
Religion, polygenism and the early science of human origins

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Abstract

American polygenism was a provocative scientific movement whose controversial claim that humankind did not share a common ancestor caused a firestorm among naturalists and the lay public beginning in the 1830s. This article gives specific attention to the largely overlooked religious ideas marshaled by American polygenists in their effort to construct race as a unit of analysis. I focus specifically on the thought of the American polygenist and renowned surgeon Dr Josiah Clark Nott (1804–73) of Mobile, Alabama. Scholars have claimed that in his effort to establish a properly modern scientific view of race Nott was one of the first American naturalists to publicly denounce the notion of common human descent (monogenesis) as proclaimed in the Bible. I argue that despite his rejection of monogenesis, Nott's racial theory remained squarely within the tradition of Christian ideas about the natural world. American polygenism provides an example of how scientific and religious ideas worked together in the minds of American antebellum thinkers in the development of novel theories about race and human origins.

Keywords

Josiah C. Nott, polygenism, race, religion, science, secularization

Introduction

In the winter of 1844, the American naturalist and physician Dr Josiah Clark Nott (1804–73) was asked by the Mobile Franklin Society to participate in a lecture series for the educated and well-to-do citizens of his hometown in Alabama. Nott agreed to the

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invitation and later published his *Two Lectures on the Natural History of the Caucasian and Negro Races*. These lectures gave Nott the reputation of being America's most vocal critic of the theory of common human ancestry. Just a decade earlier, the American paleontologist George Robins Gliddon had discovered Egyptian paintings depicting each of the major races with the same traits and characteristics seen in the mid-19th-century (Stanton, 1960: 50). With Gliddon's discovery in mind, Nott argued in his lectures that these Egyptian depictions meant either that each of the various races acquired its unique traits in the few centuries between the Deluge and the life of Moses, or that these paintings were proof each race had been created, from the very beginning, with permanent and distinct traits and therefore did not share an ancestor (Nott, 1844: 13). During the first half of the 19th-century naturalists in Europe and America were committed to the Christian notion of recent human antiquity and the special creation of our species. Nott argued that under this timeline of recent creation monogenists were forced to defend one of two explanations: the environment was capable of rendering different human forms in a considerably short period of time; or the various racial groups were created instantaneously through a 'direct act of providence' (ibid.: 1). Nott found neither explanation was satisfactory as both contradicted 'the great chain of Nature's laws' (ibid.). Nott had a point. There were no compelling arguments during the early 19th-century explaining if and how long it took for environmental factors to create a new racial group. Neither was there any consensus among naturalists on how such changes were passed down to the succeeding generation (Bowler, 1983: 118–40; Bowler, 1989: 208–14; Hull, 1989: 27–42). Moreover, the idea that the Creator could transgress natural law was unpalatable to 19th-century anatomists and physicians, like Nott, who held a refined appreciation for scientific methodology.

Rather than concede the rapid emergence of racial groups through environmental factors or assume the work of supernatural intervention Nott developed an alternative hypothesis. He argued: 'there is a Genus, Man, comprising two or more species' and that each racial group possessed its own unique ancestor (Nott, 1844: 1). With this polygenist theory of human origins Nott wanted to put to rest, once and for all, the theory of monogenesis by showing the rational limits of the biblical account of human descent and its inconsistency with sound empirical science. Nott emphatically claimed that under no conditions should we assume that the physical effects of the environment upon the human form could 'change a White man into a Negro' (ibid.).

American polygenism was a provocative scientific movement whose controversial claims about the multiple origins of human life caused a firestorm among naturalists and the lay public beginning in the 1830s. Charles Caldwell, Samuel George Morton, Samuel A. Cartwright, George Gliddon, Josiah C. Nott and Louis Agassiz were its leading theorists. This group of scientific men took up a rigorous study of the various human populations across the globe, and worked collaboratively to develop the idea that racial variation stemmed from immutable physical differences passed down from one generation to the next and therefore the human races could not have shared an ancestor. For its time, polygenism was a true science and entailed a creative mix of scrupulous data collection about human population traits and novel theories about the deleterious consequences of racial mixing.

With their rejection of the biblical chronology and with their alternative vision of human origins, American polygenists created the controversy that helped ripen the

public's mind for the arrival of Darwinism in America (Stanton, 1960: 196; Marks, 2008a: 4). Moreover, many of the questions raised by American polygenists continued to be asked by early-20th-century medical practitioners and physical anthropologists interested in the seemingly fixed biological and behavioral differences between the races (Stocking, 1968: 42–68). Arguably, 20th-century American and European anthropology is indebted to the conceptual breakthroughs that took place in the debate between monogenists and polygenists over the shared ancestry of the human race during the previous century.

This article gives specific attention to how religious ideas helped American polygenists construct race as a unit of analysis and theorize the origin of human life. I argue that Christian ideas about time, the order of nature, and human descent played a key role in the scientific theories of American polygenists. Historians, however, have overlooked this influence. Thus, my aim is to complicate our understanding of the mutually productive relationship between science and religion with regard to theories of race, thereby offering new insights about the place of religion in the history of the human sciences. This article focuses specifically on the thought of Dr Josiah Clark Nott of Mobile, Alabama. By 1851 Nott emerged as one of the leading voices of American polygenism (Stanton, 1960: 69–70; Fredrickson, 1987[1971]: 78). Historians have claimed that Nott was the first American naturalist to declare publicly that modern science and the Bible were at odds when it came to the study of human origins (Stanton, 1960: 69). I argue, however, that Nott's racial theory remained squarely within the tradition of Christian ideas about the natural world even though he aspired 'to cut loose the natural history of mankind from the Bible, and to place each upon its own foundation, where it may remain without collision or molestation' (Nott, 1849: 7). The presence of religious ideas in Nott's racial theory reveals a largely ignored tension at the heart of American polygenism: even though polygenists rejected the Christian idea of common human descent, their racial theories drew upon Christian natural theology and the Bible. Nott's move toward a modern science of human origins was not an example of the triumph of scientific secularism over religion. Instead, American polygenism provides an example of how scientific and religious ideas worked together in the minds of American antebellum thinkers in the development of novel theories about race and human origins. In other words, Nott's 'secular' theory of polygenesis was also profoundly Christian.

The shared history between the Bible and the 'science' of human origins

Polygenism has its origins outside American soil. Recounting these origins reveals the extent to which Christianity shaped the early 'scientific' study of human beginnings. In the 17th-century Isaac de La Peyrere, a Calvinist of Portuguese Jewish descent from Bordeaux, was the first to offer a systematic defense of the theory of separate human origins (Livingstone, 2008: 26). In 1655 La Peyrere published his heretical treatise *Prae-Adamitae* or 'Men Before Adam'. Using biblical criticism and cartography he arrived at the conclusion that races of men were created before the birth of Adam. The grounds for La Peyrere's polygenist theory rested on his ability to reconcile two ambiguous biblical passages: Paul's Epistle to the Romans where it is suggested that human sin

existed in the world before Adam (Romans 5: 12–14) and the implication in the book of Genesis that Cain took a wife from a population not derived from Adam's stock (Livingstone, 2008: 33–4). La Peyrere reasoned that ceremonial Judaism existed before the birth of Adam with various laws and ordinances given to pre-Adamite people. The fall of humankind, however, occurred only after Adam's unique transgression against God's law in the Garden of Eden.

La Peyrere's polygenist theory was innovative not simply because he posited the existence of humans before Adam. He was also bucking the trend common among European biblical scholars and historians who dismissed the 'pagan' chronicles of the Egyptians, Greeks, Babylonians, Chinese and Native Americans because they placed humans on earth thousands of years before the Christian chronology (Livingstone, 2008: 34). To deal with the challenges these ancient chronicles posed, European historians such as Georg Horn (1620–70) and Giovanni Battista Vico (1668–1744) made a distinction between 'fabulous history' and 'sacred history' (Rossi, 1987[1984]: 158). 'Fabulous history' referred to all accounts of human history that fell beyond the timeline narrated in the Judeo-Christian scriptures. 'Sacred history' was considered factually true and believed to be the length of time actually lived by humankind according to the biblical narrative. In 1650, just 5 years before the publication of La Peyrere's *Prae-Adamitae*, the distinguished church historian Archbishop James Ussher of Ireland announced he had calculated the origin of creation to be 22 October 4004 BCE (Livingstone, 2008: 5). Ussher did not use a literal reading of the Bible to arrive at this estimate. Taken literally the Bible does not offer a coherent account of the number of years that transpired between the life of Adam and the present (Barr, 1999: 382). Moreover, the various Greek, Latin and Hebrew sources for the Bible offer different estimates for human history. Ussher arrived at his estimate of 6,000 years for the life of humankind on earth through an analysis of Hebrew genealogy, ancient Middle Eastern manuscripts, Greek marble inscriptions, and a clever use of astronomical chronicles to fill in dates not accounted for in scripture (Barr, 1999: 382; Livingstone, 2008: 5). European historians looking to defend the 'sacred history' described in the Bible turned to the Ussherian chronology to help draw the line between history that was factually true and history that had been fantasized by 'primitive' nations (Rossi, 1987[1984]: 159). In effect the Bible carved out the temporal parameters for what was believed to be the legitimate duration of human history on earth.

Breaking with scholarly custom, La Peyrere challenged the Christian chronology traditionally understood. He also parted from the practice of dismissing non-European accounts of human history. La Peyrere took 'pagan' histories at face value, arguing that they detailed the actual historical time experienced by pre-Adamite populations (Livingstone, 2008: 35). With the claim that humans pre-dated Adam, La Peyrere clearly inverted the biblical narrative. Yet, he was careful to insist that Adam was a distinct human being, not a descendant of the populations created by God before him (*ibid.*). With this subtle move La Peyrere reasoned that the Bible was true insofar as it was understood to be an account of only the descendants of Adam's European descendants (*ibid.*). In this scheme globally significant events such as the great Deluge were to be understood as local incidents, not a universal experience shared by all of humankind.

La Peyrere's *Prae-Adamitae* was swiftly denounced nearly moments after the ink set on its heretical pages. On Christmas Day in 1655 the Belgium bishop of Namur publicly

denounced the book. A month earlier the president and council of Holland and Zeeland had done the same (Livingstone, 2008: 38–9). Within a year of its publication *Prae-Adamitae* received numerous refutations from acclaimed historians such as Isaac Voss (1618–89), Edward Stillingfleet (1635–99) and George Horn. Then in 1657 La Peyrere was summoned to Rome by Pope Alexander VII and forced to pen an official recantation (Livingstone, 2008: 37–8). In the wake of La Peyrere's pre-Adamite scandal, orthodox visions of common human descent and recent human creation would continue to be reaffirmed as the true account of the origin of racial differences and the proper framework from which to view human history.

The idea that humans had been on earth for less than 6,000 years would prevail in the minds of the intellectual elite until the 1860s (Numbers, 2000: 262). As for the lay public, Ussher's chronology would not fall out of favor among Christians until the middle of the 20th-century (ibid). Here we arrive at a common point of confusion regarding the status of biblical ideas about human origins during the rise of 19th-century American polygenism. It is often assumed that the belief in recent human creation was abandoned after geologists at the turn of the 19th-century began to discover vast periods of time that extended beyond the Ussherian framework. This in fact is not true. Defenders of sacred history were able to separate the timeline of the earth's creation from the timeline of human creation. When estimates for the earth's age extended beyond the Ussherian chronology human and earth history were severed. In effect, the idea of recent human creation and 19th-century geological claims about the ancient age of the earth coexisted in the minds of many scholars: deep geological time was simply understood as belonging to pre-Adamite history (Rossi, 1987[1984]: 152–7; Rudwick, 1986: 307–8). Even the discovery of seemingly ancient human artifacts and fossils in Suffolk, England, in 1797 and in Engis, Belgium, during the early 1830s could be dismissed by naturalists who believed in the Judeo-Christian timeline of recent creation (Greene, 1959: 236). Indeed, scientists began to acknowledge the full antiquity of human life only after the publication of Charles Lyell's *Antiquity of Man* in 1863 (Numbers, 2000: 262). Before then, scientists often believed that seemingly ancient human fossils either belonged to extinct animal species or were simply recent human remains wrongly identified (Schrenk and Muller, 2009: 6–7). Moreover, during the early 19th-century professional geologists avoided altogether the question of human origins in order to stay above the partisan conflict between traditional chronologists and the secularizing concerns of eternalistic theories of the earth (Rudwick, 1986: 311). As a result, 19th-century geological claims about the deep antiquity of the earth had very little effect on how most 19th-century scholars viewed human history until the publication of Darwin's *Origin of Species* (1859) and Lyell's *Antiquity of Man* (1863).

The American polygenists, however, were the exception. Although they did not challenge the idea of recent human antiquity, Samuel Morton and Josiah Nott questioned if humans could have descended from a common ancestor according to the Ussherian chronology. Nott in particular believed it was unscientific to assume that human variation could have manifested itself in the short period of time between Noah and the life of Moses (who was believed to have written the first few chapters of the Bible which described the creation of the earth). With these suspicions, American polygenists rekindled the flame of controversy that had been stoked by La Peyrere nearly 200 years

earlier. Like La Peyrere, American polygenists created an alternative and controversial theory of human racial origins that challenged the traditional Christian vision of humanity's shared ancestry and the temporal parameters of human existence. They also used the chronologies of non-European nations to question the universal validity of biblical anthropology. But unlike their French counterpart, American polygenists used more than simply the historical records of non-European nations. They also analysed the historical experiences recorded on the bodies of other races. By the 1830s American polygenists were armed with new scientific data about primeval and persistent cranial traits passed along in the skulls of the different races. Appeals were also made to other physical and behavioral traits such as skin color, hair texture, intellect and moral dispositions believed to be passed down consistently from the original ancestors of the present-day races. We might say that Morton and Nott made appeals to the *bio-chronologies* of each race in order to cast doubt on the scientific validity of the traditional view of human descent from a common ancestor and the Christian timeline of recent creation.

Nott and the 19th-century politics of American polygenism

American polygenism came into maturity during the period of social, political and economic unrest that led to the American Civil War (Baker, 1998: 14). In 1820, a hard-fought battle between pro-slavery and anti-slavery factions of Congress resulted in the Missouri Compromise, which balanced power in the Senate between both sides of the slavery debate. The compromise aroused fears in the South that a strong federal government posed a threat to the institution of slavery and provided the motivation for the secessionist agenda of the Confederacy.

Ten years later, the presidency of Andrew Jackson (1829–37) introduced changes to America's race relations that would endure well into the following century. On 26 May 1830 Jackson signed into law the Indian Removal Act, which divested an estimated 100,000 Native Americans of their property throughout the South, particularly in the state of Georgia. Also on Jackson's watch, Congress implemented a Gag Rule between 1836 and 1844, which banned petitions opposing slavery from being introduced before the US House of Representatives. This was a considerable blow to the efforts of abolitionists to persuade Congress to do away with America's 'peculiar institution'. Finally, Jackson was responsible for appointing Roger B. Taney as Chief Justice of the US Supreme Court. In 1857, Taney authored the majority opinion of the famous *Dred Scott v. Sandford* case, claiming that 'Negroes' were 'beings of an inferior order, and altogether unfit to associate with the white race . . . and so far inferior that they had no rights which the white man was bound to respect' (Smedley, 1999: 242–5). In the wake of this decision, African Americans were denied full citizenship across the nation.

In this setting, American polygenists emerged as leading voices of novel scientific theories about the origins of humankind and the nature of racial differences. Much of American polygenist thought was indebted to the work of the Philadelphia-born ethnologist and physician Samuel Morton (1799–1851). Morton's *Crania Americana* (1839) and *Crania Aegyptiaca* (1844) were seminal texts for early-19th-century American ethnologists and contributed to the debate among naturalists on both sides of the Atlantic over the long-standing belief in shared human ancestry (Prichard, 1813; Bachman,

1850; Smith, 1851). In both works, Morton measured the skulls of each of the 5 major races (Caucasian, Mongolian, Malay, American and Ethiopian) as delineated by the German Romantic naturalist Johann Friedrich Blumenbach (1752–1840) (Blumenbach, 1865a[1795]: 264). After noting that the crania of each group contained distinct facial angles and unique skull capacities, Morton inferred that the intellectual and moral abilities of each race were also different (Morton, 1839: 295). The specific skull features of each race and their constant heredity suggested to Morton that climate and environment had little effect on the human form (Morton, 1844: 65–6). From this Morton concluded not only that racial traits were fixed but also that it was highly unlikely each group descended from a common ancestor (Morton, 1839: 2–3).

Despite these observations, Morton never openly denounced the theory of common human origins. Instead, he was a reluctant polygenist who acknowledged that ‘it was a wiser plan to present the facts of unbiased theory and let the reader draw his own conclusions’ (Morton, 1839: 295). Although a man of science, Morton was also a devout Christian, having been raised a Quaker and later became an Episcopalian as an adult. Morton’s religious beliefs left him unwilling to draw out the full implications of his ethnology concerning the separate origins of the races (Stanton, 1960: 40). This responsibility fell on the shoulders of the younger members of the American school who were willing to push Morton’s discoveries to their logical conclusion – even if this meant an outright attack on biblical scripture.

No one was more successful at this than the southern physician and ethnologist Josiah C. Nott. In fact Nott was one of the most influential of the American polygenists, largely because of his efforts to popularize racial polygenism following Morton’s death in 1851 (Stanton, 1960: 69). Born in South Carolina, Nott received his medical degree from the University of Pennsylvania in 1827. After his postgraduate training in France, he began surgical practice in Mobile, Alabama in 1836 (*ibid.*: 66). Nott quickly established a reputation as one of the most skillful surgeons in the South, where he also specialized in gynecology (Carmichael, 1948: 250). While in Mobile, Nott established a private infirmary for African Americans, which began operations in 1848 and continued to treat patients until after the Civil War (*ibid.*). Nott is also given credit for discovering that yellow fever was transmitted through mosquitoes in a paper that appeared in the January 1848 issue of *The Charleston Medical Journal and Review* (*ibid.*: 251).

Historians have mostly focused on Nott’s *Types of Mankind* (1854), written jointly with George R. Gliddon (1809–57). The attention this work has received is due largely to its success – its first printing completely sold out and 9 editions were published before the end of the 19th-century – as well as to its timing within the period leading up to the Civil War (Stanton, 1960: 163). Nott and Gliddon argued that polygenesis was consistent with natural law, non-European races were biologically inferior, and ultimately the mixing of white blood with that of any other population was sure to bring an end to the European race (Nott and Gliddon, 1854: 49–61). Historians have aptly noted that *Types of Mankind* reflected the changes in American race relations precipitated by the Jackson administration and provided a scientific rationale for the agenda of pro-slavery apologists (Fredrickson, 1987[1971]: 79).

Largely because of this, many scholars have written off the theories of American polygenists as legitimate contributions to the history of the human sciences. Historians

have instead used the theories of race articulated by Morton, Nott and Gliddon to reinforce the boundaries between ‘real’ science and pseudo-science (Marks, 2008a: 2–3). For example, George Fredrickson, whose reading of the American School is key for historians critical of racializing science during this period, argues that political temperament and racial bias compromised the objectivity and truth-claims of Nott and others (Fredrickson, 1987[1971]: 71–96).¹ Fredrickson wrote:

The most fervent of the scientific apologists for the American system of racial subordination was Dr. Josiah C. Nott, who became the leading exponent of the new ethnology after the death of Morton. Preconceived racial attitudes probably drew him to ethnology in the first place and influenced his inquiries. (Fredrickson, 1987[1971]: 78)

Fredrickson believed Nott’s politics over-determined his views of race and therefore the conceptual roots of his scientific account of racial variation were irrelevant. In Fredrickson’s view, Nott’s writings ‘would seem to belong at least as much to the history of proslavery and racist propaganda as to the history of science’ (1987[1971]: 79). To put Fredrickson’s reading simply: Nott’s science appears to be little more than window-dressing for his racist politics (ibid.: 78–82).

I share the liberal-democratic sensibilities of those who claim that the scientific discussions of race produced by American polygenists were part of a larger discursive strategy to support American and European imperialism abroad and the disenfranchisement of blacks in America. Yet, I think that Fredrickson and other historians of this period fail to describe adequately the scientific roots of American polygenism due to their own political commitment to exposing the ideological uses of science to justify non-democratic ends. Again, these are valuable commitments of crucial importance, especially given the return of racial typologies in contemporary science (Braun *et al.*, 2007; Fullwiley, 2008; Weiss and Lambert, 2010) and the recent defense of Samuel Morton’s cranial ethnology by social scientists claiming his work was conducted without racial bias (Lewis *et al.*, 2011).

Any honest assessment of American polygenism must acknowledge how this scientific theory emerged from within a socio-political setting that was eager and willing to naturalize racial inequalities. However, I believe that the taint of 19th-century southern pro-slavery politics should not prevent us from looking deeper into the conceptual origins of this controversial theory. Moreover, to dismiss polygenism as unscientific on the basis of underlying political views or to discredit Nott as lacking the credentials to speak about human origins is fundamentally to misunderstand the ethos of antebellum science. In an age before the professionalization of formal scientific disciplines, the relationship between science, politics and religion in the ‘Old South’ was remarkably porous (Bozeman, 1977; Oleson and Voss, 1979; O’Brien, 2010).

In fact, what is often forgotten due to the swift dismissal of American polygenism is that Morton and Nott were aware of an important problem with the prevailing scientific theory of common human descent: it was based largely on biblical assumptions about human origins for which scientists had no direct evidence. Common human descent was an unverified claim during the 19th-century. Not until the 1980s could scientists actually confirm through an analysis of mitochondrial DNA and archaeological evidence that all

present-day humans actually shared an ancestor that originated in Africa (Giles *et al.*, 1980; Cann *et al.*, 1987). At best, 19th-century scientists before and after Darwin used analogies from other species to posit that successful mating between different races suggested a shared common ancestor. A comparison of the anatomical structure of each race also helped early scientists resolve this question. But this form of analogical reasoning relied on hypothetical and indirect evidence. Genetic code would be needed to establish common human ancestry as a scientific fact and this evidence would not arrive until nearly 110 years after Darwin's *Descent of Man* (1871). Morton and Nott were the first in America to draw attention to the flaws in prevailing accounts of common human origins. Like most innovative thinkers, they placed the available data about human variation into a different framework and summarily drew up alternative conclusions about the origins of the races. Their critique of monogenism should be understood as a valid scientific position, despite the obvious political consequences of their theory. Indeed, the theories of the American polygenists need to be reassessed as legitimate scientific positions for their time and not merely window-dressing for racial politics.

The story of Noah's descendants prevails

Nott's *Two Lectures on the Natural History of the Caucasian and Negro Races* prefigure the ideas developed later in his more popular text *Types of Mankind* and therefore offer a glimpse into his thought while in its early formation.² Moreover, Nott's reputation as an ethnologist was born from the controversy created by these lectures, making them as important for the legacy of American polygenism as Morton's *Crania Americana* and *Crania Aegyptiaca*.

In his first lecture on race, Nott took the opportunity to share his thoughts on how recent discoveries in ethnology were incompatible with the biblical account of common human descent. Nott's argument revolved around two key issues: first, the length of time needed for humans to develop into different races; second, the problem of what appeared to be the fixed nature of racial traits. Together these two issues became the grounds for Nott's refutation of the theory of common human descent. We will see, however, that Nott's account of multiple human origins (polygenism) continued to affirm elements of the Christian creation narrative described in the book of Genesis as well as the idea of recent human creation. Nott also held a conception of nature that was indebted to natural theology.

According to the Bible all humans share an ancestor in Adam. Following the great flood, Adam's remaining descendants were Noah, his three sons Shem, Ham and Japheth, and each of their wives. In the 10th chapter of the Genesis narrative, Noah's three sons repopulated the earth after the Deluge, yielding the various races that apparently existed during the 19th-century. According to the biblical chronologist Joseph Justus Scaliger (1540–1609), the flood was thought to take place in the year 2348 BC (Browne, 2003: 114). Later the Irish Protestant bishop, James Ussher, would concur with this dating of the flood, believing it took place roughly 1,500 years after the creation of Adam. These dates were printed in the margins of the Authorized Version of the Bible (known as the King James translation) and carried the weight of authority among English-speaking Christian naturalists in Europe and America well into the 19th-century (ibid.).

Nott knew this biblical chronology very well and deciphered what had otherwise been overlooked for centuries by Christian thinkers: the chronology provided by Ussher gave very little time between the flood of 2348 BC and the birth of Moses which, during Nott's time, was believed to occur sometime after the reign of King Menes in 2272 BC (Nott, 1844: 10). In other words, less than 100 years separated Moses – the assumed author of Genesis – from the sons of Noah. Adding to Nott's suspicions was George Robins Gliddon's discovery of Egyptian paintings that depicted Africans with the very same traits they possessed in the 19th-century (ibid.: 13) (see Figure 1). Nott first learned about Gliddon's work in Egypt through the writings of Morton, who in the 1830s asked Gliddon to supply him with Egyptian skulls to prepare his book *Crania Aegyptiaca* (Horsman, 1987: 94). Nott had advanced copies of *Crania Aegyptiaca*, which he used to prepare his first two public lectures on race. Nott and Gliddon would eventually develop a close relationship in the early 1840s when Gliddon sent Nott a mass of material on the monuments of Egypt after learning about the controversy created by Nott's *Two Lectures* (Stanton, 1960: 80). In light of Gliddon's discovery that Egyptians recorded human racial differences, Nott reasoned that if the biblical account of common human descent were true humans must have developed their racial differences during the very limited period of time when Shem, Ham and Japheth repopulated the earth between 2348 and 2272 BC; which again was a period of less than 100 years (Nott, 1844: 10). The problem for Nott was how to account for the development of different racial types within the parameters of the biblical timeline while not appealing to supernatural explanations.

Nott's solution to this problem was to reject the idea of common human origins, affirming instead that Noah's sons only accounted for the origins of Caucasians. Being descendants of Noah, Nott believed that the Egyptians could not have been black. Nott wrote that 'in the allotment of territories to the offspring of Noah, Egypt was given as an inheritance to Mizraim, the son of Ham . . . Mizraim, being a descendant of Noah, was of course a Caucasian' (Nott, 1844: 12). Nott believed that if Ham's descendants, who were white, had repopulated Egypt, it was unreasonable to assume that the blacks found in sub-Saharan Africa could have also been the offspring of Ham, coming into being in the 100 years that followed Noah's flood. Nott pleaded that 'if there is any miracle in the Bible more wonderful than this, I should like to know what it is' (ibid.: 14). In light of this inconsistency, Nott maintained that the story of Noah and his three sons only accounted for the descent and migration of whites across the globe. Nott claimed that other populations could have developed separately from Adam's bloodline.

The historian Sylvester Johnson argues that Americans in the 19th-century inherited from their Christian European forefathers several strategies for explaining the origin of the different races (Johnson, 2004). This inheritance was apparent even within Nott's thinking. Indeed, the very fact that Nott – who saw himself as championing the cause of modern science – used the story of Noah's sons to explain the origin of the Caucasian race warrants reflection on the cultural and social context in which he developed his scientific theory. The belief that the Bible provided insight into the origin of the different races was part of a long-standing practice of using scripture to reconstruct the ancestries of present-day populations. This practice took on a unique and enduring

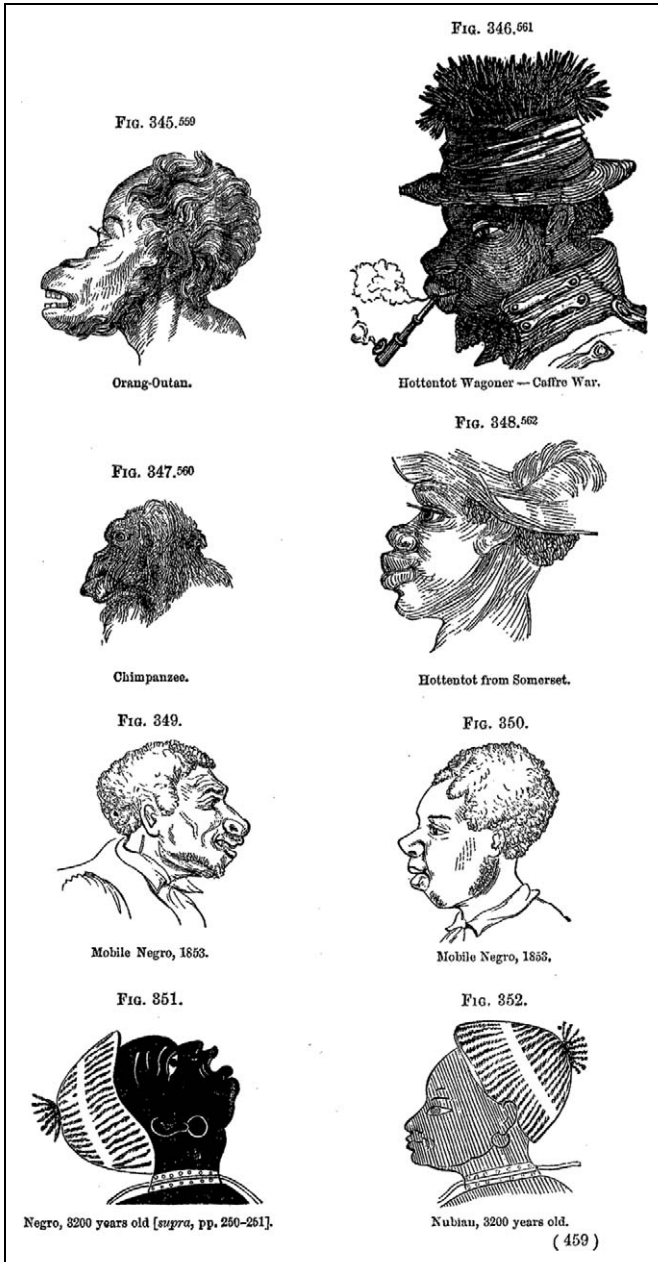


Figure I. Comparative sketches of 'Negro' features attempting to show the fixity of black facial traits since the time of Moses as well as the persistent similarity between blacks and primates. The figure originally appeared in Josiah C. Nott and George Robins Gliddon, *Types of Mankind* (1854).

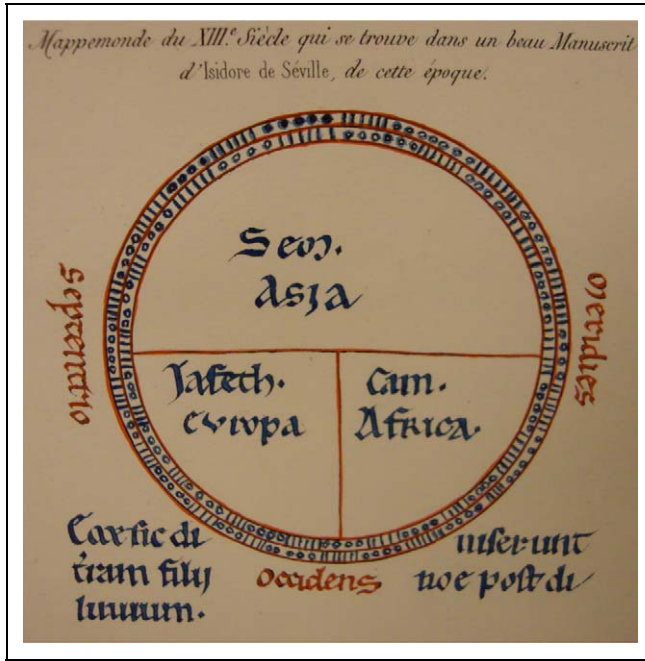


Figure 2. A 13th-century rendition of a 'T-O' map from the *Etymologiae* of Isidore of Seville. The continents of Asia, Europe and Africa are shown as the domains of the sons of Noah: Sem (Shem), Jafeth (Japheth) and Cham (Ham). The figure is taken from the Harvard University map collection at Widener Library.

shape following modern appropriations of medieval accounts of the story of Noah's sons.

In the 7th-century, the Spanish encyclopedist and historian of the early Middle Ages, Isidore of Seville (560–636), created tripartite diagrams known as 'T-O' maps that translated the story of the earth's repopulation by Noah's descendants into a visual racial taxonomy of the three major races (Livingstone, 2008: 5–6). These maps gained their name because their simple structure entailed a 'T', representing the major waterways of the earth, superimposed over an 'O' which represented the earth (see Figure 2). The three known continents, Asia, Africa and Europe, were divided across the three different planes of a globe created by the superimposed 'T'. Asia was positioned at the top of the map, leaving Europe and Africa on the bottom left and right corners respectively. These maps were East-facing in order to convey the idea that humankind had descended from Eden, which was thought to lie just past Asia at the top of the earth (Livingstone, 2008: 5). Overlying the three geographical planes were the names of Noah's three sons: 'Sem' for Asia, 'Ham' for Africa and 'Japheth' for Europe. The waterways over the globe created a 'T' that reflected the basic shape of the Cross. The function of these 'T-O' maps was to organize physical space according to a Christian conception of the world as a temporal phenomenon inhabited by specific populations that shared a common ancestor in Noah (Edson, 1997: 15). These images were thus visual representations of Christian ideas about space, time and race (see Figure 3).³



Figure 3. A more detailed rendition of a ‘T-O’ map from the 15th-century inspired by Isidore of Seville. This originally appeared in the *Mappemonde du Pomponius de la Bibliothèque de Reims de 1417*. The figure is taken from the Harvard University map collection at Widner Library.

As the historian Benjamin Braude has shown, the story of Noah’s three sons represented by the ‘T-O’ maps did not carry the same racial valences during the time of Isidore of Seville as they did later during the 19th-century (Braude, 1997). Prior to the explorations of the 15th-century, Europeans knew very little about Africa and nothing about the Americas (ibid.: 109). In effect, race in medieval Europe lacked a global frame of reference and was therefore not loaded with modern notions about pure homogeneous groups occupying isolated geographical regions (ibid.: 109–10). Although medieval thinkers contemplated the origin of racial differences, they did not believe that Arab Muslims, Asians to the East, and North and East Africans inhabited separate continents (ibid.: 109). Moreover, given both the scarcity and inconsistency of the Bible before the Protestant Reformation, medieval naturalists held wide-ranging views about the identity and geographical location of Noah’s three sons (ibid.: 106–7). The ‘T-O’ maps, therefore, were not maps in the modern sense, but iconic images loosely attaching Noah’s three sons to three different landmasses (ibid.: 114–15).

With very little knowledge of the world outside of the shores of the Mediterranean Ocean and no wide-reaching consensus on the meaning of the story of Noah’s descendants, the distillation of all human variation into three continental types would have been incomprehensible to medieval Christian naturalists.

Braude argues that the idea of three original continental races was therefore a uniquely modern invention. Only after the world became larger and better-defined in the centuries that followed European colonization in the 16th-century, did the notion of separate and distinct continental races begin to emerge (Braude, 1997: 127). Over the course of the next three centuries, which witnessed the mass distribution of the Bible among the

literate, the story of Noah's descendants helped western Europeans discern what was believed to be the original ancestry of the races found in the Americas, sub-Saharan Africa and South Asia. Gradually the racial identities of Shem, Ham and Japheth settled into the designations of Asia, Africa and Europe respectively.

Thus the birth of Noah's three sons, as we know it, happened at the dawn of the European encounter with the colonial 'Other', pulling them into the fold of the European religio-political imagination and under the gaze of the scientific enterprise. With his deployment of biblical genealogy, Nott's polygenist theory stood squarely within this uniquely modern practice of drawing upon religion and science to classify (or marginalize) the racial Other. Knowledge about the legacy of Noah's descendants was not a form of religious worship for naturalists, but provided a basic framework for western European perceptions of the world, as well as the ancestry of the various races. The inability of Nott to develop an account of European ancestry outside the story of Noah's sons reveals how influential the Christian scriptures were even for secular ethnologists interested in human racial origins.

In addition to being influenced by the Bible, Nott's vision of the first humans was also profoundly shaped by the racial theory of the German naturalist Johann Friedrich Blumenbach. Blumenbach was the first modern anthropologist to provide an account of how whites were the original human type, inventing the term 'Caucasian'. In his seminal work *On the Natural Varieties of Mankind* (1781) Blumenbach reasoned that:

It is the white in colour, which we may fairly assume to have been the primitive colour of mankind, since . . . it is very easy for that to degenerate into brown, but very much more difficult for dark to become white, when . . . this carbonaceous pigment has . . . deeply struck root. (Blumenbach, 1865b[1795]: 269)

In other words, white skin was far more malleable than black and thus appeared to be the most reasonable candidate for the color of the first humans. American naturalists, particularly in the South, gravitated toward the racial typologies of Blumenbach, because unlike the theories of the French naturalist Jean-Baptist Lamarck (1744–1829) – whose notion of acquired racial traits was popular among 19th-century European intellectuals – Blumenbach's account of race was void of evolutionary undertones (O'Brien, 2010: 56). According to Blumenbach's typology, races did not develop successively from inferior primitive to complicated modern as was suggested by Lamarck or the British naturalist James C. Prichard (1786–1848). Instead, Blumenbach argued that the races began with God's creation of an original Caucasian type from which all other humans descended. This position was consistent with American's profound religious sensibility, particularly in the Old South, where a creationist view of human beginnings carried the day (O'Brien, 2010: 56–62). It was not much of a conceptual leap for American thinkers to make connections between the biblical narrative of human origins and Blumenbach's theory of human descent from an original form. Nott, for example, insisted that Noah's three sons were Caucasian – borrowing the racial category developed by Blumenbach – and believed that it was absurd to assume that Ham's offspring could 'carry the Arts and Sciences to the highest state of perfection, and next, as an additional evidence of civilization, turn perfectly black' (Nott, 1844: 13). The point, Nott believed, was to recognize

that if the first human (Adam) was white, it was unreasonable to assume that his descendants could have given birth to black, brown and yellow races after the flood of Noah. On this score Nott clearly disagreed with Blumenbach's endorsement of monogenism, yet nonetheless retained the belief in the primacy of Caucasian ancestry.

Theoretically, had Nott rejected the idea of recent human creation he could have used the story of Noah's sons to explain the origin of all races. By 1840, most naturalists were aware of Charles Lyell's argument in *Principles of Geology* (1830–3) for an extended age of pre-human history, which effectively freed the study of the earth from the biblical tradition (Greene, 2003: 154). It would seem then that extending the timeline of human history backward would dovetail with Nott's commitment to advance modern science beyond the conceptual constraints of the Bible. Nott, however, was unable to abandon the biblical chronology of recent human creation without also giving up his argument for immutable racial traits. An older human chronology better served the argument for monogenesis as it theoretically allowed more time for humans to develop their so-called racial differences after descending from a common ancestor. An extended human chronology also weakened the argument for fixed racial traits by suggesting that humans, like animals and plants, were subject to the same laws of physical change when pressured by the environment over extended periods. But most mid-19th-century Christian naturalists were unwilling to wage a defense of monogenesis at the expense of the belief in recent human antiquity (Greene, 1959: 309–39). Albeit for different reasons, Nott also had a stake in maintaining the idea of the recent creation of humankind. Nott's motivation, however, had nothing to do with piety but was a matter of explanatory necessity: he simply had no other frame of reference for thinking about the origin and descent of human life. Since the time of La Peyrere during the 17th-century, western thinkers believed 'sacred history' was factual human history – that Christianity delimited the temporal parameters for the actual time lived by humans on earth. Before Darwin, most naturalists on both sides of the human origins debate lacked the imagination to move beyond the biblical chronology of recent human creation. Nott was no different on this score, despite his questions about the Egyptian renditions of the various races and his own observations on the longevity of racial traits.

Interestingly, Nott held no commitments to any Christian denomination. Unlike other polygenists who maintained their Christian beliefs despite their scientific work – Morton, for example, was an Episcopalian during the late stages of his scientific career and Louis Agassiz continued to believe in Unitarianism – Nott lost the faith. Although raised as a Presbyterian, Nott became a religious skeptic while earning his bachelor's at South Carolina College, which in the 1820s was a haven for religious unorthodoxy and radical free-thinkers (Horsman, 1987: 18). Later as a medical student at the University of Pennsylvania Nott became an adherent to the theories of François Broussais and the French school of physiological medicine during a time when the French exerted a strong influence on the best-trained American physicians (ibid.: 23). The physiological theory of medicine developed by Broussais rejected previous metaphysical speculations about the workings of the human body, stressing instead the importance of observation and analysis (ibid.: 27–8). With his free-thinking temperament and materialist medical training Nott had no reservations about using science to contest Christian beliefs. Holding

firm to this principle Nott was certain that polygenism was bound to ‘stir up hell among the Christians’ (Stanton, 1960: 122).

Nott’s unorthodox religious views were apparent to even his contemporaries. In his obituary written in a Mobile newspaper it was said that ‘[Nott’s] ideas on religion were confused and he was never disposed to argue about it’ (Carmichael, 1948: 255). Nott did in fact hold a peculiar view of religion, one that swayed from a quasi-interest in the ‘modernization’ of religious truth, to an outright disdain for the way Christianity compromised the pursuit of science. Elsewhere in his writings Nott argued that the Bible was actually ambiguous regarding the single origins of humankind. Nott claimed that ‘the unity of the races can only be deduced from forced constructions of the Old and New Testaments, and a persistence in this error is calculated to subvert and not to uphold our religion’ (Nott, 1849: 7). Nott even went so far as to ask:

Has God anywhere said that he never intended to create another man, or that other races were not created in distant parts of the globe. I would ask, after all these admitted truths, is there any thing so revolting in the idea that a Negro, Indian, or Malay, may have been created since the flood of Noah, or (if the flood was not universal) before this epoch? (Nott, 1844: 7)

On the surface these statements suggest Nott was interested in bringing greater harmony between biblical truths with the facts of modern science. But on a closer look, Nott had little concern for what his theory of polygenesis might mean for American Christians whose belief in the redemptive significance of Jesus Christ rested on the idea that all humans were inheritors of universal sin by sharing a common ancestor in Adam. Obviously polygenism undermined this crucial axiom of Christian faith. Although Nott gave lip-service to the idea that ‘The plurality of species in the human race does no more violence to the Bible, than do the admitted facts of Astronomy and Geology’ (Nott, 1844: 5), he was known for taking relish in the fact that his lectures on race were disturbing to Christians (Stanton, 1960: 122).

The most fervent opposition to Nott’s theory came from abolitionists in the North who saw the pro-slavery implications of polygenism and from southern conservative Christians who believed that Nott’s denial of the inerrancy of scripture and his rejection of Adam as the patriarch of all humankind were nothing short of blasphemy.⁴ But in the face of this opposition Nott remained ‘indifferent to the censure of those who hold up Christ as their model, while they are pouring out phials of wrath’ (Nott, 1844: 1). Essentially, Nott championed the separation of the Bible from the pursuit of scientific truth, which he hoped would precipitate ‘the day when the natural history of man will burst the trammels which have so long held it captive’ (Nott, 1849: 7). Nott believed that ‘the inspired writings must be abandoned, unless they can be reconciled with the clearly ascertained facts of science’ (ibid.: 14). He saw himself as a man of scientific truth, not religion.⁵ This of course makes the continued use of Christian ideas – such as the story of Noah’s descendants and the recent antiquity of humankind – within his racial theory all the more peculiar for someone who wanted to separate the natural history of humankind from the biblical tradition. This retention of Christian ideas can only be explained by acknowledging that religious ideas were a constitutive part of the scientific study of race during the first half of the 19th-century.

Races map onto places

There is another site within Nott's first lecture where Christian ideas loom large despite his secular aspirations. To account for the persistence of racial traits, Nott claimed that each race was formed within a climate and environment where it was properly suited to thrive. In this theory Nott likened nature to an orderly, purposive and prudent force capable of spawning fixed and enduring traits that continued to permanently distinguish the various races. Nott's conception of persistent racial traits was indebted to Samuel Morton's ethnological data on human crania.

Beginning in the early 1830s, Morton established a relationship with G. R. Gliddon, who was conducting archeological studies of the Egyptian monuments while serving as the US consul for the city of Cairo (Morton, 1844: 1–2). Morton convinced Gliddon to send him the skulls of the Egyptians and the cranial remains of other populations he discovered along the Nile, and eventually amassed one of the largest collections of ancient human skulls by any naturalist working in the 19th-century (Gould, 1996[1981]: 82). Morton's examinations of these skulls were published in his work *Crania Aegyptiaca* in 1844 – the very same year Nott delivered his public lectures on the history of 'Caucasians' and 'Negroes' in Mobile, Alabama.

Morton classified the various skulls of Egyptians and other nations they had come in contact with according to their racial traits. He thus identified skulls belonging to 'the Celts', 'the Scythians', also known as the ancient Iranians, 'the Pelasgic nation' referring to populations located in Greece and Italy, 'the Semitic nations', 'the Hindoos', 'the Arabs' and 'the Negroes' (Nott, 1844: 14). In order to determine which nations belonged to the ancient Egyptian lineage, Morton organized the skulls according to the similarities of their size and volume – the latter of which Morton determined by filling the skulls with lead and grain seeds in order to calculate their capacity. Morton was able to distill these ethnicities down to the following 4 classifications: 'the Arco-Egyptians', which entailed the 'purer Caucasian nations' as seen in Semitic and Pelasgic nations; 'the Austro-Egyptians', where it appeared that 'the cranium blends the characters of the Hindoo and Southern Arab'; 'the Negroloid crania', which were admixed populations with the crania of present-day 'Negroes' but shrouded with 'harsh and sometimes wiry' long hair; and lastly the 'Negro', with the least-developed crania and the smallest brain volume of all the skulls that were compared (Nott, 1844: 14).

With his cranial typology, Morton plotted the location of 'pure Caucasian heads' near and around Egypt, 'at Memphis, near the mouth of the Nile' noting that 'as you ascend the river into the interior of Africa and approach Nubia, the Caucasian character is gradually lost – they become mingled with Negro and other tribes' (Nott, 1844: 15). Morton concluded that Egypt was originally peopled by the Caucasian race, as he claimed that the presence of true 'Caucasian' skulls began to dissipate further up the Nile into the heart of Africa. Corroborating Morton's conclusions, Nott claimed that:

Independent of the bearing of many of these interesting facts, the conclusion to my mind, is irresistible, that the civilization of Egypt is attributable to these Caucasian heads; because civilization does not now and never has as far as we know from history, been carried to this

perfection by any other race than the Caucasian – how could any reasoning mind come to any other conclusion? (Nott, 1844: 16)

Like most naturalists during the early part of the 19th-century, Morton assumed the story of Noah's flood provided insight into the origins of human diversity. However, Morton was opposed to the theory that humans were derived from a common stock that then developed physical differences after adapting to various climates. In the introduction to *Crania Americana* Morton raised the question of whether '[i]t is not more consistent with the known government of the universe to suppose, that the same Omnipotence that created man, would adapt him at once to the physical, as well as to the moral circumstances in which he was to dwell upon the earth' (Morton, 1839: 3)? For Morton, much like Nott just a few years later, it was 'difficult to imagine that an all-wise Providence, after having by the Deluge destroyed all mankind excepting the family of Noah, should leave these to combat, and with seemingly uncertain and inadequate means, the various external causes that tended to oppose the great object of their dispersion' (*ibid.*).

Presuppositions about the Caucasian ancestry of Noah's descendants are relevant here. Both Morton and Nott maintained that it was untenable to assume that populations descended from Caucasian ancestry could survive and populate regions in the southern hemisphere where 17th- and 18th-century colonial settlers often fell ill with disease and died while attempting to adapt to the environs of the New World. As a physician and early epidemiologist Nott was surely aware of the literature of the early English settlers who wrote extensively about the difficulty of adjusting to the heat, terrains, diseases and limited dietary options available in the southern parts of North America and the Caribbean (Kupperman, 1984: 213–40; Merrens and Terry, 1984: 533–50).

Nott believed that each race was designed for a specific environment. This idea was in direct conflict with the view held by monogenists, who believed that an original human type spread across the globe and yielded different varieties of humankind. In Nott's view humans were not malleable, nor were their traits simply the result of free adaptation to the environment. Nott explained that the various races

... are not spread over the earth by chance, or without local relations, but the different regions of the world, may be said to have given origin to peculiar kinds, adapted respectively by their organization, to subsist under the local circumstances, among which they appear first to have been called into existence. (Nott, 1844: 18–19)

Like Morton, Nott was begging the question regarding what appeared to be an apparent natural order governing the physical constitution of humankind and nature. In Nott's view no plants could 'be propagated out of the climate to which they are adapted by nature – and man forms no exception to the general law' (Nott, 1844: 19). For Nott, this meant that by definition, species were 'marked by peculiarities of structure, which have always been constant and undeviating' and that 'two races are considered specifically different, if they are distinguished from each other by some peculiarities which one cannot be supposed to have acquired, or the other lost, through any known operation of physical causes' (*ibid.*: 18). According to Nott, these peculiarities made each race

suitable for only a limited range of environmental conditions. Like fauna and flora Nott claimed that ‘the white man cannot live in tropical Africa, or the African in the frigid zone’ (ibid.: 19). For Nott this meant that if the Deluge was universal, then non-Caucasian races had been spawned separately after the flood. If the flood was not universal then non-Caucasians were unaffected and therefore did not belong to Adam’s descendants. In either case each race came into being within its own indigenous habitat and not directly from Noah’s descendants.

Nott’s thinking about race in this moment recapitulates an understanding of nature described by the late 17th-century natural theologian Jon Ray (1628–1705). In his seminal work, *The Wisdom of God Manifested in the Works of Creation* (1691), considered a classic among the generation of naturalists who came of age with Charles Darwin, Ray professed the widely held belief in the stability of the basic structures of life. There was a theological basis for this view of nature as both static and purposive. Ray argued that God had created all that has existed, and which has been ‘conserved to this Day in the same State and Condition in which they were first made’ (Ray, 1762[1691]: Preface). The created world was static because at its inception God endowed plants and animals with traits and attributes that best prepared them to thrive in the environments where they were originally distributed. This distribution also occurred according to a divine plan. Ray explained:

There is no greater; at least no more palpable and convincing Argument of the Existence of a Deity, than the admirable Art and Wisdom that discovers itself in the Make and Constitution, the Order and Disposition, the Ends and Uses of all the Parts and Members of this stately Fabrick of Heaven and Earth. (Ray, 1762[1691]: Preface)

In effect, God’s wisdom was mirrored in the features each organism manifested as well in the locale of his creations (Greene, 1959: 5–6). This understanding of nature fleshed out the implications of the claim in Genesis that God gave shape to a world that was void and formless. This same theological rationale rested behind the ‘T-O’ maps of Isidore of Seville and was reproduced in Nott’s continental view of race. The thread that linked these accounts of race was the notion that human differences were governed by a natural order created by God.

Nott brought his first lecture to a close by making a finer point on his claim that there is an order and purpose behind the distribution of human populations, adding that:

Wherever colonies of Europeans have been formed, in temperate countries, they have soon flourished, and the white population has multiplied so fast, as to encroach upon the native, and in many instances, entirely supersede them. But in Africa, colonies of Europeans and Asiatics have dwindled away and become extinct [*sic*]. The coast of [Zanzibar] was colonized many centuries ago by Arabians, and afterwards by Portuguese ... but the climate has prevented this population from flourishing and multiplying. Were it not for these facts we should certainly see white colonies there like everywhere else. (Nott, 1844: 19)

Nott goes further:

No black race in short has been, or can be established at any great distance from the equator. Look at the bills of mortality in our northern cities, and you will see the proportion of deaths amongst the blacks, increasing as you go north, until you get to Boston, where the proportion is three to one compared to the whites. (Nott, 1844: 19)

Nott is referring to the highly controversial 1840 US census, which misrepresented blacks as having significantly higher mortality rates than whites (Nobles, 2000: 31–5). By referencing these figures, Nott was trying to argue that there were consequences to breaking natural law. Death and extinction could ensue if racial groups were taken out of their habitat. Thus not only is nature purposeful, it is also capable of retribution in the event a transgression is made against its laws. We might say that for Nott the wisdom of God was mirrored in the order of racial differences, as nature and God were collapsed within his thinking. In the hands of Nott, John Ray's theological vision of an inherently ordered world could be used to argue against racial miscegenation. Indeed the implications of nature's intentions with respect to human sexuality are elaborated in part two of Nott's lecture.

Racial hybridization transgresses the intentions of God/nature

In the second lecture Nott offered an account of human hybridization and made a case for the deleterious effects of race-mixing. To do this, Nott built upon his theory of racial populations being fitted for specific climates. He also relied upon the idea that there are limits to the effects of the environment on the human form. In this second lecture, Nott carried his polygenist theory to its logical conclusion and ruminated on what it meant for humankind to be comprised of separate species that (as quoted above) were 'distinguished from each other by some peculiarities, which one cannot be supposed to have acquired, or the other lost, through any known operation of physical causes' (Nott, 1844: 17).

Focusing almost exclusively on black and white differences, Nott first detailed the fixed anatomical differences that exist between Europeans and Africans. Nott began with an assessment of the cranial traits of both groups explaining: '[W]hen the Caucasian and Negro are compared, one of the most striking and important points of difference is seen in the conformation of the head' (Nott, 1844: 23). According to Nott, 'the head of the Negro is smaller by a full tenth – the forehead is narrower and more receding, in consequence of which the anterior or intellectual portion of the brain is defective' (ibid.). Citing the work of Franz Joseph Gall (1758–1828) who pioneered the science of phrenology in the early 19th-century, Nott adds:

Dr. Gall, in his laborious researches, has established the important fact, which is now conceded, that there is in the animal kingdom, a regular gradation in the form of the brain, from the Caucasian down to the lowest order of animals, and that the intellectual faculties and instincts are commensurate with the size and form. In animals where the senses and sensual faculties predominate the nerves coming off from the brain are large, and we find the nerves of the Negro larger than those of the Caucasian. (Nott, 1844: 23)

Nott, however, turned his attention toward much more than the perceived differences in brain size between American Negroes and Caucasians. He also claimed that ‘the arm of the African is much longer than that in the Caucasian’ and that ‘the chest of the Negro is more compressed laterally’ (1844: 24). Nott added that among Africans ‘the bones of the pelvis in the male are more slender and narrow; the muscles on the sides of the pelvis are less full, but more full posteriorly [*sic*]’ (ibid.). Differences in the bend of the knees, the shape of the calves, feet and heels, and most importantly skin complexion are also cited. According to Nott, all of these anatomical differences beg the question:

Can all these deep, radical and enduring differences be produced by climate and other causes assigned? It is incumbent on those who contend for such an opinion, to show that such changes either have taken place, or that similar changes in *the human race are now in progress*. (Nott, 1844: 25)

Nott reasoned that it had been ‘about two centuries since the Africans were introduced into this country, the 8th or 9th generation is now amongst us, and the race is unchanged. The Negroes have been improved by comforts and good feeding which they have been unaccustomed to; but they are Negroes still’ (1844: 26). The unchanged physical constitution of so-called American Negroes proved, according to Nott, that races were fixed, not malleable or readily subject to the influence of the environment.

After listing the differences between the races, Nott explained why racial miscegenation transgressed the laws of Nature. Nott contended that each of the present-day races ‘descended from several or many original pairs’ (1844: 28). These original stocks were pure ancestral populations, which over time became mixed with other racial groups. This meant that by the mid-19th-century ‘there [was] not at present a single unmixed race on the face of the earth’ (ibid.). The mixing of present-day humans was a precarious situation, as ‘no one can calculate the results which may result from crossing races’ (ibid.: 29). To prove a point that seemed to fly in the face of common-sense observations about the prevalence of mixed people, Nott turned to the so-called American ‘mulatto’, which he argued represented the amalgamation of the two most strikingly different racial groups.

Nott claimed to draw upon ‘fifteen years of professional intercourse and observations’ when he came to the conclusion that mulattoes are ‘the shortest lived of any class of the human race’ and ‘are the intermediate in intelligence between blacks and whites’, with mulatto women being ‘particularly delicate, and subject to a variety of chronic diseases’ making them ‘less prolific than when crossed on one of the parent stocks’, and ‘are less capable of undergoing fatigue and hardships, than the blacks or whites’ (Nott, 1844: 31–2). Nott also concluded that the offspring of black–white unions ‘are shorter lived, and . . . that they are more liable to be diseased and are less capable of endurance than either whites or blacks of the same rank and condition’ (ibid.: 34).

In light of the poor health, physical constitution and low reproductive rate of the mulattoes Nott asked: ‘Is it not reasonable to believe that the human hybrid may also have its peculiar laws’ and perhaps might one of ‘these laws be (which is a reasonable inference from foregoing data) that the mulatto is a degenerate, unnatural offspring, doomed by nature to work out its own destruction’ (Nott, 1844: 34)? The grounds for

thinking in this way come from Nott's background in horse-breeding. According to Nott 'breeding from a faulty stock; a stock which has been produced by a violation of nature's laws' yields 'more and more degenerate [forms] in each succeeding generation' (ibid.). It was clear for Nott that 'the parent will transmit to the child, not only his external form, character, expression, temperament [etc.] but diseases, through many generations, as insanity, gout, scrofula, consumption' (ibid.). The question for Nott was 'why then may not that defective internal organization which leads to ultimate destruction exist in the mulatto' (ibid.)? The persistence of compromised physical constitutions within 'mulattoes' suggested to Nott that these unions transgressed natural laws aimed at keeping the bloodlines of each race unmixed. By rendering racial hybrids biologically inferior when compared with their parental stocks, Nott believed that nature was attempting to eliminate illegitimate offspring.

Reassessing the critiques of polygenism

Fortunately, the flaws in Nott's reasoning about so-called 'hybrids' and his polygenist view of human origins did not go unnoticed by his contemporaries. In the April 1845 issue of the *Southern Quarterly Review*, the American botanist and Episcopal minister Moses Ashley Curtis published a scathing review of Nott's *Two Lectures*. In his defense of monogenism Curtis argued that 'the common origin of the several languages of the earth, involves of necessity a demonstration of the unity of the human race, and will so far afford collateral proof of the truth of the sacred narrative' (Curtis, 1845: 375). Curtis also claimed that Nott placed too strict an interpretation on the laws of nature and had over-generalized the geographical distribution of animal and plant life (ibid.: 415–16). Curtis believed that 'many of the most useful species, both of animal and vegetable kingdoms, are capable of easy transfer and acclimation in regions far remote from their original habitations' (ibid.: 416). The malleability of the human form, in Curtis' view, was therefore not an exception to the natural law. Descent from a common ancestor still seemed plausible to Curtis, even though he acknowledged that the development of racial forms in such a short time following the Deluge could have very well been a direct act of Providence (ibid.: 394). Curtis conceded that Nott

... was certainly correct in saying, that the assertion of a 'direct act of Providence' in affecting [change to the human form] 'is an assumption which cannot be proven' because there is no record of any such act. It might still be true however. When the true cause of any fact is unknown, we have a right to assume any adequate possible cause as the probable true one, until it be disproved. (Curtis, 1845: 393–4)

Thus, in response to the question of whether 'a White man may have been changed into a Negro 'by direct act of Providence' Curtis claimed to 'see no absurdity in attributing the change to such a cause (1845: 394). As for Nott's claim that racial hybrids transgressed the laws of nature, Curtis argued that racially mixed people were prolific as evidenced by the thriving numbers of mixed people in the English colonies located within the Pacific and Caribbean (ibid.: 446).

The Lutheran minister and pro-slavery botanist John Bachman (1790–1874) of South Carolina also attacked Nott's polygenist theory. Revisiting Bachman's criticisms allows us to see the limits of viewing American polygenism as simply racist propaganda. Like Curtis, Bachman argued that there was ample linguistic and anthropological evidence to support the belief in shared human ancestry and that the human genealogy described in the Genesis narrative was compatible with science (Bachman, 1850, 1853, 1854, 1855). Bachman also believed, like many of his southern contemporaries, that there were explicit biblical warrants consistent with the facts of science to support the belief in white superiority and the biological inferiority of blacks and other races. Bachman wrote:

The fact that nature has stamped on the African race the permanent marks of inferiority – that we are taught by their whole past history the lesson of their incapacity for self-government, and that the Scriptures point out the duties of masters and servants, should be sufficient to dispel every improper motive in an unbiased search after truth alone. (Bachman, 1850: 8)

With Bachman's affirmation that both nature and the Bible declared the African was an inferior race, and it was simply the role of naturalists to explain this scientifically, one would assume that he, Morton and Nott would be intellectual allies, particularly if we buy stock in George Fredrickson's thesis and believe that 'Nott was somewhat less attached to polygenesis as a scientific hypothesis than to the "practical fact" of inherent Negro inferiority, however it might be explained' (Fredrickson, 1987[1971]: 81). But Nott, Morton and Bachman turned out to be bitter combatants (Stanton, 1960: 125–36, 158, 173, 175; Horsman, 1987: 117–18). Bachman disagreed with the polygenist definition of species as inherently fixed, believed polygenists overstated the sterility of racial hybrids, and ultimately claimed that the concept of race itself should be abandoned given the shared ancestry of the human species (Bachman, 1855). From the other side of the debate, Morton and Nott were unmoved by Bachman's criticisms and were largely exasperated by his seemingly amateur defense of common human ancestry (Stanton, 1960: 124–36). Nott in particular was unwilling to acknowledge the 'scientific' grounds for Bachman's defense of monogenism, claiming that Bachman's commitment to Lutheranism was an intellectual handicap that predisposed him to defend the idea of common human origins (Horsman, 1987: 118). After reading Bachman's review of his work, Nott wrote that he and his polygenist colleagues

... have never, in the whole course of our lives, risen from the perusal of any work with such bitter feelings of mortification and disappointment – mortification, from its utter want of Christian charity and courtesy, and disappointment, from its loose statements of facts, its endless assumptions, and entire want of rigid, scientific reasoning. (Nott, 1851: 116)

Morton and Nott simply did not believe Bachman possessed the impartiality of a proper scientist, forcing Bachman to routinely defend his credentials as a botanist and justify his qualifications to weigh in on the question of human beginnings independent of his being a Lutheran minister (Horsman, 1987: 118).

Nott's debate with Bachman offers additional insight on the question of whether polygenism was simply window-dressing for pro-slavery politics. If Nott's intentions were to garner broad social support for restricting the freedom of blacks via a scientific theory

endorsing their biological inferiority, Nott's rejection of the truth of the Bible was certainly counter-productive. Most Christians were unwilling to abandon the truth of the Bible in support of polygenism. Bachman's monogenist theory, for example, was a more favorable scientific position for many Christians, particularly in the South, because it offered a defense of black inferiority while also upholding the veracity of scripture and the idea of common human origins. After all, Nott's rejection of common human ancestry also called into question the universal significance of Jesus Christ who Christians believed redressed the universal sin all humans inherited from Adam. If Nott was drawn to polygenism for political reasons alone he could have conceded Bachman's monogenist position, which would have allowed Nott to defend his theory of black inferiority. But, Nott was explicit that modern science did not support the biblically based idea of common human descent. Nott was willing to aid the march of science on this point even if it meant having 'anathemas heaped on [his] head' for his utter rejection of the inspired writings (Nott, 1844: 1).

Under the Fredrickson hypothesis we would have to explain this as a poor political strategy, which then of course raises serious doubts about the extent to which politics actually drove Nott's scientific analysis. Nott came from a political family and understood the nuances of social governance; his father was elected to Congress in 1798 from the state of South Carolina and was later mayor of Columbia, SC, in 1807 (Horsman, 1987: 10, 34–5). Moreover, Nott himself garnered considerable social capital while earning the reputation as one of the most skilled medical men in the South (*ibid.*: 72–4). If Nott were driven by politics there was nothing to gain by wasting social capital on a scientific theory that did not sit well with the majority of the religious South. This is especially true when there were alternative theories, like Bachman's position, which endorsed white supremacy without alienating Christians.

A better explanation is to take Nott's science at face value and admit that although polygenism was used to support a pro-slavery agenda, Nott was driven to his position by what he understood to be scientific interests. Having the fortune of historical distance, we can see that these 'scientific interests' were constructed with ideas that had their root in religion. Thus we meet a paradox that has been overlooked by scholars who believe Nott was nothing more than a political strategist or who favor the notion that science and religion are conceptually incompatible. Although Nott explicitly opposed the constraining influence of religion on the question of human origins, he arrived at his polygenist theory through the aid of religious concepts that had long since become a formal part of the discipline of natural history. The ideas Nott used to describe the origin of each race were part of a larger cache of scientific and religious concepts shared by naturalists who created different theories of race. The diversity of opinion on both sides of the human origins debate meant that Nott's claims about theology having a constraining influence over scientific theories were overstated. Religious ideas helped to facilitate his own 'progressive' views about race – even though he was unaware of this.

Conclusion: A secular view of race?

What is both fascinating and troubling about the arguments of 19th-century American polygenists are the various logics and methods they used to convert seemingly race-

specific features, such as skin color, brain size, limb lengths and incidences of disease, into quantifiable 'objects' of scientific inquiry. For Nott, the theory of polygenism freed thinkers to see how the existence of permanent racial traits was simply a fact that could 'be as clearly demonstrated as the revolution of the earth around the sun, the discoveries in geology, the circulation of the blood' (Nott, 1851: 113). Racial traits were treated as though they were material objects that stubbornly and unchangingly mapped onto specific human bodies and were passed down through successive generations. More than this, the features that differentiated the races had a purpose relative to adapting and thriving in their natural environment. In this recuperation of John Ray's theological argument for the geographical distribution of the races, polygenists like Nott and Morton emphasized that the existence of racial differences was indicative of a natural order. The ability of polygenists to inferentially map human racial traits back through time – to what they perceived as ancestral sources – gave them a powerful tool to contest the Christian account of common descent. Polygenists exploited what they saw as the lack of 'material' objects to corroborate the 'unity hypothesis'. They reasoned that anyone in the 19th-century could point out how, at even a casual glance, each racial group possessed striking physical, moral and developmental differences. Polygenists thus wanted a theory of human origins that could consistently account for the tangible racial differences they perceived while being realistic about the length of time needed for humans to manifest the physical variations they observed in the 'barbarous races'. To this end they were willing to abandon the traditional understanding of the Christian creation story in favor of an account of human racial differences consistent with what appeared to be the separate origins of each race.

But Nott's disdain for the constraints imposed by the Mosaic record did not mean that his ideas about race were freed from the rudiments of Christian discourse that had guided naturalists and theologians in previous centuries. Rather than set the natural history of humankind and the Bible on separate footings, Nott developed a scientific theory that affirmed the validity of the story of Noah's descendants insofar as it explained the origins of the white race. Moreover, Nott's conception of race continued to uphold theological ideas about species fixity, purposiveness of the human form and the geographical distribution of humankind. These were ideas shared by Christians with a literal reading of the Bible and by naturalists who defended the theory of human unity. Indeed, what made Nott's theory of polygenesis so troubling for 19th-century naturalists was that it was grounded by many of the presuppositions shared by monogenists. Yet, to make these beliefs cohere with new ethnological 'data' about racial difference, Nott arrived at a different set of conclusions regarding human unity. Polygenesis was a plausible explanation because it could account for the differences between the races while maintaining the traditional chronology and the widely held belief in the natural order of things. Moreover, polygenists provided a scientific explanation for common-sense ideas about the fixity of racial difference. Indeed, the appeal and threat of polygenism rested on the fact that Morton and Nott simply asked the American public to consider that racial differences had always been what they were now, rather than to assume complex processes of descent from a common ancestor over an ambiguous period of time.

Still, Nott's polygenist theory was not a radical break from the Christian tradition but one that worked with it, by marshalling long-standing religious precepts to develop new

ideas about race. We can say that Nott's understanding of race was not fully secular given the enduring religious 'thought patterns' that shaped and framed his racial theory. Nott ultimately was unable to see what Darwin began to articulate in the *Descent of Man*, but which was fully grasped only many generations later by social scientists during the 20th-century: that a truly modern science of humankind did not involve framing human difference in terms of static races, but rather entailed a rigorous account of how human differences were transitory and at best heuristics used to organize our self-understanding as a species (Montagu, 1951: 40; Marks, 2008b: 21–38). Darwin saw that nature was an open system that could not support the existence of permanent natural kinds. The very belief in permanent racial types was itself a carry-over from the influence of Christianity on the study of natural history, from which Nott looked to free himself in his rejection of common human ancestry.⁶ This was a heritage whose theological origins predisposed thinkers to view the world as an ordered, stable, coherent system, not a universe in flux and riddled by chance and contingency as Darwin had grasped in his account of evolution by random natural selection (Bowler, 1989: 51). Ideas of clearly defined, discrete and fixed racial types were concepts indigenous to a worldview that assumed nature was sustained by a teleological order (Greene, 1959: 304–7; Bowler, 1989: 51). But with the theory of evolution, Darwin had discovered that change, not fixity, was the only constant force in the universe. The notion of natural kinds and associated ideas about discrete and fixed racial types belonged to an older tradition of thought that had been significantly challenged by Darwinian evolution. Following Darwin's publication of the *Descent of Man* in 1871, Nott shared with his close friend James Henry Hammond, a pro-slavery politician in South Carolina, that he simply did not agree with the

... School of Naturalists among who are numbered the great names Lamarck, ... Darwin, and others, which advocates the development theory, and contends not only that one type may be transformed into another, but that man himself is nothing more than a developed worm. (Nott, 1866: 4)

Until his death in 1873 Nott was a critic of evolution, affirming instead his belief in the fixity of species and the inherent order of the natural world.

Ultimately, the racial thinking of American polygenism – the popularity of which Nott was largely responsible – still clung to a theological worldview. This framework had been preserved by naturalists over many centuries and was constructed out of biblical commentary, natural theology and scholarly observation about race. American polygenists inherited this framework, thus explaining why Christian ideas continued to influence their racial theories. This was true even for naturalists like Nott who championed scientific progress over and against the certainty of scripture and popular religious belief. Herein lies a forgotten truth about the importance of religion for the early sciences of race.

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Notes

1. Also see Steven Jay Gould's treatment of the American School which has become key for anthropologists (Gould, 1996[1981]: 100–4).
2. William Stanton argues that most of the ideas contained in the widely popular *Types of Mankind* had been published or made public by the American School before 1854 (see Stanton, 1960: 163). For this same reason I have decided not to discuss Nott's *Two Lectures on the Connection between the Biblical and Physical History of Man* delivered in New Orleans in front of the Louisiana legislature in December of 1849. The ideas contained in this work are largely captured in the two lectures discussed in this article. However, to read about the political ramifications of Nott's lecture in New Orleans see Nobles (2000: 39–43).
3. In my reference to the 'T-O' maps of Isidore of Seville, I am not arguing that he and Nott understood race in the same terms. Rather, I am arguing for continuity in the very *practice* of using the Bible, and specifically the story of Noah's three sons, to reconstruct human ancestry. Historians of the early-modern period have cautioned against assuming a continuity of meaning between pre-modern and modern ideas about race. Prior to European colonial expansion into West Africa and the Americas, western thinkers did not possess a global framework for understanding human variation. The differences recorded and studied by the likes of Hippocrates, Aristotle, Augustine and Isidore of Seville reflected regional encounters across fairly proximate national borders. Until the 16th-century these pre-modern encounters were limited to interactions across the Mediterranean, North and East Africa, and the borderlands of Europe and Asia. We can see this regional understanding of human difference reflected in the 11th- and 12th-century renditions of the 'T-O maps' of Isidore of Seville (which were originally created in the 5th-century). Pre-modern thinkers did not assume that races were derived from purely distinct groups that lived on isolated continents in the past. Without a comprehensive taxonomy separating humans on the basis of 'inherited' physical traits and dispositions, or an awareness of the degree to which humans had migrated to far-reaching areas of the globe, scholars before the modern period did not see 'the races' as separate biological units or subdivisions of the human species. The idea that race refers to a constantly distinct and biologically stable population is a modern invention that came into existence following the European colonial expansion and the post-Enlightenment obsession with classifying the species of the natural world. For more on how pre-modern definitions of race varied from what was believed by modern thinkers see Benjamin Braude (1997). For more on how modern thinkers came to see race in biological terms see Nicholas Hudson (1996).
4. Both Fredrickson and Stanton disagree on the acceptance of polygenism in the South. Stanton is of the opinion that southern religiosity was too strong to accept what amounted to the rejection of biblical truth and one of Christianity's most foundational beliefs: human descent from Adam. Fredrickson, however, makes a compelling argument that the popularization of polygenism in the South by figures like Samuel Cartwright smoothed over potential conflicts with biblical scripture by showing how polygenism could be supported with creative interpretations of the story of Cain or the Curse of Ham. For more on their contrasting views see Stanton (1960: 192–6); Fredrickson (1987[1971]: 82–90, 256–82).

5. Fredrickson has a different view on Nott's commitment to scientific truth. As mentioned earlier, Fredrickson is of the mind that Nott used ethnology to support his assumptions about the inferiority of blacks, which in turn offered evidence for his political agenda against black suffrage. In short, Nott's interests lie in politics not science. For a view that takes Nott's commitment to scientific truth more seriously see Stanton (1960: 65–72, 192–6).
6. The British historian of science Peter Bowler argued that it would be a mistake to assume that the racial typologies developed in the 18th-century by Linnaeus, Buffon, Blumenbach and Kant were truly evolutionary or could be considered intellectual precursors to Darwin. The reason is that these accounts of race assumed nature unfolded according to a predetermined pattern or teleology. Bowler argued that 'there was no possibility of a Darwinian, or open-ended view of evolutionary development until the naturalists of the early nineteenth century had overthrown [the] belief in a rationally structured order of things' (Bowler, 1989: 51). Until then, natural historians continued to define the natural world and the human species while relying on the argument from design, species fixity and the inherent order of the natural world. These were ideas inherited from late 17th-century natural theology (ibid.: 52) and were clearly present in the racial theories of American polygenists.

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