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EXHIBIT REVIEW


HOWARD P. SEGAL

*The Great American Hall of Wonders* was a bold and imaginative effort to illuminate nineteenth-century American society, culture, and values. It attempted to make some original connections among art, science, and technology as well as to revive some ideas about these that are familiar to American historians of technology but not to the general public (http://americanart.si.edu/exhibitions/archive/2011/wonders). Presented by the Smithsonian American Art Museum, the exhibition did not travel to any other museum.

Organized by guest curator Claire Perry, the exhibition featured 161 objects arranged within six sections. Those on the buffalo, California’s giant sequoia trees, and Niagara Falls explored nineteenth-century Americans’ core belief in the abundance of natural resources for “fueling the nation’s progress,” as Perry put it. The other sections—on clocks, guns, and railroads—examined the technological advances that linked the growing nation not just in terms of space but also in terms of “the purposeful use of time.”¹ However, the six sections repeatedly morphed together as objects from one area were connected to objects in another. Sometimes visitors seemed confused, but more often they appeared to appreciate those connections.

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Visitors were greeted at the exhibition’s entrance by Charles Willson Peale’s famous self-portrait *The Artist in His Museum* (1822), commemorating his eighty-first birthday (fig. 1). Peale enjoyed a multifaceted career as a pioneering museum founder, artist, scientist, and inventor. His lifesize painting shows him formally dressed at the opening of his Philadelphia Museum, welcoming visitors by lifting a heavy red curtain that reveals walls lined with hundreds of glass cases containing countless stuffed birds. Beyond the birds, visitors wander about portraits of the founding fathers, natural history specimens, mechanical inventions, and the skeleton of a huge mastodon that Peale discovered in 1801 in a New York State farmer’s bog. Also on display, Peale’s painting *Exhumation of the Mastodon* (1806–08) depicts a worker in the bog’s watery pit lifting up the exhumation’s first find, a large bone; Peale stands nearby.

*The Great American Hall of Wonders* explored the period from 1826, when former presidents Thomas Jefferson and John Adams both died, until 1876, when Philadelphia’s Centennial Exposition—the nation’s first official world’s fair—drew huge crowds. The Centennial Exposition is best remembered for the gigantic Corliss steam engine in the Machinery Building that, once switched on by President Ulysses Grant, powered the building’s other machines. A print of that huge steam engine and a Currier and Ives lithograph, *The Progress of the Century: The Lightning Steam Press, the Electric Telegraph, the Locomotive, the Steamboat* (1876) were among the many artistic works portraying the era’s technological inventions included in the exhibition.

Also examined was the widespread nineteenth-century notion that Americans, according to a museum press release, “shared a special genius for innovation.” Ordinary and famous citizens alike engaged in scientific discoveries, mechanical inventions, and artistic creations that sought to expand the greatness of America as its founding fathers and mothers passed away. The nineteenth-century citizens interpreted in the exhibition believed in the “transformative power of American inventiveness.” This was a period when new scientific expeditions, mechanical devices, and paintings of landscapes and of scenes of daily life were heralded.\(^2\) Yet many Americans before the Civil War worried that they and successive generations could not sustain the founders’ extraordinary leadership. Peale fought against those anxieties and emphasized the crucial role of invention.\(^3\) He considered displaying the embalmed corpses of some of the founding fathers in his Philadelphia Museum, but eventually decided against that.

 Appropriately, *The Great American Hall of Wonders* was cosponsored by the United States Patent and Trademark Office. Beyond the importance

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\(^2\) For an excellent broader context for the exhibition, the foremost mainstream history of early- and mid-nineteenth-century America is Daniel Walker Howe’s Pulitzer Prize–winning *What Hath God Wrought*.

\(^3\) Perry, *The Great American Hall of Wonders*, x–xi.
FIG. 1 The opening section of the exhibition featured Charles Willson Peale’s self-portrait, *The Artist in His Museum* (1822). The painting depicts the eighty-one-year-old artist posing in his museum that occupied the second floor of Independence Hall in Philadelphia in the early nineteenth century. (Source: Courtesy Smithsonian American Art Museum.)
of patents granted by the federal government as early as 1790, the building that opened in 1968 as the Smithsonian Art Museum was, from 1840 to 1932, the Patent Office’s very home. Using drawings and small-scale models, inventors had to demonstrate their projects’ originality and utility. By the 1850s this so-called “temple of invention” attracted over 100,000 visitors annually. Included in the exhibition was Theodore Davis’s wood engraving on paper of Patent Office, Washington, D.C.—Examiners at Work (1869), portraying visitors eagerly opening cabinet drawers and poring over drawings and models, demonstrating popular excitement about the possibilities of invention in nineteenth-century America. (Source: Courtesy National Portrait Gallery, Smithsonian Institution.)

FIG. 2 Theodore R. Davis’s wood engraving on paper, Patent Office, Washington, D.C.—Examiners at Work (1869), portrays visitors eagerly opening cabinet drawers and poring over drawings and models, demonstrating popular excitement about the possibilities of invention in nineteenth-century America. (Source: Courtesy National Portrait Gallery, Smithsonian Institution.)

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The exhibition’s wide range of objects included paintings, sketches,

4. Ibid., xi.
lithographs, and wood engravings by such famous artists as John James Audubon (a cardinal, 1811); George Catlin (Buffalo Bull, Grazing on the Prairie, 1832–33, Buffalo Herds Crossing the Upper Missouri, 1832, Catlin the Artist Shooting Buffalos in Texas with Colt’s Revolving Pistol, 1855); and Thomas Eakins (Perspective of a Lathe, 1860). These works of art were juxtaposed throughout with inventions such as two clocks by Eli Terry (around 1814 and 1825) and Thomas Edison’s 1880 electric lamp, as well as engineering diagrams and models such as James Kearney’s “Drawing for Patent Application for Robert Fulton’s Atmospheric Steamboat Engine” (1809), Ross Winans’s “Patent Model of Locomotive” (1837), and Albert Bierstadt’s photo of his patent application for an “Expanding Railway Car” (1896). “Prototype for Canvas Stretcher Telegraph Receiver” and “Port-rule Telegraph Transmitter” were both created in 1837 by Samuel F. B. Morse, who turned to invention after ceasing a financially unsuccessful artistic career. Also on view were botanical and zoological books and prints, including Louis Agassiz’s Principles of Zoology (1851) and Eadweard Muybridge’s 1887 collotype of Buffalo; Galloping, one of his famous studies of animals in motion.

Nearly all of these objects were accompanied by excellent labels that identified the artifacts and their creators (when known), and also placed them in broader historical contexts. (Margaret Knight’s “Patent Model of Machine for Making Paper Bags” [1879], however, cried out for more than her dates and places of birth and death, as an application from a woman at a time when this was still rare.) The texts, moreover, were succinct and readily digestible by most visitors. They often prompted people to take a second look at the objects on display. Still, as museum director Elizabeth Broun conceded, the exhibition initially appeared “to take a vagabond’s route through nineteenth-century history” as visitors tried “to discern some linear thread in the tangle of astounding details and rich amazement of the story.” Although Broun asserted that visitors eventually grasped that “the tangle is the story,” the organization into six galleries was disorienting at times.5

Perry’s thematic mix included the expansion of railroads and the manufacture of guns with the decimation of buffalo. Moreover, some persons involved in one endeavor were also involved in another. As Audubon sadly noted as early as 1843, buffalo herds were rapidly diminishing. Bierstadt’s The Last of the Buffalo (1888) confirmed that reality. Interestingly, Peale, who died in 1827, had connected buffalo abundance in his lifetime with democracy.

Winslow Homer’s painting of The Initials (1864) reflected dimensions of the Civil War beyond his The Army of the Potomac: A Sharpshooter on Picket Duty (1862), which depicts a Union sharpshooter perched in a tree,

using a telescopic rifle to try to kill an unsuspecting Confederate. Perry insightfully observes Homer’s apparent revulsion toward his subject by the soldier’s determined stance and demeanor. By contrast, The Initials depicts a tree with crossed swords in the foreground memorializing soldiers killed in perhaps this very forest. An elegantly dressed young woman presses her fingers on unseen initials carved into the bark that may be those of her deceased sweetheart. Her bright clothes with black trim are those of someone, stated Perry’s wall text, in “half-mourning” after a year of wearing black “full-mourning” clothes. The sadness of the war is painfully apparent here. No less important, the woman reading the initials may represent botanists in one of the very few sciences then open to females. The botanist may further represent efforts to protect certain trees threatened by indiscriminate logging, a crusade often led by women. So the painting, claimed Perry, connects war, science, and environmental concerns. But the evidence provided to visitors by the wall text hardly confirmed the last two layers of interpretation.

Meanwhile, Homer’s wood engraving on paper, New England Factory Life—“Bell Time” (1868), showed the regulation of work in contemporary factories by the use of bells. The most famous example was Lowell, Massachusetts. Yet by 1868 the workforce had almost completely changed: the native-born Lowell mill girls who had been working only a year or two to acquire a dowry or to assist their families had been largely replaced by a permanent group of predominantly male workers—though also some impoverished women—nearly all of them recent immigrants, unlike the original Lowell mill girls (who were the subject of enormous attention by newspaper and magazine writers both at home and abroad). Perry’s text did not mention the outdatedness of Homer’s work. The curator also failed to point out those bells’ pioneering role in making native-born and immigrant workers alike subservient to factory managers and company owners. As might also have been mentioned in the wall text, this anticipated the later stopwatch motion experiments of scientific management’s Frederick Winslow Taylor.

Among the exhibition’s revelations was Drawing for Patent Application for Abraham Lincoln’s Device, Manner of Buoying Vessels over Shoals (1849). Young Lincoln worked on a flatbed vessel in Illinois that was hard to maneuver in shallow waters; his invention of a set of large bellows proposed to solve the problem. Although the actual model is at the Smithsonian’s National Museum of American History, this partial substitute provided another connection not widely appreciated by the general public. Indeed, as president, Lincoln spent much time investigating technologies to improve the Union’s chances for victory.

The exhibition’s most effective combination of art, science, and technology was in the section on Niagara Falls, which featured three paintings—by Alvin Fisher (1820), Hermann Herzog (1872), and George Inness
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(1893)—and a lithograph by Frederic Edwin Church (1857). What was originally depicted as a unique natural wonder eventually also became a source of dreams for capturing waterpower and then hydroelectric power and for propelling America to unprecedented economic success.

To be sure, Peale and Robert Fulton, among others, believed that technology—as in the latter’s steamboat—could promote democracy. Hugo Meier’s classic 1957 article, “Technology and Democracy, 1800–1860,” drew on the enormous research of his unpublished 1950 doctoral dissertation to argue persuasively that technology and democracy were commonly characterized during those years as each enhancing the other. Countless speeches, poems, essays, newspaper editorials, and sermons made those connections, especially at the opening of canals or clipper ship routes and of railroad or telegraph lines.6

At times visitors might have “read” the exhibition as embracing this simplistic “Whig” interpretation of technology in mid-nineteenth-century America. To Perry’s credit, however, the show did not endorse that old-fashioned view. Recall the regimentation of time imposed by clocks as well as by bells; recall, too, white settlers’ destruction of so many Native American lands and peoples, thanks to guns above all. But there was also the destruction of huge areas of land beside new railroad tracks and, there and elsewhere, the elimination of countless forests for lumber and of lands for coal mining. These developments were all a part of the story told in The Great American Hall of Wonders.

The exhibition reminded me of the scholarly debates generated by Leo Marx’s classic argument in The Machine in the Garden (1964) that there was a permanent post–Civil War conflict between nature and technology. Some objects on display did depict such a conflict, as with Arthur Fitzwilliam Tait’s painting On the Warpath (1851) and William Tylee Ranney’s 1850 lithograph The Trapper’s Last Shot against approaching hostile Native Americans. By contrast, George Inness’s The Lackawanna Valley (1856) embraced the railroad as it extended the nation’s “civilized landscape.” His Niagara (1893) did the same for hydroelectric power. Both paintings support the important corrective of Marx’s book by his prize student David Nye in the latter’s America As Second Creation (2003), pointing to many Americans’ ambivalence about the relationship between nature and technology in the mid-1800s. In a similar vein, Robert Duncanson’s Landscape with Rainbow (1859)—which concludes the exhibition—demonstrated the growing commitment of painters to capture accurately not only natural beauty but also various weather phenomena such as unusual wind, cloud, and atmospheric developments.

The exhibition took a somewhat romanticized view of public investment in invention, ignoring the George Washington administration’s re-

fusal to heed Treasury secretary Alexander Hamilton’s plea for a national “industrial policy” and specifically for federal investment in manufacturing facilities, beginning in New Jersey. Hamilton and his supporters lost out to Thomas Jefferson and the Jeffersonians’ aversion to large-scale industrialization in the fledgling nation. Equally important, the exhibition gives the somewhat false impression that most of the scientific, technological, and economic enterprises it covers came from large-scale collective endeavors, when they more often derived from individual or small group efforts. The alleged pervasiveness of “collaborative imagining of enduring solutions”—Perry’s words from the exhibition’s opening area—to various challenges was hardly that extensive.

Equally important, the exhibition might have explored the topic captured by the subtitle of Robert Rydell and Rob Kroes’s 2005 study Buffalo Bill in Bologna: The Americanization of the World, 1869–1922. The authors argue that mass culture emerged in the United States before the Civil War—much sooner than previous scholars have contended—and that its impact on Europe after the Civil War was in turn considerably earlier than commonly recognized. One need not accept Rydell and Kroes’s wholly negative interpretation of America’s cultural export to Europe—its cultural imperialism—to appreciate from the exhibition the likely sources of that familiar contempt for Native Americans, for non-Caucasians, and for opponents of overseas expansion and “progress.” Nevertheless, the exhibition was infinitely more balanced than those authors’ blanket indictment of America’s eventual production of, to adopt Ronald Reagan’s famous characterization of the Soviet Union, an “evil empire.”

Scholars of American technology, science, and art would likely have been familiar with many of the objects and with their historical contexts, though no visitor could possibly have anticipated the rich array of objects that Perry obtained, juxtaposed, and wrote about. Experts in each of these fields might have faulted Perry for some of her more speculative interpretations. Not a few scholars, moreover, might take issue with Perry’s repeated use of “wonder” as the almost unique bedrock characteristic of the “American experience” in this period and ask if these Americans’ ancestors and descendants alike did not often manifest their own respective sense(s) of “wonder.” Yet the exhibition surely educated most visitors, including scholars, about nineteenth-century America in new ways. Overall, then, The Great American Hall of Wonders was a remarkable display. I regret that it did not enjoy a more extended showing and a showing in other museums.

7. Ironically, in the Foreword to Perry’s catalog (viii), museum director Broun argues that Alexis de Tocqueville was surprised by the absence of governmental units in America, and by Americans’ penchant instead for voluntary associations.
8. Robert Rydell and Rob Kroes, Buffalo Bill in Bologna. Ironically, despite its title, the book does not discuss William F. Cody’s Wild West show until chapter 4, and then for only five lines of text about the eight days in Bologna.
Fortunately, Perry’s accompanying catalog is a wonderful book that does far more than reproduce images of the objects and their accompanying wall texts. Handsomely designed, beautifully illustrated, eloquently written, and richly detailed, the catalog is a significant volume in itself, with analysis and notes that go well beyond the exhibition, especially in establishing connections among the six sections and the objects within them. For example, in the catalog but not in the exhibition, Perry extrapolates from Church’s large painting of Niagara Falls—which, being unavailable, was replaced by a less-inspiring lithograph—to the country’s growing divisions as civil war became possible.

Likewise, her interpretation of Duncanson’s painting *Landscape with Rainbow* (1859) suggests the lasting value of this publication (fig. 3). Duncanson showed, in Perry’s words, “a sunlit meadow in a broad valley,” with trees, cattle grazing, children gazing at the rainbow, and smoke from the chimney of “a humble cabin nestled in the woods.” It is an idyllic setting suggesting “the promise of the valley, as well as the fleeting nature of such a scene in the enterprising United States.” The nation was steadily moving from wilderness to settlement. Perry stresses the growth of meteorology as a science pursued by ever more citizens. She connects the keen interest in weather forecasting that inevitably followed with Americans’ belief in their ability to predict as well the nation’s rosy future. Although

she provided little evidence for this point, it has been established by other scholars. It is hardly accidental that Perry’s catalog cites an 1861 Cincinnati newspaper article characterizing Duncanson as an inventor—he having “invented himself.”10 For Duncanson was an African-American artist for whom most doors were initially closed but whose popular landscapes eventually made him an exception.

Occasionally, in her understandable desire to delve beneath the surface, Perry makes claims with little evidence in the catalog or in the exhibition. But in general, she has provided a valuable resource with this publication. In addition, googling the website provides, for now at least, a nearly hour-long YouTube American Art Museum lecture by Perry, several shorter C-SPAN/C3 History videos, and, perhaps most important, Perry’s eight podcasts of varying length covering her six basic topics plus an introduction and conclusion. May these various post-exhibition features remain available for many years to come. And may they be viewed and heard by many other historians of technology.

Bibliography


10. Ibid., 189.