Mound Builders, Mound Blunders: Mythmaking in 19th Century American Archaeology

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> It is as transparent as an old-fashioned melodrama: truth (as we perceive it today) is the only arbiter and the world of past scientists is divided into good guys who were right and bad guys who were wrong.
>
> Stephen Jay Gould's "On Heroes and Fools in Science" (1977)

1. Introduction

Mound-building practices were once widespread amongst North American Indigenous cultures, wherein large quantities of earth were piled to serve as the foundations for living quarters, religious sites, burial sites, and forms of artistic expression. Tens of thousands of these mounds and other earthworks varying in shape, size, and age, are present in the eastern United States. As American settlers moved west following the American Revolution, they encountered these mound earthworks and wondered about their origins. Many of the earthworks required incredible feats of engineering that involved substantial modifications to the local geography and were suggestive to observers of sophisticated civilizations. However, because it was widely believed that Indigenous peoples were inherently uncivilized and thus not intelligent enough to have constructed the mounds, many attributed them instead to ancient, lost, often white races. What developed in the late 18th century was a Mound Builders mythology[1]—a family of hypotheses that credited one or another vanished race with the mounds' construction that captivated both public and scientific imagination for about a century. It wasn't until the late 19th

[1] I classify it here as the *Mound Builders mythology*, rather than the singular *myth* common in historical accounts of the period, because this framing better reflects the variety of hypotheses about the identities of the mythologized lost races that circulated in the 19th century. Thank you to an anonymous reviewer for prompting this clarification.

century that the myth was unseated as the dominant theory, and the ancestors of today's Indigenous peoples were widely credited as the true builders of the mounds.[2]

There exists a trend in some of the historical literature of the Mound Builders mythology that has treated its overturning as a triumph for science. I call this the *triumphalist narrative*. It casts the historical episode as one in which proper scientific archaeologists emerged late in the 19th century and dispelled unfounded speculation. This framing is problematic as it presents a neat demarcation between science and mythmaking where, in actuality, there was none. In fact, scientific archaeology was conducted throughout the 19th century, much of which sustained the Mound Builders mythology. In what follows, I examine how some historians and archaeologists have characterized the undoing of the Mound Builders mythology, and I argue that the neat demarcation drawn by the triumphalist view obscures the following facts: scientific methods were not only present in the 19th century but were expanded and innovated upon; a methodological line between "mythmakers" and "scientists" is not clear as both sides used analytical, empirical, and historical strategies; scientists did not act solely as a corrective, but were complicit in mythmaking; and even celebrated rigorous methods did not prevent error or ideological incursion. The account developed here underscores the importance of attending to methodological change, as well as the institutional and social structures that shape scientific disciplines over time—factors that are crucial for understanding how the boundaries of science are drawn and how undue influences on science may rear their ugly head.

[2] While the Mound Builders mythology lost scientific credibility in the late 19th century, it persists in conspiratorial circles. Nicholas Timmerman notes that Glenn Beck devoted a 2010 *Fox News* segment to the "lost race" idea featuring a guest who claimed that John Wesley Powell's Bureau of Ethnology in the 1880s was engaged in a "historic cover-up of the ancient Mound Builders" (Timmerman, 2020, p. 75). (I elaborate on Powell's tenure at the Bureau in section 2.) The notion of a lost, mysterious race also resonates with the presentation of history found in programming like *Ancient Aliens*. While professional archaeologists dismiss such claims, they do worry about the credibility these ideas obtain as they circulate in popular culture (Turner & Turner, 2021).

My contributions in this paper are twofold. First, I highlight the cumulative and iterative character of scientific practice in contrast to the ready-made image presented by the triumphalist view. My reinterpretation is primarily historical, grounded in the 19th-century development of archaeology, its central figures, and descriptions of their evolving methodologies. Second, I challenge the triumphalist narrative by proposing an alternative thesis: that mythmaking and science were deeply entangled. The Mound Builders episode shows that 19th-century American archaeology was not a triumph of science over myth, but a case in which scientific inquiry and cultural ideology co-produced one another. The questions, methods, aims, and interpretations about the mound earthworks thus emerged not as products from science or culture alone, but from a hybrid "culturo-scientific" moment—one that defined the very conditions under which knowledge about the earthworks was pursued and formed.

The argument ahead unfolds in several steps. Section 2 traces the rise, development, and eventual downfall of the Mound Builders mythology, laying the groundwork for engaging with the central commitments of the triumphalist narrative in section 3. Specifically, the triumphalist narrative presents the 19th century as having abandoned scientific archaeology. Section 4 invalidates this presentation via an examination of the methodological contributions of two foundational 19th century archaeological texts and their authors. On this basis, it can be demonstrated that the triumphalist view is not only an untenable characterization of the Mound Builders episode to be abandoned, but that it obscures important features of science's development and cultural entanglement (section 5). Section 6 concludes with some lessons for philosophers and historians of science.

2. Presenting the Mound Builders Mythology and its Undoing

Dotted along the landscape of the Ohio, Tennessee, and Mississippi River Valleys of the eastern United States are tens of thousands of human-made earthworks. Some recent research conducted on bone fragments found in and around the "LSU Campus Mounds" (mounds on the campus of Louisiana State University in Baton Rouge), suggests that they are the oldest known human-made structures in North America, dating to around 11,000 years old (Ellwood et al., 2022). Not all the American earthworks are as ancient. For example, one of the most impressive mound sites in the U.S.A. is the Mississippian mound complex at Cahokia in Illinois. The site, covering approximately five square miles, is believed to have been initially inhabited around 700 CE, construction of the mounds began around 900 CE, and the population reached its peak of around 20,000 inhabitants in 1350 CE. The largest of the 120 mound structures at Cahokia is Monk's Mound, at a staggering 100 feet high, incorporating 25 million cubic feet of earth (Woods, 2024).

European American settlers were fascinated by the mounds, which were understood as the remaining traces of long-extinct civilizations, like those that had once thrived elsewhere in the world, evidenced by archaeological sites in Asia, Africa, Europe, South America, and Mexico (Dahl, 1961). The mystery of their origins and the desire to romanticize the American past provided fertile grounds for the creation of a Mound Builders mythology (Sayre, 1998). Some of the first theorizers maintained a cultural connection between the builders of the mounds and contemporary Indigenous peoples, even if the historical connections they proposed were quite speculative. Upon hearing of the mounds in Ohio, the then president of Yale University, Ezra Stiles, clamored to promote his own theory that the contemporary Indigenous peoples were the descendants of the lost Canaanites of Palestine who were expelled by Joshua, travelled to the Americas, built the mounds, and then disappeared (Stiles, 1783). Even when a lineage was

preserved, it became more common to depict the ancestors as more culturally sophisticated and capable than their modern descendants, implicitly diminishing the status of contemporary peoples.

Gradually, it became widely accepted that the contemporary Indigenous peoples—and by implication their ancestors—were not advanced enough to have constructed the mounds (Trigger, 1980; Finger & Fernando, 2001; Mann, 2003) and it didn't take long for their connection to the historic mound builders to be severed. In journals published after his death, Francis Baily—astronomer and president of the Royal Astronomical Society—described his activities in what he considered to be unsettled regions of America, including his participation in the excavation of mounds in Ohio during 1796–1797. He subscribed to the lost race view, but did not speculate about an identity as he concluded, "I have not the least doubt in my own mind that they were built by a race of people more enlightened than the present Indians, and at some period of time very far distant; for the present Indians know nothing about their use, nor have they any tradition concerning them" (Baily, 1856, p.162). The basic idea at the heart of the mythmaking became that a lost mysterious race of people constructed the earthworks in the distant past, prior even to the current Indigenous peoples' arrival. But which race of people?

The wide commitment to views of racial hierarchy inspired a large contingent of Americans including religious figures, politicians, scientists, and other members of the public to offer their own answers. The mayor and future governor of New York, DeWitt Clinton mused that the mounds bore a striking resemblance to the mounds of the Danes in Europe, lending his authority to theory of Viking origins (Clinton, 1820). Reverend John Heckewelder, who lived among Indigenous communities in and around Pennsylvania in the early 19th century, reported being told of a lost western people known to the Lenape as the "Alligewi," who were sometimes

described as a race of giants. Heckewelder writes, "[The Alligewi] are said to have been remarkably tall and stout, and there is a tradition that there were giants among them, people of a much larger size than the tallest of the Lenape" (Heckewelder, 1881, p. 48–49). He continued that he believed this race of giants to be responsible for building the many earthen fortifications and entrenchments in the area, some of which he had witnessed and described as "remarkable." As the myth gained popular attention, some hypothesized the lost race to have been the descendants of the pyramid-builders of Mexico, who were thought to have settled in the American East before migrating south into Mexico sometime later (Rafinesque, 1832).

The Mound Builders mythologizing "even spawned a new religion" (Silverberg, 1970, p. 15). Most notably, there are direct connections between the emergence of The Church of Jesus Christ of Latter-Day Saints—Mormonism—and the perpetuation of the lost race idea. The founder of Mormonism, Joseph Smith was fascinated by the mounds as a child, often showering his mother in stories about their origins. When it came time to bring his new religion to popular audiences, he relied on tablets that he claimed were found in a series of mounds along with some magical, inscribed stones. With these stones, Smith claims, he translated the tablets and used them to write Mormonism's founding text, *The Book of Mormon*, in which another interpretation of the lost Mound Builders emerges (Silverberg, 1970, p. 68). Curtis Dahl asserts that the *Book of Mormon* is "[u]ndoubtedly the most famous and certainly the most influential of all Mound-Builder literature" (1961, p. 187) that tells the story similar to Stiles' of the Nephites and the Lamanites—tribes of Israel that escaped Jerusalem, crossed the deserts, built ships, crossed the ocean to America, and established themselves there. They erected formidable settlements and structures (i.e., enclosures and mounds), tamed the land, and grew their society to eventually

number in the millions. Ultimately, these lost tribes of Israel fell out of favor with God and became the victims of his wrath, or so the story goes.

This is not to say that there were no dissenters to the mythologizing. Indeed, many endorsed the Indigenous origins idea. Thomas Jefferson is often regarded as an archaeological pioneer for familiarizing himself with and excavating mounds in Virginia, including some records of his excavations in *Notes on the State of Virginia* which he wrote and revised from 1781-1783 and published in 1785 (Jefferson, 2010). It was his opinion that the mounds were constructed by the ancestors of contemporary Indigenous peoples. His excavations are celebrated for their methodological ingenuity, including the practice of what is now known by archaeologists as digging "trial ditches"—an invasive but less destructive form of excavation to reveal a profile of a site (Lehmann-Hartleben, 1943). The merchant James Haines McCulloh agreed after he conducted his own work on mounds in Ohio between 1813 and 1829, publishing his findings at the end of his investigations (McCulloh, 1829). Historian, Albert James Pickett somewhat nonchalantly attributed the mounds to Indigenous peoples in his *History of Alabama* based on early explorers' chronicles (Pickett, 1851). Last, to conclude his introductory remarks in *Descriptions of Ancient Works of Ohio*, Charles Whittlesey staked out a middle-ground: "I do not feel inclined to attribute the great works of Central and Southern Ohio to the progenitors of our Aborigines; but in regard to those of Wisconsin and Minnesota there is room for doubts and ample discussion on this point" (Whittlesey, 1850, p. 6).[3]

According to Robert Silverberg, these gentlemen were ahead of their time, and "In the early nineteenth century, people interested in the mounds preferred to put their faith in the fantastic myths" (Silverberg, 1970, p. 49). Building on this sentiment, he quips, "The myth of the

[3] Thank you to an anonymous referee for pointing me to Whittlesey's and Pickett's work.

Mound Builders was a satisfying one; it was splendid to dream of a lost prehistoric race in the heart of America; if the vanished ones had been giants, or white men, or Israelites, or Toltecs, or Vikings, or giant white Jewish Toltec Vikings, so much the better" (Silverberg, 1970, p. 48). In this context, Silverberg and others emphasize the close connection between the cultural phenomenon of nation-building and a strong desire to craft the most imaginative historical narratives regarding the origins of the mounds, and by proxy, the American past. Early on, the Mound Builders mythology emerged and stationed itself largely as a product of cultural desires and values that had permeated European American society.

However, the Mound Builders mythologizing was maintained by a darker set of political motivations that it helped to serve. Silverberg continues,

> Then, the Indians stood in the way of the growth of the United States, and it was simplest to regard them as worthless, brutish savages. To 'prove' that the lowly Indians could not possibly have built the wondrous mounds of the Ohio and Mississippi valleys was part of the political campaign aimed at wiping these people out in the name of American progress. (Silverberg, 1970, p. 117)

The broad appeal of the Mound Builders myth was not without its consequences as it played a significant role in America's stated colonialist aims and the ideology of Manifest Destiny. According to archaeologist Bruce Trigger, the "concept of inferiority [baked into the Mound Builders mythology] was further elaborated in order to rationalize the seizure of Indian lands, which accompanied the expansion of European settlement" (Trigger, 1980, p. 663). The Mound Builders mythmaking had consequences that were, in part, self-justified through a feedback loop created by the mythology itself. By claiming that Indigenous peoples had themselves displaced a more "advanced" Mound Builders in the distant past, settlers cast them as illegitimate holders of the land. This framing allowed settlers to see their own actions as part of a historical pattern rather than as a moral offense. The mythology was constructed in service of crafting the

American identity following the Revolutionary War, and for many that identity made no room for Indigenous peoples (Trigger, 1980; Howey, 2012; Timmerman, 2020).

Fortunately, by the 1880s the Mound Builders mythology began to give way to the currently accepted consensus of Indigenous origins. The shift in theoretical commitment began with the creation of the Bureau of American Ethnology in 1879—a branch of The Smithsonian Institute—first headed by John Wesley Powell. Prior to his tenure as the director of the Bureau, Powell was well-known for cultivating relationships with local Indigenous tribes and in 1877 he published, *Introduction to the Study of Indian Languages,* and established himself as a "first rank" ethnographer (Powell, 1877). In addition to his ethnographic chops, Powell's influence as a Major for the Union Army during the American Civil War landed him the position of the director of the Bureau in which he conducted careful and detailed ethnographies of contemporary Indigenous peoples in the 1880s. His motivation stemmed from concerns that studying North American Indigenous peoples and their traditions would become increasingly challenging as American westward expansion continued. He dedicated himself to improving relations between the white settlers and Indigenous people, attributing much of the conflict to the lack of understanding on the part of the settlers.

Powell's mandate at the Bureau was purely ethnological at first, allocating all of the meager $20,000 of annual congressional funding to the study of the languages, cultures, and myths of various North American tribes. However, facing demands from archaeologists to allocate more of the Bureau's resources to the archaeological study of mounds, Powell enlisted the botanist and geologist Cyrus Thomas to oversee the mound investigations. With the annual budget raised to $25,000, $5,000 was set aside for mound investigations (Feder, 2014, p. 165). Powell made it his mission, under this new funding regime, to finally put the Mound Builders

mythology to rest once and for all and got Thomas excavating and cataloguing mounds in all of the American eastern states. In 1891, the Bureau published Thomas' examination of the mounds titled, *Catalogue of prehistoric works east of the Rocky Mountains* which constructed the coffin for lost race hypotheses. Subsequently, in 1894 the final nail would be driven in that coffin when the Bureau published Thomas's *Report on the mound explorations of the Bureau of Ethnology* (hereafter *Report*), composed of the results of a series of smaller Bureau reports written in the 1880s—which is one of the 19th century's best archaeological achievements (Williams, 1991). In its pages, Thomas undercut the central commitments of the Mound Builders myth.

Critically, Thomas was able to demonstrate that the central claim of the lost race hypothesis—that contemporary and ancestral Indigenous peoples were too primitive to have constructed them—was false. Thomas was able to do this by investigating a wide swathe of earthworks from all corners of the USA east of the Mississippi river. He enlisted the help of teams of people to more rapidly excavate the mounds in the American South, though still too slow to produce a thorough treatise immediately. Ultimately, Thomas' crews were able to survey and carefully excavate hundreds of sites and collect over 40,000 artifacts which were sent back to Washington D.C. where Thomas resided much of the time (Feder, 2014). Thomas is praised for widening the geographic scope of his mounds investigations, collecting from all corners of the US east of the Mississippi River, as far west as South Dakota, all throughout the American South, and even some sites in Canada. It was from this thorough and systematic investigation of mounds from a wide swathe of the country that Thomas was able to challenge and overturn the Mound Builders mythology.

There is no doubt that careful scientific work ultimately invalidated the lost race hypotheses, giving Indigenous peoples and their ancestors the credit they had always deserved.

However, some scholars depict the episode as though mythmaking (i.e., non-science) prevailed until professional scientists intervened, suggesting that science had been absent until the point at which the mythmaking ceased in the 1890s. In reality, science was being conducted throughout the 19th century. Archaeologists carried out detailed studies of the earthworks and contributed methodologically to a newly developing archaeological discipline during the Mound Builders "mythmaking" phase and afterward, as the history of archaeology shows. Nevertheless, a common narrative in recent scholarship still presents the undoing of the mythology as the product of an emergent and triumphant science. With both the rise and fall of the mythology outlined, the next section examines this triumphalist narrative in greater detail.

3. The Triumphalist Narrative

In this section, I engage with the scholarship on the Mound Builders episode, from Robert Silverberg's (1968; 1970) influential history through to more recent accounts by Jason Colavito (2020), Jeb Card and David Anderson (2016), and A. Martin Byers (2018), that have cast this history as a triumph for science. Each of these accounts share a common structure: a "mythmaking" phase dominates informed by racist cultural assumptions, committed to the existence of a lost race, followed by a "science" phase, in which legitimate and professionalized scientists equipped with proper scientific methods emerge to put the mythmaking to rest. This framing presumes a clean division between myth and science and equates "being scientific" with endorsing correct theories. As I will demonstrate in the next section, archaeologists conducted detailed scientific studies of the earthworks and contributed methodologically to a developing archaeological discipline during the Mound Builders mythmaking phase and after, troubling the

neat demarcation implied by the triumphalist framing. For now, I keep to a closer examination of the triumphalist narrative.

In 1968, Silverberg, who is primarily known as a prolific science-fiction writer, published a history of the Mound Builders episode titled, *Moundbuilders of Ancient America: The Archaeology of a Myth*. Two years later, in 1970, he published an abridged version, simply titled, *The Mound Builders.* Silverberg's history opens in the late 15th century with the expeditions of Spanish conquistador, Hernando de Soto through the southern regions of what is now the United States and details his crew's interactions with the Indigenous peoples. He then traces the origin, establishment, and downfall of the mythmaking of the 18th and 19th centuries and concludes with the, then-current, 20th century archaeology on Hopewell and Adena cultures. *The Mound Builders* is heavily cited by archaeologists, historians, and other scholars of fringe and fantastical sciences alike, relied on as one of the most detailed and comprehensive histories of the Mound Builder mythology and the development of earthworks archaeology.

In his work, Silverberg commits himself to a triumph narrative. He writes, "The myth took root, flourished and grew, even spawned a new religion; then the scientists took over from the mythmakers and hacked away the luxuriant growth of fantasies" (Silverberg, 1970, p. 15). In short, scientists emerged, and presumably some characteristic form of scientific method with them, spelling disaster for the dominance of the lost race mythology. This constitutes a triumph because it is clear from this characterization that science was directly responsible for replacing myth with fact and is to be celebrated for doing so considering the harm that was done. Here, Silverberg draws a fine line between science and non-science. There is a sense here that, in the absence of science, mythmaking was allowed to flourish; once proper scientists became involved the myth was easily undone.

This characterization draws a clear demarcation between two phases, each marked by the dominant hypothesis. The first is a mythmaking phase, when the lost race hypothesis dominated through speculation and fantasy. The second is a science phase, beginning with the creation of the Bureau of Ethnology in 1879 under Powell and the mound investigations led by Thomas in the 1880s, culminating in the overthrowing of the Mound Builders mythology in the 1890s. It was at that point in time that "the scientists took over from the mythmakers." Science is portrayed here as triumphing over myth, since scientific methods replaced speculation with fact. On this view, mythmaking and science are incompatible as mythmaking generates myths, while science produces facts or truth.

Turning now to more recent scholarship, the triumphalist narrative remains as a characterization of the Mound Builders episode, even more than 50 years after Silverberg's influential publication. Colavito characterizes the episode similarly to Silverberg in his book, *The Mound Builder Myth: Fake History and the Hunt for a "Lost White Race"* (2020). He abandons much of the explicit language of triumph that he acknowledges in Silverberg's characterization, but the structure is the same. He maintains the demarcation between a period of mythmaking and a period of real science. He celebrates the archaeological achievements of Thomas Jefferson and grounds his investigative work as properly scientific, claiming that "[i]n order to excavate Indian Grave mound, Jefferson would have to invent a new science, anticipating by more than a century the methodology of archaeology" (Colavito, 2020, p. 17). Jefferson is often credited as the father of American archaeology for his careful investigation of the mounds of Virginia in the late 18th century. Colavito suggests that Jefferson's supposedly scientific methods were abandoned, leaving science dormant for nearly a century, during which time mythmaking and other distinctly unscientific approaches contributed to the dominance of the Mound Builders mythology.

Notably, as outlined earlier, Jefferson correctly attributed the origin of the mounds to the ancestors of contemporary Indigenous peoples. Colavito continues,

> Despite the widespread fame of Jefferson's mound and its scientific excavation, no antiquarian in Europe or America decided to follow Jefferson's lead and excavate scientifically. Indeed, the opinions of most educated observers of mounds were starting to shift away from Jefferson's views and away from science altogether. (Colavito, 2020, p. 29)

Here Colavito tethers science to Jefferson's preferred hypothesis: the current consensus view of Indigenous mound origin. Accordingly, an abandonment of the correct hypothesis is an abandonment of science. In one sense, Colavito is correct that some 19th-century antiquarians failed to follow Jefferson's lead, often professing their support of the notion of the lost race of Mound Builders. But, for Colavito, the mere dominance of the Mound Builders mythology signals a turning away from science. Then, in the late 19th century, science returned as mounds investigators would finally pick up where Jefferson left off, successfully dismantling the mythology that had been allowed to dominate in the absence of his archaeological legacy.

In *Lost City, Found Pyramid* (2016), professors of anthropology, Card and Anderson present another triumphalist narrative, targeting discipline-formation and professionalization as the demarcation between a period of mythmaking and the arrival of science. They write, "As archaeology became a more established discipline, professionals began their Initial Engagement with extreme claims on a methodological basis. The first generations of professional archaeologists applied new and more rigorous investigatory standards to old fantasies and contemporary hoaxes" (Card & Anderson, 2016, p. 2). In other words, they argue that the discipline's increasing professionalization, and by implication its methodological rigor, marked a decisive break with earlier, more speculative approaches to generate the dominant fantastic claims. "Initial Engagement," for them, is treated as a phase (akin to the science phase) wherein

"with professionalization, we see the new techniques and approaches of professional archaeology being applied to extreme cases" (Card & Anderson, 2016, p. 6), following a period of Romantic Archaeology (akin to the mythmaking phase) which "housed quests for myth" (Card & Anderson, 2016, p. 2). They develop their thesis by examining a wider suite of pseudoarchaeological hypotheses in the modern era to provide a general view of the ways that extreme hypotheses are undone. As it applies to the Mound Builder episode, they too identify the 1890s as the watershed moment when archaeology was established as a discipline. The professionalization of the field—and by implication, the establishment of norms of methodological rigor—contributed to the undoing of the Mound Builders mythology.

Last, anthropologist A. Martin Byers presents another triumphalist narratives, as he draws a demarcation by isolating the kinds of argumentative and evidential reasoning strategies deployed by the opposing camps—what he characterizes as proponents of the exogenous (i.e. lost races) and endogenous (i.e., Indigenous) hypotheses. For Byers, the proponents of the exogenous hypotheses relied on two styles of argumentation that he labels the "historical" on the one hand, and the "social and cultural" on the other. The historical argument is premised on the idea that Indigenous peoples "had no 'cultural historic memory' of the construction and use of the earthwork locales" as reported by chroniclers of the early Spanish, French, and English colonists who encountered them (Byers, 2018, p. 22). As it turns out, this is false. Nevertheless, exogenous proponents relied on it to argue that an earlier mound-building society must have existed long before contemporary Indigenous peoples. The social and cultural argument drew on widely held racist assumptions about the savagery, barbarism, and lack of civilizational capacities of the contemporary Indigenous peoples to diminish any plausibility that they could have constructed the mounds. Proponents of the exogenous view thus concluded that the mounds

could not have been built by Indigenous peoples but must instead have been the work of some more advanced race.

Alternatively, Byers presents the proponents of the endogenous hypothesis as relying on "concrete empirical evidence" that "empirically demonstrated that the endogenous claim better and more coherently explained the archaeological record being revealed by this hard empirical fieldwork and archiving" (Byers, 2018, p. 23). Byers, like the other authors, moves to identify the 1890s as the period when the archaeological sciences attained their legitimate status by adopting newer, more innovative empirical methods of demonstration. This shift marked the turning point for archaeology as it lent to the successful overthrowing of the Mound Builders mythology.

With the individual triumphalist narratives outlined, it is now easier to see what unites them. Each draws a demarcation along theoretical lines, where the line is drawn at the point at which the dominant theory shifted, marking out a phase of mythmaking from a phase of science. Then, some conventional or characteristic element of good science (or just science itself) is presented as having emerged to characterize the science phase post-1890, while some lesser convention of inquiry is identified as characteristic of the mythmaking phase pre-1890. For instance, Byers identifies the adoption of concrete empirical demonstration by the proponents of the endogenous hypothesis—a practice more consistent with conventional understandings of scientific rigor than the less evidentially grounded historical and cultural reasoning attributed to proponents of the exogenous view. Anderson and Card identify the emergence of professionalized archaeological investigations of the 1890s and the norms of methodological rigor that accompanied it. Prior to this, lesser, more speculative practices characterized the Romantic period.

In each case, the demarcation explains how a period of mythmaking was able to dominate (i.e., there was a lack of rigorous scientific methods on display) and how the myth was undone (i.e., rigorous scientific methods appeared). But, in tying proper science to the correct theory, these triumphalist characterizations cast much of the 19th century's archaeological development aside as non-science because of its endorsement of the lost race mythology. My task in the rest of the paper is to demonstrate that the characterization of this episode as a triumphalist narrative is, in actuality, the complex exchange between emerging archaeological practice—newly focused on site-based meticulous data-gathering, with omnivorous integration of evidence and tools from multiple disciplines—interacting with very traditional elements of theoretical interpretation, scientific consensus forming, and cultural feedback. All of these are squished together in the simplistic demarcations of the triumphalist narrative accounts that should be abandoned. I begin in the next section with a demonstration of the early 19th century archaeological innovations, then move to trouble the triumphalist narrative in section 5.

4. The Development of 19th Century American Earthworks Archaeology

As already noted, Cyrus Thomas' 1894 *Report* is regarded as a landmark in the history of American archaeology, notable for its methodological and theoretical contributions. Jefferson's work from over a century earlier is similarly highly regarded as anticipating Thomas' work. But what of the earthwork's investigations of the intervening years? Two other important works are also cited as laying important groundwork for mounds investigations sidelined by the triumphalist narrative: Caleb Atwater's, *Description of Antiquities Discovered in the State of Ohio and other Western States* from 1820, Ephraim G. Squier and Edwin H. Davis's *Ancient Monuments of the Mississippi Valley* from 1848. In what follows these two text's methodological

contributions and favored hypothesis for mounds origins are discussed with the aim of demonstrating methodological continuity throughout the 19th century.

Atwater was born in 1778 in Massachusetts but spent most of his career in Circleville, Ohio where he moved with his family in 1815 to pursue law. Most of his time was spent as a legal professional and fulfilling his appointment as the Postmaster but he also spent his free time excavating and mapping mound earthworks. Atwater surveyed, excavated, and studied dozens of mounds in the Ohio region, many of which were eventually destroyed to make way for settlements. In 1820, Atwater published *Description of Antiquities Discovered in the State of Ohio and other Western States* (hereafter, *Description*), the first publication of the American Antiquarian Society's Transactions series, which is widely regarded as the first regional examination of American archaeological sites (Fedoroff, 2021, p. 2).

Through his studies of mounds in the Ohio region, Atwater developed a taxonomy of the earthworks. He divided them into three categories: "1. Those belonging to Indians.—2. To people of European origin;—and 3. Those of that people who raised our ancient forts and tumuli" (Atwater, 1820, p. 111). It was this latter category—the so-called Mound Builders—that most influenced Atwater's research ambitions, prompting him to devote considerable time and resources to the surveying, excavation, and description of the mounds. He opens *Description* with reports of the mounds across different regions of Ohio, supplementing them with detailed survey illustrations of the sites. Later in the work, Atwater moves to conduct detailed artifactual and skeletal interpretation and was fascinated by discoveries of metal objects as they signaled the use of metallurgy, and thus the advanced status of the lost race. Notably, Atwater recounted discovering what he believed to be cast iron and traces of rust near two skeletons in a Circleville mound, along with what looked like the hilt of a sword. This constituted evidence, to his mind,

that the mound builders possessed knowledge of metallurgy and a mark for their advanced status. Atwater was captivated by artifacts and devoted considerable time to describing and speculating about them, constantly referring to artifacts in his possession.

Further, based on the number of skeletons he excavated from the mounds, Atwater suggested that Mound Builder society was made up of millions of individuals, comparable to the civilizations of ancient India (Dahl, 1961, p. 181), implying to him a heavy reliance on agricultural subsistence (Atwater, 1820, p. 223). Based on the discovery of a "Triune vessel"—a clay artifact composed of three heads joined together at the base of a hollow vase-like container—Atwater pondered, "Does it not represent the three chief gods of India, Brahma, Vishnoo and Siva?" (Atwater, 1820, p. 30). Thus, Atwater had entered his own fantastical theories to the record, going so far as to propose "that the ancient mounds had been constructed by Hindus, who had come to North America from Asia and later moved south into Mexico" (Trigger, 2006, p. 161). Despite this error (even contemporaries of Atwater's thought Hindu attribution was a stretch), he is celebrated for his approaches to investigating the mounds, some of which were quite unique for his time.

In addition to the surveys and artifactual examinations, Atwater is credited with establishing robust information networks amongst a variety of people in different social classes. Atwater felt great pride in his identity as an Ohioan and a Westerner (to be read as Western United States). He adopted the view that the locals to any region were better positioned to contribute archaeological knowledge of mounds because they held a privileged and unique relationship to their own land and its contents. According to Whitney Martinko, Atwater's efforts to recommend Ohio-based antiquities scholars to the American Antiquarian Society "established the state as a formidable source of scholarly inquiry" (Martinko, 2009, p. 43). He frequently

consulted scholars of antiquities, but also went to great lengths to seek the knowledge and discoveries of well-diggers, statehouse construction crews, and farmers; all of whom had been called upon in the newspapers to form relationships with their local antiquarians. And many answered the call! (Martinko, 2009, p. 43). Atwater celebrated the achievements of Ohio antiquarians as a distinct Western form of intellectual contribution, formed by distinctly Western Americans (Martinko, 2009, p. 48).

What makes Atwater stand out as a scientific archaeologist, rather than a mere antiquarian (who were primarily driven by artifact curation), was his attention to the analytic side of the investigation. Atwater, like Jefferson before him, investigated with an eye to answer questions that the mounds inspired about origin and function, and he developed investigative tools to do so, including the construction of a mounds taxonomy. He spent his time systematically documenting, surveying, classifying, and interpreting the mounds and their artifacts. It is because of Atwater that mounds investigations were largely conducted in the Ohio region for the decades to come, as we will continue to see.

While Atwater's 1820 study remains celebrated today, by the 1840s his archaeological work was thought to have gone stale, but the fascination with the mounds remained. A more rigorous investigation of the mounds was sought by young scientific institutions as a way of establishing themselves in a developing professional atmosphere. To this end, the newly minted Smithsonian Institute solicited works for the first edition in their Contributions to Knowledge series. In 1847 the newspaper editor, Ephraim G. Squier and the physician, Edwin H. Davis had just concluded a years-long investigation of earthworks in Ohio and were seeking a venue to publish their findings. The Smithsonian jumped on this opportunity and published *Ancient Monuments of the Mississippi Valley* (hereafter *Ancient Monuments*) in 1848.

Squier and Davis's over-300-page treatise was the most thorough examination of American archaeological sites to date detailing about one hundred mounds excavations conducted from 1843–47. Like Atwater before them, Squier and Davis engaged in survey work to document the earthworks and their surroundings. They created dozens of highly accurate contour maps, many of which are our only surviving records of sites that were destroyed to make way for towns, roads, and other artifices of westward expansion. The maps work in tandem with detailed descriptions of the sites. For example, accompanying the map of "Mound City" in Ross County, Ohio Squier and Davis offer the following descriptive details:

> These mounds seem placed generally without design in respect to each other, although there is a manifest dependence between those composing the central group, and between those numbered 4 and 5, and 12 and 13. From the principal mound, numbered 7 in the plan, after the fall of the leaves, a full view of every part of the work and of its enclosed mounds is commanded. This mound is seventeen feet high, with a broad base nearly one hundred feet in diameter. (Squier & Davis, 1848, p. 55)

Topographical surveying and cataloguing that locates the works geographically and records the layout, sizes, and relationships of mounds (i.e., their heights, diameters, lengths, relative placement) was useful for classifying them. Based on these surveys and the site-based details they recorded, Squier and Davis developed their own taxonomies of the earthworks, dividing them into mounds and enclosures, of which mounds were further divided by their proposed function in Mound Builder society:

> 1st. ALTAR MOUNDS, which occur either within, or in the immediate vicinity of enclosures; which are stratified, and contain altars of burned clay or stone; and which were places of sacrifice.
> 2d. MOUNDS OF SEPULTURE, which stand isolated or in groups more or less remote from the enclosures; which are not stratified; which contain human remains; and which were the burial places and monuments of the dead.
> 3d. TEMPLE MOUNDS, which occur most usually within, but sometimes without the walls of enclosures; which possess great regularity of form; which contain neither altars nor human remains; and which were "High Places" for the performance of religious rites and ceremonies, the sites of structures, or in some way connected with the superstitions of the builders.

> 4th. ANOMALOUS MOUNDS, including mounds of observation and such as were applied to a double purpose, or of which the design and objects are not apparent. This division includes all which do not clearly fall within the preceding three classes. (Squier & Davis, 1848, p. 142)

A mound on a site could be categorized, in part, by noticing patterns in the geographic distribution of the mounds relative to other mounds, enclosures, and other site structures like walls and fortifications, as seen in the descriptions above. But the mounds hid internal clues to their form as well.

Squier and Davis innovated on previous mounds investigations like Atwater's by enlisting stratigraphic methods. By cutting trenches into the surface down to the base of the mound, a succession of stratigraphic layers is revealed for analysis—each layer presents a different stage of the chronology of the construction process. As noted above, one of the reasons Jefferson is celebrated as the father of American archaeology is for his employment of this same methodology—known as digging "trial ditches"—anticipating a fundamental practice of modern archaeological research (Lehmann-Hartleben, 1943). Squier and Davis employed it in the 1840s.

The trench was useful for classification as it yielded a profile of successive stratigraphic layers that were used to infer function. For example, Altar or Sacrificial mounds were identifiable by the altar that made up the oldest (and deepest) layer of the mound, characterized by a solid layer of burned clay or stone deep within the earthwork that was only accessible via a large excavation to remove the younger layers of earth. During these excavations they meticulously recorded the stratigraphic layers. At that same site at "Mound City," Squier and Davis report their stratigraphic investigation and its yields:

> A shaft six feet square was sunk from the apex with the following results:
> 1st. Occurred the usual layer of gravel and pebbles, one foot thick.
> 2d. A layer of earth, three feet thick.
> 3d. A thin stratum of sand.
> 4th. Another layer of earth two feet thick.

> 5th. Another stratum of sand, beneath which, and separated by a few inches of earth, was—
> 6th. The altar (Squier & Davis, 1848, p. 147)

The stratigraphy was also useful to identify the ancient environment present at mound sites. They were able to notice and distinguish between the human incursions on the mounds and those made by natural sources like flooding rivers, which would redistribute sediment in characteristic ways. They report that they noticed that one mound had been excavated by a later visitor who encountered—perhaps to their surprise—a skeleton inside and decided to abandon their investigation:

> Thus, while on one side of the shaft the strata were clearly marked, on the other they were confused. And, as this was the first mound of the class excavated, it was supposed, from this circumstance, that it had previously been opened by some explorer; and it had been decided to abandon it, when the skeleton was discovered. (Squier & Davis, 1848, p. 145)

Squier and Davis were attentive to skeletal decomposition as another way to infer ages based on its successful use in other regions like the Middle East or Egypt where ages of archaeological sites had been long established. However, this invited problems for accuracy due to differing environmental conditions and irregularities that caused more rapid skeletal decomposition in North America but was only one of a series of dating methods they utilized.

Another way to date the mounds was to use the flora "as evidence of antiquity afforded by aspects of the forest" (Squier & Davis, 1848, p. 16). In one case, they estimate the age of an earthwork by examining the cross section of a chestnut tree growing on it, which showed nearly 200 rings, suggesting it was about 600 years old. Adding the time between the construction and abandonment of the work, plus the subsequent forest growth, Squier and Davis concluded that the site must be at least a thousand years old, and possibly older given the presence of decaying trees contained in the surrounding soil.

Notably, like Atwater before them, Squier and Davis concluded that an ancient mysterious race—the Mound Builders—were responsible for the mound earthworks: "The centres of population are now, where they were at the period when the mysterious race of the mounds flourished" (Squier & Davis, 1848, p. 7). However, unlike Atwater before them, they did not attribute an identity to the Mound Builders, largely due to the oversight from their no-nonsense editor—the well-known physicist—Joseph Henry (Trigger, 1996, p. 162). In their concluding remarks, Squier and Davis summarize that the Mound Builders were "homogenous in customs, habits, religion, and government" (Squier & Davis, 1848, p. 301); they were "numerous and widely spread" (Squier & Davis, 1848, p. 301); they must have been "stationary and agricultural" (Squier & Davis, 1848, p. 301); and they may have been a "connection more or less intimate between the race of the mounds and the semi-civilized nations which formerly had their seats among the sierras of Mexico, upon the plains of Central America and Peru" (Squier & Davis, 1848, p. 301). Although, they agree with another researcher's assessment that the Mound Builders were "essentially different from that of the modern race of Indians north of the tropic" (Squier & Davis, 1848, p. 302). And, perhaps most importantly, according to Squier and Davis, our only record of them now is the mounds and artifacts they left behind; in other words, they are an "extinct race" (Squier & Davis, 1848, p. 307).

Ancient Monuments set the research agenda for American archaeology for decades to come and cemented the lost race hypothesis as the Smithsonian's preferred interpretation, lending it considerable institutional support. Squire and Davis had established with great archaeological significance the credibility of the mysterious Mound Builders idea, and called upon future archaeologists to reveal the identity of the lost race:

> Further and more extended investigations and observations may, nevertheless, serve satisfactorily to settle not only this, but other equally interesting questions connected with

> the extinct race, whose name is lost to tradition itself, and whose very existence is left to the sole and silent attestation of the rude but often imposing monuments which throng the valleys of the West. (Squier & Davis, 1848, p. 307)

So powerful was the desire to solve the mystery of the Mound Builders that archaeologists were able to marshal institutional resources to sustain investigation into the subject for decades. Most notably, as already illustrated above, Powell's Bureau of Ethnology was explicitly tasked with devoting a portion of funds to the problem. Interestingly, the pressure to continue archaeological work on the mounds inspired by Squier and Davis would lead to the undoing of the lost race hypothesis in another few decades.

And yet, *Ancient Monuments* is still acknowledged as a scientific achievement by archaeologists today. Paul Welch writes, "Until the last decade of the 19th century, *Ancient Monuments* was the most comprehensive, detailed, perceptive and one of the most cogently argued works on the subject" (Welch, 1998, p. 926). Gordon Willey and Jeremy Sabloff hail the work in the mid-1840s that led to *Ancient Monuments* as the beginning of a new archaeological intellectual tradition they call the "classical-descriptive period." This period, from 1840–1914, is marked by a focus on "the description of archaeological materials, especially architecture and monuments, and rudimentary classification of these materials" (Willey & Sabloff, 1974, p. 34). While this period ultimately failed in its aim to make archaeology more systematic, Willey and Sabloff argue that the new attention to careful documentation set the stage for future innovation. What is it about *Ancient Monuments* that justifies its status as a staple of archaeological methodology, despite touting the wildly incorrect lost race hypothesis?

Another of the revolutions that occurred in American archaeology in this time was the adoption of stratigraphic methods to construct chronologies of archaeological sites. This method had long been characteristic of the European archaeological context, but scholars have disputed

when the methodology was adopted into the American context. Arguing that stratigraphic methods made it to the American context earlier than many historians have thought, Trigger lists some significant publications in the late 19th century, including Jeffries Wyman's "Fresh-Water Shell Mounds of the St. John's River, Florida" in 1875, and S. T. Walker's contribution to the Smithsonian Institution's annual report in 1883. Notably, the earliest publication Trigger lists as having made novel contributions to the stratigraphic revolution is *Ancient Monuments* published in 1848, decades before Wyman's and Walker's work. Squier and Davis are also noted for their "perceptive" use of tree-ring analysis and other botanical methods for dating the mounds (Welch, 1998, p. 925). Moreover, as some readers have noticed, Squier and Davis were "closer to being correct than were some archaeologists in the 1930s" with regards to the attribution of ages to various earthen mounds based on these stratigraphic and botanical methods (Griffin, 1973, p. viii), suggesting that their methods were not altogether worthless, and may even have had a leg up on successive traditions.

Moreover, scientists of the 19th century similarly regarded *Ancient Monuments* as a significant achievement of contemporary archaeology, as evidenced by the endorsements in its introductory pages. American physician, Samuel George Morton was "convinced they constitute by far the most important contribution to the Archæology of the United States, that has ever been offered to the public (Squier & Davis, 1848, frontmatter). Additionally, noted naturalist and environmentalist, George Perkins Marsh also praised the work, citing that "The Smithsonian Collection could not begin with a more appropriate or creditable essay (Squier & Davis, 1848, frontmatter). Those in the scientific community of the 19th century who held prestigious positions in the more eminent scientific institutions—even if many of them, like Morton, are now rightly recognized for perpetuating harms through the development of scientific racism (see e.g.,

Gould, 1996)—lauded *Ancient Monuments* as an achievement that would set the agenda for archaeological investigations for decades to come.

Silverberg even highlights the importance of *Ancient Monuments* as "a summary of knowledge in its particular field," "a model for later work," and "a detailed record of the Ohio mounds as they appeared in 1847" (Silverberg, 1970, p. 84). Despite this praise, Silverberg and the proponents of the triumphalist narrative fail to assign pre-1890s mounds archaeology the status of science. In 1848, the most rigorous and innovative archaeological work available endorsed a popular myth, legitimizing it as a scientific conclusion. How, then, can this triumphalist demarcation be reconciled with the praise for *Ancient Monuments* and other contemporary work as genuine scientific advancement? My answer, to be developed in the next section, is that it cannot and that the simplistic epistemic demarcations on which it rests should be abandoned.

5. The Myth of a Triumphant Science and the Entanglement of Science with Culture

Thomas's *Report* remains one of the most important American archaeological treatises of the 19th century. Welch highlights that *Report*, "had the most profound impact on the subsequent development of archaeology in the United States" (Welch, 1998, p. 921) methodologically and argumentatively. There is no doubt that what Thomas and his contemporaries achieved is to be rightly described as a scientific achievement. While the lost race hypothesis has retained adherents to the modern day, *Report* dealt a fatal blow to the lost race hypothesis as a legitimate scientific contender. The gravity of the publication for the triumphalist view is in its decisiveness. So, identifying the 1880s and 90s as the unseating of the myth is an accurate

historical benchmark. However, given the understanding of how archaeology developed prior to 1890 above, four questions expose the fragility of the epistemic dimensions of the narrative.

1. When did scientists "take over" from the mythmakers? Remember, Silverberg's "scientists took over from the mythmakers and hacked away at the luxurious growth of fantasies." His metaphor suggests a clean break between mythmaking and science in the 1890s with the publication of Thomas's *Report*. In fact, as far back as 1820, Caleb Atwater conducted detailed investigations of the mound earthworks that stood apart from his contemporaries for their analytic nature. He is recognized as having done the first extensive regional study of mounds in the Ohio region. In 1848, Squier and Davis not only build on Atwater's work, by expanding the scale of the regional studies, but they radically expand the toolkit available to the archaeological study of the mounds. In 1894, Thomas undermines the myth by enlisting the very same archaeological methods that Squier and Davis do to endorse it. So, there is continuity and an iterativity of the methodologies of mounds investigations in the 19th century that troubles an easy answer to the question posed here. But, in tying proper science to the correct theory at the historical moment when the mythology was replaced, Silverberg's demarcation discards much of the 19th century's archaeological development because of its endorsement of the Mound Builders mythology. In doing so, it also inadvertently casts aside the valuable work that mounted challenges to the lost race idea in the early to mid-19th century. The trouble for Silverberg's view is that some scientists endorsed, perpetuated, and legitimized central commitments of the Mound Builders mythology. In other words, before scientists "hacked away at the luxurious growth of fantasies," some scientists pruned and nurtured them.

2. Were Jefferson's scientific methods abandoned, only to be rediscovered later? Colavito frames the 19th century as having lost touch with Jefferson's legitimate scientific

approach to the study of the mounds, until the moment when they reemerged and the mythology was overturned. Again, neither Atwater's nor Squier and Davis's work supports this framing. Both Atwater and Squier and Davis continued Jefferson's analytic approach to the mounds by conducting survey work, interpreting artifacts, and constructing mounds taxonomies. Squier and Davis even employed the very same "trial trenching" techniques in their extensive mounds excavations that Jefferson is celebrated for conducting in his own excavations in the 1780s. Squier and Davis's approach even expanded what Jefferson started by widening the geographic scope of their investigations and utilizing a more varied set of dating techniques on site. Far from disappearing, the scientific approach and methods that Jefferson began were deployed and innovated upon. Thomas' *Report* widened the scope further and drew on this same methodological lineage further supporting a more gradual progression of scientific advancement.

3. Did archaeology suddenly professionalize by 1890? Card and Anderson present the 1890s as having reached a new level of disciplinary professionalization that contributed to the downfall of the lost race Mound Builders mythology. However, as with the other answers about methods, the professional development of archaeology is a lot more scattered and gradual. Although archaeology became increasingly professionalized over the 19th century, with the creation of many scientific institutions willing to publish and support archaeological work, it is an exaggeration to claim that by 1890 it had suddenly matured into a discipline with agreed upon methodological norms. Figures like Powell and Thomas still relied heavily on amateurs and antiquarians, who sent in artifacts, photos, and their own surveys and descriptions to contribute to the series of Annual Reports that made up the *Report* in 1894. This disorganization and reliance on amateurs was part of the reason it took them over a decade to marshal their assault on the lost race idea. However, these exchanges often led to long-term relationships, donations, and

valuable collections for future archaeological analysis. The late 19th century saw widespread public enthusiasm, with local societies and academies across the U.S. still publishing amateur work and amassing vast collections (Williams, 1991).

4. Was there a neat argumentative distinction between mythmakers and scientists? Byers presents the difference between scientists and mythmakers as a competition between argumentative styles. On the side of the Indigenous origins hypothesis, the practitioners preferred concrete empirical demonstrations through carefully considered bouts of fieldwork, while the lost race proponents chose instead to rely on cultural and historical arguments that appealed to racist civilizational hierarchies and the testimony of historical figures. In other words, those that adopted the correct theory relied on conventionally more epistemically robust forms of inquiry, while the others that adopted the incorrect theory relied on forms of inquiry considered less epistemically robust. But this clean division turns out to be far too simplistic. It has been well documented already that the archaeologist mythmakers like Atwater, and Squier and Davis engaged in concrete empirical fieldwork to support their conclusion. But it cuts the other way as well. In *Report*, Thomas relied heavily on the testimony of the chroniclers of the early conquistadors to aid in identifying historic sites and to ground his inferences about the customs and behaviors of the mound builder cultures (see, e.g., Thomas, 1894, pgs. 17, 292–3, and 652). These historical arguments were pivotal in mounting the attack on the core premises of the lost race hypothesis that Indigenous peoples had no "cultural historic memory" of mound building and were too primitive to have built them.

In sum, by assuming that science and mythmaking operate in distinct epistemic spheres, the triumphalist narrative cannot account for episodes like the Mound Builders mythmaking of

the 19th century that demonstrate a blending of them. The triumphalist framing obscures this entanglement.

One way to react here would be to swing opposite of the triumphalist narrative and reclassify the Mound Builders episode as a failure of science. This would be an overcorrection. Instead of overcorrecting, there is a live epistemic lesson to be learned here, one that archaeologists are acutely familiar with. As Alison Wylie has argued, archaeologists continually grapple with "epistemic hopes and anxieties" that frame internal debates about the discipline's foundations (Wylie, 2011, p. 301). Archaeologists understand that a tension about the value of the archaeological record permeates their discipline. On the one hand, the material record is seen as the means to provide secure access to the past, unburdened by the biases of the written record; on the other hand, the material record is plagued by underdetermination problems that often undermine their interpretations. Much of Wylie's work is like therapy for archaeologists, helping them confront their anxieties about evidence and method by showing just how epistemically savvy they already are (see, e.g., Chapman and Wylie, 2015; 2016; Wylie, 1997; 2000; 2002; 2016). Despite their savviness, they acknowledge their vulnerabilities and the ways that theoretical interpretation can be infused with bias.

This episode presents as an opportunity to understand the complex ways that robust epistemic inquiry can still produce falsehoods by way of cultural entanglement. Wylie makes this explicit connection in her brief discussion about the proponents of the lost race hypothesis. She writes,

> The result was a selective practice of excavation and recording of these sites that focused on the highly visible, the monumental, and the exotic, and was structured by the question of who could possibly have built the mounds: Facts of ancestry figured prominently; the industry in measuring skulls and calculating evolutionary affiliation got under way in earnest, and evidence of their artistic accomplishment was routinely juxtaposed with supposed facts of "cannibalism," a penchant for elaborate ritual, and barbaric mortuary

> practices. The foundational assumptions of nineteenth-century anthropology, and the collecting interests of emerging research and educational institutions, structured the recovery and description of the archaeological facts. (Wylie, 2011, p. 304–5)

In other words, the "facts" about the Mound Builders were not neutral but shaped by the guiding assumptions of 19th-century archaeology, themselves products of the broader nationalistic culture of the time. Excavations were driven by the question of who built the mounds—a question rooted in cultural beliefs about racial hierarchies, the capacities assigned to different groups, and Indigenous peoples' place in the newly forming American identity.

In this cultural context it is no surprise that Squier became one of the scientific champions of the lost race hypothesis. Squier was by all accounts a true American nationalist. According to Stanley Finger and Hiran Fernando, Squier "was a fiercely nationalistic individual who believed that the United States was a great country with an even greater future" distinguishing himself from his contemporaries by the desire to demonstrate that an ancient civilization had flourished long ago (Finger & Fernando, 2001, p. 355). Later in his life, Squier moved to Ohio where he took a keen interest in the mounds and began what would be a successful career as an antiquarian and archaeologist. It was in *Ancient Monuments* that Squier got his opportunity to contribute to the project of crafting the American past—a past that could stand shoulder-to-shoulder with the Greeks, Romans, and Egyptians (Finger & Fernando, 2001). Any hypothesis that offered material to rival European history gained extra traction, since it was bound up with the urgent questions and cultural priorities of the moment.

Moreover, American policy regarding the relocation of Indigenous peoples largely relied upon notions of racial hierarchy that were developing in concert with the policies of removal and inspiration for scientific questions of origin. Of note, Samuel George Morton's skull collecting in the 18th century exemplifies this entanglement well. Morton took this conflict as an opportunity

to pad out his collection of skulls, from which he would develop a taxonomy of races, further justifying the aggression towards Indigenous peoples (Geller, 2020). The Seminole Wars between American soldiers and Indigenous peoples (who fought alongside Black allies) raged for decades between 1812 and 1859, creating a constant supply of skulls for Morton's analyses (Missall and Missall 2004). With this abundance of human material, Morton conducted his craniological studies which culminated in his taxonomy of races in *Crania Americana* (1839).

The Mound Builders mythology, in a somewhat horrifying fashion, develops and entrenches in the public imagination as American domestic policy develops. The plausibility of the myth is tied to the material effects it generates in the world, fulfilling the aims of the American nationalist and imperialist project. The Mound Builders mythology emerged as a product of American nationalism and colonial expansion and snowballed to offer justification of those projects in a viscous feedback loop. On May 28, 1830, the Indian Removal Act was signed into law, stripping Indigenous peoples of their lands. Many were forced off their historic homelands and required to settle west of the Mississippi River. Those that resisted this law were deemed "hostile Indians," and excessive force was used upon them.

It is worth emphasizing here that although the Mound Builders mythology lost credibility as a legitimate scientific idea, and the nationalism that provided cultural material for sustaining the mythmaking may have lessened in its intensity or changed its character, but settler colonial ideology did not cease and still informs many aspects of scientific research (see, e.g., Anderson, 2006; TallBear, 2013; Subramaniam, 2024). The Mound Builders episode, rather than a triumph for science where mythmaking and science live apart, stands as a case of their entanglement in this tradition. The questions posed, methods deployed, and conclusions drawn were not divisible into distinct spheres, but constitute a hybrid "culturo-scientific" entity.

6. Conclusion

By 1900 the Mound Builders mythology had largely served its purpose in justifying America's colonial land-grab. In the time between 1870–1900, American domestic policy began to shift from the violent removal of Indigenous peoples from their lands towards a policy of forced assimilation to the newly minted American way of life (Timmerman, 2020, p. 87). At the same time, the Mound Builders mythology was being replaced by the now consensus view of Indigenous origins. My main aim in this paper was to correct the record and unsettle the characterization of the Mound Builders episode as the triumph it has been presented as in some historical accounts. But, we must contend with the fact that science played a not insignificant role in maintaining a myth that was used to justify horrific American policy of genocide and the removal of people from their lands.

While there is no doubt that the unseating of the mythology is a moral good, the Mound Builders episode should not be celebrated as a triumph for science. Rather, it stands as a cautionary tale—a scientific misstep with lasting and serious consequences. To reframe this narrative, I have examined some of the best archaeological works of the 19th century, identifying them as genuinely scientific through their epistemic strengths and the recognition they received by the scientific community both at the time and in subsequent evaluations. I have traced a trajectory of scientific practice that illustrates the emergence and establishment of a more rigorous and successful American archaeology, but this trajectory proceeded through steps and iterations of previous practice, preventing the drawing of a line between science and mythmaking at any point in the 19th century.

My characterization thwarts idealistic hopes for an easy demarcation between science and non-science, destabilizing the triumph narrative which relies on it. My alternative characterization is sobering but accurate—one in which science and mythmaking are significantly entangled, and the presence of conventionally strong epistemic practices are not guaranteed to insulate scientific hypotheses from our culture's most noxious elements. Our reaction as scholars of science to this historical fact should not be to preserve a mythologized interpretation of science as purely rational, disinterested, and independent from outside influence. We should grapple with the facts of politicization and influence in science, and develop the tools that act as prophylactic or correct for undue influences.

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