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ART INTERNATIONAL

VOLUME XIII/7
SEPTEMBER 1969

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Editorial and Subscription Offices:
Via Maraini 17-A
6900 Lugano, Switzerland
Telephone: (091) 54 34 61
Telegrams: Artmag Lugano

Advisory Editors:
Umbro Apollonio
Jean-Christophe Ammann
R. C. Kenedy
James R. Mellow

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CONTRIBUTORS: Lawrence Alloway, David Bourdon, C. Blok, Nicolas Calas, Michael Chanan, John Chandler, Bernhard Denvir, Gillo Dorfles, Otto Hahn, Carol Johnson, Lucy Lippard, Norbert Lynton, Giuseppe Marchiori, Allan McCulloch, Michael Peppiatt, James S. Pierce, Marcelin Pleynet, Margit Staber, Guillermo Whitelow.

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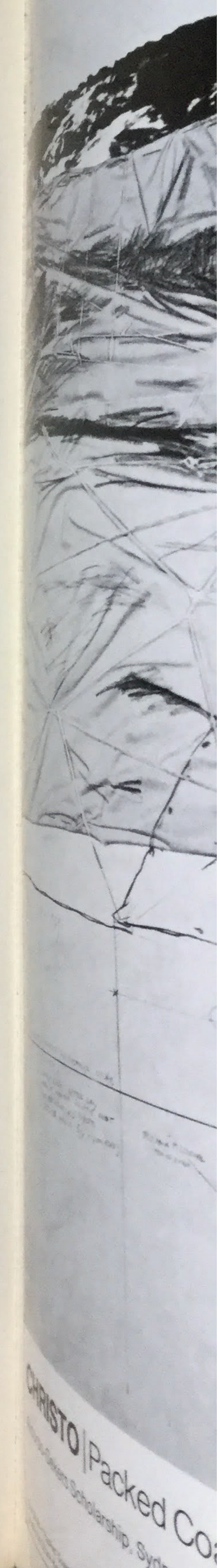

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HANS HAACKE

BITITE VINKLERS

Systems and Environment

Hans Haacke's works appear remarkably unassuming; they are simply constructed or arranged, quiet, colorless, and unhurried. Above all, they are natural in their fundamental reliance on natural laws, and environmental in their interdependence or merging with their surroundings. The phenomena of the physical world presented in Haacke's work are most frequently meteorological: the action of wind, water, snow and ice, gravity, and electricity. In addition, there is an increasing number of biological systems, of both plant and animal life. Common to the presentation of both physical and biological systems is Haacke's focus on the continual flux and transformation involved for the preservation of an equilibrium, which he considers a central concept in his work:

> One of my essential premises is the strong belief that the world is something dynamic, something that constantly changes. ... Obviously, such a view of the world is not new. ... Twenty-five hundred years ago, Heraclitus proclaimed that everything is in flux. Throughout history, he was followed by ... philosophers who, although with varying accents, shared a similar dynamic view of the world, up to the present day. ... All scientific and philosophic reading, though, would be of little avail if my personal, day-to-day experience would not support the findings of relevant thinkers. ... My belief in the pervasive pattern of change developed, in fact, while observing what was going on around me and with me—not speculation, but the registration of a total absence of something solid and forever unchanging. Nothing remained the same.[1]

With the prominence of natural phenomena in Haacke's work, it is essential to understand at the beginning his particular interest in nature, again best described by his own words:

> In thinking about nature, we most often think only in terms of trees, mountains, the blue sky, etc., and not of the underlying forces and patterns of organization. Neither do we immediately realize that these same conditions are at the basis of all technological achievements. An airplane is subject to the same aerodynamic laws as is the seagull. We seem to be so accustomed to looking at the "gestalt" of natural phenomena and to interpreting it in a heart-warming, romantic manner, that we neglect perceiving the physical laws forming the "gestalt".[2]

There is thus no difference in Haacke's work between nature and technology in the usual sense of their polarization as "natural" versus "artificial"; correspondingly, there is no distinction in principle between the works executed out-of-doors and those presented indoors, or between the ones relying on nonmechanical sources of energy and those utilizing machinery; they all exhibit the same natural dynamic laws.

Quite obviously, this kind of work no longer fits within the traditional concepts of "sculpture", and like much of contemporary art, requires its own terminology—but preferably less for purposes of classification than for the orientation of conceptual and visual attitudes toward the art. By Haacke's own intention, his works should be understood primarily as systems:

> A "sculpture" that physically reacts to its environment or affects its surroundings is no longer to be regarded as an object. The range of outside factors influencing it, as well as its own radius of action, reach beyond the space it materially occupies. It thus merges with the environment in a relationship that is better understood as a "system" of interdependent processes. . . .
>
> The original use of the term in the natural sciences is valuable for understanding the behavior of physically interdependent processes. It explains phenomena of constant change, recycling, and equilibrium. Therefore, I believe there are sound reasons for reserving the term "system" for certain non-static "sculptures", since only in this category does a transfer of energy, material, or information occur.[3]

Inherent in the existence of a system, then, are the effects of the environment: it "cannot 'perform' without the assistance of its environment".[4] This concept can cover a wide range of possibilities and nuances: the system may be activated by the naturally occurring physical properties of the environment; by a machine; by another, complementary, system; or by the participation or mere presence of a spectator.

Among the works that depend solely on the physical elements of the environment is the condensation box (Fig. 1), one of Haacke's earliest and most characteristic concepts. Here the natural process is a continual cycle of water evaporation, condensation, and dripping, which depends primarily on the available light and heat. The intrusion of light warms the inside of the box, and since the inside temperature remains higher than the surrounding temperature, the enclosed water evaporates and then condenses, forming a pattern of minute water droplets on the interior walls of the box. The droplets increase in size according to the intensity of the light and its angle; after they reach a certain size, their weight overcomes the laws of adhesion, and they run down along the walls, leaving traces, which eventually grow together again as the process of condensation continues.

Haacke compares these cyclical transformations in physical matter to the growth and decay process in living systems. Moreover, it is interesting that sometimes the same environmental conditions are necessary for both an inorganic and an organic system, as with the growing grass (Figs. 2 and 3), planted on the opening day of an exhibition and allowed to grow for its duration. In addition to responding to the particular conditions of soil and water, the grass depends on the temperature and the location, scope, and intensity of light, as does the condensation system. The conical earth mound, in contrast to the flat area of grass in the *Grass Cube*, reveals especially clearly the effects of light, since the conical form receives the light unevenly.

In the outdoor systems, the natural environment is usually allowed to play an even freer role, especially when the existing weather conditions are the determining factors. A single example, involving freezing and melting, is the *Spray of Ithaca Falls* (Fig. 4), which consisted of a rope (wrapped with screening to give it added surface) stretched near the falling water in freezing weather and allowed to collect the spray from the water, which froze, grew, and eventually melted on the rope.

The use of machines as a source of energy appears most frequently, though not exclusively, in Haacke's indoor "wind" and air pressure systems, such as the balloons floating on a column of air formed by a fan (Figs. 5 and 6). In the balloon systems, visible transformations like those in the water systems are absent, although a subtle aerodynamic process does occur, for the balloon will remain in equilibrium only on an air cushion that is formed as the air jet shoots up to a certain height and then falls back slightly due to gravity. At the same time, the surrounding air currents have to be calm enough not to blow the balloon out of the range of the air column. (An interesting large-scale variation of this concept was created at the Massachusetts Institute of Technology in conjunction with Haacke's one-man exhibition there in 1967, when a weather balloon, forty feet in diameter, was hoisted up and then floated over four large, powerful fans in the rotunda of the Institute; unfortunately, the huge weather balloon began to flounder, and burst only minutes after its difficult but successful launching.) In addition to demonstrating aerodynamic principles for a floating solid object, Haacke has experimented with the more difficult problem of floating a hollow form in an air jet, which has to follow the same design and laws that govern a parachute; this was achieved with *Flight*, 1967, which consisted of a white silk parachute form hovering over a fan system. The *Sail* (Fig. 7) and the *White Flow* (Fig. 8), on the other hand, are blown freely by fans beneath them (the *Sail* hangs from the ceiling by nylon cords and has an oscillating fan beneath it; the *White Flow* has a group of fans concealed under a frame at the head of the sheet). Here, the direction and intensity of the air stream determine the type and speed of movement in the material—fluttering, swelling, twisting, and so on. Each movement of the thin, sensitive material influences all the others—"the wind-driven fabric behaves like a living organism, all parts of which are constantly influencing each other."[5]

Haacke does not restrict the use of machines to indoor environments, however, where they serve primarily to simulate actual weather conditions, such as wind. In an outdoor demonstration called *Water in Wind*, executed in model form in 1968, several high-pressure spray nozzles were used to disperse water to create the effect of a fog; the fine water particles were then carried and blown by the existing wind until they merged with the environment and disappeared from sight.

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A particularly interesting and subtle set of environmental interrelationships is established when one system is affected by the presence of another. Complementary systems of this type are the ice systems, such as the *Ice Stick* (Fig. 9), in conjunction with a steam-generating system (Fig. 10); the first is a refrigerated work, which acts as a dehumidifier, the second is a humidifying device. The *Ice Stick*, a metal rod kept cold by a refrigeration unit at its base, depends on the amount of water vapor in the surrounding air, which collects on the stick, freezes, and accumulates, gradually increasing the diameter of the stick. Varied texture and irregularities in the thickness of the successive layers are created by changes in temperature and humidity in the room—if the frost on the stick forms rapidly it is dry and snowy, if it melts from increased heat, it dribbles downward in irregular patterns and becomes hard and glassy. Thus the transformation here is from water in its gaseous state, vapor, into its solid state. The reverse process occurs in the steam generator: the box contains an immersion heater, automatically controlled by a thermostat, which makes the boiling water evaporate through a hole in the lid; as the steam merges with the air, the humidity increases and affects the development of the ice system. The two systems thus communicate with each other through space, without direct contact, and form a parasitic relationship.

In addition to the properties of the physical environment, also the participation or the presence of the spectator is frequently important in Haacke's systems. As an active and direct participant, the viewer has been necessary mostly for a group of works showing the movement of water or other liquids sealed in plexiglas containers. Examples of this type are the *Rain Tower* (Fig. 11) and related "rain boxes"; containers with two immiscible liquids; and containers with a single liquid and air, such as the *Wave* (Fig. 12). The *Rain Tower*, as its title suggests, recreates the process of rain within the plexiglas box, which is constructed with several horizontal, perforated partitions inside, by which water droplets are formed and allowed to fall through, from floor to floor, to the bottom of the container, whenever the viewer initiates this process by turning the box upside down. The same situation is true for the plexiglas containers with two immiscible liquids; like the rain boxes, these have to be turned over by the viewer to activate the flow of the liquids, which create moving patterns near the center of the container as they swirl around each other and eventually separate again, coming to rest at the top and bottom according to their relative densities. The *Wave*, a thin, boardlike plexiglas container with water, and other pieces similar in principle, differs slightly in being suspended from the ceiling by nylon cords at both ends, requiring the viewer to swing it in order to create a pattern of waves within.

In some cases, only the presence of the viewer is necessary for the system to operate, as with the *Photo-Electric Viewer-Programmed Coordinate System* (Fig. 13). In the model room executed in 1968, fourteen infra-red projectors were installed at intervals of seventeen inches (the approximate width of a person) at waist height, along two adjoining walls; fourteen photoelectric cells, sensitive to infra-red light, were situated at waist height on the opposite adjoining walls. As a result, the room was structured by an invisible grid of intersecting infra-red light beams. Placed above each projector and each complementary photo-cell was a white incandescent bulb; the bulbs were connected with the light sensors in such a way that, whenever the infra-red light beam was interrupted, the two bulbs directly above these respective devices lit up. If we assume that the viewer in the room normally breaks two beams, perpendicular to each other, four bulbs light up, one on each of the four walls; if more than one viewer is in the room, more lights go on, again four per person. Consequently, the number of viewers in the room determines the degree of illumination, and their movements determine the location of the lighting. The system thus functions and undergoes transformations only in the presence of people; when no one is present, there is only a dark room. It is this set of interrelationships between the viewer and his environment that interests Haacke, rather than the phenomena of the lighting itself. "The people become integral parts of the work for the time of their presence. As long as they stay there, it is give and take. One could regard it as a symbiotic relationship."[6]

On the other hand, Haacke has given equal attention to systems that are self-sufficient and operate independently of any viewer. Some of the water and wind systems already described belong in this category, and even more clear-cut instances are the outdoor meteorological and biological systems. Two examples, both involving birds, are the demonstrations with sea gulls (Fig. 14) and with hatching chickens (Fig. 15). The sea gull demonstration involved no other spectator than Haacke himself, who established the special environmental conditions required to tempt the sea gulls to feed by throwing bread out on the water at Coney Island, New York; he observed the birds gather and swoop down on the water over a period of only minutes and took photographs of the event, which now remain its only record. The same thing was done with the chickens, except that the moment of change and movement that was selected for observation and isolation on film was birth, instead of feeding. An extension of this demonstration is planned for Haacke's exhibition in Toronto in the fall of 1969: a cage will be installed in the gallery and eggs brought in that will hatch on the day of the opening of the exhibition; the chickens will become part of the exhibition and continue to grow until it closes.

Clearly, in demonstrations of systems of this type, the viewer is in no way essential to the ongoing process, but remains a witness:

> . . . The system's program is not affected by the viewer's knowledge, past experience, the mechanics of perceptual psychology, or his emotions. . . . In the past, a sculpture or painting had meaning only at the grace of the viewer. . . . Without his emotional and intellectual involvement, the material remained meaningless. A system's program, on the other hand, is independent of the viewer's mental participation.
>
> Naturally, exposure to a system also releases a gulf of subjective projections in the viewer. These projections, however, can be measured relative to the system's program. The viewer's role is reduced to that of a witness. A system is not imagined; it is objectively present; it is real.[7]

Time

All the systems develop over a period of time, following Haacke's principle "to make something which lives in time and makes the 'spectator' experience time".[8] The time scale is nearly always a natural one, and usually the movements and transformations are very slow. Beyond these basic similarities, there is a number of ways in which the viewer can experience time in Haacke's work—by the length of time necessary for specific transformations to occur within a system; by the duration of the system as a whole; by its connection with a specific day or season; or by the relationships between the actual work and its records of existence.

In a small number of instances, such as the *Rain Tower* or the containers with two immiscible liquids, the time required to reveal the kinetic principles involved is short, of only a few minutes' duration. In the *Rain Tower* one may even sense an unnatural abbreviation of the actual time span of the process as it exists in nature; this seems to be a rare instance in which natural time, at least in terms of the particular natural process simulated, has not been utilized.

But in the condensation boxes, the ice systems, or the growing grass, which seem to be more central to Haacke's concepts and purpose, the time scale is fully natural, and movement and transformation extremely slow. Here, quite the opposite experience of time occurs. Whereas in the *Rain Tower* the viewer experiences time directly, by initiating a process and seeing it begin and end, in the systems of the water cycle or of the growing grass, he experiences time in a certain sense negatively, by seeing hardly any change or movement at all and by realizing that he is experiencing only an extremely short time fragment in proportion to the entire, perpetual cycle. To sense time in these systems more fully, the viewer has to return to them over a period of at least several days; perhaps this requirement, more than any other, confirms the fact that we are dealing with systems, rather than objects. There is a developmental, sequential process of natural phenomena here that progresses on its own time scale, and the changes within the progression are always relatively unpredictable, unstable, and impermanent. But these characteristics of indeterminism are inherent in the system and follow natural laws—in contrast to being programmed by the artist—and thus the continually different effects function not as mere variations, but as phases within a developing process. The various sequential phases of the water cycle, for instance, provide a rationale for the indeterminate and unstable patterns created by condensing and dripping water, or growing, melting, and refreezing ice. With their involvement of natural time and natural laws Haacke's systems bypass the ultimately meaningless variation for its own sake that can often entrap kinetic machines that attempt to show continually changing effects.

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Beyond the temporary and unstable effects within the process of the system is the frequent impermanence of the system as a whole. The duration of the indoor systems is understandably much more controlled than those outdoors, for here the artist can dictate their life span, at least in terms of a particular visual presentation. Thus, although in principle the indoor water and ice systems or the mounds with growing grass could continue to develop infinitely, their existence as systems can be arbitrarily cut off by their being disassembled or destroyed. Such control is not possible, nor desired, in the outdoor systems. The fog effects of *Water in Wind* or *Cast Ice: Freezing and Melting* (Fig. 16) are extreme examples of temporariness, as the very principles they demonstrate are dispersion and melting, i.e., merging with the environment and disappearing visually; they may be considered a quiet answer, within the realm of self-destroying art, to such works as the machines of Tinguely.

A similar impermanence characterizes the *New York Sky Line* (Fig. 17) and the sea gulls (Fig. 14), which likewise disappear visually. Moreover, the exact duration of these systems cannot be predicted; they could end soon or late, depending only on the existing natural conditions. And with the sea gulls, even the beginning, as loosely defined as it may be, cannot be predicted. In this respect, the *Sky Line* and the sea gulls seem to resemble happenings; ultimately they differ, however, in being essentially visual presentations and in lacking a social context and human participation as basic conditions to their purpose and meaning. The visual arts today are more and more frequently becoming temporal and impermanent, i.e., ceasing to be permanent art objects, and a distinction should be drawn between this type of a temporary visual art form, as is the case with Haacke's work, and the kind of theatrical, often multimedia, social experience generally referred to as a happening.

Although the temporary works just discussed have been executed on a specific day, the day selected was arbitrary, and any comparable day would have served equally well. This principle distinguishes them from other works, which are temporally fixed, either to one particular season—usually winter, as with the *Spray of Ithaca Falls* or the *Cast Ice*—or even to one particular day, as with *Wind in Water: Snow* (Figs. 18, 19, 20) of December 15, 1968, New York. Beforehand, Haacke sent out invitations for this particular day, printed signs for snow and rain, and also prepared to execute the fog system in case of good weather. His idea was to use whatever weather conditions developed as the demonstration for that day; since it turned out to be the first day of snow, the sign, or title, that he posted was *Wind in Water: Snow*. Thus, this was an exhibition of weather in a literal sense, which could be connected only with one particular day.

With demonstrations of this type, various kinds of records and photographs become important, as they remain the only extant references to the actual event. Some works can create their own temporary records. Such is the case with the traces on the inside walls of the condensation boxes, or with a second demonstration with sea gulls that Haacke executed in the winter of 1968; in this instance he planned to have the sea gulls feed in snow, instead of water, and leave their tracks—which would constitute a brief record of the event, to be complemented by a permanent record on film. (Ironically, on the day he arrived at Coney Island to feed the sea gulls, he found that someone had already preceded him in this, and all that remained for him to do was to take photographs of the tracks—a humorous yet valid example of the possibility of the artist's role being reduced only to pointing out already existent systems.) Another way in which Haacke has created a record of a natural system was to underline a natural record with a man-made form; again in the winter of 1968, he conceived of burning a trail in the snow near the sea, so that the track would parallel the snow contour at the edge of the water, which was in turn a record of the movement and height of the tide. (Although Haacke was not able to use a torch, as he had intended, he executed the idea by digging a trail in the snow.) For the snow demonstration of December 15, 1968, discussed above, Haacke retained several types of permanent records that refer to it: photographs of the event (Fig. 18); the December weather chart for New York; a weather map of the United States for December 15, 1968; and photographs of these records (Figs. 19, 20). Haacke considers each of these complementary parts to the snow demonstration as a separate work in itself. The two weather charts, in addition to providing proof and records of the actual event, put the day of snow in New York into larger contexts. The United States weather map places it in a broad geographical setting, whereas the New York weather chart for December places it in a temporal context; since both of these broader frameworks in turn imply even larger contexts, of which they temselves are but fragments, the act of using these records as a reference to the one specific day of snow is a way of extending its effect indefinitely.

In contrast to Haacke's short-lived works are several that could continue without end; two possibilities that Haacke has conceived of at the present both involve plant life. One of these is planned as part of his coming exhibition in Toronto, where he would like to install a watering system on a lawn that would remain turned on continually for the duration of the exhibition, two to three weeks. Although Haacke concedes the possibility that the grass might rot and die, he expects that the more likely outcome will be that it will become very lush and that certain seeds may sprout under these conditions that normally lie dormant; in any case, this area of grass would remain indefinitely affected by the demonstration. His second idea is a tentative plan for a park with a steep hill. Here, a topographical line would be followed all around the hill, marked by a five to ten-foot wide strip of vegetation that would remain uncultivated and untended for the life of the area as a park, allowing it a free and unending ecological evolution.

Style and Development

As with a number of contemporary kinetic artists now working in the United States, Haacke's ideas are rooted in the European kinetic movements; he especially acknowledges the importance for his work of the Zero Group of Düsseldorf and the Parisian Nouveaux Réalistes and the Groupe de Récherche d'Art Visuel. From around 1960 to 1963 Haacke worked with prints, paintings, wall reliefs, and free-standing sculpture that show a logical progression from illusionistic to real movement, which he began in 1963 with experiments in water and air dynamics.

Around 1960, Haacke's paintings were simple compositions in one main color, with identical elements, such as dots, dispersed either in a field or in a symmetrical arrangement. The paintings functioned optically and appeared to vibrate; "motion was created by trickery"[9] and was dependent on the viewer's perception. At the same time, Haacke was making inkless intaglios, also with regular patterns of dots, which relied on the angle of light and the viewer's position to become visible. By 1961 and 1962, he was involving the environment more directly, with works made from reflecting aluminum foil, stainless steel, and plastics; the room and the people in it became part of the works through their reflections, and the works hardly existed in isolation at all. These reflecting works, which at first were fairly flat wall panels, became high reliefs, protruding into the room, and eventually developed into free-standing sculptures. Yet the movement involved was still illusionistic:

> ... The mirror-objects were still static themselves—they only reflected outside movement. A logical next step was to introduce actual motion. In 1963, I replaced a solid, transparent, and reflective material by an equally transparent and reflective, but liquid, medium: I replaced acrylic plastic by water in motion.[10]

Haacke made his first hydraulic works in early 1963, in New York, when he developed both the dripping water systems and the condensation boxes. Soon afterwards he also began to work with aerodynamic principles:

> Early during my hydrodynamic experiments, I realized that the flow of gases is not unlike liquid flow; in other words, aerodynamics and hydrodynamics are related. This revived old dreams of making things light, airy, of taking off from the ground, and flying. It seemed only consequent to move from visually light-weight, transparent, but solid material, to liquids and finally to arrive at air. I then proceeded on a double track with the manipulation of liquid as well as air motion.[11]

Haacke's earliest aerodynamic works were fans in cages with either plastic or chiffon bags fastened over the top; the plastic swelled and remained taut over the air current, but the porous chiffon material allowed some air to escape and consequently fluttered around the perimeter of the box. These early experiments eventually developed into the more balanced systems of balloons hovering directly above an air jet (Fig. 5). The next year Haacke conceived of using a living airborne system—sea gulls—for "Zero on the Sea", an art festival planned, but never executed, for the pier and beach in Scheveningen, Holland; he finally executed his plan in a somewhat simpli-

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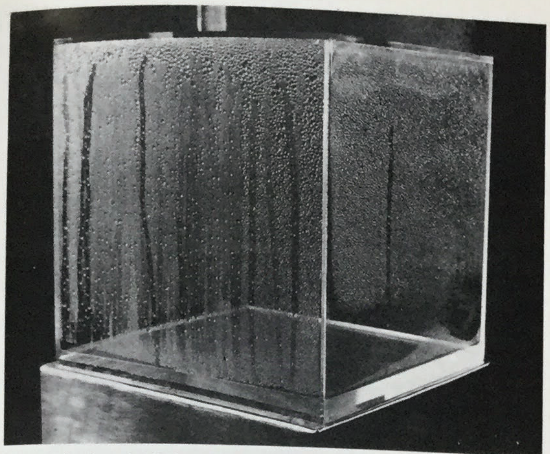


Fig. 1 *Condensation Cube*, 1965. Acrylic plastic and water; 11 × 11 × 11″ (All illustrations by courtesy of the artist and the Howard Wise Gallery, New York)

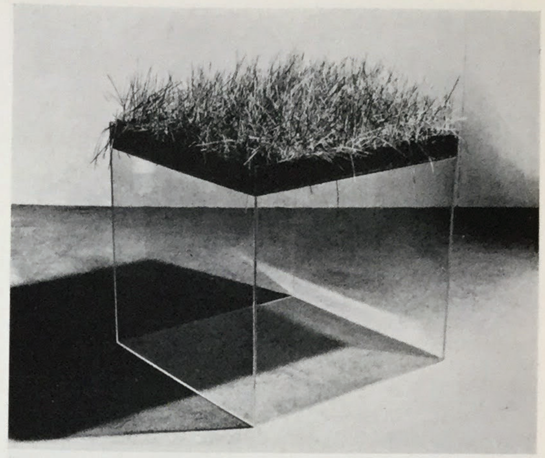


Fig. 2 *Grass Cube*, 1967. Acrylic plastic, soil, grass; 30 × 30 × 30″

Fig. 4 *Spray of Ithaca Falls: Freezing and melting on a rope*. February 8–10, 1969. Rope wrapped with screening, about 100′ long

Fig. 3 *Grass Mound*. February 1969, "Earth" exhibition, Andrew Dickson White Museum, Cornell University, Ithaca, New York. About 3½ × 7′. Soil, grass

Fig. 5 *Floating Sphere*. 1964–1966. Wood, fan, balloon

Fig. 6 *Sphere in Oblique Air Jet*. 1967. Wood, fan, balloon

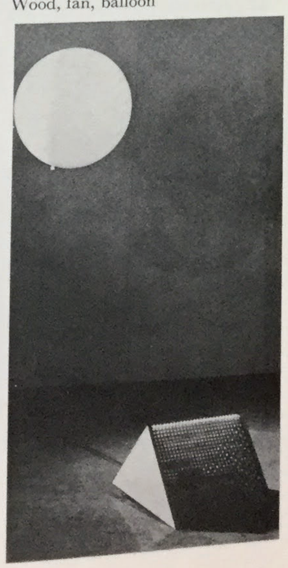


Fig. 9 *Ice Stick*. Conception 1964; execution 1966. Height 70″

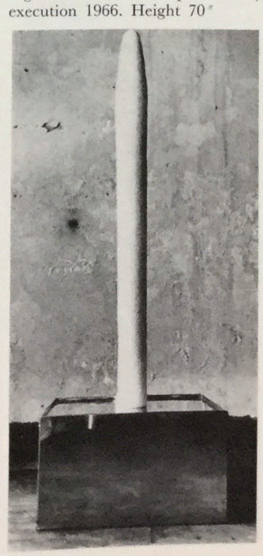
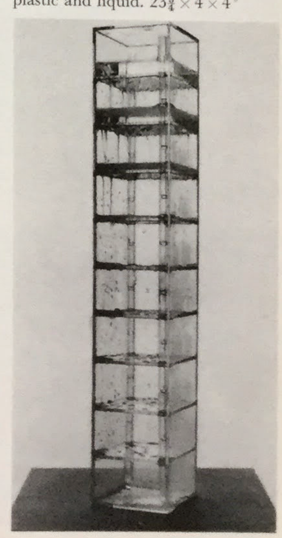


Fig. 11 *Rain Tower*. 1963. Acrylic plastic and liquid. 23¾ × 4 × 4″



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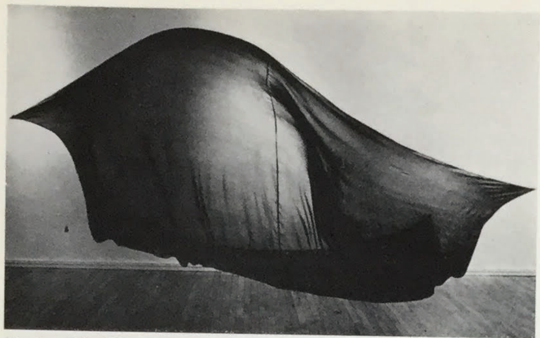


Fig. 7 *Sail.* 1965–1967. Blue chiffon, 8 × 8′, and oscillating fan

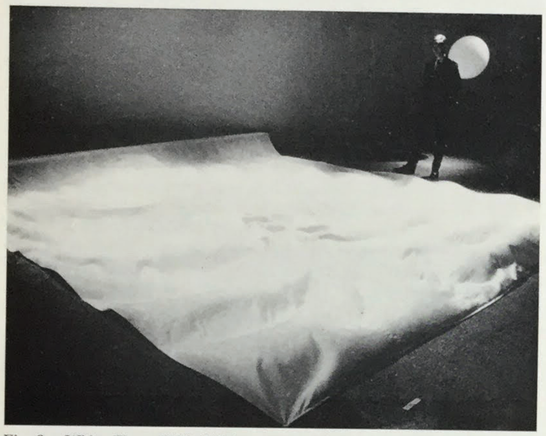


Fig. 8 *White Flow.* 1967. White rayon silk fabric, 16 × 21′, fans, steel construction

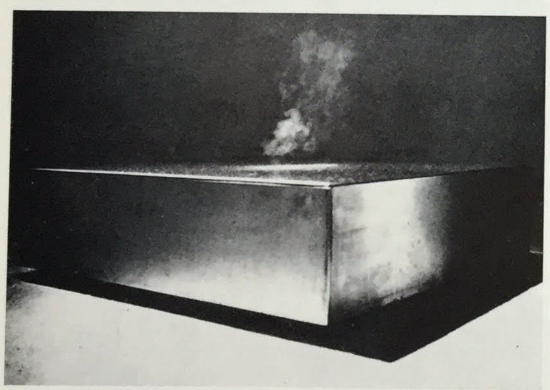


Fig. 10 *Steam.* 1967. Stainless steel, copper, immersion heater, electric controls, water. 36 × 36 × 9″

Fig. 16 *Cast Ice: Freezing and Melting.* January 3–5, 1969, Studio roof, New York

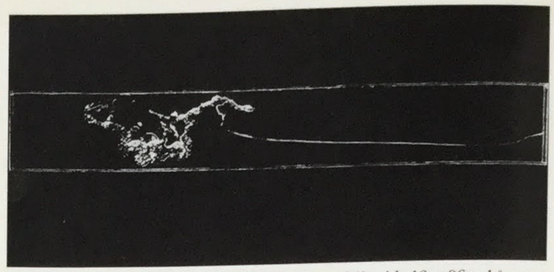


Fig. 12 *Wave.* 1964–1965. Acrylic plastic and liquid, 12 × 96 × 1″

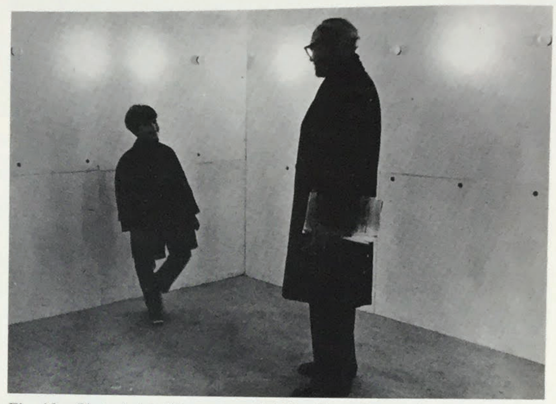
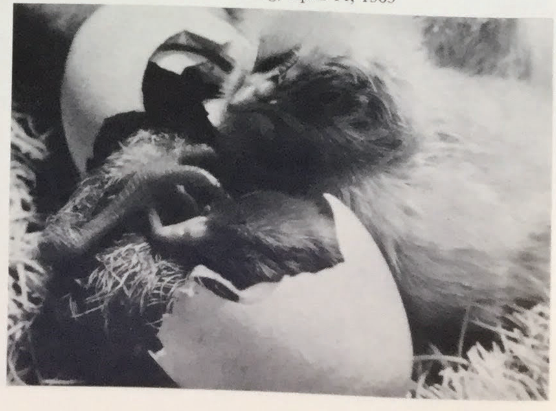


Fig. 13 *Photo-electric Viewer-controlled Coordinate System.* Conception 1966; model executed 1968. Room 136 × 136 × 120″, with 14 infra-red projectors, 14 photo-electric cells and 28 white incandescent bulbs. Equipment: Courtesy of Automatic Timing and Controls, Inc., King of Prussia, Pennsylvania. To be executed as a room 100 × 100 × 8 yards with fluorescent tubes floor to ceiling

Fig. 14 Record of *Live Airborne System.* November 30, 1968, at Coney Island

Fig. 15 Record of *Chickens Hatching,* April 14, 1969



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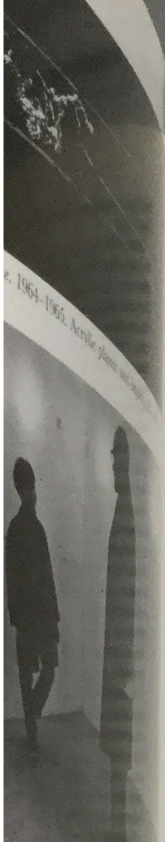
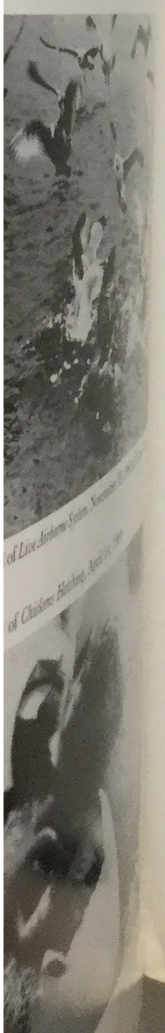




fied, but essentially the same form in 1968 on Coney Island, New York.

From 1963 to the present, Haacke has developed most of his early ideas side by side. His major dynamic principles and ideas were set already around 1964 with the development of the condensation box, the balloon systems, the first *Wave*, and the conception for the sea gulls and for the refrigeration systems (which could not be executed until 1966 for lack of financial support). If a general progression since then is to be noted, it is primarily in the direction of greater simplicity, freedom, and sometimes, conceptualization. Small works set on bases, for instance, have been replaced by works set directly on the floor and by concepts of greater scope in general, especially in the outdoor systems. Color, used in the early works with immiscible liquids and in the *Sail*, has been eliminated in favor of only transparent or white materials. Haacke's primary reason for this deliberate change was to avoid any distractions or decorative suggestions that color might create, in order to focus the viewer's attention on the actual phenomena of the system; in addition, white seems to him natural, airy, and related to transparency and reflection. Greater conceptualization is evident in recent work like *Wind in Water: Snow*, which shows less emphasis on the actual execution or orientation toward the viewer than on the idea itself.

Basically, Haacke sees two approaches to the systems: the production of systems, and the presentation in various ways of systems that already exist. In both cases, the central question is in what manner he exposes a natural system. Except for his very recent work, Haacke's systems have been "produced", though often in a very loose sense of the word. Thus he considers even such examples as the sea gulls or the hatching chickens intended for Toronto to be of this type, since in the first case, he set up the environmental conditions for feeding, and in the second, he will isolate the chickens froir natum thrale surroundings as a device to focus attention on them.

In some works a reference to nature is made through a simulation of its processes. This is the case with the *Wave* (Fig. 12) and the *White Flow* (Fig. 8), both of which imitate the motion of waves, the first with actual water within a plexiglas container, the second with a large sheet of white silk rippling on the floor.

Fig. 18 *Record of Wind in Water: Snow.* Studio roof, New York, Dec. 15, 1968

Two examples that simulate rain are the *Rain Tower* (Fig. 11), already discussed in other contexts, and the *Rain Tree*, executed in Central Park, New York, in the summer of 1968. The *Rain Tree* consisted of a hose attached to a fire hydrant and strung in a tree, so that the water dripped down through the branches like rain, on an otherwise totally sunny day; this concept illustrates both a simulation of natural processes and an alienation from normal conditions as a means of exposing a particular system.

A real, rather than a simulated presentation of natural principles occurs, for instance, in the condensation boxes, the ice systems, the grass works, and an electricity system of 1968 that involved a high-voltage discharge cycle. In these works, natural transformation and development proceed in almost the same way as they do in nature, but with an imposition of synthetic materials and human concepts. The natural processes have (*Continued on page 56*)

Fig. 17 *Sky Line.* Central Park, New York, 1967. Helium-filled balloons one foot in diameter on nylon string, approx. 700′

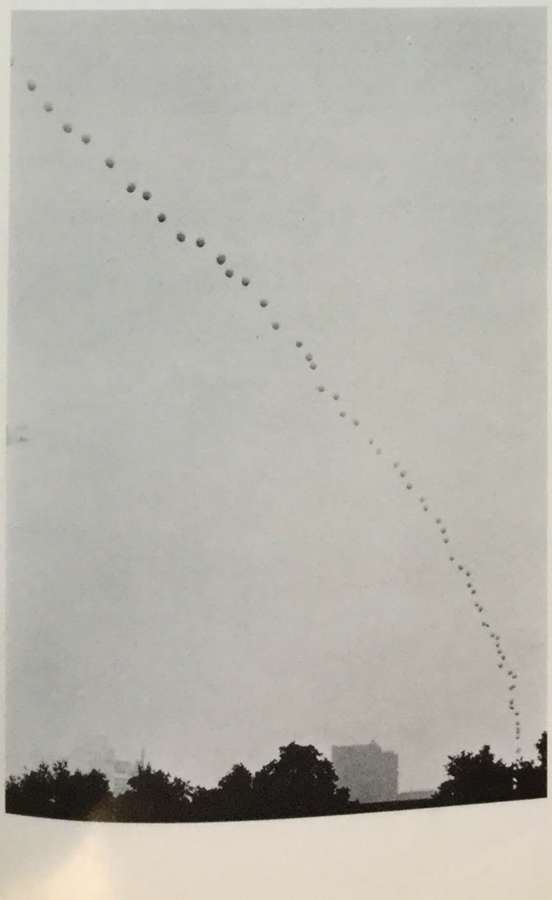
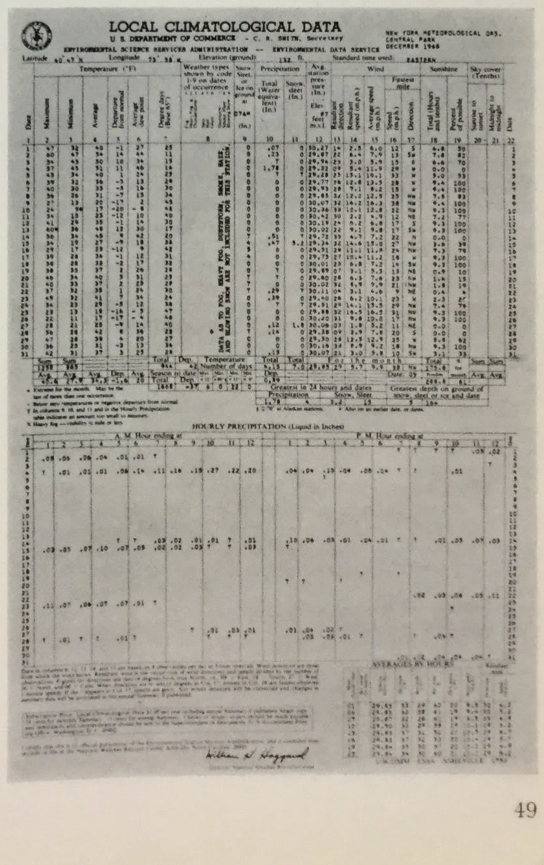


Fig. 19 Record of *Meteorological System.* Central Park, New York, December 1968 (Courtesy Environmental Science Services Administration, US Dept. of Commerce)



LOCAL CLIMATOLOGICAL DATA

U. S. DEPARTMENT OF COMMERCE - C. R. SMITH, Secretary

ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION -- ENVIRONMENTAL DATA SERVICE

HOURLY PRECIPITATION (Liquid in Inches)

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HAACKE: continued

been enclosed or otherwise confined by a man-made material (most often plexiglas) and by regular, stereometric forms, which isolate and regularize the natural phenomena. Particularly clear examples are the *Condensation Cube* (Fig. 1), the *Grass Cube* (Fig. 2), and the electricity system, in which an arc of electric current formed by a high-voltage discharge is blown by a fan through a ten-foot long transparent pyrex cylinder until it is broken by insulators at the other end and immediately regenerated.

Often the use of these unexpected forms and materials in the presentation of a natural system adds a formal and visual interest to the work. Although Haacke himself disclaims an interest in shape and form in his systems for other than practical reasons or for a preference for simplicity, in order to focus on the dynamic processes themselves, the juxtaposition of naturally occurring substances and processes with man-made materials can create a visual and conceptual complexity that enhances the work. In the *Condensation Cube*, for example, it is evident that the condensation process has to be enclosed and isolated in some way to be demonstrable in an indoor situation, and that the basic reasons for its form are thus practical. Yet, the transparency of the plexiglas walls of the condensation systems sets up an interesting ambiguity between the wall as a kind of transparent window, through which the viewer can see the process of water condensation—itself transparent—and its necessity as the primary condition that allows the process of evaporation, condensation, and dripping to create the work independently of the artist, through the patterns and movement on the interior of the wall. Similarly, the growing grass in the *Grass Cube* has been confined and regularized by the plexiglas cube beneath it, which, as in the condensation boxes and numerous other systems, also creates an interesting textural juxtaposition between the soft, irregular natural forms and a hard, artificial form. Even in such works as the *White Flow* (Fig. 8) and the *Cast Ice* (Fig. 16), there is an interesting contrast between the original, fairly rectangular ice and silk forms and their transformation into irregular shapes as the one begins to melt, and the other to ripple. In the balloon systems (Figs. 5 and 6), the fan has been made part of the visual experience (in contrast to the way it is used in the *Sail*, where it is visually inessential) by its enclosure in either a square or triangular white box, thereby becoming related to the balloon formally in proportion, shape, and position. This juxtaposition of a sphere with a square or a triangle—or, texturally, of the soft, fragile balloon in contrast to the hard and angular box—creates a tension in the viewer's experience as he simultaneously recognizes the formal aspects, the concepts of "balloon" and "fan" and their connotations, and the aerodynamic laws being demonstrated here.

With the second basic type of systems—those that already exist—the artist's role is reduced considerably. This concept is characteristic of his more recent work, and so far only three examples genuinely fit within it. Two of these are *Wind in Water: Snow* and the hatching chickens (Fig. 15), both discussed above; the third is in the idea of presenting and recording the recent birth of his son, Carl Samuel Selavy (an indirect namesake of Duchamp) through a signed record (the hospital identification certificate) of an actual and temporally unique process. Simultaneously a playful and serious concept, it represents the extreme to which Haacke's beliefs regarding the use of natural systems and dynamic laws can be taken. In these works with extant systems, the artist's role consists only of the conception of using natural systems in this way, the selection of the systems to be demonstrated, and the act of pointing them out in some way. Haacke considers this to be enough, yet at the same time is aware of the inherent restrictions:

> There is a set of physical laws governing motion which severely interferes with one's free-wheeling imagination. Only strict obedience to these laws guarantees proper functioning. . . . It is of utmost importance to study them and make them useful for one's purposes. If you can't fight them, join them. Let them become the very thing out of which the work consists.[12]

With this kind of use of natural laws and systems, without alteration by the artist, the question of the ready-made enters. Haacke himself has pointed out that certain parallels can be drawn between his work and that of Duchamp, the originator of this concept of the ready-made:

> Letting the natural laws in is tantamount to the adoption of . . . the ready-made. . . . The principal and conscious acceptance of natural laws in sculpture certainly parallels Duchamp's gesture of laying his hand on ready-made objects. . . .[13]

Haacke's intent differs, however, from Duchamp's, and his selection has been restricted to meteorological and biological systems. Yet, his fundamental interest in the dynamic interrelationships and continual change that are evident everywhere—in inorganic, biological, and sociological systems—could lead into numerous other areas—all the more so with Haacke's view that the artist himself cannot survive in isolation:

> The artist's business requires his involvement in practically everything. . . . It would be bypassing the issue to say that the artist's business is how to work with this and that material and manipulate the findings of perceptual psychology, and that the rest should be left to other professions. . . . The total scope of information he receives day after day is of concern. An artist is not an isolated system. In order to survive . . . he has to continuously interact with the world around him. Theoretically, there are no limits to his involvement. . . .[14]

1. Unpublished manuscript of talk given at annual meeting of International Color Council, Spring 1968, New York.
2. Statements September, 1967, New York.
3. *Ibid.*
4. *Ibid.*
5. Statement August, 1965, Köln.
6. Talk at International Color Council, *op. cit.*
7. *Ibid.*
8. Statements September, 1967, New York.
9. Talk at International Color Council, *op. cit.*
10.—14. *Ibid.*

JOHNS: Notes, continued

Sidney Tillim, "Ten Years of Jasper Johns", *Arts* 38 (April, 1964), p. 22: "It seems ridiculous to speak of the *decline* of an artist not yet thirty-five years old. Yet such is the conclusion I feel one has to draw from the Jasper Johns retrospective at the Jewish Museum. ... That he has been unable to implement his solution to achieve a really major style has nothing to do with his basic talent or imagination, but is rather due to the fact that the solution he devised for himself was a limited one—a fact to which I believe his subsequent development bears witness."
9. Statement made by Mr. Johns to the author. (See Note 3.)
10. Ibid.
11. Henri Zerner, "Universal Limited Art Editions", *L'Œil* (December, 1964), p. 37.
12. Statement made by Mr. Johns to the author. (See Note 3.)
13. Ibid.
14. Ibid.
15. Ibid.
16. From a personal interview Kenneth Tyler granted the author on February 6, 1969, at Gemini G.E.L. in Los Angeles, California.
17. Statement made by Mr. Johns to the author. (See Note 3.) At this time Mr. Johns stated that his second portfolio of etchings from Universal Limited Art Editions had not yet been released.
18. Statement made by Mr. Johns to the author. (See Note 3.)
19. Ibid.
20. Ibid.
21. Ibid.
22. Statement made by Mr. Tyler to the author. (See Note 16.)
23. Statement made by Mr. Johns to the author. (See Note 3.)
24. Ibid.
25. Ibid.
26. Clement Greenberg, "Modernist Painting", *Arts Yearbook* IV (1961), pp. 103–8. In this seminal essay, Mr. Greenberg defines "modernism" as, "the characteristic methods of a discipline to criticize the discipline itself" which results in the fact that, "Each art had to determine, through its own operations and works, the effects exclusive to itself."
27. Statement made by Mr. Johns to the author. (See Note 3.)
28. See, for example, Jules Olitski's *Pink Alert*, 1966 illustrated in *Art News* (May, 1967), p. 34. In this as in many of his later paintings, Olitski utilized "drawing" along the edges of the canvas in order to formally acknowledge the shape of the canvas and thus reinforce the object-quality of the painting. Thus, in his later works Olitski seems to consistently acknowledge the idea that color works best in the service of form but cannot in itself assume the role of structure and thereby become a convincing object-painting.
29. Statement made by Mr. Johns to the author. (See Note 3.)
30. Ibid.
31. Ibid.
32. Walter Hopps, "An Interview with Jasper Johns", *Artforum* III (March, 1965), p. 35.
33. Statement made by Mr. Johns to the author. (See Note 3.)
34. Ibid.