

Video artist Nam June Paik, who spent time at Bell Labs as an artist-in-residence, already had his answer: “If you are surprised with the result,” he later told an interviewer, “then the machine has composed the piece.”²⁵ Paik and Klüver were already acquainted with each other. The Korean-born artist had even prepared a *Sonata quasi una fantasia for Billie Kluver*, an essay of sorts in which he proposed “some utopian or less utopian ideas and phantasies.” Referencing Klüver’s own professional research, Paik asked, “Can the laser, so-said breakthrough in electronic [sic], become also the breakthrough in art?” After noting that “someday every high-brow will have a laser phone number” that “enables us to communicate with everyone everywhere wirelessly and simultaneously,” Paik advised his friend to “please, tele-fuck!”²⁶

Klüver, inspired by his conversations with Paik and other artists, advised Pierce that computers, lasers, and the like were akin to a “glorious new paint.” Judging what computers and their programmers produced would have to wait until “pre-conceived standards of what we think art is” had time to properly adjust. For the moment, Klüver suggested that “the best definition of what art is is implicit in Marcel Duchamp’s work: A person calls himself an artist. He makes an object which he calls art. Others come and look and agree that the object is art.”²⁷ Klüver’s disinterest in delineating “art” from “technology”—or adjudicating good art from bad—would become central to E.A.T.’s strategy of ignoring aesthetic judgments in favor of supporting the collaborative process itself.

Klüver had continued thinking about the social life of technology and the purported cultural divide between artists and engineers after he started working at Bell Labs. Like many educated people, Klüver followed the debate Snow’s two cultures lecture provoked. “I reacted very strongly against it,” Klüver recalled, “I didn’t feel he had the right to divide society into two separate cultures.” Nonetheless, one important aspect of Snow’s diagnosis resonated strongly with the engineer: “It was his call for action to bridge the gap that I subconsciously agreed with.”²⁸ For Klüver, this translated into getting directly involved with the contemporary art scene around him.

PART OF THE MACHINE

On the evening of Saint Patrick’s Day in 1960, in the Museum of Modern Art’s courtyard some 250 invited guests shuffled their feet in puddles of cold slush while waiting to watch a work of art destroy itself. The artwork in question was Jean Tinguely’s *Homage to New York*, a contraption some twenty-three feet long and twenty-seven feet

high and painted more or less white. One critic described it as an “object of bizarre attraction if not of classical beauty.”²⁹ Less charitable people might have looked at *Homage*, with its bicycle wheels, bottles, and upright piano, and seen the result of an encounter between a hardware store and a landfill. Indeed, many of *Homage*'s parts had come from Lower East Side junk shops and outer borough dumps.

After a long delay, the audience—which included Governor Nelson Rockefeller, a throng of art critics and artists, uptown glitterati, and three television crews—watched *Homage* noisily clank its way toward destruction. The piano mechanically played three forlorn notes. Smoke provided by a mixture of ammonia and titanium tetrachloride placed in a bassinet drifted toward the audience. An overheated resistor lit a candle sitting on the piano's keyboard. A radio turned on and the machine poured some gasoline on itself. A scroll with the words “Yin is Yang” unfurled. The smoke turned yellow and the piano was soon ablaze while artist Robert Breer filmed the damage. A money-throwing machine, concocted by Robert Rauschenberg and primed with gun powder, went off in a flash, scattering silver dollars across the museum's sculpture garden. The piano collapsed, the performance ended, and a few curious guests spirited away bits of *Homage* as souvenirs before its remains were carted back to the dump. Almost all that remained of the event were memories and pictures.³⁰

Klüver joined the *Homage* project after Pontus Hultén told his friend that Tinguely would be having a show in New York. When the engineer met the artist, Tinguely described for Klüver a machine that would destroy itself in front of an audience. Over the next few weeks, Klüver and Tinguely foraged throughout the city for industrial detritus and then assembled *Homage* underneath a geodesic dome in the museum's garden. Tinguely had planned *Homage* as a series of spontaneous events that the machine would carry out. To build electrical circuits that would trigger these actions, Klüver brought in Harold Hodges, a technician from Bell Labs. Hodges had joined the lab in the 1950s, working with physicists on projects such as building lasers and light-emitting diodes. Compared to what Hodges's “day job” required, Tinguely's technical needs were elementary but, as Klüver and he came to appreciate, they still were beyond the scope of the average artist.³¹ To make *Homage*'s piano collapse, for instance, Hodges embedded a resistor in solder material that melted at low temperatures. When Tinguely closed the circuit, the resistor would overheat, which, in Rube Goldberg fashion, would cause the piano's support to give way. That was the plan anyway. During the actual performance, Breer cautiously approached the collapsing contraption and gave it a helping shove. This was all fine to Klüver.

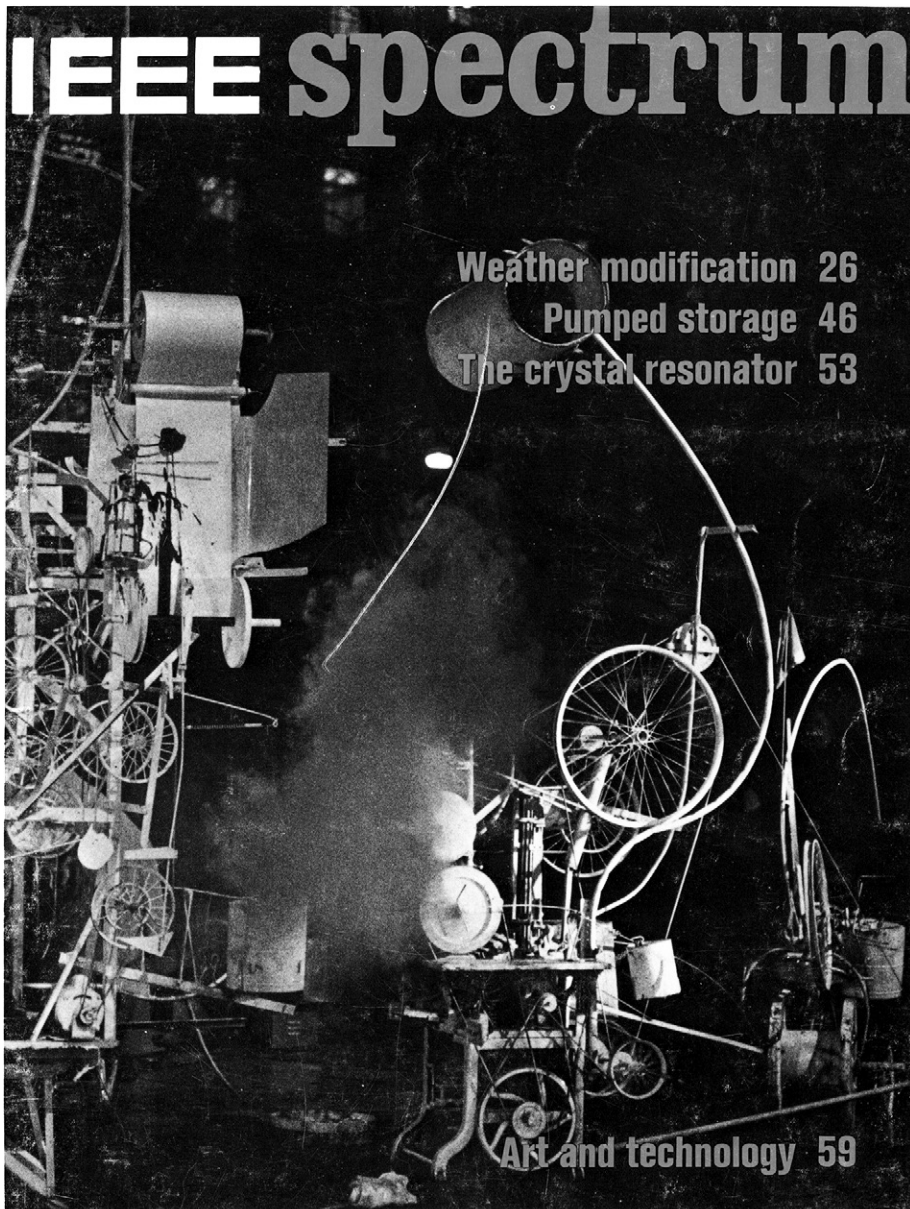


Figure 3.2 Jean Tinguely's *Homage to New York*, made in 1960 with assistance from Klüver, as shown on the April 1969 cover of *IEEE Spectrum*. While the work of art itself was remarkable, just as striking was its appearance on the cover of a magazine read almost exclusively by electrical engineers.

“All good machines destroy themselves,” he told a writer from the *New Yorker*, “the machine doesn’t have to work.”³² Indeed, he would argue, it was through technological failures—such as power blackouts—that people could learn more about the built environment around them.

As articles about *Homage* appeared in city newspapers, Klüver worried that his participation might reflect poorly on Bell Labs. He was, after all, a professional engineer who had helped build a system designed to fail spectacularly. But when he arrived at work the morning after *Homage* fell to pieces, John Pierce only asked why he hadn’t been on the guest list. In any case, John Canaday, a newly hired art critic for the *New York Times*, ignored the engineers’ contributions and focused only on the artist (a pattern that would occur frequently during the art-and-technology wave of the 1960s). Canaday, often critical of the still-central school of New York-based abstract expressionism, was delighted by *Homage*, branding it “a legitimate work of art as social expression.”³³ He also praised Tinguely, whom he portrayed as a descendant of the 1920s Dada movement, for managing to get something so experimental into MoMA’s courtyard in the first place. *Homage* was an “elaborate witticism” that expressed a “gesture of independence against the machines” via a “preoccupation with destruction.”³⁴ Not all critics agreed. At the *Nation*, *Homage* simply was an expression of modern decadence. “A garden party,” their critic lamented, “This is what protest has fallen to in our day.”³⁵

Inspired by the *Nation*’s negative response, Klüver prepared his own essay titled “The Garden Party.” For those people inclined to critique *Homage* on the basis of whether it worked perfectly—and it certainly didn’t—the engineer explained they missed the point. In fact, had it worked properly, *Homage to New York* would merely have reflected the perfection of a “purely technocratic society,” and not the realities of the urban environment. Klüver insisted that just “as a scientific experiment can never fail, this experiment in art could never fail.” In the coming years, Klüver and other participants in the art-and-technology movement often repeated this point of view. After he became the chief spokesperson for E.A.T., Klüver insisted that the essential experiment was collaboration itself and not what resulted from it. In the final analysis, he noted that Tinguely, inspired by the possibilities technology offered, had asked engineers for help in realizing his vision. “As an engineer, working with him,” Klüver concluded, “I was part of the machine.”³⁶

A few months after *Homage*’s self-destruction, Hultén asked Klüver for help recruiting American artists for a new exhibit called (in English) “Art in Motion.”³⁷ The Swedish curator imagined this as a sequel to the 1955 “Le Mouvement” show

Gertner, *The Idea Factory: Bell Labs and the Great Age of American Innovation* (New York: Penguin, 2012).

19. Unfortunately, despite his involvement in several high-profile projects and his fantastically diverse career, the archival record for Pierce is frustratingly scant. A. Michael Noll donated some materials to the Huntington Library which I consulted (JP/HL), and there is a similarly small collection at Stanford University's archive.

20. Undated statement from John R. Pierce, likely mid-1967; Folder 18, Box 4, EAT/GRI; a similar version appears in *E.A.T. News* 1, no. 3 (November 1, 1967); Box 138, EAT/GRI. See also, Jeff Gates, "Computers and Art," *Eye Level* (blog), Smithsonian American Art Museum, March 23, 2015, <https://americanart.si.edu/blog-post/445/computers-and-art>.

21. Kathy Battista, "E.A.T.—The Spirit of Collaboration," in *E.A.T.: Experiments in Art and Technology*, ed. Sabine Breitwieser (Cologne: Walther König, 2016), 9.

22. A recent look at how cosmological research was situated in the context of both corporate as well as national security interests is Kendrick Oliver, "'The Lucky Start Toward Today's Cosmology'? Serendipity, the 'Big Bang' Theory, and the Science of Radio Noise in Cold War America," *Historical Studies in the Natural Sciences* 49, no. 2 (2019): 151–193, doi:10.1525/hsns.2019.49.2.151.

23. J. R. Pierce, "Portrait of the Machine as a Young Artist," *Playboy* 12, no. 6 (June 1965): 148–150, 182, 184.

24. Noll presented his work in a psychological journal as "Human or Machine: A Subjective Comparison of Piet Mondrian's 'Composition with Lines' and a Computer-Generated Picture," *Psychological Record* 16, no. 1 (1966): 1–10, doi:10.1007/BF03393635.

25. Jud Yalkut, "Art and Technology of Nam June Paik," *Arts Magazine*, April 1968, 51.

26. Paik's "sonata" was prepared sometime in 1965; from materials in the Nam June Paik collection (NJK/AAA), published in *We Are in Open Circuits: Writings by Nam June Paik*, ed. John G. Harnhardt, Gregory Zinman, and Edith Decker-Phillips (Cambridge, MA: MIT Press, 2019), 100–114.

27. December 15, 1964 letter from Klüver to Pierce; BK/JM, emphasis in original.

28. Comment from Klüver's personal recollections, circa 2000; BK/CW.

29. John Canaday, "Machine Tries to Die for Its Art," *New York Times*, March 18, 1960, <https://nyti.ms/1XTOTFN>.

30. For full description of *Homage to New York* see MoMA's March 18, 1960 press release, https://www.moma.org/momaorg/shared/pdfs/docs/press_archives/2634/releases/MOMA_1960_0033_27.pdf. A fragment of Tinguely's piece was secured by MoMA staff and later exhibited at the 2017 exhibition *Robert Rauschenberg: Among Friends*.

31. Harold Hodges, interview by Cameron Vanderscoff, November 9, 2014, transcript, Robert Rauschenberg Oral History Project, Columbia Center for Oral History Research, New York, <http://www.rauschenbergfoundation.org/artist/oral-history/harold-hodges>.

32. Billy Klüver, interview by Calvin Tomkins, January 18, 1961, IV. C. 20, CT/MoMA.

33. Canaday, "Machine Tries to Die for Its Art."

34. John Canaday, "Odd Kind of Art," *New York Times*, March 27, 1960, <https://nyti.ms/1PqXAo3>.

35. "Tinguely's Contraption," *Nation*, March 26, 1960, 267.

36. Klüver's essay was reprinted in several places in the 1960s; it first appeared in the short-lived publication *ZERO 1* (1961): 168–171.

37. Hultén's show was billed as *Bewogen Beweging* in Amsterdam and in Stockholm as *Rörelse I Konsten*.

38. See, for example, George Rickey, "The Kinetic International," *Arts Magazine*, September 1961, 16–21.