8 The Human Spirit in an Age of Machines

The *Pietà* and the Computer at the 1964–1965 New York World's Fair

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IN "THE DYNAMO AND THE VIRGIN," Henry Adams (1838–1918), American historian and descendant of two presidents, reflected upon representations of faith and technology at the Paris Universal Exposition of 1900. While fascinated by it all, he was deeply concerned about the impact of the Machine Age on the human spirit. A half-century later, at the 1964–1965 New York World's Fair, his ambivalent views still reverberated. This chapter opens by spotlighting two of the fair's most popular attractions: the Vatican Pavilion's exhibit of Michelangelo's *Pietà* and the IBM Pavilion's display of their latest mainframe computers. Both pavilions had a Cold War subtext. Triangulated with these is the display of the Programma 101, a computer of revolutionary design out of the research labs of Olivetti, the Italian office machine manufacturer, standing for what can be described as an anti–Cold War ideology. Comparing these disparate displays of art, design, and technology reveals a growing unease with the relationship between spiritual values and the machine during the tumultuous 1960s.

PRELUDE: PARIS 1900

"UNTIL the Great Exposition closed its doors in November, Adams haunted it, aching to absorb knowledge, and helpless to find it," wrote Henry Adams

about his repeated visits to the Paris Exposition of 1900. His reflections appear in "The Dynamo and the Virgin," a chapter in his posthumous autobiography.[1] Adams pondered the social and cultural implications of the Machine Age. He fretted about what he saw as a clash between the culture of modern science and technology—the "Dynamo"—and religion and traditional values—the "Virgin."

Despite his faith in technological progress, a faith common to many intellectuals rooted in the nineteenth century, Adams feared his fellow citizens were naively embracing new technology at the cost of traditional human values. His musings were sparked by a visit to the Hall of Electrical Machines, in which he focused on one of the forty-foot dynamos. He fixated particularly on its "huge wheel, revolving within arm's-length at some vertiginous speed" while emitting hardly a sound. He found in its workings an unfathomable, but alluring mystery. To Adams it was the incarnation of modernity and symbol of the "revolution of 1900"—interwoven revolutions in science and technology known collectively as the Second Industrial Revolution, ushering in Machine Age technologies and, most importantly, a new age of electricity.

And then there was the art. Adams contrasted the dynamo with the figure of the Virgin he encountered in the fair's acclaimed art pavilions. He interpreted the Virgin as Western art's animating force, symbolizing at once religious tradition and transcendent female power, comparable to that of the Roman goddess Venus. Looking to the future, he asked if the god of technology, the dynamo's apotheosis, was on the verge of replacing the "Church and the Cross." Referring to himself in the third person, Adams wrote: "As he grew accustomed to the great gallery of machines, he began to feel the forty-foot dynamos as a moral force, much as the early Christians felt the Cross. . . . Before the end, one began to pray to it."[2] Indeed, Adams later did pray to it, composing an ambivalent poetic tribute, "Prayer to the Dynamo": "Mysterious Power! Gentle Friend! Despotic Master! Tireless Force!"[3]

Even as he was awed by the dynamo, the historian admitted to a longing for the solace of tradition, security, and unity of medieval society and the Church. Turning away from the Virgin distressed him: he feared it portended the end of the great artistic traditions that had been propelled by the power of Christian belief, "the highest energy ever known to man," surpassing even the steam engine and the dynamo. Yet rather than completely rejecting the dynamo, Adams espoused a compromise concept—a hybrid dynamo-Virgin, which he dubbed the "animated dynamo."

He drew a pointed contrast between Europeans and Americans. In Europe, he contended, the force of the Virgin was "still felt at Lourdes, and seemed to be as potent as X-rays," but "in America neither Venus nor Virgin ever had value as force."[4] Despite a personal religious skepticism, he lamented that his countrymen were apparently throwing in their lot with the machine-worshippers,

reinforcing a long-held European criticism of America as a machine-obsessed, soulless society. This raised for him an unavoidable question for the dawning century: Will the human spirit survive the new age of the Machine?

NEW YORK WORLD'S FAIR OF 1964–1965

A half-century later at the 1964 New York World's Fair, Adams's disquieting question indeed resonated. The fair's relentless technological optimism tended to elide such questions, but ultimately they could not be denied. Like the 1900 Paris Exposition, the New York World's Fair opened during a period of disruptive technological change—the postwar technological boom ushering in new materials, miracle drugs, atomic power, and space exploration. Advertising slogans such as GE's "Progress is our most important product" and DuPont's "Better things for better living . . . through chemistry" expressed the era's faith in technological progress.[5] Two of the fair's biggest hits were General Motors' "Futurama II" and GE's Progressland, orchestrated by Disney Imagineering.

Yet by the mid-1960s there were signs of trouble in "Progressland." The heating up of the Cold War during the Cuban Missile Crisis, military escalation in Vietnam, civil rights conflicts in New York and other American cities, and an emergent environmental movement fed growing skepticism of the progress myth among contemporary thinkers. Reflecting darkly on the dropping of the atomic bomb, the Cold War, the Vietnam War, and the social eruptions of the 1960s, the American culture and technology historian Lewis Mumford introduced the specter of the "megamachine"—the moral equivalent of Henry Adams's dynamo—in his two-volume *The Myth of the Machine*: "I shall usually refer to the 'megamachine': in plain words, the Big Machine."[6] Transcending technology, the megamachine denoted techno-science, regimented labor, militarized society, authoritarian control, and subordination of the human to "megatechnics." The Cold War marked its apogee: "For twenty years after the atom bomb was dropped only two modern military megamachines came into existence—those of the United States and Soviet Russia."[7] By the 1960s Mumford famously began to echo the countercultural rhetoric of the time, particularly among American youth. The historian Joseph Tirella writes that the "more politically savvy" among the fair's young visitors "felt that the Tomorrow-Land world of the Fair, no matter how noble its intentions, was a technological chimera bought and paid for by the political and corporate elites who had waged the Cold War, had their finger on the A-bomb, [and] had resisted civil rights for millions."[8] The struggle between humanistic tradition and technological modernity that Henry Adams envisaged seemed to be coming to pass. The stage was set for another encounter between the Dynamo and the Virgin.

THE *PIETÀ* IN NEW YORK

Influenced by New York's politically connected Cardinal Francis Spellman, Pope John XXIII agreed in 1962 to send to the fair the Vatican's preeminent masterpiece: Michelangelo's *Pietà*, depicting the Virgin cradling the body of her son after his Crucifixion.

Sculpted from a single block of Carrara marble, the *Pietà* (1498–1499) expressed both deep Italian tradition and the power of Christian piety. Yet, ironically, in New York it took on the trappings of cutting-edge technology. Encounters with modern technology began even before it left Rome. Radiologists from Eastman Kodak were dispatched to X-ray it for internal flaws that might cause it to fracture during transport (none was found). The Vatican engaged American shipping executives to manage the sculpture's transportation to New York. A test-run across the Atlantic with a replica showed it could be shipped safely. The original was soon loaded aboard the *Cristoforo Colombo*, encased in two embedded crates and cushioned with the latest scientific materials. According to the Vatican Pavilion's *Guide*, the brilliantly colored case, painted so as to be highly visible in the water, "traveled lashed to steel deck shoes [and] steel guy wires equipped with hydrostatic releases able to free the entire package from its confining cables, should it sink below the surface of the sea, held the *Pieta* case to its deck fittings." If the worst came to pass, "a signaling light buoy [was] placed nearby so that if the necessity arose it would signal over the international radio distress the location of the Pieta."[9] It safely reached its destination in the Vatican Pavilion on April 16, 1964.

Once in place, every effort was made to create a contemplative atmosphere for experiencing the sculpture within the pavilion's inner sanctum. Maintaining that solemnity, however, turned out to be no easy task. The official *Guide* told visitors what to expect in the Vatican Pavilion: "Sorrowful Mother holding the Body of Christ at the Foot of the Cross in a setting by Jo Mielziner."[10] Joseph Mielziner, then Broadway's leading set designer, posed the sculpture dramatically against a royal blue curtain. Votive candles were simulated with hundreds of flickering blue lights forming a halo around the sculpture, according to reports in the *New York Times*, making it seem to float eerily in a blue grotto. Gregorian chants droned in the background. An adjacent chapel offered a space for quiet meditation—and perhaps a welcome refuge from the technical paraphernalia and sound effects enveloping the sculpture.

Some visitors complained of trouble penetrating the layers of technological security to appreciate the sculpture itself. Surrounded by an elaborate system of advanced security sensors, alarms, and atmospheric light displays, it was for all intents and purposes encased in a technological cage. A floor to ceiling bulletproof barrier, made up of seven sheets of Plexiglas at seven hundred pounds

Fig. 8.1. Paul VI, who became pope in 1963, views a model of the *Pietà* with JFK, Cold War president. *Source*: Edward J. Orth Memorial Archives of the World's Fair, Archives Center, National Museum of American History, Smithsonian Institution.

apiece, separated visitors from the masterpiece.[11] News reports highlighted the "speed-walk" that moved crowds at a steady pace by the display. The elaborate people-conveyor ran on three levels, providing visitors with unobstructed views, each track moving at a different speed. In the rear was a stationary platform for those desiring more time to contemplate the masterpiece. Reaction was predictably mixed. Fifty years after visiting the fair at age sixteen, Charles McGrath recalled: "I stood in line forever at the Vatican Pavilion to get on a conveyor belt that slowly, boringly, inched past Michelangelo's Pietà, sequestered behind a Plexiglas screen about a hundred yards away." But, George Campbell remembered visiting as a fourteen-year-old: "The Pietà, in its simplicity, and its starkness, I don't think I have ever seen anything as powerful. . . . The more I saw it, the more I was amazed at the number of people who came off that line in absolute tears."[12]

More than 27 million visitors viewed the *Pietà*, the second most popular attraction at the New York World's Fair, surpassed only by GM's "Futurama II." Touted as the fair's "crown jewel," it was more popular than that other expo hit, Disney's "audio-animatronic" Abraham Lincoln, with features fashioned from Abe's death mask and capable of 250,000 combinations of motions.[13]

We might easily wonder if the fair was transforming not only a revered president but also the *Pietà* into a machine of sorts. Was this a sign of Adams's Vir-

gin yielding to the Dynamo, the latter now morphing into a robotic Abe Lincoln along with other animated figures concocted by Disney for the GE Pavilion's "Carousel of Progress"? With its moving sidewalk, the *Pietà* emulated Disney theme-rides sponsored by GM at Flushing Meadow. At the very least, the varied progeny of Adams's Dynamo at the fair were giving Michelangelo and Mielziner a run for their money, perhaps even co-opting the Vatican's overproduced sculpture.

More to the point, at midcentury could this latter-day embodiment of Adams's Virgin compete with the Dynamo in its evolving forms? The theme of the Vatican Pavilion was "The Church Is Christ Living in the World" and its goal was to foster "a deeper understanding of the Church as Christ living in the world, and, through this understanding, to bring men to that peace which He alone can give Who is called the Prince of Peace." It thus affirmed the New York World's Fair's theme of "Peace through Understanding." At the time of the fair, the need for peaceful understanding could not have been more urgent. Even as the fair was being planned, the Cuban Missile Crisis threatened nuclear catastrophe and the US–Soviet space race heightened Cold War tensions that had begun with the 1957 launch of Sputnik. The lack of a Russian pavilion prevented a replay of the US–Soviet confrontation at Brussels 1958. In fact the absence of such a major player amplified the effect of the blockbuster *Pietà* display.[14] Nevertheless, did the Virgin have the power to curb the destructive potential of modern technology?

Despite the perilous international scene, the New York World's Fair famously projected a sunny future of technological progress. Only the Vatican Pavilion seemed out of step. It was unabashedly religious and, to some, antimodern. In addition to the *Pietà*, "The Hand of God," "The Prophecies," and "The Annunciation" were typical exhibition sections. Other major areas included "The Church Loving," "The Church Sanctifying," and "The Church Teaching."[15] The historian Lawrence Samuel noted that some American Catholic clerics, often finding themselves at odds with Rome, criticized the pavilion and the *Pietà* display as backward-looking, a throwback to Old World Catholicism. "[I can] only question the wisdom that has made a Renaissance work of art the central attraction in a pavilion that should show a contemporary church looking toward the future," opined Reverend Gregory Smith.[16]

Amid the fair's technological ebullience, we might ask why Vatican planners assumed this conservative religious stance. Aside from respecting tradition, there was another obvious motivation: at a time of overwhelming nuclear fear, they wanted to pull the world back from the nuclear brink toward a more human-centered and spiritual perspective—not a denial of technology, to be sure, but certainly a call for reflection and introspection. As emphasized elsewhere in this volume in chapters by Robert Kargon and Mary Ann Borden, the

fair organizer Robert Moses supported a strong faith presence at the fair for just these reasons. The Vatican Pavilion may not have been so much looking away from the future as trying to increase the odds for having any future at all. When Pope Paul VI visited New York to see the Vatican Pavilion, he made no secret of his opposition to the Cold War and to the American-led war in Vietnam. In blessing the fair's visitors, he hailed the "religious convictions" embodied in Michelangelo's masterpiece, adding that "We feel these same religious convictions can move men in a similar way to seek peace and harmony among the peoples of the world."[17]

Would the *Pietà* have been more effective without its protective technological cocoon? Surely Henry Adams would have been appalled by its shackled presentation. One of the most powerful and emotionally charged masterpieces of the Renaissance undoubtedly relinquished some of its spiritual power, if not its dignity, by being so displayed (think of the *Mona Lisa* at the Louvre today, obscurely displayed behind a heavy layer of bullet-proof glass). Less the image of the goddess, it became an indefinable hybrid of Renaissance art and midcentury modern technology. The power of advanced technology to transmogrify the sacred could perhaps be seen as a victory of the Dynamo over the Goddess. Adams could not have known how prescient he was in calling the Virgin the "animated dynamo."

The computer was about to become the next embodiment of the Dynamo and agent of transformation.

THE IBM PAVILION

Like "Futurama I" at New York 1939, GM's "Futurama II" created a sensation. But the IBM Pavilion was arguably even more spectacular. There is no question that the computer emerged as one of the fair's technological stars. By the 1960s the future looked like it belonged to the computer, with IBM in the vanguard. The space programs in the United States and the USSR were as dependent on computers as on rocket engines.

Designed by Eero Saarinen and Charles Eames, the pavilion spread over 1.2 acres of Flushing Meadow. It featured a grove of thirty-two-foot-tall steel trees under a canopy of fiberglass leaves—advertised as a place for quiet reflection, a place to "Think," echoing the motto of IBM president Thomas J. Watson Sr.

The pavilion's most talked-about feature was a ninety-foot-high ovoid theater, popularly known as the Egg, hovering overhead. Covered with thousands of raised images of the IBM logo, it simulated a gigantic typing ball of the IBM Selectric typewriter, an overnight sensation when it was launched in 1961. In the grove beneath up to five hundred visitors at a time boarded the "People Wall," a huge grandstand hydraulically lifted into a multiscreen theater. There they viewed a multimedia presentation by Charles and Ray Eames called "Informa-

Fig. 8.2. IBM Pavilion: The "Egg." Courtesy of IBM Archives.

tion Machine," which "puts you in the mind of a racing car driver going 120 miles an hour. You will explore the mysteries of a woman's mind as she plans the seating of a dinner party. Don't be surprised if your *own* mind expands a bit, as you see how a computer uses your own everyday way of reasoning to solve some of the universe's most mystifying riddles."[18]

Exhibits in the IBM Grove invited visitors to interact with mainframe computers to retrieve headlines from selected dates in history, to learn about concepts of probability and averages, and to play with programs of handwriting recognition. A major attraction that was soon to become famous in its own right was Eames's exhibition "Mathematica: A World of Numbers . . . and Beyond." Fairgoers also watched puppet shows that "encouraged visitors to believe that computers were friendly, logical devices."[19] Mindful that the public was still unfamiliar with and not a little intimidated by computers, the designers of the IBM Pavilion employed show-biz flair to convince visitors that the company's machines were people-friendly, not the Orwellian monsters that some warned would outsmart and dominate human beings. But visitors showed they were not ready to befriend the computer—not just yet. They tended to avoid the automated information stations, preferring to pose questions to real people in information booths.[20]

Still, IBM was the most famous computer maker in the world. By the mid-1950s its brand had become synonymous with Cold War computing. This was largely by dint of its collaboration with MIT in developing the first real-time

air defense system, known as SAGE (Semi-Automatic Ground Environment).[21] Seeking to win the massive government project for IBM, Thomas Watson Jr. persuaded Thomas Sr., IBM president, that it would propel the company into the lead market position it would indeed soon occupy in the era of the computer. In the 1950s SAGE was said to be the world's largest computer project. The digital system designed to detect and intercept incoming Soviet missiles was fully deployed in 1963, just a year before the opening of the New York World's Fair. IBM had become a major player in the US military-industrial complex. This fact was not lost at Olivetti headquarters in Ivrea, Italy.

PROGRAMMA 101

By all accounts a spectacular introduction to the computer revolution, IBM's pavilion made a worldwide splash. Yet, opening at a nearby venue was a small subdued computer display—no more than a booth—offering a revolutionary alternative to IBM. Italy's Olivetti was launching its Programma 101, "recognized as the world's first desktop computer commercially produced."[22] The case for the historic claim is not cut and dried, in part because of a stratagem adopted by its company engineers to conceal its revolutionary characteristics from General Electric, as explained below. But at the very least it is fair to say that the new machine was the seedling of the process that would eventually disrupt IBM's whole mainframe business.

It was nicknamed the "Perottina," after Pier Giorgio Perotto, Olivetti's chief of research and leader of the special team that developed the experimental computer. Olivetti's machine debuted in New York City—but not at the New York World's Fair as widely assumed. Italy in fact did not participate in the fair, which was not sanctioned by the BIE because of Robert Moses's defiance of key provisions, such as barring host countries from charging rental fees to other participating nations. No doubt Olivetti would have preferred to introduce its revolutionary device at the fair, but they did the next best thing. They entered it into the annual Business Equipment Manufacturers Association (BEMA) trade show, which overlapped with the last week of the world's fair at a nearby venue, the New York Coliseum.

It was the success and fame of the IBM Pavilion at the New York World's Fair that spurred Olivetti to mount a product challenge against the dominant IBM. In taking on the US computer giant, Olivetti trumpeted the virtues of its much smaller, user-friendly, democratic line of machines.

The roots of Programma 101 lie in historical contingency. Olivetti was one of the major companies fueling Italy's postwar economic boom, the "economic miracle." Headquartered in the Olivetti family's hometown of Ivrea, near Turin, it enjoyed a global reputation for finely made typewriters, calculators, and other business products. It was famous above all for its stable of top industrial design-

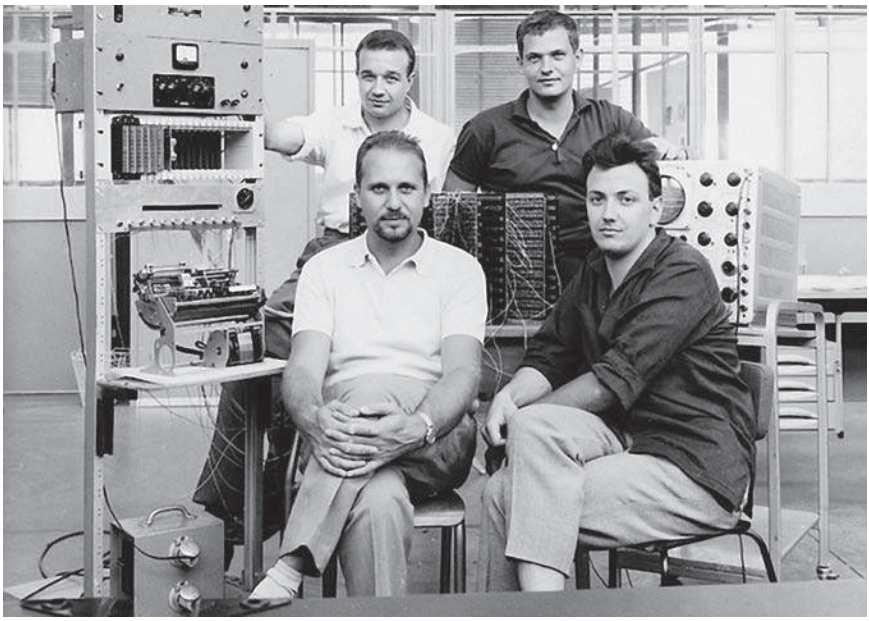

Fig. 8.3. Programma 101 team: Front row (*left to right*): Pier Giorgio Perotto, Giovanni De Sandre; back row: Gastone Garziera, Giancarlo Toppi, in front of their P101 prototype, left. *Source*: Gastone Garziera, Giovanni De Sandre, Wikimedia Commons.

ers: Marcello Nizzoli, Mario Bellini, and Ettore Sottsass, the "Godfather of Italian cool." Olivetti machines and designers are justly celebrated in museums around the world, including New York's Museum of Modern Art.[23]

Ironically, in 1959 Olivetti manufactured Italy's first mainframe electronic computer, the Elia 9003. But in 1964 the company sold off its electronics division to General Electric—because of financial exigency it was stated—and pulled out of the computer field. Yet Olivetti engineers had been working quietly for several years on the Programma 101. Perotto contrived to save the project from going to GE by labeling it a "calculator" rather than "computer." His team produced a remarkable machine that was nonetheless a computer, a triumph of miniaturization, elegantly packaged by the renowned architect and industrial designer Mario Bellini. In the end the Programma 101 is probably best described as a transitional machine: more than a programmable adding machine, but not quite a modern PC. It was nevertheless a big idea and a thrust into the future of computing, heralding today's post-mainframe era. It opened up a new world of small computers for use in schools, offices, homes and other spaces where mainframes couldn't fit.[24]

Completing it just in time to catch the tail end of the New York World's Fair, Perotto and company marketers seized the opportunity to bring the new inven-

tion to BEMA. They initially feared that the futuristic device was too far ahead of its time and hedged their bets by spotlighting instead the Logos 27, the latest in their line of mechanical calculators. Totally contrary to their expectations, Perotto's machine became an instant hit—a surprise that emboldened Olivetti to hasten its commercial launch.[25] At $3200 it was a steal compared to a mainframe and sales took off.

The Programma 101 represented more than a feat of technical ingenuity. While the then–company president Roberto Olivetti initiated its development, the Programma 101 bore the philosophical stamp of Roberto's charismatic father and former company president, Adriano, who had just died in 1960. Asserting that industrial society was in crisis and that machines threatened to dominate mankind, Adriano had sought to build an organic, holistic relationship between society, technology, and modern industry. After the defeat of Fascism in the Second World War, he had published a plan for the regeneration of Italy, developed during his wartime exile in Switzerland. Founded upon a sweeping philosophical vision, it was his utopian dream. A communitarian idealist, he reimagined Italy as a federation of Christian democratic communities. Born of this vision were his ideas of a "New Man" and a "resurrected" Italy—and, as midwife to both, a radical new technology. An engineer fascinated by the arts and human-centered design, Olivetti wrote that science and technology should never be "separable from ethical ends, since it is clear that, when this last is lacking, science and technique submit man to the dominion of the machine which he is no longer able to control, and which might lead civilization toward its own auto-destruction."[26] Olivetti's machines were essentially an extension of his political-cultural agenda, serving as the communications network for his utopian community.

Even as they confronted the immense technical problems of reimagining the computer, team Perotto imbibed Adriano's philosophy, aiming for a machine that was aesthetic and accessible to all people, rather than just to technical and corporate elites. In publicizing their product in New York in 1965, they contrasted it to IBM's mainframe goliaths, which only the privileged could understand and operate, leaving ordinary humans in fear of even touching them.[27] "At the time, the computer was something which seemed guarded by priests" (perhaps like the *Piet*à at the world's fair?), recalled one of the original P101 team, Gastone Gardiera. "Going into a computer room was just like entering a hospital. Everyone would be wearing white coats," said fellow team member, Giovanni de Sandre. The Programma 101 (P101), insisted its inventors, would arm the common man against the tyranny of the machine, against corporate power and domination.[28] Olivetti's publicity prefigured a famous advertisement that Apple produced twenty years later for the launch of the Macintosh at the

1984 Super Bowl, a spectacle showing enslaved technical workers smashing Big Brother in mid-harangue on a gigantic TV screen.

No wonder a mythology has gathered around the little device promoted as the world's first PC. As mentioned, folklore has it that it was introduced at the New York World's Fair, not BEMA—a widespread misconception that P101 pioneer De Sandre has no problem understanding: "I accept with benevolence the historic license by the young directors [of a P101 documentary widely seen on the Internet]; to my knowledge there was no documentation available about BEMA and the association of P101 with the great technological exposition of the time (even though arbitrary) is not inconsistent and yields a flavor of fantastic vision of the future capabilities of man."[29]

The myth also involves Cold War geopolitics. Rumor has it that the machine's near-death experience when Olivetti sold off the company's electronics division to GE was not a matter of financial exigency but actually a political hit-job.[30] In the 1960s the Italian Communist Party was the strongest in Western Europe. Legend has it that the company was forced out of the computer business by a cabal of politically conservative leaders of major Italian industrial firms, who distrusted the left-leaning Olivetti's community movement as being borderline Communistic. Said to be in league with the Italian government, they feared the radical industrialist was working too closely with the Soviets, and might conspire to pass on to them the company's advanced numerical control (digital) technology, thereby posing an imminent Communist threat to national security. A recent fictionalized miniseries on Italian TV, *Adriano Olivetti: The Power of a Dream*, brings espionage and the US Secret Service into the conspiracy. The US agency was allegedly worried about his possible Communist connections and the way he thumbed his nose at the US mainframe computer industry.[31] The film even raises the prospect of foul play around Adriano's "mysterious" death of a heart attack in 1960 when he was still in his prime. A tantalizing Cold War thriller, but one that must be left for another day.

CONCLUSION

At the Paris Exposition of 1900 Henry Adams foresaw a twilight struggle between the Dynamo, standing for the forces of scientific and technological modernity, and the Virgin, symbolizing tradition, humane values, faith, and art. He predicted the dynamo would likely prevail. The consequences of the Second Industrial Revolution were still playing out at the time of the New York World's Fair. The extraordinary popularity at the fair of the *Pietà* testified to the enduring power of the Virgin. Yet, as has been argued here, the sculpture had begun to blend in with the modern world of technology. The popularity of the IBM Pavilion seemed to reinforce Adams's belief that the forces of the Second Industrial

Revolution were unstoppable. Yet when Programma 101 unexpectedly appeared in New York, it was as if IBM had conjured up its own antithesis, a machine embodying Adriano Olivetti's spiritual ideals. A half-century after Henry Adams warned of an impending clash between technology and humanism, Olivetti aimed to show that it was possible to endow technology with a soul.