

One if By Land; Two if by Sea
Frontiers of Science, Art, and Popular Culture in Antebellum America

The investigation of American cultural and national identity in key periods provides illumination for the intersections that make up United States History. In this thesis I intend to explore as full a view as I can, an effort which will include sources from literature, art, and science. In particular I am interested in understanding the process of culture-building that advanced in parallel with the development of the young Republic's government. Combining the history of American Science with the history of American Art and the history of American Literature provides a trinity of sources that are as relevant for the nation's cultural genesis through its modern age while such an interdisciplinary approach allows for a more focused view of antebellum America, there will be challenges in drawing on resources from separate established fields and a host of source materials analyzed by a variety of experts with disparate backgrounds. Using the American explorations expedition practices as my topic will allow me to provide concrete examples of the production of new knowledge, the development of new practices, and the broad dissemination of information to an engaged and enthusiastic public. From physical specimens to artistic representations to written accounts, the outcomes of those expeditions had far-reaching effects. Maps were not the only products of these endeavors.

Although I will pay close attention to the official documents, if only the official reports are analyzed, we will only have an extremely narrow understanding of the significant outcomes of the expeditions themselves. By following the content from the official reports published for senators and members of Congress through various disseminational displays in public art and illustration and further still through daily newspaper circulation and popular literature we can understand more about how the American public interacted with this "official" knowledge and shaped it for themselves at the same time it presented boundaries in constructing their own views about America, the world, and their individual place within those domains. For example, the

grandeur of the notion of exploration, particularly polar exploration, influenced America's early writers such as Edgar Allan Poe. These articles and stories, by Poe and others, influenced the American public's perception of exotic places across the sea and of western frontiers across the plains which aided in crafting a cultural model of self in the early days of the nineteenth century when what it meant to be "American" had yet to be fully established.

The history of American science is intrinsically linked with the history of American art and literature. As the nation worked to establish itself—geographically and politically—in the early nineteenth century, American scientists, artists, and authors were working on the leading edge that impacted global knowledge networks for the first time. The "American Experiment" was not solely a government-based endeavor. The nature, and terminology of "experiment", is pulled from the sciences, and has many facets. Separating science, art, and popular discourse during the antebellum period is not only antithetical but debilitating to understanding early American culture.

Two expeditions in particular, one by land, and the other by sea, provide the meeting point for these three distinct features of American culture-in-the-making. The *United States Exploring Expedition* and the *Pacific Railroad Surveys* employed the military, artists, and scientists. The participants in these expeditions provide points within a network of communication, education, and fraternity that also contributed to the dynamics of cultural life in antebellum America. Expedition leaders such as Charles Wilkes (1798-1877) and Amiel Whipple (1818-1863) were career military men serving in the Navy and the Army respectively. Some members of the expeditions, such as Titian Peale (1799-1885) were career artists. Peale was also a veteran expeditionary artist, having first accompanied an expedition at the age of nineteen. Titian's father Charles Peale (1741-1827) established one of the first museums in the

United States in addition to his portraiture of many of the nation's first statesmen. James Dana (1813-1895) represented American science serving aboard the US. Ex. Ex., as a geologist, following his time teaching mathematics to midshipmen in the Navy and as chemical laboratory assistant to Benjamin Silliman at Yale. Others, such as artist Richard Kern (1821-1853), were members of the Philadelphia Academy of Sciences which forged the two sides into a single coin.

Hollow Earth

One of the first scientific theories to be plied transnationally in American was that of a Hollow Earth. While not a new idea, this nineteenth century version not only posited the nature of the earth, but capitalized on what would later become standard scientific communication in America: the public lecture tour. Far from a crackpot idea shouted from street corners, the speculation about the possibility of a hollow earth was well-organized, if underfunded, and traveled outward from major city hubs into the wilds of the Ohio frontier. Regardless of the validity of these claims, these presentations initiated governmental discussion pertaining to the needs of the young republic to explore and express itself beyond its own continent. The story of America's first circumnavigation expedition begins with that hole in the ground: specifically, "Symmes' hole" at the north pole which, it was hypothesized, opened into a hollow earth. On April 1818 in St. Louis, Missouri, (which was still an American territory) John Cleves Symmes, Jr. (1780-1829) published his first circular declaring that "the earth is hollow and habitable within"¹ and called for "100 abled-bodied men" to help him prove it. Jeremiah N. Reynolds

¹ The highest resolution scan for this circular accompanies a history blog published by *Slate*. The image credits the Delaware Historical Society but their link accesses a "private and protected" wordpress blog, and the circular cannot be found searching the DHS website. More work to find an academic scan will be needed, but this is symptomatic of research involving failed theories or topics mainstream science and history do not deem to be important.

(1799-1858) was an early convert, and his influence would build on and surpass that of Symmes himself.

Reynolds was a successful Ohio newspaper editor when he heard and subsequently joined Symmes' lecture tour in 1824. By the time of Symmes' death in 1829, Reynolds's support and own version of the hollow earth theory had evolved enough that the two were no longer touring together. Even though Symmes' namesake uncle was a prominent congressman, it was Reynolds' addresses to congress that gained the interest of President John Quincy Adams, who agreed to establish an American expedition to the South Pole. Andrew Jackson replaced Adams as president in March 1829 and refused to follow through with any of his predecessor's initiatives—especially the national naval expedition. It would be nearly a decade before a government-funded expedition would set sail.²

The Hollow Earth Theory and the difficulties of mounting the types of expeditions proposed by Symmes and Reynolds is an excellent lens with which to view the development of American culture during the antebellum period. The same year that Symmes published his circular, the first edition of Benjamin Silliman's *The American Journal of Science and Arts* was published. Known colloquially as "Silliman's Journal," it is the United States' longest-established scientific journal and is known today as *The American Journal of Science*.³ An American chemist, Silliman (1779-1864) was one of the earliest professors at Yale College, and

² The most concise history of this expedition is Nathaniel Philbrick's *Sea of Glory: America's Voyage of Discovery, The U.S. Exploring Expedition, 1838-1842*. (Viking, 2003).

³ The full archive of the journals from 1818-1895 can be accessed digitally thanks to the Carnegie Mellon University Libraries' Digital Collection here: <https://digitalcollections.library.cmu.edu/portal/browse.jsp>

continued to edit the journal until his death when it passed to his geologist son-in-law James Dana.

During the period that Reynolds was building support for the naval expeditions and their eventual embarkation in 1838, American newspapers developed into powerhouses of information diffusion. With the advent of the “penny press” anyone with a penny could purchase a paper that had been reformatted to be more compact than previous versions. The flow of information across class and culture in America was unprecedented, providing a different information ecology than in Europe. These journalistic innovations also led to new types of literature and reporting, which in turn would influence established authors, artists, and genres prior to the Civil War. Reynolds seems to have had influenced a number of important figures in American literature, including, for example Herman Melville and Edgar Allan Poe.

American Literature

Official expedition and survey reports were not published for the public. The limited number of copies that were pressed to meet government funding requirements were somewhat dry and boring—it is an open question whether they ever passed into bookshops or through friends of congressmen and senators to wider audiences, but alternative modes of communication existed, as within early niche markets for American literature such as those found in the restructured newspaper formats and the illustrated periodicals. For example, members of expeditions would oftentimes send letters describing the events they experienced directly to newspapers for immediate publication. Others waited until the completion of the journey to publish their collected thoughts for mass market consumption. It is through avenues such as these that many Americans experienced these expeditions at second-hand, and these sources

were the fodder American authors in the early national period used to participate in the shaping of Americans' consciousness of the world beyond their streets and cities.

Unpacking American literature in the antebellum period requires casting a broad net across many collections of literary criticism and selecting the most relevant for the areas pertaining to American exploration, science, and art. An excellent example is Isabelle Lehuu's *Carnival on the Page: Popular Print in Antebellum America*, which explores both the "literary exuberance" that ran rampant in that period, and the parallel attempt by "arbiters of culture [who were] attempting to control, if not eradicate...[the] playful culture that cheap books and periodicals were celebrating."⁴

Moving further into literary culture, David Reynolds' *Beneath the American Renaissance: The Subversive Imagination in the Age of Emerson and Melville* is especially important for my research, for its analysis of Melville, and the specific points in his subtitle.⁵ *Moby Dick*—Melville's most famous work, and arguably one of the most famous in all of American literature—was inspired in part by a short account of a whale named Moche Dick published in New York's *The Knickerbocker* in 1839. The "leaf from a manuscript" was written by Jeremiah N. Reynolds following a mutiny aboard a private expedition that left him marooned off the coast of South America.⁶

Carnivals were not relegated to the page during the antebellum period. The emergence of popular attractions like P.T. Barnum's first American Museum completely dismantled the

⁴ Isabella Lehuu. *Carnival on the Page: Popular Print Media in Antebellum America*, University of North Carolina Press, 2000. p. 3.

⁵ I find Reynolds' *Waking Giant: America in the Age of Jackson* to be similarly influential and important for my work in understanding the ascendancy of American culture from 1815 to 1848.

⁶ Andrew Delbanco. *Melville, His World and Work*, Random House, 2000. pp. 167-168

orderly chain of being and quiet reflection of Charles Wilson Peale's early natural history museum. Just as literature began folding back on itself with the subversive writing of Melville and Emerson, public display and discourse were battling for authority in exhibition and display spaces. Both Les Harrison's *The Temple and the Forum* and Lawrence Levine's *Highbrow/Lowbrow: The Emergence of Cultural Hierarchy in America* explore the stratification and pushback against elite efforts to stabilize the stratification of culture, class, and place. Their analysis reveals the stakes that existed during this period, and the work to control definitions of what it meant to *be* "an American."

The culmination of this struggle for authority and the quest for ever-increasing audiences is exemplified by the so-called 1835 "Moon Hoax." Through August 1835 a New York City penny paper named *The Sun* published the "Great Astronomical Discoveries Lately Made by Sir John Herschel, LLD FRS &c at the Cape of Good Hope [From Supplement to the Edinburgh Journal of Science.]" While ultimately a hoax, enough of the supplemental information was true or plausible given contemporaneous scientific discoveries. The six-part serial drove *The Sun*'s readership to unprecedented levels and, with national wide reprints, created one of the largest audiences for popular science in the United States. Matthew Goodman's analysis of the hoax in *The Sun and the Moon: The Remarkable True Account of Hoaxers, Showmen, Dueling Journalists, and Lunar Man-Bats in Nineteenth Century New York* helps to place the phenomenon within the context of the same culture-building examined by Lehou and Reynolds. Goodman's inclusion of Barnum and Poe allow the Moon Hoax to bridge to Levine and Harrison.

American Art

While American writers were finding their voices, American artists were finding their palettes. In 1825, the same year the Erie Canal opened, Thomas Cole's work was being reviewed in the *New York Evening Post*, providing another strand of the cultural interweaving I am drawing together. Cole's style and unique American landscapes formed the beginnings of the Hudson River School art movement which dominated the American Style for two generations.⁷ Works of American art, like the exploration narratives, were limited in their initial audiences. Newspapers like the *Post* could provide reviews and entice locals to visit, love, or loathe new movements like Cole's, but what did Cincinnati readers know of the Hudson River School? Did that art, or reasonable facsimiles travel west and south to reach larger trading crossroads such as New Orleans? If so what influences may have entered into those cities' arts districts? American art provided a way to stay connected to a familiar America even as Americans pushed west into places that were distinctly unlike the cities they had left, and cheap newspapers allowed some connection to the civilization to which they bid farewell as people travelled west, pushing the frontier's boundaries as they did.

Before Cole's fateful trip up the Hudson in 1825, the sphere of American art was dominated the Peale family. The Peales' genealogy stretched back to the American colonial period when Charles Wilson Peale (1741-1827) made his living as a portraitist. Peale's portrait work kept him politically and socially connected. In 1786, he opened his American Museum in Philadelphia, which presented American "nature" in all its myriad forms. The exhibit galleries served as a three-dimensional representation of the Great Chain of Being in nature which

⁷ An excellent collection and short history of the Hudson River School can be found in *Hudson River School: Masterworks from the Wadsworth Atheneum Museum of Art* published by Yale University Press and edited by Amy Ellis and Maureen Miesemer.

reflected the thinking of the early natural philosophers and a mixture of Europe and American ideals influenced by the Enlightenment.

One of the turning points in the development of American ideas about nature occurred when Peale was called up to southern New York State in 1801 to help excavate the remains of a giant prehistoric beast. Peale's Mastodon (actually a mammoth) became the centerpiece of his museum in the new century as he added specimens collected by Lewis and Clark's Corps of Discovery to the Pacific Ocean. Charles's son Rembrandt (1778-1860), a noted portraitist and museum curator himself, opened his Baltimore Museum and Gallery of Fine Art in 1814 with similar holdings to the celebrated museum belonging to his father.⁸ The youngest Peale son, Titian (1799-1885), took his art out of the portrait studio. As a young adult, he accompanied The Academy of Natural Sciences' expedition to Florida and Georgia in 1816. Two years later he served as assistant to the eminent ornithologist Thomas Say on Stephen Harriman Long's expedition through the Rocky Mountains. At nearly 40 years old, Titian served as the chief naturalist aboard the *Peacock* of the United States Exploring Expedition.⁹

The Peale family provides an excellent—and far-reaching—lens with which to view changes in American art and science, but they were not the sole influences on artistic modes in the early Republic. Cole's Hudson River School continued to influence other artists, specifically those producing landscapes. Numerous artists journeyed to extreme environments to record what

⁸ An introduction to the founding of American museum culture is the exhibition book *Mermaids, mummies, and mastodons: the emergence of the American museum* published in 1991 by the American Museum Association.

⁹ Titian's work on both land and sea explorations can serve as the control in comparing the expectations and treatment of naturalists by the United States Navy and the United States Topographical Engineers. For Titian's time on the Long Expedition see Kenneth Haltman's *Looking Close and Seeing Far: Samuel Seymour, Titian Ramsay Peale, and the Art of the Long Expedition, 1818-1823*.

they saw in their sketches and notes they returned to their studios to work on larger scale paintings. Many of the works were reverent depictions of America's natural beauty, and embodied themes comparable to those being developed in the written works of Ralph Waldo Emerson and Henry David Thoreau.¹⁰

Following the death of Cole in 1848, the second generation of the Hudson River School branched out far beyond the Hudson River Valley. As the railroads looked for routes to connect the east and west coasts, this new generational cohort of artists provided the illustrations contained in the official government reports and versions found in other publications. In these instances the expression of natural settings as sacred ground and the desire to depict the natural resources and the exotic flora and fauna of the American West as exceptional, many of the expeditionary artists display attitudes characteristic of the Hudson River School, in spirit if not in actual practice.

Through 1853 John Mix Stanley (1814-1872) was the chief artist for Isaac I. Stevens' survey of the northern route for the Pacific Railroad. Born in central New York State near the Finger Lakes region, Stanley had already exhibited more than 150 works at the Smithsonian Institution before the Railroad Survey contract. Lithographs produced for Stevens' reports proved to be popular and circulated widely. Returning to New York in January 1854 Stanley began work on a large panorama of his western scenes. Opening in September of that year the panorama required two hours to experience (it has since been lost).¹¹

¹⁰ Analysis of the Hudson River Schools' romanticism as expressed in their landscapes can be found in the Metropolitan Museum of Art 1987 exhibit book *American Paradise: The World of the Hudson River School*.

¹¹ A concise source for Stanley's year with Stevens is Robert Taft's *The Pictorial Record of the Old West: XV. John M. Stanley and the Pacific Railroad Survey* published for the Kansas Historical Society in 1952.

Other survey artist did not fare as well as Stanley. Richard Kern (1821-1853) was a Philadelphia artist assigned to the Central Pacific survey of John Gunnison. Kern, who was a member of the Academy of Natural Sciences of Philadelphia, had already survived the disastrous 1848 John Frémont expedition which had left his brother, Benjamin, and the expedition's guide dead. Richard himself and another brother, Edward, as well as Gunnison were killed by Paiute Indians near Sevier Lake in Utah. Following their deaths, the survey was left to Lieutenant E.G. Beckwith and was later joined by the artist F.W. von Egloffstein—who himself had narrowly survived the 1853-54 Fremont expedition.¹²

The Pacific Railroads successful conclusion in 1855 ushered in a golden age for Hudson River School artists. Some of the most impressive paintings—both in content and size—were completed between 1855 and 1875. Students of Cole's school—Frederic Edwin Church (1826-1900), Albert Bierstadt (1830-1902), and Thomas Moran (1837-1926)—captured the public's imagination of the American West which was now more readily accessible than it had ever been. These figures also became household names thanks to lithograph reprints and to Moran's contract with the railroads for advertising prints.

The United States Exploring Expedition

Symmes' call for one hundred able-bodied men was finally answered (with some caveats) twenty years after he first published it in 1818. Original plans for both a seagoing expedition and

¹² Few sources specific to the Railroad surveys have collected the works of the artists or the scientists but several journals provide some context. One such published account is Eugene C. Tidball's *Soldier-artist of the Great Reconnaissance: John C. Tidball and the 35th Parallel Pacific Railroad Survey*. Other more general histories include Edward Wallace's *The Great Reconnaissance: Soldiers, Artists, and Scientists on the Frontier, 1848-1861* and William H. Goetzmann's *Army Exploration in the American West, 1803-1863*.

the exploration of the earth's supposed polar holes were restructured with growing frequency as the early Republic's government shifted and moved with the prevailing politics of the time. The time needed to mount such an ambitious project spanned several presidential administrations, beginning with James Monroe, following some planning during John Quincy Adams' term, the halt called by Andrew Jackson, and then, it was finally pushed out of port under president Martin Van Buren.

While Symmes' theory was the original stimulus, it was Reynolds' continued lecturing and growing fame which finally led to the expeditions' approval—and to his ultimate absence from it. While Nathaniel Philbrick's *Sea of Glory* serves as an excellent biography of the expedition, he fails to explore the greater connection between global exploration and the expanding attention to American natural history. To fully understand the *U.S. Ex. Ex.* and the makeup of its crew, including—and especially—its captain Charles Wilkes (1798-1877), it is helpful to look to Europe for comparison. The voyages of Captain James Cook had continuing influence on world naval exploration even after his ill-fated voyage. Many of the men aboard the American expedition had likely read Cook's published journals or accounts either as children or while in the U.S. Naval Academy or both.¹³

Charles Darwin's voyage on the *Beagle* had just ended when Wilkes and the *U.S. Ex. Ex.* sailed from New York. Several of Darwin's accounts published during the voyage influenced the scientists serving under Wilkes. Most specifically expedition geologist James Dana read Darwin's thoughts on atolls and island chains in an Australian newspaper before confirming the

¹³ Aside from Cook's published journals an excellent over-arching biography of Cook is Frank McLynn's *Captain Cook: Master of the Seas*.

observations in Hawai'i.¹⁴ The fame of Cook's, and later that of Darwin's, expeditions and of their published journals, shaped Wilkes' expectations, and his attention to recounting and publishing a best-selling account of his expedition.

Outside of Britain the expeditions and the fame of Alexander von Humboldt reinforced the understanding that exploration and scientific expeditions were a global enterprise (and a way to comfortable retirement). Unfortunately for Wilkes he lacked many of the more affable characteristics that Cook, Darwin, and Humboldt possessed, his personality and demeanor led to a rapid deterioration in his social popularity and even though acquitted during his Courts Martial, his journal never achieved the popularity of his travelogue heroes. Another immediate and local connection with Humboldt is Reynolds who is one of the four American authors that Aaron Sachs highlights as having been greatly influenced by Humboldt's expeditions and writings.¹⁵ These intersections contain some of the social and cultural background from which the *United States Exploring Expedition* (1838-1842) sailed. These figures and their popular successes also shaped the expectations for how the information gathered from the expedition would be shared with the American public.¹⁶

The Pacific Railroad Surveys

¹⁴ *Sea of Glory*, 208-209. Charles Darwin's influence on Dana and other geologists can be found in Sandra Herbert's *Charles Darwin, Geologist*.

¹⁵ Aaron Sachs. *The Humboldt Current: Nineteenth Century Exploration and the Roots of American Environmentalism*.

¹⁶ Humboldt's work also influenced Alfred Russell Wallace to travel. Even though he and Darwin co presented the theory of evolution, Wallace did not publish his popular travelogues and journals until late in the nineteenth century.

While undertaken for vastly different reasons than the *U.S. Ex. Ex.* the Pacific Railroad Surveys (1853-1855) were no less a herculean or scientifically rewarding task. The U.S. Secretary of War Jefferson Davis oversaw a series of five surveys with the goal of ascertaining the most economical route for a transcontinental railroad. Each of these expeditions can be seen as analogous to the individual ships in Wilkes' fleet, each taking a different, and in this case, competing routes to the same ends. What is markedly different between these two enterprises is the organizational components of an overland Army Corps of Topographical Engineers compared to that of a United States Naval expedition. Where the background for the *U.S. Ex. Ex.* is the US Navy modeled on that of Britain, the railroad surveys were marked by a structure similar to that of the French Army.

In order to understand how the scientists fit in with the army corps surveyors it is important to explore its precedent: Napoleon's 1798 invasion and concurrent scientific exploration of Egypt.¹⁷ While Britain ultimately seized many of France's Egyptian finds, the work of Napoleon's scientists and Britain's display of the artifacts gave rise to Egyptology in Europe which quickly spread to America. Once the popularity of ancient Egypt arrived in America many of the depictions of Native American ruins took on a more Egyptian appearance. This trend became prevalent enough that in 1845 Poe penned his biting satire "Some Words with a Mummy" which took to task both Egyptomania and American exceptionalism.

Where Wilkes collected his entire crew's journals as government property—assuring that he would be first to publish—there were no such edicts on the overland survey. While no event

¹⁷ Sections of Frank McLynn's *Napoleon: A Biography* outline Napoleon's time in Egypt, and subsequent establishing of the Egyptian Institute. That McLynn wrote about both Cook and Napoleon provides another comparison. More recently, Juan Cole's *Napoleon's Egypt: Invading the Middle East* provides a different perspective.

biography comparable to *Sea of Glory* exists for the surveys, many diaries and accounts have been published, including Eugene Tidball's *Soldier-Artist of the Great Reconnaissance: John C. Tidball and the 35th Parallel Pacific Railroad Survey*. William Goetzmann's *Exploration and Empire: The Explorer and the Scientists in the Winning of the American West* provides some scientific specificity—a singular emphasis as many of the secondary accounts of this and the other surveys have been undertaken through that history of art (for example, most fruitfully in Edward Wallace's 1955 *The Great Reconnaissance: Soldiers, Artists, and Scientists on the Frontier, 1848-1861*). Art historian Dan Flores and historian Ron Tyler's separate publications on earlier expeditions and surveys provide an adequate framework in which to organize, understand, and explore the science of the surveys and to determine how closely it is related to the art of the surveys.¹⁸ Art from the surveys fit into the larger collection of art and natural history as examined in Ann Shelby Blum's *Picturing Nature: American Nineteenth-Century Zoology*.

From the Mountains of the Moon to the Mountains of Madness

American science, art, and literature did not develop separately from one another during the nineteenth century; neither is that influence unidirectional nor does it end at some arbitrary point in history. The scientific theories which led to the eventual *U.S. Ex. Ex.* may have been erroneous but they produced *real* results. They were also part of the culture in a way that historians of science have only just begun to explore. While dismissed as pseudoscience or

¹⁸ Specifically, see Dan Flores, *Southern Counterpart to Lewis and Clark: The Freeman and Custis Expedition of 1806* and Ron Tyler, *The Big Bend: A History of the Last Texas Frontier*. Broader histories of expeditions in the American West include Herman Viola's *Exploring the West* and Goetzmann's *Army Exploration in the American West 1803-1863*.

insanity today, the Hollow Earth theory and the *U.S. Ex. Ex.* were so engrained in the antebellum citizenry's imagination and consciousness that Thoreau mentions them both in the conclusion to his 1854 novel *Walden*, if only to say, in true American transcendentalist fashion, that the exploration of the hollowness within ourselves would be more useful than the physical enterprise. He then rhetorically asks what the use might be of the "South-Sea Exploring Expedition."¹⁹

This connection is what produced a willing consumer base for exploration literature that flooded the country following the end of the Civil War, while not a new commodity, it was one that would be finally acknowledged by industrious publishers in the period of 1835-1855, as they exerted themselves in developing the consumer market.

The Pacific Railroad Surveys were ultimately undertaken for private industry and the advancement of trade and country, but they, too, produced tangible specimens and scientific and artistic data. Taken together, both the *U.S. Ex. Ex.* and the Pacific Railroad Surveys produced enough physical scientific material to force the hand of those planning a national museum to organize the Smithsonian Institution as a collection of artifacts instead of a research and research publication institution.²⁰ The physical products of these expeditions (which are still housed in Washington D.C.) and many other smaller museums' artifacts were traded throughout the country and serve as tangible representations of that which would be categorized in various ways

¹⁹ Thoreau's concluding question "What does Africa—what does the West stand for?" compares the American West with that of the European explorations of the "Dark Continent." He then lists famous expedition leaders Mungo Park, Lewis and Clark, and Frobisher as evidence of far reaching physical exploration in order to express that a greater outcome would come from the personal exploration that is introspection. Henry David Thoreau, *Walden, or Life in the Woods*. Peter Pauper Press, Mount Vernon New York, 1966, pp. 305-306.

²⁰ For an early history of the Smithsonian see Heather Ewing's *The Lost World of James Smithson: Science, Revolution, and the Birth of the Smithsonian*.

as American Science, and in other ways as being universal, or international, or derivative of scope, depending on the objective and toward which this knowledge was deployed.

The expeditions' less physical legacies, especially that of the *U.S. Ex. Ex.*, are evident in the literature, and popular culture of the antebellum period through today. Both the impetus and the outcome of the *U.S. Ex. Ex.* sparked early American conversations about science, exploration, and understanding of place. American writers of this period took these conversations and ideas and shaped them into what we would call science fiction. A hollow earth lies at the heart of many of nineteenth centuries' most popular adventure stories, both American and British. Many stories from authors such as Arthur Conan Doyle and Edgar Rice Burroughs presume theories such as those of Symmes' Hollow Earth are true. Doyle's *The Lost World* and Burroughs' Pellucidar series are examples. Poe more specifically kept his finger and pen on the pulse of scientific development in America. He was accused of being the hoaxer in the early days of *The Sun's* Moon Hoax and provided satirical social commentary about science in stories such as "Some Words with a Mummy" and "The Gold-Bug."

The Narrative of Arthur Gordon Pym on Nantucket, the only novel written by Edgar Allan Poe, is also relevant. *Pym* references Symmes' Hollow Earth theory as it was adapted by Reynolds and was published the same year that the *U.S. Ex. Ex.* sailed from New York with plans to explore the South Pole among other charges. One chapter includes a long excerpt from Reynolds' 1836 "Address, on the Subject of a Surveying and Exploring Expedition to the Pacific Ocean and the South Seas." The work became influential for Melville and Jules Verne. According to Frederick Paul Walter, Verne became obsessed with Poe's *Pym* and its abrupt ending. Verne's polar exploration adventure story *The Sphinx of the Ice Realm* was a direct

follow-up to Poe. When it was published in 1897 it was dedicated “To the Memory of Edgar Allan Poe” and “To my friends in America.”²¹

A full century after *The Sun* spuriously reported Herschel’s “discovery” of life on the lunar surface an American author related the tale of a geological expedition to the South Pole. H.P. Lovecraft’s 1936 *To the Mountains of Madness* continued the tradition of published journal fiction from Poe’s own moon story *The Unparalleled Adventure of One Hans Pfaall* published in June 1835 in the *Southern Literary Messenger*, (a story which is referenced in Jules Verne’s *From the Earth to the Moon*). Poe later published a scientific report hoax of his own in the very same newspaper that ran the Moon Hoax, but by 1844 fewer people were taken in by Poe’s “Balloon-Hoax,” which by 1913 when Doyle published his short story *The Horror of the Heights* in *The Strand Magazine* such tales were fully contained within the realm of fiction and were not in any way construed to have been true or based on any facts or reality whatsoever. They were, however, still based in science fact, which is what made the fictional seem more real. This verisimilitude is a particular convention of H.G. Wells’ stories, and used to great effect, as when he refers to one scientific organization or another.

To the Mountains of Madness takes the journal genre a step further than Doyle’s ill-fated pilot. Throughout the tale geologist William Dyer recounts previously unknown and terrifying events as a warning to prevent further exploration of the Antarctic continent. While the main antagonists in Lovecraft’s work are beyond imagination and description the settings and the science—hieroglyphics, geologic formations and ages, and evolutionary biology—are all well known, if not fully understood by the public at large. This is no coincidence or mere catering to

²¹ Frederick Paul Walker translated and edited Verne’s *The Sphinx of the Ice Realm* in 2012 and published it with the full text of Poe’s *The Narrative of Arthur Gordon Pym on Nantucket*, including notes on translating Verne and Poe’s influence on the French author.

what was popular. According to letters collected and edited by Lovecraft biographer S.T. Joshi, Lovecraft mentions the first expeditions of Richard E. Byrd several times while Bill Manhire's *The Wide White Page: Writers Imagine Antarctica* indicates that the doomed Miskatonic University expedition was modeled on Byrd's.²²

Lovecraft's work, like that of Verne a generation before, was influenced greatly by Poe's *Pym*. Lovecraft cites *Pym* twice and wrote to a friend that he was trying to achieve a similar effect with his ending as Poe had done with his own work. Literary critic William Fulwiler suggests that Lovecraft was inspired by Burrough's first installment of the Pellucidar series *At the Earth's Core* (1914). Fulwiler points out that both stories involve vivisection of humans by nonhuman scientists and involve radical new geological drilling techniques.²³ Whether *Earth's Core* was instrumental to Lovecraft or not, it is evident that both stories share a common ancestor from the early nineteenth century with Poe's *Pym* and by extension the Hollow Earth Theory and Reynolds subsequent successful push for a polar expedition.

These works, from the *Sun* hoax regarding life on the moon to the mysteries found on the isolated and inhospitable Antarctic continent or inside a hollow earth share the same themes, if not tones, of wonder, horror, and adventure as they continue to drive the content of modern popular books, comics, film, and television. They are relics of early American science and scientific reporting within the pages of books and newspapers that began circulating at an unprecedented rate in the 1830s. The same push to know, experience, and tame more of the world that led to the *U.S. Ex. Ex.* and the Pacific Railroad surveys, as well as numerous other surveys, before the Civil War drove the quest for knowledge at the popular level. Following the

²² In addition to the *Annotated Lovecraft* Joshi has published *A Dreamer and a Visionary: H.P. Lovecraft in His Time*.

²³ William Fulwiler, "E.R.B. and H.P.L.," *Black Forbidden Things*, p 64

end of the war, the increased pace of Westward Expansion, mapping, and exploration, American science found not only a primed audience waiting to know and discover the wonders of the continent, but also a government filled with two generations of representatives who had absorbed antebellum culture through art and literature, and who were willing to continue funding American field sciences at the federal level.

Selected Bibliography

- Bellion, Wendy. *Citizen Spectator: Art, Illusion, and Visual Perception in Early National America*. 2012.
- Bruce, Robert. *The Launching of Modern American Science, 1846-1876*. Cornell University Press, 1988.
- Cook, James W. *The Arts of Deception: Playing with Fraud in the Age of Barnum*. Cambridge, Mass: Harvard University Press, 2001.
- Ewing, Heather P. *The Lost World of James Smithson*. 2008.
- Ferber, Linda S. and the New-York Historical Society. *The Hudson River School: Nature and the American Vision*. New York: Skira Rizzoli, 2009.
- Goetzmann, William H. *Exploration and Empire: The Explorer and the Scientist in the Winning of the American West*. New York: Vintage books, 1966.
- Goetzmann, William H. *Army Exploration in the American West, 1803-1863*. New Haven: Yale University Press, 1959.
- Goodman, Matthew. *The Sun and the Moon The Remarkable True Account of Hoaxers, Showmen, Dueling Journalists, and Lunar Man-Bats in Nineteenth-Century New York*. Basic Books, 2010.
- Harrison, Henry Leslie. *The Temple and the Forum: The American Museum and Cultural Authority in Hawthorne, Melville, Stowe, and Whitman*. Tuscaloosa: University of Alabama Press, 2007.
- Irmscher, Christoph. *The Poetics of Natural History: From John Bartram to William James*. New Brunswick, NJ: Rutgers University Press, 1999.
- Lehuu, Isabelle. *Carnival on the Page: Popular Print Media in Antebellum America*. Chapel Hill: University of North Carolina Press, 2000.
- Levine, Lawrence W. *Highbrow/Lowbrow: The Emergence of Cultural Hierarchy in America*. Cambridge, Mass: Harvard University Press, 1990.
- Mihm, Stephen. *A Nation of Counterfeiters: Capitalists, Con Men, and the Making of the United States*. 2007.
- Novak, Barbara. *American Painting of the Nineteenth Century: Realism, Idealism, and the American Experience*. Oxford: Oxford University Press, 2007.

- Novak, Barbara. *Nature and Culture: American Landscape and Painting, 1825-1875*. New York, NY: Oxford University Press, 2007.
- Novak, Barbara. *Voyages of the Self: Pairs, Parallels, and Patterns in American Art and Literature*. Oxford: Oxford University Press, 2007.
- Pandora, Katherine. "Popular Science in National & Transnational Perspective: Suggestions from the American Context," *Isis*, 2009, 100:346-358
- Reynolds, David S. *Beneath the American Renaissance: The Subversive Imagination in the Age of Emerson and Melville*. New York: Knopf, 1988.
- Richardson, Brian William. *Longitude and Empire: How Captain Cook's Voyages Changed the World*. Vancouver: UBC Press, 2005.
- Sachs, Aaron. *The Humboldt Current: Nineteenth-Century Exploration and the Roots of American Environmentalism*. New York: Viking, 2006.
- Sears, John F. *Sacred Places: American Tourist Attractions in the Nineteenth Century*. New York: Oxford University Press, 1989.
- Streeby, Shelley. *American Sensations: Class, Empire, and the Production of Popular Culture*. Berkeley: University of California Press, 2002.
- Tompkins, Jane P. *Sensational Designs: The Cultural Work of American Fiction, 1790-1860*. New York: Oxford University Press, 1985.
- Valenčius, Conevery Bolton. *The Lost History of the New Madrid Earthquakes*. 2013.
- Valenčius, Conevery Bolton, David Spanagel, Emily Pawley, Sara Stidstone Gronim, and Paul Lucier, "Science in Early America: Print Culture and the Sciences of Territoriality," *Journal of the Early Republic*, 2016, 36: 73-123
- Viola, Herman J. *Exploring the West*. Washington, D.C.: Smithsonian Books, 1987.
- Wallace, Edward S. *The Great Reconnaissance; Soldiers, Artists, and Scientists on the Frontier, 1848-1861*. Boston: Little, Brown, 1955.
- Walls, Laura Dassow. *The Passage to Cosmos: Alexander Von Humboldt and the Shaping of America*. Chicago: The University of Chicago Press, 2009.
- Walsh, Lynda. *Sins against Science: The Scientific Media Hoaxes of Poe, Twain, and Others*. Albany: State University of New York Press, 2006.
- Welch, Margaret. *The Book of Nature: Natural History in the United States, 1825-1875*. Boston: Northeastern University Press, 1998.

Zboray, Ronald J. *A Fictive People: Antebellum Economic Development and the American Reading Public*. 1993.