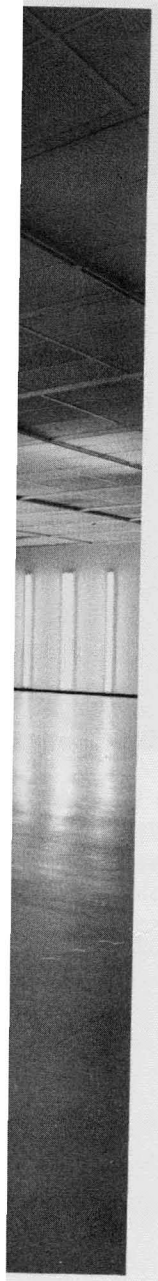


Dan Flavin, view of installation, *Pink and Gold*, 8' fluorescent lamps, 1967. (Museum of Contemporary Art, Chicago.)

SYSTEMS ESTHETICS



JACK BURNHAM

A polarity is presently developing between the finite, unique work of high art, i.e., painting or sculpture, and conceptions which can loosely be termed "unobjects," these being either environments or artifacts which resist prevailing critical analysis. This includes works by some primary sculptors (though some may reject the charge of creating environments), some gallery kinetic and luminous art, some outdoor works, happenings, and mixed media presentations. Looming below the surface of this dichotomy is a sense of radical evolution which seems to run counter to the waning revolution of abstract and non-objective art. The evolution embraces a series of absolutely logical and incremental changes, wholly devoid of the fevered iconoclasm which accompanied the heroic period from 1907 to 1925. As yet the evolving esthetic has no critical vocabulary so necessary for its defense, nor for that matter a name or explicit cause.

In a way this situation might be likened to the "morphological development" of a prime scientific concept—as described by Thomas Kuhn in *The Structure of Scientific Revolutions* (1962). Kuhn sees science at any given period dominated by a single "major paradigm"; that is, a scientific conception of the natural order so pervasive and intellectually powerful that it dominates all ensuing scientific discovery. Inconsistent facts arising through experimentation are invariably labeled as bogus or trivial — until the emergence of a new and more encompassing general theory. Transition between major paradigms may best express the state of present art. Reasons for it lie in the nature of current technological shifts.

The economist, J. K. Galbraith, has rightly insisted that until recently the needs of the modern industrial state were never served by complete expression of the esthetic impulse. Power and expansion were its primary aims.

Special attention should be paid to Galbraith's observation. As an arbiter of impending socio-technical changes his position is pivotal. For the Left he represents America's most articulate apologist for Monopoly Capitalism; for the Right he is the socialist *éminence grise* of the Democratic Party. In *The New Industrial State* (1967) he challenges both Marxist orthodoxies and American mythologies premised upon *laissez-faire* Capitalism. For them he substitutes an incipient technocracy shaped by the evolving technostructure. Such a drift away from ideology has been anticipated for at least fifty years. Already in California think-tanks and in the central planning committees of each soviet, futurologists are concentrating on the role of the technocracy, i.e., its decision-making autonomy, how it handles the central storage of information, and the techniques used for smoothly implementing social change. In the automated state power resides less in the control of the traditional symbols of wealth than in information.

In the emergent "superscientific culture" long-range decision making and its implementation become more difficult and more necessary. Judgment demands precise socio-technical models. Earlier the industrial state evolved by filling consumer needs on a piecemeal basis. The kind of product design that once produced "better living" precipitates vast crises in human ecology in the 1960s. A striking parallel exists between the "new" car of the automobile stylist and the syndrome of formalist invention in art, where "discoveries" are made through visual manipulation. Increasingly "products" — either in art or life — become irrelevant and a different set of needs arise: these revolve around such concerns as maintaining the biological livability of the Earth, producing more accurate models of social interaction, understanding the growing symbiosis in man-machine relationships, establishing priorities for the usage and conservation of natural resources, and defining alternate patterns of education, productivity, and leisure. In the past our technologically-conceived artifacts structured living patterns. We are now in transition from an *object-oriented* to a *systems-oriented culture*. Here change emanates, not from *things*, but from *the way things are done*.

The priorities of the present age revolve around the problems of organization. A systems viewpoint is focused on the creation of stable, on-going relationships between organic and non-organic systems, be these neighborhoods, industrial complexes, farms, transportation systems, information centers, recreation centers, or any of the other matrixes of human activity. All living situations must be treated in the context of a systems hierarchy of values. Intuitively many artists have already grasped these relatively recent distinctions, and if their "environments" are on the unsophisticated side, this will change with time and experience.

The major tool for professionally defining these concerns is systems analysis. This is best known through its usage by the Pentagon and has more to do with the expense and complexity of modern warfare, than with any innate relation between the two. Systems analysts are not cold-blooded logicians; the best have an ever-expanding grasp of human needs and limitations. One of the pioneers of systems applications, E. S. Quade, has stated that "Systems analysis, particularly the type required for military decisions, is still largely a form of art. Art can be taught in part, but not by the means of fixed rules . . ."[1] Thus "The Further Dimensions"[2] elaborated upon by Galbraith in his book are esthetic criteria. Where for some these become the means for tidying up a derelict technology, for Galbraith esthetic decision-making becomes an integral part of any future technocracy. As yet few governments fully appreciate that the alternative is biological self-destruction.

Situated between aggressive electronic media and two hundred years of industrial vandalism, the long held idea that a tiny output of art objects could somehow "beautify" or even significantly modify the environment was naive. A parallel illusion existed in that artistic influence prevails by a psychic osmosis given off by such objects. Accordingly lip service to public beauty remains the province of well-guarded museums. Through the early stages of industrialism it remained possible for decorative media, including painting and sculpture, to embody the esthetic impulse; but as technology progresses this impulse must identify itself with the means of research and production. Obviously nothing could be less true for the present situation. In a society thus estranged only the didactic function of art continues to have meaning. The artist operates as a quasipolitical *provocateur*, though in no concrete sense is he an ideologist or a moralist. *"L'art pour l'art"* and a century's resistance to the vulgarities of moral uplift have insured that.

The specific function of modern didactic art has been to show that art does not reside in material entities, but in relations between people and between people and the components of their environment. This accounts for the radicality of Duchamp and his enduring influence. It throws light on Picasso's lesser position as a seminal force. As with all succeeding formalist art, Cubism followed the tradition of circumscribing art value wholly within finite objects.

In an advanced technological culture the most important artist best succeeds by liquidating his position as artist vis-à-vis society. Artistic nihilism established itself through this condition. At the outset the artist refused to participate in idealism through craft. "Craft-fetishism,"[3] as termed by the critic Christopher Caudwell, remains the basis of modern formalism. Instead the significant artist strives to reduce the technical and psychical distance between his artistic output and the productive means of society. Duchamp, Warhol, and Robert Morris are similarly directed in this respect. Gradually this strategy transforms artistic and technological decision-making into a single activity — at least it presents that alternative in inescapable terms. Scientists and technicians are not converted into "artists," rather the artist becomes a symptom of the schism between art and technics. Progressively the need to make ultrasensitive judgments as to the uses of technology and scientific information becomes "art" in the most literal sense.

As yet the implication that art contains survival value is nearly as suspect as attaching any moral significance to it. Though with the demise of literary content, the theory that art is a form of psychic preparedness has gained articulate supporters.

> Art, as an adaptive mechanism, is reinforcement of the ability to be aware of the disparity between behavioral pattern and the demands consequent upon the interaction with the environment. Art is rehearsal for those real situations in which it is vital for our survival to endure cognitive tension, to refuse the comforts of validation by affective

congruence when such validation is inappropriate because too vital interests are at stake . . .[4]

* * *

The post-formalist sensibility naturally responds to stimuli both within and outside the proposed art format. To this extent some of it does begin to resemble "theater," as imputed by Michael Fried. More likely though, the label of "theatricality" is a red herring disguising the real nature of the shift in priorities. In respect to Mr. Fried's argument,[5] the theater was never a purist medium, but a conglomerate of arts. In itself this never prevented the theater from achieving "high art." For clearer reading, rather than maintaining Mr. Fried's adjectives, "theatrical" or "literalist" art, or the phrase used until now in this essay, "post-formalist esthetic," the term *systems esthetic* seems to encompass the present situation more fully.

The systems approach goes beyond a concern with staged environments and happenings; it deals in a revolutionary fashion with the larger problem of boundary concepts. In systems perspective there are no contrived confines such as the theater proscenium or picture frame. Conceptual focus rather than material limits define the system. Thus any situation, either in or outside the context of art, may be designed and judged as a system. Inasmuch as a system may contain people, ideas, messages, atmospheric conditions, power sources, etc., a system is, to quote the systems biologist, Ludwig von Bertalanffy, a "complex of components in interaction,"[6] comprised of material, energy, and information in various degrees of organization. In evaluating systems the artist is a perspectivist considering goals, boundaries, structure, input, output, and related activity inside and outside the system. Where the object almost always has a fixed shape and boundaries, the consistency of a system may be altered in time and space, its behavior determined both by external conditions and its mechanisms of control.

In his book, *The New Vision,* Moholy-Nagy described fabricating a set of enamel on metal paintings. These were executed by telephoning precise instructions to a manufacturer. An elaboration of this was projected recently by the director of the Museum of Contemporary Art in Chicago, Jan van der Marck, in a tentative exhibition, "Art by Telephone." In this instance the recorded conversation between artist and manufacturer was to become part of the displayed work of art. For systems, information, in whatever form conveyed, becomes a viable esthetic consideration.

Fifteen years ago Victor Vasarely suggested mass art as a legitimate function of industrial society. For angry critics there existed the fear of undermining art's fetish aura, of shattering the mystique of craft and private creation. If some forays have been made into serially produced art, these remain on the periphery of the industrial system. Yet the entire phenomenon of reproducing an art object *ad infinitum* is absurd; rather than making quality available to a large number of people, it signals the end of concrete objects embodying visual metaphor. Such demythification is the Kantian Imperative applied esthetically. On the other hand, a systems esthetic *is* literal in that all phases of the life cycle of a system are relevant. There is no end product which is primarily visual, nor does such an esthetic rely on a "visual" syntax. It resists functioning as an applied esthetic, but is revealed in the principles underlying the progressive reorganization of the natural environment.

Various postures implicit in formalist art were consistently attacked in the later writings of Ad Reinhardt. His black paintings were hardly rhetorical devices (nor were his writings) masking Zen obscurities; rather they were the means of discarding formalist mannerism and all the latent illusionism connected with post-realistic art. His own contribution he described as:

> The one work for the fine artist, the one painting, is the painting of the one-sized canvas . . . The single theme, one formal device, one color-monochrome, one linear division in each direction, one symmetry, one texture, one free-hand brushing, one rhythm, one working everything into dissolution and one indivisibility, each painting into one overall uniformity and nonirregularity.[7]

Even before the emergence of the anti-formalist "specific object" there appeared an oblique type of criticism, resisting emotive and literary associations. Pioneered between 1962 and 1965 in the writings of Donald Judd, it resembles what a computer programmer would call an entity's "list structure," or all the enumerated properties needed to *physically* rebuild an object. Earlier the phenomenologist, Maurice Merleau-Ponty, asserted the impossibility of *conceptually* reconstructing an object from such a procedure. Modified to include a number of perceptual insights not included in a "list structure," such a technique has been used to real advantage by the anti-novelist, Alain Robbe-Grillet. A web of sensorial descriptions is spun around the central images of a plot. The point is not to internalize scrutiny in the Freudian sense, but to infer the essence of a situation through detailed examination of surface effects. Similar attitudes were adopted by Judd for the purpose of critical examination. More than simply an art object's list structure, Judd included phenomenal qualities which would have never shown up in a fabricator's plans, but which proved necessary for the "seeing" of the object. This cleared the air of much criticism centered around meaning and private intention.

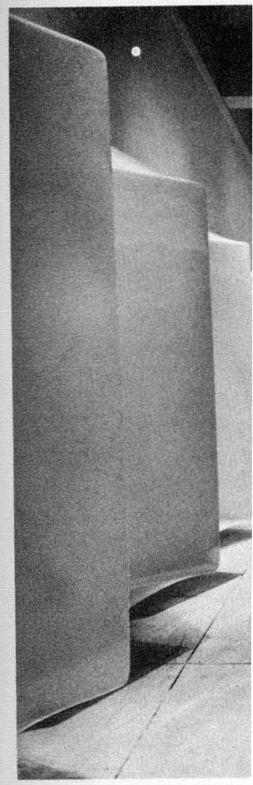
It would be misleading to interpret Judd's concept of "specific objects" as the embodiment of a systems esthetic. Rather object art has become a stage towards further rationalization of the esthetic process in general — both by reducing the iconic content of art objects and by Judd's candidness about their conceptual origins. However, even in 1965 he gave indications of looking beyond these finite limits.

> A few of the more general aspects may persist, such as the work's being like an object or even being specific, but other characteristics are bound to develop. Since its range is wide, three-dimensional work will probably divide into a number of forms. At any rate, it will be larger than painting and much larger than sculpture, which, compared to painting, is fairly particular. . . . Because the nature of three dimension isn't set, given beforehand, something credible can be made, almost anything.[8]

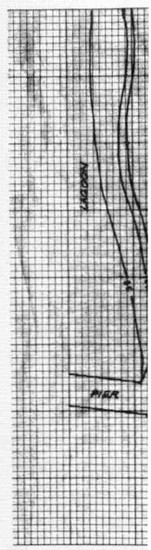
In the 1966 "68th American Show" at the Chicago Art Institute, the sculptor, Robert Morris, was represented by two large, L-shaped forms which were shown the previous year in New York. Morris sent plans of the pieces to the carpenters at the Chicago museum where they were assembled for less than the cost of shipping the originals from New York. In the context of a systems esthetic possession of a privately fabricated work is no longer important. Accurate information takes priority over history and geographical location.

Morris was the first essayist to precisely describe the relation between sculpture style and the progressively more sophisticated use of industry by artists. He has lately focused upon material-forming techniques and the arrangement of these results so that they no longer form specific objects but remain uncomposed. In such handling of materials the idea of *process* takes precedence over end results: "Disengagement with preconceived enduring forms and orders of things is a positive assertion."[9] Such loose assemblies of materials encompass concerns that resemble the cycles of industrial processing. Here the traditional priority of end results over technique breaks down; in a systems context both may share equal importance, remaining essential parts of the esthetic.

Already Morris has proposed systems which move beyond the confines of the minimal object. One work proposed to the City of New York last fall was later included in Willoughby Sharp's "Air Art" show in a Y.M.H.A. gallery in Philadelphia. In its first state Morris's piece involved capturing steam from the pipes in the city streets, projecting this from nozzles on a platform. In Philadelphia such a system took its energy from the steam bath room. Since 1966 Morris's interests have included designs for low relief earth sculptures consisting of abutments, hedges, and sodded mounds, visible from the air and not unlike Indian burial mounds. "Transporting" one of these would be a matter of cutting and filling earth and resodding. Morris is presently at work on one such project and unlike past sculptural concerns, it involves precise information from surveyors, landscape gardeners, civil engineering contractors, and geologists. In the older context, such as Isamu Noguchi's sunken garden at Yale University's Rare Book Library, sculpture defined the environment, with



Les Levine, *The Clean Mach*
As installed in the Fischbach



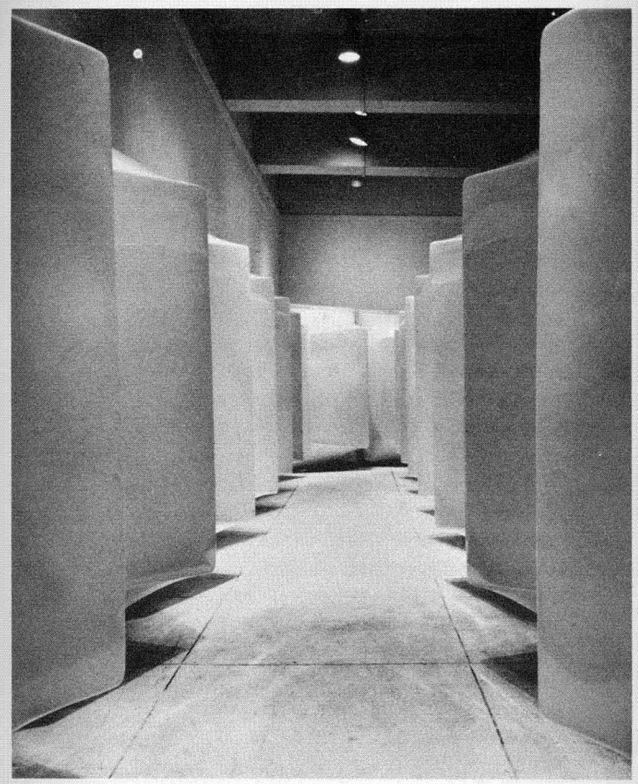
Robert Morris, dr

ts.

eral aspects may per-
eing like an object or
her characteristics are
range is wide, three-
bly divide into a num-
it will be larger than
than sculpture, which,
rly particular. . . . Be-
dimension isn't set,
ng credible can be

can Show" at the Chi-
lptor, Robert Morris,
arge, L-shaped forms
revious year in New
the pieces to the car-
eum where they were
cost of shipping the
the context of a sys-
a privately fabricated
Accurate information
and geographical lo-

yist to precisely de-
sculpture style and
sticated use of indus-
ocused upon material-
arrangement of these
form specific objects
such handling of ma-
akes precedence over
t with preconceived
of things is a positive
nblies of materials en-
nble the cycles of in-
traditional priority of
reaks down; in a sys-
re equal importance,
he esthetic.
osed systems which
f the minimal object.
City of New York last
loughby Sharp's "Air
ry in Philadelphia. In
involved capturing
city streets, project-
latform. In Philadel-
nergy from the steam
s's interests have in-
earth sculptures con-
and sodded mounds,
unlike Indian burial
of these would be a
earth and resodding.
on one such project
oncerns, it involves
urveyors, landscape
ontractors, and geol-
uch as Isamu Nogu-
niversity's Rare Book
e environment, with

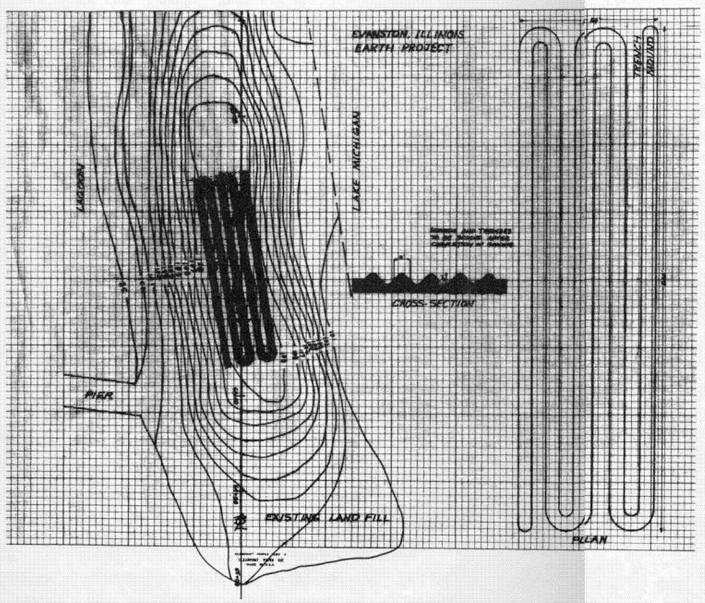


Les Levine, *The Clean Machine*, uvex, each unit 4 x 6', 56 units. As installed in the Fischbach Gallery, New York.



Allan Kaprow, *Fluids, a Happening*. The Happening consisted of ice being delivered to 14 sites in Pasadena, California; in 3 days 14 rectangular structures were built without windows, doors, or roofs. The structures were left to melt. (October, 1967.)

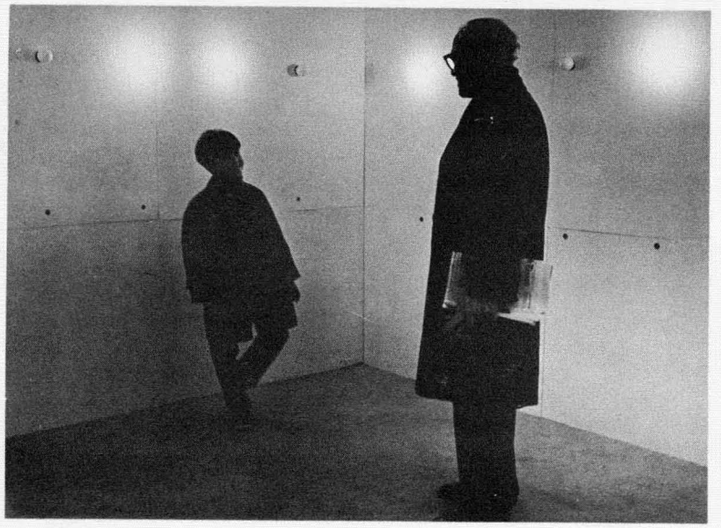
"...the most important artist best succeeds by liquidating his position as artist vis-a-vis society."



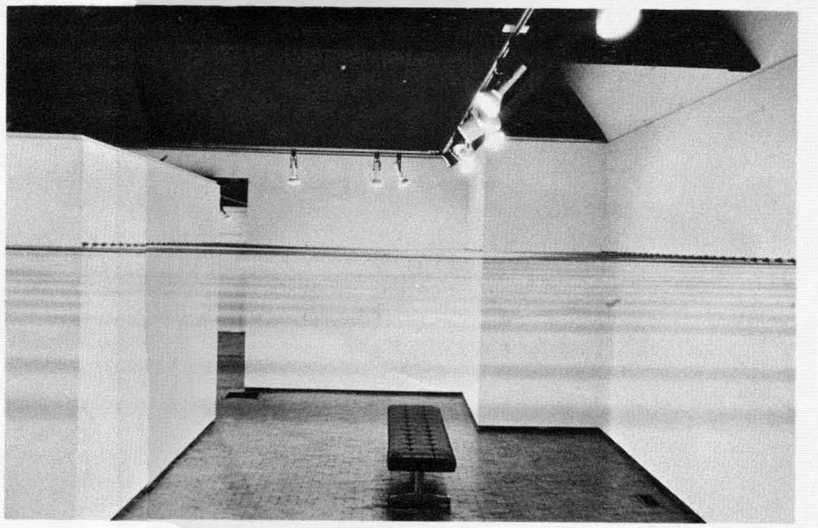
Robert Morris, drawing for *Earth Project*, Evanston, Illinois.



Lakefill addition to Northwestern University Campus. Lower outer peninsula is the site for the earth sculpture by Robert Morris.



Hans Haacke, *Photo-Electric Viewer-Programmed Coordinate System.* (Spectator interrupts infra-red light beams positioned as a regular, right-angled grid in the room. Lighted bulbs determine the movements of spectator in room.)



Les Levine, *Electric Shock,* installation view in Douglas Gallery, Vancouver.

Morris's approach the environment defines what is sculptural.

More radical for the gallery are the constructions of Carl Andre. His assemblies of modular, unattached forms stand out from the works of artists who have comprised unit assembly with the totality of fixed objects. The mundane origins of Andre's units are not "hidden" within the art work as in the technique of collage. Andre's floor reliefs are architectural modifications — though they are not subliminal since they visually disengage from their surroundings. One of Andre's subtler shows took place in New York last year. The viewer was encouraged to walk stocking-footed across three areas, each 12 by 12 feet and composed of 144 one-foot-square metal plates. One was not only invited to see each of these "rugs" as a grid arrangement in various metals, but each metal grid's thermal conductivity was registered through the soles of the feet. Sight analysis diminishes in importance for some of the best new work; the other senses and especially kinesthesis makes "viewing" a more integrated experience.

The scope of a systems esthetic presumes that problems cannot be solved by a single technical solution, but must be attacked on a multileveled, interdisciplinary basis. Consequently some of the more aware sculptors no longer think like sculptors, but they assume a span of problems more natural to architects, urban planners, civil engineers, electronic technicians, and cultural anthropologists. This is not as pretentious as some critics have insisted. It is a legitimate extension of McLuhan's remark about Pop art when he said that it was an announcement that the entire environment was ready to become a work of art.

As a direct descendant of the "found object," Robert Smithson's identifying mammoth engineering projects as works of art ("Site-Selections")[10] makes eminent sense. Refocusing the esthetic away from the preciousness of the work of art is in the present age no less than a survival mechanism. If Smithson's "Site-Selections" are didactic exercises, they show a desperate need for environmental sensibility on a larger than room scale. Sigfried Giedion pointed to specific engineering feats as *objets d'art* thirty years ago. Smithson has transcended this by putting engineering works into their natural settings and treating the whole as a time-bound web of man-nature interactions.

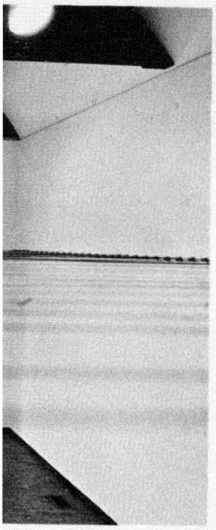
Methodologically Les Levine is possibly the most consistent exponent of a systems esthetic. His environments of vacuum-formed, modular plastic units are never static; by means of an experience's ambulation through them, they consistently alter their own degree of space-surface penetrability. Levine's *Clean Machine* has no ideal vantage points, no "pieces" to recognize, as are implicit in formalist art. One is *processed* as in driving through the Holland Tunnel. Certainly this echoes Michael Fried's reference to Tony Smith's night-time drive along the uncompleted New Jersey Turnpike.[11] Yet if this is theater, as Fried insists, it is not the stage concerned with focused-upon events. That has more to do with the boundary definitions which have traditionally circumscribed classical and post-classical art. In a recent environment by Levine rows of live electric wires emitted small shocks to passersby. Here behavior is controlled in an esthetic situation with no primary reference to visual circumstances. As Levine insists, "What I am after here is physical reaction, not visual concern." [12]

This brings to mind some of the original intentions of the "Group de Recherches d'Art Visuel" in the early 1960s. The Paris-based group had sought to engage viewers kinesthetically, triggering involuntary responses through ambient-propelled "surprises." Levine's emphasis on visual disengagement is much more assured and iconoclastic; unlike the labyrinths of the G.R.A.V., his possesses no individual work of art deflecting attention from the environment as a concerted experience.

Questions have been raised concerning the implicit anti-art position connected with Levine's *disposable* and *infinite* **series**. These hardly qualify as anti-art as John Perrault has pointed out. Besides emphasizing that the context of art is fluid, they are a *reductio ad absurdum* of the entire market mechanism which controls art through the fiction of "high art." They do not deny art, they deny scarcity as a legitimate correlative of art.

The components of systems — whether these are artistic or functional — have no higher meaning or value. Systems components derive their value solely through their assigned context. Therefore it would be impossible to regard a fragment of an art system as a work of art in itself — as say, one might treasure a fragment of one of the Parthenon friezes. This became evident in December 1967 when Dan Flavin designed six walls with the same alternate pattern of "rose" and "gold" 8-foot fluorescent lamps. This "Broad Bright Gaudy Vulgar System," as Flavin called it, was installed in the new Museum of Contemporary Art in Chicago. The catalog accompanying the exhibition scrupulously resolves some of the important esthetic implications for modular systems.

> The components of a particular exhibition upon its termination are replaced in another situation. Perhaps put into non-art as part of a different whole in a different future. Individual units pos-



er.

inesthetically, trigger-
hrough ambient-pro-
emphasis on visual
re assured and icon-
s of the G.R.A.V., his
k of art deflecting at-
nent as a concerted

d concerning the im-
nected with Levine's
s. These hardly qual-
ult has pointed out.
ne context of art is
absurdum of the en-
n controls art through
ney do not deny art,
timate correlative of

ns — whether these
ave no higher mean-
ponents derive their
igned context. There-
to regard a fragment
of art in itself — as
gment of one of the
ame evident in De-
in designed six walls
ttern of "rose" and
lamps. This "Broad
" as Flavin called it,
seum of Contempor-
atalog accompanying
resolves some of the
ns for modular sys-

cular exhibition upon
in another situation.
part of a different
ndividual units pos-

sess no intrinsic significance beyond their concrete utility. It is difficult either to project into them extraneous qualities, a spurious insight, or for them to be appropriated for fulfillment or personal inner needs. The lights are untransformed. There are no symbolic transcendental redeeming or monitary added values present.[13]

Flavin's work has progressed in the past six years from light sources mounted on flat reliefs, to compositions in fluorescent fixtures mounted directly on walls and floors, and recently to totalities such as his Chicago "walk-in" environment. While the majority of other light artists have continued to fabricate "light sculpture" — as if *sculpture* were the primary concern — Flavin has pioneered articulated illumination systems for given spaces.

By the fact that most systems move or are in some way dynamic, kinetic art should be one of the more radical alternatives to the prevailing formalist esthetic. Yet this has hardly been the case. The best publicized kinetic sculpture is mainly a modification of static formalist sculpture composition. In most instances these have only the added bonus of motion, as in the case of Tinguely, Calder, Bury, and Rickey. Only Duchamp's kinetic output managed to reach beyond formalism. Rather than visual appearance there is an entirely different concern which makes kinetic art unique. This is the peripheral perception of sound and movement in a space filled with activity. All too often gallery kinetic art has trivialized the more graspable aspect of motion: this is motion internalized and experienced kinesthetically.

There are a few important exceptions to the above. These include Otto Piene's early "Light Ballets" (1958-1962), the early (1956) water hammocks and informal on-going environments of Japan's *Gutai* group, some works by Len Lye, Bob Breer's first show of "Floats" (1965), Robert Whitman's laser show "Dark" (1967), and most recently, Boyd Mefferd's "Strobe-Light Floor" (1968).

Formalist art embodies the idea of deterministic relations between a composition's visible elements. But since the early 1960s Hans Haacke has depended upon the invisible components of systems. In a systems context, invisibility, or invisible parts, share equal importance with things seen. Thus air, water, steam and ice have become major elements in his work. On both coasts this has precipitated interest in "invisible art" among a number of young artists. Some of the best of Haacke's efforts are shown outside the gallery. These include his *Rain Tree,* a tree dripping patterns of water; *Sky Line,* a nylon line kept aloft by hundreds of helium filled white balloons; a weather balloon balanced over a jet of air; and a large-scale nylon tent with air pockets designed to remain in balance one foot off the ground.

Haacke's systems have a limited life as an art experience, though some are quite durable. He insists that the need for empathy does not make his work function as with older art. Systems exist as on-going independent entities away from the viewer. In the systems hierarchy of control, *interaction* and *autonomy* become desirable values. In this respect Haacke's *Photo-Electric Viewer Programmed Coordinate System* is probably one of the most elegant responsive environments made to date *by an artist* (certainly more sophisticated ones have been conceived for scientific and technical purposes). Boundary situations are central to his thinking.

> A "sculpture" that physically reacts to its environment is no longer to be regarded as an object. The range of outside factors affecting 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. These processes evolve without the viewer's empathy. He becomes a witness. A system is not imagined, it is real.[14]

Tangential to this systems approach is Allan Kaprow's very unique concept of the Happening. In the past ten years Kaprow has moved the Happening from a rather self-conscious and stagy event to a strict and elegant procedure. The Happening now has a sense of internal logic which was lacking before. It seems to arise naturally from those same considerations which have crystalized the systems approach to environmental situations. As described by their chief inventor, the Happenings establish an indivisibility between themselves and everyday affairs; they consciously avoid materials and procedures identified with art; they allow for geographical expansiveness and mobility; they include experience and duration as part of their esthetic format; and they emphasize practical activities as the most meaningful mode of procedure.[15] As structured events the Happenings are usually reversible. Alterations in the environment may be "erased" after the Happening, or as a part of the Happening's conclusion. While they may involve large areas of space, the format of the Happening is kept relatively simple, with the emphasis on establishing a participatory esthetic.

The emergence of a "post-formalist esthetic" may seem to some to embody a kind of absolute philosophy, something which, through the nature of its concerns cannot be transcended. Yet it is more likely that a "systems esthetic" will become the dominant approach to a maze of socio-technical conditions rooted only in the present. New circumstances will with time generate other major paradigms for the arts.

For some readers these pages will echo feelings of the past. It may be remembered that in the fall of 1920 an ideological schism ruptured two factions of the Moscow Constructivists. The radical Marxists, led by Vladimir Tatlin, proclaimed their rejection of art's false idealisms. Establishing themselves as "Productivists," one of their slogans became: "Down with guarding the traditions of art. Long live the constructivist technician."[16] As a group dedicated to historical materialism and the scientific ethos, most of its members were quickly subsumed by the technological needs of Soviet Russia. As artists they ceased to exist. While the Productivist program might have had some basis as a utilitarian esthetic, it was crushed amid the Stalinist anti-intellectualism that followed.

The reasons are almost self-apparent. Industrially underdeveloped, food and heavy industry remained the prime needs of the Soviet Union for the next forty years. Conditions and structural interdependencies which naturally develop in an advanced industrial state were then only latent. In retrospect it is doubtful if any group of artists had either the knowledge or political strength to meaningfully affect Soviet industrial policies. What emerged was another vein of formalist innovation based on scientific idealism; this manifested itself in the West under the leadership of the Constructivist emigres, Gabo and Pevsner.

But for our time the emerging major paradigm in art is neither an *ism* nor a collection of styles. Rather than a novel way of rearranging surfaces and spaces, it is fundamentally concerned with the implementation of the art impulse in an advanced technological society. As a culture producer, man has traditionally claimed the title, *Homo Faber: man the maker* (of tools and images). With continued advances in the industrial revolution, he assumes a new and more critical function. As *Homo Arbiter Formae* his prime role becomes that of *man the maker of esthetic decisions.* These decisions — whether they are made concertedly or not — control the quality of all future life on the Earth. Moreover these are value judgments dictating the direction of technological endeavor. Quite plainly such a vision extends beyond political realities of the present. This cannot remain the case for long. ■

1. Quade, E. S. (November 1964) "Methods and Procedures" in *Analysis for Military Decisions* (Santa Monica: The Rand Corp.) p. 153.
2. Galbraith, John Kenneth (1967) *The New Industrial State* (Boston: Houghton Mifflin Co.) pp. 343-353.
3. Caudwell, Christopher (pseud.) (1937) *Illusion and Reality: A Study of the Sources of Poetry* (London: MacMillan and Co.) p. 111.
4. Peckham, Morse (1965) *Man's Rage for Chaos: Biology, Behavior & the Arts* (New York: Schocken Books, 1967) p. 314.
5. Fried, Michael (Summer, 1967) "Art and Objecthood" *Artforum,* p. 15.
6. Bertalanffy, Ludwig von (1967) *Robots, Men and Minds* (New York: George Braziller Inc.) p. 69.
7. Anonymous (September 1, 1967) "Ad Reinhardt, Painter, Is Dead, Reduced Color to Bare Minimum" in *The New York Times* p. 33.
8. Judd, Donald (1965) "Specific Objects" in *Contemporary Sculpture* (New York: The Arts Digest, Inc.) p. 78.
9. Morris, Robert (April 1968) "Anti Form," *Artforum,* p. 35.
10. Smithson, Robert (Summer 1967) "Towards the Development of an Air Terminal Site" *Artforum,* pp. 36-40.
11. Fried, *op cit.,* p. 19.
12. Jacobs, Jay (March 1968) "More Les" *the ART gallery* (Ivoryton, Connecticut: Hollycraft Press) p. 27.
13. Flavin, Dan (with introduction by) (December 1967) *Dan Flavin: Pink and Gold,* exhibition catalog, (Chicago: The Museum of Contemporary Art).
14. Haacke, Hans (with statement by) (January 1968) *Hans Haacke,* exhibition catalog (New York: Howard Wise Gallery).
15. Kaprow, Allen (March 1966) "The Happenings are Dead—Long Live Happenings" *Artforum,* pp. 36-39.
16. Gabo, Naum (1957) *Gabo: Constructions, Sculptures, Paintings, Drawings, Engravings* (Cambridge: Harvard University Press) p. 153.