From Technophilia to Technophobia: The Impact of the Vietnam War on the Reception of “Art and Technology”

Anne Collins Goodyear

Technology is not art—not invention. It is a simultaneous hope and hoax…. Technology is what we do to the Black Panthers and the Vietnamese under the guise of advancement in a materialistic theology.

—Richard Serra [1]

In September 1970 artist James Turrell made a prophetic remark about Maurice Tuchman’s “Art and Technology” exhibition at the Los Angeles County Museum of Art:

You could make this thing [“Art and Technology”] historically significant if you want(ed) to. I have the feeling that whatever is happening here is a symptom of something that’s going on—but I think—I hope—it’s going to be vastly overshadowed by the thrust of things going on independently [2].

As Turrell intuited, the “Art and Technology” exhibition was the product and the victim of a confluence of social, economic and political factors that initially inspired, and ultimately curtailed, widespread support for projects linking art, science and technology during the late 1960s and early 1970s [3]. A close study of Tuchman’s exhibition, planned and executed between 1967 and 1971, suggests larger lessons for interpreting the growth and demise of a cluster of similar projects, demonstrating in particular the role played by the Vietnam War in undermining collaborations between the “two cultures” [4].

TECHNOPHILIA AND AMERICAN ART OF THE 1960S

If the Vietnam War was to undermine in the early 1970s a major art project embracing technology, it is worth observing that only a few years earlier the political climate of the Cold War had encouraged an outlook better described as “technophilic” on the part of many American artists, curators and critics. The launch of Sputnik by the Soviet Union in 1957 created a climate favorable to art projects embracing new science and technology. In response to the perceived Soviet threat, American education emphasized science and technology, while influential theorists such as C.F. Snow, Reyner Banham and Marshall McLuhan stressed the need for interconnection between art, science and technology [5]. In 1967, engineer Billy Klüver, co-founder of Experiments in Art and Technology (E.A.T.), argued that “the new interface between artists and engineers…has not developed only out of the historical relationship between art and technology. It has rather been born out of the direction and the nature of contemporary art itself” [6]. Klüver’s observation fits with responses by artists Dan Flavin, Robert Morris and Allan Kaprow to a 1966 questionnaire circulated by art historian and critic Barbara Rose to assess the “Sensibility of the Sixties.” Dan Flavin reported that “it would not surprise me to see the evolution of a type of scientist-artist, or engineer-artist” [7]. Robert Morris affirmed: “Some kind of center is needed. . . . Even with a few machines for working plastics and metal the artists themselves could experiment. Since this doesn’t happen in industry it would undoubtedly lead to new ways of working materials” [8]. Allan Kaprow, who harbored his own plans to form such an “experimental research” center for the arts, observed:

Although there is good work being done in the conventional arts—painting, sculpture, music, dance, poetry, etc.—the newest energies are gathering in the cross-overs, the areas of impurity, the blurs which remain after the usual boundaries have been erased. This zone is increasingly referred to as the “intermedia,” Dick Higgins’ term for the media between the media [9].

Such opinions were consistent with viewpoints expressed by several pop artists earlier in the decade. As James Rosenquist observed, “Doing a painting now seem[s] very old-fashioned” [10]. Roy Lichtenstein asserted: “I think the meaning of my work is that it’s industrial, it’s what all the world will soon become” [11]. Warhol claimed that “everybody should be a machine” and later came to refer to his “studio” as “The Factory” [12].

The drive to combine art with new technology inspired numerous exhibitions. These included: The Machine as Seen and Noted, held with Some More Beginnings, at the Museum of Art in 1968, held with Some More Beginnings, at the National Portrait Gallery, Smithsonian Institution, PO Box 37012, Victor Building–Suite 4100 MRC 973, Washington, D.C. 20013-7012, U.S.A. E-mail: <GoodyearA@si.edu>.
The exhibition, originally projected for 1970, was intended to showcase the first results of an ongoing series of collaborations structured by Tuchman. In launching his program, Tuchman aimed high, securing the participation of internationally renowned artists such as Andy Warhol, Robert Rauschenberg, Claes Oldenburg and Richard Serra [19]. Employing commercial techniques of his own, Tuchman created an incentive. Corporations who joined the venture agreed to allow a particular artist, with needs that matched the company’s strengths, to work at its facilities in exchange for publicity from the museum and the opportunity to acquire an artwork “issuing from the collaboration” [20].

New to the city, Tuchman had reason to believe that this undertaking would not only complement the futuristic setting of Los Angeles but would also enhance the museum’s financial and cultural standing. As critic Peter Plagens observed, the exhibition catalogue for the show, A Report on the Art and Technology Program of the Los Angeles County Museum of Art, 1967–1971, “is not so much the narrative of a completed project, but an interim report on a hoped-for ongoing metamorphosis of modern art, centered in Los Angeles” [21].

The ambitious aims of the exhibition were buoyed by the opportunity to participate in the American Pavilion, sponsored by the United States Information Agency (USIA), at Expo ’70 in Osaka. The decision of the USIA to focus on “topics dealing with Science, Technology, and the Arts” made selections from Tuchman’s “Art and Technology” exhibition an ideal choice and also suggested that Tuchman had correctly read prevailing climate of the society. Pragmatically, “A&T” could be interpreted as embodying [President Nixon’s] “bring us together” philosophy [24].
partnerships from industrial sponsors of the exhibition. Despite high hopes, many collaborations had dissolved due to mutual misunderstandings. John Chamberlain, for example, who undertook a residency at the RAND Corporation to create a conceptual work consisting of “answers,” encountered resistance from employees who supplied the following material: “There is only one answer: You have a beautiful sense of color and a warped, trashy idea of what beauty and talent is”; “The answer is to terminate Chamberlain” [27].

Even artists who worked successfully with their corporate sponsors voiced unforeseen concerns about the pairing of art with industrial technology. R.B. Kitaj, whose time at Lockheed led to the fabrication of simulated artifacts from the Industrial Revolution as well as sculptures using airplane parts, despaired that “over the last fifty years, these art and science people only manage light jabs and then seem to wither … while an immense technology remains … progressive, destructive, what have you” [28]. Despite Kitaj’s prolific output, the attitude toward the collaboration reflected in the comments of Robert Robillard, manager of industrial design at Lockheed, suggests the artist’s concerns may not have been misplaced. “I had a call from one of the other companies participating in the project who said they were tearing their hair out,” recounted Robillard. “I told them they should just cooperate with [the artist] and get him out of there as fast as possible” [29]. Kitaj’s increasing pessimism about the implications of technology was matched by Richard Serra, who completed a sculpture project with Kaiser Steel, but insisted on distinguishing “art” from “technology.” “Technology is not art—not invention,” asserted Serra. “It is a simultaneous hope and hoax. . . . Technology is what we do to the Black Panthers and the Vietnamese under the guise of advancement in a materialistic theology” [30].

This is not to say that “Art and Technology” generated only animosity between participating artists, engineers and scientists, although even Robert Rauschenberg, a co-founder of E.A.T., acknowledged problems encountered by artists exposed to the “skepticism [and] patronizing” of “middle-management” [31]. In some cases, such as those of Rauschenberg and Claes Oldenburg, industrial partnerships ultimately provided artists with vital technical support and productively challenged their collaborators. Rauschenberg felt that his work with Teledyne, which led to the sputtering and splashing of Mud Muse, enabled him to demonstrate the playful and sensual qualities of technology [32]. Lewis Ellmore, the engineer assigned to work with him, found his interaction with the artist, whose interactive art intrigued him, both stimulating and enjoyable [33]. After Oldenburg’s collaboration with Walt Disney Productions disintegrated, he established a successful relationship with Krotz Enterprises, a theatrical animation company, which published an article on the mechanical innovations in his Icebag [34].

For other artists, collaborations established by “Art and Technology” provided new means of thinking about art-making. Robert Irwin (whose collaborator, James Turrell, dropped out of the exhibition) established a long-term working partnership with physicist Ed Wozz of the Garrett Corporation, and Newton Harrison credited the exhibition with encouraging him to work collaboratively and to pursue scientific questions through artistic channels with his wife, Helen [35].

Despite such successes, however, a serious blow to the show was dealt by shifting political and social circumstances that exacerbated differences between counter-culture artists and the “establishment”-oriented corporations that controlled the technologies to which the artists sought access. Increasingly, artists and critics came to identify the perils of new technology with the companies that developed and deployed it, making collaborations between art and industry untenable.

Much of the commentary about the show, whether by Tuchman or critics including David Antin, Jack Burnham, Amy Goldin and Max Kozloff, referred to its timing, signaling a palpable shift in sentiment from one of embrace to one of rejection of industrial technology [36]. As Jack Burnham reported in his review: If presented five years ago, A&T would have been difficult to refute as an important event, posing some hard questions about the future of art. Given the effects of a Republican recession, the role of large industry as an intransigent beneficiary of an even more intractable federal government, and the fatal environmental effects of most of our technologies, few people are going to be seduced by three months of industry-sponsored art—no matter how laudable the initial motivation [37].

He also confirmed that “Art and Technology” would not be an ongoing project [39].

Perhaps more than any other factor, the Vietnam War and related tragedies eroded support for “Art and Technology.” Tuchman’s observation that the war “undermined [the exhibition] almost month to month” is born out by events [40]. When the show opened in May 1971, on the heels of a major anti-war demonstration staged the previous month in Washington, D.C., the American public had been largely polarized by the pivotal events of the Tet Offensive, the My Lai massacre, the American invasion of Cambodia and the killings at Kent State [41]. As Todd Gitlin has noted, by 1971 the anti-war movement had spread to the military itself, leading to an orchestrated protest at 19 bases just 5 days after the opening of the exhibition [42]. The publication of the Pentagon Papers, leaked by Daniel Ellsberg, a former supporter of the war, the following month, in June 1971, further inflamed public opinion, contributing to at least one critic’s negative reception of the exhibition, which was on view through August [43].

Of particular concern to several critics of “Art and Technology” was the association of many of the participating companies with the war effort. Several, including the Jet Propulsion Laboratory, the RAND Corporation, and Teledyne, Inc., were connected with the aerospace

“I told them they should just cooperate with [the artist] and get him out of there as fast as possible.”
industry, leading Max Kozloff to characterize the corporate partners Tuchman had solicited as “a rogue’s gallery of the violence industries” [44]. Amy Goldin insisted that artists could not divorces themselves from the sociopolitical environment in which they worked, writing: “Making art is not simply esthetic behavior. It is bound into the social system in very specific ways. Ways that affect the kinds of meaning it makes available. Art plays its own part in our ecology—whether we like it or not” [45]. Although then became untenable. It is worth noting, by contrast, that just 3 years earlier the British organizers of Cybernetic Serendipity, a show that traveled to the United States in 1969, were able to solicit, without criticism, the support of several sponsors—including the U.S. Air Force research lab—that would contribute to the war effort [48].

Major exhibitions showcasing partnerships between art and new technology came to a dramatic halt in the wake of “Art and Technology.” Indeed, as Charlie Gere has observed, with the exception of video, very little attention was directed to technologically oriented artwork by British and American museums and galleries during the 1970s and into the 1980s [49]. Such technophobia also impacted the historical record. Aside from a few studies published by enthusiasts in the early 1970s, the dynamic engagement by American artists with new technology and science during the late 1960s has been largely overlooked by scholars [50]. Fortunately, this is now beginning to change [51]. However, a thorough study of the historiography and criticism of the period is still required to discern the impact of sociopolitical events on our understanding not only of Maurice Tuchman’s “Art and Technology,” but of the broader context of “art and technology” collaborations from which it grew. As this essay has attempted to argue, such examination must address not only those forces that gave rise to widespread artistic experimentation with industrial technology during the 1960s but also those that curtailed it.

Acknowledgments

The ideas developed in this essay benefited from presentation at REFRESH: The First International Conference on the Histories of Media Art, Science and Technology, at the Banff New Media Institution, The Banff Centre, Banff, Alberta, Canada, 28 September–1 October 2005. I thank panel chairs Eddie Shanenko and Charlie Gere for their input as well as my fellow panelists and other participants in REFRESH for their interest, in particular Fred Turner. I thank also two anonymous reviewers for their helpful feedback on an earlier version of this essay.

References and Notes


4. The concept of the “two cultures,” referring to the arts and humanities on the one hand and the sciences on the other, was popularized by C.P. Snow, who coined the phrase in The Two Cultures (Cambridge, U.K.: Cambridge Univ. Press, 1993 [1959, part II added 1964]).


8. Robert Morris, Letter to Barbara Rose, 12 August 1966, Papers of Barbara Rose [7].

9. Alan Kaprow, response to questionnaire on “The Sensibility of the 1960s,” ca. Fall 1966, Papers of Barbara Rose [7]. Kaprow’s remarks were cited in a resulting article, Barbara Rose and Irving Sandler, “Sensibility of the Sixties,” Art in America 55, No. 1 (January–February 1967) p. 45. In his reply to Rose’s questions about the needs of contemporary sculptors, Otto Piene referred to Allan Kaprow regarding the question of “a center for experimental research in sculpture,” suggesting, “Ask Kaprow (he has been planning one for a long time.)” Otto Piene, Letter to Barbara Rose, 3 July 1966, Papers of Barbara Rose [7].


25. Tuchman intended the diverse appearances of the artists and businessmen to demonstrate that “Artists & Industry” had brought the two groups together (author’s interview with Maurice Tuchman, 2 February 1999), but critics read it as evidence of a division between the parties. (See Max Kozloff, “The Multimillion Dollar Art Boomdoggle,” Artforum 10, No. 2 (October 1971) p. 74.)


29. Robert Rohlillard, quoted in Buhrman [16].

30. Richard Serra, quoted by Scott [1]. Also quoted by Burnham [1].


35. On the conceptual importance of the art and technology movement, see Anne Collins Goodyear, The Relationship of Art to Science and Technology in the United States, 1957–1971, Ph.D. diss., University of Michigan, 2000. I thank Michelle V. Kuo for this reference.


38. Anne Collins Goodyear is assistant curator of Prints and Drawings at the National Portrait Gallery and has a long-standing interest in the relationship between art, science and technology. She is co-curator of the upcoming National Portrait Gallery exhibition “Inventing Marcel Duchamp: The Dynamics of Portraiture” and co-editor of the accompanying exhibition catalogue.
A WORD OF THANKS

Thanks to Our Supporters

Leonardo/ISAST is a nonprofit organization that serves the international arts community by documenting work at the intersection of the arts, sciences and technology and by encouraging and stimulating collaboration through its programs and activities. Donations and grants are integral to the future of Leonardo.

Contact <isast@leonardo.info> or visit <http://leonardo.info> for more information.

Leonardo Codex

($3,000 and above)
The California Tamarack Foundation
College of Extended Learning
San Francisco State University
CRSS Architects
The Ford Foundation
Interval Research Corporation
Roger Malina
The Malina Trust
Sonya Rapoport
The Malina Trust
Tom Smith
U.S. National Endowment for the Arts
Al Smith
Interval Research Corporation
The Ford Foundation
CRSS Architects
Michele Emmer
Una Dora Copley
Richard Clar
James D. Burke
Anna Campbell Bliss
(Mona Lisa)
La Gioconda
($300 to $499)
(Mona Lisa)
La Gioconda
($300 to $499)

Flying Machine
($250 to $499)
Loren Basch
Ray Bradbury
Betina Berendel
David Carrier
Holly Crawford
Engene Epstein
Lawrence Fane
Herbert Franke
Dorothy Garland
Pamela Grant-Ryan
Oliver Grau
Linda Dalrymple Henderson
Robert Hill
Curtis Karnow
Melinda Klayman
Kathleen Lazzia
Thomas Mercier
Frieder Nake
Barbara Nessim
Jack Ox
Ed Payne and Liss Fain
Nancy Perlof
Frank Popper
Harry Rand
Bevlel Reiser
Mark Resch
Eric Roll
Edward Shanken
Leonard Shlain
Marcia Tanner
Jesse Tischler
Joan Truemback
Jonathan Willard
Barbara Lee Williams
Richard A. Wilson
Stephen Wilson
Gary Zellerbach

Angel
($250 and under)
Anonymous
Aaron Alpar

Charles Ames
Craig Anderson
Michael Joopin Grey
Raymond Kacy
Larry Larson
Lynn Horak-Leezen
Guy Leveir
Jacques Mandelbrot
Isabel Maxwell
Merrill Lynch Foundation
Emmanuel Nadler
Nessun & Associates
Sam Okoshien
Steve Oeschwitz
Trudy Reagan
David Rosenboom
Jack Sarrariti
Joel Silverman
Christian Simm
Tami Tecter
Meredith Troumble

Robert Kadesch
Marshall Kaplan
Ken Knowlton
Zdenek Kocih
Kenji Kohiyama
Thomas Kottkamp
Kathleen Lazina
Levi Family Foundation
Frederick Loonnis
Carl Machover
William Marchant
Delle Maxwell
Eliot Mazer
Kevin Meleen
Minnesota College
of Art & Design
Mit Mitropoulos
Moet Hennessey
Louis Vuitton
Jason Monberg
Roger Mulkey
Geetha Naravanan
Alex Nicolloff
Greg Nieneyer
Hiroshi Ninomiya
Elaine Petschek
Anne Brooks Pfister
Glenn R. Phillips
Victor A. Pickett
Otto Piene
Ann Pizzorusso
Herbert & Joan
Webster Price
Patrie: Prince
Wolf Rainer
Peter Richards
Ron Rocco
Peter Rudolfi
David M. Russell
Mr. and Mrs.
Robert Russett
Colin Sanderson
Piero Scaruffi
Patricia Search
Allan Shields
Gregory C. Shubin
Joel Slaton
John Slog
Avril Sokolov
Kirill Sokolov
Christo Sommerer
Rejane Spitz
Anat Stephens
Robert Struzich
The Sun Microsystems
Foundation, Inc.
Tamiko Thiel
Rodrigo B. Toledo
Heinz Trauthroth
Mark Tribe
Karen Tse
Roman Verostko
Alexandre Vitzine
Natalie & Mark Whitson
Alan Thompson & Sharon A.
Widmayer
Ioannis Vossos
Robert Zimmerman