

BLOWN CIRCUITS

TECHNOLOGY AND IRRATIONALITY IN POSTWAR ART

TINA RIVERS RYAN





FROM OCTOBER
13 TO 23, 1966,
THE CAVERNOUS 69th Regiment Armory in Manhattan—site
of the infamous Armory Show that introduced Americans to modern
art in 1913—hosted a series of events called “9 Evenings: Theatre and
Engineering.”¹ Overseen by Neo-Dada artist Robert Rauschenberg and
Bell Labs engineer Billy Klüver, the programming comprised ten perfor-
mances, each envisioned by a different artist in collaboration with a team
of engineers and staged twice over the course of the nine evenings. A total
audience of ten thousand people—according to critic Brian O’Doherty,
“virtually everyone with a New York Scene label attached”—watched
the events unfold from bleachers on the sidelines.² Thanks in part to its
ambitious scale and large art-world audience, “9 Evenings” is perhaps the
most notable example of the use of contemporary technology in postwar
art, giving rise to the field now known as “new media.”³

On the first and last night of “9 Evenings,” the program included
Grass Field by Alex Hay, an artist associated with both Pop art and the down-
town avant-garde that coalesced around the gallery and performance space
at Judson Memorial Church. The piece began with sixty-four square pieces
of peach cloth, each measuring six by six feet and stenciled with a large
number, set out in two piles in the center of the floor. Hay, wearing a kind
of pajama suit of the same fabric, entered the stage and began to randomly
distribute the squares in the pattern of an eight-by-eight grid. As he walked,
electrodes placed on his head and back transmitted electrical signals to
portable amplifiers in his backpack, which then transformed these signals
into electronic tones that were wirelessly transmitted to nearby loudspeakers,
filling the space with discomfiting noise.

Alternate view of **Alex Hay** *Grass Field*, from “9 Evenings: Theatre and
Engineering,” 69th Regiment Armory, New York, October 1966 (fig. 28)

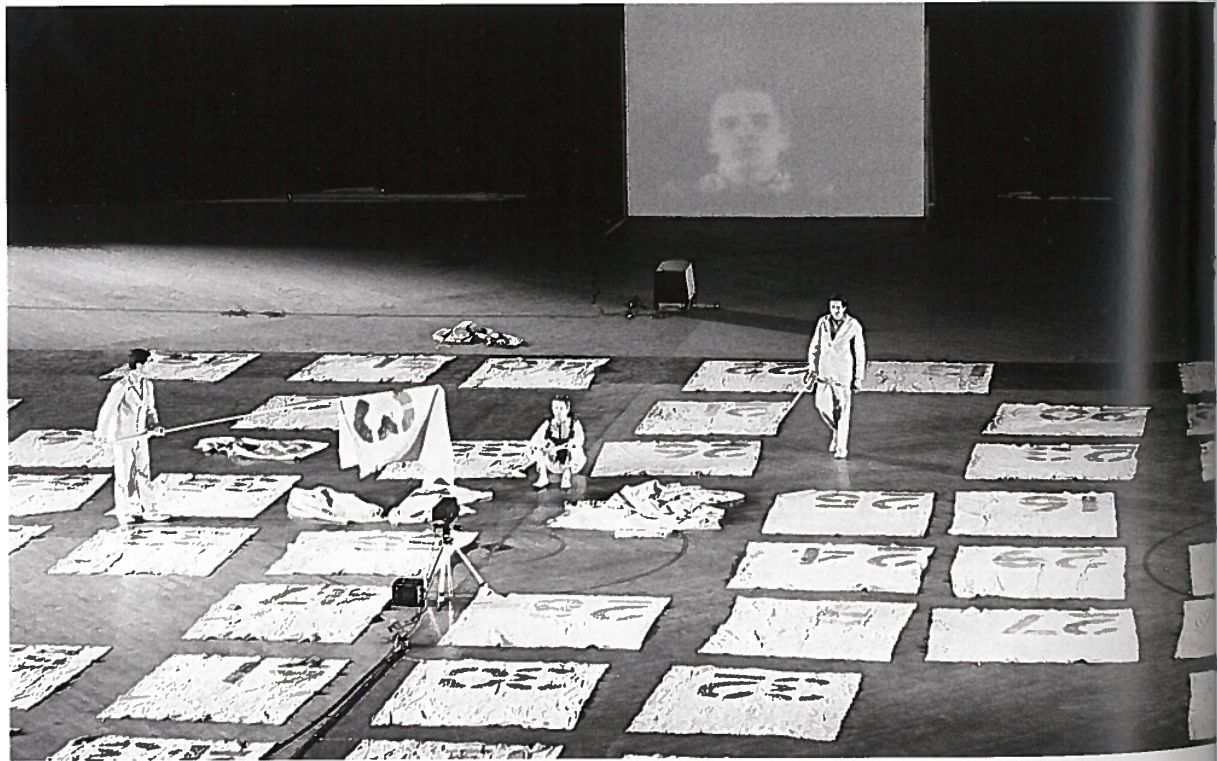
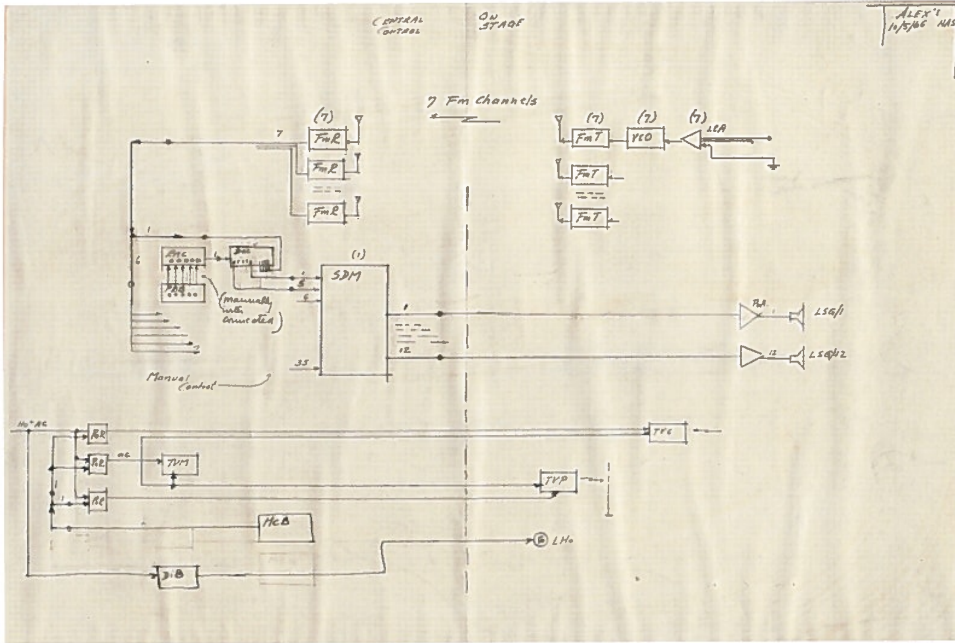


fig. 27 Herb Schneider 9 Evenings Engineer Drawing (Alex's), for Alex Hay's Grass Field, 1966

fig. 28 Alex Hay Grass Field, from "9 Evenings: Theatre and Engineering," 69th Regiment Armory, New York, October 1966

In the performance's second movement, Hay sat down in the center of the stage and remained as still as possible, attempting to flatten out the sounds being generated by his body. A closed-circuit video camera—a novelty at that time—broadcast a live, close-up image of his face to a large screen, magnifying his most minor movements and reflexes. Similarly, at the second performance, a microphone was used to amplify involuntary sounds made inside his throat. While Hay remained seated, Rauschenberg and artist Steve Paxton, wearing costumes the same as Hay's, picked up the squares with long poles and piled them next to Hay in numerical order (frontispiece and fig. 28). When done with their task, they stood at attention; all three men then left the stage, ending the performance. Critic Lucy Lippard, writing in *Studio International*, called it "the best [work] of the *Nine Evenings*."⁴

Inevitably, *Grass Field* was an expression of the concepts that had been circulating among the Judson group, the members of which formed the artistic core of "9 Evenings." These include the aleatory aesthetics of composer John Cage, who infamously framed ambient sounds as music in his 1952 work *4'33"*; an emphasis on performance and environment, derived in part from the Happenings of the late 1950s; and the valorization of everyday movement, as seen in task-based Minimalist dance. Relatedly, the Fluxus artists combined these ideas with a conceptual approach to art-making, in which the artist devises a system that will generate the art more or less "automatically," outside of his or her total control. Not coincidentally, the aesthetic of this period relates genealogically to the deductive structure of Frank Stella's *Black Paintings* of 1959 (and their progenitors of 1958), in which an initial compositional choice—for example, to divide the surface of the canvas into quadrants and then repeat the first division in regular intervals—wholly determines the rest of the work (fig. 29).

To the degree that the performance of *Grass Field* was similarly "automated"—that is, produced by the logical execution of a premise—it serves as yet another demonstration of the seeming tendency toward rationality in modern art. Rationality is the quality of possessing reason, which is defined by the Oxford English Dictionary as "the power of the mind to think and form valid judgements by a process of logic" and "the mental faculty which is used in adapting thought or action to some end." In *Grass Field*, the artist creates a logical system that is methodically followed to its end: all of the square cloths are to be distributed in a square

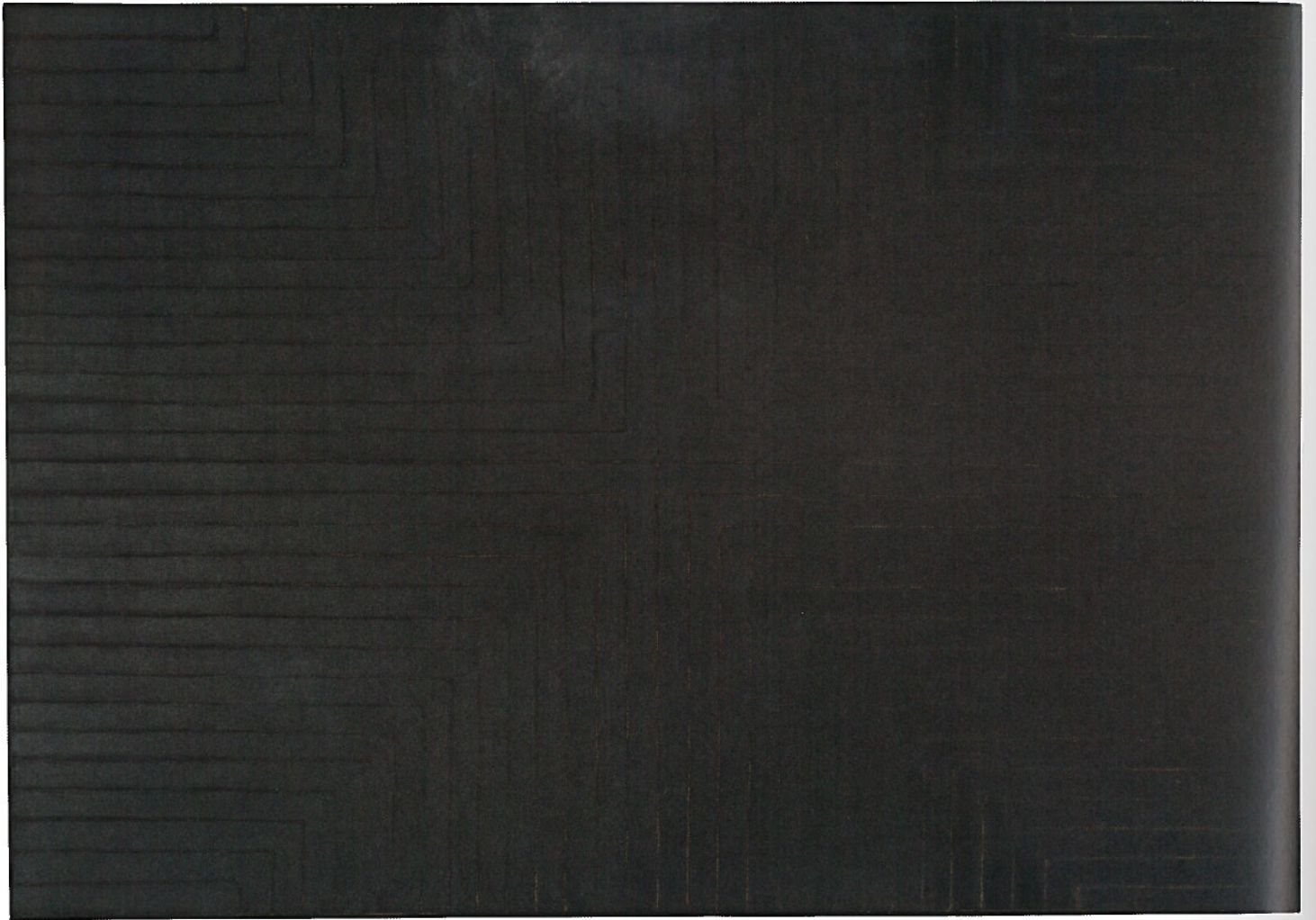


fig. 29 Frank Stella *Arbeit Macht Frei*, 1958

grid, until none are left, and then retrieved in numerical order, until none are left. The performance is made even more rational through the introduction of numbers, counting, and geometry, the latter represented by the abstract form of the grid, which functions as an icon of both rationality and modernity in art, as Rosalind Krauss has argued.⁵ Given its reliance on logic and mathematics, the goal of *Grass Field* appears to be a rigorous demonstration of rationality itself.

Because rationality is associated with human intelligence, it is supremely ironic that the humans inserted into this reflexive calculating machine are thereby transformed into dehumanized subjects who appear to lack the ability to reason for themselves. This is the typical result of rationalization, or the operation by which individual components of a system or product are standardized and coordinated to increase efficiency in an industrialized, modernized economy. While it typically applies to commodities, it also applies to people, who are standardized for the sake of productivity, according to the principles of scientific management (or “Taylorization”) that were outlined by Frederick Winslow Taylor in the early twentieth century. Like workers on an assembly line, the performers in Hay’s *Grass Field* wear uniforms that render them anonymous, and their rote execution of a predetermined task is mindless. Most disturbingly, Hay himself is subjected to a technological mediation that converts his bodily functions—such as blinking and swallowing—into inorganic electrical signals that assault the eyes and ears of the audience.⁶ The ultimate impression of *Grass Field*, then, is of three robotlike humans toiling methodically, but without apparent purpose and according to a system imposed upon them, in an alien landscape. Not coincidentally, Hay recounted that his “first ideas” about the work “were fantasy, science-fiction type ideas,” and the engineer Robby Robinson reported that he felt, while working on Hay’s electronic amplifiers, as if he were preparing an astronaut for outer space.⁷ The uncomfortable association in *Grass Field* of the human and the inhuman points to a glaring contradiction: beyond a certain point, the pursuit of rationality produces its inverse, turning humans into automatons and logic into absurdity.

If reason here is undermined by being transformed into its opposite, it is also undermined by the performers’ bodies, which indicate, on closer inspection, that their rationalization is not complete. The sounds generated by Hay’s body evade his control, erupting like expressions of

the irrational unconscious. And Rauschenberg and Paxton are not fully coordinated in their movements, so they inevitably finish their tasks at different times. One could even read a kind of disobedience into their actions: they order the squares numerically in the process of picking them up but, in so doing, transform the ordered grid into disordered piles. Ultimately, then, *Grass Field* is about the limits of both rationality and its proxy, technology, which fail to fully account for human experience and, when pursued too far, result in irrationality. In order to understand the significance of this artistic statement, one must consider the role of technology and rationality—and their close relation—in the postwar era.

Technology and Rationality

The word “technology” is a neologism of the Greek words *tekhne* (meaning both art and craft or industry) and *logos* (meaning logic but also, more broadly, a system). In its modern English usage, dating from the early seventeenth century, the term designates the application of scientific knowledge to practical ends. One prominent example of this definition comes from the Massachusetts Institute of Technology (MIT), founded in 1861; the school’s website today tells the story of its emergence out of “a community of hands-on problem solvers in love with fundamental science and eager to make the world a better place.”

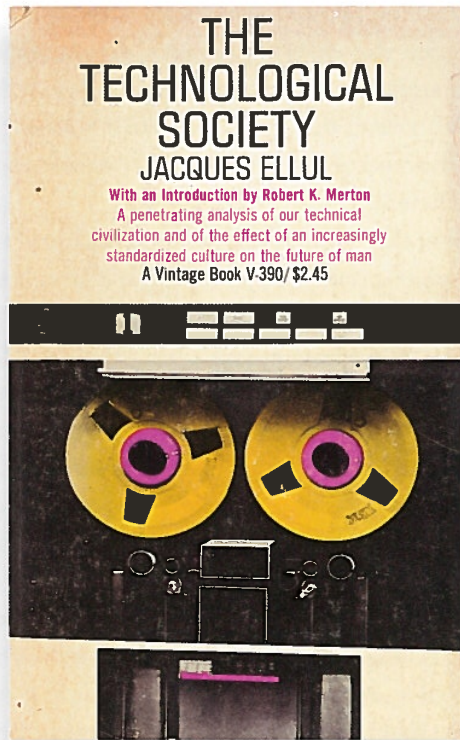
The history of technology, defined as applied science, is more or less continuous with the history of man. This idea is encapsulated by the phrase *Homo faber*, which implies that to be human is to make tools with which to remake the world. As technology has evolved over time, so too has the concept of technology. While the concept is ancient—recall the Greek tale of Prometheus, who gave humans fire he stole from the gods on Mount Olympus—it became the subject of intense scrutiny in the wake of the Industrial Revolution, in response to technology’s new prominence as a ubiquitous and determining force in contemporary life.

The scrutiny of technology became even more urgent in the decades before and after World War II, thanks to a confluence of factors. These include the transformation of a majority of the first-world workforce from manual laborers into skilled professionals, the invention of nuclear warfare, the race between the United States and the Soviet Union to send satellites and humans into outer space, a new ecological awareness, and the emergence of what President Eisenhower memorably

termed the “military-industrial complex.”⁸ As a result of these major changes, technology itself became the object of protracted debate. Importantly, many of the texts that aimed to make sense of technology in this period explicitly aligned it with *rationality*, connoting both reason (the power to think logically) and the methodical analysis of a process in order to render it systematic and efficient.

One notable example of this trend is the 1967 publication of the anthology *Technology in Western Civilization*, in which Peter F. Drucker — a pioneer in the field of modern corporate management — argues that technology as we know it is a recent phenomenon. Until the turn of the twentieth century, technology was a craft practiced by lone tinkerers conducting haphazard experiments. But by the middle of the twentieth century, after the emergence of the German chemical industry and the mobilization of various industries for World Wars I and II, technology had become thoroughly professionalized, in the sense that it was carried out by teams of expressly trained, highly specialized “knowledge workers” in a dedicated institution: the industrial laboratory.⁹ According to Drucker, by this point, technology was no longer merely applied science but rather a new field of practice modeled on the goal-oriented, rigorous, and systematic approach of scientific inquiry: “research.” Thus, whereas technology in earlier times was associated with personal “invention,” in the twentieth century, technology became premised on the more “purposeful and deliberate” method of corporate “innovation.”¹⁰ In short, Drucker implies that modern technology is technology that has been rationalized.

The same association appears in the writing of Lewis Mumford, one of the twentieth century’s most outspoken critics of technology. From the 1930s onward, his books chart the historical development of science and technology and their impact on modern life, emphasizing the innate opposition between man and machine. In his 1956 book *The Transformations of Man*, Mumford characteristically associates technology with the scientific method, modern machinery, capitalism, and bureaucratic and totalitarian governance, which conspire to extinguish all that is unreasonable from human nature. (He goes so far as to imagine that in the future “frontal lobotomies may be as widely performed on children . . . as tonsillectomy now is.”¹¹) For Mumford, the great irony of our situation is that the pursuit of perfect rationality through the technological suppression of irrationality ultimately produces a kind of madness. Quoting



Captain Ahab from Herman Melville's *Moby-Dick* (1851)—“All my means are sane: my motives and object mad”—Mumford argues that “the more rationalized become the processes of production, the more irrational will finally become the end product, man himself. In short, power and order, pushed to their final limit, lead to their self-destructive inversion: disorganization, violence, mental aberration, subjective chaos.”¹²

In his 1967 book *The Myth of the Machine: Technics and Human Development*, Mumford further makes the case that it is only by embracing irrationality that we can hope to escape the impending state of “megatechnics,” a “uniform, all-enveloping, super-planetary structure, designed for automatic operation” that will transform man into “a passive, purposeless, machine-conditioned animal.”¹³ Parallel to Mumford's work, a number of other books examined the increasing role of technique (defined as the rational, strategic pursuit of an outcome) and technology in modern life, including Oswald Spengler's *Man and Technics* (1931), Sigfried Giedion's *Mechanization Takes Command* (1948), and Jacques Ellul's *The Technological Society* (1954; English translation 1964) (fig. 30). In popular culture, these authors' dystopian vision of a society ruled by the technological imperatives of rationalization and efficiency went by another name, first coined in 1919: “technocracy.”¹⁴

By the late 1960s, technocracy had become a target of critique for not only the progressive intelligentsia but also youthful revolutionaries.¹⁵ In fact, the entire counterculture movement was interpreted as a rejection of technocracy in Theodore Roszak's 1969 book *The Making of a Counter Culture: Reflections on the Technocratic Society and Its Youthful Opposition*. Like Mumford, Roszak identifies technology with reason: the technocracy, he writes, is the form of industrial society given over to “the relentless quest for efficiency, for order, for ever more extensive rational control.”¹⁶ Ideologically invisible (that is, naturalized through the rhetoric of progress), independent of any economic or political system, and innately authoritarian, the technocracy can be resisted only by undermining the rationalism upon which it rests. “Nothing less is required than the subversion of the scientific world view,” Roszak writes, “with its entrenched commitment to an egocentric and cerebral mode of consciousness.”¹⁷ The solution lies, therefore, in the promotion of “non-intellective” and “anti-rationalist” modes of consciousness, including those “blurred states” that appear eccentric or even “plain mad.”¹⁸

fig. 30 Jacques Ellul, *The Technological Society*, 1954; English translation, 1964

According to Roszak, psychedelic drugs are one method of pursuing anti-rationalism, but because these can be coopted by the technocracy, a better option is Eastern religion—or even art, which he defines as something that eschews “finding out about, summing up, or solving” in favor of the awe-inspiring, delirious experience of immanence.¹⁹

Art and Technology

While Roszak makes no mention of it in his book, visual art in the postwar period often addressed rationalism head-on. As Kelly Baum recounts in her essay in this volume, many artists aimed to undermine rationalism by creating works that induced delirium in viewers. Most typically, they did this by emphasizing sensual experience or discouraging a cerebral mode of analysis. Some artists, recognizing the connection between rationality and technology, attacked rationalism by making technology the more or less explicit object of their scorn, carrying forth the legacy of earlier critical movements, such as Arts and Crafts, Dada, and Surrealism. For example, the plastic-encased Technological Reliquaries of the mid-1960s (pls. 52, 53) made by neo-Surrealist Paul Thek—whose work celebrates the irrational force of ritual and myth—suggest that technology is a corrupting fetish of modern times. By juxtaposing what appear to be bloody body parts with the boxy forms, bright colors, slick materials, and mechanical seriality of mass production (and also of Pop art and Minimalism), Thek indicts technology as something that induces trauma, as in the case of warfare.

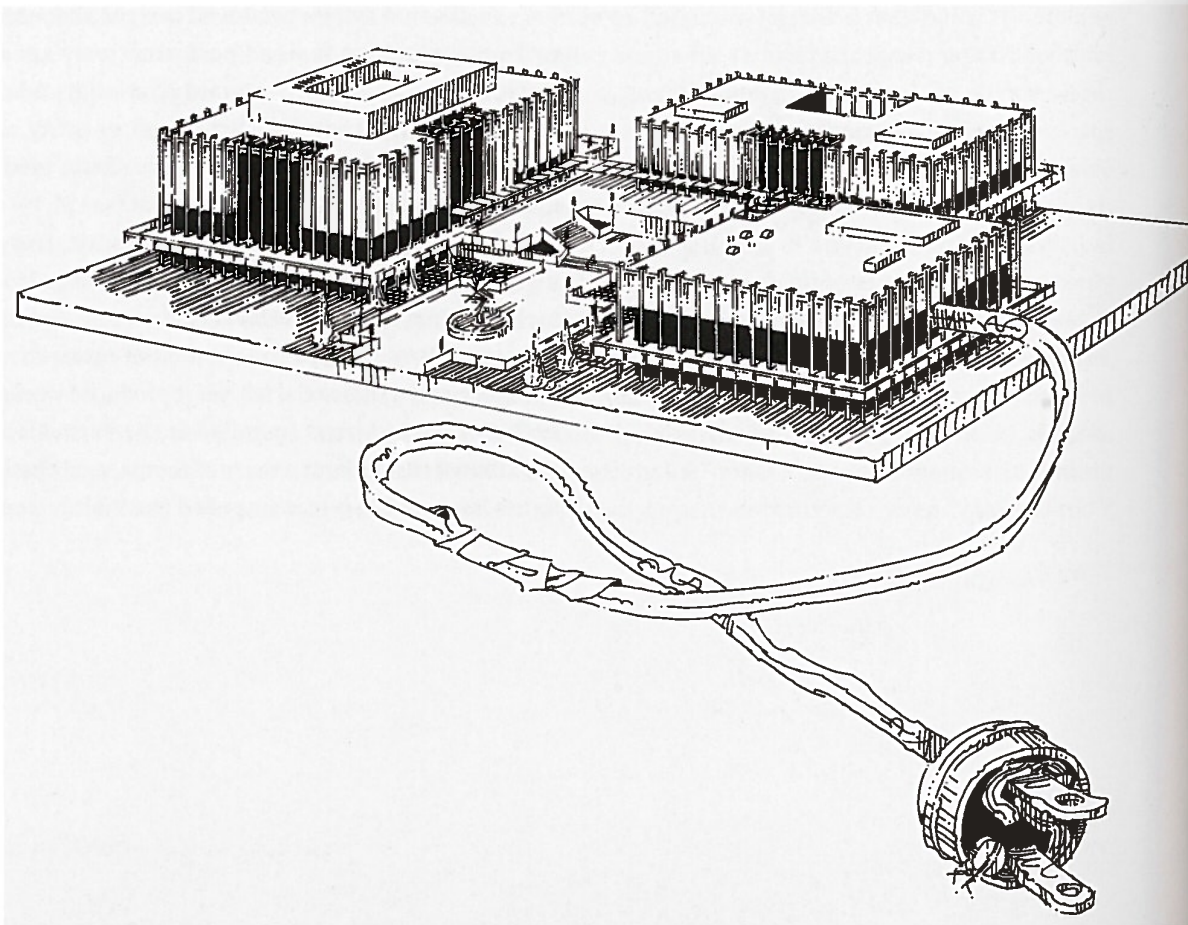
If some artists produced images that are iconically indexed to technology, others instead performatively aped technology’s operations, only to apply them toward irrational ends.²⁰ A prime example is the Groupe de Recherche d’Art Visuel, or GRAV, a Paris-based coalition of eleven Op and kinetic artists active from 1960 to 1968. Several of its members, including François Morellet (see pl. 19) and Yvaral, are closely associated with mathematical, algorithmic, and programmed art; tellingly, GRAV was aligned with New Tendencies, a loose international movement originating in Yugoslavia that anticipated digital art.²¹ As its name suggests, GRAV adopted the rhetoric of research and the organizational structure of the industrial lab, yet it produced works with delirious effects, such as *Labyrinth*, first installed at the Paris Biennial of 1963 (fig. 31).²² Distributed throughout a maze of rooms, a succession of mirrors, strobing lights, and roving boxes impeded the visitor’s conceptual mapping of



forms in space. Characteristically, Julio Le Parc's curtains of gently swaying mirrored squares destabilized the rational grid, dissolving its structure in the random chaos of reflections.

The most direct engagement of art with technology, however, resulted from initiatives to encourage collaborations between artists and engineers, including Experiments in Art and Technology (E.A.T.), a group formed by Rauschenberg, Klüver, and others in the wake of "9 Evenings," and Art and Technology (A&T), a program begun in 1966 by curator Maurice Tuchman at the Los Angeles County Museum of Art (LACMA).²³ Whereas E.A.T. brokered creative matches between individual artists and volunteer engineers, A&T placed artists in residence with industrial corporations in Southern California (fig. 32). The motivation behind these and other programs (such as the Center for Advanced Visual Studies at MIT, founded by György Kepes in 1967) was the desire to bridge what British scientist C. P. Snow had famously described in the 1950s as the "two cultures" of the humanities and the sciences, with the goal of making art more relevant to contemporary life by giving it access to contemporary materials and, secondarily, of encouraging engineers to think more creatively.²⁴

Informed by the concept of research, it was argued that artistic projects made with technology were provisional experiments, as indicated by the very name of E.A.T. This redefined the criteria for evaluating a work: in the research lab, even failed experiments are useful, in the sense



that they produce new knowledge.²⁵ That said, the works made by E.A.T. and A&T inevitably were subjected to more conventional definitions of success in the realm of popular opinion, where they were uniformly described as failures. Again and again, it was argued that they had low aesthetic value, did not emerge from any meaningful collaboration, and were plagued by technological malfunction. Clive Barnes, reviewing “9 Evenings” in the *New York Times*, complained that on the first evening, “the level of technology was such that the performance started 40 minutes late, a 15-minute intermission lasted 35 minutes and even a loud-speaker announcement was so indistinct on the apparently unsound sound equipment that it became unintelligible.”²⁶ Calling the event “such a sad failure, such a limp disaster,” he worried that “if the American engineers and technologists participating in this performance were typical of their profession, the Russians are sure to be first on the moon.”²⁷ *Grass Field*, which Lucy Lippard had identified as the best work of the series, was not immune from criticism; Brian O’Doherty, for example, complained that it lacked “psychological interest,” causing the audience to get “restive.”²⁸ (Hay himself complained about the engineering of his piece, noting that they had “underestimated the problems” and were working down to the wire to solve them.²⁹) Reviews of the A&T show at LACMA in 1971 were equally vicious, with critic Max Kozloff calling the show “The Multi-million Dollar Art Boondoggle” in which “everyone got screwed.”³⁰

The biggest failure of the art-and-technology movement, however, was its perceived complicity with technocracy. As Anne Goodyear has argued, if earlier rapprochements between art and technology, as in the work of the Bauhaus, benefited from technology’s positive association with utopian ideals (such as progress and democracy), the experiments of the 1960s increasingly suffered from technology’s association with technocracy, particularly as represented by the military-industrial complex.³¹ From the vantage point of 1971, Tuchman himself wondered whether many of the artists would have participated if his project were “beginning now ... in a climate of increased polarization and organized determination to protest against the policies supported by so many American business interests and so violently opposed by much of the art community.”³² This sentiment was repeated by critic Jack Burnham, who argued in his review of the LACMA exhibition that the change in the political climate over the course of the program, due to “the effects of a Republican recession,

fig. 31 Groupe de Recherche d’Art Visuel (GRAV)
Labyrinth, Paris Biennial, 1963

fig. 32 Illustration by William Crutchfield in *A Report on the Art and Technology Program at the Los Angeles County Museum of Art, 1967–71*

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," had doomed the show, "no matter how laudable the initial motivation."³³ In his review, Kozloff went so far as to condemn the corporations of A&T as "a rogue's gallery of the violence industries" that had "grown to their present bulk through the business of slaying," and he chided the American artists involved for not hesitating "to free-load at the trough of that techno-fascism" that had encouraged turmoil both at home and abroad, exemplified by the Kent State and My Lai massacres.³⁴ This widespread suspicion of technology was expressed most bluntly by artist Richard Serra in the A&T catalogue: "Technology," he claimed, "is what we do to the Black Panthers and the Vietnamese under the guise of advancement in a materialistic theology."³⁵

The movement to bridge art and technology never recovered from its guilt by association with the "violence industries," which was a significant factor in its decline as the 1970s progressed. (Other factors included the high cost to corporations of supporting sustained relationships with artists and the fact that much of the work proved difficult to conserve in working order.) In 1980, Burnham tellingly titled his retrospective assessment of the period "Art and Technology: The Panacea That Failed."³⁶ Owing to the subsequent elision of these projects from art historical narratives, it has been difficult to reassess them; only in the past decades have scholars begun that work, an example being the retrospective of E.A.T. held at the Museum der Moderne in Salzburg in 2015. Yet even in its heyday, there were hints that the relationship of the art-and-technology movement to technology was more complex than it seemed. For example, at *9 Evenings*, Öyvind Fahlström explicitly commented on the war in Vietnam with his performance *Kisses Sweeter than Wine*, while Rauschenberg's *Open Score* applied military infrared technology to absurd, and even slightly sinister, ends.

This hostility was not lost on critics. In the same review in which Burnham noted that the A&T show was doomed to a hostile reception, he also argued that the *works themselves* were hostile to the technology they utilized:

There is so little here not implicitly antagonistic or disparaging of the effects of technology. I hope the business moguls who sup-

ported this exhibition get the message, because what the artists are saying is simply this: *no one believes that American corporate interests, controlling the overwhelming portion of our technology, have any real sense of social responsibility or direction* [emphasis in the original].³⁷

Similarly, Kozloff described some of the artists as filled with “malice” and as being “derisive” toward the technology they used. When reflecting upon this in an essay published in 2012, he wrote, “I now think that such derision was indirectly critical of the whole enterprise. In retrospect, it was the way for them [the artists] to go.”³⁸

Ironically, it is the insight of the movement’s most vituperative critics that suggests a reconsideration of its success. Might the seemingly failed enterprise have succeeded, not by bridging the gap between the humanities and the sciences, or by reinvigorating art with engineering, but rather by interrupting the circuits of technocracy? Instead of undertaking the futile search for a position outside technocracy from which to attack its moral bankruptcy, art could attack modern technology at its very core: its rationalism. Like a Trojan Horse, it could infect technology’s rationalism with irrationalism, undermining the logic, order, and efficiency on which its systems are premised. In short, *art could blow technology’s circuits*. In so doing, it would fulfill the vision of the critics of technocracy, including that of Theodore Roszak, who had called for the creation of “non-intellective” and “anti-rationalist” experiences, and also of Lewis Mumford, who in *The Transformations of Man* proposed that man “may become the sand in the works: if necessary, he will use the machine to destroy the society that has produced it.”³⁹

Perhaps no work coming out of the art-and-technology programs better represents this strategy than Boyd Mefferd’s strobe-lighted environment (the work was never given a proper title) (figs. 33, 34).⁴⁰ It was produced by A&T with the financial support of Los Angeles-based Universal Television and shown at both of A&T’s showcases, first at the world’s fair in Osaka in 1970 and then at LACMA in 1971. More of an environment than a sculpture, Mefferd’s work originally comprised two adjacent V-shaped structures, approximately three feet tall; four of their surfaces were turned into “flash walls” totaling about one hundred feet in length.⁴¹ Each flash wall was made of thirty two-foot-square Plexiglas “flash units,”

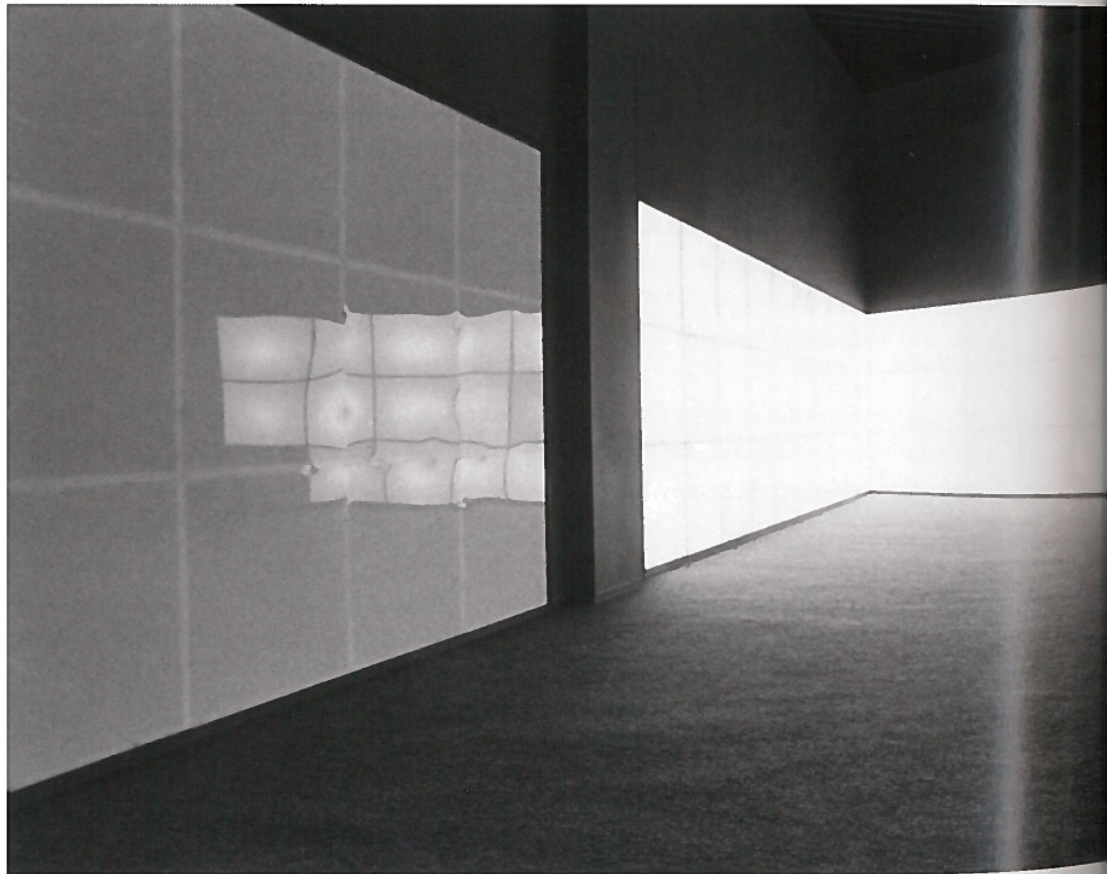


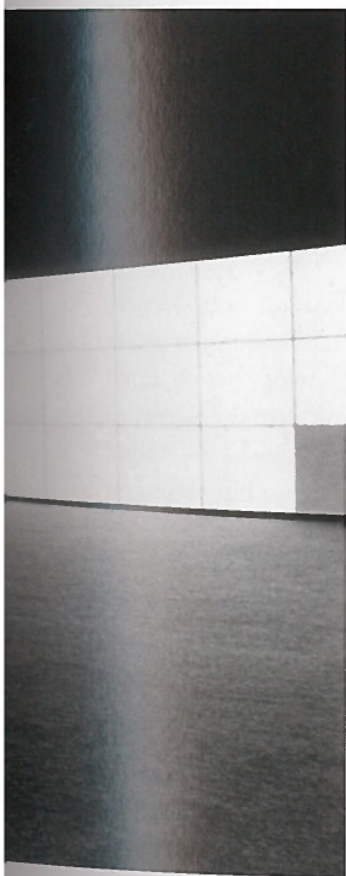
fig. 33 Boyd Mefferd Strobe-lighted room (untitled), as seen in the exhibition "Art & Technology" at the Los Angeles County Museum of Art, 1971

fig. 34 Boyd Mefferd Strobe-lighted room (untitled), as seen at Expo '70, Osaka, Japan, 1970

each housing a xenon flashbulb of the type used in photography, stacked in a three-by-ten grid. Using motorized timers, one V shape flashed every thirteen seconds and the other every fifteen seconds, so that the flashes came into and out of sync, obliterating the images of the grids and simultaneously depositing stark afterimages on the retina. While other artists, such as the “intermedia” group USCO, had used strobing light in the 1960s, never before had it been employed on this scale or generated experiences this intense.⁴²

By all accounts, the effect of the flashing light was physical discomfort and spatial discombobulation, even to the point of inducing fear and nausea. As recounted in the A&T catalogue, “The first burst of white light to hit a spectator’s eyes was the most startling and disorienting. . . . In the first moment one may be fearful and instinctively shut one’s eyes from the light.”⁴³ Burnham, who characterized the environment as “an obvious crowd-pleaser,” also claimed that the “hallucinatory” experience left him and others feeling “nauseous.”⁴⁴ *Time* magazine, singling it out as one of the “triumphs” of the 1971 LACMA show for its “real interaction” with industry, captured the tension between attraction and revulsion, describing it as “a stunning perceptual experience” that was also “engulfing and somewhat unnerving.”⁴⁵

In her discussion of the visual pulsing of Marcel Duchamp’s mechanical *Rotoreliefs* (fig. 35) and other experiments with “Precision Optics” — which are comparable to Mefferd’s work in their production of woozy optical effects — Krauss argues that Duchamp grounds vision as something that is not only connected to the mind but also produced within the body, and therefore subject to physiological and unconscious forces, such as libidinal desire. She concludes that Duchamp’s works, by appealing to a corporeal vision that bypasses the rational mind, create, “if ever so fleetingly, a space of resistance to rationalization.”⁴⁶ This potential was realized to blunter effect in the 1960s by a range of works employing strobe light, from Tony Conrad’s 1966 film *The Flicker* to Mefferd’s environment.⁴⁷ By using technology to overload the senses — or to blow the viewer’s circuits — these works engaged the body on a physiological level, defying rational analysis and thereby interrupting the rationality on which postwar technology was based.





**Coda: Glitch
Aesthetics**

In narratives of modernity, the 1960s are typically identified as a pivotal decade, signaling both the exhaustion of the major positivist ideas that had powered the twentieth century—including the belief that technological progress would deliver utopia—and the emergence of new paradigms of postmodernity.⁴⁸ Not coincidentally, the 1960s are also identified as a turning point in the history of technology. As historians and theorists of digital media have argued, while the theoretical foundations for computing emerged centuries ago, the majority of the technologies that define computing today emerged in the 1960s.⁴⁹

Following the invention of the integrated circuit in 1959, computers became smaller, cheaper, and more ubiquitous, helping to usher in the information economy.⁵⁰ This evolution of technology has changed our relationship to it: as theorist R. L. Rutsky explains, with the advent of “high tech,” technology’s formerly transparent operations have receded into an opaque black box, even as, at the same time, they have come to mediate every facet of human life.⁵¹ From the 1960s onward, writers such as William Burroughs, Michel Foucault, and Gilles Deleuze have contributed to the idea that, in this new situation, there is no escape from technology and, more broadly, from the hegemonic ideologies that

fig. 35 Marcel Duchamp *Rotoreliefs*, 1935

influence all aspects of our lives. Like a virus, these forces contaminate us—or, one could argue that they even constitute us. The only path of resistance, then, as suggested by the work of E.A.T. and A&T, is to engage them, in hopes of temporarily short-circuiting their systems.⁵²

In the realm of digital art—that is, art made with and about digital technologies since the 1990s—the term that describes the intentional introduction of failure is “glitch.”⁵³ Importantly, the purpose of glitch is not to cause a total system crash; rather, we might say that glitch is an engine for introducing difference.⁵⁴ Describing both the process by which a technological failure is effected and its result, a glitch occurs when a piece of software or hardware is used to access data in a manner that deviates from its intended purpose, producing unforeseeable but repeatable results, as when Photoshop is tricked into opening an audio file or a video is played on a broken screen. Ultimately, glitch art makes visible the underlying “rational” mechanisms that govern digital technology and puts them to new use. As screen studies expert Hugh Manon and glitch artist Daniel Temkin explain, even if this type of hacking does not amount to “real sabotage,” it abides by a “punk” ethos, refusing the slick effects that gloss over discontinuous binary data with a seamless veneer.⁵⁵

Notably, the aesthetic of glitch is couched in the language of irrationality (for example, the glitch image is said to be “crazed”).⁵⁶ “Irrational” describes the style of the glitch, which fails to follow the codes of either representation or abstraction; the process of glitching, which proceeds by refusing the operational logic embedded in software and hardware; and the development of glitch art, which has expanded through “an irrepressible compulsion to *keep on glitchin’*.”⁵⁷ Thus the specter of irrationality haunts all glitch art, as represented, for example, by the pioneering work of the collective JODI (Joan Heemskerk and Dirk Paesmans), whose modified video games, software programs, and websites, dating back to the mid-1990s, present garbled text, mangled graphics, and misbehaving or unruly interfaces. Characteristically, their webpage <http://asdf.jodi.org> is made of rapidly alternating black-and-white pages filled with roving, permutating blocks of unintelligible characters, such as rows of letters with accents, dollar signs, or dashes, as well as horizontal and vertical bars that skip around the screen (fig. 36). With its irregularly flickering light, the site seems to have itself blown a circuit, while also inducing blown circuits in the viewer.

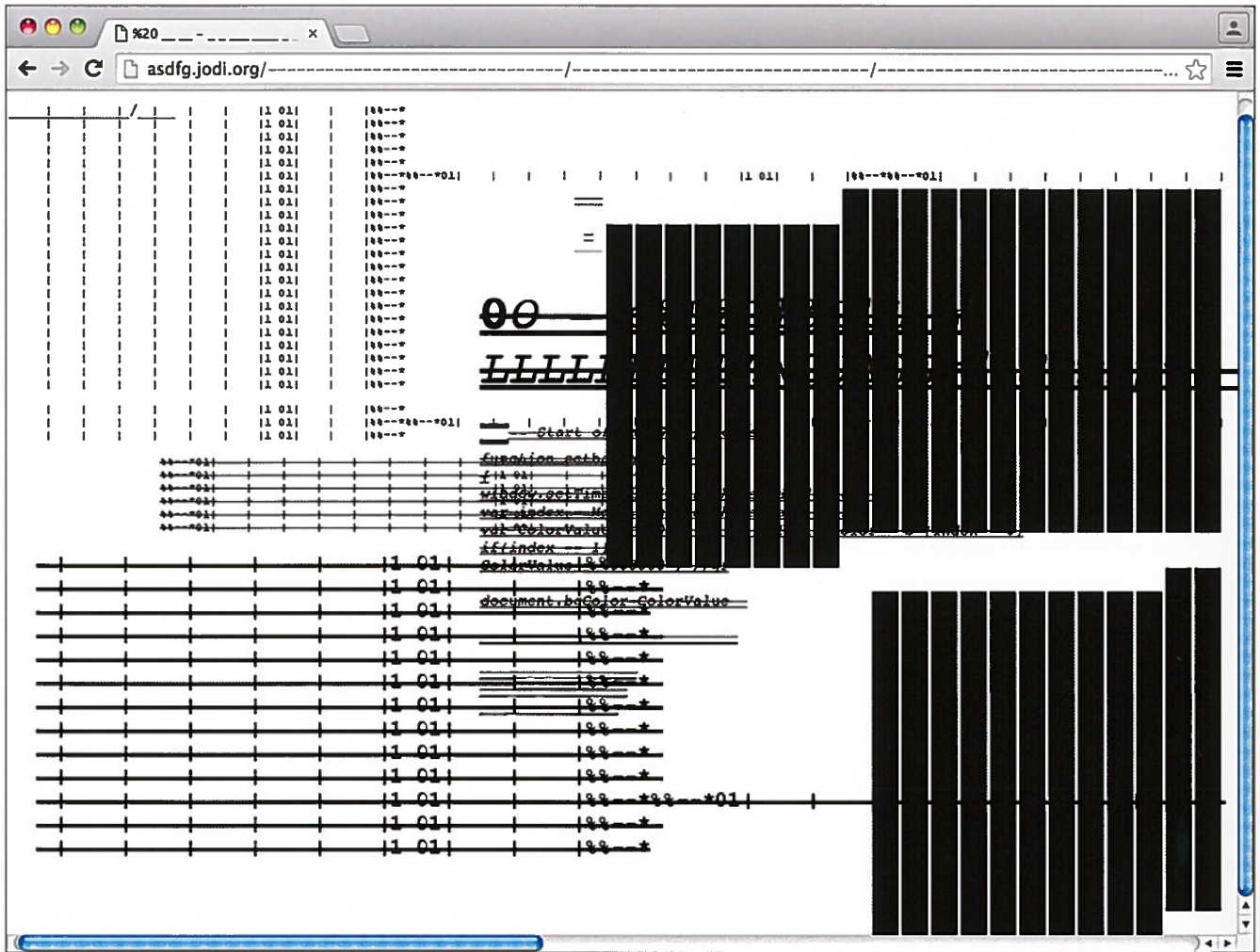


fig. 36 JODI (Joan Heemskerck and Dirk Paesmans) <http://asdf.jodi.org>, ca. 1998

Irrationality is also evident in the works of video artist Takeshi Murata, who uses the glitch-art technique of “datamoshing,” which corrupts digital-media files by removing, replacing, or otherwise manipulating their data. In his *Monster Movie* (2005) (fig. 37), frames from the 1981 movie *Caveman* are processed to produce a short video in which an Abominable Snowman character repeatedly emerges from a pool of water, only to be swept up in a churning tide of colorful abstraction. The tension between form and formlessness, order and disorder—and by extension, between rationality and irrationality—is symbolized by the figure of the monster. Like its star, the video itself, with its mindlessly repetitive action and syncopated percussive soundtrack, has become monstrous, uncontrollable, irrational.

In some recent texts, glitch art has been presented as an empowering assertion of control and mastery over the machine. But given the reliance of glitch art on largely unforeseeable outcomes and its close ties to irrationality, authority is not precisely what is at stake. Rather, by introducing failure into digital technology—specifically, by refusing the rationalism that undergirds its codes and guides it toward efficient and productive ends—glitch artists open fissures through which alternate possibilities emerge. Their art suggests that the blowing of circuits was not a definitive solution to the problem of postwar technocracy. Rather, irrationality is an ongoing project, one that continues to unfold with urgency as we imagine our technological future.

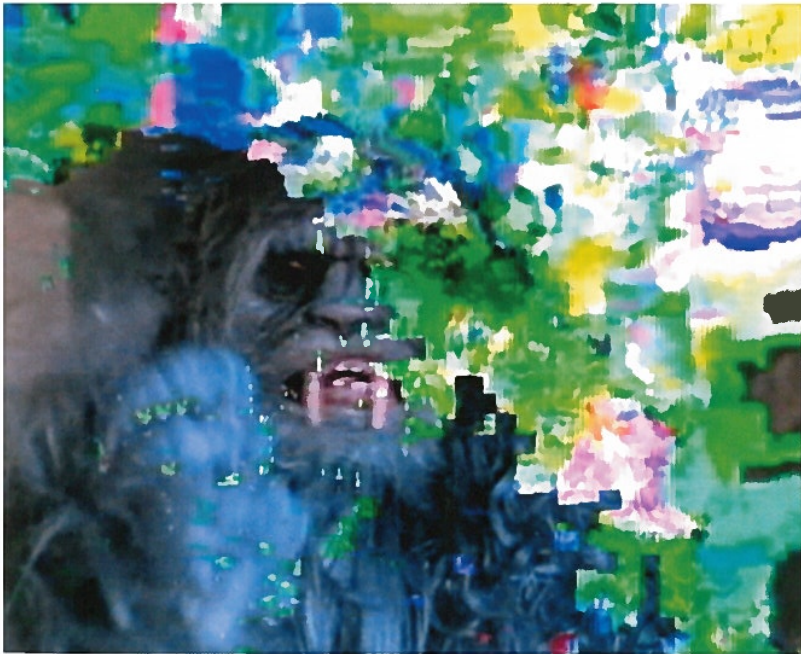


fig. 37 Takeshi Murata *Monster Movie*, 2005

language lined with flesh, a text where we can hear the grain of the throat, the patina of consonants, the voluptuousness of vowels, a whole carnal stereophony: the articulation of the body, of the tongue, not that of meaning, of language" (ibid., p. 67). For more on language in American art in the 1960s, see Liz Kotz, *Words to Be Looked At: Language in 1960s Art* (Cambridge, Mass.: MIT Press, 2007).

216 The concept of mimetic exacerbation is taken from Hal Foster. See his *Bad New Days: Art, Criticism, Emergency* (New York: Verso, 2015).

217 Sylvère Lotringer, *Mad Like Artaud* (Minneapolis: Univocal, 2015), p. 133. See also pp. 136–37.

218 Ibid., pp. 137, 140.

219 For a related argument, see Benjamin H. D. Buchloh, "Conceptual Art 1962–1969: From the Aesthetic of Administration to the Critique of Institutions," *October* 55 (Winter 1990), pp. 105–43.

220 Marcuse, *One-Dimensional Man*, p. 247.

221 Ibid., p. 248.

BITE YOUR TONGUE / BRADNOCK

1 Antonin Artaud, "To Have Done with the Judgment of God," translated by Guy Wernham, *Northwest Review* 6, no. 4 (Fall 1963), p. 61.

2 I am grateful to Jean-Jacques Lebel for sharing information about the recipients with me.

3 Editions Gallimard, letter to Lawrence Ferlinghetti, June 30, 1961, box 4, folder 10, City Lights Books records, collection no. BANC MSS 72/107c, The Bancroft Library, University of California, Berkeley.

4 Pierre Jouffroy, "A Noisy Broadcast: Writers and Artists Yesterday Judged Antonin Artaud's *Judgment of God*," in *Le Parisien libéré*, translated by Guy Wernham, box 49, folder 14, collection no. BANC 2003/222 c, Michael McClure Papers: Additions, The Bancroft Library, University of California, Berkeley, p. 41.

5 Lawrence Ferlinghetti, letter to Jack Hirschman, undated, box 1, collection no. 0158, Jack Hirschman papers, Special Collections, USC Libraries, University of Southern California, Los Angeles.

6 Antonin Artaud, *Artaud Anthology*, edited by Jack Hirschman (San Francisco: City Lights Books, 1965); Robert R. Kirsch, "Artaud—An Introduction to an Extraordinary Writer," *Los Angeles Times*, December 22, 1965, p. E4.

7 Paule Thévenin, "Artaud naturalisé beatnik!" *Le Figaro littéraire*, December 9, 1965: "les beatniks américains [...] un précurseur de la poésie de la drogue et de la folie." (Translation by the author.)

8 Calvin Tomkins, *The Bride and the Bachelors: Five Masters of the Avant-Garde*, rev. ed. (New York: Viking Press, 1968).

9 Jean Desternes, "Dernière visite à Antonin Artaud," *Le Figaro littéraire* (Paris), March 13, 1948, p. 3, quoted in Kaira M[aria] Cabañas, *Off-Screen Cinema: Isidore Isou and the Lettrist Avant-Garde* (Chicago: University of Chicago Press, 2014), p. 91.

10 Antonin Artaud, "All Writing Is Pigshit . . ." in *Artaud Anthology*, p. 38.

11 Cabañas, *Off-Screen Cinema*, p. 91.

12 Cabañas, *Off-Screen Cinema*, p. 90.

13 Isidore Isou, *Oeuvres de spectacle: Traité de bave et d'éternité* (1951); *La marche des jongleurs* (1954);

Apologie d'Isidore Isou (1954) (Paris: Gallimard, 1964), p. 29: "une volontaire accumulation de fautes, une espèce d'anti-grammaire du cinéma."

14 Peter Boswell, "Bruce Conner: Theater of Light and Shadow," in *2000 BC: The Bruce Conner Story Part II*, edited by Peter Boswell, Bruce Jenkins, and Joan Rothfuss, exh. cat., Walker Art Center, Minneapolis, and other venues (Minneapolis: Walker Art Center, 1999), p. 32.

15 Michael McClure and Eduardo Lipshutz-Villa, "On Semina," in *Wallace Berman: Support the Revolution* (Amsterdam: Institute of Contemporary Art, 1992), p. 61.

16 Alan Cholodenko, "The Logic of Delirium, or The Fatal Strategies of Antonin Artaud and Jean Baudrillard," in *100 Years of Cruelty: Essays on Artaud*, edited by Edward Scheer (Sydney: Power Publications, 2000), pp. 153–74.

17 Margit Rowell and Sylvère Lotringer, "A Conversation with Nancy Spero," in *Antonin Artaud: Works on Paper*, edited by Margit Rowell (New York: Museum of Modern Art, 1996), p. 137.

18 Ibid.

19 Ibid.

20 This question is the subtitle of a 1969 gouache-and-ink drawing by Spero.

21 *Northwest Review* 6, no. 4 (Fall 1963), p. 61.

22 Thomas H. Garver, *Bruce Conner: Drawings, 1955–1972*, exh. cat., San Francisco: M. H. de Young Memorial Museum (San Francisco: Fine Arts Museums of San Francisco, 1974), unpag.

23 Antonin Artaud, "To Have Done with the Judgment of God" (unpublished manuscript), p. 2; see also *Northwest Review* 6, no. 4 (Fall 1963), pp. 60–61.

24 Umberto Artioli, "From 'Production of Reality or Hunger for the Impossible,'" in *Antonin Artaud: A Critical Reader*, edited by Edward Scheer (London and New York: Routledge, 2004), p. 140.

25 Robert Duncan, "Wallace Berman: The Fashioning Spirit," *Third Rail*, no. 9 (1988), p. 13.

26 Antonin Artaud, "No More Masterpieces," in *The Theater and Its Double*, translated by Mary Caroline Richards (New York: Grove Press, 1958), p. 74.

27 Julie Stephens, *Anti-Disciplinary Protest: Sixties Radicalism and Postmodernism* (Cambridge: Cambridge University Press, 1998).

28 Duncan, "Wallace Berman," p. 13.

BLOWN CIRCUITS / RYAN

1 The account that follows derives from the description in Catherine Morris, "9 Evenings: An Experimental Proposition (Allowing for Discontinuities)," in *9 Evenings Reconsidered: Art, Theatre, and Engineering, 1966*, edited by Catherine Morris, exh. cat. (Cambridge, Mass.: MIT List Visual Arts Center, 2006), pp. 14–15, and Catherine Morris, "9 Evenings: Theatre and Engineering," in *E.A.T.—Experiments in Art and Technology*, edited by Sabine Breitwieser, exh. cat., Museum der Moderne Salzburg (Cologne: Verlag der Buchhandlung Walther König, [2015]), p. 85. See also Calvin Tomkins, "Onward and Upward with the Arts: E.A.T.," *The New Yorker*, October 3, 1970, pp. 83–133. Emerging from the ashes of a failed project overseen by curator K. Pontus Hultén

in Stockholm, "9 Evenings" grew to a massive scale: the nine months of preparations consumed more than 8,500 hours of engineering labor from thirty engineers, and the event itself required nineteen engineers to work more than 2,500 hours over the course of sixteen days.

2 Brian O'Doherty, "9 Armored Nights," *Art and Artists* 1, no. 9 (December 1966), p. 14.

3 In the arts today, "new media" commonly designates the use of digital technologies, such as software programs and the Internet. For example, the 2006 book *New Media Art* defines its topic as "works—such as interactive multimedia installations, virtual reality environments and Web-based art—that were made using digital technology" (Mark Tribe and Reena Jana, *New Media Art* [Cologne: Taschen, 2006], p. 6). Here, I use the term "new media" (as opposed to older terms, such as "computer art") to indicate the historical and theoretical contiguity of digital art with a larger field of objects made with analog electronics, including the works described in this essay. Some of the central texts in the debates over the meanings and uses of "new media," including whether new media are even "new," are *New Media, Old Media: A History and Theory Reader*, ed. Wendy Hui Kyong Chun and Thomas Keenan (New York: Routledge, 2006); Lev Manovich, *The Language of New Media* (Cambridge, Mass.: MIT Press, 2001); and David Bolter and Richard A. Grusin, *Remediation: Understanding New Media* (Cambridge, MA: MIT Press, 1999). As some scholars have noted, with each passing year, the distinction between "new media" art and other art forms becomes more blurry, as most artists now use digital technologies at some point in their practices. See, for example, Claire Bishop, "Digital Divide: Contemporary Art and New Media," *Artforum*, September 2012, pp. 434–41.

4 Lucy R. Lippard, "Total Theatre?" *Studio International* 11, no. 1 (January 1967), p. 44.

5 Rosalind E. Krauss, "Grids," in *The Originality of the Avant-Garde and Other Modernist Myths* (Cambridge, Mass.: MIT Press, 1985), pp. 8–22. In Krauss's nuanced argument, the grid is not simply an icon of "science, or logic," but rather, a "myth" (in the structuralist sense) that appears rational while also allowing the viewer access to the kind of "illusion" or "fiction" it supposedly banishes (Krauss, "Grids," p. 12). Therefore, while Krauss does not use the exact words "rationality" and "irrationality," the grid arguably contains within itself the contradiction between these two terms; by extension, if the grid is an icon of the modern, so too is the paradox of rationality and irrationality under discussion here.

6 In this aspect, the performance is indebted to the late nineteenth-century experiments of Étienne-Jules Marey, who invented mechanisms through which the body could register its own traces—a concept rendered familiar by the cardiogram. See François Dagognet, *Etienne-Jules Marey: A Passion for the Trace*, translated by Robert Galeta with Jeanine Herman (New York: Zone Books, 1992).

7 Simone Whitman, "Theatre and Engineering: An Experiment: 1. Notes by a participant," *Artforum* 5, no. 6 (February 1967), p. 27; Morris, "9 Evenings," p. 14.

8 For example, in 1900, eighteen of twenty Americans earned a living through manual labor, primarily as farmers; but by 1965, only five of twenty did (Peter F. Drucker, "Technology and Society in the Twentieth Century," in *Technology in Western Civilization*, Vol. 2, *Technology in the Twentieth Century*, edited by Melvin Kranzberg and Carroll W. Pursell Jr. [New York: Oxford University Press, 1967], p. 26). The rise of the military-industrial complex has been much discussed, but statistics are helpful: by the mid-1960s, in America, the armed forces and their vendors accounted for eighty-five to ninety percent of all government purchases; government money accounted for more than half the research conducted in industrial laboratories and around three-fifths of research in universities and similar institutions; and more than three hundred thousand scientists were engaged in research relating to the military (Solly Zuckerman, *Scientists and War: The Impact of Science on Military and Civil Affairs* [New York: Harper and Row, 1967], pp. 30-31).

9 Peter F. Drucker, "Technological Trends in the Twentieth Century," in Kranzberg and Pursell Jr., *Technology in the Twentieth Century*, pp. 13-14. Notably, Drucker is the man credited with inventing the term "knowledge workers."

10 *Ibid.*, p. 18.

11 Lewis Mumford, *The Transformations of Man*. World Perspectives, 7 (New York: Harper and Brothers, [1956]), p. 162.

12 *Ibid.*, pp. 161, 171. A similar conclusion is reached by William Barrett's classic 1958 book *Irrational Man: A Study in Existential Philosophy*, which aligns existentialism, the prevailing intellectual current of the postwar period, with an attack on rationalism. Noting the absurdity of the quest for a "clean" hydrogen bomb, Barrett writes that "despite the increase in the rational ordering of life in modern times, men have not become the least bit more reasonable in the human sense of the word. A perfect rationality might not even be incompatible with psychosis; it might, in fact, even lead to the latter." William Barrett, *Irrational Man: A Study in Existential Philosophy* (New York: Anchor Books, [1990] [1958]), pp. 270-71. Also like Mumford, Barrett concludes that embracing irrationality is the solution: given the fact of a "brilliant scientific and technological civilization that could run amuck out of its own sheer uprooted cleverness," he advocates that we adopt the solution of the ancient Greeks and "[give] the Furies their place" (*ibid.*, pp. 279-80).

13 Lewis Mumford, *The Myth of the Machine: Technics and Human Development* (New York: Harcourt, Brace and World, 1967), p. 3.

14 See William Henry Smyth, "Technocracy—National Industrial Management," *Industrial Management* 57, no. 3 (March 1919), pp. 208-12, and "Technocracy—Ways and Means to Gain Industrial Democracy," *Industrial Management* 57, no. 5 (May 1919), pp. 385-89. Only a few dissenting techno-utopianists, led by R. Buckminster Fuller,

attempted to recuperate the idea of technocracy, advocating a supra-governmental system that would produce higher standards of living at lower costs through automation and a more efficient redistribution of global resources, thereby ending geopolitical conflict. See, for example, R[ichard] Buckminster Fuller, *Nine Chains to the Moon* (Philadelphia: J. B. Lippincott, 1938), and *Operating Manual for Spaceship Earth* (Carbondale, Ill.: Southern Illinois University Press, 1969). For a criticism of Fuller's politics, see Felicity D. Scott, "Acid Visions," *Grey Room*, no. 23 (Spring 2006), pp. 22-39.

15 For example, in France, one could cite both Jean-Luc Godard's 1965 film *Alphaville* and the uprising of May 1968 as expressing a cynical attitude toward advanced technology and the rationalization of society in its name. See Andrew Feenberg, "Technocracy and Rebellion: The May Events of 1968," in *Questioning Technology* (New York: Routledge, 1999), pp. 21-44. As examples of the criticism of technology by intellectuals, see "Science and Culture," special issue, *Daedalus: Journal of the American Academy of Arts and Sciences* 94, no. 1 (Winter 1965), and John McDermott, "Technology: Opiate of the Intellectuals," *New York Review of Books*, July 31, 1969.

16 Theodore Roszak, *The Making of a Counter Culture: Reflections on the Technocratic Society and Its Youthful Opposition* (Garden City, N.Y.: Doubleday, 1969), p. 21.

17 *Ibid.*, p. 50.

18 *Ibid.*, pp. 51, 53.

19 *Ibid.*, p. 253. Here, Roszak indirectly, and perhaps unintentionally, echoes the conclusion of German philosopher Martin Heidegger, whose 1954 essay "The Question Concerning Technology" was one of the first attempts to identify technology's essence rather than focus on its various manifestations and their consequences. For Heidegger, technology is not simply the production of tools or the application of science. Rather, technology is a way of viewing or "enframing" the world, such that rather than seeing the "truth" of objects as they present themselves to us, on their own terms, we only view them relative to us, according to their ability to be rationalized and, therefore, instrumentalized. In Heidegger's example, instead of seeing the river as it is, we merely see the river as a raw material: a source of power to be dammed. Heidegger warns that if we continue to pursue the technological enframing of the world, eventually, it will destroy us. The alternative is not to abandon technology (which is impossible) but rather to enframe the world differently: noting that the etymological root of "technology" includes both the concept of instrumentality and art, he argues that art views the world not by rationalizing it but rather by accessing the truth in things as they are. See Martin Heidegger, *The Question Concerning Technology and Other Essays*, translated by William Lovitt (New York: Harper and Row, 1977).

20 I am borrowing the distinction between works that have an "iconic" relationship to tech-

nology and those with a "performative" one from Caroline A. Jones, *Machine in the Studio: Constructing the Postwar American Artist* (Chicago: University of Chicago Press, 1996), p. 55.

21 On New Tendencies, see Armin Medosch, *New Tendencies: Art at the Threshold of the Information Revolution (1961-1978)* (Cambridge, Mass.: MIT Press, 2016).

22 On GRAV and its relation to technocracy, see Lily Woodruff, "The Groupe de Recherche d'Art Visuel against the Technocrats," *Art Journal* 73, no. 3 (Fall 2014), pp. 18-37.

23 While not resulting from official programs to bring art and engineering together, many exhibitions in the 1960s either resulted from collaborations between artists and engineers (such as "The Magic Theatre: Art Technology Spectacular" at the Nelson-Atkins Gallery in 1968) or displayed works made by scientists- and engineers-turned-artists (such as "Lights in Orbit" at the Howard Wise Gallery in 1967).

24 While initially arguing for greater attention to be paid in English schools to the hard sciences, by the 1960s, Snow shifted toward an emphasis on the importance of bringing the two cultures into dialogue. His sense of an opposition between humanistic and scientific or technical ways of understanding the world, which undergirds many of the critical writings of the postwar period, remains with us today in the debate over STEM and STEAM education. See C[harles] P[ercy] Snow, *The Two Cultures: And a Second Look; An Expanded Version of "The Two Cultures and the Scientific Revolution,"* 2nd ed. (Cambridge: Cambridge University Press, 1969).

25 By this rubric, there is no such thing as a failed experiment, and further, failures may be more useful than nominal successes. Rauschenberg, Klüver's partner, conveyed this idea to critic Douglas Davis: "Most industrial firms consider that a research man who fails 96 percent of the time is more valuable than one who succeeds more often, because he is involved in truly important experimentation. Success in art is very easy; how to fail is the problem." Douglas Davis, *Art and the Future: A History/Prophecy of the Collaboration between Science, Technology and Art* (New York: Praeger, 1973), p. 145.

26 Clive Barnes, "Dance or Something at the Armory," *New York Times*, October 15, 1966.

27 *Ibid.* The sense that the technology was a failure was reiterated by artist Robert Smithson (who did not participate), who wrote that it seemed like "The Funeral of Technology": "Everything electrical and mechanical was buried under various esthetic mutations. The energy of technology was smothered and dimmed." Robert Smithson, "An Esthetics of Disappointment (c. 1966)," in *Robert Smithson: The Collected Writings*, edited by Jack Flam (Berkeley: University of California Press, 1996), p. 335. Remarkably, "9 Evenings" is still criticized as a failure, half a century later: for example, in a recent review Peter Schjeldahl insisted that the performances, which he attended, "were malfunctioning, formless, numbing

ordeals" (Peter Schjeldahl, "The Audacity of Robert Rauschenberg," *The New Yorker*, May 29, 2017), p. 60.

28 O'Doherty, "9 Armored Nights," p. 16.

29 Whitman, "Theatre and Engineering," p. 29.

30 Max Kozloff, "The Multimillion Dollar Art Boondoggle," *Artforum* 10, no. 2 (October 1971), p. 72.

31 See Anne Collins Goodyear, "Expo '70 as Watershed: The Politics of American Art and Technology," in *Cold War Modern: Design 1945-1970*, edited by David Crowley and Jane Pavitt (London: Victoria and Albert Museum, 2008), pp. 197-203.

32 Maurice Tuchman, "Introduction," in *A Report on the Art and Technology Program of the Los Angeles County Museum of Art, 1967-1971* (Los Angeles: Los Angeles County Museum of Art, 1971), p. 17.

33 Jack Burnham, "Corporate Art," *Artforum* 10, no. 2 (October 1971), p. 67.

34 Kozloff, "Multimillion Dollar Art Boondoggle," p. 76.

35 Gail R. Scott, "Richard Serra," in Tuchman, *Art and Technology Program*, p. 300.

36 Jack Burnham, "Art and Technology: The Panacea That Failed," in *The Myths of Information*, edited by Kathleen Woodward ([Lincoln, Neb.]: Coda Press, 1980), pp. 200-215.

37 Burnham, "Corporate Art," p. 71.

38 Max Kozloff, "Industrial Complex: Max Kozloff on 'The Multimillion Dollar Art Boondoggle' (1971)," *Artforum* 51, no. 1 (September 2012), p. 209.

39 Mumford, *Transformations of Man*, p. 171. Recently, scholars such as Michelle Kuo, Edward Shanken, and Sylvie Lacerte have offered other interpretations of the relative success of artists using technology in the 1960s. For example, both Shanken and Lacerte argue that these artists fulfilled the contemporaneous failed ambitions of conceptual art. See Kuo, "9 Evenings in Reverse," in *9 Evenings Reconsidered* (see note 1 above), pp. 31-39; Edward Shanken, "Art in the Information Age: Technology and Conceptual Art," *Leonardo* 35, no. 4 (2002), pp. 433-38; and Sylvie Lacerte, "9 Evenings and Experiments in Art and Technology: A Gap to Fill in Art History's Recent Chronicles," in Dieter Daniels and Barbara U. Schmidt, eds., *Artists as Inventors, Inventors as Artists* (Ostfildern: Hatje Cantz, 2008), pp. 159-74.

40 The description of this work is drawn from Gail R. Scott, "Boyd Mefferd," in Tuchman, *Art and Technology Program*, p. 233.

41 According to the catalogue, which is corroborated by photographic documentation in the archives at LACMA, the work was to be reconfigured for its 1971 showing at LACMA: two sets of L-shaped walls would frame the entrance and exit, and Mefferd would add two additional bulbs per flash unit (*ibid.*, p. 234).

42 On USCO, see Tina Rivers Ryan, "Towards a Stroboscopic History: An Interview with Gerd Stern of USCO," in *Hippie Modernism: The Struggle for Utopia*, edited by Andrew Blauvelt, *exh. cat.*, Walker Art Center, Minneapolis; Cranbrook Art Museum, Bloomfield Hills, Mich.; and University of California, Berkeley Art Museum and Pacific Film Archive (Minneapolis: Walker Art Center, [2015]), pp. 375-82. The sudden popularity of strobe

lights in the art of the 1960s was noted by filmmaker Jonas Mekas in his regular column for the *Village Voice*. See Jonas Mekas, "May 26, 1966: On the Plastic Inevitables and the Strobe Light" and "June 16, 1966: More on Strobe Light and Intermedia," in *Movie Journal: The Rise of the New American Cinema 1959-1971* (New York: Collier Books, 1972), pp. 242-44, 244-46, respectively.

43 Scott, "Boyd Mefferd," p. 233.

44 Burnham, "Corporate Art," p. 70.

45 "Art: Man and Machine," *Time*, June 28, 1971, p. 60.

46 Rosalind E. Krauss, *The Optical Unconscious* (Cambridge, Mass.: MIT Press, 1993), p. 142. As both Rosalind Krauss and Caroline Jones have argued, the rationalization of the human body—in terms of the isolation of the senses—defines the modernist theory espoused by Clement Greenberg. Thus the rationalization of the body is the mark of not only economic modernity but also artistic modernity. See *ibid.* and Caroline A. Jones, *Eyesight Alone: Clement Greenberg's Modernism and the Bureaucratization of the Senses* (Chicago: University of Chicago Press, 2005). As Krauss explains, it is precisely this kind of "technologizing of the body, this need to abstract and reify each of the senses in a submission of human subjectivity to the model of positivist science," that so incensed Georg Lukács (Krauss, *Optical Unconscious*, p. 8). Although Lukács's writing inspired the Frankfurt School of critical theory associated with Theodor Adorno, whose critique of technology is discussed by Kelly Baum in her essay in this volume, for Adorno (and also Greenberg), there was something utopian in this disciplining of the senses—a utopianism that now seems impossible to recover.

47 Elsewhere, Krauss implies that the use of flashing lights in Picabia's 1924 ballet *Relâche* offered a kind of resistance to technocracy. See Rosalind E. Krauss, *Passages in Modern Sculpture* (New York: Viking Press, 1977). Picabia's work, therefore, serves as an early antecedent of work such as Tony Conrad's 1966 film *The Flicker*, which is discussed at length in Branden W. Joseph, *Beyond the Dream Syndicate: Tony Conrad and the Arts after Cage; A "Minor" History* (New York: Zone Books, 2008). According to Pamela M. Lee, even Bridget Riley's Op art paintings, which were not technological but resulted in similarly aggressive assaults on the sensorium, offered a kind of critique of technology. See Pamela M. Lee, *Chronophobia: On Time in the Art of the 1960s* (Cambridge, Mass.: MIT Press, 2004).

48 See, for example, the work of Jean-François Lyotard, Frederic Jameson, Arthur Danto, and Hal Foster.

49 See, for example, Lev Manovich, "New Media from Borges to HTML," in *The New Media Reader*, edited by Noah Wardrip-Fruin and Nick Montfort (Cambridge, Mass.: MIT Press, 2003), p. 24.

50 This narrative of computer history is found in many sources, such as Steven D. Lubar, *InfoCulture: The Smithsonian Book of Information Age Inventions* (Boston: Houghton Mifflin, 1993).

51 See R. L. Rutsky, *High Techné: Art and Technology*

from the Machine Aesthetic to the Posthuman (Minneapolis: University of Minnesota Press, 1999).

52 My stance here is indebted to the work of Branden W. Joseph, Felicity D. Scott, and David Joselit. See, for example, Felicity D. Scott, "Limits of Control: Felicity Scott on *Rain Room* and Immersive Environments," *Artforum* 52, no. 1 (September 2013), pp. 350-57, 432. Janet Kraynak has proposed a reading of the technological work of Bruce Nauman that intersects with my own reading of the art-and-technology movement here: rather than see Nauman's installations as "embodiments of technorationality," she argues that these works "speak to the moment of reason's collapse," prompting the subject to "[discover] those small opportunities where conformity breaks down and possibility, even if fleeting and limited, accrues" (Janet Kraynak, "Dependent Participation: Bruce Nauman's Environments," *Grey Room*, no. 10 [Winter 2003], pp. 37, 38, 40).

53 The literature on glitch has been proliferating rapidly and cannot be surveyed here, but some major texts are Rosa Menkman, "Glitch Studies Manifesto," in *Vortex Video Reader II: Moving Images Beyond YouTube*, edited by Geert Lovink and Rachel Somers Miles (Amsterdam: Institute of Network Cultures, 2011); Mark Nunes, ed., *Error: Glitch, Noise, and Jam in New Media Cultures* (New York: Continuum, 2011); Iman Moradi and others, eds., *Glitch: Designing Imperfection* (New York: Mark Batty Publisher, 2009); and Kim Cascone, "The Aesthetics of Failure: 'Post-Digital' Tendencies in Contemporary Computer Music," *Computer Music Journal* 24, no. 4 (Winter 2000), pp. 12-18.

54 This phrase is a pun on the "difference engine," an early mechanical calculator that preceded the nineteenth-century "analytical engine" that gave rise to modern computing; notably, the difference engine was itself a failure, as it wasn't successfully built until the 1990s.

55 Hugh S. Manon and Daniel Temkin, "Notes on Glitch," *World Picture Journal* 6 (Winter 2011), pp. 6, 8, http://www.worldpicturejournal.com/WP_6/Manon.html. I thank Daniel Temkin for bringing this paper to my attention.

56 *Ibid.*, p. 7.

57 *Ibid.*, p. 13.

DELIRIOUS

ART AT THE
LIMITS
OF REASON
1950-1980

KELLY BAUM

WITH LUCY BRADNOCK AND
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KELLY BAUM

WITH LUCY BRADNOCK AND TINA RIVERS RYAN

Can postwar art be understood as an exercise in calculated insanity? Taking this provocative question as its basis, this book explores the art and history of delirium from 1950 to 1980, an era shaped by the brutality of World War II and the rapid expansion of industrial capitalism. Skepticism of science and technology—along with fear of its capability to promote mass destruction—developed into a distrust of rationalism, which profoundly influenced the art of the times. *Delirious* features work by more than sixty artists from Europe, Latin America, and the United States, including Dara Birnbaum, León Ferrari, Gego, Bruce Nauman, Howardena Pindell, Peter Saul, and Nancy Spero. Experimenting with irrational subject matter and techniques, these artists forged new strategies that directly responded to such unbalanced times. Disturbing and challenging, the works in this book—in multiple media and often, counterintuitively, incorporating highly ordered and systematic structures—upend traditional notions of aesthetic harmony. Three wide-ranging essays and a richly illustrated plate section investigate the degree to which delirious times demand delirious art, inviting readers to “think crazy.”

Kelly Baum is Cynthia Hazen Polsky and Leon Polsky Curator of Contemporary Art, Department of Modern and Contemporary Art, The Metropolitan Museum of Art, New York; **Lucy Bradnock** is Assistant Professor, Department of History of Art, The University of Nottingham, England; **Tina Rivers Ryan** is Assistant Curator, Albright-Knox Art Gallery, Buffalo, New York.

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