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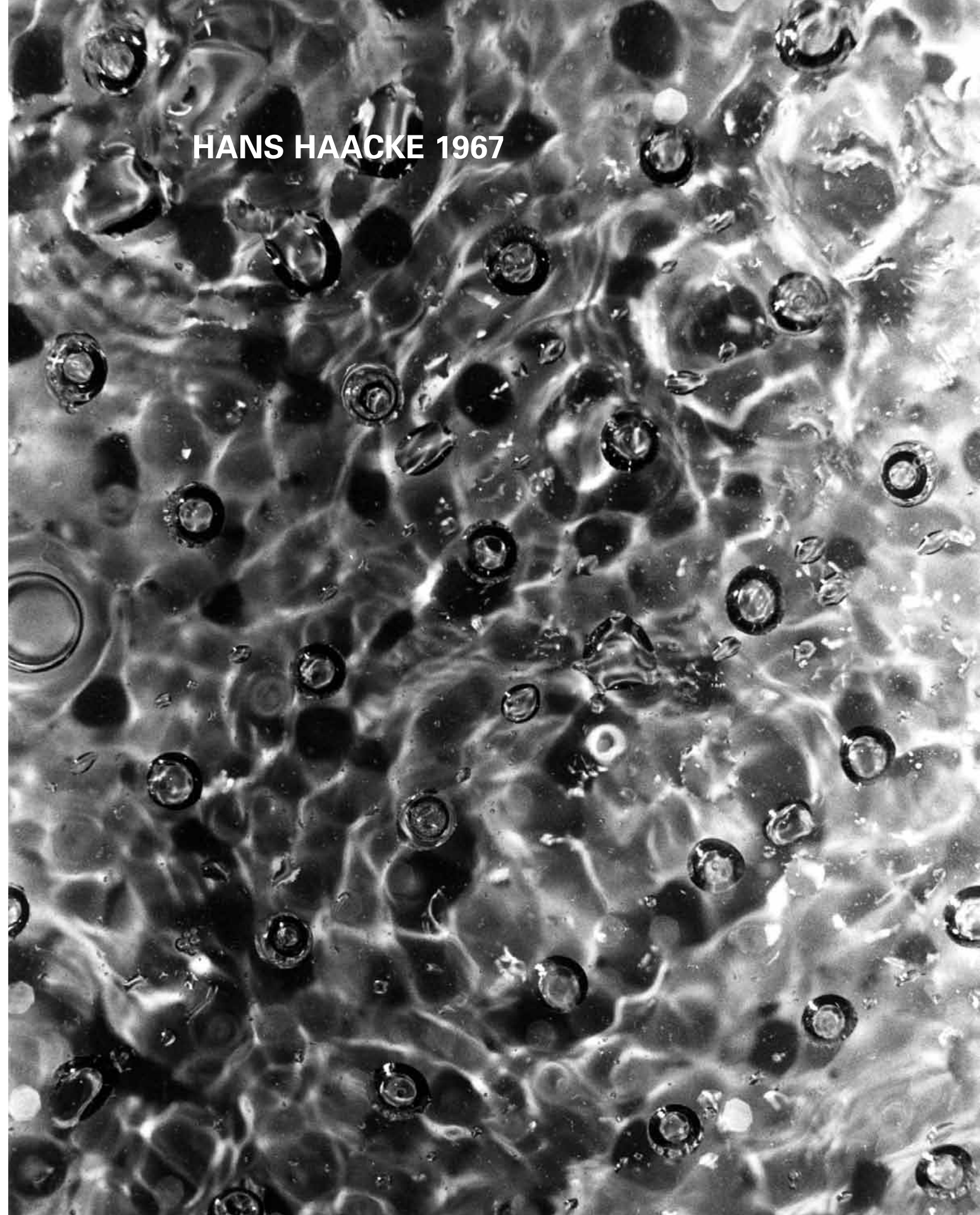
HANS HAACKE 1967

MIT LIST VISUAL ARTS CENTER



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This catalogue accompanies the exhibition *Hans Haacke 1967*
MIT List Visual Arts Center
Cambridge, MA
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Curator: Caroline A. Jones

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Front cover: *MIT Sky Line*, 1967; back cover: *Flight*, 1967
Opposite: Visitors at Hans Haacke's exhibition at the Hayden Gallery, MIT, 1967.

Unless otherwise noted, all photographs are taken by Hans Haacke and are published here courtesy of the artist.



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ACKNOWLEDGMENTS

Throughout the past year, as the Massachusetts Institute of Technology celebrated its 150th anniversary, the MIT List Visual Arts Center has presented a series of exhibitions that bring to light the Institute's extraordinary artistic heritage. This re-presentation of Hans Haacke's 1967 MIT solo exhibition is a fitting piece of this exploration.

Hans Haacke has been a force in the artworld for five decades, and it has been our pleasure to work with him to restage these early works that utilize such elements as earth, air, and water. He has kindly opened up his home and archives for multiple visits, graciously providing objects, images, and records.

The idea for *Hans Haacke 1967* began with a visit by former List Center director Jane Farver to Haacke's 2008 exhibition at Paula Cooper Gallery in New York City. Realizing that the artist, whom she had known for years, was taking photographs in the gallery, they chatted and she learned that Haacke had first shown some of the work at MIT decades earlier. He sent photographs to Farver, who shared them with MIT art historian Caroline Jones, who set about to determine exactly what had been shown in the original presentation.

We are so grateful to Jones, who is Director of the History Theory + Criticism of Art and Architecture program in MIT's Department of Architecture, for her extensive research, writing, and sheer enthusiasm in organizing this exhibition and catalogue, which includes not only the works seen at MIT in 1967 but a selection of photographs of Haacke's systems works produced around that time. This is the third project Jones has so generously undertaken with the List Center.

List Center Gallery Manager Tim Lloyd, who makes every exhibition look its best, spent months making sure the various components of these works, many of which needed to be refabricated, came together seamlessly. He was assisted by Alexander Hilton Wood, an MIT graduate student in History Theory + Criticism, who used his interests and skills in research, computer-aided design, and project management to bring this project to completion, and Meegan Williams, who used her considerable skills on several of the silk pieces. MIT graduate student S. Faisal Hassan provided invaluable research assistance for the curator, as did MIT Museum archivist Laura Knott.

This catalogue includes the first English-language publication of Edward Fry's essay on Haacke that was intended for the canceled Guggenheim exhibition of 1971. Caroline Jones was able to track it down at the University of Pennsylvania Special Collections with the assistance of Aaron Levy, Executive Director of Slought Foundation. We appreciate the permission of Sandra May Ericson and the Fry estate to publish it here. This publication was ably edited by Joseph N. Newland, Q.E.D., and designed by Jean Wilcox of Wilcox Design.

Special acknowledgment is also offered to the generous lenders of art, including the artist; Paula Cooper Gallery, New York; the Art Gallery of Ontario; and the MIT Museum.

Funding for *Hans Haacke 1967* has been generously provided by the Barbara and Howard Wise Endowment for the Arts, the Council for the Arts at MIT, the Massachusetts Cultural Council, and Consulate General of the Federal Republic of Germany.

I owe a great debt of gratitude to my List Center colleagues, who are skilled professionals who handle their roles so well. To Registrar Diane Kalik, Educator and PR Officer Mark Linga, Gallery Manager Tim Lloyd, Gallery Assistant John Osorio-Buck, Administrative Assistant Barbra Pine, Curator João Ribas, Public Art Curator Alise Upitis, Web Assistant Dani LaFontaine, Gallery Attendants Karen S. Fegley, Magda Fernandez, Kristin Johnson, Bryce Kauffman, and Suara Welitoff, and interns Jill Fisher, Alex Jacobson, Beryl Lam, Emily Manns, Megan Reinhart, Andrea Rosen, Shelby Spaulding, and Angelina Zhou, thank you so much for your dedication and hard work to make *Hans Haacke 1967* such a success.

And lastly a heartfelt thank you to former director Jane Farver, for initiating this project and teaching me so much about museums and the arts.

David Freilach, Acting Director

September 2011



HANS HAACKE 1967

CAROLINE A. JONES

RECONSTITUTING “SYSTEMS ART”

Hans Haacke 1967 has three goals: to provoke a reconsideration of late sixties “systems art” in general, to reposition Haacke as a key participant in that discourse, and to reinvent the 1967 exhibition of his systems art at MIT. Each “re-” signals a vexed relation to both past and present. First, systems thinking has become so pervasive that it is difficult to see how instrumental it was to what we now refer to as “relational,” “situational,” and “social” modes of art-making. Second, Haacke’s involvement in non-human systems has been occluded by his own social turn, codified after the trauma of the Guggenheim Museum’s cancellation of his planned one-person show in 1971 and canonized as institutional critique. Third, the reconstruction of any historical exhibition is fraught, despite the proliferation of “restagings” in these first decades of the twenty-first century.¹ As curator Bill Arning warns, “what we cannot reconstruct is the technological innocence of the original audience for this work.”²

Comprehending Haacke’s systems thinking in its full historical moment, and installing that “moment” in an exhibition in 2011 may be impossible—but that merely fuels my polemic: the work shown at MIT in 1967 was significantly *different* from the highly social work to which the artist turned shortly thereafter. There is a widespread presumption that Haacke’s systems art was merely the trial run for later institutional critique. I propose instead that *Hans Haacke 1967* looks back to a last, exquisite apogee of techno-utopianism. In 1967, “natural” systems would be captured for art with an elegant minimum of technology in order to eradicate sentiment and contemplate non-human agency.

If the work from this time embraced the non-human, it did so in order to minimize the traditional exclusivity of “fine art,” which seemed to require an education in the humanities. The viewer’s participation was actively solicited, even though the “systems” being investigated were not (yet) social ones. *Hans Haacke 1967* itself results from the broader social systems we now understand to be an incontrovertible aspect of art’s work. As recounted in David Freilach’s catalogue acknowledgments, it was Haacke’s chance encounter with Jane Farver in 2008 that reminded us of his 1967 MIT exhibition. When I proposed to restage it, just what “it” was became an open question. An answer of any kind would have been impossible without the artist’s patient collaboration, deep archives, and installation photographs; also crucial was the intense intellectual and material involvement of Alexander Wood and S. Faisal Hassan (fabrication and research assistants, respectively) as well as the gallery’s superlative exhibition designer Tim Lloyd.³ Just what *was* in Haacke’s one-person show, which opened on October 24, 1967, at MIT?

Haacke’s exhibition had no thematic title.⁴ Organized by Department of Architecture professor Wayne Andersen, newly hired to chair MIT’s Committee on the Visual Arts, it was intended for MIT students as well as a wider public. Its unorthodox objects—bubbles sliding through a large water level, immiscible liquids sloshing between Plexiglas sheets, “rain” percolating through small holes in transparent plastic acrylic, silk chiffon flowing in ribbons and waves, a parachute suspended in air, a “weather cube”—were like no art these viewers had seen before. Yet Haacke’s works gave impetus to a century-long



MIT Sky Line, in Killian Court at MIT prior to launching, October 24, 1967.

aspiration of MIT designers: to transform academic Beaux-Arts traditions (chiaroscuro, rendering, the sketch) through protocols of engineering (structural analysis, material innovation, mechanical drawing). This desire was at its most intense immediately following World War II, when Gyorgy Kepes was brought in to reform teaching of “the Drawing,”⁵ replacing the pencil with a wide range of technological media, and confirming the Institute’s broad goal after the war to ameliorate fears of the technologies its own faculty had made possible (radar no less than the atomic bomb).⁶ These years witnessed MIT’s founding of a new school of humanities, arts, and social science, an ecumenical chapel, an art gallery, and altogether new curricula in architecture—all part of the growing consensus that technology alone could not solve the problems humans were creating.⁷ Haacke was brought into this context, his presence brokered by MIT’s architecture school, founded a century before to meld “fine art . . . and technological science,”⁸ which resonated nicely with an exhibition of “systems art.”

In that brief moment before the student-led revolts of 1968, Haacke’s air and water works opened at the Institute’s Hayden Gallery, even as the artist’s mentors, ZERO Group⁹ artist Otto Piene and “Systems and Art” theorist Jack W. Burnham, were planning to arrive as the first generation of fellows at MIT’s new Center for Advanced Visual Studies (CAVS).¹⁰ Very much in Piene’s spirit, Haacke kicked off his

exhibition with a parade of students shepherding *MIT Sky Line* (1967)—helium balloons linked to a single nylon cord—to be sent aloft between the shockingly new student center and Eero Saarinen’s new auditorium and chapel. This choreography left the Beaux-Arts columns of old MIT behind, aiming for the new postwar “functionalist” architecture linked to technology and engineering.¹¹

MIT Sky Line was ephemeral, and lasted only a few hours (as did its earlier prototype, a *Sky Line* Haacke staged in *Kinetic Environment 1 and 2* in New York’s Central Park earlier in the year). But despite his obvious homage to Piene (whose work he “greatly admired” for the “human time patterns” unfolding in his motorized *Light Ballet*¹²), Haacke was signaling at MIT his departure from the ZEROS’ sometimes mystical gestures. In *Sky Line*, the balloons were seemingly just vehicles for launching a technical drawing into the sky. Play was now partnering with the abstraction of systems.

Systems pervaded MIT. Fed by MIT professor Claude Shannon’s information theory and codified at the famous Macy Conferences in New York from 1946 to 1953, systems and cybernetics stretched from Jay W. Forrester’s applications in social science to the major contributions of Norbert Wiener in mathematics and Vannevar Bush in computational

engineering. Wiener, a galvanic presence at MIT until 1964, published *Cybernetics* in 1948, with a revised second edition put out by MIT Press in 1961. It’s safe to say that once Ludwig von Bertalanffy’s *General System Theory* was published by the literature and art firm Braziller in 1968, the artworld had its bookend bibles for a systems revolution.¹³ Andersen’s invitation to Haacke confirmed the momentum, reinforced by Kepes’s appointment of Burnham to CAVS shortly thereafter.

Jack Burnham was linked closely to both Haacke and Piene; when Kepes’s first letter was sent to him in June 1967, its opening sentence—“I learned about your work from Otto Piene”—reveals a probable link to Haacke, who’d known Piene since the late 1950s, and Burnham since 1961.¹⁴ Burnham in turn sent Kepes an essay he had published on Haacke’s work a few months before as a supplement to the journal *Tri-Quarterly*, and offered to teach a course on the subject of “Systems and Art.”¹⁵ While at CAVS, Burnham included Haacke in more generic essays on “Systems Esthetics” in 1968 and “Real Time Systems” in ‘69, both published in *Artforum*. Deeply enthused about “systems,” Burnham described Haacke’s work in 1967 as a kind of “natural medicine” for humans beleaguered by rapid-fire industrialized capitalism. Commenting on Haacke’s preference for simple technologies in mobilizing his systems, Burnham wrote:

Today in the engineering of complex systems the problem is to make the man-machine relationship as smoothly functional as possible. . . . For this reason—and for more practical ones—Haacke’s devices are purposely kept simple and technically unelaborate. . . . [T]hey are fragile *systems* not stable *objects*.¹⁶

The necessarily new forms associated with “systems” were difficult to submit to aesthetic judgment. Unlike “kinetic art,” under whose rubric Haacke had first come to MIT,¹⁷ systems offered little in the way of “composition.” (Haacke recalls that already by the late 1950s he had become “intrigued by non-compositional developments” in European and American art.¹⁸) Moreover, systems’ interactivity was not a matter of knobs and buttons. “In some cases I was asked only to look,” wrote Burnham in 1967 of his visit to Haacke’s studio, “as a box would do its ‘work’ with no human intervention.”¹⁹ In the MIT student newspaper reviews of the 1967 show, the phrase “kinetic sculpture” yields explicitly to “systems.” As *The Tech* reported:

Haacke rejects the name “sculpture” for his works. He calls them “systems,” noting that they “have been produced with the explicit intention of having their components physically communicate with each other, and the whole communicate physically with



Jack W. Burnham’s monograph on Haacke, spring 1967.



the environment. . . . Changes are desired and are part of the program—they are not due to the shifting experience of the viewer.”²⁰

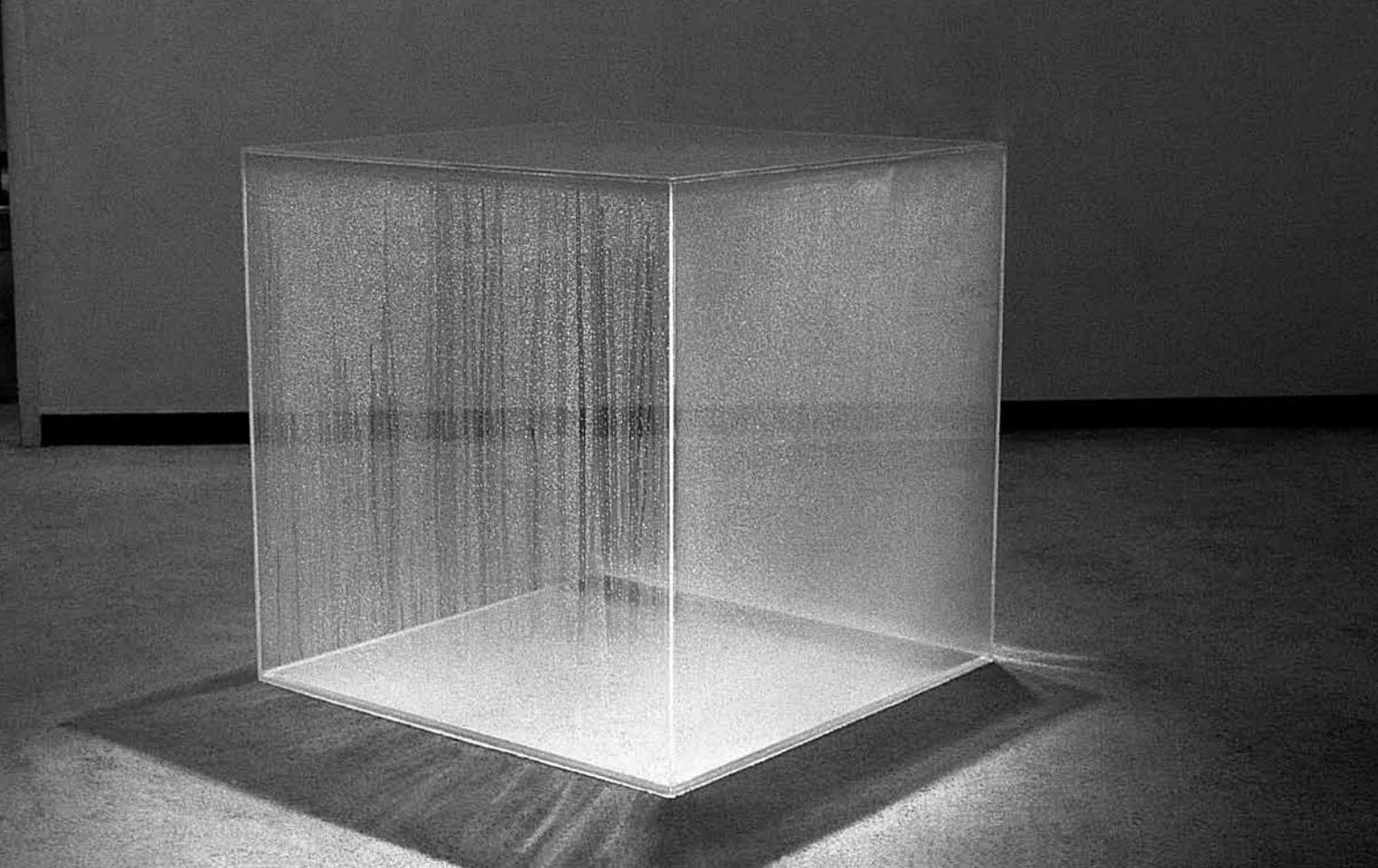
Systems called to stranger discourses of feedback, recursive loops, automatic functions, and autopoiesis. Most remarkably, even if they sometimes needed human agency to set them in motion, Haacke’s systems in 1967 were positioned explicitly as being outside standard aesthetic discourses involving emotion, interpretation, culture, and memory. Haacke’s earliest “systems” were in some measure outside the human altogether.

This is the paradox—that mere months before his turn to the social, Haacke was capable of arguing for a systems art that was wholly independent of the humans perceiving it. (Although the artist now quotes Lenin, “everything is connected to everything else,” at the time his priority was to argue against the banality of “art appreciation.”²¹) Rather than prosthetic “extensions of man” in the 1960s theories of Canadian English-professor-turned-media-guru Marshall McLuhan, Haacke’s technologies anticipated the 1980s work of German literary-theorist-turned-media-guru Friedrich Kittler—less enhancements of a coherent human body than propulsions to the post-human.²² Even Burnham, who had proposed to consider the artist’s “natural medicine” in terms of a tradition of “organic rapport” with nature (à la Thoreau), was “shocked” at Haacke’s abrupt response, when the artist wrote:

I hate the nineteenth century idyllic nature loving act. I’m for what the large cities have to offer, the possibilities of technology and the urban mentality. Plexiglas, on the other hand, is artificial and strongly resists either tactile sensuality or the ‘personal touch’. Plexiglas, mass-production—Thoreau—they don’t really fit together.²³

Haacke’s rejections, as in Kittler’s later attempt at “driving spirit [*Geist*] out of the humanities,”²⁴ may have been responses to Fascist appropriations of these very tropes (nature-loving, blood, soil, and spirit). Certainly the failure of the great German philosophical tradition either to prevent or comprehend the atrocities of World War II caused a crisis among all thinking Germans. There was also a generational disgust at the traditional discourses of “empathy” that still haunted art criticism. For whatever reason, by 1967 Haacke was reaching for a newly dispassionate art. As he recently recalled his position: “I rejected the traditional thinking of the romantic, and rejected the psychological, which exudes the magic of all art criticism.”²⁵

The canonical *Condensation Cube* (first conceived in 1963, and executed in 1965) reveals the barometric operation of the systems Haacke wanted to employ. The fact that a larger version was exhibited under the title *Weather Cube* at MIT in 1967 troubles some interpretations that place this work either with the 1960s cubic objects of Minimal Art (courting what Michael Fried called “objecthood”²⁶), or along the path to full-blown institutional critique (as theorized by Benjamin H.D. Buchloh²⁷). The current re-installation allows us to re-open the case of Haacke’s most famous cube. Constructed of the synthetic glass substitute thermoplastic acrylic (poly[methyl 2-methylpropenoate], developed by a German



Condensation Cube (exhibited at MIT in 1967 as *Weather Cube*), large version, 1967.

chemist in the 1930s, researched during wartime for airplane windshields, and later marketed in the US under trade names such as Plexiglas, Lucite, or Perspex), the cube's flawless transparency extends to its chemically fused facets. A tiny hole drilled in a top corner allows the introduction of water to a depth of about an inch in the bottom of the box. Crucially, the box is less an object than a device for staging a slowly unfolding sequence of events. As in the cloud chambers made by Victorian physicists for mimetic experiments, the water in Haacke's *Weather Cube* forms a microclimate system.²⁸ Although Haacke now demurs that "weather" is no different from "condensation" ("they are the same thing"),²⁹ I would argue for their difference. Condensation is commonly experienced on the surfaces of a nearby object (at a Minimalist scale); *weather* happens atmospherically (at a systems scale). To model condensation is a modest aspiration; to model weather aims at the orders of the world.

In 1967 Burnham could already see how these "weather" boxes would connect with Haacke's wind devices, with global implications: "The Earth itself could be looked upon as a great wind making device forming patterns of evaporation, rain and humidity over its surface as a kind of enormous condensation container."³⁰ Unaware of anthropogenic climate change, Burnham shared Haacke's view of the *impersonality* of "weather" in 1967, whereas the reinstallation of Haacke's systems in 2011 may prompt reflections on collective responsibility.

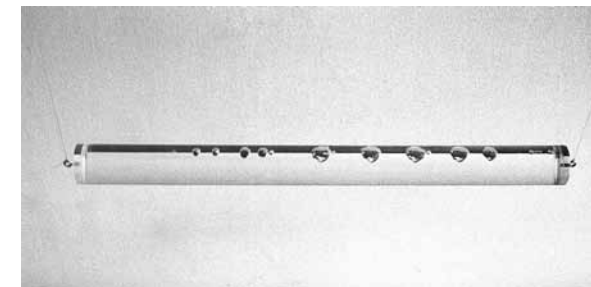
Accepting its familiar title, *Condensation Cube*, is to tame this broader set of implications, as water circulates through several of its available states: beginning as liquid, evaporating into mist, and slowly condensing again into liquid droplets that form orderly yet subtly random patterns that run down the sides as rain.

Even within the heady context of systems art that first enveloped it at MIT, the self-sufficiency of this system can be called into question. Around which inputs and outputs is the system defined? What is black-boxed, and what interrogated as functional? Most importantly for my argument here, what are its boundaries—*Does the system include us? The artworld? The larger climate?* For Haacke in 1967, just beginning to explore extremely diffuse systems of animal and environmental life, the boundaries of the system in question still excluded the human. The miniature model, and the closed universe it implied, called up the magic of autonomous art:

. . . in spite of all my environmental and monumental thinking, I am still fascinated by the nearly magic, self-contained quality of objects. My water levels, waves and condensation boxes are unthinkable without this physical separation from their surroundings.³¹

Details reveal the artist's efforts to maintain that "physical separation." The distilled water introduced into the various Plexi structures must be treated with copper sulfate to prevent unwanted biotic "systems" from blooming. Similarly, the tiny hole drilled at the top must be managed to prevent humidity from escaping—covered either by clear tape or a set screw in order for the condensation "system" to continue to function. Art history's canonization of *Weather Cube* as *Condensation Cube* is largely unreflective about these aspects of the work, sometimes reducing the work to an object, or at best celebrating it as the container of processes "completely independent of the viewer's perception" (as Buchloh correctly relays Haacke's intentions).³²

In complicating these received views (and in the spirit of systems theorizing), I suggest that what we call *Condensation Cube* would be unlikely to display its internal weather theater without two inputs from outside the box. First, there must be light shining into the interior (as Haacke himself admitted)—light that cannot then escape, becoming heat (the "greenhouse effect") and causing the water to evaporate into the air trapped inside the box. Second, the box's exterior must become cooler than this interior, whether as a result of air conditioning or the natural cooling of its surrounding after sunset. It is only this differential of a cooler exterior that propels condensation to occur, but only after the differential of a hotter interior has allowed evaporation to precede it. It is no accident that the piece exhibited at MIT as "Weather Cube" entered art history as "Condensation Cube"—reinforcing the smaller scale of an object that could be moved about.



Large Water Level, 1964.



Clear Flow, 1966.

The tension between environmental versus object implications is even more problematic with other works, lost since 1967 but now refabricated. The title of *Double-Decker Rain* (1963) for example, implies that the decks “contain” the rain as an isolated or self-generated system, an impression furthered by the few reproductions in major Haacke monographs.³³ The documentation of *Clear Flow* (1966) conveys the same autopoiesis, the patterns of its bubbles seemingly self-generated. Only the process of reconstruction brought out that the photographs capture an evanescent moment in these systems, when the fluids in the box are struggling to return to homeostasis. Indeed, this and other works *depend* on being agitated by human hands, which are required to begin the process by turning the box upside down like an hourglass.

This introduces the crucial component of participation, which interested Haacke deeply at the time (see his first published statement from 1965 reprinted herein: “make something which the ‘spectator’ handles, with which he plays, and thus animates.”) Clearly intending to question the passivity of vision (note the scare quotes around “spectator”), Haacke produced hand-manipulated Plexi-and-water pieces even before making the self-contained *Condensation Cube*—as, for example, with *Rain Tower* as early as 1962 (see p. 31). He often photographed visitors peering at these works (presumably after agitating them), and believed such interactions would transform them in important ways.³⁴ It is this paradox I want to emphasize—how Haacke struggled to keep the human from impeding the autonomy of these fluid systems, yet recognized the importance of the art in restoring humans’ own equilibrium (via empathetic “systems” he was not acknowledging as part of his concern). Notably, particularly in the early published photographs, we are rarely shown the visitor actually holding, turning, pushing, or handling a piece (a decorum broken by Eric Pollitzer in his 1965 photograph of the artist himself moving *Wave*, for which see p. 17.) Even when discussing his contribution to a conceptual art show in which he put a gallery humidity detector on display, Haacke insisted there was no input from the human—although it is precisely the sweat, heat, and vaporous breath of crowds that the device is ordinarily used to monitor.³⁵

The human could watch; the human might even push a system into motion, but the system’s unfolding was *independent of the human* in 1967. Such autonomy, ideally, would exclude even the machine: “I would want all the machines to disappear and for the sails or balloons or whatever to become completely autonomous.”³⁶ How can we understand the artist’s resolute desire to circumscribe the human or the machinic from the system, when cybernetics itself originated in an application of mechanical feedback theories to psychological human processes? Was Haacke alone in reading systems art as black-boxed from the human, at least before 1968?

SYSTEMS’ GENEALOGY

At MIT, the yearning for systems goes back to its nineteenth-century origins, when architect William R. Ware and Institute President William Barton Rogers drew on the *beaux arts* (as taught in Europe) but instituted *techné*—the art of crafting, of making, of innovating and engineering. As Ware put it in his outline for the program in 1865:

The trouble is technological; *there is a want of system and method*, and of means for general collection, and a general diffusion of their results.³⁷ [emphasis added]

That anxious “want of system and method,” and the view of technology as its solution, would continue with the Institute’s placement of Kepes at CAVS and Haacke at the Hayden.³⁸ Haacke’s show thus played to a much longer obsession, but it was important that it took place at the hinge of the late sixties—an epoch later described by Burnham as the “great hiatus between standard modernism and postmodernism.”³⁹ “Systems” might initially have promised Burnham a kind of “natural medicine” inoculating art lovers against industrial alienation, but Haacke’s show of luminous, autopoetic works unfolded in 1967 amid a burgeoning military-industrial complex—just months before students’ principled attack on that much larger “system” forced MIT to implement massive change.⁴⁰ Having been introduced to systems thinking by Burnham, Haacke had read Bertalanffy and Weiner and was familiar with the theory’s imbrication in protocols of military command, control, and communication. Only later would this attribute of systems render the label of “Systems Art” unappealing.⁴¹

Since Haacke’s Systems Art initially posited that the human subject was only an instigator or perceiver of a system that excluded her, we are confronted with a curious logic—that the very extension of systems and cybernetic theory into the human sciences coincided with Haacke’s *removal* of humanist traditions via Systems Art. Of course, eliminating human error (which “empathy” could be seen to be!) had always been the very point of systems. As Burnham would later summarize its force: “Ultimately . . . systems theory may be another attempt by science to resist the emotional pain and ambiguity that remain an unavoidable aspect of life.”⁴² If resisting sentimentality, romanticism, empathy, and “the ‘personal touch’” meant turning to systems, did it also mean rejecting the environmental politics of Thoreau? Haacke’s systems in 1967 oscillated between “natural medicine” and an edgy aesthetic of technological and urban orders.

The very ambiguity of Haacke’s early Systems Art—concern for nature’s operations combined with a critique of traditional humanism—are both available in the genealogy of systems theory. But by making systems into *art*, Haacke began to confront those theories’ very instrumentalizing logic. It may even be that the installation of these pieces at MIT brought such ambiguities to a head for Haacke, clarifying how the necessarily social component of “art” systems precisely allows art to do more than foment further systematization. Certainly his growing understanding of “systems” as a component of US military practices increasingly gave the artist pause, especially after 1970. Indeed, a few months after MIT he would ruminate that “An artist is not an isolated system.”⁴³ This was given force in 1969, when he helped found the Art Workers Coalition in January and included in his show at Howard Wise Gallery the first poll of a gallery’s viewers: a residence and birthplace inquiry that “invited them to create a self portrait and look at themselves in a (sociological) mirror.”⁴⁴

The confrontation between systems and the social is attested by Haacke’s archive of unpublished early photographs, which frequently show families engaging the works in



Hans Haacke with *Wave* (1965), photograph by Eric Pollitzer (courtesy of Archives of American Art, Smithsonian Institution, Rudi Blesh papers).

the 1967 installation. And almost all of MIT’s student newspaper articles show visitors enjoying works that were elsewhere described as autonomously boxed. The “magic” of objects that Haacke still craved remained inert without humans setting some of these systems in motion. And although the artist was extricating himself *via systems* from his past with the ZEROS, the kickoff for the MIT show was clearly linked to their Happening-type events. Scores of student helpers were marshaled for filling, tying, and tethering the balloons of *MIT Sky Line* (p. 8), and for the different experiments with weather balloons in the great dome of MIT’s main entrance. Here Haacke planned to suspend an enormous sphere (partially inflated with helium), forty feet wide, in the center of the dome. Like a massive version of the *Sphere in Oblique Air Jet* (1964) on view in the gallery, the balloon was supposed to float mysteriously over a giant fan in a classical demonstration of the Bernoulli principle. But despite advice from MIT meteorologist Erik Møllø-Christensen, the sphere drifted, developed a leak, and had to be removed.⁴⁵ Well after the show’s opening, Andersen got four smaller weather balloons to float on airshafts from fans housed in the four corners of the dome lobby (see *The Tech* photograph p. 21). Such “weather” was messily mechanical, and exuberantly social.

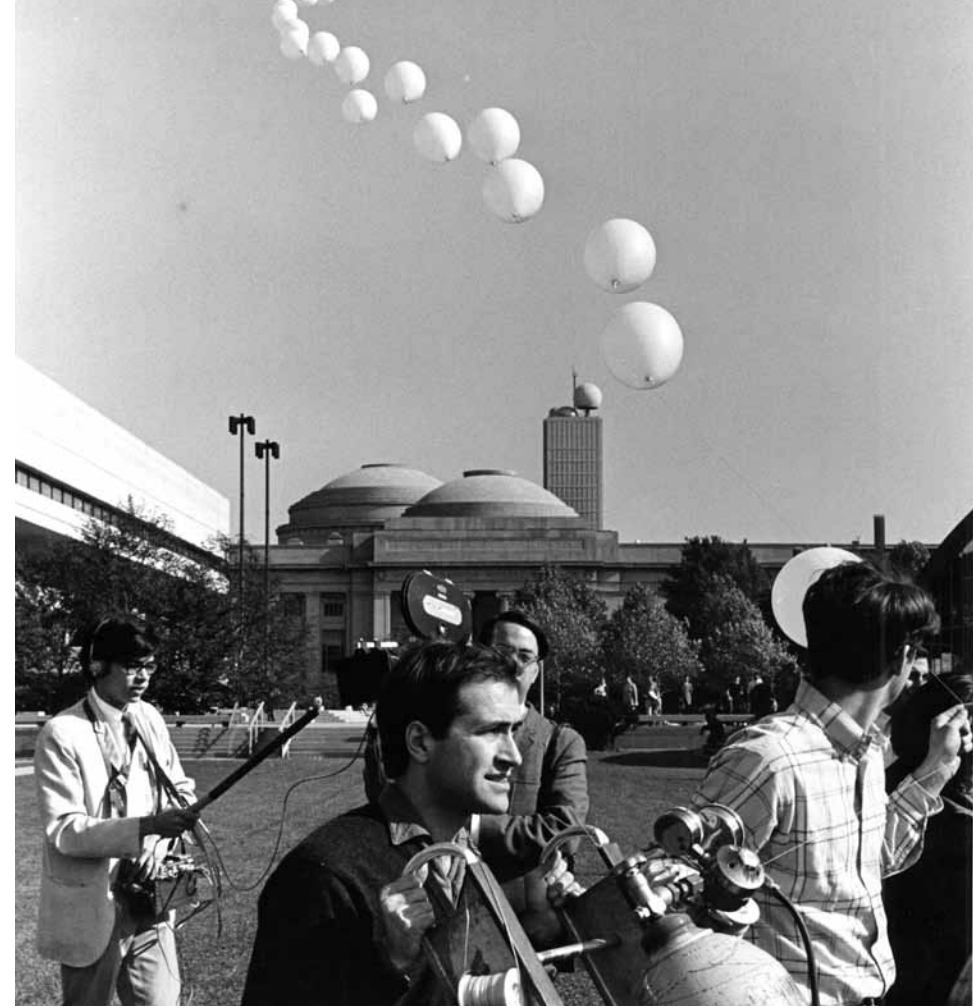
Grass also revealed the social parameters of systems edging their way into Haacke’s 1967 procedures. Known to art history as *Grass Grows* (and previously dated to Cornell’s *Earth Art* show in 1969 for its first articulation),⁴⁶ this work originated at MIT as *Grass*, a



“system” rather than a “work” of earth. As a system, the pile was intended to demonstrate phenomena over time: “Haacke exhibit features systems of ‘grass,’ ‘ice’.”⁴⁷ Historically excavating its full system means that the 1967 *Grass* would have to include dubious students shoveling dirt into a pile, commercial manufacturers selling winter rye seeds, and even more dubious maintenance workers watering and tending the crop planted in the heap. (According to Andersen, the janitorial staff ultimately “adopted” *Grass* and fought to defend it from students’ “hacks.”⁴⁸) These social components of the systems on view proved difficult to control. *The Tech* reported that *Ice Stick* was marked by “the effects of many warm hands,” and noted “*Grass* has taken a heavy beating and is pockmarked with footprints.” But the larger social systems around these works could both outline the parameters of art and celebrate Haacke for enlarging them, as in the quip reported from administrator Marietta Millet: “These people who walk on sculpture—really!”⁴⁹

The humor in Millet’s response stems precisely from the exhilarating freedom Haacke’s systems produced *for art*, with change welcomed by the artist who “deliberately designs his ‘systems’ to evolve in time and be affected by time.”⁵⁰ The student writers learn in print, over the passage of several articles, and eventually come to question the entire “philosophy of art.”⁵¹ Revealing his new interest in sociology, Haacke responds cautiously to their questions: he “would have to define art” in order to classify these works as such; but “the display

Top: Child eyeing *Large Water Level* (1964–65) in MIT’s Hayden Gallery, 1967.



of his work does qualify as an ‘exhibit’ due to the fact that it is being held in Hayden.” (It is the institutional circumstances, not its status as “art,” that produce the works as an “exhibit.”) The final query as to whether his systems really have “artistic significance” yields Haacke’s most telling response: “‘It all depends on the people (who view the work),’ he said.”⁵²

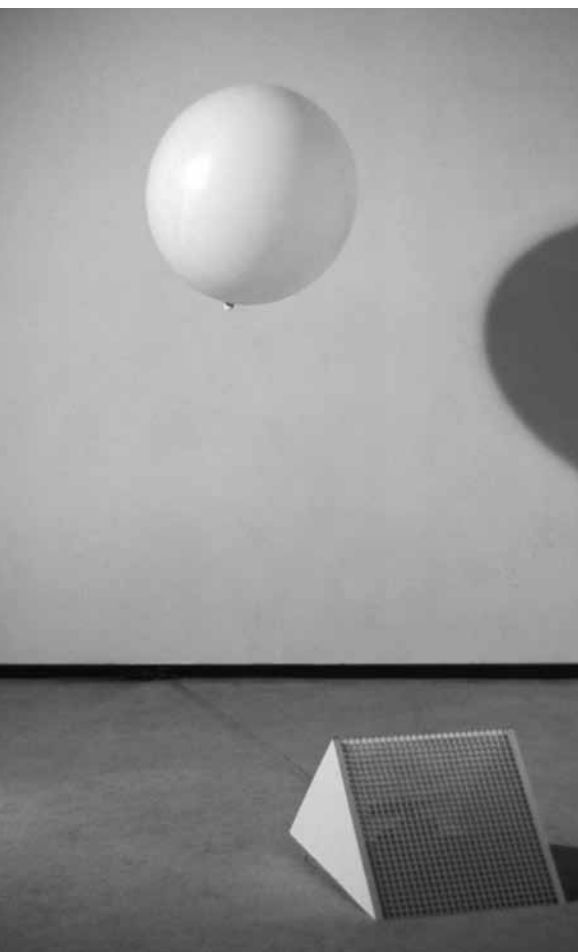
EPHEMERAL SYSTEMS

After a year in Philadelphia (1961–62, when he met Burnham) and another in New York (1962–63), Haacke abandoned painting and printmaking for much less conventional media. Photographs Haacke took of his studio in Cologne (in 1964 and 1965) already show this freedom—in experiments edging onto windowsills, on spots of outdoor ground, or even



Top: Haacke wheeling helium tank with MIT students assembling *MIT Sky Line*, October 24, 1967 (photograph courtesy of MIT Museum).

Right: Visitor to Howard Wise Gallery in 1966 manipulating Haacke’s *Column of Two Clear Liquids*.



Sphere in Oblique Air Jet, 1964–67.

extruding as soapy foam from columnar machines—an exploration of water he later abandoned.⁵³ Proposals for “ZERO on Sea” in August 1965 included the mass of seagulls that he would not have occasion to produce until *Live Airborne System* three years later.⁵⁴ (For images of these and other ephemeral projects, see pp. 55–70.) Moving back to New York in the fall of 1965, the artist began to question the very categories of “sculpture” and “kinetics.” The roof of his Bowery studio became a laboratory for Systems Art.

Confessing to Burnham that he liked the separation and autonomy of art, but also longed for “something unconfined, like the ocean, the desert, Grand Canyon, or even . . . interstellar proportions,” Haacke utilized the “free” urban space of his rooftop as a corner of the cosmos.⁵⁵ *Water in Wind* from 1968 is photographed from high, low, and in color, to capture a rainbow forming in the prism of droplets in Haacke’s spray.⁵⁶ Casting ice, and photographing it “freezing and melting” in 1969, he also piled chunks of urban snow into an impressive rooftop mound as dusk fell in the city. He explored the liquid state of water by photographing its trickles from a perforated hose in the 1969 *Cycle*; again, the “urban mentality” frames the set up (which would be repeated in *Tokyo Trickle*, and *Trickle*, *Maenz Gallery*, 1970 and 1971, respectively). Site began to play a role, and geometry to waver—in 1970, *Bowery Seeds* replaced the monoculture of MIT’s *Grass* with something airborne and weedier;

Spray of Ithaca Falls . . . in 1969 was austere compared to the chaotic urban garden he produced in Boston with water hoses and spray nozzles in *Fog*, *Dripping*, *Freezing* in ‘71.

Their full titles suggest the discourses about site specificity and process that were entering Haacke’s systems after MIT—*Spray of Ithaca Falls: Freezing and Melting on Rope February 6, 7, 8 . . . , 1969*. What he has jokingly referred to as his “Franciscan” phase expanded from seagulls to a repertoire of animals: *Ant Co-op* and *Chickens Hatching* from 1969, *Ten Turtles Set Free* from 1970. Near the Fondation Maeght in Saint-Paul de Vence in southern France, the artist focused on different systems in a single set up in the woods, *Transplanted Moss Supported in Artificial Climate* in one view becomes *Artificial Rain* in another. There is nothing particularly “systematic” about these ephemeral, process-oriented explorations. The close-up view from the Rhine’s bank in Krefeld (then in West Germany; 1972) and the *Monument to Beach Pollution* in Carboneras, Spain (1970), are dissimilar in scale, framing, and proportion—but they share a focus on the “systems”

depositing trash and pollution by water. Significantly, these are systems of pollution produced *by people*. Crucially, by the time of the 1972 Krefeld exhibition, Haacke was willing to merge documentation with action—the *Rhine Water Purification Plant* transformed the Plexi containers of autopoietic “weather” into housings for filtration systems that at once “represented” the discharge from the Krefeld sewage plant, and actively intervened to reduce it.⁵⁷

This full-blown recognition of the “social” in systems was fueled by Haacke’s own increasing political concerns, and by the politicization of his work following the cancellation of his Guggenheim museum show in 1971.⁵⁸ The now (in)famous tipping point, *Shapolsky et al., Manhattan Real Estate Holdings, a Real-Time Social System, as of May 1, 1971*, is a breathtakingly different kind of “system,” social to the core. But the explicit politics of this work (which Haacke was also living, as a cofounder of the Art Workers Coalition and an advocate for artists’ work/live and resale rights) has eclipsed the ephemeral process-oriented systems he was still producing after *Grass* at MIT—the beginnings of *Guggenheim Beans* (later realized as *Directed Growth* in Krefeld) and *Guggenheim Rye in the Tropics*, both “unfinished” but documented in the museum’s sculpted Frank Lloyd Wright interiors. Yes, it could be claimed that these dirt-based systems, brought into the alimentary but still white and antiseptic galleries of the Guggenheim, “reveal” an institutional critique—but I have struggled to explore the internal boundaries that Haacke’s “systems aesthetic” originally entailed.

An ephemeral work described by one curator as “essentially parodic” reveals these boundaries precisely—*Norbert: “All Systems Go”* from 1970–71.⁵⁹ Named for Norbert Wiener yet referring to systems rather than cybernetics, the work featured a pet mynah bird which Haacke was attempting to train to say “All systems go” (the signal for blast-off readiness in the space age) in time for the Guggenheim opening. As Luke Skrebowski, a sympathetic scholar of this piece, has imagined it:

A white cube. A black bird with bright yellow stripes around the eyes sits in a chrome cage. It rocks gently on its perch. Silence. Occasional scrabbling sounds [. . .] Time passes. Nothing happens. Suddenly, the caged bird speaks. “All systems go” it squawks. And again, “All systems go.” A pause. “All systems go. All systems go.” Repetition to inanition. “All systems go.”⁶⁰

Balloons float in Bldg 7 as part of art exhibit

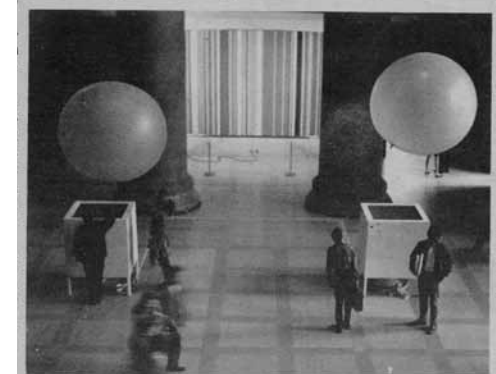
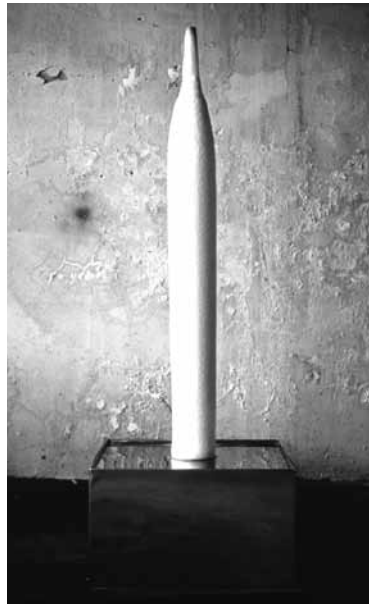


Photo by Mike Venturino
Two of the six foot balloons float above their fans in the lobby of Building 7. The balloons are part of Haacke’s kinetic sculpture exhibit now in the Hayden Gallery [See story on page 11.]

MIT student newspaper, *The Tech*, documenting the successful launch of a revised balloon project by Haacke in MIT’s main lobby, November 4, 1967.



Haacke’s *Grass Grows* being watered at the *Earth Art* exhibition by its curator Willoughby Sharp and museum director Tom Leavitt, Cornell University, 1969 (photograph by Sol Goldberg for Cornell University).

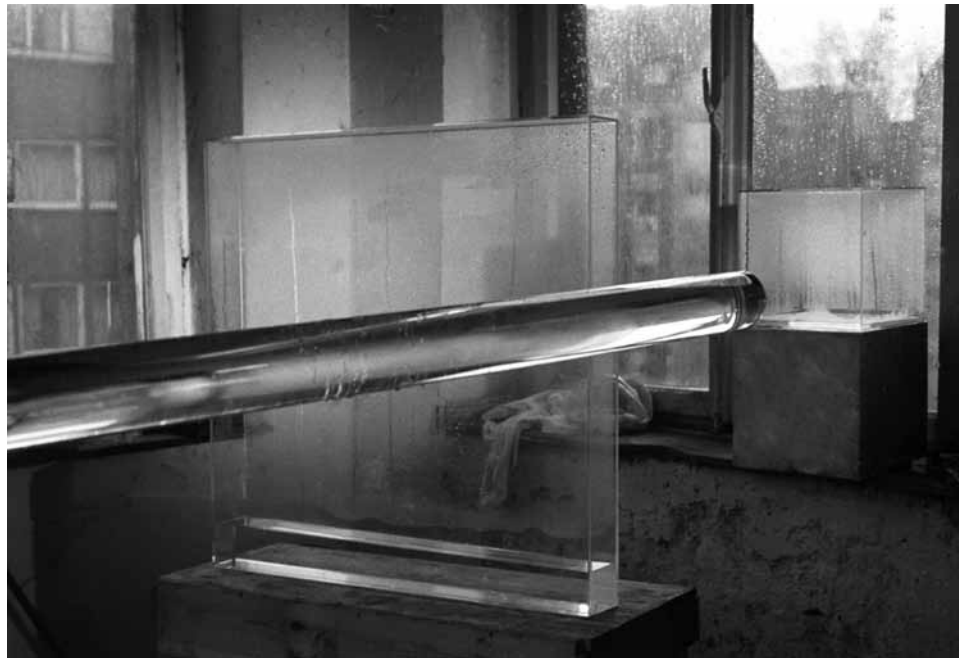


Ice Stick, 1966.

Skrebowski argues that “[the 1969] *Chickens Hatching* makes direct use of the possibilities presented by cybernetic systems [while the later] *Norbert* . . . seems to negate them.”⁶¹ As Skrebowski argues: “[in *Norbert*] cybernetic theory . . . is mocked, its optimistic feedback-steered vision of human progress undermined . . . [in] the sardonic refrain of a trained mynah bird.”⁶² This reading aligns with Buchloh’s view of systems work as inherently critical, but I want *Norbert* to foreground a different problematic. What is the boundary that defines the “system,” outside of which are set up the terms for its critique?

The boundary that Haacke consistently vexes is the boundary he continually redraws: the elite container of artworld signification *must* be conceived as a separate system from the real world—a world in which Haacke buys the mynah bird, sets up a feedback loop (quite literally) in which he endlessly plays a tape of the intended utterance and waits to reward the bird if it should ever say it, until such time as the system (as I am seeing

View of Haacke’s studio in Cologne, 1965.



it, with much larger boundaries than Haacke finds useful) can be presumed to be homeostatic, with the bird named Norbert primed to utter “All systems go” for the now symbolic reward system of the artworld itself, transferred from the artist’s hand to the bird’s beak to the viewer’s ear. The fact that this particular mynah bird proved “dumb” and the Guggenheim canceled the exhibition does not change Haacke’s core requirements: the artworld would be the one system whose boundaries would have to remain intact, to contain the changing contents of other systems—whether the abstract droplets in *Condensation Cube* or the riotous patterns of colored papers—color-coded according to status as fully paying visitor, member, student, etc.—“ballots” in the *MoMA Visitors’ Poll* (from the 1970 *Information* show: ballots inserted, I note, from outside the box, p. 25).⁶³ Haacke continued to think of these as systems, but they were now permeable to the social—and the artworld would never quite be the same.⁶⁴

Earlier processes seen to “evolve without the viewer’s empathy” at MIT could hardly jibe with a new reality in which the personal had become political. The constant was Haacke’s conviction, set down on paper as he was preparing the MIT exhibition in 1967: “A system is not imagined, it is real.”⁶⁵ *Hans Haacke 1967* will make a different *real* from the systems of air, ice, and water on view; we are more likely to think about the hydrocarbons burning at a distant site to fuel *Ice Stick*, the global climate implied by *Condensation* (a.k.a. “*Weather*”) *Cube*, or the absurd inefficiencies of *Artificial Rain* and *Transplanted Moss*. Clearly, the ephemeral works’ titles were already shifting to emphasize the human agency behind “artificial” climates and “transplanted” biota; the full social turn was not far behind. If we can no longer sustain the earliest belief that the systems of Systems Art are “absolutely independent” of humans, we can still take up Haacke’s initial offer of an artworld space, time, and provocation to contemplate their unfolding.

NOTES

1. As, for example, curator Helen Molesworth and artist Allan Kaprow’s “reinvention” of *Yard* (1961/2009) at the Hauser & Wirth Gallery in New York, and the refabrication of Haacke’s own *Wide White Flow* in 2006, exhibited in his solo exhibition *Hans Haacke—wirklich—Werke 1959–2006* at Deichtorhallen, Hamburg, 2006, and in 2008 at the Paula Cooper Gallery, discussed below. (Repairs and reconstructions are made as required for each exhibition.)
2. Bill Arning, public discussion before the opening of *Stan VanDerBeek: The Culture Intercom* at MIT’s List Visual Art Center, February 3, 2011.
3. For help with archives at MIT, staff members Alise Uptis and Laura Knott were indispensable; as were the staff at the Archives of American Art, Smithsonian Institution, in Washington, DC, and at Haacke’s present gallery, Paula Cooper. The final element in the project’s germination was intellectual—funded by the MIT 150th anniversary, we organized a forum for thinking about systems in the present and questioning systems in the past. Here I want to thank David Mindell, Leila Kinney, Tod Machover, and all the brilliant colleagues and facilitators who made possible the symposium “Systems, Process, Art, and the Social” on February 4, 2011, at MIT, with presentations by Ben Aranda, Michelle Kuo, João Ribas, Matthew Ritchie, and Matt Wisnioski.
4. The exhibition from October 1967 is referenced in *The Tech*, the MIT student newspaper, simply as a one-man show of Hans Haacke works. Curator Wayne Andersen identified the show as “Hans Haacke Wind and Water Works” in his curriculum vitae from 1969. Andersen file, Committee for the Arts Records, MIT Museum. This title is close to “Hans Haacke: Wind and Water,” the one-person show that Haacke staged in 1966 at his New York gallery, Howard Wise, suggesting that at some point Andersen merely thought he was getting that exhibition. (He did not.) The poster designed for the exhibition by Jackie Casey reads simply: “Hans Haacke / Hayden Gallery / MIT.”
5. “We are eager to make the Drawing (for part of a more complete word) a strong and integral part of the school.” William Wurster to Gyorgy Kepes in Wellfleet, MA, August 1945, Gyorgy Kepes papers, Archives of American Art,



Grass Grows (first installed at MIT in 1967 as *Grass*), shown here in 1969 conical version.

- Smithsonian Institution, reel 5303 fr 0175, as cited by Elizabeth Finch in her path-breaking "Languages of Vision: Gyorgy Kepes and the 'New Landscape' of Art and Science," Ph.D. diss., City University of New York, 2005. See my contribution to Arindam Dutta, ed., *A Second Modernism: MIT, Architecture, and the "Techno-Social" Moment* (forthcoming).
6. MIT's most notable contributions came with the development of radar in the "Rad Lab" (Radiation Laboratory), as detailed in Peter Galison, *Image and Logic: A Material Culture of Microphysics* (Chicago: University of Chicago Press, 1997).
 7. See Reinhold Martin, *The Organizational Complex: Architecture, Media, and Corporate Space* (Cambridge, MA: MIT Press, 2003); and Dutta, *A Second Modernism*.
 8. As summarized by Mark Wigley, "Prosthetic Theory: Disciplining of Architecture," *Assemblage* 15 (August 1991): 14. Founder of the MIT School of Architecture, William R. Ware positioned "the history of architecture, the theory of architectural ornamentation, the laws of proportion, of harmony and of geometrical and naturalist decoration" as humanist fine arts, while placing "mechanic arts employed in building, supervising, specifications, contracts, lighting, ventilation, heating, etc." on the scientific side of architecture. William R. Ware, letter to John Runkle (secretary of the Massachusetts Institute of Technology), April 27, 1865, 2, as cited by Wigley, "Prosthetic Theory," 26 n35.
 9. Crucial to Haacke's development (and open for deeper historicization than can be accomplished here), the ZERO Group was founded in West Germany in the late 1950s and at its zenith collaborated with groups in the Netherlands, Paris, Italy, Eastern Europe, and even Japan. The current summary

- of its history can be found on the ZERO foundation website, <http://www.zerofoundation.de> (accessed June 2011): "In 1958, at their studio at Gladbacher Strasse in Düsseldorf, Heinz Mack and Otto Piene founded ZERO. In 1961, Günther Uecker joined the group; and in 1966, ZERO disbanded."
10. The history of "Systems Art" is only beginning to be written, but by all accounts Jack Burnham can be considered its founding theorist. For recent forays into this history, see Edward A. Shanken, "From Cybernetics to Telematics: The Art, Pedagogy, and Theory of Roy Ascott," in Roy Ascott, *Telematic Embrace: Visionary Theories of Art, Technology, and Consciousness*, edited and with an essay by Edward A. Shanken (Berkeley and Los Angeles: University of California Press, 2003); Luke Skrebowski, "All Systems Go: Recovering Jack Burnham's 'Systems Aesthetics,'" *Tate Papers*, no. 5 (Spring 2006), <http://www.tate.org.uk/research/tateresearch/tatepapers/06spring/skrebowski.htm> (accessed June 2010); and emerging research by Melissa Ragain, "Homeostasis is not enough: Order and Survival in Early Ecological Art," unpublished manuscript, courtesy of the author.
 11. As Wayne Andersen recalls it, the wind swept the balloons dangerously close to traffic on Massachusetts Avenue, and he and Haacke decided to authorize the immediate untying of the balloons. Andersen, interview with the author, July 13, 2009, Boston.
 12. Hans Haacke, interviewed by Jack W. Burnham, in his "Hans Haacke Wind and Water Sculpture," *Tri-Quarterly Supplement* 1 (Spring 1967), 19.
 13. Norbert Wiener, *Cybernetics: Or, Control and Communication in the Animal and the Machine*, 2d ed. (New York: MIT

Press, 1961); and Ludwig von Bertalanffy, *General System Theory: Foundations, Development, Applications* (New York: Braziller, 1968).

14. Kepes, letter to Burnham, June 5, 1967, Burnham file, Center for Advanced Visual Studies (CAVS), MIT. In an interview with the author on March 26, 2009, New York City, Haacke recalled (typescript 12): "I met him [Burnham, in 1961–62] when I was in Philadelphia. He was a junior faculty in some Delaware college. And somehow, I don't remember how, I met a graduate student at the University [of Pennsylvania], who's still around, by the name of Jimmy Harithas . . . I don't know how he had heard, or knew. Well, he had a car, I didn't have a car. We made a trip down to this college and met Jack Burnham. And since then we were in touch." Burnham introduced Haacke to the concepts of systems theory in the work of Wiener and von Bertalanffy, and confirmed Haacke's notion of Duchampian "ready mades" as capable of describing this systems work.
15. Burnham, letter to Kepes, November 17, 1967, Burnham file, CAVS archives, MIT. Never taught at MIT, the intriguing course on "systems and art" had been developed with an engineer when Burnham was at Northwestern; Burnham's systems morphed into structuralism and the material was eventually published as *The Structure of Art* (New York: Braziller, 1971). As Burnham described "systems methodology" to Kepes: "It is a radical departure from the usual sticks and screen design class, but that is what it meant to be. Since the writing of this paper there have been a number of changes and improvements in the course." I have identified a loose mimeographed typescript in the Burnham file in the CAVS archives as the course proposal. It is annotated in Burnham's handwriting, "for G. Kepes," and titled "Some thoughts on systems methodology applied to art"; based on the correspondence it can be dated November 1967 and is cited henceforth as "Burnham, 'Systems methodology' 1967." In the correspondence, Burnham also promised to send Kepes the monograph he had recently written on Hans Haacke ("Hans Haacke Wind and Water Sculpture" in the *Tri-Quarterly Supplement*).
16. Burnham, "Hans Haacke Wind and Water Sculpture," 10–11.
17. *Miscellaneous Motions of Kinetic Sculpture* (April 4–May 2, 1967) included more works by Haacke than any other artist: *Large Wave* (1965), *Floating Sphere* (1964–66), *Condensation Wall* (1967), and *White Sail* (1965–67). Other artists in the show were Len Lye, Gerald Oster, Earl Reiback, Vassilakis Takis, Günther Uecker, and Jean-Pierre Yvaral.
18. Haacke interview, March 26, 2009 (ts 9).
19. Burnham, "Hans Haacke Wind and Water Sculpture," 3.
20. Peter Mechler, "Haacke to Exhibit Kinetic Art," *The Tech*, October 17, 1967, 5. After this article, reporting on Haacke's gentle corrections, the phrase "kinetic art" was not used again.
21. Hans Haacke, email communication with the author, August 31, 2011.
22. Kittler's best-known work in English is the 1999 translation (by Geoffrey Winthrop-Young and Michael Wutz) of his 1986 study *Gramophone, Film, Typewriter* (Stanford University Press); McLuhan's comparable treatise is the 1964 *Understanding Media: The Extensions of Man*, reissued by MIT Press in 1994.
23. Haacke to Burnham, letter sent prior to April 1967, as quoted by Burnham in "Hans Haacke Wind and Water Sculpture," 13. Although Haacke begins with an ameliorating "Good old Thoreau" and acknowledges "there's some [romanticism] in me," his rejection of Burnham's transcendentalism is complete.
24. Friedrich Kittler, ed., *Austreibung des Geistes aus den Geisteswissenschaften: Programme des Poststrukturalismus* (Paderborn, Munich, Vienna, Zürich: Schöningh, 1980).
25. Haacke interview, March 26, 2009 (ts 18).
26. Michael Fried, "Art and Objecthood" (1967), anthologized in his *Art and Objecthood* (Chicago: University of Chicago Press, 1998), 148–72.
27. Benjamin H.D. Buchloh, "Hans Haacke: Memory and Instrumental Reason" (1988), as anthologized in Buchloh, *Neo-Avantgarde and Culture Industry: Essays on European and American Art from 1955 to 1975* (Cambridge, MA: MIT Press, 2000), 202–41.
28. On the experimental cloud chamber and mimetic experiments, see Galison, *Image and Logic*. On the connection of Haacke's *Condensation Cube* to contemporaneous climate-control systems in architecture, see Mark Jarzombek, "Haacke's Condensation Cube: The Machine in the Box and the Travails of Architecture," *Thresholds* 30 (Summer 2005): 99–103.
29. Discussion with the author, May 24, 2011, New York.
30. Burnham, "Hans Haacke Wind and Water Sculpture," 11.
31. Haacke, letter to Burnham, written before April 1967, as cited in Burnham, "Hans Haacke Wind and Water Sculpture," 14.
32. Buchloh, "Hans Haacke," 218. Buchloh's thoughtful piece on Haacke has certainly been the most influential since the writings of Jack Burnham and Edward Fry in the late 1960s.
33. This reading is not Haacke's, since his thought was to capture the visual similarity with rain rather than its containment. Haacke, email, August 31, 2011.
34. As he acknowledged in the interview Burnham published in 1967, Haacke felt that the slower rhythm of his systems work was healing for the participant: "It is more related to what human beings have known in terms of natural motion. I watched many people during my exhibitions. I was surprised and happy to see them loosening up after handling some of my objects." Burnham, "Hans Haacke Wind and Water Sculpture," 19.
35. In our March 26, 2009, interview (ts 13), Haacke stated that the hygrothermograph piece was intended for a conceptual art show as an ironic commentary on the institution, not as an actual measure of the human / HVAC systems interacting in the galleries: CAJ, "By '69 you're looking at hygrothermographs in an art gallery . . . so you know that when bodies come into the gallery, the temperature rises." HH, "No, that was not the idea behind it. I would suspect that the visitors, unless it's really packed, have no effect on the humidity."

36. Haacke, interviewed by Burnham, "Hans Haacke Wind and Water Sculpture," 20.
37. William R. Ware, *An Outline of a Course of Architectural Instruction* (Boston: John Wilson and Sons, 1866), 9, cited in Wigley, "Prosthetic Theory," 13.
38. These fears continued through to the founding of the Media Lab, where ameliorative Kepes/Piense models were contested by former CAVS fellow Nicholas Negroponte, who hoped to achieve "something closer to the cockpit of an F14 than a barn." Memorandum to Ricky Leacock and Otto Piene from Negroponte of the Architecture Machine Group, dated December 9, 1977, CAVS archives, MIT. Thanks to the scholarship of Meg Rotzel at MIT for revealing this fascinating contest. The fact that Burnham included Negroponte in his *Software* exhibition at the Jewish Museum, New York, in 1970, and even put his work on the catalogue's cover, suggests the convergence of these interests at the time.
39. Jack Burnham, personal correspondence with Edward Shanken, April 23, 1998, as cited in Shanken, "The House That Jack Built: Jack Burnham's Concept of 'Software' as a Metaphor for Art," *Leonardo Electronic Almanac* 6:10 (November 1998): unpaginated n3, now hosted at <http://www.artextra.com/House.html> (accessed June 2011).
40. Notably, the reviews of Haacke are on pages of the student newspaper that also contain recruitment ads for Grumman, Hughes Aircraft, and the like. Student protests against the militarization of MIT attempted to shut down various functions of the university in 1968, when MIT's Instrumentation Laboratory was receiving over \$50 million from the Department of Defense and NASA. By 1969, the funding of the Instrument Laboratory constituted *one-quarter* of MIT's total operating budget. See Finch, "Languages of Vision," 276–77. MIT's President Howard W. Johnson (in office from 1966–71) gained praise for his handling of the situation, advocating for the divestment of the Instrumentation Lab in 1970, plus a relocation and partial restructuring of the Lincoln Labs.
41. Indeed, Haacke's decision not to use "Systems Art" in the title for the accompanying gallery of ephemeral documentation here in 2011 can be seen as part of his post-1967 education, which revealed to him just how involved with military operations "systems" had become. I propose that prior to the MIT show, systems was an interest of Haacke's but not an "aesthetic." The impetus of the MIT exhibition seems to have prompted numerous statements (see those reprinted in this book), as well as discussions with *Tech* newspaper writers, in which Haacke explicitly shifted from "kinetic" to "systems" in his discourse. From this point in the essay, therefore, I capitalize "Systems Art" to convey this moment of canonization for both Haacke and Burnham.
42. Jack Burnham, "Introduction," *Great Western Salt Works: Essays on the Meaning of Post-Formalist Art* (New York: Braziller, 1974), 11.
43. Haacke, "from a talk . . . at the annual meeting of the Intersocietal Color Council, April 1968," as cited by Burnham, "Real-Time Systems," in *Great Western Salt Works*, 30.
44. Haacke, email, August 31, 2011. In an interesting way, this "mirroring" returned to concerns that pre-dated the systems work, evident in constructions that Haacke made using highly reflective mirror foil on wooden forms, while still in Cologne.
45. The Art Workers' Coalition began when Haacke and others organized to support the protest by kinetic artist Takis, who had physically withdrawn his work on January 9, 1969, from the 1968 MoMA show *The Machine at the End of the Mechanical Age* in resonance with *Mai '68* in Paris and in outrage at the continuing war in Vietnam. The coalition disbanded by 1971, but its legacy was revived by activist collectives in the 1980s such as Artists Meeting for Cultural Change, Group Material, Guerrilla Girls, the Women's Action Coalition, Act Up, and others.
46. Referenced as "Eric" in a letter from the Director of Exhibitions sent to Haacke in October 1967 (Haacke personal archives), but correctly spelled "Erik" in Bobbi Lev, "Balloon Problems Mar Haacke Opening," *The Tech*, 27 October 1967, 1.
47. *Grass Grows* was Haacke's well-documented submission to the 1969 *Earth Art* show curated by Willoughby Sharp for Thomas Leavitt at the White Art Museum (and outside it!) at Cornell University, Ithaca, New York. Haacke's *Spray of Ithaca Falls: Freezing and Melting on Rope, February 7, 8, 9 . . . , 1969* was part of the same exhibition, which included Robert Smithson and Dennis Oppenheim, enthusiastically assisted by a young architecture student, Gordon Matta-Clark.
48. *The Tech*, written four days before the exhibit opening, October 20, 1967, 1.
49. Andersen interview, July 13, 2009.
50. Lev, "Balloon Problems Mar Haacke Exhibit Opening," 11.
51. Mechler, "Haacke to Exhibit Kinetic Art," 5. This first of the *Tech*'s many articles on the one-person show did not reflect in the headline what the body of the article documented, e.g., the switch from "kinetic" to "systems" art.
52. *The Tech*, October 20, 1967, 1.
53. *The Tech*, October 20, 1967, 3.
54. Haacke's foam works were abandoned early on, perhaps because of his awareness that David Medalla had already begun to exhibit "bubble mobiles" in 1964. In Medalla's *Signals* newsletter (London), June–July 1965, an earnest letter from the young Haacke notes "it would be extremely petty and unfair if I would not say that you build [*sic*] your bubble-mobiles before I made my water-columns foam. . . . It is an old story that rather similar things are being developed at the same time by different persons spread all over the world." Haacke letter dated November 22, 1964, Köln; thanks to Anneka Lenssen for bringing this *Signals* issue to my attention.
55. Importantly, Haacke's proposal for the Scheveningen ZERO festival was not yet conceived as a system, even in the spring of 1966 when the artist excitedly wrote Burnham about the event he still thought would happen: "[A]lso, I would like to lure 1000 seagulls to a certain spot (in the air) by some delicious food so as to construct an air sculpture from their combined mass." Letter from Haacke to Burnham, as cited by Burnham in "Hans Haacke Wind and Water Sculpture," 14. By the time of its realization off the beach at Coney Island in November 1968, the work was, definitively, a "*Live Airborne System*."
56. Haacke was not alone in this impulse, of course, as Robert Smithson took friends on outings to New Jersey, and performance artists such as Joan Jonas and Trisha Brown began to utilize streets and rooftops for urban choreography.
57. This stock signifier of romantic beauty is interpreted radically differently by Haacke in 1968 than in the 1990s practice of Olafur Eliasson, who has studied Haacke's systems works closely. As curator Walter Grasskamp has recently described *Water in Wind's* rainbow, "this romantic aspect was rather incidental in a sequence of works of nearly scientific stringency. . . . Haacke's production had moved far away from what museums, collectors and dominant culture had made of art: a heroic mystery." Grasskamp, in Walter Grasskamp, Molly Nesbit, and Jon Bird, *Hans Haacke* (London and New York: Phaidon, 2004), 40–41. In contrast, by titling his interior mist-and-light assemblage as *Beauty* (1993), Eliasson locates the romantic history of aesthetics in the singular plural of the spectator's body: after all, both beauty and rainbow exist only in the eye of the beholder, analogized to the camera that is its "objective" correlative.
58. "By displaying the Krefeld Sewage Plant's murky discharge, officially treated enough to return to the Rhine River, Haacke brought attention to the plant's role in degrading the river. By pumping the water through an additional filtration system and using the surplus water to water the museum's garden, he introduced gray-water reclamation." <http://greenmuseum.org/ecovention/rhine.html>. Haacke confirmed in an email, August 31, 2011, that at the time of the exhibition, the Krefeld sewage treatment plant was under construction but not yet functioning. See also the work of Melissa Ragain, "Homeostasis is not enough."
59. The cancellation both stalled Haacke's career and made it. For Europeans, he became a frequent emblem of the cultural freedom offered by their state-funded museums and festivals, revealing the bankruptcy of US claims to free speech; at the same time, the artist was virtually ignored by American museums (and the American market) until well into the 1980s, when he became celebrated as one of the founders of institutional critique. The issue of the cancellation has so dominated the study of Haacke's work that the present exhibition counts as revision, emphasizing as it does the earliest systems work and arguing that it was utopian and initially quite uninterested in social critique.
60. Walter Grasskamp, "Real Time," in Grasskamp et al., *Hans Haacke*, 42.
61. Imaginative reconstruction of Haacke's concept offered by Skrebowski, "All Systems Go" (2006; a revised and expanded version of a talk given in 2005 at Tate Modern's "Open Systems: Rethinking Art c. 1970").
62. Skrebowski, "All Systems Go" (2006). Skrebowski becomes even more certain with a second version of this article published in *Grey Room*, where he argues for "a fundamental continuity in Haacke's work" between the early systems and a later institutional critique, a continuity "that is occluded by any accounting of his practice as ideologically split." I am indebted to Skrebowski for creating the space for what I hope is a productive disagreement—not to argue for an "ideological split" but to position Haacke as only gradually disenchanted with an early anti-humanist engagement with systems, and continuing to invoke a bounded art system even into the later institutional critique. See Skrebowski, "All Systems Go: Recovering Hans Haacke's Systems Art," *Grey Room*, no. 30 (Winter 2008), 54–83.
63. Skrebowski, "All Systems Go" (2006).
64. Haacke has emphasized to me (email, August 31, 2011) that "the artworld is not a 'system' apart, it always has been and will be part of society at large, interacting with it. That probably became clear to me in the mid-sixties, but I had a sense of it already during the 1959 Documenta"—referring to the photographs he took of visitors, art handlers, and curators in that show (now published in Walter Grasskamp, *Hans Haacke: Fototonizen Documenta 2, 1959*, Museum für Gegenwartskunst Siegen, 2011). Underscoring the sociological perspective he was rapidly developing in 1970 was the color-coding of the ballots in the visitors' poll at MoMA based on the paying/nonpaying status of the visitor.
65. In *David Rockefeller, Memoirs* (New York: Random House, 2002) the author mentions (without naming the artist), the political contents of Haacke's "Poll," which asked viewers if Nelson Rockefeller's position on Vietnam would affect their vote for governor in November. David Rockefeller makes it clear that this was a factor in instigating the dismissal of John Hightower from the MoMA directorship after the *Information* show ("he had no right to turn the museum into a forum for antiwar activism and sexual liberation," p. 452. This curious echo of the firing of Edward Fry at the Guggenheim should be noted.) In a conversation of August 22, 2011, Haacke recalled that the mynah bird never once managed to utter "All Systems Go!"—which fact he enjoys as the humorous proof of this particular system's failure.
66. Hans Haacke, "New York, 1967" statement, republished in Haacke et al., *Hans Haacke, For Real: Works 1959–2006* (Düsseldorf: Richter, 2006), 90.

