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Dependent Participation: Bruce Nauman's Environments

JANET KRAYNAK

I don't like the idea of free manipulation . . . A lot of people had taken a lot of trouble educating the public to participate—If I put this stuff out here you were supposed to participate.¹

A lot of the work is about that, frustration and anger in the, with the social situation, not so much out of specific personal incidents but out of the world or mores or any cultural dissatisfaction, or disjointedness or something, and it doesn't always appear that way in the work, I think. Somehow it generates work. It generates energy from the work.²

Between 1969 and 1974 Bruce Nauman produced a series of hybrid sculptural installations that assertively engage and operate upon the beholder's body, senses, and mind. Erected from temporary walls or permanent rooms, some of the sculptures direct the beholder's passage through space while video monitors play prerecorded imagery and/or channel live-feed images of the viewer as she circulates the sculptural arena. In others, video is replaced by swaths of intense colored lights that illuminate the interiors, performing optical tricks or inducing woozy feelings of nausea. In some, empty space is rendered acoustical through recorded sounds of the artist yelling, laughing, exhaling; or through walls lined with thick acoustical materials that invite the viewer to touch and produce sound. In other installations textual "instructions," in the form of prose writings, are mounted on the walls, serving as directives for the beholder's feelings and actions.

In Nauman's installations the sculptural meets the architectural, the former realized as an environmental arena in which the beholder's role is no longer one of passive witness. Instead, the viewer is directly, physically engaged—"performing" rather than "viewing" the object—and indeed the completion of the object is contingent upon such interactions. As such, they have a long precedent in the pre- and postwar avant-garde, in which methods of artistic production were investigated and transformed as a means of reconsidering the traditional relations between art objects and their audience, and as a means of envisioning a different type of subject than



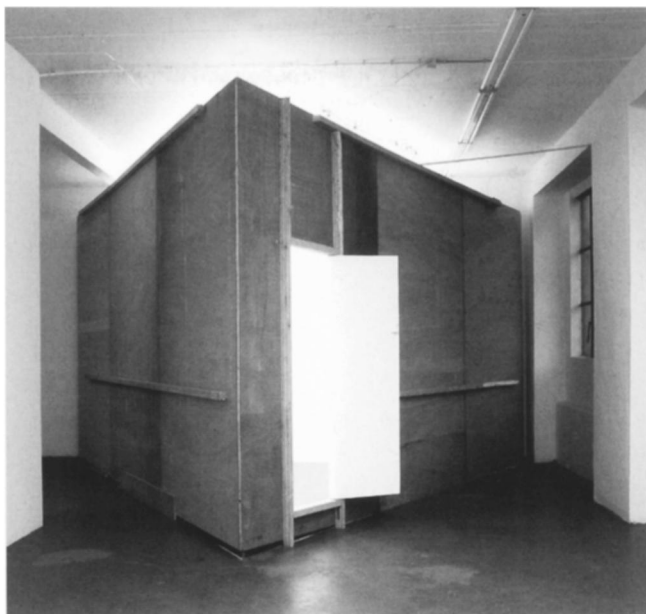
Bruce Nauman. *Live Taped Video Corridor*, 1970. (Shown in right of illustration) Wallboard, video camera, two video monitors, videotape player, videotape, dimensions variable. ©2002 Bruce Nauman/Artists Rights Society (ARS), New York.

the modernist contemplative one. Examples cross the boundaries of time and meaning: from the Russian Constructivist doctrine of productivism and Brecht's concept of estrangement to John Cage's incorporation of the audience into the musical composition, Minimalism's phenomenological experiments, and Conceptual art's rethinking of the networks of artistic distribution, among others.

While the shift toward audience participation historically has been motivated by diverse concerns, frameworks that emphasize its positive attributes as well as its potential for critical transformation dominate the art-historical interpretation. Whether the Marxian model of de-alienation (in which the redefinition of object relations leads to a politically emancipated subject); or poststructuralist critiques of authorship (where the activation of the reader dismantles the aura of the individual work and authorial intention); or the ideological model of collectivism (as an antidote to the passive lull of bourgeois leisure and media), participation is seen as an interventionist gesture that furthers the ambitions of a progressive avant-garde.³

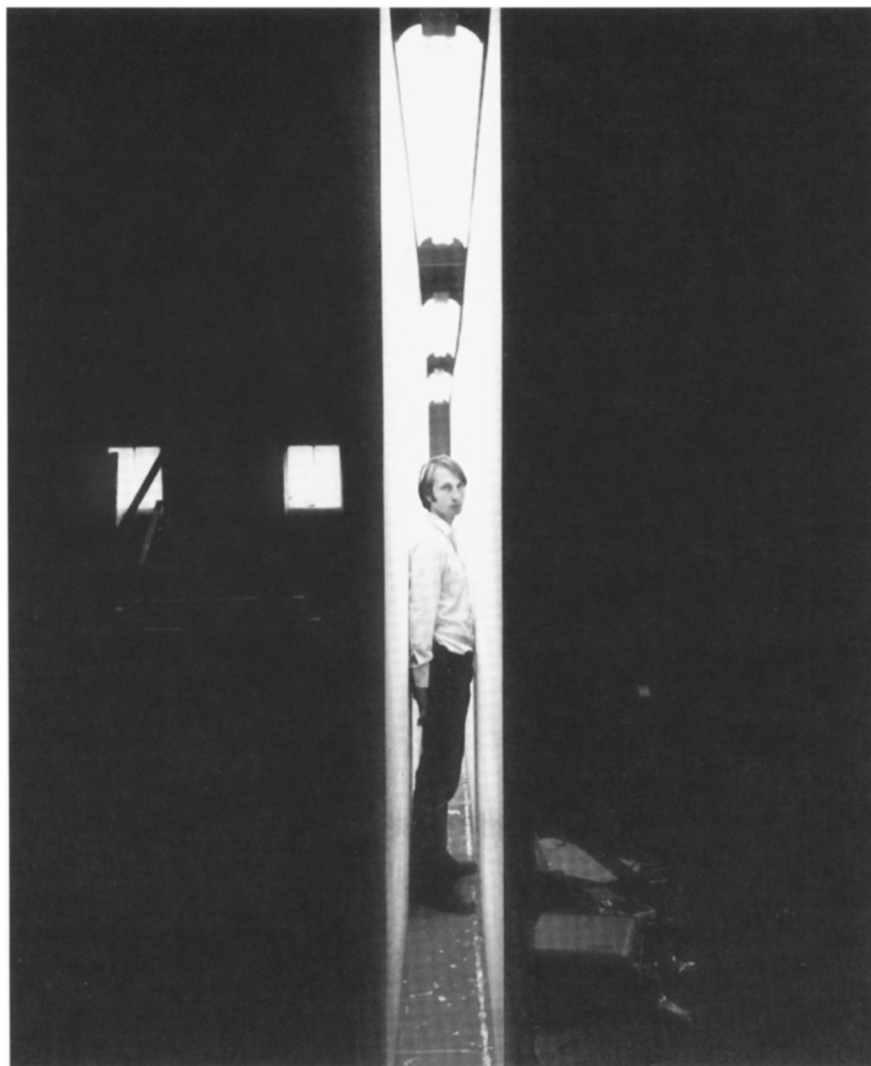
But here I want to consider the question of the participatory artwork in terms of a more limited art-historical framework of the late 1960s, as well as its specific expression in Nauman's early installations. Despite individual differences of materials or design, Nauman's environments consistently figure spectatorial participation as a strange, even alienating, encounter. The viewer is assaulted with sound, frightened with foreboding narrow spaces, and cornered by video cameras recording her every move. Recorded images, moreover, are instantly played back to the viewer, whose body is often reduced to a partial fragment or fleeting shadow, resulting in a sense of corporeal dispossession. Physically and psychologically, the viewer continually confronts a collapse of identification between her experience as a body/subject and her image or representation. Technical devices, in conjunction with carefully conceived architectural structures, interrupt passage through space, yielding highly charged environments. In the process the viewer becomes almost an object—a sculptural element—while external space itself seems to assume agency: overwhelming the spectator not necessarily in terms of scale but as a controlling or disciplining factor.

In short, participation in Nauman's environments emerges as an oppressive concept that is at the *expense* of the viewer: or, at least,



Above: Bruce Nauman.
Yellow Room (Triangular), 1973.
Wallboard, plywood, yellow
fluorescent lights, dimensions
variable. Courtesy: Sperone
Westwater Gallery, New York.
©2002 Bruce Nauman/Artists
Rights Society (ARS), New York.

Opposite: Bruce Nauman.
Green Light Corridor, 1970.
Wallboard, green fluorescent light
fixtures, dimensions variable.
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Rights Society (ARS), New York.

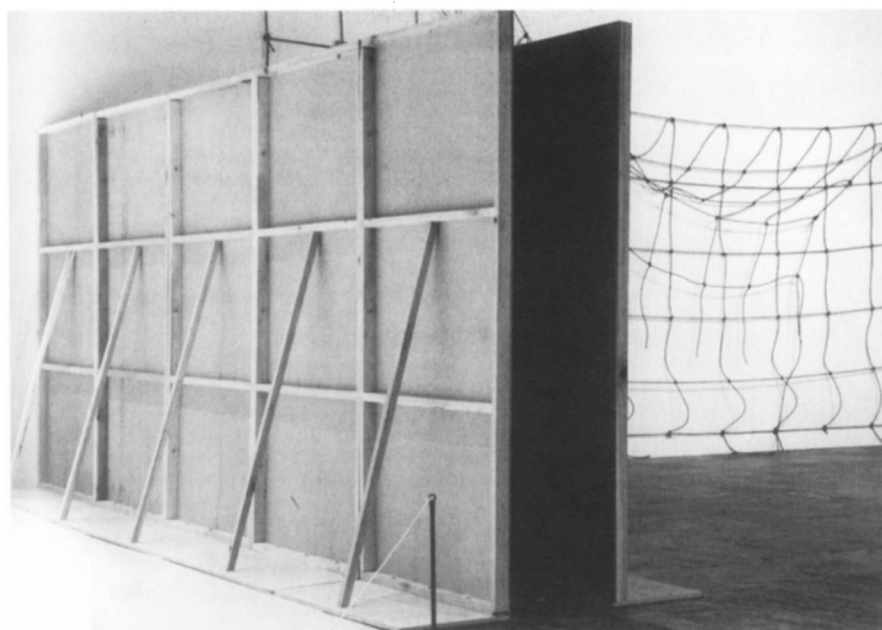


while Nauman's installations depend upon the viewer's interaction, they are nonetheless ambivalent about the possibilities such involvement affords and, as such, create uncomfortable experiences. Such wariness is echoed in the artist's frequent comments over the years regarding his "mistrust" of audience participation. In the following exchange with Willoughby Sharp, for example, Nauman speaks of his work, *Corridor Installation* (Nick Wilder *Installation*), from 1970:

Nauman: The cameras will be set upside down or at some distance from the monitor so that you will only be able to see your back. I have tried to make the situation sufficiently limiting, so that spectators can't display themselves very easily.

Sharp: Isn't that rather perverse?

Nauman: Well, it has more to do with my not allowing people to make their own performance out of my art. Another problem that I worked out was using a single wall, say twenty feet long, that you can walk around. If you put a television



camera at one end and the monitor around the corner, when you walk down the wall you can see yourself just as you turn the corner, but only then. You can make a square with the same function—as you turn each corner, you can just see your back going around the corner. It's another way of limiting the situation so that someone else can be a performer, but he can do only what I want him to do. I mistrust audience participation. That's why I try to make these works as limiting as possible.⁴

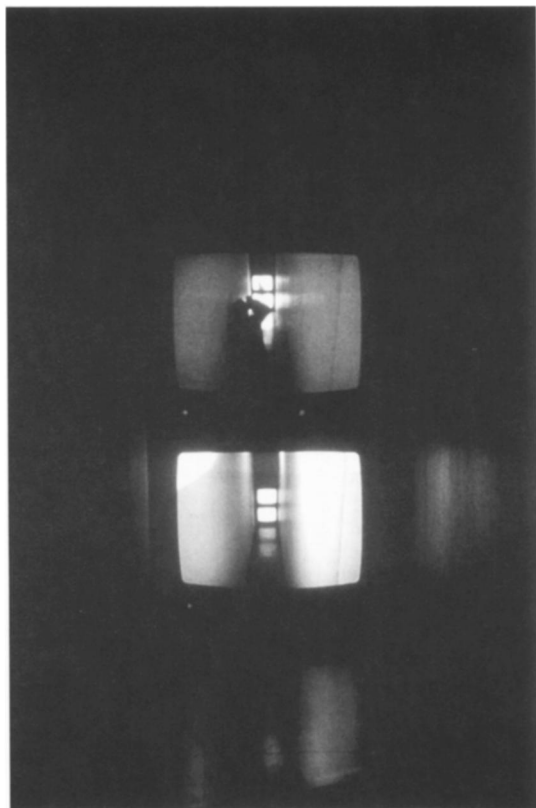
Similarly, in another interview, Nauman disdains the creation of open-ended situations, which, he complains, reduce art to a form of “game playing”: “I don’t like to leave things open so that people feel they are in a situation they can play games with. . . . I think I am not really interested in game playing. Partly it has to do with control, I guess.”⁵

What to make of this apparent tension between the need (or desire) for reciprocal involvement on the part of the viewer and concomitantly a reluctance to allow for it or, at least, to preclude unfettered access? Because of the ways with which the spectator is compelled to perform certain tasks and is physically manipulated within the spaces, as well as the artist’s comments (such as those cited above), there has been much speculation regarding not just the nature of Nauman’s sculptures but also the artist’s perceived relationship with, or even personal feelings toward, his audience—often with uneasy transpositions being made between Nauman’s art and persona.⁶ But I want to forgo this tendency to personalize—not the least because the evidence of Nauman’s artwork does not support such an approach, but also because I am interested in more consequential considerations of historical exigency: specifically, how Nauman’s environments raise the very question of participation and how this involvement is interpreted.

Participation, this essay suggests, is a historical rather than a static

Above: Bruce Nauman.
Performance Corridor, 1969.
Wallboard, wood, 96 x 240 x 20".
©2002 Bruce Nauman/Artists
Rights Society (ARS), New York.

Opposite: Bruce Nauman.
Live Taped Video Corridor, 1970.
Detail. Wallboard, video camera,
two video monitors, videotape
player, videotape, dimensions
variable. Courtesy: Sperone
Westwater Gallery, New York.
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concept, one that bears particular resonance with the emergence of technocratic society in the late sixties. Characterized not simply by the pace and stuff of technological change (including computers, television, and the familiar trappings of media culture), technocracy also specifically refers to the increasingly administrative order that accompanies these developments. Nauman's environments negotiate this new technocratic space, giving form to the acute anxieties with which it was greeted. The discussion will be guided by a number of contemporary sociological and philosophical writings that attempt to analyze the nature of these changes as well as the conflicts and fears engendered by a social system still in the making. In these writings, what emerges is that participation functions simultaneously as a source of seduction and controversy, touching upon a series of arising social tensions that are

part of the larger history of the sixties and its lasting influence on contemporary culture.

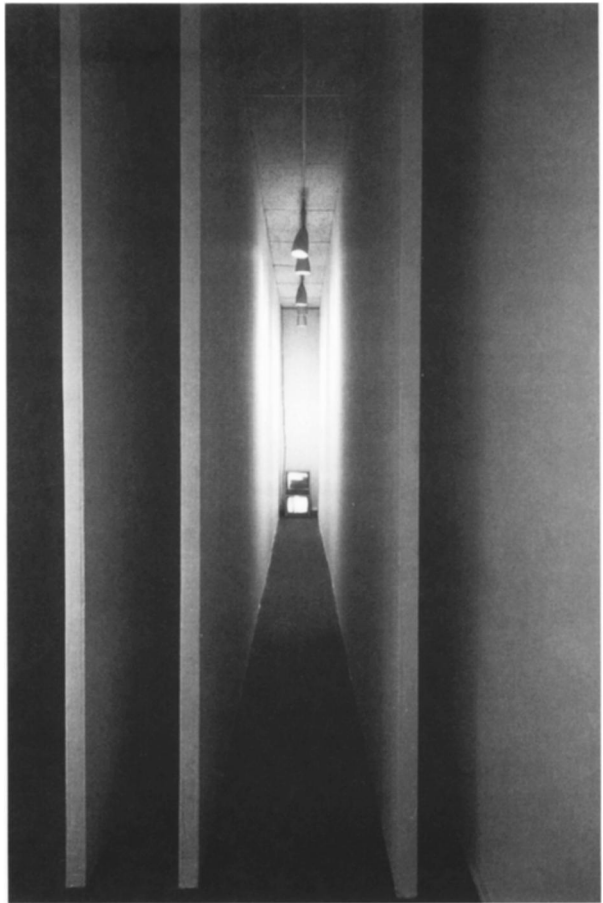
Nauman's Environments

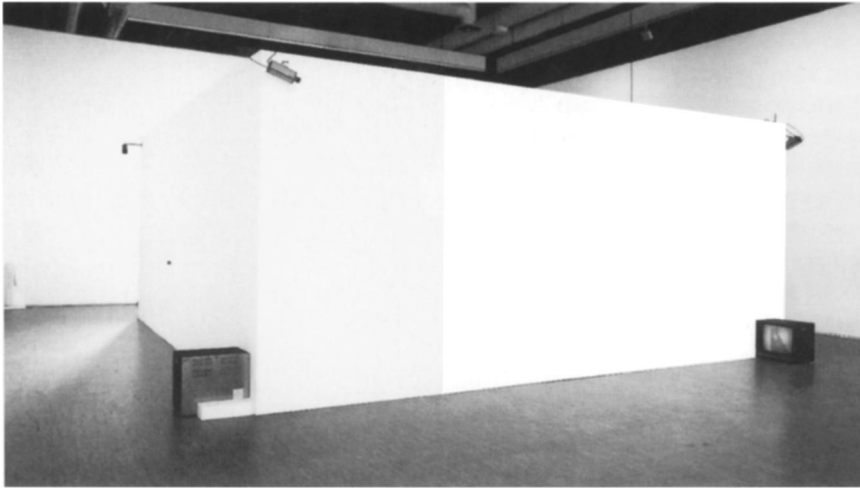
Typical of Nauman's production, the 1970 *Live Taped Video Corridor* is an elaboration an earlier work, in this case the artist's first environmental sculpture *Performance Corridor*. Employing the same simple structure of a plywood corridor with an entryway open at one end, in the later work, two video monitors are placed atop each other on the floor at the closed end of the corridor: a dead end passage that leads to nowhere. As in *Performance Corridor* the beholder performs the simple task of walking in and out of the corridor's interior, enveloped by its narrowly set walls. Here, however, visual and bodily experience is mediated by video: a prerecorded image of the empty corridor as well as a continuous live feed from a recording camera that is mounted high on the wall near the structure's opening and tracks the viewer's movement through space. As the viewer works her way toward the corridor's mouth, walking closer to the picture, her body continually recedes, appearing ever smaller. This disconcerting effect is the result of a simple technical detail: because the monitor is placed at the far end of the corridor and the camera at its entry point, as the viewer moves forward, desiring to see and "touch" her image, she is actually traveling further away from the recording device. Due to the orientation of the camera, moreover, the viewer can only see herself from behind: a perspective of one's body to which one is not normally privy.

In *Live Taped Video Corridor* a disturbing disjuncture results between vision and experience: I *feel* myself getting closer, yet I *see* myself receding further away. The two forms of sensorial information do not coordinate but rather contradict each other. Such strangeness is not only unfamiliar but unsettling: an uncomfortable space that welcomes me into its depths yet seems to mock me, subjecting me to its parameters. Concomitantly it depends upon me, however, and I am, technically, a desiring participant.

In subsequent pieces such perceptual effects continue with increasingly elaborate spatial configurations that generate new avenues of audience engagement. In *Corridor Installation (Nick Wilder)* of 1970, the simplicity of the single corridor is multiplied into a sprawling construction consisting of six individual corridors of differing widths, only some of which the beholder can enter, as well as an enclosed, inaccessible room. The corridors are variously lit and unlit; some contain cameras and video monitors showing combinations of pre-recorded and real-time imagery, while others are empty, extremely narrow, and unpassable. Shifting between access and prevention, each individual configuration explores different perceptual and phenomenal conditions. In the fourth corridor, for instance, a monitor sits at the far end of the passage, feeding a live picture of the floor and ceiling of the enclosed, empty room taken by a camera placed in its interior on an oscillating mount. As the beholder exits this corridor, turning a corner into the fifth passage, she encounters a television monitor that captures, for a brief instant, a fleeting, fragmentary image of the viewer's back. As if to heighten its destabilizing effect, the image appears sideways, upsetting one's sense of bodily orientation.⁷

If *Corridor Installation* is descriptively confusing, it is experientially unwieldy. The beholder negotiates a maze of intricately designed spaces, arriving at physical impasses, but, even when entry is permitted, finds herself unable to move about freely and subjected to so many weird perceptual tricks. Reinforcing this sense of being "cornered," Nauman shortly afterward created two related installations, *Four Corner Piece* and *Going Around the Corner Piece*, in which the beholder's passage from one place to another—as seen in the fourth and fifth corridors described above—becomes the basis





Opposite: Bruce Nauman. *Corridor Installation (Nick Wilder Installation)*, 1970. Wallboard, three video cameras, scanner and mount, five video monitors, videotape player, videotape (black and white, silent), dimensions variable. ©2002 Bruce Nauman/Artists Rights Society (ARS), New York.

Above: Bruce Nauman. *Going Around the Corner Piece*, 1970. Wallboard, four video cameras, four video monitors. Walls 120 x 240" each. ©2002 Bruce Nauman/Artists Rights Society (ARS), New York.

of the sculptural installation. In the latter piece a full-scale square room is constructed and placed in the center of a gallery, like an enlarged minimalist cube. With no entry point the viewer instead circumnavigates its exterior, at each turn encountering a partial, momentary image of her back going around the corner that plays on a video monitor set upon the floor. Desperate to “capture” the image—to see oneself properly—the beholder finds herself caught up in an endless cycle of replay, turning around and around and around the corners to no avail. As a result, the viewer is in the awkward—and ultimately frustrating—position of seeming to chase herself from behind, not unlike the proverbial dog hopelessly chasing its tail. (Perhaps, in light of an installation Nauman produced almost two decades later, a more apt analogy is a hapless rat.⁸)

The subject’s spatial discomfort, of being ill at ease in the external world, is a recurring theme in the literature on modernity: the notion of not belonging tied to both the physical and figurative displacements wrought by industrialization, the architecture of urban life, and the sublime effects of overwhelming space.⁹ Yet here I am less interested in the effects of estrangement than in those of solicitation; that is, the simultaneous beseeching and thwarting of the beholder that lies at the center of Nauman’s environments.

While, collectively, Nauman’s sculptures might be the most systematic in this regard, numerous participatory artworks from the sixties and seventies are similarly characterized by a decidedly confrontational nature, in which the audience is subjected to various forms of manipulation or assault, yielding often unsettling, ambiguous experiences in which the goal of participation is not entirely clear. For example, in Allan Kaprow’s *A Spring Happening* (1961) the audience was confined to the darkened interior of a small crate, while various—sometimes frightening—events took place outside, ones that were audible, but barely visible to the participants, who, as Judith Rodenbeck maintains, are figured as “objects, collage elements, exchangeable tokens.”¹⁰ In Vito Acconci’s *Seedbed* (1972) the unsuspecting beholder, walking up a room-size ramp installed in a gallery, is caught off guard by the potentially embarrassing sounds of a private, sexual act. In Yoko Ono’s *Cut Piece* (1964) and

Marina Abramović's *Rhythm 0* (1974), on the other hand, the gesture to engage takes the form of a dare, in which the audience is confronted with the burden of *how* to act, with potentially serious—and violent—consequences for the artist.¹¹

While such provocative relationships vis-à-vis the viewer constitute a significant tendency in the history of participatory artworks, in current practices the move toward audience involvement frequently manifests itself as a benignly *inclusive* aesthetic. For museums and other institutions, moreover, participation is promoted as a resolutely democratic enterprise, capable of rendering often inaccessible contemporary art less mysterious and more pleasurable for a general audience. The viewer engages in various lighthearted activities: relaxing on a lovely dock installed above a lake, eating food served by the artist,

or playing with an inviting mass of sculptural putty while listening to the music of the indie band Stereolab on a walkman.¹² In these (and other) examples the once radical premises and potentially destabilizing effects of participation are transmogrified into a user-friendly doctrine of artistic viewing. The artist is no longer producer but caretaker and nurturer who provides sustenance, entertainment, and other pleasures for an audience that can enjoy such spoils without having to purchase anything.¹³

Because these artworks putatively circumvent the commodity system, providing an experiential encounter for the spectator, they are frequently positioned within a genealogy of sixties' practices (such as decommodification, dematerialization, and institutional critique), invoking the language, if not the substance, of radical politics and progressive aesthetics. However, as I have argued elsewhere, such acts of social engagement and benevolence often mask what is in fact an *economic* relationship (i.e., one based upon return) that is identifiable if the model of economy is shifted: from the commodity to gift exchange.¹⁴

While the subject of my earlier discussion focuses on recent artistic practices and develops an alternative theoretical model, it shares with the current essay several key points: first, far from operating *outside* the dominant system, this "gift economy" (as, it will



Top: Marina Abramović. *Rhythm 0*, 1974. Detail. Photograph from performance (published as an edition in 1994). One black-and-white photograph, 29 3/4 x 39 1/4"; and one letterpress text panel, 10 1/4 x 7 1/4" (not shown). Courtesy: Sean Kelly Gallery, New York.

Bottom, left: Jorge Pardo. *Pier*, 1997. Installation view. Sculpture Project, Münster, Germany, 1997. Redwood, metal, cigarette vending machine. Courtesy: Friedrich Petzel Gallery, New York.

Bottom, right: Charles Long. *Bubble Gum Station*, 1995. Modeling clay, sound equipment, furniture, 91 x 60". Courtesy: Tanya Bonakdar Gallery, New York.

be argued, “participation”) is structurally immanent to that system.¹⁵ Second, they both propose a reading of *participation as obligation*: a tacit form of control in which reciprocity is all but guaranteed and desires and will are exploited, becoming, in effect, forms of submission—or dependency. Technocratic society, we shall see, is precisely built upon this dynamic: a dialectic of participation and control.

The Programmed Society

The notion of technocracy first widely arose in public discourse in the United States during the twenties and thirties when a group of scientists and social engineers proposed a rationalistic, technological order as a means of curing the social and economic crises brought on by the Great Depression. For these self-described technocrats, however, faith rested not in technology as an isolated instrument but in its principles of efficiency, which, they believed, could be adapted to the social sphere. As historian William Akin notes, “In the technocrats’ minds the ills of the economy were traceable not to the machine per se, but to an *inefficient adjustment of the social order* to modern high-energy technology.”¹⁶ For the technocrats, governmental and business institutions—the traditional cornerstones of the capitalist system—were inadequate and inefficient systems that had led the nation to the edge of economic disaster. In their place the technocrats promoted the value of the “technician” (or engineer) and enlisted the scientific management theories of Thorstein Veblen and Frederick W. Taylor, both of whom argued for a broad social application of the principle of technical rationality.¹⁷

While the technocratic period represents a relatively minor episode in social and political history, debates regarding the emergence of technocracy reached a fever pitch during the sixties.¹⁸ In attempting to grasp the implications of the transformation from an industrial, production-based economy to an informational, service-oriented one, writers such as Daniel Bell speculated that a wholesale reconfiguration of the social structure was underway.¹⁹ While Bell’s tome (whose title, *The Coming of Post-Industrial Society: A Venture in Social Forecasting*, reveals the extent to which the future was perceived to be in the present), is one of the most influential on the subject, it ultimately amounts to an apologia for the new system. For Bell, technocracy represents merely one stage in the “progress” of modern society, with the potential to realize the unfettered dreams of capitalism. For others, however, the advent of technocratic society ushers in a moment of profound social crisis. In the sociological writings of Jean Meynaud, Jacques Ellul, and Alain Touraine, among others, techno-optimism is replaced by skepticism and even anxiety—a dystopic view of technology that recalls the philosophical writings of Heidegger, Adorno, Horkheimer, and the contemporary work of Herbert Marcuse, in which technoscientific

progress is viewed as inextricably bound to new forms of social domination and oppression.²⁰

Technocracy's skeptics draw attention to the increasing value placed upon technical "expertise" and the rise of ever more specialized forms of knowledge. As such, they maintain, traditional ideals give way to a relentless (and somewhat blind) pursuit of innovation and technical progress. Despite his otherwise rosy perspective, Bell himself identifies the emergence of technocracy as a historical crux, in which modernism's two models of social change—toward "equality" (advocated in the writings of Alexis de Tocqueville) and toward "bureaucracy" (anxiously elaborated by Max Weber)—meet and clash:

In the last hundred and fifty years, the social tensions of Western society have been framed by these contradictory impulses towards equality and bureaucracy, as these have worked themselves out in the politics and social structure of industrial society. Looking ahead to the next decades, one sees that the desire for greater participation in the decision-making of organizations that control individual lives (schools, hospitals, business firms) and the increasing technical requirements of knowledge (professionalization, meritocracy) form the axes of social conflict in the future.²¹

While Bell does not develop this reading beyond initial speculation, for Alain Touraine the interdependence of equality (i.e., the desire for a more inclusive society) and bureaucracy (i.e., technical, social, and administrative hierarchization) is the central principle of technocratic society and the main source of its disaccord. Both the tenor and content of Touraine's analysis is more typical of the literature, where the sense of urgency regarding the emergence of technocratic society is seen both in the passionate (and often paranoid) nature of the rhetoric and the extent of its reach.²² Revealing his dim view, Touraine's study replaces the relatively neutral descriptives "technocratic" or "post-industrial" with the loaded term "*programmed*": "the programmed society," he explains, more accurately captures "the nature of production methods and economic organization" of postindustrial culture. For our purposes here, however, it functions as a useful rhetorical shorthand, one that underscores the dual meaning of "programmed": the technical sense (i.e., computer language or programming, systems logic, game theory) associated with a knowledge-based economy; and the social condition of being controlled or managed.

Touraine's book explores the three principle forms of domination, which, he argues, are characteristic of the programmed society: "social integration," "cultural manipulation," and "political aggressiveness." The latter speaks to the development of the technobureau-

cracy, while the two former relay the push-pull, so to speak, of the new system. Touraine writes: “[T]he individual is pressured into participating—not only in terms of his work but equally in terms of consumption and education—in the systems of social organizations and power which further the aims of production.”²³

In short, Touraine argues that technocratic society, unlike earlier eras of industrialism, is contingent not upon *exclusion* but upon widespread *inclusion*. Participation is axiomatic to this system, but it is coerced. Moreover, its manipulative power rests upon the relative “success” of the system, as well as its deviousness: the benefits and pleasures it affords and, as such, the needs it seemingly fulfills, all the while eschewing overt oppression. Whereas in Marxian theory economic exploitation of the workers or working classes results in their social alienation, in the programmed society, Touraine maintains, those of relative affluence—and, as such, with greater “participation” in social, political, and economic life—are nevertheless subject to the lure of propaganda, advertising, and consumption. In short, in addition to the traditional oppressed classes, new ones are formed that cross a broad social strata, all becoming passive participants in their own domination.

Technocratic society, therefore, sees a dramatic shift, in which participation leads not to self-determination but, paradoxically, to *alienation*. “Ours is a society of alienation,” Touraine writes, “not because it reduces people to misery or because it imposes police restriction, but because it seduces, manipulates, and enforces conformism.”²⁴ In other words, alienation is wrought by complicity and conformity, which ultimately serve to nullify or “manage” dissent. The programmed society, Touraine argues, amounts to an insidious yet potent system of “*dependent participation*.”²⁵

Weak Participants

To be clear: I am not advocating a deterministic view; that is, that Nauman’s controlling environments are a consequence of technocracy or can be “framed” by its context. Rather, I want to suggest that Nauman’s environmental sculptures share or are energized from one of the central principles of technocratic society—that of “dependent participation.” Art-historically this approach allows for an alternative model of explanation, destabilizing the oppositional logic of the contemplative versus participatory artwork and their relative roles within the history of modernism. In contrast, through the model of dependent participation, participation itself represents a form of submission—one not so dissimilar to the slavishness of the seduced viewer that Brechtian distancing seeks to counter, or the benumbed consumer of mass media that postmodern critiques, embracing semiotic theory, challenge. With this theoretical approach Nauman’s environmental sculptures can be seen to question one of the

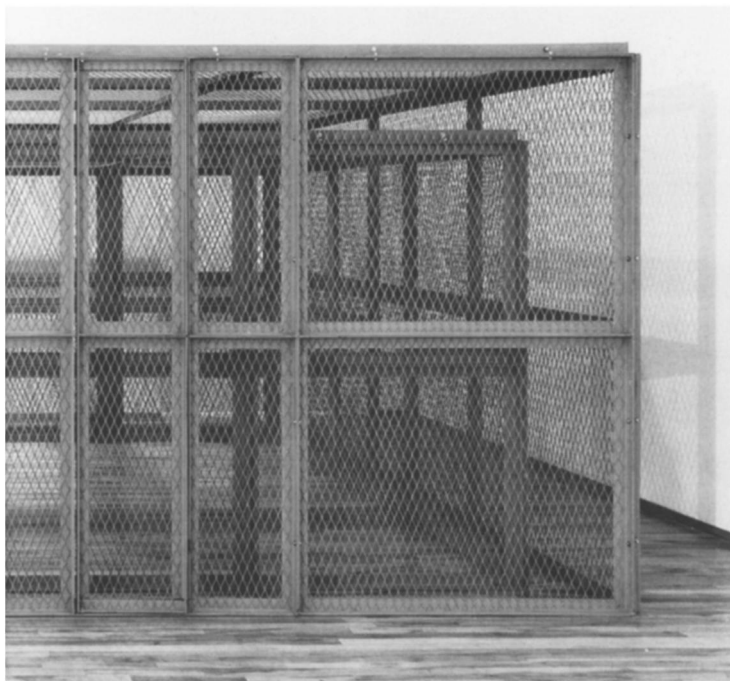
stakes upon which much progressive sculptural work of the sixties turned: namely the possibility (and benefits) of direct experience.

Central to the notion of “presence” and the phenomenological aspirations of Minimalist sculpture (and famously derided by Michael Fried as its problematic “theatricality”), the idea of direct experience was embraced as an antidote to modernism’s transcendentalism.²⁶ Instead, meaning is grounded in the here and now of the temporal, material world, contingent upon the transient situations of encounter. Such forms of lived experience, in the critical thinking of the late sixties, undermined art’s rarified (and artificial) aesthetic boundaries and, moreover, questioned the logic of medium specificity that preserved or accommodated this separation. The doctrine of presence reaches its apex in writings on performance, which is not simply insistently temporal but is heralded as the most immediate and “present” of all forms—given the assumed structure of the copresence of artist and viewer, or, in case of interactive installations, the necessity of the viewer’s immediate engagement in order to “see” and ultimately create the work.

But if we consider Nauman’s installations, direct experience is insistently, even aggressively, precluded. To recall one of the examples described above, *Live Taped Video Corridor* does not simply disturb phenomenal and perceptual states but seems to insist that experience can *only* be generated through representation and reproduction: a point reinforced in the semantic tethering of “live” (presence) and “taped” (reproduction) in its title.

The effects of media on perception, subjectivity, and reality, of course, have been extensively addressed in the critical literature, particularly in relation to the notion of spectacle culture.²⁷ In media society, to sum these arguments, subjective experience and reality are not simply received but constructed through forms of mediation—such as television, advertising, and other media. In the most extreme readings this leads to the derealization of the real, its displacement by so much simulacra, as well as the dissolution or “splitting” of the subject herself, who is caught within a mire of imagery and perceptual stimuli. Here, however, I want to leave aside this framework, which has been productively argued in other contexts,²⁸ as well as its potential focus on the literal presence of technology in Nauman’s environmental installations, which is not my concern.²⁹ Rather, I am interested in a more circumscribed issue: how such





Bruce Nauman. *Double Steel Cage Piece*, 1974. Steel, 84 x 162 x 198". Courtesy: Sperone Westwater Gallery, New York. ©2002 Bruce Nauman/Artists Rights Society (ARS), New York.

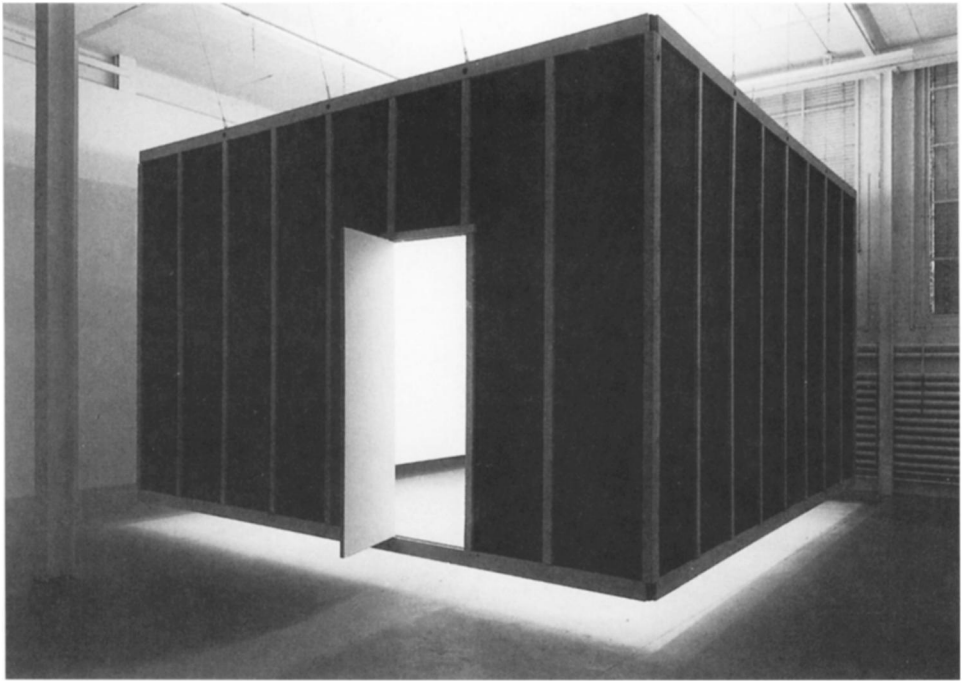
mechanisms do not simply filter experience but render it largely *unmanageable*. In other words, the beholding subject, at the whim of forces that surpass desire or agency, becomes, to borrow Touraine's descriptive, a "*weak participant*."³⁰

Nauman's *Double Steel Cage Piece* (1974) operates on the edge of this premise, in which the possibility of "willing"—but not necessarily free—participation is negotiated. The aspects of authority and control latent in the earlier, abstracted spaces are here thematized into a literal prison. Incarcerating the viewer between two

parallel screens of thick wire, the work seems to give concrete form to the Foucauldian nightmare of disciplinary society, in which technology is not simply viewed as a dehumanizing force but gives rise to potent physical and institutional agents of control.³¹ In *Double Steel Cage Piece* the viewing subject similarly emerges as a disciplined one, who acts—or, rather, behaves—accordingly.

Experience, in short, is not simply mediated and controlled, but it is *predetermined*. This structure, while characteristic of most all of Nauman's installations, is first, and most economically, realized in *Performance Corridor* (1969). Without the aid of technical devices, but simply due to the physical constraints of its narrow walls (built, moreover, to the measure of the artist's sweeping hips), a succession of like performances results: the "original" one being a video of the artist's performance, which is subsequently reenacted by the audience, whose autonomy is severely compromised by the nature of the physical structure. What results is a series of *programmed* iterations of the simple act of walking in and out of a corridor.

Heuristically speaking, the curtailing of direct experience—or its management—in Nauman's environments guarantees *repetition*: the outcome is largely determined in advance, and the most effective means of circumscribing the beholder's experience is put into place. All potential variations are carefully considered and reduced through a combination of architectural elements and technical devices so that—in *Going Around the Corner*, for example—the monitors are neatly positioned to face one direction, which, in turn, leads to the audience moving in lock-step, circulating the perimeter in an orderly line, without much interpretive modification. *Floating Room: Lit from Inside* (1972), to give another example, offers an equally guided experience. A square room, elevated several

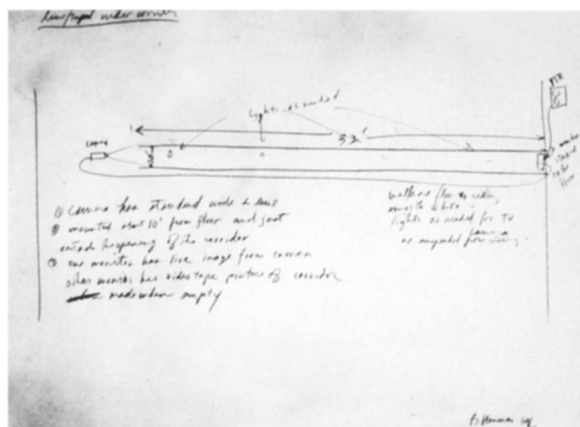


Bruce Nauman. *Floating Room: Lit from Inside*, 1972. Wallboard, wood, fluorescent lights, 120 x 192 x 192", suspended 6 inches above floor. ©2002 Bruce Nauman/Artists Rights Society (ARS), New York.

inches off the floor, is illuminated on the inside by glaring lights. Despite the disorienting nature of its interior space—in which walls fail to reach the floor and the intensity of the lighting induces nothing less than a pulsing headache—the viewer is nonetheless compelled to enter: because the only alternative is to remain within the physical unknown of a completely darkened gallery. As critic Jan Butterfield, referring to *Green Light Corridor* (1970), once remarked to the artist: “I think it is a very frightening piece. The manner in which it was structured made it necessary to participate in it your way—and that is frightening.”³²

Through highly prescribed details, Nauman’s environments are structured by repetitious interactions. Repetition, however, is central to the principle of *efficiency*, the sine qua non of technological progress. In the sixties a widespread application of the technical notion of efficiency led to the formation or expansion of fields of knowledge, including game or decision theory, in which the ultimate aim (not unlike Nauman’s environments) was to anticipate human responses—and, in so doing, to *manage* them.³³ Through an adaptation of scientific principles of rationality and theories of logic, a means of envisioning and then limiting the range of possible behaviors was found, thereby ensuring a particular outcome.

While their pragmatic uses were numerous (military, scientific, economic, etc.), game or decision theory also demonstrates a more generalized characteristic of technocratic culture: its realization of an information- or knowledge-based society, in which “technical” expertise enters into areas hitherto largely immune to it. Information theory, cybernetics, and decision theory (what Daniel Bell aptly terms “intellectual technologies”), for example, operate according to a similar logic in which means and outcome—or input and output, to use the computer terminology—are calculated. Through



Bruce Nauman. *Untitled (Live/taped video corridor)*, 1969–70. Pencil on paper. 22 x 30". ©2002 Bruce Nauman/Artists Rights Society (ARS), New York.

computation, seemingly unquantifiable variables are parsed into discrete units of analysis, yielding a manageable order. "The goal of the new intellectual technologies is, neither more nor less," Bell exclaims, "to realize the social alchemist's dream: the dream of 'ordering' the mass society. . . . If the computer is the tool, then

decision theory is the master."³⁴

In short, such knowledge systems, which are central to sixties' technocratic society, are resolutely goal-oriented, working both prescriptively and predictively to ensure the most efficacious and expedient result. As such, they function as an analogue for technocratic culture as a whole—which may be described as a *society of performance*. Whether referring to economic activity, educational institutions, or machines such as the computer, the goal of the given system or institution is one and the same: efficiency, or a graduated process of improving "performance."

If in his public comments Nauman disdains "games" in the vernacular sense as nonserious "play," his sculptural environments nonetheless incorporate the logic of game theory. Various restraints, both physical and mental, simultaneously anticipate and then circumscribe human response. In the process uncertainty and interpretive deviation are minimized as much as possible, a dynamic that economists, in an application of game theory, have described as "minimax"—or the minimization of maximum loss.³⁵ Nauman's installations constitute spaces of "performance"—defined, that is, as *efficient interaction*. To emphasize, *performance* here does not simply refer to the viewer creating a performance as a *participant*; rather, through the social theory of technology, *performance* acquires a very different meaning, one that concerns the formation of a rationalistic social order.

Whereas the Minimalist exploration of phenomenological conditions of perception banked on the ability to assert and engage the direct experience of the beholder, Nauman's installations aim to calculate and determine that experience through laws of probability. This perhaps explains why the artist often describes all aspects of his sculptural work (whether visual, conceptual, or perceptual) as "modes of information: dry language that seems directly at odds with the highly experiential or material qualities of the works themselves."³⁶ But with this claim and the use of game theory—with its quasi-scientific mapping of responses and the mitigation of choice and conflict—as a theoretical model for performance (defined now as "efficiency"), it may appear that this essay is proposing that Nauman's installations constitute embodiments of technorationality. Quite to the contrary, however, I am interested in the point at which

the rationalization of society comes under pressure. Rather than the realization of reason, in other words, Nauman's "performance" environments speak to the moment of reason's collapse, when technological change ushers in an acute crisis of legitimation—a topic of a philosophical debate that arises and is played out against the backdrop of technocratic society.

The Fate of an Idea: Technocracy and Reason

In the late sixties, sociologist Jean Meynaud voiced his fear that "politics" would be displaced by technocracy.³⁷ What Meynaud means by this is that the pursuit of traditional "political" ideals, including those at the foundation of bourgeois society (i.e., freedom, self-determination, justice), will gradually dwindle away in favor of the singular mission to increase "productivity." Writing a decade later, with the benefit of hindsight and the present realization of developments upon which earlier thinkers could only speculate, Jean-François Lyotard takes this sociological observation one step further, developing a philosophical account of the shifting nature of knowledge and society.³⁸

In a not-so-subtle challenge to Jürgen Habermas's theory of communicative reason, Lyotard reflects upon what Andrew Feenberg describes as the "technical turn" of contemporary knowledge.³⁹ Deftly marrying contemporary theory and the social discourse of technology, Lyotard specifically engages with the problematic of "performance." His subject is not simply computer and information technologies, however, but the reorientation of knowledge itself under the forces of technical change. He writes, "Technology is a game pertaining not to the true, the just, or the beautiful, etc., but to efficiency: a technical 'move' is 'good' when it does better and/or expends less energy than another."⁴⁰ Lyotard emphasizes that the "goal" of knowledge has ceased to be the revelation of truth or the realization of human possibility and instead has become the optimizing of "performance." Accordingly, he adapts the linguistic concept of *performativity* (i.e., the performative utterance or language game) as both a methodological model and the fundamental principle of contemporary, technocratic society—which being knowledge- or information-based is "linguistically" oriented. According to the logic of the language game, ever-shifting rules produce a different outcome: hence Lyotard's now well-known notion of the local or "little" narrative that displaces master or "grand" narratives. But Lyotard not only argues that knowledge is subject to change and competing ideals; rather, with the advent of "language" technologies (problems of communication, cybernetics, computer languages, information storage, to name a few of his examples), it is no longer even a product of individual "knowing." It is, in his words, "exteriorized":

We must thus expect a thorough exteriorization of knowledge with respect to the “knower,” at whatever point he or she may occupy in the knowledge process. The old principle that the acquisition of knowledge is indissociable from the training (*Bildung*) of minds, or even of individuals, is becoming obsolete and will become ever more so. The relationship of the suppliers and users of knowledge to the knowledge they supply and use is now tending, and will increasingly tend, to assume the form already taken by the relationship of commodity producers and consumers to the commodities they produce—that is, the form of value. Knowledge is and will be produced in order to be sold, it is and will be consumed in order to be valorized in a new production; in both cases, the goal is exchange. Knowledge ceases to be an end in itself, it loses its “use-value.”⁴¹

In this passage not only does Lyotard renounce both subject-centered Hegelianism and the willful humanism of Habermas, but he emphasizes the commodification of knowledge itself—a subject of earlier speculation, which, he can now assert with some certainty, has come to pass.⁴² With the removal of knowledge from the subject’s control and the emphasis on “performance” over “truth,” however, society loses its bases of legitimation. To recall Lyotard’s statement cited previously, what is “good” is no longer necessarily what is “true.” Rather “goodness” is gauged by productivity, while expending the least possible effort—an acutely passive condition. Due to this reorientation, Lyotard argues, society abdicates any claim to rationality. “The games of scientific language become the games of the rich,” Lyotard inveighs, “in which whoever is wealthiest has the best chance of being right. An equation between wealth, efficiency, and truth is thus established.”⁴³

In this “game”—one of struggle and conflict, and precisely *not* the Habermasian dream of trouble-free consensus—Lyotard finds a series of losses: of the possibility of resistance, of the actual fulfillment of human need, and of political idealism. Lyotard’s position, however, resists nostalgia, containing no dream of returning to a pretechnical past. Within this system, he counters, the source of domination and resistance are one and the same: the only path for the subject is opened up by an increased access to knowledge that technology affords; while at the same time technology (or rather, technical society) instills conformity. Hence the ambivalence of Lyotard’s treatise, stuck in the dialectic of participation and control.

The Dream of Interactivity

The equivocality of Lyotard’s argument, which distinguishes it from the wholesale technophobia of earlier philosophical accounts, is

useful in understanding why we are not simply oppressed but are also seduced by Nauman's environments. What can be irritating lighting, as in the glaring yellow of the *Left or Standing, Standing or Left Standing*, is also the source of wondrous optical tricks: the simple juxtaposition of different lighting technologies (fluorescent and incandescent) produces painterly illusions in three-dimensional space.⁴⁴ What can be a terrifyingly narrow space in *Live Taped Video Corridor* also induces a profound pleasure in the game it creates: no matter how much the beholder realizes the futility of the task, she will repeatedly try to "beat the machine" and somehow line up her image to match bodily experience. What can seem to be impossibly manipulative, as the illuminated cleave of space in *Green Light Corridor*, also reveals "chinks" in the system—or the point where intervention is unable to completely dictate the outcome, as Nauman readily acknowledges.⁴⁵

In Nauman's manipulative yet pleasurable spaces there is also a cautionary tale, one regarding participation as a panacea, a message that resonates perhaps even more intensely in contemporary culture where *dependent participation* is increasingly the reality—and even the operative principle—of a global information society. Advanced information technologies, such as the Internet, afford endless opportunity for interactivity; but hidden—and not so hidden—within them, are ever more insidious mechanisms of manipulation (browser tracking, personally targeted marketing, "cookies," etc.). In this system choice is illusory and participation obligatory: after all, if we don't accept the mechanisms, we cannot purchase a book, a ticket, or even view our own private records online. As Alain Touraine observed forty years ago, to refuse to participate is not a possibility. To be a subject in contemporary culture, one cannot simply reject the cards that historical possibility has dealt. There is little or no choice, which is why perhaps "choice"—and its cousin, "customization"—are now such ubiquitous buzzwords: forms of coercive management sporting a benign guise.

That the body of the spectator in Nauman's environments is the actor through which these dramas and conflicts are played out is not surprising. As a historical agent the individual is still the cornerstone, the pawn of a technocratic system that increasingly markets "individual" desire and which, despite providing less autonomy and choice, proffers a fantasy of more and more. Likewise, in Nauman's installations the subject ultimately is the one who must navigate a minefield of participation and control, discovering those small opportunities where conformity breaks down and possibility, even if fleeting and limited, accrues.



Bruce Nauman. *Left or Standing, Standing or Left Standing*, 1971/99. Wallboard, yellow fluorescent lights, 2 monitors, 1 videodisc player, 1 videodisc, text. Dimensions variable. Courtesy: Sperone Westwater Gallery, New York. ©2002 Bruce Nauman/Artists Rights Society (ARS), New York.

Notes

This essay is part of a longer study on the problem of performance in the art of the sixties and seventies, here addressed through the social theory of technology. I want to thank the editors of *Grey Room*—Reinhold Martin, Felicity Scott, and especially Branden Joseph—for their helpful comments and advice in the final preparation of this essay.

1. Bruce Nauman, interview by Lorraine Sciarra, 1972, Pomona College, Claremont, Cal., 9.

2. Bruce Nauman, interview by Michele de Angelus, 1980, Smithsonian Institution, Archives of American Art, Washington, D.C., 79.

3. Beyond the European/American context, in the South American postwar avant-garde the participant assumed an equal—if not more crucial—role in an explicitly political project: for example, Lygia Clark's interactive "relational objects" and "propositions" produced during the sixties; or Hélio Oiticica's "Quasi-cinemas" (a series of interactive, multimedia installations made in the early seventies) and "Parangolé," which Oiticica describes as follows: "*Parangolé* is anti-art par excellence; and I intend to extend the practice of appropriation to things of the world which I come across in the streets, vacant lots, fields, the ambient world, things which would not be transportable, but which I would invite the public to participate in. This would be a fatal blow to the concept of the museum, art gallery, etc., and to the very concept of 'exhibition.'" Hélio Oiticica, "Position and Program," in *Conceptual Art: a Critical Anthology*, eds. Alexander Alberro and Blake Stimson (Cambridge: MIT Press, 1999), 9.

4. Willoughby Sharp, "Nauman Interview," *Arts Magazine* 44, no. 5 (March 1970): 23.

5. Jan Butterfield, "Bruce Nauman: The Center of Yourself," *Arts Magazine* 49, no. 46 (February 1975): 55.

6. For example, Paul Schimmel writes, "Throughout Nauman's career he has baited, controlled, bored, infuriated, scared, insulted, angered, imperiled, experimented with, and manipulated us—his viewers—into experiencing his work within his parameters." Schimmel, "Pay Attention," in *Bruce Nauman*, eds. Neal Benezra, Kathy Halbreich, and Joan Simon, exh. cat. and catalogue raisonné (Minneapolis: Walker Art Center, 1994), 69. A more extreme biographical leap is evidenced in the following observation by Andrew Solomon, from an article that profiles the artist on the occasion of the opening of his 1995 retrospective at the Museum of Modern Art in New York: "Looking at Nauman's retrospective is like walking through someone else's psychoanalysis: it's full of patterns and recurring wishes, anxieties and obsessions; it's sometimes rather comical and often hostile; it keeps turning out to be about something other than what's apparently being said. Like someone else's psychoanalysis, Nauman's work is often boring and repetitive. . . . I had seen Nauman's work for years and had never wanted to meet him. I had thought he was probably sadistic and controlling and brilliant and unforgiving and cold." Andrew Solomon, "Bruce Nauman: Complex Cowboy," *The New York Times Magazine*, 5 March 1995: 29–30.

7. For further description of the piece, see entry no. 172 in the catalogue raisonné. Benezra, Halbreich, and Simon, 241.

8. Referenced here are Nauman's two related pieces, *Learned Helplessness in Rats (Rock and Roll Drummer)* (1988) and *Rats and Bats (Learned Helplessness in Rats II)* (1988). In both, a rat navigates the interior space of a Plexiglas maze, placed on the floor of a darkened gallery, while a combination of closed-circuit

and prerecorded imagery is projected onto the walls of the gallery. The rat essentially performs the same role as the beholder in the earlier corridor installations described above.

9. For example, architectural historian Anthony Vidler theorizes modern space through the Freudian notion of the *unheimlich*: He writes, “[T]he labyrinthine spaces of the modern city have been constructed as the sources of modern anxiety, from revolution and epidemic to phobia and alienation . . .” See Vidler, *The Architectural Uncanny: Essays in the Modern Unhomely* (Cambridge: MIT Press, 1992), ix.

10. Rodenbeck further observes: “This piece is often discussed in relation to the notion of ‘rebirth’—a mythic, even epiphanic reading. . . . [But] attendees recall the smell of fear—Kaprow himself admits he was interested in this as an element. The imagery—no, the actuality—of confinement as well as the assaultive violence of the audience’s ‘liberation’ by a roaring lawnmower has as much to do with the historically specific imagery of the Holocaust or of behaviorist experiments as it does with any mythical notion of ‘rebirth.’” Judith Rodenbeck, *Crash: Happenings (as) the Black Box of Experience, 1958–1966* (Ph.D. diss., Columbia University, 2002), 105–106.

11. Frazer Ward has written compellingly about the issue of performance and audience involvement through a theory of ethics exploring the nature of “acts” rather than simply the entreaty “to act.” Frazer Ward, “Marina Abramović’s *Rhythm 0*: Performance, Audience, Ethics,” paper presented at the College Art Association Annual Conference, Philadelphia, Penn., February 2002.

12. The works referred to here include Jorge Pardo’s *Pier* (1997), installed in situ for the “Sculpture Projects” exhibition, Münster, Germany 1997; Rirkrit Tiravanija’s *Untitled (Free)* (1992), as well as the artist’s many other performances/installations in which he prepares and serves food; and Charles Long’s *Bubble Gum Station* (1995), an installation (which is part of a series of sculptures collectively titled *The Amorphous Body Study Center*) consisting of a central pedestal holding a large blob of bright pink clay, which viewers are encouraged to manipulate while listening to music through headphones attached to the sculptural mass. Of course, not all contemporary works interpret audience participation in such terms: for example, Andrea Zittel’s *A-Z Carpet Furniture* (1993; part of her *A-Z Designs for Living* series), among other works, touches upon the more oppressive or sinister aspects of design, controlling the viewer/inhabitant through domestic objects and spaces. Other pieces by the artist, however, such as *Escape Vehicles*, more readily approach the “user-friendly” doctrine of participation. In *Escape Vehicles* the collector customizes the interior of a small unit (the shell of which is designed by Zittel), creating a private space of personal taste and objects. Even this work, however, tarries between pleasure and oppression: as Stefano Basilico mentioned to me, in the *Escape Vehicle* one basically designs one’s own coffin, a decidedly morbid task.

13. Miwon Kwon, in an important study of the historical and theoretical transformations of “site-specific” practices, discusses this relatively recent phenomenon of the “artist as service-provider.” Drawing upon—and inverting—Benjamin Buchloh’s construct of the “aesthetics of administration,” which he developed in relationship to conceptual art, Kwon theorizes the “administration of aesthetics” in the art of the 1980s and 1990s. Miwon Kwon, *One Place after Another: Site-Specific Art and Locational Identity* (Cambridge: MIT Press, 2002), 51.

14. The argument was developed in relation to the work of Rirkrit Tiravanija, whose various projects entail serving food and drink, performing live music, and

re-creating a full-scale model of the interior of his apartment in a gallery, an so on—all of which generate spaces for social exchange. The “generosity” often attributed to these works, is, however, misleading, in that, according to the structural logic of the gift, it demands reciprocity and fosters social contracts of obligation. See Janet Kraynak, “Rirkrit Tiravanija’s Liability,” *Documents* 13 (Fall 1998): 26–40.

15. In the essay on Rirkrit Tiravanija’s work cited above, I draw upon Pierre Bourdieu’s concept of symbolic “capital,” which represents an intangible, yet powerful, source of economic and political wealth, and contend that “the gift” in fact constitutes a central economic force in late capitalist society.

16. William Akin, *Technocracy and the American Dream: The Technocratic Movement 1900–41* (Berkeley: University of California Press, 1977), x (emphasis added).

17. In *The Theory of Business Enterprise* (1904) Thorstein Veblen maintains that the rationality and objectivity of the scientist (or the engineer) was an antidote to the uncontainable self-centeredness of the capitalist businessman, who, rather than aiding the economy, was detrimental to its smooth functioning. Frederick Taylor, whose theory of scientific management has been widely discussed, was similarly committed to scientific principles of rationality, which, he argued, could be applied to generate increasingly efficient models of work, the factory, and, by extension, social life. Taylor, *The Principles of Scientific Management* (New York: W.W. Norton, 1911).

18. Referring to the sixties as an important turning point, Andrew Feenberg, in his study on the philosophy of technology, writes: “It is not easy to explain the dramatic shift in attitudes towards technology that occurred in the 1960s. By the end of the decade early enthusiasm for nuclear energy and the space program gave way to technophobic reaction. But it was not so much technology itself as the rising technocracy that provoked public hostility.” Feenberg, *Questioning Technology* (New York: Routledge, 1999), 4.

19. Daniel Bell, *The Coming of Post-Industrial Society: A Venture in Social Forecasting* (New York: Basic Books, 1973).

20. Jean Meynaud, *Technocracy*, trans. Paul Barnes (New York: Free Press, 1968); Jacques Ellul, *The Technological Society*, trans. John Wilkinson (New York: Knopf, 1967); Alain Touraine, *The Post-Industrial Society: Tomorrow’s Social History: Classes, Conflicts, and Culture in the Programmed Society*, trans. Leonard F.X. Mayhew (New York: Random House, 1971); and Herbert Marcuse, *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society* (Boston: Beacon Press, 1964). Martin Heidegger, *The Question Concerning Technology*, trans. W. Lovitt (New York: Harper and Row, 1977); Max Horkheimer and Theodor W. Adorno, *The Dialectic of Enlightenment*, trans. John Cumming (New York: Herder & Herder, 1972).

21. Bell, 8.

22. For example, Theodore Roszak, in *The Making of a Counter Culture: Reflections on the Technocratic Society and Its Youthful Opposition* (New York: Anchor Books, 1969), argues that “counter-culture” in the United States arose as a specific reaction to technocratic society. Similarly, Andrew Feenberg explores the relationship between the student revolts of May 1968 in France and technocracy, including their protest against the transformation of the university into a “knowledge factory.” See, Feenberg, *Questioning Technology*, 21–43.

23. Touraine, 7.

24. Touraine, 9.

25. Touraine, 9. The complete quote is “Alienation means canceling out social

conflict by creating dependent participation."

26. In his essay (now equally as famous for the accuracy of its reading of Minimalist sculpture as for its decidedly negative assessment), Michael Fried posits an opposition between Minimalist "presence" (defined as material and temporal) and modernist "presentness," the latter an essentially atemporal construct in which time exists in an ideal, arrested state. Fried, "Art and Objecthood," *Artforum* 5, no. 10 (June 1967), 12–23.

27. Guy Debord, *The Society of the Spectacle* (Detroit: Black and Red, 1970), first English translation. Debord writes, "The spectacle is not a collection of images, but a social relation among people mediated by images." Later on, Jean Baudrillard radicalized Debord's notion of spectacle, claiming that the "real" itself no longer exists, rather is atomized into an endlessly self-referential chain of signifiers. Jean Baudrillard, "Simulacra and Simulations," in *Selected Writings*, ed. Mark Poster (Stanford: Stanford University Press, 1988), 166–184.

28. See Jonathan Crary, *Suspensions of Perception: Attention, Spectacle, and Modern Culture* (Cambridge: MIT Press, 1999). For some recent studies that develop such themes in relation to television, technology, and postwar media culture more specifically, see Anna McCarthy, "From Screen to Site: Television's Material Culture, and Its Place," *October* 98 (Fall 2001): 93–111; Pamela M. Lee, "Bridget Riley's Eye/Body Problem," *October* 98 (Fall 2001): 27–46; David Joselit, "The Video Public Sphere," *Art Journal* 59, no.2 (Summer 2000): 46–53; and Branden W. Joseph, "'My Mind Split Open': Andy Warhol's Exploding Plastic Inevitable," *Grey Room* 08 (Summer 2002): 80–107 (in the same issue, see also David Joselit's "Yippie Pop: Abbie Hoffman, Andy Warhol, and Sixties Media Politics": 62–79).

29. One danger this approach poses is of lapsing into technofetishism, which, given Nauman's complicated relationship to new technologies, is highly suspect. Despite continually experimenting with different techniques and media, the artist often utilizes outdated or outmoded techniques—such as neon, which in the 1960s, as Brenda Richardson notes, was already tainted by obsolescence. See Brenda Richardson, "Bruce Nauman: Neons," *Bruce Nauman: Neons*, exh. cat. (Baltimore: Baltimore Museum of Art, 1982), 13–39. Furthermore, when Nauman employs newer technologies—such as the Sony Portapak video camera in the late sixties and, most recently, infrared digital photography—he often subjects the medium to extreme forms of manipulation, harnessing it for decidedly dated visual effects such as filmic graininess. The futuristic and the retro are thus continuously inverted.

30. Furthermore, Touraine writes, "A choice between returning to traditional cultural themes and memberships or the passive consumption of the mass media does not exist. These are two closely connected manifestations of cultural underdevelopment, which is itself *bound to the weak participation of the masses in the values and products of technical civilization and social democracy*." Touraine, 203 (emphasis added).

31. Michel Foucault, *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan (New York: Vintage Books, 1979).

32. Butterfield, 54.

33. Game theory has a long history, but two key postwar texts are H.W. Kuhn and A.W. Tucker, eds., *Contributions to the Theory of Games*, vol. I of *Annals of Mathematics Studies* 24 (Princeton: Princeton University Press, 1950); and John Charles McKinsey, *Introduction to the Theory of Games* (New York: McGraw Hill, 1952).

34. Bell, 33.

35. As cited in Bell (31), the economic application of the principle of "minimax"

appears in John van Neumann and Oskar Morgenstern, *Theory of Games and Economic Behavior* (Princeton: Princeton University Press, 1944).

36. For example, in the following, Nauman refers to two early sculptures: *A Cast of the Space under My Chair* (1965–1968), a somewhat battered cubic form, and *Shelf Sinking into the Wall with Copper-Painted Plaster Casts of the Spaces Underneath* (1966), both which are largely unreadable in the absence of their titles: “I think, in a sense, a lot of the titles . . . where there were titles like *Shelves Sinking into the Wall*, and all that, were sort of trying to give two pieces of information. . . . And probably what I found out from that is that you can give two pieces of information and the piece is finally about that. It’s about the tension of not being able to put them together.” Nauman, interview by de Angelus, 73–74.

37. “Let us suppose that in a world in which the profit motive becomes more and more paramount,” Meynaud writes, “the political authorities (as is already partly true) failed to keep a close watch on the activities of technologists, who do not all have the public interest at heart; in the end, the effect would be a barely perceptible evolution towards a régime which would be democratic only on the surface. The elected representatives would be deprived of the substance of their power. . . . The democratic principle would then be nothing more than the ‘front’ . . . behind which the true leaders of the country would justify or disguise their domination.” Meynaud, *Technocracy*, 15–16.

38. Jean François Lyotard, *The Postmodern Condition: A Report on Knowledge*, trans. Geoff Bennington and Brian Massumi (Minneapolis: University of Minnesota Press, 1984).

39. Andrew Feenberg, *Alternative Modernity: The Technical Turn in Philosophy and Social Theory* (Berkeley: University of California Press, 1995).

40. Lyotard, 44.

41. Lyotard, 4–5.

42. And perhaps even more so in contemporary culture, where, for example, in educational institutions, the drive for “efficiency” is equated with tangible evidence such as test scores rather than the acquisition of knowledge, and where the reward is not the creation of an educated or enlightened population, but money—in the form of additional school funding or salary incentives. Such outcomes of technocracy, only feared by earlier writers, are increasingly the rule of contemporary society.

43. Lyotard, 45.

44. Formerly called *Installation with Yellow Lights, Left or Standing, Standing or Left Standing* (1971/1999)—named for the accompanying text written by the artist—consists of a trapezoidal room whose walls do not extend to the ceiling and which is illuminated with bright, yellow fluorescent lights. Two corridors on either side of the central room are lit with incandescent lights; as a result, when the viewer looks up to the gap between the wall and ceiling, the two forms of light blend, yielding a purple afterimage.

45. In response to an inquiry by Jan Butterfield regarding whether or not he “queries people afterwards” to check if the participant’s reaction to any given installation is similar to his own, Nauman comments: “People will tell me that they tried it and it didn’t do what I said it would for them; or that they read a great deal about a given piece, but didn’t have the response they were ‘supposed to’; or, conversely that they did not seem to relate at all to what I had written in the instructions. For example, I will say at some point that the exercise will become very sensual, or very sexual, and people will tell me that it didn’t for them.” Butterfield, 55.