

Open Systems



Rethinking Art
c.1970

Tate
Publishing

Open Systems Rethinking Art c.1970

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Supported by a group of American Patrons
and Exhibition Patrons of Tate

First published 2005 by order of the Tate Trustees
by Tate Publishing, a division of Tate Enterprises Ltd,
Millbank, London SW1P 4RG
www.tate.org.uk/publishing

on the occasion of the exhibition *Open Systems:
Rethinking Art c.1970*, Tate Modern, London
1 June – 29 August 2005

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British Library Cataloguing in Publication Data
A catalogue record for this book is available from
the British Library

ISBN 1-85437-565-2

Distributed in the United States and Canada
by Harry N. Abrams, Inc., New York

Library of Congress Cataloging in Publication Data
Library of Congress Control Number: 2005923371

Designed by Rose
Reproduction by Saxon Print Group
Printed in Italy by Graphicom s.r.l. – Vicenza

Cover: John Baldessari, *Throwing Three Balls in the
Air to Get an Equilateral Triangle* 1972–3 (no.57, detail)

All measurements of works of art are in
centimetres, height before width and depth

WIMBLEDON COLLEGE OF ART LEARNING RESOURCES CENTRE	
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Foreword

The art of the 1960s and 1970s continues, even some forty years later, to fascinate and provoke. Perhaps this is because the period persists in-defying categorisation, or that its artistic, social and cultural ramifications were particularly profound. One thing is certain – the innovations of then are regarded as the foundation of art now, and for this reason alone it is important to revisit it. *Open Systems: Rethinking Art c.1970*, curated by Donna De Salvo, is an exhibition that springs from a desire to engage with the complex and often messy nature of artistic production. It tracks the accomplishments of artists working simultaneously in several geographic arenas – Britain, Central and Eastern Europe, South America and the United States – and a particular aspect of their practice as they attempted to rethink the object of art in greater relation to themselves, the audience, and the world in general. There is undoubtedly some common ground in these ‘open systems’. More importantly, however, there are differences to be discovered, divergent viewpoints that remind us that art history is made up of multiple stories.

The research and organisation of this exhibition was begun while Donna was still a Senior Curator at Tate Modern, and completed after her appointment as Associate Director and Curator at the Whitney Museum of American Art. I am grateful to her for this highly original

and complex concept, her curatorial passion, and the contribution this exhibition and publication will undoubtedly make to the field. The positive response to the exhibition concept was demonstrated by the number of artists and lenders who readily agreed to help. I would especially like to thank all the artists and lenders who have ultimately allowed the ideas behind the show to come together through the juxtaposition of generous loans.

Following Donna’s appointment to the Whitney, the project team at Tate Modern has been impeccably led by Victoria Walsh and supported by Patricia Lee. They have overseen every aspect of this project and I owe an immense debt of gratitude to them, as well as to Stephen Mellor and Michele Smith, who sustained the momentum of the project. The combined knowledge, dedication and good humour of the team and their transatlantic communication with the curator have ensured that a challenging proposition could be realised into an exhibition.

Finally, we would like to thank the American Patrons of Tate for their support of this exhibition, particularly contributions from the Peter Norton Family Foundation and Kirk Radke and Liz Gerring.

Vicente Todolí
Director
Tate Modern

Acknowledgements

The organisation of any exhibition is the result of the collaborative efforts of many individuals and a project as challenging as *Open Systems: Rethinking Art c.1970*, which features thirty-one artists from twelve countries, has only come to fruition due to the generosity, patience and support of many. The thematic approach has both its strengths and weaknesses and I owe an immense debt of gratitude to many of the artists in the exhibition for their willingness to participate and share their insights about the period: John Baldessari, Mel Bochner, Braco Dimitrijević, Dan Graham, Hans Haacke, Valie Export, Ilya and Emilia Kabakov, Sol LeWitt, Richard Long, Cildo Meireles, Bruce Nauman, Adrian Piper, Charles Ray and Martha Rosler.

The lenders to the exhibition deserve particular thanks for their willingness to part with their works. In addition to those artists who have lent works, I would like to extend thanks to: Philip Aarons and Shelley Fox Aarons, Zdravka Bašičević, Sergio Bertola, Brian Butler, Marie Puck Broodthaers, Canadian Centre for Architecture, Centre Georges Pompidou, Anthony d'Offay, Herman Daled, Braco Dimitrijević, Coleção Família Clark, Electronic Arts Intermix, Eric Decelle, Estate of Bas Jan Ader and Patrick Painter Editions, Estate of Dan Flavin, Estate of Eva Hesse and Hauser & Wirth Zürich London, Estate of Gordon Matta-Clark and David Zwirner Gallery, Thomas Erben, Friedrich

Christian Flick, Peter Freeman, Ingvild Goetz, Anton and Annick Herbert, Irmeline Lebeer, LeWitt Collection, Lisson Gallery, Marian Goodman Gallery, Museu d'Art Contemporani de Barcelona, Museu de Arte Contemporânea Fundação Serralves, Museum Boijmans van Beuningen, Museum of Contemporary Art Los Angeles, Museum of Contemporary Art Zagreb, Museum of Modern Art New York, Museu de Arte Moderna Rio de Janeiro, Projeto Hélio Oiticica, Luisa Malzoni Strina, Solomon R. Guggenheim Museum and the Whitney Museum of American Art.

I am grateful to the three essayists who took up the challenge to write about this period, Johanna Burton, Mark Godfrey and Boris Groys, and for their highly original and rigorous perspectives on the exhibition's premise. I am also grateful to Michael Asbury for translating and annotating one of Hélio Oiticica's seminal texts. Simon Elliott and Terry Stephens of Rose have produced a catalogue design that captures the spirit of the project, reflecting on all things 'systematic.' Nicola Bion, my editor at Tate Publishing, has overseen this publication with her characteristic professionalism and commitment, with the help of Alessandra Serri, who valiantly undertook the picture research, and Sophie Lawrence, who managed the complexities of the catalogue production. My thanks, also, to Michele Smith and Patricia Lee for coordinating all the information and compiling the bibliography.

Many individuals generously offered help identifying and locating works for the exhibition, and I am indebted to: Daniel Congdon, Patrick Painter Editions; Sjarel Ex, Elbrig de Groot, Jaap Guldemon, Jacqueline Rapmund, Paul Teunissen, Museum Boijmans van Beuningen; Michelle Ginsburg, Jill Silverman van Coenegrachts, Michelle D'Souza, Nicholas Logsdail, Lisson Gallery; Angela Choon, Stephanie Daniel, David Zwirner, David Zwirner Gallery; Jane Crawford; Lissa McClure, Karina Daskalov, Marian Goodman, Marian Goodman Gallery; Gwendolyn Owens, Canadian Centre for Architecture; Michael Ringier; Cora Rosevear, Glenn C. Lowry, John Elderfield, The Museum of Modern Art, New York; Ida Gianelli, Carolyn Christov-Bakargiev, Chiara Bertola, Castello di Rivoli; Anne-Marie Sauzeau Boetti; Molly Epstein, Gian Enzo Sperone, Angela Westwater, Sperone Westwater Gallery; Patrick Peternader, Helena Greter, Friedrich Christian Flick Collection; Maria Gilissen; Manolo Borja-Villel, Antonia Maria Perelló, Museu d'Art Contemporani de Barcelona; Hélio Portocarrero, Fernando Cocchiarale, Claudia Calaça, Cátia Louredo, Museu de Arte Moderna Rio de Janeiro; Cesar Oiticica, Luciano Figueiredo, Projeto Hélio Oiticica; Felipe Scovino, Coleção Família Clark; Nena Dimitrijević; Kurt Kladler, Charim Gallery; Heike van den Valentyn, Museum Kunst Palast; Amy Gotzler, Sean Kelly, Sean Kelly Gallery; Olga Mahkroff, Oriane Cazaubon, Darrell di Fiore, Catherine Louison,

Centre Pompidou; Susanna Singer, Janet Passehl, LeWitt Collection; Branka Stipančić, Estate of Mangelos; Rebecca Epstein, Peter Freeman Gallery; Daniela Oliveira, Cláudia Osório, Museu de Serralves; Robert del Principe, Doreen Mende, Adrian Piper Research Archive; Paul Schimmel, Karen Hanus, Museum of Contemporary Art Los Angeles; Ted Bonin; Laura Ricketts, James Elliot, Anthony d'Offay Gallery; Sheri Pasquarella; Jodi Myers, Lisa Dennison, Solomon R. Guggenheim Museum; Julie Chill, Barbi Spieler, Adam D. Weinberg, Whitney Museum of American Art; Rebecca Cleman, Electronic Arts Intermix; Florian Berkold, Sabine Sarwa, Hauser & Wirth Zürich; Barry Rosen, Estate of Eva Hesse; Leonida Kovac, Museum of Contemporary Art Zagreb; Florian Baron, Galerie Christian Nagel; Harald Falckenberg.

I have been fortunate to have benefited from the counsel of several colleagues who patiently listened to some of the thinking behind this exhibition and offered their advice: Paul Andriesse, Kathy Battista, Guy Brett, J.D. Connor, Ann Goldstein, Stephen Melville, Anne Rorimer, Lauren Sedofsky, Eugenie Tsai, and Paulo Venancio Filho. For providing information about the divergent approaches that characterised this period, I would also like to thank Michael Baldwin and Christine Kozlov.

The exhibition concept was first proposed while I was a Senior Curator at Tate Modern, where it received the support and encouragement of Sheena Wagstaff,

Head of Exhibitions and Displays. I would also like to acknowledge the advice and help of other colleagues in the department, in particular my fellow curators Tanya Barson, Emma Dexter, and Frances Morris, as well as Susan May, formerly of Tate Modern and now Head of the Arts Council Collection.

I found particular curatorial kinship in Vicente Todolí, Director of Tate Modern, who explored similar terrain in his exhibition, *Circa 1968*. Over the course of this project, he has been an enthusiastic colleague and sounding board, generously offering ideas, advice, and guidance throughout. I am, as ever, grateful to Nicholas Serota, Tate Director, for his support.

For their early work on the project I also want to thank Sarah Lewis and Ben Borthwick, and more recently Vincent Honoré. The exhibition has also benefited from the administrative support of Paul McAree and Rebecca Lancaster; transport arrangements by Stephen Dunn and art handling by Phil Monk. Stephen Mellor has exceeded his role as Co-ordinator of Exhibitions and Displays at every turn of the exhibition development. The complexity and range of media of many of the works has also called upon the insights of the Tate Conservation Department and in particular, Calvin Winner, Matthew Flintham and Elisabeth Andersson. My thanks also to Anna Nesbit and Ruth Pelopida for overseeing the complex and demanding technical requirements of the exhibition.

Demonstrating that the spirit of collaboration and experimentation is alive and well, Sacha Craddock enthusiastically embraced the idea of a curatorial partnership with Braco Dimitrijević for Sadler's Wells. I would like to thank them and, in particular, Sacha for her advice about the exhibition and for her friendship and support over many years.

I would also like to thank Adam D. Weinberg, Alice Pratt Brown Director, Whitney Museum of Art, who generously allowed me the time needed to complete this project, and Apsara DiQuinzio, Curatorial Assistant, who kept things moving smoothly. My deepest appreciation is due my friend and colleague, Linda Norden. The exhibition and essay are all the better for her critical reading of the text and her incisive insights into the notion of an 'open system'.

I owe a further and final debt of gratitude to those at Tate Modern who have worked closely on this project, especially as their task was made all the more difficult by the challenges of geographic distance. I want to acknowledge the particular efforts of Victoria Walsh, Project Manager. Her clarity of vision, professionalism, knowledge of and enthusiasm for the period, made this project possible. This was a task entirely enabled by the assiduous attention to detail that Michele Smith brought to the project and finally, not least, by Patricia Lee, whose commitment, research and negotiation skills are in evidence throughout.

Donna De Salvo

Essays

Donna De Salvo
Mark Godfrey
Boris Groys
Johanna Burton

Where We Begin Opening the system, c.1970

Fig.1
Rioting students throwing
stones at police during the
Paris riots of 1968



Donna De Salvo

Introduction

The old art was an object
The new art is a system.¹

Willoughby Sharp, 1967

From today's perspective, there is something especially intriguing about the late 1960s and early 1970s. Perhaps the impulse to revisit this period is one of nostalgia for its artistic innovations and redefinition of the art object. Or it may be that we admire a period in which art, culture and politics seemed to mesh so easily, especially in the late 1960s when so many dramatic events were internationally felt. Student riots in Paris, assassinations in the United States and worldwide protests over the war in Vietnam were the scenarios of the day, as virtually every mode of authority and order was under attack. All this was taking place against a backdrop of technological and communications innovations that we now see as the foundations of today's global society. *Open Systems: Rethinking Art c.1970* investigates some of the themes and issues arising during this seminal

period in contemporary art by focusing on the work of thirty-one international artists with roots in the critical moments of the early 1960s for whom the development of a more culturally, socially and politically responsive art became paramount. These artists evolved new and more fluid ways of thinking about art in the world. Building upon the structures and systems of Fluxus, Neo-Concretism, Minimalism and Conceptualism, all of the artists included here are linked by their use of a generative or repetitive system as a way of redefining the work of art, the self and the nature of representation. This book traces some of the ways in which these artists drew parallels between their aesthetic systems and those of the real world, a development that was to have tremendous influence on artists for decades to come.



Fig. 2
Senator Robert Kennedy
lying on the floor having
been shot by an assassin
while running for the US
presidential election in June
1968. He died the next day.

Fig. 3
*When Attitudes Become
Form*, installation view, ICA,
London 1969 (with Victor
Burgin's *Photopath* in the
centre foreground)

12—13

Around 1970

What was and remains fascinating about this period is the perception it continues to provoke that something incredibly vibrant was happening in many places at the same time and this catalogue is just one of many that have sought to examine the efforts of these far flung artists and trace the diverse trajectories of the period. But, unlike the exhibitions *Reconsidering the Object of Art*, Los Angeles Museum of Contemporary Art, 1995; *Circa 1968*, Museu de Serralves, Porto, 1999; *Global Conceptualism: Points of Origin 1950–1980s*, Queens Museum, New York, 1999, and *Beyond Geometry: Experiments in Form, 1940s–1970s*, Los Angeles County

Museum of Art, 2004, *Open Systems* is less a comprehensive history than a proposition. It takes a cue from the writings of Frederick Jameson who has described the period as one of transition and has argued that: 'the Sixties did not end in an instant but extended until 1972–1974'² and that the early Seventies encompasses the formal lessons and experiments of the Sixties while signalling the pluralism associated with the Seventies in general. And Rosalind Krauss, who characterised the period as 'diversified, split and factionalized. Unlike the art of the last several decades, its energy does not seem to flow through a single channel for which a synthetic term, like Abstract Expressionism,

or Minimalism, might be found. In defiance of the notion of collective effort that operates behind the very idea of an artistic "movement," '70s art is proud of its own dispersal.'³

Perhaps because the period defies easy categorisation, Conceptual art is the term most frequently invoked in reference to the works in these exhibitions. Although it does not adequately describe the diverse array of material practices and individual positions that characterised these years, the term remains a useful framing device. As gallerist Seth Siegelaub observed in 1973, 'The debut of conceptual art is unique because it appeared

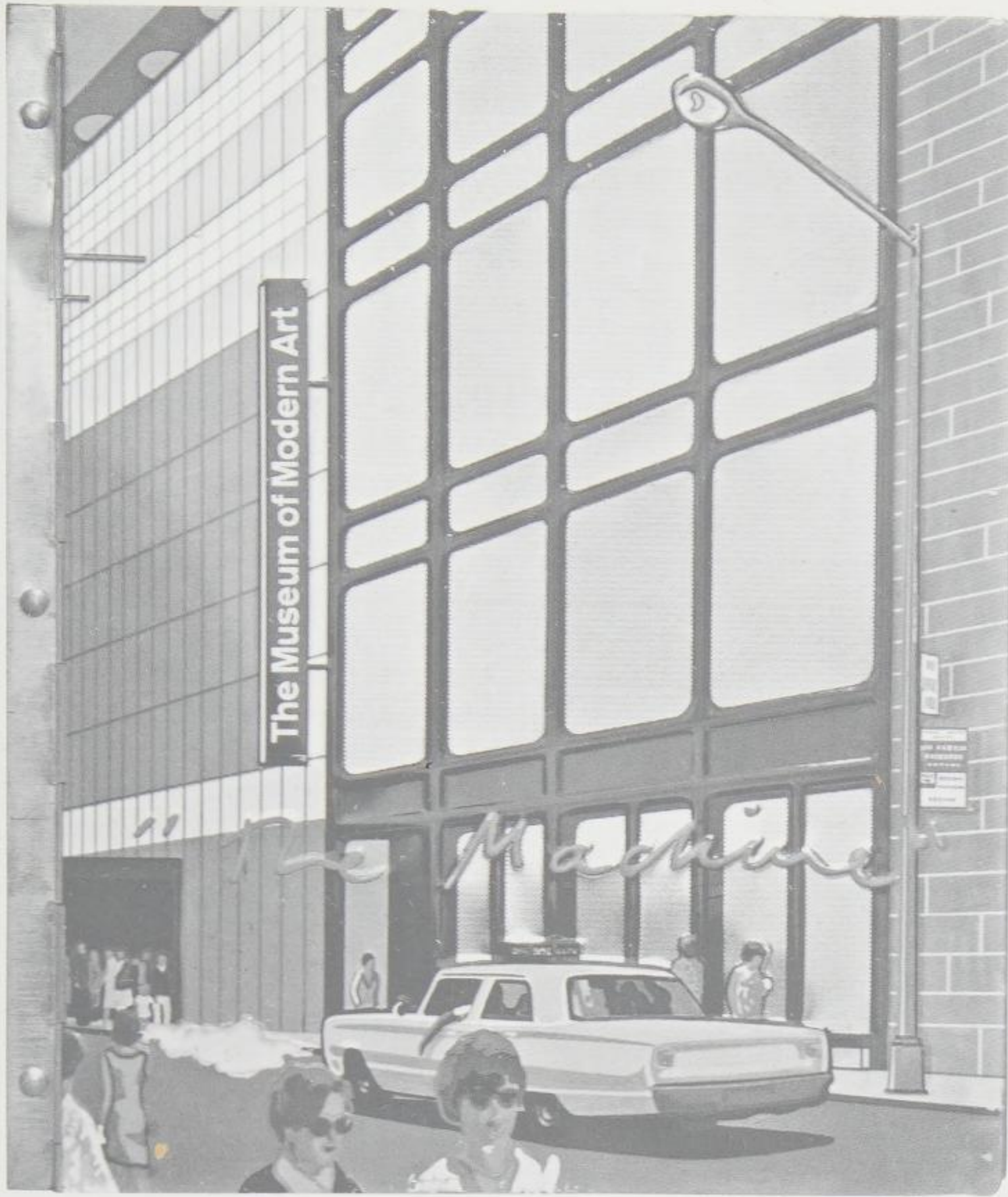


Fig. 4
Front cover of the exhibition
catalogue for *The Machine*
as seen at the End of the
Mechanical Age, the Museum
of Modern Art, New York, 1968

simultaneously around the world. Prior to this artistic movements were very localized with all the leaders living in the same city (and usually the same neighborhood) ... Conceptual art, which is an inappropriate name, was probably the first artistic movement which did not have a geographic center.⁴

One of the most characteristic developments of the late 1960s was a reconsideration of the object of art, a move away from the static and autonomous object towards a practice which, at times, literally moved out of the studio, in an attempt to be more responsive to the world. This radical rethinking of the art object led to wide ranging experiments in all media – film,

video, dance and performance, challenges to traditional categories of art making, and to the institutions and galleries that formed the art system. Many artists were eager to re-engage reference without forfeiting the lessons learned from the narrower formal problems that defined the early 1960s. While *Open Systems* does not make medium or 'post-medium' its subject, in exploring the widespread desire among artists of the period to open up the object to the world, it comprises works in myriad mediums and, perhaps more important, works whose materials and means are determined less by traditional media than by an effort to realise a concept or idea with whatever means are most effective.

Open Systems

Open systems is offered as a term that characterises this widespread preoccupation in art produced by a cross section of artists in the United States, United Kingdom, Europe and South America. In the mid- and late 1960s, words such as 'system', 'structure', and 'process' had particular currency in art and in culture, a fact that is reflected in some of the exhibition titles of the period: *Systems*, Whitechapel Art Gallery, London, 1972; *Primary Structures*, Jewish Museum, New York, 1966; *Cybernetic Serendipity: The Computer and the Arts*, Institute of Contemporary Arts, London, 1968; *When Attitudes Become Form, Concepts, Processes, Situations, Information*, Kunsthalle, Bern, 1969; *The Machine as seen*



at the *End of the Mechanical Age*, Museum of Modern Art, New York, 1968; *Information*, Museum of Modern Art, New York, 1970. In addition, initiatives such as Experiments in Art & Technology united artists with engineers, and the RAND corporation established an artist in residence programme. Systems theory was being employed on numerous levels by corporations and governments, and President John F. Kennedy famously brought systems analysts into his administration. Further proof of the currency of the term is indicated by the portrayal of the word 'system' as enemy by students united in protests during 1968. Every aspect of the conventions and structures by which society operated seemed to be under scrutiny, and the breakdown in trust of fixed meaning was also reflected in the art being produced at the time.

If today some artists are uncomfortable with the word system, Valie Export's (b. 1940) suggestion that artists make open systems has helped to inspire some of the thinking behind this investigation.⁵ Along the lines that Export puts forward, it is argued that the notion of system allowed each of the artists represented here to surpass the idea of the art object as something that has a purely metaphorical relationship to the world and to propose instead that the art object functioned as an analogue or equivalent for lived experience. Artist Cildo Meireles (b. 1948) recalls of the time:

I remember that in 1968, 1969 and 1970 ... we were no longer working with metaphors (representations) of situations; we were working with the real situation itself ... It was work that, really, no longer had that cult of the object, in isolation; things existed in terms of what they could spark off in the body of society. It was exactly what one had in one's head: working with the idea of a public.⁶

Of the other artists featured, Lygia Clark (1920–88) fused aesthetics, psychoanalysis and optics, making eyewear that brought together, yet isolated, its participants; Richard Long (b. 1945) imposed orderly and transitory patterns on solitary hikes through wilderness areas; Adrian Piper (b. 1948) ventured alone through the streets of Manhattan in a series of planned movements in space; and Marcel Broodthaers (1924–76) inverted the language of art historical categorisation to create mythical 'museums'. What they have in common is that each of these artists situates their work in real time and space, asking viewers to navigate a scenario in order to experience something that could be perceived as an aesthetic system. We attempt here to trace this progression from the cube – a construct that because of its apparent reductive structure was widely employed in the early 1960s – to the new forms artists conceived in greater response to the world around them, something suggesting a system.

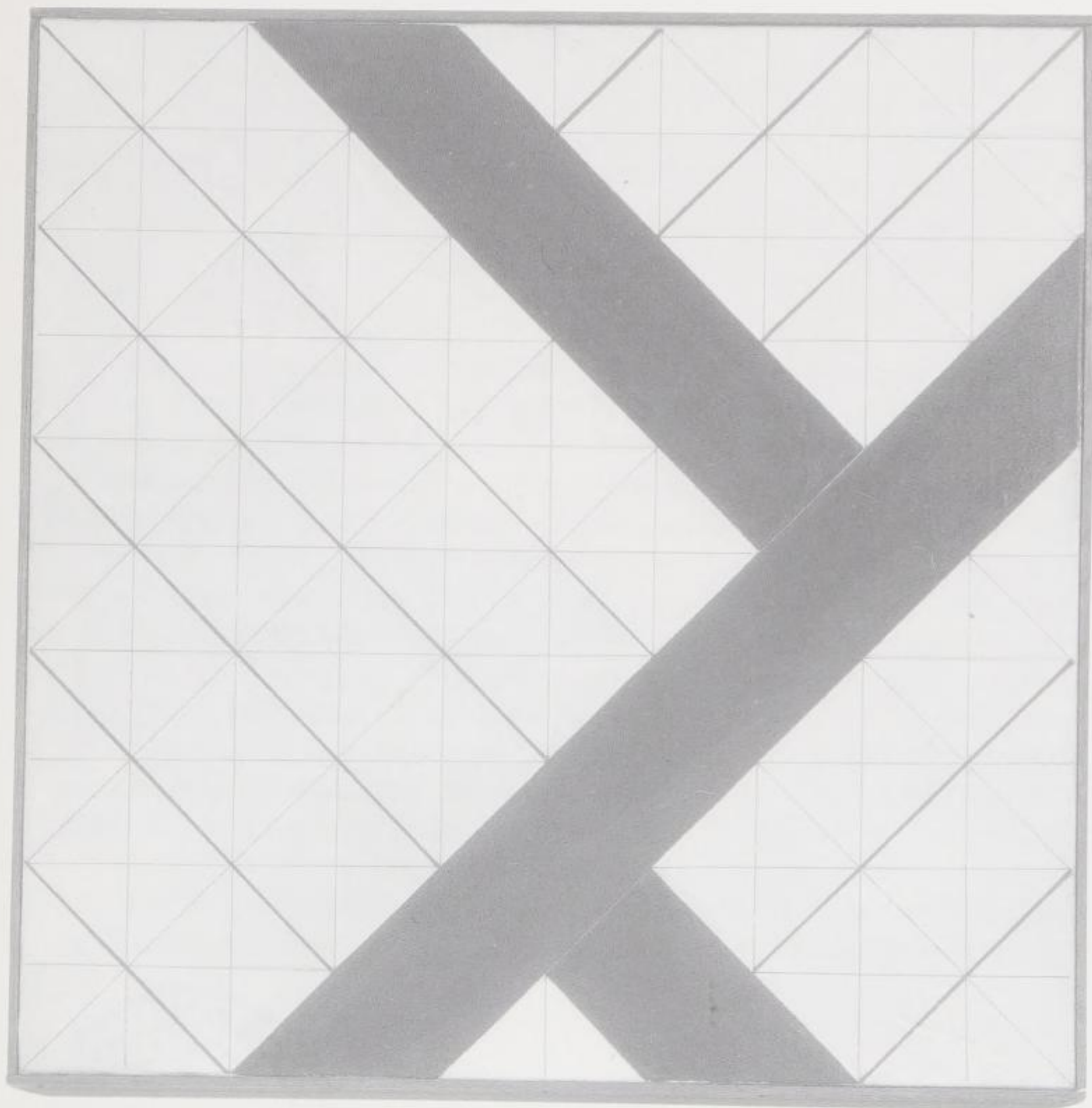
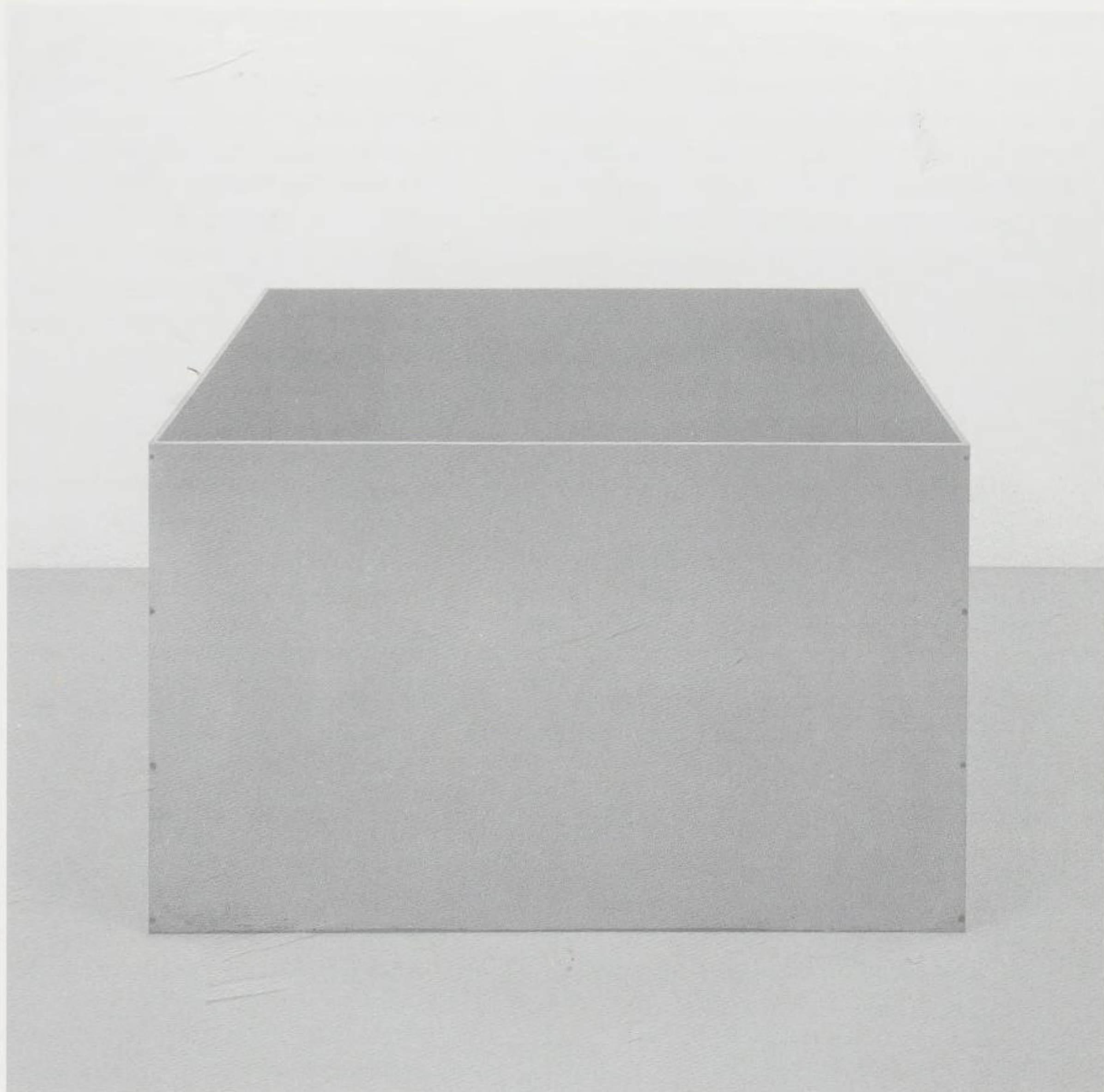


Fig. 5
Theo van Doesburg,
Counter-Composition VI 1925
Tate

Fig. 6
Donald Judd,
Untitled 1972
Tate. Presented by
the American Fund for
the Tate Gallery 1992



Cubes and Rooms

Building upon the innovations of post-war abstraction, the exhibition begins with a room of cubes suggesting that it offered many artists of the period a convenient armature, an ordered geometric structure and controlled space as a device through which to test out and posit new ideas. The fact that at this moment so many artists turned to the cube, but decided to complicate it, seems emblematic of a period in great transition. The cube stands as a simple system, a way of ordering space; within the modernist paradigm it has also come to represent a utopian ideal. Clinging to these identifiable structures, artists introduced something else into the system; the disorder and contradictions of the world. The use of the cube here underscores a shared structural relationship – a desire to go beyond pure abstraction, an investigation of materials and processes and a physical opening up of the object to the surrounding world, while

at the same offering the opportunity to differentiate the ways these common threads are inflected by a variety of cultural frameworks, perspectives and systems.

During the early part of the twentieth century, many of the artists associated with Constructivism – Theo van Doesburg (1883–1931), Kazimir Malevich (1878–1935), and Piet Mondrian (1872–1944) – had turned to the use of objective systems such as mathematics and physics as ways of achieving compositional harmony and order in their work, enabling a utopian agenda that brought reason (and in the case of some artists, emotion) to a disordered and unjust world. These ideas continued to find currency in the work of artists working in Central and Western Europe and South America. For instance, in Rio de Janeiro at the end of the 1950s, artists participated in the short-lived

movement called Neo-Concretism, which adopted some formalistic aspects of Russian Constructivism, but held as one of its central ideas a return to the body, the senses and subjectivity. Unlike their contemporaries working in São Paulo, who had adopted the more rational and technical aspects of Constructivism, artists working in Rio sought to express an organic notion of the artwork – to establish a dialogue between art and public by incorporating the space-time of lived experience. In the United States, Minimalism's interest in the literal in art – the idea that all meaning rests within the work itself – also owed a debt to the *art concret* of van Doesburg. In their writings, both Donald Judd (1928–94) and Robert Morris (b. 1931) referenced the Constructivists, especially Vladimir Tatlin (1885–c.1953), as well as the work of figures such as Naum Gabo (1890–1977). And in Eastern Europe, a group of artists and

architects working in Yugoslavia known as EXAT 51, advocated the principles of geometric abstraction and in particular, Constructivism, as an alternative to official Social Realism.⁷

Eva Hesse's (1936–70) 1967 *Accession*, for example, is precise, yet idiosyncratic. Comprised of a galvanised steel frame, its five sides are held together by plastic tubing that has been systematically laced through it, in a way similar to a hooked rug.⁸ 'That huge box I did in 1967, I called it *Accession*,' the artist has said, 'I did it first in metal, then in fiberglass. Outside it takes the form of a square, a perfect square and the outside is very clear. The inside, however, looks amazingly chaotic, although it is the same piece of hose going through.'⁹ Working at the time of Minimalism, Hesse had also used grids and serialised structures in the production of her objects. However, unlike Donald Judd's industrially fabricated objects, Hesse was intent on retaining the expressive look of the handmade in her sculpture,

investing it with a sense of the corporeal. As curator Ann Rorimer has observed regarding her method and intent, 'Hesse relayed in an interview that she was "interested in finding out through working on a piece some of the potential and not the preconceived," and that if there were nameable content in her work, it's the total absurdity of life ... absurdity is the key word. It has to do with contradictions and oppositions.'¹⁰ Hesse's systemised structure can still be read organically, as something fixed yet open, just as the cube itself is left open.

As in Hesse's work, this opening up of sculpture to the world around it, and to the body within and without, is a fundamental aspect in the work of Hélio Oiticica (1937–80). However, unlike static sculpture, *Box Bolide 9* 1964, a painted wooden box containing openings and drawers filled with pure pigments, is intended to be opened and explored, thus challenging the traditional boundary between gallery goer and work

of art. Oiticica saw artwork as a 'series of proposals, open and incomplete processes, situations to be lived, inserted into social space', and his interactive approach made viewer participation a central focus of his work.¹¹ His works transformed the museum or gallery experience into a 'mythical place for feelings, for acting, for making things and constructing one's own interior cosmos'.¹² His Neo-Concrete works of the 1950s – intensely coloured painted wooden constructions suspended away from the wall which viewers walked within and around, built upon ideas inherited from the Modernist avant-garde, and in particular, Russian Constructivism.¹³ However, Oiticica also sought to break with traditional categories of painting and sculpture by inventing his own classifications, including the boxes he called *Bolides*, which translates from the Portuguese as 'fire-ball', or meteor', each of which he carefully catalogued and numbered in his notebooks. Into these highly formal constructions, Oiticica came

increasingly to reference the cultural, social, and political landscape of Brazil, and particularly of Rio de Janeiro. He used raw materials such as seashells, crushed shells and mud, and drew inspiration from the activities and structures he found in its poorest, yet most vibrant districts, the favelas. As art historian Guy Brett (b. 1942) writes, the 'two sides co-existed in Hélió – delirious abandon and meticulous order, intellect and trance'.¹⁴

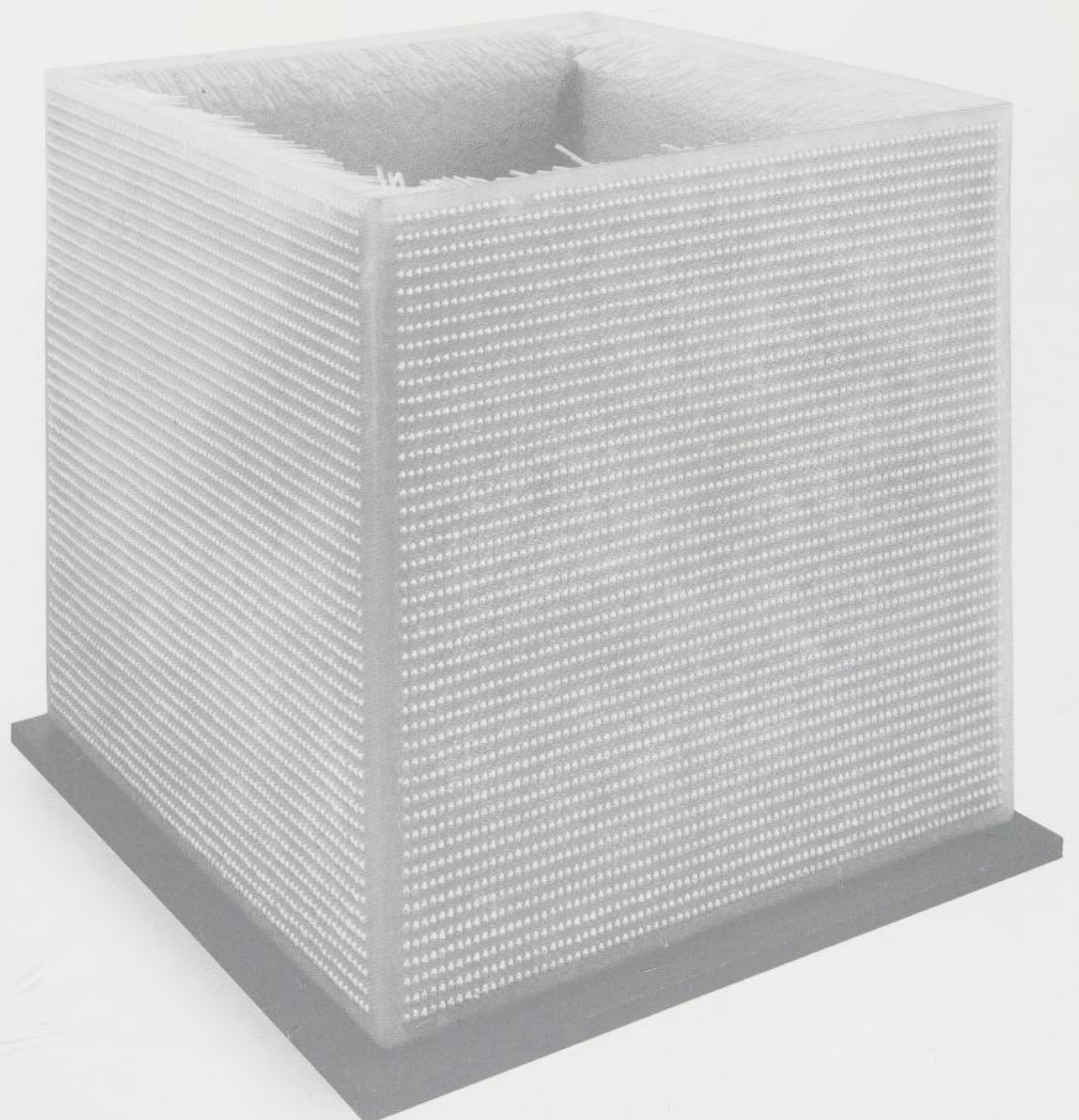
For Robert Smithson (1938–1973), physical structures – for example, geometry and later crystalline structures – were, as he writes, wielded as a way to 'to conceive of ways of dealing with nature without falling into the old trap of the biological metaphor'.¹⁵ In *Mirror Vortex* 1966 Smithson captures the viewer reflected in the world, and as the work's title

suggests, spins that image in a seemingly infinite number of directions. Similar to a work produced one year earlier, *Four-Sided Vortex* 1967 (no.9), Smithson created it by inserting mirrors in the shape of inverted pyramids into an industrially-fabricated steel case. The shapes are based upon crystals, geological formations whose structures are produced through the loss of energy. In his earlier works, Smithson's references included science fiction, religious iconography and biology; by 1966, these had been eclipsed by an interest in physics. His objects were primarily used in the service of his larger interest in the concept of entropy as articulated by the Second Law of Thermodynamics. His writings of the period, published regularly in *Artforum* and other magazines of the day, were at least as important as the object was to his efforts to

look beyond the purely organic split between a place and how it was represented in the gallery. In 'Entropy and the New Monuments' (1966), for example, he observed that the work of some of his fellow artists (e.g. Judd, Morris, Sol LeWitt [b. 1928], Dan Flavin [1933–96], Larry Bell [b. 1939]) 'provided a visible analogue for the Second Law of Thermodynamics, which extrapolates the range of entropy by telling us energy is more easily lost than obtained, and that in the ultimate future the whole universe will burn out and be transformed into an all-encompassing sameness'.¹⁶

At first glance, Hans Haacke's *Condensation Cube* 1963–5 may seem deceptively simple (no.2). First shown at the Howard Wise Gallery in New York, it is a sealed Perspex box, 30 x 30 x 30 centimetres, containing a small

Fig. 7
Eva Hesse,
Accession VIII 1968
Museum Ludwig, Cologne



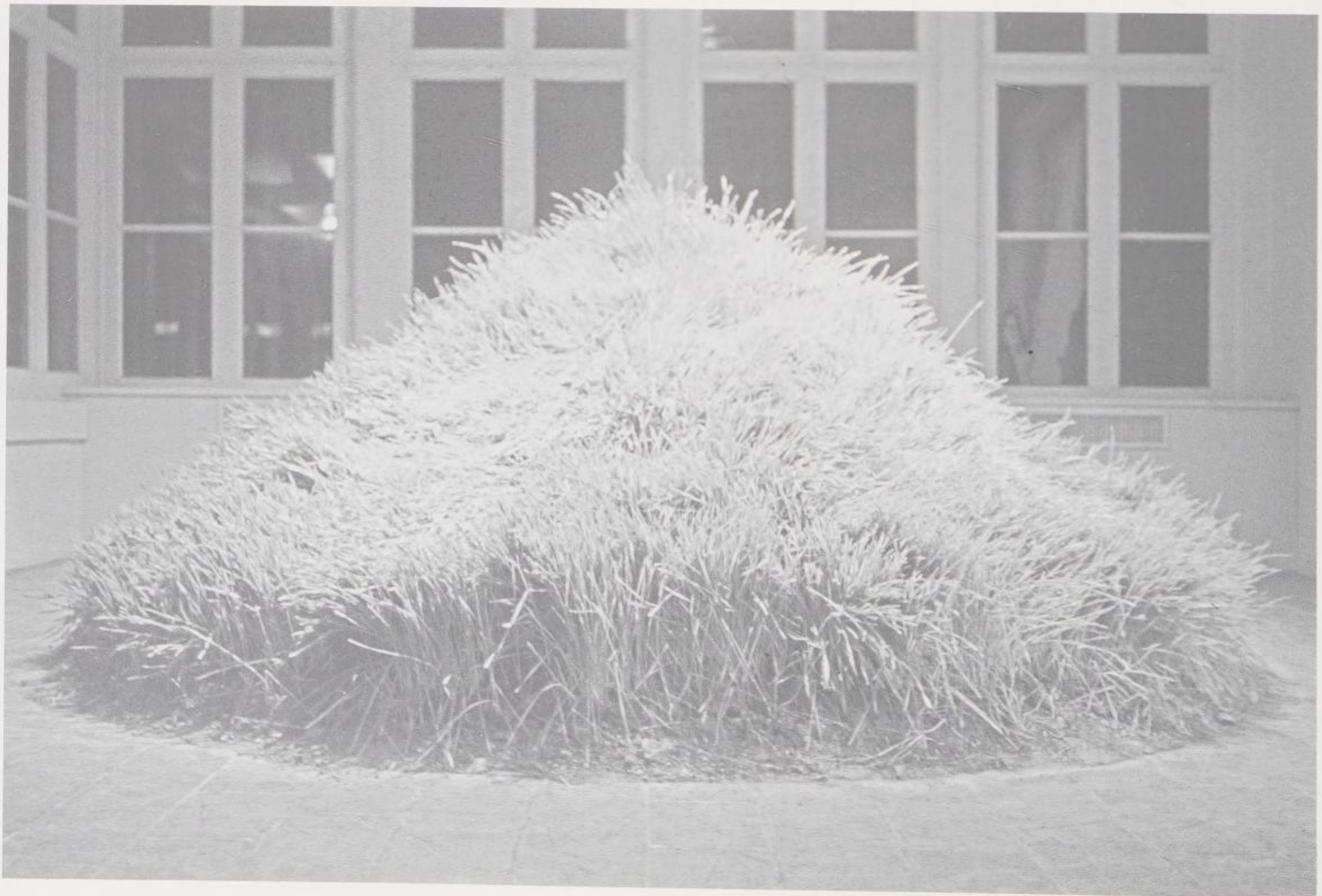
amount of water. As light enters, the cube warms and the water within condenses on its interior walls, collecting at the bottom to perpetuate the process. Initially, Haacke was involved with an analysis of physical and biological systems, including living plants and animals, and the physical states of water and wind. *Condensation Cube* is just one of a series of works the artist produced in the early 1960s combining technological with organic processes to make visible the physical forces of nature. Haacke's cube bears only a passing resemblance to the reductive Minimalist structures of the 1960s, but also reflects his involvement with the Zero group, established in Dusseldorf by Otto Piene (b. 1928) and Heinz Mack (b. 1931), and later Gunter Uecker (b. 1930). The group was interested, as Haacke has said, 'in light and phenomena and reflection, and motion, and also works that were taking place with a public outside of the gallery space'.¹⁷

Although a sealed structure, *Condensation Cube* is entirely dependent upon its ambient surroundings: light and temperature directly influence the process of condensation happening within, placing viewer and work in real time and space. As artist and critic Jack Burnham wrote: 'Traditionally, artworks exist in "mythical time", that is in an ideal historical timeframe separated from the day-to-day events of the real world. Some systems and conceptual artists, such as Haacke, attempt to integrate their works in the actual events of the "real world", that is the world of politics, money-making, ecology, industry, and other pursuits.'¹⁸ The phenomenologically-based practices of Minimalism, which required the viewer to navigate the spaces around and within works, also placed the viewer in real time and space. They became implicated in an interconnected system of objects in space, engaged in perceptual changes as they moved around the objects. The objects themselves,

however, remained materially stable, whereas Haacke now added instability, allowing him to 'make something which experiences, reacts to its environment, changes, is nonstable'.¹⁹

Sol LeWitt's *Muybridge I* 1964 offers one of the most elaborated retorts against the limitations of geometric structure in and of itself (no.15). A fundamental figure in the development of Conceptual art, LeWitt had initially been attracted to Minimalism, but 'increasingly felt that the constant simplification of geometrical form was a reductive trap'.²⁰ In order to move away from the 'dead-end' of Minimalism, LeWitt became interested in producing works in which there was movement from one part to another, where a sequence had to be followed that required the viewer to move his or her body in response to the work, as is seen in *Muybridge I*. A rectilinear wooden box containing photographs made by his colleague, Barbara Brown, of a nude female

Fig. 8
Hans Haacke,
Grass Grows 1968
Courtesy the artist



figure, it was inspired by the nineteenth-century photographer Eadweard Muybridge's motion studies. For LeWitt, Muybridge's careful studies of movement and its attempt to break down and systematise something as common as a body walking, became a way to complicate the reductive closure of a structure like the cube. In LeWitt's work the photographs are arranged based upon their sequence in time and space, as the body moves before the camera. In so doing, he began to analyse an operation that accounts for the resulting image or structure. As LeWitt later came to observe in his 'Paragraphs on Conceptual art', 'When an artist uses a conceptual form of art, it means that all of the planning and decisions are made beforehand and the execution is a perfunctory affair. The idea becomes a machine that makes the art.'²¹ However, although one might experience a sense of clinical detachment in this orderly arrangement, its erotic charge as the nude woman advances closer and closer into the viewer's field of vision, is undeniable.

Arguing that the artists of the period move from the opening up of a paradigmatic object into the creation of spaces that engage the viewer in a controlled manner, the next section of the exhibition begins with Mel Bochner, for whom the cube becomes the room, the space of the gallery itself. In Bochner's *Measurement: Room* (no.14), first realised in 1969 at the Heiner Friedrich Gallery in Munich, the artist applied 1/2 inch black tape and Letraset to the walls of the gallery, mapping out and indicating their height and length. Before beginning this work, Bochner had been experimenting with photography, using his own bodily parts for works such as *Actual Size (Face)* 1968 and *Actual Size (Hand)* 1968 as a way of testing the medium's capacity to mediate meaning.

Measurement: Room enabled Bochner to completely encompass a space, and through the mediating system of measurement create distance between the viewer and what they were seeing. That he accomplishes this

through a system of standardisation is what enables the room to function on multiple levels. The measurements not only serve to make the viewer aware of his or her surroundings, but to make them self-consciously aware, that they are now the subject. Perhaps it is something about the lines we encounter, something that evokes in us a feeling that we, much like the room we are in, are also being called into question, that we are literally being-sized up. Bochner accounts for this sense of doubt. He has said: 'Measurement is one of our means of believing that the world can be reduced to a function of human understanding. Yet, when forced to surrender its transparency, measurement reveals an essential nothingness. The yardstick does not say that the thing we are measuring is one yard long. Something must be added to the yardstick in order to assert anything about the length of the object. This something is a purely mental act ... "an assumption".'²²

Measurement: Room throws everything into doubt and is paradigmatic of the move from object to system.

Moving on to consider some of the other ways in which artists fused aesthetic and real world systems, one aim here is to explore some of the complex intersections between these artists' individual efforts by studying structures and systems in the day-to-day world, representations of the physical body and psychological constructions of the self.

One approach that seems to recur in the work of artists as varied as Joan Jonas (b. 1936), Richard Long (b. 1945), Lygia Clark, Bruce Nauman (b. 1941), Adrian Piper (b. 1948), Charles Ray (b. 1953) and Bas Jan Ader (1942–75) is a tendency to appropriate the body as a kind of Duchampian readymade in order to provoke calculated responses in the viewer. Each of these artists stakes out a subjective boundary between self and world. Charles Ray literally folds his body into his art object to intimate the implied presence of the

body in sculpture, and documents this in his photograph, *Plank Piece* 1973 (no.66). In a *Line Made by Walking* 1967 (no.17) Richard Long traverses a straight line between two places, transplanting his studio practice to the world. The act of walking is as important to Long as the photographs which document his carefully planned forays into the English countryside. Adrian Piper also devised an art form in which she plotted her movements, but on urban streets. Aside from documenting these movements in written texts, photographs, and graphs, Piper treated herself as an art object in such a way that she might provoke in viewers a heightened consciousness to her racial identity. In a different way from Piper, but also with an interest in provoking, Valie Export isolates and frames charged body parts or strikes exaggerated poses, with a similar desire to incite a response in the viewer and make them conscious of what they are seeing. In *Vertical Roll* 1972 (fig.45, p.74) Joan Jonas takes the then new medium of video and in the process of recording the structured movements of the body in real time, also calls

attention to the movements of the medium itself. Finally, Bruce Nauman simultaneously entices and frustrates the attention of the viewer in *Going Around the Corner* 1970 (no.72) by causing them to follow themselves around a corner while a video camera records their actions, the viewer becoming unwitting witness to his or her actions.

John Baldessari (b. 1931), Marcel Broodthaers, Hans Haacke, Sanja Iveković (b. 1949), Gerhard Richter (b. 1932), Bračo Dimitrijević (b. 1948), Gordon Matta-Clark (1943–78) and the Anarchitecture Group, Cildo Meireles (b. 1948), Martha Rosler (b. 1943), and Andy Warhol (1928–87) appropriate whole systems rather than their own isolated bodies, investigating such institutions as the art museum, artistic authorship, real estate, and architecture. In his series *Commissioned Paintings* (nos.58–9) Baldessari commissions a series of paintings exhibited under his name but which in fact are works made by amateur artists and sign painters. As exhibited, the paintings call into question the notion of artistic authorship. For

his *48 Portraits* 1972 (no.48), Gerhard Richter appropriates images from an encyclopedia of famous scientists, artists and writers. By basing his paintings on these photographs, Richter unravels the credibility of at least two systems assumed to stand for 'truth' – the encyclopedia and photography. For his silkscreen portraits of Mao Tse Tung, Andy Warhol subjects the ubiquitous image of the Chinese leader to market production, making the work available in a seemingly limitless array of sizes and colours. Braco Dimitrijević stops individuals he meets on the street and photographs those willing to participate. He then inserts photographs of these individuals into the urban context, as in *The Casual Passer-by I met at 11:38 am, London, October 1972*, inevitably raising questions about the criteria by which fame and historical importance are determined. Cildo Meireles practises another kind of insertion by distributing his own banknotes and bottles of Coca-Cola, which he has altered, as part of his *Insertions Into Ideological Circuits* (nos.53–4).

Martha Rosler focuses on the domain of the housewife in her video, *Semiotics of the Kitchen* 1975 (no.26). Spelling out an A–Z list of chores by slashing the air with knife and fork, Rosler weaves together two systems – that of food production and language – to critique female stereotypes. In *Double Life* 1959–75 (no.56), Sanja Iveković explores another kind of stereotype by selecting gender-specific images from mass media and juxtaposing these with highly personal photographs containing parallel poses. Hans Haacke uses records of real-estate transactions as the structure for his work, *Shapolsky, et.al. Manhattan Real Estate Holdings, A Real Time Social System, as of May 1, 1971* 1971 (no.44), its highly detailed documents unmasking the inner machinations and inequalities of property. And, drawing attention to everyday life and the forgotten gaps and spaces of the urban environment, Gordon Matta-Clark and the Anarchitecture Group make us rethink what constitutes architecture.

Instead of appropriating a system of the world in order to subvert or critique, Dimitrije Bašičević Mangelos (1921–87), Robert Filliou

(1926–87), Ilya Kabakov (b. 1933) and Alighiero e Boetti (1940–94), create highly poetic ones that selectively mimic the real world systems they find inadequate. Alighiero e Boetti invented an imaginary postal system featuring letters never mailed. A museum curator whose work remained private for many years, Mangelos transformed the surfaces of books and globes, replacing their original content with handwriting and painting to create a poetic, yet systemised cautionary statement on the dangers of rationalism in post-war Europe. Made while living in the Soviet Union, Ilya Kabakov's *Sitting-in-the-Closet-Primakov* 1972–5 (no.49), tells the story of a fictional character, Primakov, as he slowly ventures out of the blackness of his closet into a world that seems even more absolute than the one he leaves behind. Playfully misaligned, Robert Filliou's construction, *I Hate Work Which is Not Play* 1970, upsets traditional notions of workmanship. A former economist and participant in Fluxus, Filliou proposes new theories of value based upon principles of imagination and innocence.



Fig. 9
Sybil Seely and
Buster Keaton in
Buster Keaton's
One Week 1920,
before starting
work on the house
Courtesy Ronald
Grant Archive

Fig. 10
Buster Keaton
in Buster Keaton's
One Week 1920,
contemplating
the finished product
Courtesy Ronald
Grant Archive

Fig. 11
Bas Jan Ader,
Fall II 1970 (detail)
Courtesy Bas Jan Ader
Estate and Patrick
Painter Editions

Hélio Oiticica (1937–1980) and Dan Graham (b.1952) seduce us into spaces which reflect very different ideas about the representation of self. In an unexpected twist, Graham's *Public Spaces, Two Audiences* 1976 (no.61), puts viewers on display as they enter a bare room in which one wall is covered by a mirror. Without resorting to traditional portraiture, Graham's room creates a mirror image – of a self repressed by space. In his *Homes for America* 1966–8 (no.35), Graham employs the language of Minimalism to critique the banality of suburban tract housing. By contrast, Hélio Oiticica finds his inspiration in the vibrancy, chaos, and customs of everyday life in Brazil. As viewers move through the labyrinthine structure of Oiticica's *Projeto-Para Vergara* NY 1972, they are immersed in a sensory overload of colour and sound. At the end of the journey, visitors can actually imbibe colour by consuming the glass of orange juice they are offered. In Oiticica's world, everyone is free to construct their own 'interior cosmos,' a cathartic experience that gets to the interior world of the self.

In trying to present a period as earnest, probing, and unresolved as the early 1970s, there is always the danger that one can promote only one reading of it. However, the intent here is just the opposite, for by identifying some common ground, it becomes possible to read the individual efforts of these artists as 'open systems' – or propositions that open themselves to the vulnerability of the world and its events. The artists featured here succeeded in extending the literal, material object of Minimalism, Neo-Concretism, and other approaches and the purely abstract generative idea of Conceptualism into a more dynamic and responsive construct, resulting in new and incredibly diverse forms of art that continue to challenge, move, and remind us of the illusive nature of reality.

In much of his work, Bas Jan Ader explored moments in which his subject – himself – loses physical and emotional control. Ader's films depict his carefully planned actions as he falls from the roof of a house, or rides his bicycle into a canal in Amsterdam, flowers in hand, always ending in an inevitable surrender to the forces of gravity. Having lived the last

decade of his life in Los Angeles, the pathos in Ader's work suggests that he may have been aware of the history of early Hollywood film, and vaudeville. Buster Keaton, the king of vaudeville, in his 1920 film *One Week* tells the story of an unfortunate pair of newlyweds and their attempt to build a house from a kit. After receiving crates containing their house, they proceed to assemble it by following numbers written on each of the boxes, unaware that the husband's rival has reordered them. The completed house looks anything but normal, with a front door opening into mid-air and windows askew. Their troubles only escalate when they discover the house has also been built on the wrong lot, and, towing it behind their car to another location, it becomes stuck at a railroad crossing. Ironically, just when they think it is safe, the house is demolished by a passing train. Keaton's film could be seen as a jibe at the institution of marriage, or even property ownership, but if there is any lesson to be learned from it, and from the artists featured in this book, it is that a system is a human construction, and thus fallible and imperfect. This is why artists make 'open systems'.

Notes

- 1 Willoughby Sharp, 'Luminism and Kineticism', in Gregory Battcock (ed.), *Minimal Art*, New York: 1968, p.318.
- 2 Quoted in Dick Hebdige, *Hiding in the Light*, London 1988, p.21.
- 3 Rosalind Krauss, 'Notes on the Index, Part 1 Seventies Art in America', in *The Originality of the Avant Garde and Other Modernist Myths*, Cambridge, Mass. 1985, p.196.
- 4 Quoted in Alexander Alberro and Blake Stimson, eds., *Conceptual art: a critical anthology*, London and Cambridge, Mass. 1999, p.287.
- 5 Conversation with the artist, September 2004.
- 6 Quoted in *Cildo Meireles*, exh. cat., IVAM Centre Del Carme, Valencia 1995, p.174.
- 7 For an excellent discussion of the role of form and systematic strategies in an international context, see Lynn Zelevansky's exhibition catalogue *Beyond Geometry: Experiments in Form, 1940s-70s*, Los Angeles County Museum of Art, 2004.
- 8 See Linda Norden "'Getting to Ick": To Know What One is Not', in Helen Cooper (ed.), *Eva Hesse: A Retrospective*, exh. cat., New Haven 1992. Norden is the first to write about Hesse's experiences working in a textile mill and their potential impact upon her sculpture.
- 9 Quoted in Robert Pincus-Witten, 'Eva Hesse: More Light on the transition from Post-Minimal to the Sublime', in *Eva Hesse: A Memorial Exhibition*, exh. cat., The Solomon R. Guggenheim Foundation, New York 1972, p.10.
- 10 Anne Rorimer, *New Art in the 60s and 70s Redefining Reality*, London 2001, p.25.
- 11 Quoted in Catherine David, 'Hélio Oiticica: Brazil Experiment', in *The Experimental Exercise of Freedom*, Los Angeles: Museum of Contemporary Art 2000, p.181.
- 12 Quoted in *Hélio Oiticica*, exh. cat., Galerie national de Jeu de Paume, Paris 1992.
- 13 See 'Hélio Oiticica's 1960s Aesthetic of Subversion and Cultural Contamination', in *A Radical Intervention: The Brazilian Contribution to the International Electronic Art Movement*, Eduardo Kac (ed.), in *Leonardo*, Volume 30, No.4, Cambridge, Mass. 1997.
- 14 Zelevansky, p.19.
- 15 Ann Goldstein, *A Minimal Future? Art as Object 1958-1968*, exh. cat., Los Angeles Museum of Contemporary Art 2004, p.342.
- 16 Robert Smithson, 'Entropy and the New Monuments', quoted in James Meyer (ed.), *Minimalism*, London 2000, p.223.
- 17 Quoted in Goldstein, p. 211.
- 18 Jack Burnham, 'Steps in the Formulation of Real-Time Political Art', in Kaspar Koenig (ed.), *Hans Haacke/Framing and Being Framed: 7 works, 1970-5*, Halifax and New York 1975, p.134.
- 19 Goldstein, p.213.
- 20 Martin Friedman, 'Construction Sights', in Gary Garrels, *Sol LeWitt: A Retrospective*, exh. cat., San Francisco Museum of Modern Art 2000, p.52.
- 21 Alberro and Stimson, p.12.
- 22 Quoted in Rorimer, pp.184-5.

Mark Godfrey

24—25



Fig. 12
Sol LeWitt,
Wall Structure in Nine Parts,
Each Containing a Work of
Art by Other Artists, 1963
Private Collection

From Box to Street and Back Again

An inadequate descriptive system for the Seventies

Hiding Objects

In 1968, Sol LeWitt (b. 1928) buried a cube. The act was recorded in a series of nine photographs that LeWitt later arranged in a 3x3 grid and exhibited the next year as a work entitled *Buried Cube Containing an Object of Importance But Little Value* (no.3). The first photograph shows three people facing the camera with the cube at their feet. Another person stands by the object in the second. LeWitt is there in the third, to attention, his arms straight by his side. In the next row we see a spade, then LeWitt from behind digging a hole, and then the empty hole. The cube is in the hole in the third row, its shiny steel top first bright against the mud, then covered by a mound of earth. In the final shot, the hole has been filled in, the rough surface of earth still showing signs of spade work, a surface we assume will soon be flattened underfoot.

This was neither the first time LeWitt had hidden objects, nor that he had used photography in connection with sculpture. In 1963 he had shown a *Wall Structure in Nine Parts, Each Containing a Work of Art by Other Artists* (fig.12), and the following year he fabricated a black wooden box with ten compartments. Each had its own peephole, and the viewer could look into the holes to see photographs of a naked woman proceeding in increments towards the camera: appropriately, the work was titled *Muybridge I* (no.15). LeWitt's engagement with the serial photography of Eadweard Muybridge (1830–1904) would seem to have dissipated by the mid-1960s, by which time he had become well known for his white-painted wooden lattice structures that had been included in the first group exhibitions of Minimalist art. But Muybridge, as art historian

James Meyer has shown, would continue to be productive.¹ Other Minimalists would use open systems to structure the repetitions in their works, such as arithmetic progression (Dan Flavin [1933–96] *The Nominal Three* 1964) or the Fibonacci sequence (Donald Judd [1928–94], *Untitled* 1969). Muybridge's photographs, however, illustrated self-enclosed systems – all the movements an athlete would make to complete a jump. 'Self-exhausting' systems would be crucial to LeWitt's thinking for his *Serial Projects*. For instance, in *Serial Project I (Set A)* 1966 (fig.13), LeWitt decided that the terms of the system would be open square structures, of one, two or three units high, and one or three units wide. Once these parameters were determined, the form of the work followed, and this form would be equally evident

whether the work was encountered as a diagram, a maquette or a large sculpture. The concept took precedence over its realisation, and traditional ideas of intuitive composition were banished. In LeWitt's words, 'to work with a plan is one way of avoiding subjectivity'.²

The various serial structures deployed by Minimalist artists were categorised in 'The Serial Attitude', an article written by LeWitt's friend Mel Bochner (b. 1940) for a show Bochner organised in 1967.³ The attitude that concerned Bochner was anti-emotive and anti-expressive. In many ways, this 'attitude' is conveyed in LeWitt's *Buried Cube* work, through both the content of the photographs and the form of their arrangement. We are witness to a burial, but drama makes way for deadpan. The grid flattens out hierarchy, so no one photograph has any more importance than any other. The outer shape of each photograph is repeated externally by the square of the grid,

and inside by the square of the cube. So this work does share plenty with LeWitt's others; but against all expectations, and quite out of the context of the rest of his oeuvre, this grouping of images staged a *narrative*. The emergence of narrative in LeWitt's art is extremely perplexing, for if serial art developed out of 1950s abstract painting, yet set itself against 1950s Expressionism, those painters had already nailed narrative in the anti-Modernist coffin. Here narrative is unearthed. The big question is: how do we read the story?

We could think about the work as a kind of self-negating double self-portrait. LeWitt was, and continues to be, famously cautious about releasing photographs of himself. This is his only work in which his image appears. But the third photograph hardly renders a picture of the heroic artist. Rather, LeWitt looks awkward, standing just off-centre, the cube cutting off his feet, the edge of the frame slicing off his

crown.⁴ It is as if, just before the widespread emergence of 'performance art', LeWitt deliberately staged this image of 'the artist at work' only to emphasise its utter mundanity. Why a 'double self-portrait'? Not because LeWitt appears twice, but because his surrogate - the cube - is there in the pictures. LeWitt was attracted to the cube because it was entirely impersonal ('Compared to any other three-dimensional form, the cube lacks any aggressive force, implies no motion, and is the least emotive'⁵), but by burying a cube he was submerging the form most associated with his own work. Perhaps this was to stage a temporary farewell to the object (this was the year that LeWitt began to make his wall drawings), or perhaps the act of burying an object of 'importance' but little 'value' was a means of *stressing* his own concerns. 'Value', after all, was not just a financial idea, but a term associated with Modernist critics such as Michael Fried. Like many other artists, LeWitt

had wanted his works to be important but had resisted the criteria of value beloved of the Modernists. Here LeWitt was staging the burial of a box, an act we usually associate with the protection of wealth (hidden treasure), but doing so precisely to posit *importance* in *value's* place.⁶

We could instead be more literal, and explore the tale of the buried cube by finding out about the actual event the pictures capture, the characters they show, asking how these events sit alongside others in LeWitt's life at the time.⁷ In brief, here's what we find: LeWitt had been invited by Robert Smithson (1938–73) to contribute a work to *Earthworks*, an exhibition Smithson was curating at the Dwan Gallery in October 1968. LeWitt determined what to make while staying in the Netherlands in July at the house of Martin and Mia Visser, collectors and friends that he had known for some time. LeWitt had begun to use European fabricators

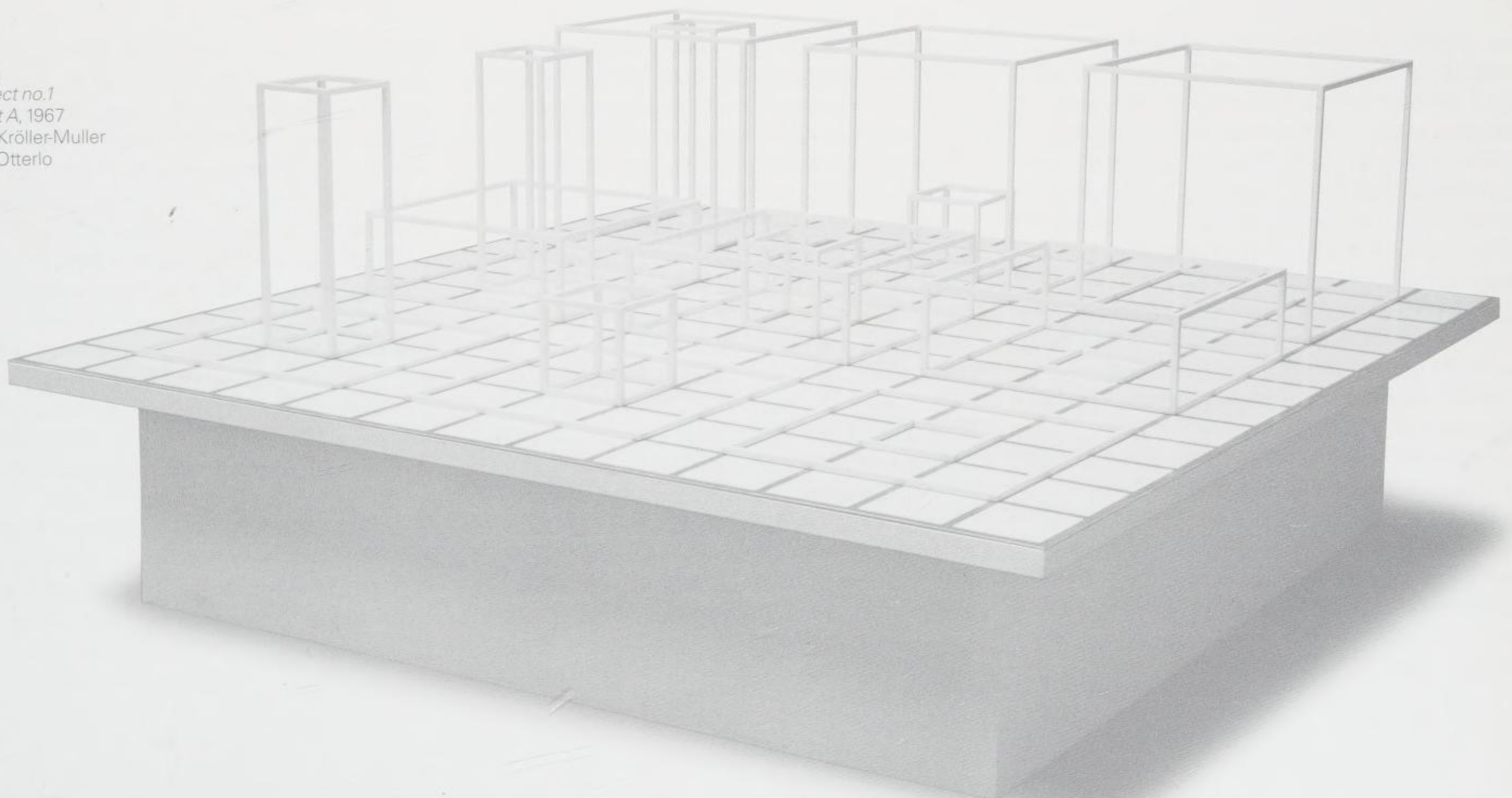
to make work he showed on the continent, and had been particularly pleased with the work of engineer Dick van der Net. As his response to Smithson's invitation, LeWitt arranged for Mia Visser to place an object in a box fabricated by van der Net, and for the box to be buried in land adjacent to a new extension to their house built by the architect Aldo van Eyck (1918–99). The Vissers are the people shown in the first photograph; van der Net is the man in the second.

An American artist-friend of the artist asks for a work; the artist makes it with Dutch collector-friends. A simple story? Well, not really. Reading the literal events hardly resolves the strangeness of the work, and in fact opens it up even more. We could read this as a pointed response to two situations that happened to have converged at this moment in time. As a contribution to Smithson's show, LeWitt's work might mark a somewhat prescient refusal of

the grand outdoor structures that would characterise 'earthworks', an exchange of the invisible or conceptual for the physical and visible.⁸ As a work made for collectors, LeWitt might simultaneously highlight *and* confound the meaning of (a) private collection. Highlight because the work in the private collection is revealed here as a buried object, concealed from public view; confound, because rather than being able to display an object as a kind of trophy, the Visser's LeWitt is hidden in the garden.

We might also stop to consider the way the story problematises authorship, as art historian Paula Feldman has pointed out. Though its burial was staged by LeWitt, the cube was fabricated by van der Net, and only Mia Visser was party to its contents. If the work's maker is hard to determine, so too is its location: is the 'work' the steel box, or the photographs, or both? Were LeWitt's concerns close to Smithson's own

Fig. 13
Sol LeWitt,
Serial project no. 1
(ABCD) set A, 1967
Collection Kröller-Müller
Museum, Otterlo





exploration of 'site' and 'non-site'? Maybe we should see the work as a performance, as the act of burial itself, in which case it is not its location that counts so much as its duration. There is no one correct way to read the tale of the buried cube: the very open-endedness of the story might be another mark of the difference of this work from LeWitt's self-enclosed serial projects of 1966–7. However we read it, we can note the expansiveness of the associative realm around the cube at its heart, an expansiveness quite uncharacteristic in the context of the discourse around Minimalism and around LeWitt. There has always been a debate as to what LeWitt's interest in simple geometric structures and serial systems amounts to. Some critics thought it added up to an interest in mathematics, while friends and historians emphasised the absurdity and obsession of LeWitt's seriality.⁹ But in this work

the cube is inserted not just into the ground but into a totally different dynamic. This is an object that gets hidden, but which also hides, its sealed edges concealing a secret interior at whose contents the viewer can only guess. It is an object with a history, but also one with an imagined future, for any buried object asks to one day be re-discovered. LeWitt has recently called it a 'time capsule'.¹⁰

Two years earlier, in 1966, Hélio Oiticica (1937–80) had made a work entitled *Bolide Caixa 18 (Homenagem a Cara de Cavalo)*. Though an utterly different kind of project from LeWitt's, Oiticica's also involved a box, some photographs and the suggestion of burial. Oiticica had been making *Bolides* since 1963 – small objects that viewers would manipulate with their hands (fig.14). The first ones had been made in wood and were boxes with drawers

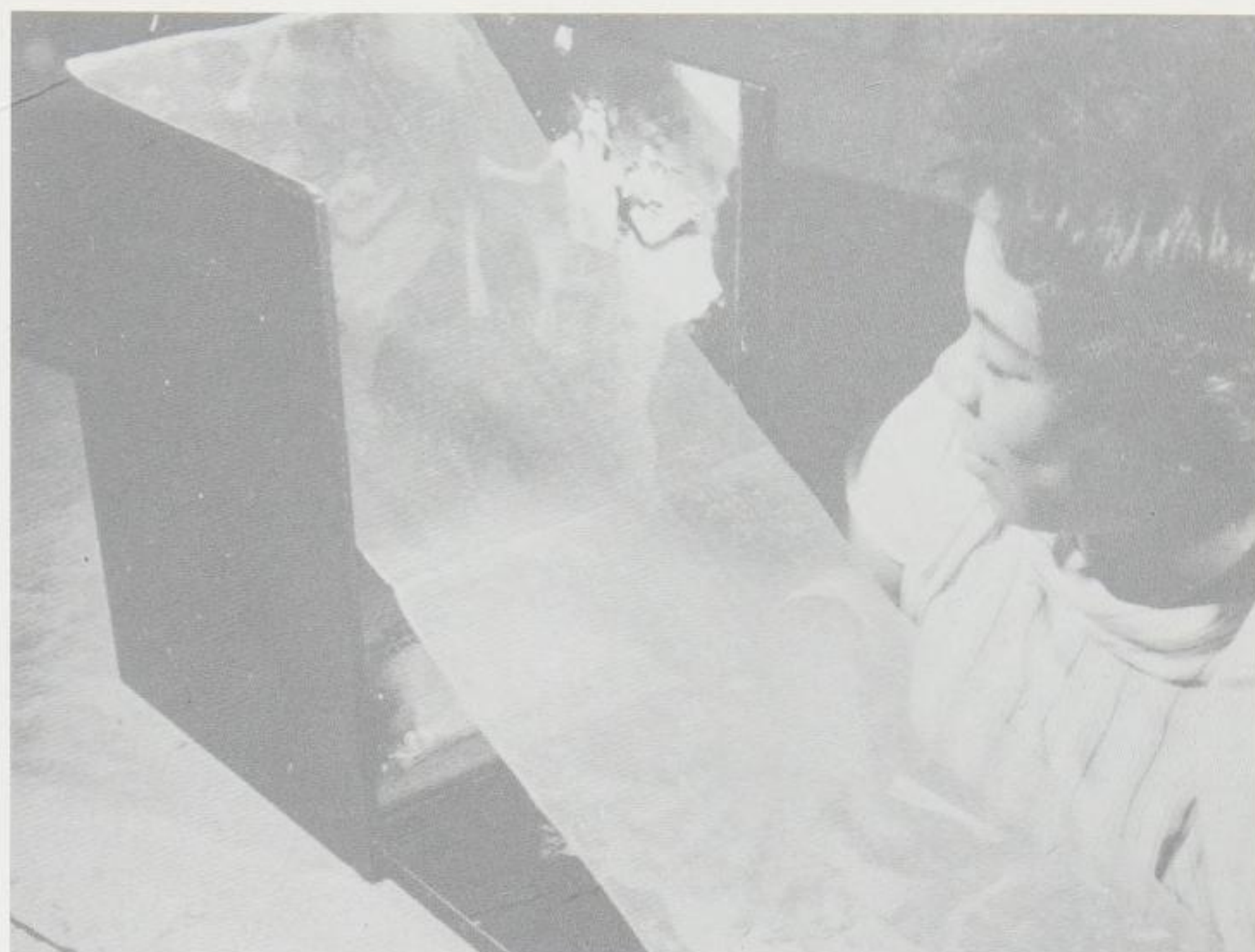
and openings that could be explored. The outsides were brightly painted, and the insides also contained the 'most strange and deliciously beautiful colours'. The drawers were lined with gauze or polythene, pigment or earth, and for art historian Guy Brett (b. 1942), 'the presence of a natural element loose in the kind of space we normally keep small possessions [was] quite bewitching'.¹¹ Oiticica's later *Bolides* had been made using glass containers so that the viewer knew what lay inside just by looking at the object, and yet unexpected sensations would occur as they plunged their hands into the vessels' openings, scooping up small mounds of earth or handfuls of shells.

The *Bolide Caixa 18* was a different proposition all together. This was an open-top wooden box with five shiny black painted sides (figs.15–16). Peering into it from above, the viewer could

(left)
Fig.14
Hélio Oiticica
with *Bolide Caixa 9*, 1964
Projeto Hélio Oiticica,
Rio de Janeiro

(right)
Fig.15
Hélio Oiticica
with *Bolide Caixa 18*
(*Homenagem a Cara de Cavalo*), 1966
Projeto Hélio Oiticica,
Rio de Janeiro

Fig.16
Luisa Oiticica
with *Bolide Caixa 18*,
1966
Projeto Hélio Oiticica,
Rio de Janeiro



sense that its insides were covered with images, but their view would be blocked by a doubled-up sheet of red gauze. The front side would flip down, the gauze stretching out with it. With one side open, the nature of the photographs lining the four sides of the box would become evident. A dead man lay prostrate on the street, his body riddled with bullets, his arms, Christ-like, by his side. Oiticica's object could be manipulated again to reveal more of its contents. Release the gauze from the top, let it flow out, and a transparent plastic package at the bottom of the box would be revealed, resting on six circular bars of metal. The package contained earth, and had a text printed on its surface: '*Qui Esta, E Ficara! Contempla! Seu Encio Roico*' (Here he lies, and here he will stay! Contemplate! his heroic silence).¹²

The man whose image lined the box was a gangster nicknamed Cara de Cavalo ('horse face'). Oiticica had got to know Cavalo during time spent in Manguiera, a favela of Rio where he had lived while attending Samba school and immersing himself in its culture. Cavalo, Oiticica wrote, was 'public enemy number one, wanted for audacious crimes and assaults', and yet, to the artist, he was 'a friend ... someone I talked to in an everyday-life context as we do with anyone else'.¹³ Cavalo had been tracked down and killed by police in August 1964, so some time had passed since his friend's death before Oiticica had made this *Bolide*. This indicates that the work was not produced in an immediate outpouring of grief, was not (to quote Oiticica), an expression of 'subjective sympathy', but a well-thought out homage, a complex expression of the artist's support towards what he felt Cavalo stood for. Brazil at this time was

governed by a 'military dictatorship which imposed censorship reinforced by torture and disappearances, and that outlawed political representation in any form'. Curator Paulo Herkenhoff writes that in this turbulent context, 'Oiticica concluded that, for the marginalized, violent crime was essentially the only way out.' The *Bolide* pays tribute to a 'member of the underclass who negotiated social and political violence in a concrete rather than a metaphorical way'.¹⁴ In the artist's words, 'Violence is justified as a revolt means [sic] but never as an oppressive one'.¹⁵

So the *Bolide* was made as a homage not just to the dead figure pictured on its inner walls, but to the very idea of aggressive 'individual social revolt' against 'every social conditionment'. What is fascinating is the contrast between the violence of Cavalo's life

and death, and the gentleness of the viewer's interaction with Oiticica's object. Like the box, the experience of its use unfolded in stages: imagine the viewer carefully releasing the side, detaching the gauze, looking at and feeling the insides, and then closing the box back up again. As Guy Brett wrote, '[t]he spectator is encouraged to approach these objects with a kind of reverence which has nothing to do with conventional symbols of respect, but arises out of his becoming conscious of his actions as he makes them, for the box arouses in him analogies with other moments when he has tenderly explored things'.¹⁶ For art historian Anna Dezeuze, 'the box becomes Cara de Cavalo's tomb and an altar to a sanctified hero, the red gauze evoking a bloodied shroud or the curtain containing a sacred image'.¹⁷

But if there is gentleness here, the nature of the image itself would have prevented the activity from seeming totally private. For in the photograph, Cavalo's body is partially blocked from view by the silhouettes of two other onlookers. Oiticica had taken the photograph from the newspaper *Jornal do Brasil*. The press photographer had obviously been standing in a crowd, peering at the gangster over these men's shoulders. This means that Oiticica's viewer's activity repeated that of the viewers *within* the image, in that their own act of looking was somewhat belated. Peering between the silhouettes, perhaps Oiticica's viewer might even have felt as much a voyeur as a respectful witness, but whatever the case, Oiticica's choice of an obviously journalistic image rather than a cropped close-up of the gangster indicates his concern not only with Cavalo's activities but with their representation in the mediated culture of Brazil.

Such a reading would confirm the analysis by curator Catherine David (b. 1954) of Oiticica's work. David has contrasted him to his fellow-artist Lygia Clark (1920–88), who likewise produced objects for her viewers to manipulate. David stresses that where Clark's 'phenomenological and psychological' explorations probed the 'phantasmic production of an intersubjectivity arising out of regions of interiority', Oiticica 'approach[ed] subjectivity by way of its social fabric', insisting on an 'idea of the subject as 'always social and historical'.¹⁸ This is never truer than here, where the work asks its viewing subject to confront not just a malleable object, but press photographs of a rebel murdered by the state. Though such an explicit and photographic confrontation with social marginalization was unusual in Oiticica's

career, the artist did argue for its importance, underlining the fact that *Bolide Caixa 18* 'represented for me an "ethic moment" that reflected powerfully in everything I made afterwards'.¹⁹ Elsewhere, wary of the pacifying and depoliticising effects of art history's assimilation of his oeuvre, and attentive to his own hostility to 'the major movements of world art',²⁰ Catherine David has argued that it is 'more judicious and legitimate ... to view Oiticica's work from a Brazilian cultural perspective than from an artistic standpoint'.²¹ But I want now to think about the *Bolide* alongside LeWitt's *Buried Cube*. LeWitt's images show the physical manipulation of an object; Oiticica's object demands such manipulation. Where LeWitt's photographs show the burial of a cube, Oiticica's cube reveals photographs of a dead man before burial, but includes earth alongside the images. LeWitt's cube is hidden, whereas in its closed form, Oiticica's box hides its insides like a secret. Oiticica's box is slowly opened up; LeWitt's remains closed. In drawing attention to such shared dynamics of concealment and

revelation, shared juxtapositions of objects and photographs, one might risk belittling the huge difference of the cultural climates in which the works were produced, but the comparison can be helpful. LeWitt's concerns were far from those of the 'international Pop and Op' artists Oiticica derided,²² and may not have been so distant from his own; Oiticica's politics help draw out the sometimes-ignored politics of LeWitt's Minimal and Conceptual art. Oiticica wrote that the *Bolide* expressed 'an anarchic attitude against all kind of armed forces - police, army, etc'.²³ LeWitt's burial of an object was certainly no anarchist protest, but it could be seen to scrutinise the very operations of the art market and the activities of collection. Intriguingly, when LeWitt published the grid of photographs for the first time as the penultimate illustration in the catalogue for his MoMA retrospective of 1978, he accompanied it with an extra caption, a long paragraph at the centre of which were the statements that 'When art is commercialized, it is trivialized', and, 'The art system trivializes art by assigning monetary values to it, thus turning art into a commodity'.²⁴

Formal similarities and political differences aside, considering the two works together does suggest some very important if rather obvious and general points about object-making in the 1960s, for the comparison illustrates both the versatility of the object and yet at the same time a moment of its crisis. The cube, the simplest of regular three-dimensional forms, was at this moment utterly malleable, and could function in a work addressing the economics of the European/North American art world or the social exclusions of Brazilian society. But a crisis too – for both LeWitt's and Oiticica's works suggest the limits of object-making. Both works rely on photographs and external narratives, both witness concerns of the artists that lie far beyond the act of sculptural fabrication. For such concerns to continue to be explored, artists would have to work for a while without the constraints of the object itself.



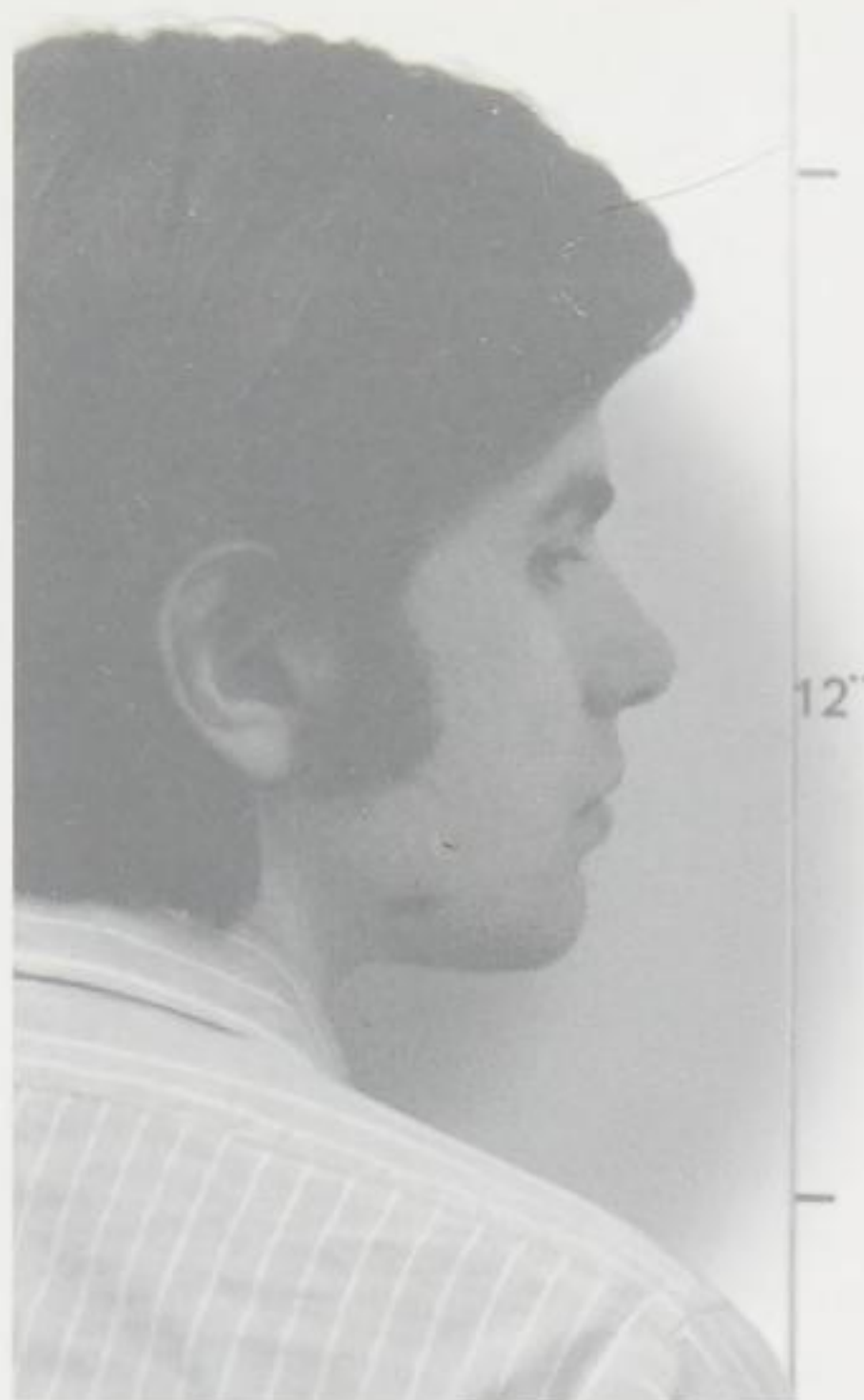
Measuring Rooms

There is a gallery in the collections section at Tate Modern that the curators have called 'The Autonomous Object'. Were a historian of American Minimalism to draw up an inventory of its contents, they would list two Frank Stella (b. 1936) paintings, one Carl Andre (b. 1935) floor sculpture, three works by Larry Bell (b. 1939), one Donald Judd diagram and two works (one set of drawings, one set of sculptures) by Sol LeWitt. Now look again at the same room, but picture it through the eyes of an artist, an artist of a slightly later moment. See the museum gallery minus the art works, make another inventory, and what have you got? There are two main entrances, but also three other doorframes. One is a fire escape, with a metallic push-bar and appropriate signage. The other two have no visible handles, so must open from the other side, granting access from concealed corridors for cleaners and art movers. At around eye-level on the walls there are two plaques announcing this to be the 'Richard B. and Jeanne Donovan Fisher Gallery', and a further eleven curatorial plaques describing the contents of the room and the titles and dimensions of the artworks.

(opposite)
Fig.17
Installation shot of
'The Autonomous Object'
gallery at Tate Modern
showing Sol LeWitt's
*The Location of Six Geometric
Figures* 1975 (far right),
Donald Judd's *Untitled*
1967–8 (far left), and Carl
Andre's *Steel Zinc Plain* 1969
Tate

(right)
Fig.18
Mel Bochner,
Actual Size (Face) 1969
Courtesy the artist

Fig.19
Mel Bochner,
Measurement Room 1969,
installation view, Galerie
Heiner Friedrich, Munich, 1969
Collection of the Museum
of Modern Art, New York



Higher up the walls there are four surveillance cameras, one alarm sensor and one small box whose function is harder to determine. On the ceiling there are seven sections of fluorescent strip lighting behind translucent frosted glass panels, and two spots for the paintings. Once you join this second inventory to the first, the room's title becomes absurd. The autonomous object? Not likely.

The various contents of the second inventory point to the concerns of many artists of the late 1960s and 1970s. How did the architecture of the gallery determine the encounter with art works? How were museums maintained, serviced, policed? How were they funded? How were their objects collected, categorised, grouped, and into what narratives were they inserted? On first sight, Mel Bochner's work *Measurement: Room* from 1969 (figs.19–20, no.14) might not seem to address these various questions, but all of them lie within its silent embrace.

Bochner, as has been noted, had been interested in the serial systems deployed in the work of Minimalist artists since the

mid-1960s. Initially he had explored such compositional systems himself, first making small objects in cardboard and balsa wood, and then with drawings and photographs. But as early as 1967 he had invoked the figure of the solipsist to describe the constraints of serial art. The solipsist 'denies the existence of anything outside the self-enclosed confines of his own mind'. 'Serial art is ... likewise self-contained and nonreferential.'²⁵ The medium of photography opened up a way out of seriality's dead-end, as it led to his exploration of measurement. In 1968 he produced two photographs entitled *Actual Size* showing his face or arm alongside two markers on a wall, in between which was an annotation reading 12 inches (fig.18). The photographs were printed 'life size', so the dimensions of the image corresponded to the dimensions of Bochner's depicted body. But if the photographs unusually doubled the scale of the situation, the measurement itself remained quite abstract. They did not show you how tall Bochner stood, but simply the length of his appendages. Remove the body, and the annotation would tell you nothing – for what is 12 inches alone on a wall?

Some time later in the year Bochner encountered just this situation. He had taped up two pieces of paper on the wall of his studio and measured the distance between them, writing the measurement of 25 inches. After removing the paper, there was just the measurement, and this was rather perplexing. Without the paper as boundary, what did the 25 inches measurement mean? Bochner has recently called it a 'signifier with nothing to signify'.²⁶ As curator Brenda Richardson noted, the situation opened up all sorts of questions: 'Where were the edges of the "piece"? What comprises a boundary? What is inside and what outside a given measure of length or width or height? What can or cannot be measured? By what criterion is any unit of measurement determined? How verifiable is a measurement? Does a measurement's verifiability depend on the action and/or perception of the measurer? Or the viewer?'²⁷ Clearly the event triggered enquiries about the nature of measurement, but it also prompted wider questions about art's possible concerns and locations.

Bochner would explore many of these questions in works made in early 1969 and by May of that year his investigation had led to *Measurement: Room*. The work was first installed at Heiner Friedrich's private gallery in Munich. The space was a 'neo-classical room' with a 'very intimate, calm quality'. The room had 'no real architectural oddities', 'just a clear, clean and simple run of walls with three beautifully proportioned doors, and twin recessed windows interrupting them'.²⁸ Materially, *Measurement: Room* was quite simple. Bochner took black tape and stuck bands straight onto the walls. The strips were positioned just to the side of the prominent features of the room, running above the skirting boards, alongside the door lintels, and alongside the window recesses. At the central point of each line the tape was broken, and in the gap, also in black tape, he placed a number showing the length of that particular line.

Yve-Alain Bois has pointed to the important fact that the measurements did not reach inside the door frames, or alongside the actual window panes.²⁹ In other words, the measurements did not map the space of the room as it would be experienced by the actual viewer, walking

through doors or gazing out the window. Instead, the measurements Bochner provided suggested a doubled and different space, like an architect's blueprint, a geometrical, abstracted rendering of the physical space. The room had been measured, but this was not for the sake of the viewer. The realisation of this difference would produce 'a phantasmagoric feeling of estrangement'.³⁰ Bochner was certainly concerned with exploring the difference between abstract systems of knowledge and real, embodied perception. Measurement was particularly interesting to him because although it seemed objective and rational, it was essentially meaningless. 'Measurement is one of our means of believing that the world can be reduced to a function of human understanding. Yet, when forced to surrender its transparency, measurement reveals an essential nothing-ness.'³¹ Bois' account of the *Measurement: Room* locates the work within Bochner's exploration of the fallacy of measurement's authority, and it can be seen as part of his wider critique of the assumptions of 'Conceptual art'. But just because the annotations did not account for the Heiner Friedrich space as it would be

encountered by its visitors, this is not to say that the black bands of tape had no purchase on the real. Precisely the opposite was the case: for as much as the numbers were *unfelt*, the bands pointed to those features of the architecture that usually remained invisible for viewers entering the gallery. Here were the door frames, there were the windows. If John Cage had insisted that silence was full of ambient noise, Bochner now insisted that the 'white cube' gallery space was not a cube, and nor was it white.

Before he had installed the piece, Bochner had told an interviewer that he wished 'to undermine the domination of architecture, [to] force it to surrender its transparency'.³² The first installation of *Measurement: Room* pointed out the proportions of the private gallery space, but the installation was not a one-off, the work was a 'portable idea'.³³ In other realisations of the work the measurements would be different, as the room sizes and architectural features would alter. But there would also be different things to measure. In the Heiner Friedrich installation, one of the measurements had been between the picture rail and the ceiling (11 inches),

pointing to the fact that the gallery had been built in expectation that its artists would display paintings (rather than works like Bochner's). The second installation of the work was at the Baltimore Museum in 1975, and another was at MoMA in 2000 (fig.20). In each case, new decisions have to be made as to where to install the work, and what features should be measured. The door frames of service entries as well as those of visitor exits? The distance between doors and humidity devices? Between windows and alarm systems? Within the space of the museum, forcing the architecture to surrender its transparency means different things, but the work always insists that the space has other users than art viewers, and that like any other kind of non-domestic building, this one is serviced, heated and alarmed.

Without clamour or overt accusation, *Measurement: Room* was fundamental to the project that came to be known as 'institutional critique'. As much as anyone else, this term has been associated with the artist Hans Haacke (b. 1936). His most controversial early work, *Shapolsky et al. Manhattan Real Estate Holdings, a Real-Time Social System, as of May 1, 1971*, involved measuring rooms too, but in a very different way to Bochner (fig.22). The 'rooms' that Haacke 'measured' were slum properties, and the measurements he took were not physical: they were recordings of the financial activities of the companies that owned them.

Shapolsky et al. was supposed to debut in an exhibition curated by Edward Fry at the Guggenheim in 1971 entitled *Hans Haacke: Systems*.³⁴ While Bochner and LeWitt had explored seriality, Haacke had investigated physical, biological and social systems. The best known example of the first category is *Condensation Cube* 1963–5, a transparent Perspex box on whose interior sides droplets form as more viewers entered the space where it is exhibited. Biological systems include *Grass Grows* 1969 for which Haacke planted seeds in a pile of soil, letting them grow during an exhibition, so that the work responded to the particular heat and light conditions of the site (fig.8). By 1970, Haacke was exploring 'social systems'. These works include the *Gallery-Goers Birthplace and Residence Profile*, a poll conducted at the Howard Wise Gallery in New York whose results were displayed at another gallery in Cologne; and the more famous *MoMA Poll* that canvassed viewer's opinions of Governor Nelson Rockefeller's implied support for the Vietnam war (fig.21). The work was installed at The Museum of Modern Art, and since Rockefeller was a trustee, it pointed to the political affiliations of the Museum's funders, and revealed the different attitudes of its visitors.

Shapolsky et al. investigated the 'social system' of real estate ownership in Manhattan. Harry Shapolsky was the landowner who possessed more slum properties than any other landlord in New York, which is why he had caught

Haacke's attention. A vigorously researched project, *Shapolsky et al.* was a massive collection of data charting all the property Shapolsky controlled 'as of 1 May 1971'. The data included two maps, 142 photographs of façades and 142 typewritten data sheets. An explanatory sheet and six charts showing connections between his companies indicated how Shapolsky's business worked. Different properties were held under different company names, and 'frequent sales and exchanges took place among the individuals and corporations comprising the system. Properties were sold and mortgages obtained, assigned, and cross-held.'³⁵ These activities enabled Shapolsky to keep control of the properties and minimise his business expenses.

But *Shapolsky et al.* proved the undoing of Haacke's planned Guggenheim show. Though all of the information Haacke presented was easily accessible in public records' offices, Thomas Messer, the Guggenheim's director, feared that the work overstepped the boundaries of what was permissible in the space. The Guggenheim's trustees stipulated that the museum should 'not to engage in extra-artistic activities or sponsor social or political causes',³⁶ and this work, for Messer, was directly political, 'pointing through word and picture to social malpractices'.³⁷ He wrote that, 'It is well understood ... that art may have social and political *consequences* but these, we believe, are furthered by

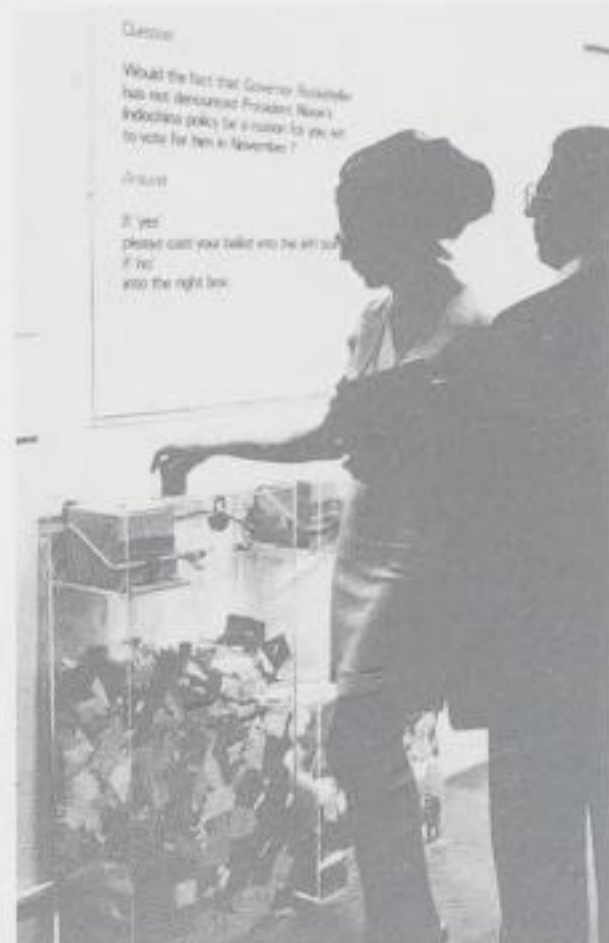


Fig.20
Mel Bochner,
Measurement Room 1969,
installation view, Museum of
Modern Art, New York, 2000
Collection of the Museum
of Modern Art, New York

Fig.21
Hans Haacke's ballot box
installed for the exhibition
Information at the Museum
of Modern Art, New York, 1970

indirection and by the generalized, exemplary force that works of art may exert upon the environment, not, as you proposed, by using political means to achieve political ends, no matter how desirable these ends may appear to be in themselves.³⁸

Messer's decision to censor and cancel Haacke's exhibition, and the firing of its curator, have contributed to *Shapolsky et al.* becoming one of the most frequently discussed works of the early 1970s. In the many accounts of the work, historians have stressed that *Shapolsky et al.* is not just about the activities of the specifically named slumlord. The very viability of the system of private property and real-estate ownership is thrown into question. An attentive viewer would come to share 'serious doubts ... as to whether the needs of low-income residents can ever be met'.³⁹ The system of real-estate ownership is exposed as *necessarily* inimical to 'human needs'. The problems the piece witnessed 'cannot finally be attributed to the callousness of individual landlords but is, rather, structurally determined'.⁴⁰

Another wider ambition of the work was to question the 'autonomous' status of the museum in which it would be displayed. Haacke was in no way suggesting that the Guggenheim's trustees were caught up in Shapolsky's business dealings, but as art historian Rosalyn Deutsche has argued, the work would nonetheless have been difficult to accommodate in the museum. This was not a work that allowed its viewer any aesthetic escape, not even the pity that 'socially concerned photographs' inspire.

Had *Shapolsky et al.* been installed at the Guggenheim, viewers would have been struck by the 'striking physical and sociological contrasts' between the buildings in Haacke's pictures and Frank Lloyd Wright's museum, but the contrast would have drawn them to re-think the separation of the museum from the subject addressed by the work, leading attentive viewers back to the museum to ask questions. If Haacke's work demonstrated how real estate dealing functioned in residential areas, to what extent did 'proprietary interests affect the cultural space as well?'⁴¹ 'Ultimately the work highlighted the fact that the museum building too is not an isolated architectural structure, container of static aesthetic objects, but a social institution existing within a wider system, a product and producer or mutable power relations.'⁴²

In the discussions of Haacke's work, much is made of its relation to, or break with artistic traditions. For art historian Leo Steinberg (b. 1920), the work extends an avant-garde tradition of pushing boundaries.⁴³ For Benjamin Buchloh, it continues an earlier twentieth century mode of 'factographic' art.⁴⁴ Rosalyn Deutsche argues that the repetitive images in the work counter the traditions of 'liberal social documentary' and 'humanist photography'. Little has been made of what Haacke's work *shared* with recent art, and some would even say that by asking the question one risks deradicalising the work. However, in discussing this work alongside Bochner's, I am interested in raising this question. Haacke could have displayed the information he gathered in any number of ways: as a book, as a large grid, in cabinets, on tables or as a slide show. Instead *Shapolsky et al.* has always been installed as

a kind of double belt around a room, with two layers of frames, each containing six photographs and six charts below. These span the walls at a height that enables the viewer to look at the images and read the information, but they also stretch from wall to wall, all around the room, so it becomes difficult for the viewer to see the whole work at once. After making the *Measurement: Room*, Mel Bochner proposed a piece that would have consisted of a single line of tape around the room at his eye-level. He has described *No Vantage Point/Eye-level Crossection of Room* 1969 as 'lassoing' the space in which it would be installed. In its installation, Haacke's work also squeezes the room of its display, producing for the viewer a physical sensation of constraint as much as it overwhelms them with information.⁴⁵ The sense of constraint is achieved also within the photographs themselves, each of which pictures its subject (the tenement building) from across the pavement, the camera pointing up from street level to the roof, so the buildings feel crammed into the frames.⁴⁶

Perhaps it is historical distance that permits me to locate Bochner's work so firmly in the project of institutional critique more commonly associated with Haacke, and to suggest that the meanings of *Shapolsky et al.* depend in part on the physical encounter we usually think of in connection with Bochner's measurement works. Historical distance produces other changes to the way we must think about these works. Many of the areas shown in the *Shapolsky et al.* photographs have been gentrified. Nothing much has changed with the real estate system itself: poverty has not diminished, but has instead been pushed

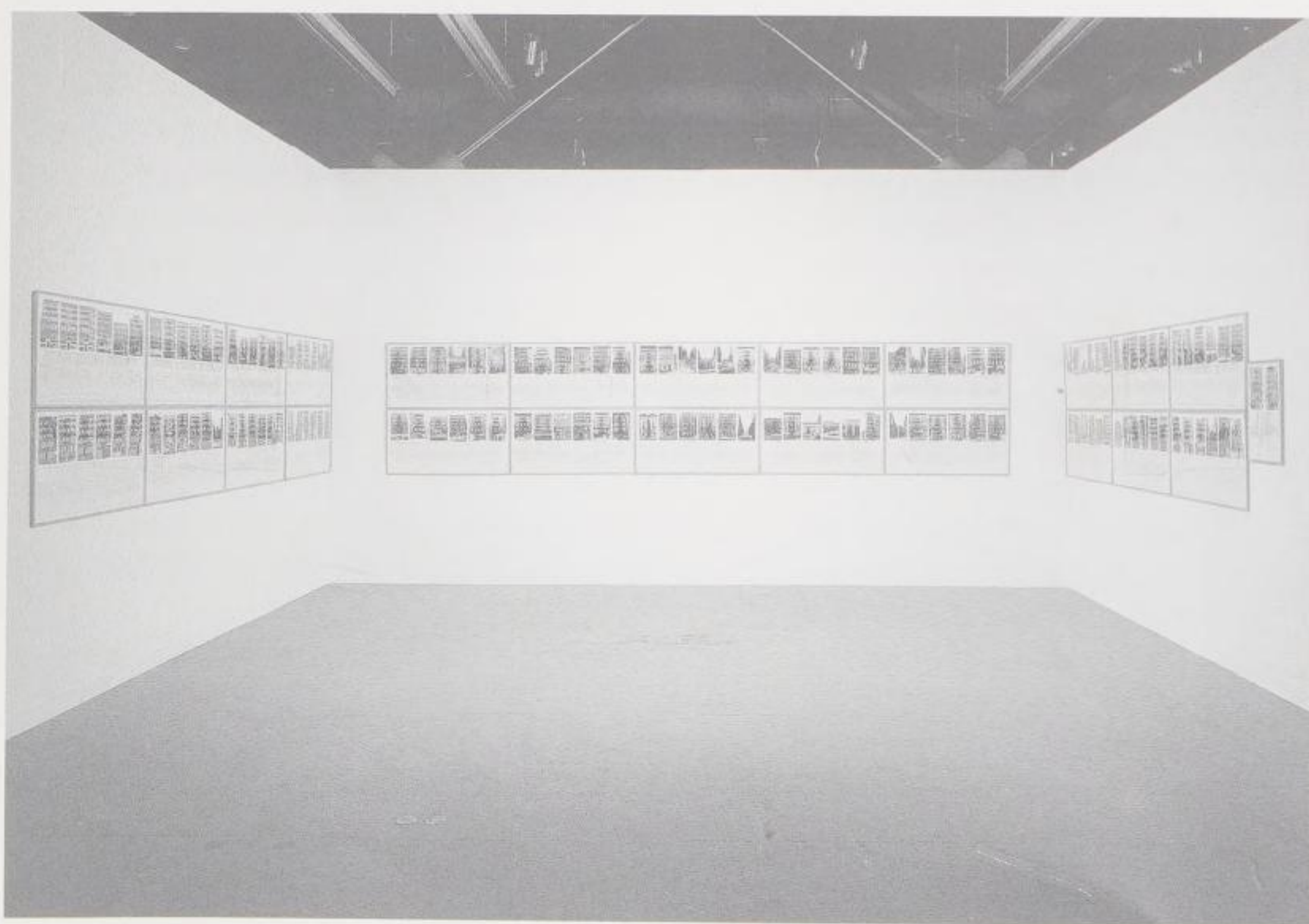
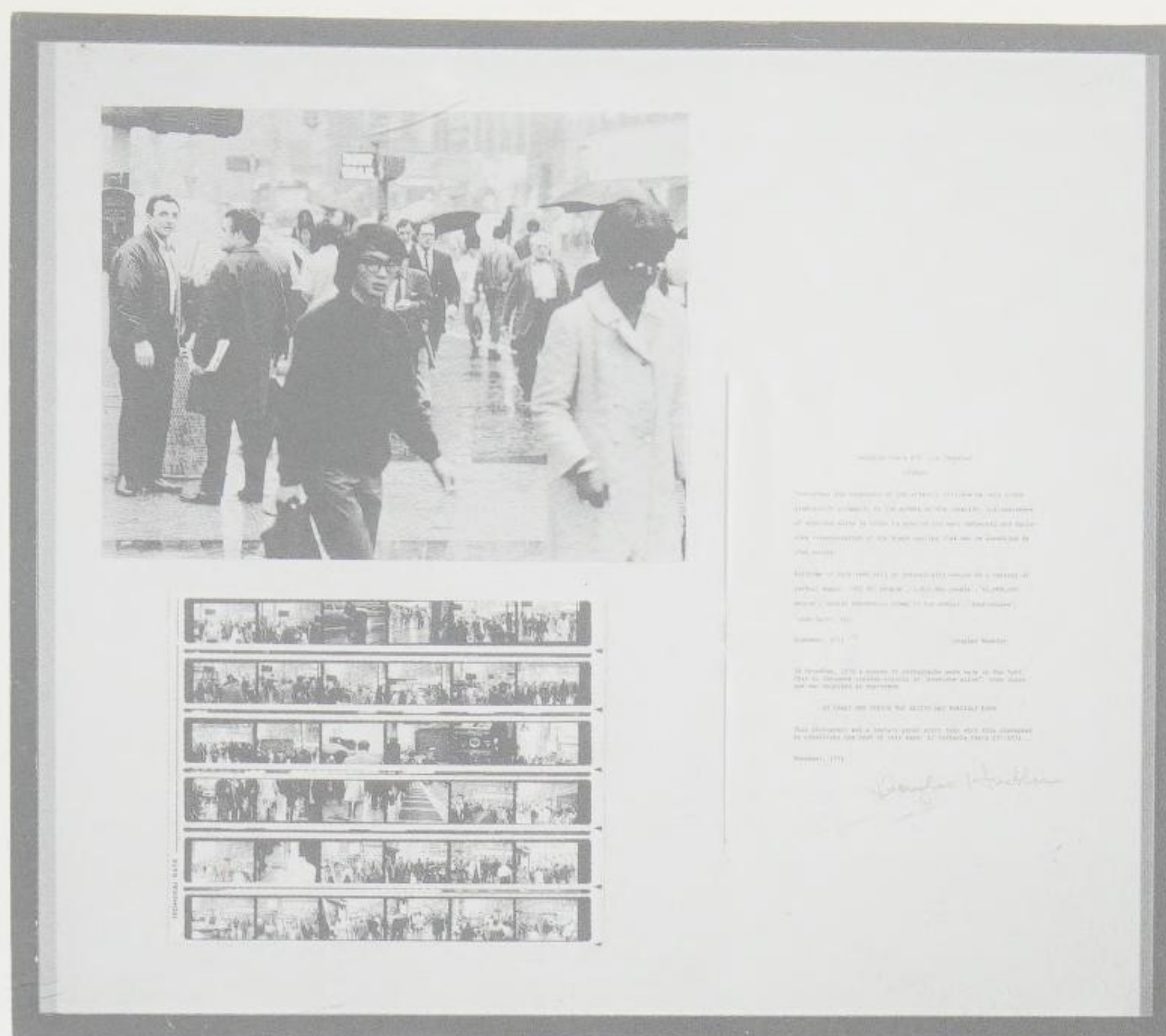


Fig.22
Hans Haacke,
*Shapolsky et al. Manhattan
Real Estate Holdings:
A Real-time Social System,
as of May 1, 1971 1971*
Courtesy the artist

Fig.23
Douglas Huebler,
2/variable piece no.70
(in progress) 1971
Musée national d'Art
Moderne, Centre
Pompidou, Paris



Citizens and Passers-by

further out of sight towards the peripheries of the city. Where low-income housing has become visible it is only in popular, romanticising musicals such as *Rent*. Meanwhile, Bochner's attempt to 'force architecture to surrender its transparency', to 'come out of hiding', takes on new meaning at the contemporary moment when transparency has a renewed status in architectural discourse. Tate Modern's architects, Herzog & de Meuron, are amongst the producers of what Hal Foster has termed the 'Jewel Box'. ('Architecture becomes an illuminated sculpture, a radiant jewel. It can be beautiful, but it can be spectacular in the negative sense used by Guy Debord ... A mysterious object whose production is mystified.'⁴⁷) *Measurement: Room* is actually owned by MoMA, whose architect, Yoshio Taniguchi reportedly promised its trustees before the museum's recent redevelopment 'Raise a lot of money for me, I'll give you good architecture. Raise even more money, I'll make the architecture disappear.'⁴⁸ In both these contexts, *Measurement: Room*'s insistence on the materiality of architecture, its refusal to allow it to 'disappear', is more urgent than ever.

In several of the photographs of Haacke's *Shapolsky et al.*, people appear in front of the buildings. Mostly they look towards the artist, whose tripod and camera must have appeared to them a somewhat unusual sight in the neighbourhood. The people are too far away for a viewer of the work to ascertain much about them, but Haacke was not trying to capture a poignant, single picture of adversity. Imaging the residents of Shapolsky's property was not the point – and yet no real effort seems to have been made to capture the buildings without people in the image. Haacke was not the Bechers.⁴⁹ *Shapolsky et al.* exemplifies a shift in artists' concerns from object making to 'social systems', but the work involved other, more literal kinds of movement too. If the art institution was still the preferred location of the final work, to make it Haacke had left the space of the studio, and ventured out onto the streets.

This movement from studio to street inevitably brought artists of the 1970s into contact with everyday people, and many of the most significant projects of the decade involve investigations of urban subjectivity, representations of citizens and passers-by.

Some of these projects were pre-planned and archival; others random; some were fleeting, utopian gestures, others sustained analytic critiques. *I Met 1968–79*, by On Kawara (b. 1933), was an open ended series of works, each a typewritten sheet listing people he encountered on a given day, with no sense of hierarchy. Vito Acconci (b. 1940) made *Following Piece 1969* which suggested a different picture of urban life, the work consisting of photographs of the artist trailing a complete stranger. Douglas Huebler (1924–97) made works in which he approached strangers and took their photograph while telling them 'you have a beautiful face' (*Variable Piece 34, Bradford, Massachusetts, December 1970*), but in 1971, in a very different kind of project, he set out to photograph 'everyone alive', accompanying the street photographs he took with complex captions that troubled the viewer's perception of the unknown subjects of the images. Allan Sekula (b. 1951), in his *Untitled Slide Piece* of the following year, imaged factory workers leaving a car plant. By using the serial forms associated with Huebler's earlier works, he simultaneously addressed photo-conceptualism's exclusions and wrested the representation of the worker from the grip of

Fig.24
Braco Dimitrijević,
*The Casual Passer-by I met
at 11.09 am, Paris, 1971* 1971
Collection Musée National
d'Art Moderne, Centre
Pompidou, Paris.

Fig.25
Braco Dimitrijević,
*Casual Passers-by I met at
1.15 pm, 4.23 pm, 6.11 pm,
Zagreb, 1971* 1971
Collection Museum
Moderner Kunst, Stiftung
Ludwig, Vienna

38—39



humanist photography. So figuration returned in force in the 1970s, but not in any traditional sense. For this moment, it meant figuring out how people live and work, and how architecture, advertising and other kinds images affect their subjectivity.

The *Casual Passer-by* project by Braco Dimitrijević (b. 1948) stands somewhere between the analytical and utopian poles of this new figuration.⁵⁰ The work consisted of banners placed in public locations in cities across Europe. The locations included ceremonial squares, museum exteriors, residential building façades, advertising hoardings and in London, the panels on the backs of the number 14 bus. Sometimes Dimitrijević would carry the banner on a placard through the city. Each banner featured a single portrait. The portraits were enlargements of photographs that the artist had taken in the city

where the banner was to be displayed. Dimitrijević would accost total strangers on the street, explain the project to them, and if they agreed, he would take their picture, usually from the shoulders up against a white background. Dimitrijević was not on the lookout for subjects with unusual features – rather he would approach the first person he met on a given day. Coinciding with the display of the banner, Dimitrijević would have a gallery show in the city. There, the work would be documented by a certificate and two photographs – a small portrait, and a photograph of the banner *in situ*. The certificate would include the title, for instance, *The Casual Passer-by I Met at 11.15 am, London, 1972*.

The *Casual Passer-by* series crossed the aleatory procedures of the avant-garde with the 1960s critique of artistic authorship, as randomly encountered citizens were

displayed on unsigned banners. It would be easy to approach this work through two of the most famous artist's quotes of the period – Andy Warhol (1928–87): 'In the future, everyone will be famous for fifteen minutes', and Joseph Beuys (1921–86): 'Everyone is an artist'. It might seem that Dimitrijević was granting 'casual passers-by' a momentary notoriety by displaying monumental images of their face in situations they might never have anticipated. This would be the 'utopian' aspect of the project. The unexpected heroic, if temporary, elevation of undistinguished citizens might have even been quite comic.

However, Dimitrijević's intentions were more serious. He was less interested in the effect on the portrayed subject than in the response to the banner of the viewer who would apprehend it while casually passing by. 'I have attempted to change our customary relationships and reactions in our encounter



with everyday reality,' he wrote. 'My interest is in specific, rather than general information. By specific information I mean information transmitted by contemporary mass media as well as by "historical" media: monuments, memorial plaques, books, pictures, photographs, etc.'⁵¹

Dimitrijević hoped his viewers would initially think that the banners displayed subjects of national importance. To encourage this response he had to situate the banners in the locations usually occupied by political posters, and to mimic the iconography of such posters, for instance, photographing his subjects from the shoulders up against blank backgrounds. However, the viewers would soon sense that the images were not quite right, and that the people were not politicians, actors, models. In coming to see the banners as a kind of decoy,

they would be forced to re-consider the kind of images that the banners mimicked, rethinking their actions and their exclusions, the repressiveness of such images, the repressions of the history they enforced.⁵²

Dimitrijević conducted the project in many cities across Europe throughout the early 1970s and has continued it since. The first work was made in Munich, and later manifestations took place at the Paris Biennale in 1971 (fig.24), Documenta 5 (1972), the Venice Biennale in 1976 (no.47) and on the occasion of gallery exhibitions in many other countries. One of the fascinating aspects of the project is the way the same process and format (taking portraits of casual passers-by, mounting them on public banners) could generate very different responses in different contexts. The work might be said to have acted like a kind of

thermometer, taking the temperature of the city in which it was carried out.⁵³ One of the initial motivations for the work was Dimitrijević's dissatisfaction with the cult of personality he experienced growing up in Yugoslavia. When the work was made in Zagreb in 1971, this local context determined Dimitrijević's choice of location, and the responses to his images. Three large banners were hung from the 'prominent façade of Republic Square where posters of prominent politicians usually hung on state holidays... (fig.25). Puzzled early morning commuters, queuing for a tram, asked themselves if there had been a sudden change of government.'⁵⁴ In Paris, a massive poster was displayed across a residential building on the Boulevard St. Germain, but in the aftermath of May 1968, it was deemed incendiary, and taken down some weeks later by police 'with the laconic explanation that "It disturbs Paris."⁵⁵

In cities such as London, with different recent histories, the work was far less controversial, and perhaps even invisible.

Dimitrijević wrote that the 'idealistic intensity' of the *Passer-by* project 'increased through repetition'.⁵⁶ For him, then, the work was not merely being repeated to see how it registered in different contexts; the project was cumulative, more powerful with each new rendition. But as he 'passed' from one context to another, to what extent was his work increasingly 'casual'? There were times when Dimitrijević addressed the particular mnemonic practices and political climates of the countries in which he worked. For instance, in London, Dimitrijević made a parallel work, *Monument to David Harper, the Casual Passer-by I Met at 11.28 AM, London 1972*, a bronze, double-life-sized bust which he installed on a black plinth on the grass of a West End square, mimicking the ubiquitous Victorian statues found around the city, but parodying them too: this was no General from the Crimean War, but 'David Harper, b. 1924' (the words engraved and gold plated, of course). But for the main part, the

form stayed the same from city to city. It even stayed the same when the work was made for the front cover of *Flash Art* in 1974, where the face of a 'casual passer-by' took a space normally reserved for the portrait of a new artist.

Rather than thinking about the work as a thermometer as above, the project might be judged to mark the limits of a repeated gesture's capability to properly scrutinise questions pertaining to state power, political iconography, advertising, and artistic celebrity, all of which were areas the work encountered. Such questions occupied Martha Rosler (b. 1943) too, but the nature and specificity of her analyses were quite different. Her most obvious work that could be considered in comparison with Dimitrijević's is *The Bowery in Two Inadequate Descriptive Systems* 1974 (no.45), for like the *Casual Passer-by* work, this mounts an assault on the traditions of street photography. Dimitrijević refrained from choosing quirky strangers, picking his subjects by chance. Rosler refrained from photographing subjects all together. The photographs for the work were made in an

area of downtown Manhattan inhabited by a drunk and homeless population, an area much photographed by social documentarians. Rosler's images show empty doorways where one might expect to find down-and-outs. The photographs were accompanied by cards on which were written lists of synonyms for drunks and drunkenness. Just as Dimitrijević's banners were decoys, prompting reflection on the political portrait, so too was Rosler's 'concern'. While seeming to address conditions of marginality that had perhaps been beyond the attention of Pop, abstract and Conceptual art, the work's real focus was the inadequacy of the systems it employed. Neither photography nor poetry were appropriate for the analysis of the subject to which they pointed.

But it is to her video tape *Vital Statistics of a Citizen, Simply Obtained* 1977 (no.24) that I want to turn, for though not made outdoors, it certainly addresses the questions of subjectivisation that began to occupy artists as they moved from studio to street. In suggesting that the movement from studio to street

brought with it a change in concerns, I have pointed to a separation of public and private, but it is precisely this separation that Rosler realised to be fallacious. Part of the reason I am pairing Rosler's video with Dimitrijević's series is the difference between the dynamic of private and public in both works. The frisson of Dimitrijević's work arises from the display of a private person in public, in a place usually reserved for the display of politicians, models or celebrities. Rosler's work, however, would refuse the idea that there is such a thing as privacy: the private sphere is entirely policed. In *Vital Statistics*, the focus of concern was the woman's body, and the video indicated how every aspect of subjectivity is socially determined.

The video version of *Vital Statistics of a Citizen, Simply Obtained* lasts 40 minutes and has three distinct visual sections and an extremely complex narrated soundtrack.⁵⁷ The first act is staged in what seems to be a laboratory or hospital room, but the set is quite crude, the

props are quite casual. Enter a woman, played by Rosler, dressed casually in trousers and a loose shirt, her hair in bunches. She is met by an 'examiner' and his 'assistant', and they start asking her questions: her sex, age and race. Taking her over to a white sheet of paper pinned against the back wall of the set, the assistant draws her outline before she returns to centre stage. The examiner then proceeds to take a range of measurements, calling them out to the assistant who annotates the diagram in the background. Soon the examiner asks the woman to disrobe to facilitate his examination. The measurements are unrelenting and all-encompassing, from 'shoulder span' to 'vaginal depth'. At one point in this procedure three female 'trainees' enter to the left, each with a musical instrument. When the examiner declares the measurement he has taken to be standard, one rings a bell. If it is under or over average, the others blow one of two kinds of whistles. Once the measurements have been taken, the doctors leave and the naked Rosler walks to the right of the stage. During the final

period of this first section, she gets dressed, but this time in more 'feminine' clothes. Up to now, the video has been a single unedited take, but as she dresses, two different sequences are inter-cut. In one, Rosler dresses up in a small black cocktail outfit, in the other she puts on a wedding gown (fig.26).

There is an intermittent narration accompanying the dialogue spoken by the actors during this first section. This narration actually begins while the screen is black, and consists of Rosler's didactic introduction to the structure and subject of the work ('This is an opera in three parts ... This is a work about coercion ...'). A portion of the introductory narration is repeated after a period where we simply hear the actor's voices, and then later, as we watch her 'character' get dressed, Rosler's voice returns, this time with a list of activities describing how women internalise societal expectations in the way they dress, clean and perceive their body, how women learn to 'judge the[ir] body, always finding it faulty'.



Fig. 26
Martha Rosler,
*Vital Statistics of a Citizen,
Simply Obtained* (detail), 1977,
Electronic Arts Intermix,
New York

The next two sections are much shorter. The introductory narration calls 'Act Two [...] symbolic: what is the same, what is different': over a couple of minutes we see the artist cracking three brown and three white eggs in turn into a bowl, which she swivels to the camera at the end to reveal that despite their different skins, inside they are all the same (fig.27). The final section is a slide show of images of doctors measuring women. The voiceover returns here: Rosler reads a list of crimes against women, her incantation repeatedly disturbed by feedback noise.

Rosler's work is obviously concerned with 'the social construction of subjectivity and its relationship to the body',⁵⁸ the way the private is policed everyday. The woman 'sees herself from outside with the anxious eyes of the judged who has within her the critical standards of the ones who judge'. Nothing about a

woman's subjectivity is essential, Rosler suggests, everything is socially controlled. 'Her body grows accustomed to certain prescribed poses, certain characteristic gestures, certain constraints and pressures of clothing.' *Vital Statistics* is clearly a critique of the perpetration of 'crimes against women', a demonstration that these crimes are not just committed by those deemed 'criminals'. The situation has many causes, but the one that seems to be scrutinised more than any other is medical discourse, as it is medical measurement and examination that 'transforms the human subject into an object'.⁵⁹

But can the situation the work describes be overcome? At least two answers to this question are suggested by the video's form. Optimistically, we could point to its fragmentation and the implications of this formal feature. From the very beginning when the narrator tells us 'there is no image on the

screen just yet', the tape foregrounds its own construction. We are in no doubt that the set is fake, the characters only actors, and after the long take, the work breaks into two quite different sections. We are never able to settle into an easy position watching a fluid narrative unfold, and perhaps this enables the viewer to question the conditions the work describes. Just as the tape could have been edited differently, so too medical measurement, despite its ubiquity, could be different and challenged.⁶⁰

However, the various repetitions in the work suggest that a straightforward solution is impossible. The viewer finds themselves in the first section watching Rosler as victim while hearing her as perpetrator of a depersonalising discourse. As critic Craig Owens noted, in its objectifying, impersonal tone, rather than criticising the activities of the 'examiner', the narration repeats them.⁶¹ There are other kinds

of repetition in the narration: whole sections repeat, the phrases becoming like prayers, sets of inescapable commands. During the 'dressing-up' section, the sentences begin with infinitives, a verb list: 'To lick one's lips to make them wet. To cross or uncross one's feet or legs. To sit forward or back, upright or compressed. To think of sitting as disposing ones limbs. To keep thighs and knees pressed together.' The narrator is not describing actions that any *one* woman has done at any *one* time, but rather procedures inevitable as they are incessant. If the tape's fragmented construction fosters a viewing situation in which conditions of oppression can be questioned, its various repetitions and the verbal makeup of its narration suggests these conditions are inescapable.

Noting how this repetition works allows us to return to Dimitrijević to open up an important distinction between his and Rosler's projects. Both use images of people to scrutinise systems of knowledge and power. Dimitrijević is concerned with the pomposity of political iconography and the exclusions of history, Rosler with the impact on women's subjectivity of medicine, fashion, food, et cetera. While the repetitions of Dimitrijević's works suggest a series of increasingly intense temporary escapes from the conditions with which he is concerned, Rosler seems to have been less hopeful about such an escape. In fact, *Vital Statistics* might seem to represent the pervasiveness of such conditions most powerfully by repeating, rather than refuting them.

But there is one feature of Rosler's work which escapes this conclusion, and that is its absurdity. From the chorus of whistle-blowers, to the measurement of her 'toe height', to the egg-cracking demonstration, the video is peppered with moments of bizarre humour. There is an absurd dimension to Dimitrijević's project too, not only in the choice of subjects, but their appearance. With their cheap overcoats or their unbuttoned collars or their quizzical stares, Dimitrijević's passers-by never quite match up to the appearance of the politicians. The kind of absurdity in these works is quite different from the all-out weirdness of previous avant-gardes such as Fluxus, but its presence witnesses that in the political art of the 1970s humour was an important strategy of resistance.



All my clothes

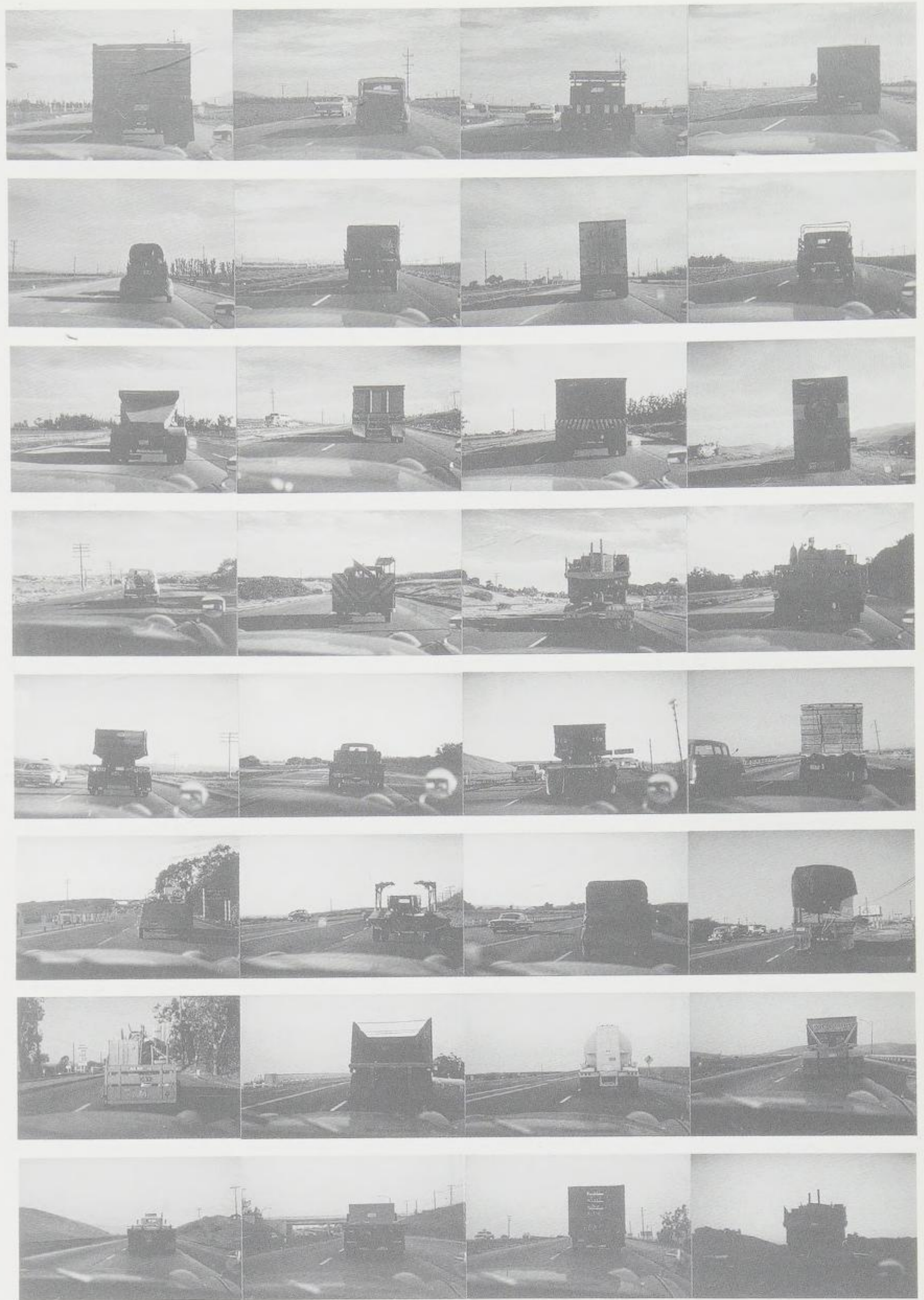
Some time in 1970, Bas Jan Ader (1942–1975) made a photograph called *All My Clothes*. It shows the roof of his Los Angeles house scattered with the contents of his wardrobe – a solitary sock across the roof's ridge, a group of ties on the slates, suits, trousers, the lot. The work initially seems to appropriate the form of 'scatter art'. Ader might have known fellow Angelean Barry Le Va (b. 1941) and his distribution sculptures, which had adorned the front cover of *Artforum* in 1968. The more you look at *All My Clothes*, though, the more the photograph seems *arranged*. Most of the jackets are still on their hangers, the trousers are still folded, and a single shirt has been carefully positioned to bottom right, hanging

from the rafters and blowing in the wind. The clothes have not just been treated as ready-at-hand materials. They suggest the organisation of the body, and in some cases their arrangement retains its shape, so we are made to think of its absence from the scene, and of the companion piece, *Fall 1*, from the same year, a short film in which Ader is shown first sitting on a chair on the ridge of the same roof, then toppling and falling off into the garden.

Three years later, Charles Ray (b. 1953) made another work called *All My Clothes* (no.65). This time it is a series of photographs, sixteen in a line, each showing the artist standing straight up by a wall, arms by his side. Ray always

appears wearing a different outfit, so, we assume, the series exhausts the contents of his wardrobe with as few photographs as possible while protecting his modesty (shirts don't get repeated; jeans do). This is a new take on the kind of 'self-exhausting' serial system deployed by Sol LeWitt, and there are other kinds of ordering devices here. In the photographs to the left, Ray appears in full winter warms, and as we move along, the seasons seem to change: by the far right he sports shorts and a T-shirt. So, two systems at once – but neither can quite account for the fact that the brown cords and tie in the twelfth photo only make one appearance; Ray, presumably, just preferred jeans.

Fig. 28
John Baldessari,
*The Back of All the Trucks
Passed While Driving from
Los Angeles to Santa
Barbara, California, Sunday
20 January 1963, 1963*
Marian Goodman Gallery,
New York



I bring these works together because of their identical titles, but these titles might actually be quite significant. Many artists of this period deliberately used the word 'all' (or its synonym, 'every') in the titles of their works, mimicking their generational predecessors' desires for an art of totality and transcendence, but emptying out these pretensions at the same time. Staying with the Californian context, think of John Baldessari's *The Back of All the Trucks Passed While Driving from Los Angeles to Santa Barbara, California, Sunday 20 January 1963* (fig.28), or Ed Ruscha's *Every Building on the Sunset Strip* 1966. The deflating operation of these two works relied on the impersonal character of the subject matter; Ader and Ray,

however, chose 'my clothes' as the subject of their photographs. They chose things that touch the very surface of the body, commodities that would seem expressions of individual taste. They chose to make archives of the personal.

Ader's and Ray's (early) works have tended to be understood as signalling a return of subjectivity and emotion, following their exclusion during the moment of high Conceptualism (recall LeWitt's comment 'to work with a plan is one way of avoiding subjectivity'⁶²). Both supposedly injected the 'dry' forms of 1960s sculpture and Conceptual art with pathos and humour. Another of Ader's works from 1970 was an installation titled *Light vulnerable objects threatened with eight cement bricks* (fig.29).

Where artists such as Robert Morris (b. 1931) let gravity go to work to produce sculpture because it was an utterly unsubjective force, a route away from intuitive and overly planned composition ('the focus on gravity as a means results in forms that were not projected in advance'⁶³), Ader's title turned gravity into the villain of a melodrama. The installation photograph shows the poor objects brutally shattered. Ray turned to a different sculptural practice, the *Props* 1968–9 of Richard Serra (b. 1939) to make *Plank Piece* 1973, for which he photographed himself pinned ridiculously between the leaning plank and the wall. These artists were certainly strategic: art needed an injection of comedy and feeling. Such features were not absent

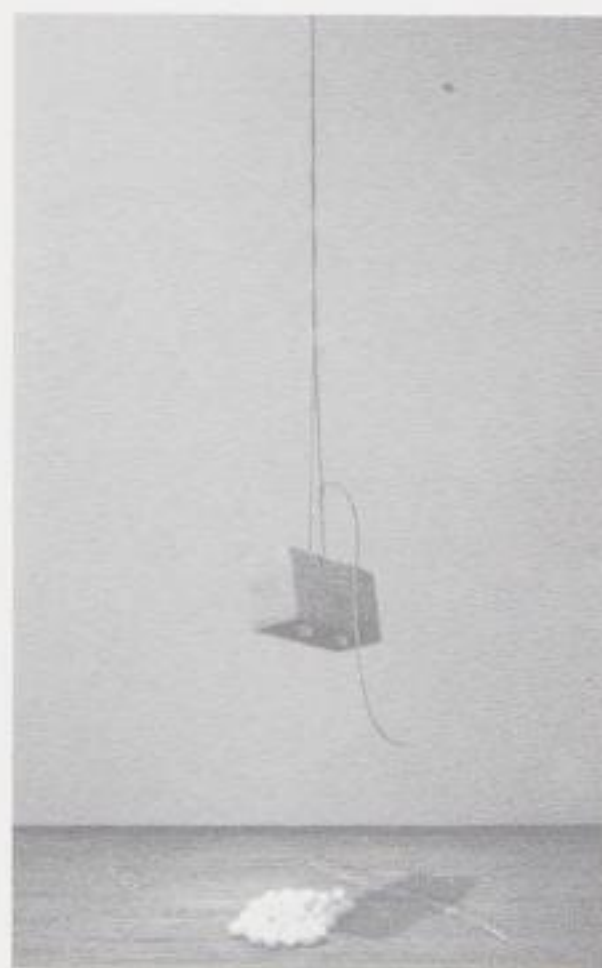


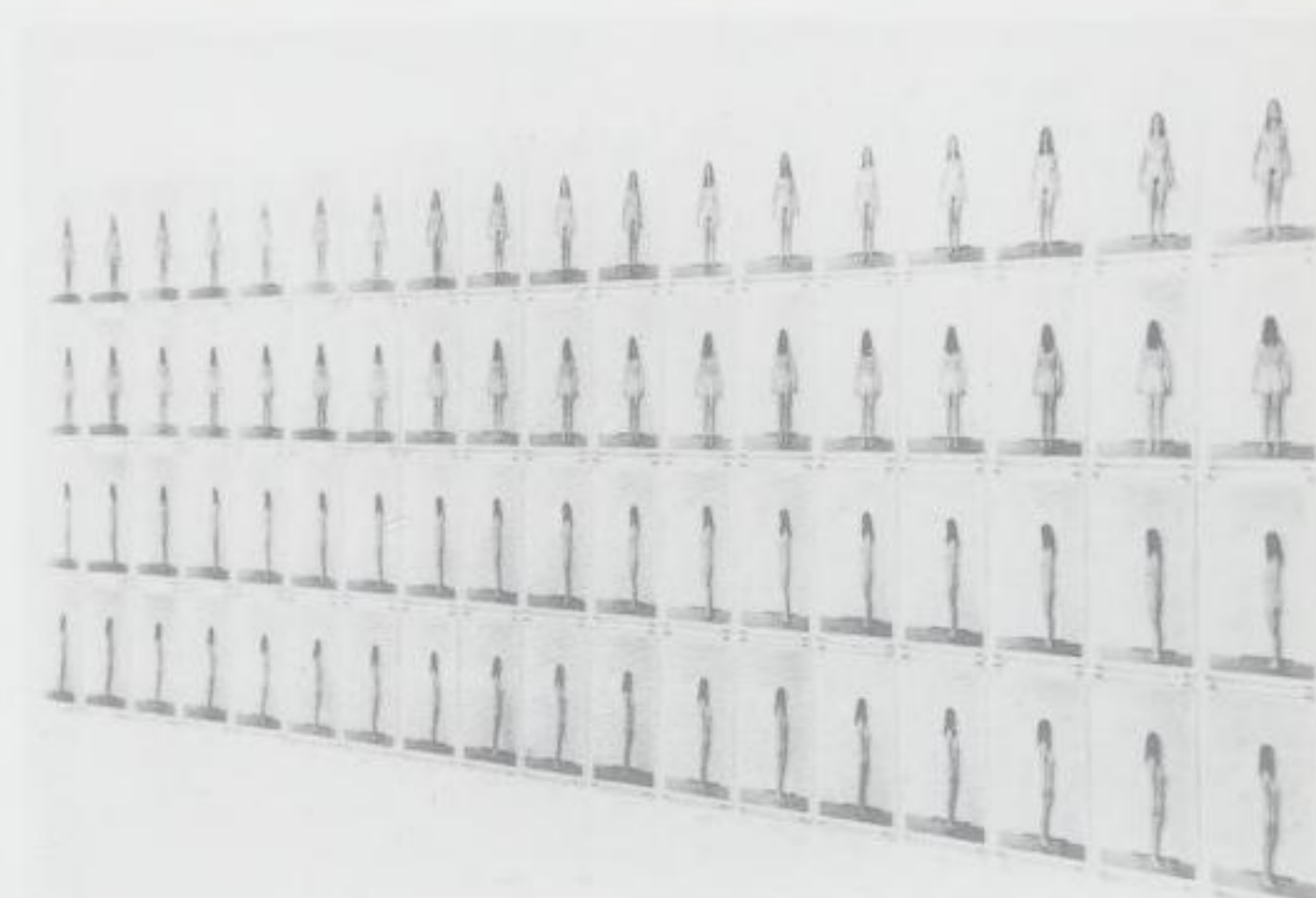
Fig.29
Bas Jan Ader,
*Light vulnerable objects
threatened with eight
cement bricks* 1970
(installation view and details)
Courtesy Bas Jan Ader Estate
and Patrick Painter Editions

from the other work of the period (I have attempted to point to the tenderness of Oiticica's *Bolide*, the quirky humour of Martha Rosler's video, for instance), but nor were they the point. The other art works I have discussed in their different ways addressed the politics of collecting, criminality and social marginalisation, the architecture of the institution, the inadequacies of private property, the exclusions of history and the everyday brutalisation of the female body. Although they were made right at the middle of the period I have treated, are Bas Jan Ader's and Charles Ray's *All My Clothes* to be taken then as representing a kind of retreat, a turning away from the social and the political towards the private?

Perhaps not. Perhaps what we are seeing here are representations of masculinity on the ropes. Ray's work was a direct response to Eleanor Antin's *Carving* 1972 (fig.30). For just over a month, Antin (b. 1935) shot four photographs a day of her naked, dieting body, economically unpacking the modern regulations of the diet and ridiculing the classical ideal of the carved marble sculpture. I am not suggesting that Ray, then studying in a sculpture department, cowered away from the power of feminist art; rather, he seems to have acknowledged Antin's concerns as his own. Though his figure appears clothed, Ray's work was no less concerned with societal prescriptions and expectations. Even as a

slacker, an 'amiable geek',⁶⁴ he appears as a type – witness the hippy hair, the repetition of lumberjack shirts, less 'my' clothes, than clothes determined for him. His body was no less policed: the work, after all, looks like an identity parade. Ader's *All My Clothes* relates to his series of *Falls* which articulate a different kind of vulnerability, his body repeatedly prone to accidents, ungraciously collapsing and collapsing again without the compensation of Chaplinesque humour. Instead of laughter, these works might prompt a degree of pathos in the viewer, but Ader was certainly not interested in feeling in any kind of unmediated way. In other works, Ader's persona shifts from the 'fumbler' to the 'romantic', but only to

Fig. 30
Eleanor Antin,
*Carving: A Traditional
Sculpture* 1972
(installation view)
Collection of the Art
Institute of Chicago.
Courtesy Ronald
Feldman Fine Arts,
New York



represent the construction of sentimentality, the 'romantic' as another type. *Farewell to Faraway Friends* 1971 uses as its support the kitschy sunset postcard; *In Search of the Miraculous (One Night in Los Angeles)* 1973 deploys the cheesy pop song lyric: the 'emotion' Ader injected into Conceptual art was absolutely and self-consciously circumscribed by the culture industry. Or as artist Brad Spence has argued, 'It seemed to be Ader's futile desire to represent genuine emotions within the empty tropes of melodrama.'⁶⁵

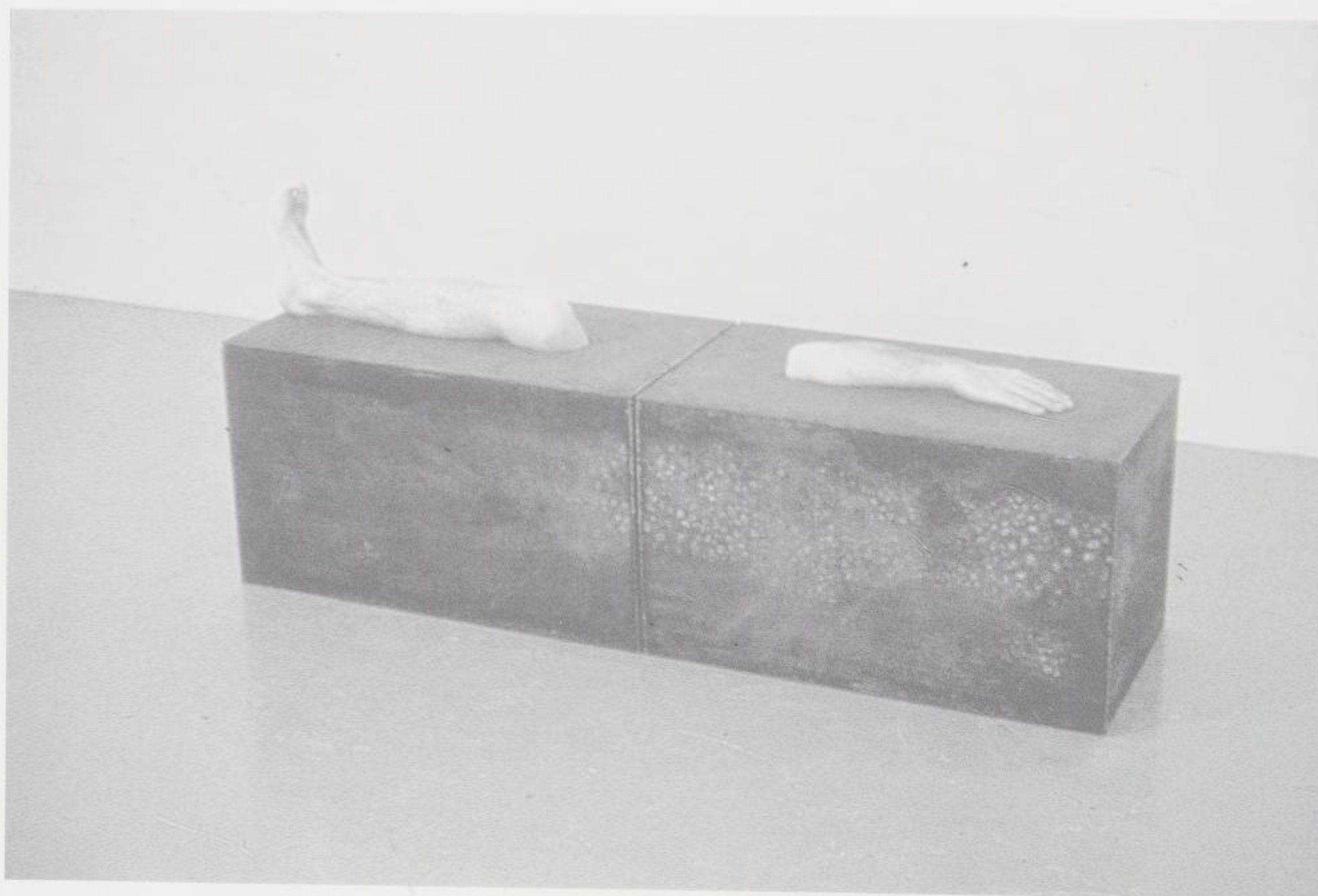
All My Clothes and *All My Clothes* also suggest two different solutions to the problem of how

the male artist's body could be figured at this moment. Both artists rejected the picture of the artist as a Beuysian shaman, and refused to indulge in performance art's 'spectacularization of the traumatic self'.⁶⁶ For Ader, it was as if 'the only way to figure the body now were as an absent object'.⁶⁷ For Ray, the body was repeatedly imaged but in the plainest way possible, so that any claims to its special status were totally diminished.

By the 1980s, another notion of the 'artist's body' would take hold, the art world becoming obsessed with the image of the artist-star. But for Ray and Ader, one step after *All My Clothes*

was for the body to be concealed. I started with 'hiding objects' – the cube that LeWitt buried, the box whose interior Oiticica lined with photographs. As a kind of reversal, both Ray and Ader hid themselves in their cubes. *In Memory of Sadat* 1981–5 (fig.31) was a performance in which Ray's arm and leg stuck out of holes in the top of a box. *Untitled (Tea Party)* 1972 (no.10) is a short film showing Ader sitting on a grass bank, smartly dressed, sipping tea. A flimsy twig props a cardboard box above him, offering some shade. The weight of the box causes it to give, the box falls down, and the artist is hidden from view.

Fig. 31
Charles Ray,
In Memory of Sadat, 1981–5
Courtesy the artist



Notes

- 1 James Meyer discusses the importance of Muybridge to LeWitt in *Minimalism: Art and Polemics in the Sixties*, London and New Haven 2001, pp.200–8.
- 2 Sol LeWitt, 'Paragraphs on Conceptual Art', *Artforum*, Summer 1967, pp.79–84.
- 3 Mel Bochner, 'The Serial Attitude', *Artforum*, December 1967, pp.28–33.
- 4 I am referring to the reproduction of the work in the 1978 Museum of Modern Art catalogue on p.164. In other reproductions of this work, the photographs are rectangular and include more visual information. It seems to me that the MoMA reproduction matches LeWitt's other photo-grids more closely.
- 5 Sol LeWitt, 'The Cube', *Art in America*, Summer 1966; reprinted in Adachia Zevi, *Sol LeWitt: Critical Texts*, Rome 1995, p.72.
- 6 In her discussion of the work, Suzaan Boettger argues that LeWitt's act of burial amounted to a strategic Duchampian rejection of Greenbergian opticality: LeWitt's cube was not an art work you could see. See *Earthworks – Art and the Landscape of the Sixties*, Berkeley and Los Angeles, 2002, pp.85–90.
- 7 The following discussion is indebted to Paula Feldman's account of this work in her unpublished PhD study *Made to Order: American Minimal Art in the Netherlands, Late 1960s to early 1970s*, Courtauld Institute of Art, London 2005.
- 8 This is how Smithson seems to have read the work, in a text he published in *Studio International* in 1969. See 'Aerial Art', in *Robert Smithson: The Collected Writings*, ed. Jack Flam, Berkeley, Los Angeles and London 1996, pp.116–18.
- 9 For the second kind of approach, see Mel Bochner, 'Sol LeWitt', reprinted in James Meyer, *Minimalism*, London 2000, p.226, and Rosalind Krauss, 'LeWitt in Progress', in *The Originality of the Avant-Garde and Other Modernist Myths*, Cambridge, Mass. and London 1985.
- 10 See Boettger 2002, p.90. The temporality of the *Buried Cube* work could be compared with the temporality of Alighiero e Boetti's *Lampada Annuale* 1966 which illuminates for eleven seconds every year. Boetti's object sets up a dynamic of expectation and frustration not dissimilar to the experience of LeWitt's work.
- 11 Guy Brett, *Hélio Oiticica*, exh. cat., Whitechapel Gallery, London 1969, unpaginated.
- 12 I am grateful to Anna Dezeuze for this translation, and for her account of the work. See Anna Dezeuze, *The 'Do-it-yourself Artwork': Spectator Participation and the Dematerialisation of the Art Object*, New York and Rio de Janeiro, 1958–1967, unpublished PhD manuscript, Courtauld Institute, London 2003.
- 13 Oiticica in *Hélio Oiticica*, 1969.
- 14 Paulo Herkenhoff, 'The Hand and the Glove', in Mari Carmen Ramirez and Hector Olea et al., *Inverted Utopias: Avant-Garde Art in Latin America*, New Haven and London, in association with The Museum of Fine Arts, Houston 2004, p.332.
- 15 Oiticica in *Hélio Oiticica*, 1969.
- 16 Brett, 1969.
- 17 Dezeuze, 2003. In this work, the body (albeit an image of a dead body) is enshrouded in fabric and in temporary walls. Thinking about it in this way suggests a connection to the *Parangoles* and *Penetrables* 1967 and *Nests* 1969–70 where the viewer's body would be covered with materials.
- 18 Catherine David, 'Hélio Oiticica: Brazil Experiment', in Alma Ruiz (ed.), *The Experimental Exercise of Freedom*, exh. cat., Los Angeles Museum of Contemporary Art 1999, p.189.
- 19 Oiticica in *Hélio Oiticica*, 1969.
- 20 Hélio Oiticica, 'Tropicália', in *Hélio Oiticica*, exh. cat., Witte de With Center for Contemporary Art, Rotterdam 1992, pp.124–6.
- 21 Catherine David, 'The Great Labyrinth', in *ibid.*
- 22 Oiticica, 'Tropicália', in *Hélio Oiticica*, 1992.
- 23 Oiticica in *Hélio Oiticica*, 1969.
- 24 Sol LeWitt, commentary in Alicia Legg (ed.), *Sol LeWitt*, exh. cat., Museum of Modern Art, New York 1978, p.164.
- 25 Mel Bochner, 'Serial Art, Systems: Solipsism', in Gregory Battcock, *Minimal Art: A Critical Anthology*, Berkeley, Los Angeles and London 1995, p.100.
- 26 Miwon Kwon, 'Portable Ideas: An Interview with Mel Bochner', *Documents* 20, Spring 2001, p.15.
- 27 Brenda Richardson, 'Mel Bochner: Number and Shape', in *Mel Bochner: Number and Shape*, exh. cat., The Baltimore Museum of Art, 1976, pp.12–15.
- 28 Letter from the artist, December 2004.
- 29 Yve-Alain Bois, 'The Measurement Pieces: From Index to Implex', in *Mel Bochner: Thought Made Visible 1966–1973*, exh. cat., Yale University Art Gallery 1995, pp.167–75.
- 30 *Ibid.*
- 31 Mel Bochner, 'Three Statements for Data Magazine', *Data*, February, 1972, p.64. Reprinted in Christophe Cherix and Valérie Mavridorakis (eds.), *Mel Bochner – Spéculations: Écrits 1965–1973*, Geneva 2003, p.254.
- 32 Elayne Varian, 'Interview with Mel Bochner, March 1969', reprinted in *Documents*, Spring 2001, p.5.
- 33 *Ibid.*
- 34 For an early account of the work and the exhibition, see Jack Burnham, 'Hans Haacke's Cancelled Show at the Guggenheim', *Artforum*, June 1971, pp.67–71.
- 35 Rosalyn Deutsche, 'Property Values' in *Evictions: Art and Spatial Politics*, Cambridge, Mass. 1996, p.172. My discussion of Haacke's work is heavily indebted to Deutsche's fascinating and rigorous account.
- 36 Thomas Messer, quoted in Deutsche, 1996, p.166.
- 37 *Ibid.*, p.168.
- 38 *Ibid.*, p.165.
- 39 *Ibid.*, p.180.
- 40 *Ibid.*, p.178.
- 41 *Ibid.* p.182.
- 42 *Ibid.*, p.182.
- 43 Leo Steinberg, 'Some of Hans Haacke's Works Considered as Fine Art', in *Hans Haacke: Unfinished Business*, exh. cat., New Museum of Contemporary Art, New York, 1986, pp.8–19.
- 44 Benjamin Buchloh, 'Hans Haacke: Memory and Instrumental Reason', in *Neo-Avantgarde and Culture Industry*, Cambridge, Mass. 2000, pp.203–41.
- 45 Haacke has indicated that he was not intending this effect of the installation, but I think it is nonetheless important. E-mail from the artist, January 2005.
- 46 Deutsche reads the form of the photographs in a different way. She argues that Haacke deliberately mimed the way the real-estate market treated property. Rather than representing architecture as the home of a community, each photograph records each building as a 'spatial terrain', a single bounded object that could be bought or sold. Deutsche, 1996, p.181.
- 47 Hal Foster, 'The ABCs of Contemporary Design', *October* 100, Spring 2002, p.194.
- 48 Cited by Hal Foster, 'It's Modern, but is it contemporary?', *London Review of Books*, vol.26, no.24, 16 December 2004.
- 49 Bernd and Hilla Becher, b. 1931 and 1934.
- 50 For an account of Dimitrijević's work, see Nena Dimitrijević, 'Braco Dimitrijević: The Posthistorical Dimension', in *Braco Dimitrijević*, exh. cat., Museum of Modern Art, Dubrovnik, 2004.
- 51 Braco Dimitrijević, 'Towards a New Way of Behaviour', *Studio International*, February 1974, pp.13–14.
- 52 Caroline Tisdall explained, 'Dimitrijević hopes to call into question the criteria by which we accept the accidents of history that raise people to fame. He feels that many stay in the world memory for no particularly good reason, and that the rest of us accept their eminence passively, unthinkingly, and unconsciously.' Caroline Tisdall, 'Notes for a friend', in *Braco Dimitrijević*, exh. cat., Museum of Contemporary Art, Zagreb 1973, quoted in Nena Dimitrijević in *Braco Dimitrijević*, 2004, p.13.
- 53 There is a similarity, then, to Bochner's 'portable idea', and to the way the *Measurement: Room* revealed different aspects of each space in which it was installed.
- 54 Nena Dimitrijević in *Braco Dimitrijević*, 2004, p.12.
- 55 *Ibid.*
- 56 Braco Dimitrijević in *ibid.*, p.14.
- 57 The work was first made as a performance in 1973.
- 58 Alexander Alberro, 'The Dialectics of Everyday Life', in Catherine de Zegher (ed.), *Martha Rosler: Positions in the Life World*, exh. cat., Ikon Gallery, Birmingham 1998, p.98.
- 59 *Ibid.*, p.77.
- 60 Alberro argues that, 'The essential aim of [Rosler's] strategy of producing works that are not seamlessly sutured but rather emphasize their constructedness is to expose the gaps where politics can enter.' *Ibid.*, p.95.
- 61 Craig Owens, Interview with Martha Rosler, *Profile*, vol.5, no.2, Spring 1986 (Video Data Bank, Chicago) p.27.
- 62 Sol LeWitt, 'Paragraphs on Conceptual Art', *Artforum*, Summer 1967, pp.79–84.
- 63 Robert Morris, 'Anti-Form', *Artforum*, April 1968, pp.33–5.
- 64 Anne Wagner, 'Charles Ray', *Artforum*, May 1999, p.171.
- 65 Brad Spence, 'Painfully Ironic', in *Bas Jan Ader*, exh. cat., The Art Gallery, University of California, Irvine 1999, p.39. As many writers have noted, what is surprising and engaging about Ader's work is that for all its knowingness about the construction of emotion, it is no less touching.
- 66 Benjamin Buchloh, 'Francesca Woodman: Performing the Photograph, Staging the Subject', exh. cat., Marian Goodman Gallery, New York 2004, p.42.
- 67 The phrase is Briony Fer's, and it comes from a discussion of Bruce Nauman and Alighiero e Boetti in Chapter Nine of *The Infinite Line*, London and New Haven 2004, p.182. (In passing, it is worth noting that the absent, invoked body of Ader's *All My Clothes* anticipates a very different kind of absence: Ader disappeared at sea in his final work, suffering more than any performance artist at the time, but out of sight.)

The Mimesis of Thinking

Boris Groys

The contemporary 'art system' emerged as an effect of the shift in artistic practices that took place during the 1960s and 1970s. Art is always in flux; its forms are always subjected to a historical evolution. But in the 1960s the role of the artist was subjected to a radical redefinition that has not lost its validity until now. Until the 1960s the romantic image of the artist remained fundamentally intact. The 'true' artist was understood to be a lonely creative individual following not the external rules and conventions of society, but exclusively his or her 'inner necessity', as Wassily Kandinsky (1866–1944) famously put it.¹ The role of the artist was to act outside modern bureaucracies, outside the huge socio-economic machines of modern industrial production. The creative artistic act served as a paramount example of a non-

alienated, liberated work. Of course, the artist, in a very acute way, experienced dependency on the capitalist art market, on the prevailing public taste, on the explicit or implicit censorship in the name of generally accepted norms and values. But the duty of the artist was seen precisely in the struggle for liberation from these external norms, values and dependencies. This struggle was regarded as possible and even necessary because the artistic creative act itself was understood as being uniquely autonomous, internally free. Art had to manifest this inner freedom openly to be recognised as 'true' art. But it is precisely this inner autonomy and freedom of the creative act that was questioned by the art practices of the 1960s and 1970s.

It was during this period that mass cultural imagery began to invade the whole visual field of contemporary society. An individual artist could no longer compete effectively with the commercial apparatuses of anonymous image production. In addition, emerging computer technology demonstrated the possibility of producing, processing and registering images without any direct intervention by a human producer or spectator. Some authors and artists reacted to this loss of individual control over image production with desperate protest. The writings of Guy Debord (1931–94) are paradigmatic in this respect.² Other artists developed a new strategy, which operated through the individual appropriation of mass-produced images. This new attitude is most notably reflected in Pop art, especially in the

work of Andy Warhol (1928–87). In both cases the 'system' was seen as something purely external, as something opposed to the unique subjectivity of an individual artist. Retrospectively, it seems that the real shift was effectuated by Minimal and Conceptual art of the period, because in this context an individual artwork was understood as being inscribed in a certain system of image production and communication from the start. This shift was partially inspired by different linguistic theories, such as French Structuralism or the Wittgensteinian concept of language games. Notwithstanding the differences in their details, all these theories interpreted an individual speech act as an application of a set of general linguistic rules. Accordingly, the advanced art of this time understood the individual act of art production as being originally regulated by a 'system', as following a certain general rule from the beginning, and as being inscribed into a certain social practice even before its product was submitted to a definite social use.

This change of attitude towards the notion of a system can easily be misunderstood as an act of capitulation vis-à-vis the apparatuses of technological progress and commercialised mass culture. But in fact this change allowed the artist to analyse and criticise the dominant regime of image production and distribution by his or her own artistic means for the first time. Indeed, if the act of art production is understood as fully autonomous and genuinely free, then the artist can only be a slave or a victim of the external systems of the art market, art institutions and so on, being completely heterogeneous in relationship to these systems. But if the creative act itself is part of a certain system and guided from the beginning by a certain set of rules, then the artist has a unique inner access to the system. And this means that the artist has a unique competence and power in dealing with this system, and potentially with any possible system. The integration of an individual creative act into a communicative system was interpreted by some theoreticians as

a sign of the death of autonomous artistic subjectivity. But this subjectivity successfully survived its death by making the system itself the object of its inner, intimate experience. There are many ways to understand what kind of system is guiding the inner creativity of an artist. Some artists wanted to analyse the existing systems, the existing visual codes that compel the artist to use a certain vocabulary of images and to combine them according to a certain set of rules. Other artists tried to develop alternative, utopian systems of visual communication that would be able to supplant and substitute the existing image regime. There were artists like Joseph Beuys (1921–86) or Lygia Clark (1920–88) who developed their own myths, their own extremely complicated systems of meaning production and communication. And there were the artists who played ironically with the socially accepted visual codes to subvert and deconstruct them, such as Marcel Broodthaers (1924–76) or Ilya Kabakov (b. 1933). Overall, the art of the 1960s shifted its focus from the individual creative act

to a description, investigation and development of communication systems and visual codes. Accordingly, the art world as a whole began to be perceived as an 'art system'. The metaphysical loneliness of the romantic artist was substituted by strategies of participation and collaboration. The artist became a part of the art system, of the art bureaucracy. The artist's main occupation became not to create but to criticise. The paradoxical figure of a 'critical artist' that emerged in the 1960s announced an end to a long period of confrontation between the individual artist-creator and the art critic serving the 'system', a conflict that contributed substantially to the dynamic of romantic and modernist art.

At the same time, the Minimal and Conceptual art practices of the 1960s and 1970s can be seen as the completion of the revolutionary process that the classical avant-garde initiated at the beginning of the twentieth century. The

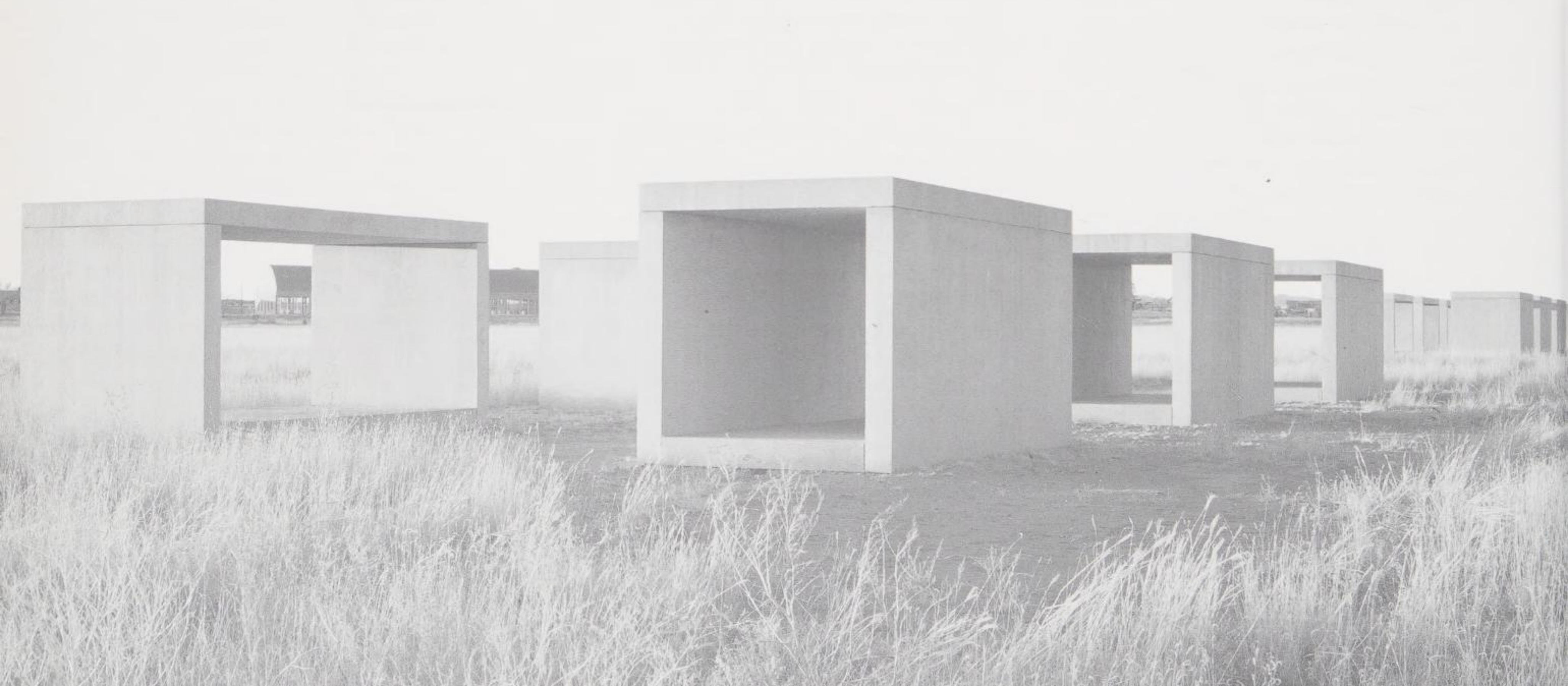
word 'completion' has two senses here: both extreme radicalisation, and the termination of that process. Since the 1970s we have been living and functioning in a post-revolutionary system of art. According to G.W.H. Hegel (1770–1851), all post-revolutionary societies are characterised by the fact that they prescribe rational goals, procedures and strategies to their members, and demand explanations, justifications and precise plans from them.³ It is obvious that our present art system functions precisely according to these rules. The claim of a single artist that his or her work is an unpredictable, creative act, seems obsolete, and is not taken seriously by today's art world. It therefore falls under the rubric of 'pure snobbism', as Alexandre Kojève (1902–68) defined it in his commentary on Hegel's description of post-revolutionary society.⁴ But, paradoxically, it was precisely the radicalisation of the notion of creativity by the revolutionary avant-garde that has historically led to its integration into the 'system'.

The avant-garde art saw itself as the embodiment of the pure negativity, as the medium of the destruction and annulment of all traditional, mimetic, naturalistic art forms. For example, Kazimir Malevich (1878–1935) proclaimed himself to be the 'zero of form'.⁵ But at the same time, in accordance with the famous formulation 'Negation is creation', which was inspired by Hegelian dialectic and propagated by authors like Mikhail Bakunin (1814–76) and Frederich Nietzsche (1844–1900) as 'active nihilism', Malevich felt himself empowered to create new icons for a new society by means of an iconoclastic destruction of the old conventions, methods and habits. The avant-garde actually even radicalised the romantic concept of creativity by proclaiming the possibility of creation from nothing, rather than being inspired by Nature. This radicalised understanding of creativity found further manifestation in the readymade technique introduced by Marcel Duchamp (1887–1968):

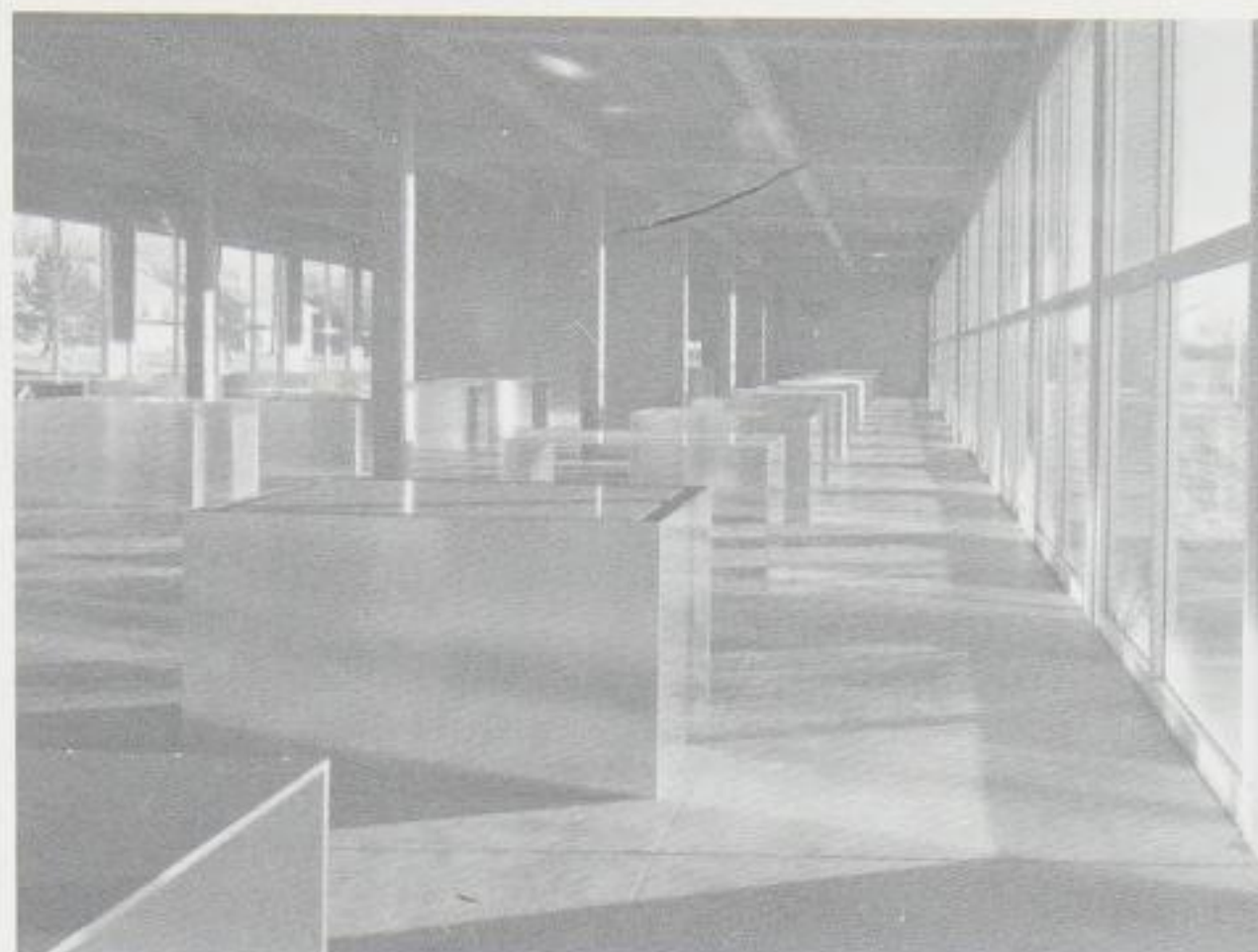
artists began to create independently of any skilled craft, solely by means of the sovereign creative decision, thus negating the previous status of the individual objects. The act of artistic creation was reduced to an instant, autonomous decision between yes and no, between affirmation and negation, between leaving something intact and declaring it an artwork, between 1 and 0. But such a highly formalised decision can be easily placed in the context of a formal logic, a semiotic system, a digital code. Nevertheless, nearly half a century passed between the first radical reductions effectuated by the classical avant-garde and their inscriptions in the formal-logical systems and structures during the 1960s and 1970s. There are many well-known reasons for this. Theoreticians and artists of post-avant-garde Surrealism of the 1920s and 1930s declared erotic desire to be the motor of artistic

decisions. At the same time, these decisions were sociologised and politicised by the left and the right. Only after the Second World War did it become possible to begin thematicising the logic of individual decisions as such, specifically, as a logic within a describable and analysable formal, logical, semiotic or linguistic system. Every such system can be described using a binary code: presence or absence, inclusion or exclusion, communication or interruption of communication, understanding or non-understanding, action or inaction, life or death. But the same binary code is also at work in Duchamp's readymades or Malevich's *Black Square* 1913, which reduced traditional painting to a simple distinction between black and white. Thus it is only logical that the art of 1960s and 1970s understood itself as a systematic praxis guided by a certain formalised code.

This fundamental shift in the understanding of artistic creativity is made particularly clear by the works of Donald Judd (1928–94) and other Minimalists of his generation. The Minimalists practised not negation but variation. Thus Judd's large installations in Marfa, Texas, show the transition from one object to the other as a series of reiterations and modifications, as a series of binary decisions about which elements of the previous object should be retained, and which modified, and how. In such a series no object has the status of a model that unambiguously determines the form of other objects; it is also true, however, that no object can surprise us completely, being produced as a symbol of total negation of what we have already seen. As Jean-François Lyotard (1924–98) rightly noted in his text 'The Avant-Garde and the Sublime',⁶ the question of how one transitions from one form



(opposite)
Fig.32
Donald Judd,
15 untitled works in concrete 1980–4 (detail)
Permanent collection
the Chinati Foundation,
Marfa, Texas



(right)
Fig.33
Donald Judd,
100 untitled works in mill aluminium 1982–6 (detail)
Permanent collection
the Chinati Foundation,
Marfa, Texas



Fig.34
Donald Judd,
Untitled 1976, installation
view, Dia:Beacon
Dia Art Foundation. Gift
of the Brown Foundation

to the other, from one artwork to the other, is central to art. Lyotard believed that traditional art regulates this transition by placing a known model before the new artwork, whereas the avant-garde progresses by the negation and destruction of such models, and offers to the viewer its own emergence beyond all models as a sublime drama. For Lyotard, therefore, the avant-garde work is the unplanned result of a negation of the model by the artist, a result that is, as such, unforeseen, and one that astonishes viewers as well as the artists themselves by its mere presence. It is evident now, however, that the Minimalists proceeded totally differently when they transitioned from one art object to the other. The typical Minimalist installation is perceived as a fragment of a formalised algorithm of reiterations and modifications. However powerful and fascinating the

immediate visual impression of these installations on the viewer may be, ultimately they point to something invisible, merely conceivable, virtual. Clearly, the same set of binary oppositions, the same visual code that is manifested in the installations, can produce a potentially infinite row of new objects. That is why the viewer's imagination is stimulated to imagine this generative code, to imagine all the variations that can be generated by the code. Such an attempt, however, immediately points the viewer in the direction of the invisible set of rules on which the different variations are based. And that means nothing other than that an individual artistic decision is no longer understood as sovereign, as fully autonomous but, rather, as an individual application of the existing set of rules, as a realisation of an option that is always already given. The same is true, of course, for Judd's

early installations as well as those of Carl Andre (b. 1935), where the objects mostly do not vary at all but are simply reiterated. Here the variations are reduced on the one hand to mere repetition within the framework of an installation. On the other hand, however, Judd varied materials and forms from installation to installation in an easy understandable, transparent way. That was also true of Andre's installations, which practise pure combinations of the simplest geometrical forms. This is a strategy of variation that puts the artist beyond the traditional opposition between affirmation and negation, between repetition and innovation. Hence if Minimalist artists themselves repeatedly insisted on the immediate presence of their objects, de facto the most important aspect in Minimalist installations took place in the zone of the invisible, that is, between the art objects.

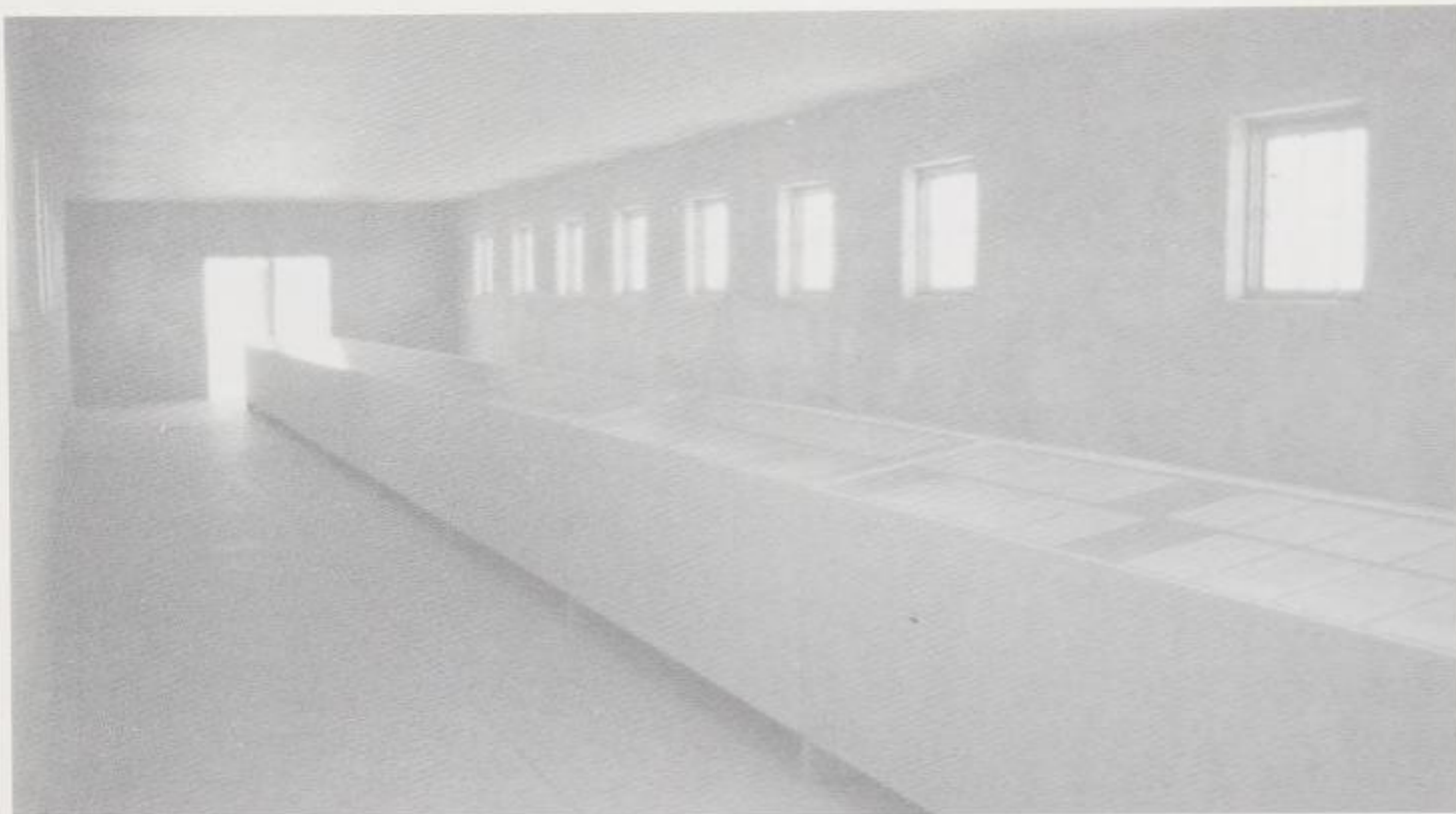


Fig.35
Carl Andre,
Poems 1958–72
Permanent collection
the Chinati Foundation,
Marfa, Texas

(opposite)
Fig.36
Joseph Kosuth,
One and Three Chairs 1965
Paul Maenz Collection, Berlin

This view was formulated, with critical intent, in Michael Fried's famous essay 'Art and Objecthood' (1967). Fried (b. 1939) criticised Minimalist installations for drawing the viewer's attention away from the individual artworks and into the space of the installation. According to Fried, in a Minimalist installation the presence of the space is felt more strongly than the presence of the art objects themselves. This is why Fried attributes a theatricality to Minimalist installation which he characterises as hostile to art. The reason for this critical assessment of Minimalist installation becomes clear when Fried writes that that which lies between the artworks, or even between the individual arts, can only be the theatre, the stage.⁷ To put it another way, for Fried that which takes place between artworks is always just another

image – in this case, an image of the stage. But, as I have tried to show, what happens between artworks in a Minimalist installation is not theatre but a set of rules, a formal logic, an algorithm, which may generate an image but is not itself an image. Minimalist installation is also crucially distinct from theatre in that it can be walked on and around. An installation does not present itself to visitors as a stage that can only be observed from a certain position, but as a space for the *flâneur*, for walking from one art object to the other. The viewer's movement from one art object to the other is guided by the same system of rules that determines the space between the individual artworks in an installation by linking those artworks by a series of reiterations and modifications.

One might say that Minimalist installation practises the mimesis of thinking. In that phrase, 'thinking' is understood to mean a step-by-step movement from one option to the other, from one variation to the other within an overarching, virtual system that incorporates and arranges all such conceivable options and variations. The goal of using art as a mimesis of thinking unites almost all the main trends in the art of the 1960s and 1970s. It also subsumes many of the attempts to use language – as a supposedly direct representation of thinking – in the context of art, many examples of which can be found in the work of Art and Language, Joseph Kosuth (b. 1945) and John Baldessari (b. 1931). But a piece of text is still an image. The romantic as well as the modernist artist tried to create an image of infinity, be it an infinity of

Nature or of negation. But the infinity of thinking cannot be represented by an individual image. Thinking progresses from one image to another in a systematic way without any conceivable end. Thinking is the infinite progressive movement, the infinite 'et cetera'. Therefore, it can be represented in the art context only in the form of an installation that recreates this progressive movement, even if only inside a finite, limited space. Minimalist installation represented the process of methodically, systematically organised thinking precisely by directing the visitor to a step-by-step movement from one object to the other. Here we are dealing with

the same understanding of thinking that lies at the basis of computer programming. And of course, only the introduction of the computer made it possible to represent such thought processes and to formalise them to a greater extent. Minimal and Conceptual art of the 1960s had, however, taken the decisive step in the direction of representing thought processes by taking pure thinking as its object and thus aestheticising it. In this sense Minimalism is at the same time very much a megalomaniacal maximalism that wants to transcend the limits of the finite installation space. Not only does the artist subject the uniqueness of his or her artistic decisions to an abstract, infinite

generative code, but the artwork itself also ceases to be a concrete, unique artwork, and instead presents itself from the outset as a fragment of a potentially infinite progression that, while it can certainly be understood, grasped and even continued at will, cannot be completely realised.

Now, however, every programme for mimesis leads to countless difficulties and paradoxes. René Magritte (1898–1967) observed that a representation of an apple is not an apple and a representation of a pipe is not a pipe. So too a representation of thinking by means of computer programs or artistic installations is



Chair [tʃeə], I. s. der Stuhl, Sessel; (seat) der Sitz; das Schienenlager (Railw.); die Würde or das Amt (des Lord Mayor etc.); (presidency) der Vorsitz; —! —! zur Ordnung! easy—, der Lehstuhl; folding —, der Klappstuhl; professorial —, der Lehrstuhl; sedan —, der Tragsessel; upholstered —, der Polsterstuhl; 1. (with verbs) address the —, den Vorsitzenden anreden; a new — was founded, eine Professur or ein Lehrstuhl wurde gegründet; hold the — of German, den Lehrstuhl für Deutsch innehaben; take the —, den Vorsitz übernehmen; 2. (with prepositions) with Dr. J. in the —, unter dem Vorsitz von Dr. J.; Dr. J. in the —, Dr. J. als Vorsitzender; he called to the —, zum Vorsitzenden (einer Versammlung) berufen werden. II. attrib.; — back, die Stuhllehne; — caning, das Rohrflechten. III. v.a. auf den Schultern tragen. Comp. —bottom, s. der Sitz des Stuhles. —cover, s. der Stuhlüberzug. —man [—man], s. Vorsitzende(r), m.; [—men], der Sänfenträger (for sedan —s); —man of the board of directors, der Vorsitzende des Verwaltungsrates; —man and committee, Vorsitzender und Beisitzer. —manship, s. der Vorsitz. —rail, s. die Doppelloksschiene, Stuhlschiene. —woman, s. die Vorsitzende.

not yet thinking. Human thinking is used for the purpose of individual and collective survival in the service of the survival instinct. 'Intelligent' machines and artistic installations do not think; they merely represent thinking beyond any concern about their own survival and wellbeing. The mimesis of thinking is thus in many respects confronted with the same difficulties that faced the mimesis of Nature. Above all, it faces the fundamental question of how one represents the system of all possible options in the necessarily limited space of the artistic installation. The thinking is potentially infinite. The space of the installation, by contrast, is finite. Minimalist installation lives from the tension that results from the encounter of an abstract, infinite generative code that regulates the production of art objects within the installation space and the external, contingent characteristics of this space whose size limits the code's further realisation. This incursion of the contingent into the infinite progression

of thinking which takes its internally unmotivated, 'irrational' limit from the external form of the installation space, is, however, merely an external symptom of the irrationality that internally infects every code and every system of thinking from the outset. If, for example, artists are asked why they chose precisely this rule of variation and not another, they can explain it either by falling back once again on their own contingent, subjective, creative decisions or by reference to a meta-system that determines the choice of the specific rule in each individual case. Such a reference to an ever-higher meta-level system, however, famously leads to insoluble logical paradoxes that in turn can be eliminated only by the contingent decision to limit the system.

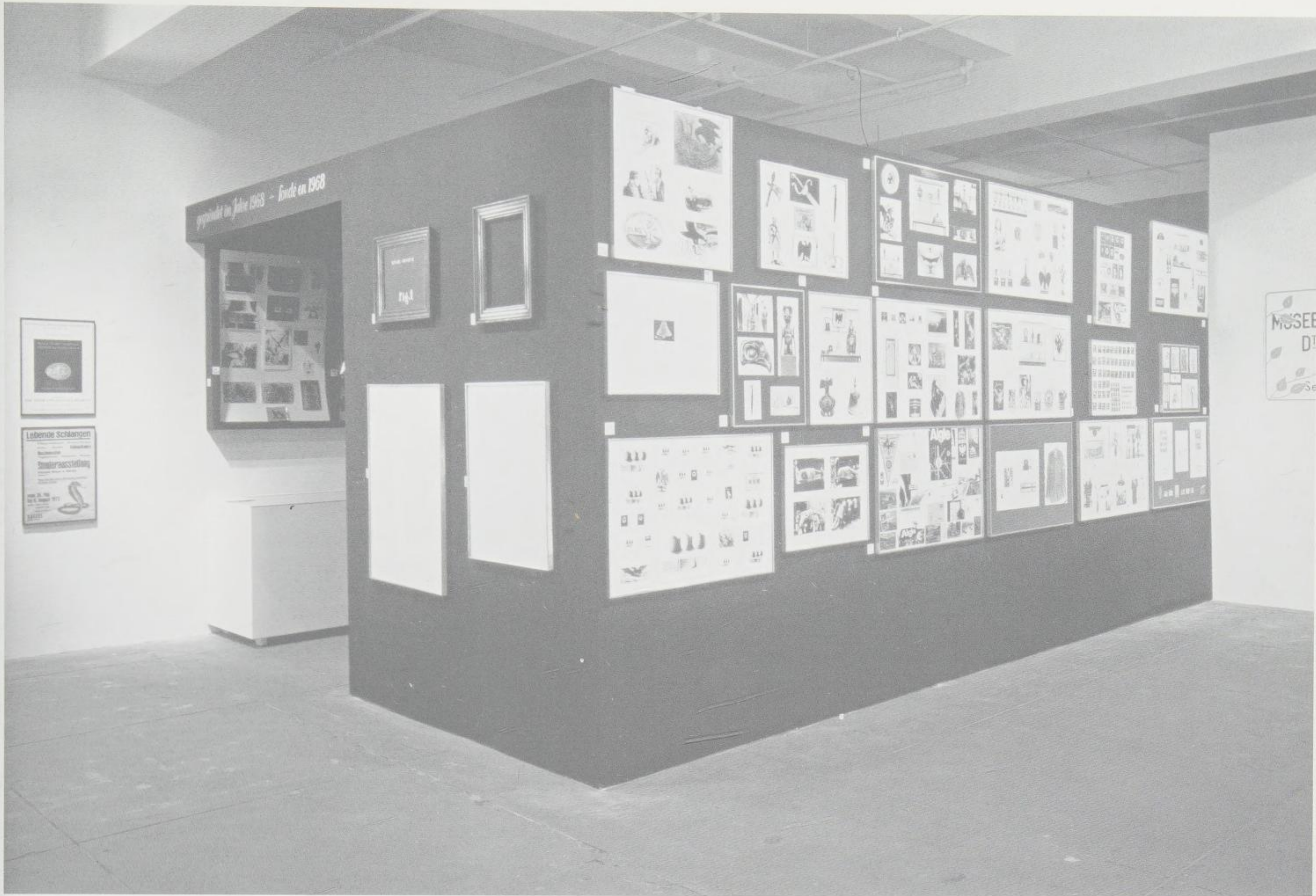
One might say that it is precisely the dead ends, disturbances and absurdities of the mimesis of thinking that have been most attractive to artists. Art of the 1960s and 1970s

may have been interested in the system, in the structure, in the programme, but also, primarily, where these things themselves led ad absurdum. That was because it was precisely this descent into the absurd that makes it clear that the image of thinking is not thinking itself and that the living and the procedural cannot easily be duplicated mimetically. Even Minimalist installations are not without a subtle irony in that they confront the virtual realisation of the code with the constriction of real space. The tempting irrationality of a formalist, systematic thinking is seen particularly clearly, however, if one attempts to apply this thinking to the practice of art itself. Thus Marcel Broodthaers, in his *Musée d'Art Moderne, Département des Aigles* 1968–72, sketched a project to categorise, collect and exhibit artworks according to a strict formal method (fig.38). Hence this museum had to contain all known representations of eagles, and to subdivide



Fig.37
Ilya Kabakov,
*Sitting-in-the-closet-
Primakov* 1972 (detail)
Centre Pompidou, Paris

(opposite)
Fig.38
Marcel Broodthaers,
Section Publicité du Musée d'Art Moderne, Département des Aigles: Section Publicité 1972
Paul Maenz Collection, Berlin

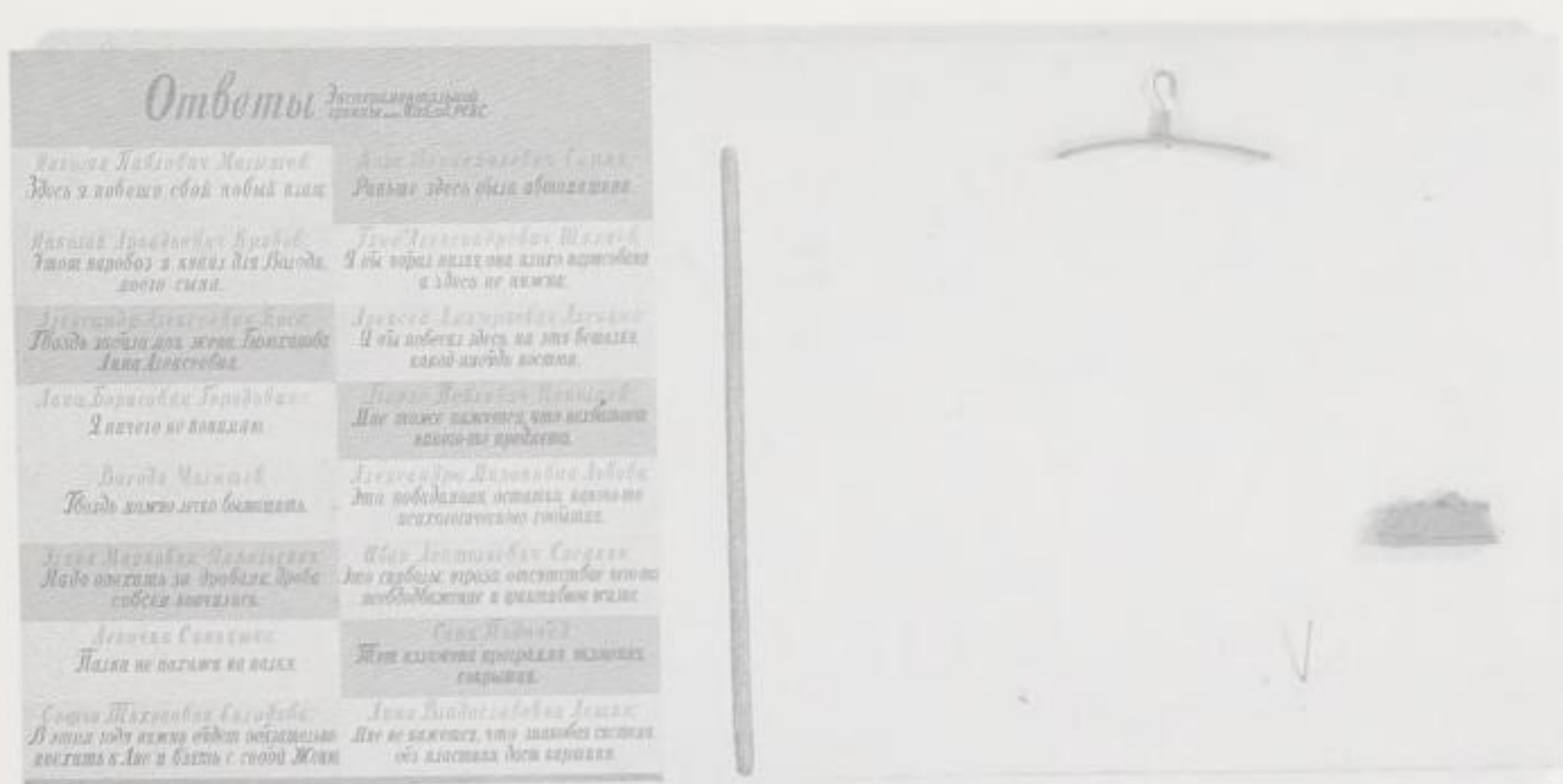


them according to the genre in which they were represented. This curatorial project replaces the curator's usual arbitrariness with a systematic, step-by-step, workable, graspable and testable method that seemingly eliminates the distracting intervention of personal taste in the choice and presentation of artworks. The end effect, however, is that it ironises and undermines both traditional, historical curatorial practices and supposedly positivistic, formalised archiving practices, since both results seem equally implausible to the viewer.

Whereas Broodthaers uses art to represent, and at the same time ironises the logical, systematic method of categorising, subdividing

and specifying, Ilya Kabakov is concerned with the process of generalising. This process is the focus above all of the first album of his series *10 Persons* 1972–5, which is entitled *Sitting-in-the-Closet-Primakov*. The first sheets of the album show the black square that recalls Malevich's *Black Square*. From the commentaries, however, we learn that this blackness is seen by a small boy who is sitting in a closet that he has refused to leave for a long time. Eventually the boy begins to gradually open the closet. At first he sees his family in the apartment, then his city, then the region, then the territory, then the whole earth, then the various levels of the heavens, in which the objects and words begin to

disintegrate, as if in modernist paintings, and then comes a white sheet of paper on which is a commentary describing how the boy left the closet and was never seen again. The boy thus flies ever further in search of a better overview, a larger horizon, a more universal perspective. This movement reproduces the dynamic of modern thought which wants to think in ever broader and larger contexts. The further the boy flies, however, the more everything about him disintegrates until there is nothing more for him to see. At the end of the album the hero's consciousness becomes the white sheet of paper, a neutral surface. The constant expansion of the context of thinking proves to be the movement towards death.



Not only in this album but also in many of his other works, Kabakov describes the progression of logical generalisation as the process of disintegration: the more one struggles to depict the system as a whole, the more one gets lost in the smallest details, until one loses sight of the whole once and for all. In his four-part album *The Universal System for Depicting Everything* 1977–80 (fig.40) Kabakov demonstrates that the will to depict the totality of the world dissolves the image. In search of an ever more precise representation, the images become increasingly abstract and the system of depiction becomes increasingly incomprehensible, esoteric, incommunicable, 'mystical'. The same dialectic of generalisation was presented on an even larger scale by Kabakov in his later installation *The Big Archive* 1993 (fig.41), in which he used the method that he had already developed in the 1960s and 1970s, for example, in his work *Answers of an Experimental Group* 1973 (fig.39). The space of the installation *The Big Archive* recalls the typical rooms of a Soviet state administration building: shabby, boring, depressing. Visitors to the installation are asked to fill out hundreds

of different forms to establish their identity. The questions on the forms become increasingly detailed, but also so contradictory, inconsistent and indecisive that the whole mass of forms appears from the outset to be suitable for the paper shredder and wastepaper basket. The archive collapses because, as it attempts to grasp the human being as a whole, in all aspects of his or her life, it no longer permits any criteria that would make it possible to distinguish the essential and relevant from the inessential and irrelevant. Hence a summary becomes impossible, and the whole formalised and detailed procedure of representation leads us into the vague and even the absurd.

Minimalist and post-Minimalist installations here become not only a place of representation of thinking, but at the same time a place of critique of this representation. Every installation represents a particular selection process that determines which objects are included and which excluded in an installation, and in which locations inside the space of the installation they must be placed according to the overall organisation of this space. The person responsible for the selection

procedure is an individual artist, but every individual selection is supposed not only to exemplify a system of private judgements, preferences and attitudes, but also to be socially, culturally and politically anchored and thus to some degree 'representative'. This assumption lends the mimesis of certain systems of thought a critical, polemical acuity. The installation can become the site of ideological critique precisely because it operates on the same terrain of selective thinking that ideology does. Minimalist installation already had this polemic acuity in its demonstration of emphatic logical correctness. But projects like those of Broodthaers or Kabakov are critical of ideology in a very explicit way because they fundamentally call into question certain procedures of systematisation and generalisation with which modern ideologies of various kinds operate. In this respect, Minimal and Conceptual art cooperated with the general spirit of institutional and ideological critique in the 1960s and 1970s, even though it was not explicitly utopian, rebellious or politically illustrative.

(opposite)
Fig. 39
Ilya Kabakov,
*The Answers of an
Experimental Group 1970–1*
Collection of John Steward

Fig. 40
Ilya Kabakov,
fragment from
*Album IX: The Universal
System for Depicting
Everything 1977–80*
Collection of Ilya
and Emilia Kabakov

(right)
Fig. 41
Ilya Kabakov,
The Big Archive,
installation view,
Stedelijk Museum,
Amsterdam 1993



The mimesis of thinking does not, however, mean, as is sometimes asserted, that the art of the 1960s and 1970s became 'immaterial'. An installation that manifests a certain rule of selection or a line of thought is as such by no means immaterial. Rather, art takes on the character of a project. In this sense, the art of the 1960s and 1970s fits in well with the general praxis of the contemporary world, which is known for being above all project-oriented. And indeed the formulation and documentation of various projects is the main activity of contemporary society. Whatever one wishes to undertake in business, politics or culture, the first thing that must be done is to formulate a corresponding project in order to present an application for the approval or financing of this project to one or more responsible authorities. If this project is rejected in its original form, it is modified so that it can be accepted. If the project is rejected entirely, there is no choice but to propose a new project in its place. Consequently, every member of our society is constantly occupied with drafting, discussing, and rejecting new projects. Assessments are written, budgets are precisely calculated,

commissions are formed, committees are convened, and decisions are made. No small number of our contemporaries read nothing other than such projects, reports and budgets. The art world is no exception here: even an artwork is today created according to a plan. A typical project is formulated as a description of certain methodical and practical steps that are supposed to lead to a result that is defined in advance. Art that practises the mimesis of thinking, by contrast, causes a shift of attention from the result to the activities that are supposed to produce that result. The documentation of the virtual and real steps necessary to realise the project becomes the main object of artistic interest.

Consequently, the traditional individual artwork is replaced by the open-ended art project. Art is no longer understood as the production of artworks, but rather as the documentation of art projects. This, of course, also changes the way that art has been defined since the 1960s and 1970s. Art manifests itself not so much as another new object of observation, but rather

as a manifestation of another heterogeneous time of the art project that is documented as such. The artwork is traditionally understood to be something that embodies art in itself, that makes it immediately present, at hand, visible. When we go into an art exhibition, we usually assume that what we see there – whether it is painting, sculpture, drawing, photography, video, readymades or installation – is art. Artworks can, of course, refer in one way or another to something other than themselves – to objects from reality, say, or to particular political subjects – but they do not refer to art, because they are art. However, this traditional presumption about a visit to an exhibition or museum turns out to be problematic if we are confronted with art projects rather than artworks. There may still be painting, drawing, photography, video, text and installation – that is, the same forms and media in which art is usually presented – but in the case of art documentation the art is not presented by these media but merely documented by them. Art documentation is by definition not art. It merely refers to art, and that is precisely what makes it clear that art is no longer present and

immediate here, but rather absent and merely conceived. Hence in his *Département des Aigles*, Broodthaers explicitly indicates that the exhibited objects are not artworks; rather, they are the documentation of an artistic project that may be presented with the help of this documentation.

At the same time, the understanding of art as art project also entails art's re-adoption of technique. Art was always primarily a matter of technique. But Malevich's Black Square and Duchamp's readymades introduced a period in which art parted with technique. The avant-garde was an attempt to liberate art from technique by equating the act of artistic creation with the act of negating the tools and devices of traditional artistic techniques. From our perspective today, however, this separation of art and technique that the historical avant-garde tried to achieve can be seen as a preparation for a new phase

of art's involvement with technique. The contemporary artist is once again a technician, a producer. But now the artist is no longer an artisan or worker but a project developer and project manager who produces the artistic project documentation by analogy to technical documentation. Happenings, performance, political actions in the urban space, artistic research projects and other comparable artistic practices that also made their appearance in the 1960s are often regarded as taking place outside the traditional art context. Being temporary and even fleeting, these artistic activities were initially conceived in opposition to the production of the 'solid' objects ultimately destined to be included in a museum collection. But these temporal, transitory activities can become a part of art history only by being documented, memorised and exhibited in the form of a publicly accessible archive. And such an archive can be shown in the art context only in the form of an installation that presents this

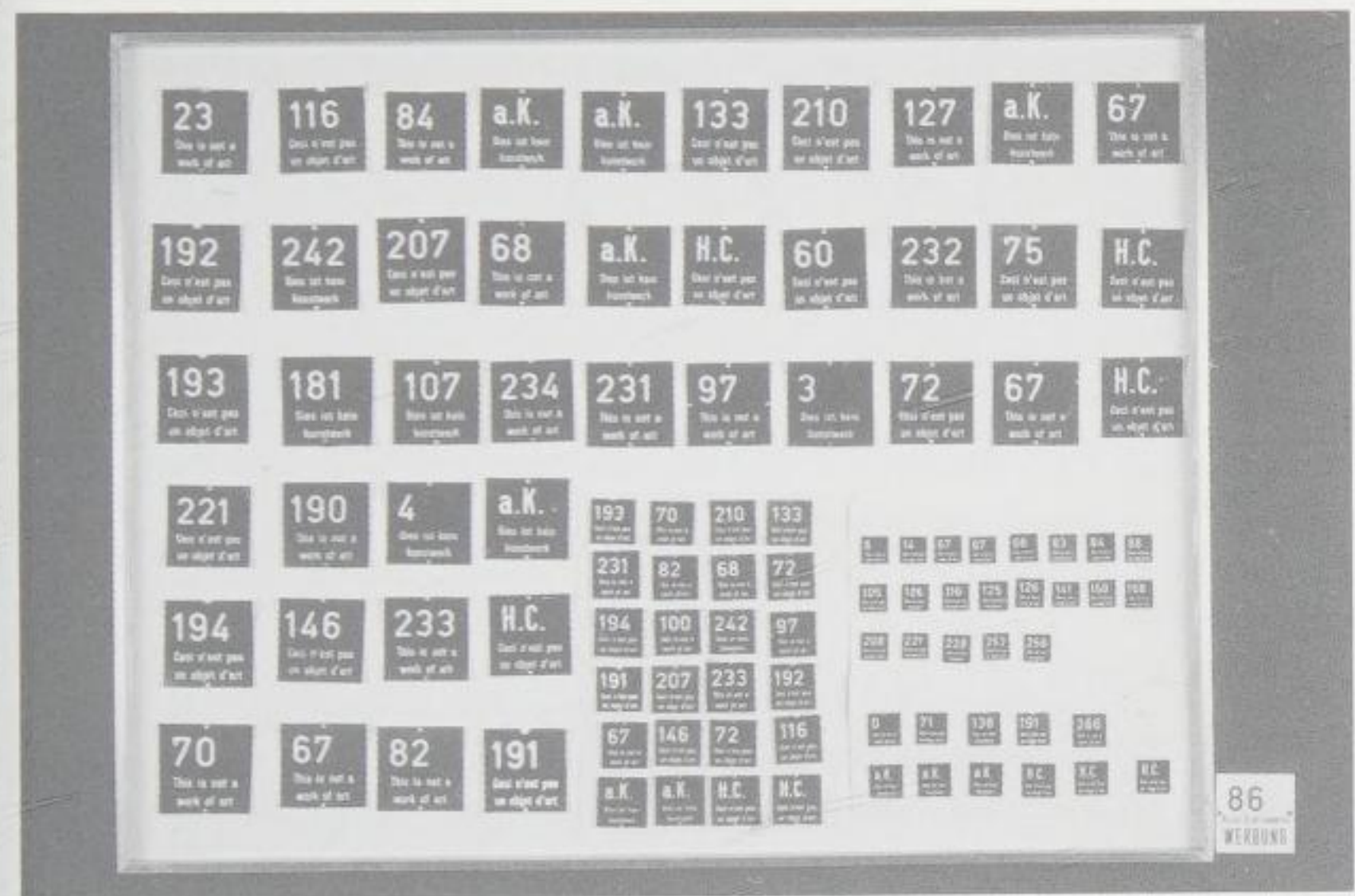
archive to visitors. One can say that the creation of a documentary installation is, 'objectively speaking', the true goal of any happening, performance or intervention art – even if the artists working in these fields mostly tend to reflect on their own art in different terms. This kind of documentation is not much different from the documentation that a contemporary manager uses to present certain commercial transactions, technological projects and institutional activities to a broader public. Installations using art documentation explicitly manifest the poetic of modern bureaucracy that increasingly shapes our everyday experience. The technique of art production functions here in the same way as the operational modes of modern bureaucratic systems.

These operational modes are not, of course, simply represented by art; rather, art documentation demonstrates a utopian potential that is inherent to any bureaucracy

Fig. 42
Marcel Broodthaers,
Section Publicité du
Musée d'Art Moderne,
Department des Aigles:
Section Publicité 1972
(details) Collection
Kunstmuseum Nordrhein –
Westfalen, Düsseldorf

and administrative activities as well as their equally unavoidable Kafkaesque logic. One might say that the art of the 1960s and 1970s almost always displays a very specific sense of humour. Søren Kierkegaard (1813–55) sharply distinguished between irony and humour. For Kierkegaard, irony was the manifestation of an allegedly infinite subjectivity that wished to triumph over the finiteness of things. The ironic laugh of romantic art is, in his view, the expression of the superiority that artists who consider their own subjective imagination infinite when they are confronted with the finiteness of their own lives and the things of this world. Humour, by contrast, manifests for Kierkegaard the insight of the artistic subjectivity into its own finiteness in

comparison to the infinite project it is supposed to realise.⁸ Now it is precisely such potentially infinite projects that the art of the 1960s and 1970s repeatedly formulated and presented, projects that make visible the infinite operation of the formal, logical system that determines both the individual processes of thinking and the way that modern social institutions function. The results of such projects can only be commensurable with the infinite code in a limited, finite way. The tension between an infinite project and its finite presentation and documentation thereby inevitably produces an effect that can perhaps best be described as the expression of an 'objective humour', and it makes it possible for the viewer not just to understand Minimal and Conceptual art, but also to enjoy it.



Notes

- 1 Wassily Kandinsky, *Concerning the Spiritual in Art*, New York 1947.
- 2 Guy Debord, *Society of the Spectacle*, Detroit 1973.
- 3 G. W. F. Hegel, *Phenomenology of the Spirit*, trans. A. V. Miller, Oxford 1977, p.365 ff.
- 4 Alexandre Kojève, *Introduction to the Reading of Hegel: Lectures on the Phenomenology of Spirit*, trans. James H. Nichols Jr., New York 1969, p.161.
- 5 'I have transformed myself in the zero of form'; see Kazimir Malevich, 'From Cubism and Futurism to Suprematism: The New Realism in Painting', in *Essays on Art*, ed. Troels Andersen, trans. Xenia Glowacki-Prus and Arnold McMillin, Copenhagen 1968, vol.1, p.19.
- 6 Jean-François Lyotard, 'The Sublime and the Avant-Garde', trans. Lisa Liebman, Geoffrey Bennington and Marian Hobson, in Andrew Benjamin (ed.), *The Lyotard Reader*, Oxford 1969, pp.196–211.
- 7 Michael Fried, *Art and Objecthood: Essays and Reviews*, Chicago 1998, p.164.
- 8 Søren Kierkegaard, *Kierkegaard's Concluding Unscientific Postscript*, trans. David F. Swenson, intro. and notes Walter Lowrie, Princeton 1941.

Johanna Burton

Mystics Rather than Rationalists

I.

'In elucidating the process of making art on a personal level, meta-art criticizes and indicts the machinations necessary to maintain this society as it is. It holds up for scrutiny how capitalism works on us and through us; how we therefore live, think, what we do as artists; what kinds of social interactions we have (personal, political, financial); what injustices we are the victim of, and which ones we must inflict on others in order to validate our work or our roles as artists; how we have learned to circumvent these, if at all, i.e. how highly developed we have had to become as political animals; what forms of manipulation we must utilize to get things done; what compromises we must make in our work or our integrity in order to reach the point where such compromises are no longer necessary; whether, given the structure of this society, there can be such a point.'

Adrian Piper¹

In 1977, the critic Robert Pincus-Witten (b. 1935) published a book of collected essays written during the previous decade, all of which discussed the art of the time. His introduction offers a cheeky pardon for the 'pinched scholarly mode of the earlier essays', explaining that he, along with many others, had been swept up in what he had come to regard as the prevailing discursive imperative of the early 1960s – one that, for artists and critics alike, 'corresponded to a closed formalist machine of judgment from which personal reference and biography were omitted'.² Such 'omissions', he argues, eventually surfaced as the return of the repressed in art-after-Minimalism, corresponding on a material level to artists' concerted deployments of 'eccentric processes, substances, and colorations', and on a social level to the revived attention of artists, writers and viewers alike to politics and ethics in the face of Vietnam, Watergate and the Women's Movement.³

Pincus-Witten gave his book a heady title that pronounced a newly historical nomenclature: *Postminimalism* – the 'post' self-consciously performing a double function, the way all such grammatical qualifiers do, by indicating a breach with the previous 'parent style' while simultaneously laying claim to the Oedipal privileges and neuroses accorded to members of that lineage.⁴ The critic considered this an umbrella term (similar, he argues, to Post-Impressionism) that could be usefully applied to 'numerous paths radiat[ing] from Minimalism's stylistic nexus', nearly defining Post-Minimalism's variations by way of symptomology.⁵ Here were so many unexpected mutations that evolved from the hallowed Petri dish called 'the cube'.

Indeed, Pincus-Witten arrived at three strains to represent the factions of Post-Minimalism. The first distinction he made was the 'Pictorial/Sculptural', pointing to a renewed

interest among artists in the expressive characteristics of materials, and in process as a primary element of their work (amounting to an unexpected recuperation of long renounced Abstract-Expressionist tendencies). Artists in this category – one emphatically aligned by Pincus-Witten with the Women's Movement – included Eva Hesse (1936–70), Lynda Benglis (b. 1941), Barry Le Va (b. 1941) and Keith Sonnier (b. 1941).⁶ His next classification was 'Epistemology', which, true to its name, comprised artists engaging 'an information-oriented abstraction, one that loosely honored, say, mathematical set theory, 0 to 9 formulas, Fibonacci series, "Golden Sections" or spectrum-based color sequences with their contingent analytic systems emphasizing red-yellow-blue primaries (rather than a sensibility-based choice of color)'.⁷ The main players here were Sol LeWitt (b. 1928), Mel Bochner (b. 1940) and Dorothea Rockburne (b. 1932), though a retrospective nod by Pincus-Witten anointed figures from Kazimir Malevich (1878–1935) to Jasper Johns (b. 1930) as forbearers. The final grouping, rather cryptically called 'Ontology' was an attempt to round up artists working with notions of 'the body', 'temporality' and 'the theatrical', heralding Benglis, Chris Burden (b. 1946), Dennis Oppenheim (b. 1938) and Vito Acconci (b. 1940) as artists whose family trees had roots in earth fertilised not only with Minimalism but also a dose of Dada to boot.

The most literally 'systems based' of Pincus-Witten's categories was, obviously, that which he dubbed 'Epistemology', and yet it is not so difficult now to see that his three variants of Post-Minimalism were, in fact, provisionally united in adopting, adapting and confronting all manner of systems – aesthetic, critical, ideological, political, institutional, art-historical and economic among them. However, the critic did not make such a connection, instead characterising 'Epistemology' as the most limited and limiting of the Post-Minimal proceedings – going so far as to name information-based stratagems functions of 'closed systems', and thus strangely aligned with the same formalist tendencies he so hoped his Post-Minimalist triad uniformly bucked. Near the end of his introduction, he makes his reservations clear in a short but illuminating paragraph:

The epistemological examination of 'pure knowledge' continues apace; however, work produced as a function of such closed systems may be said to be, by this moment, less an urgent matter than it once was. First theory was honored; then it was honored in the breach. Honor in the breach, especially in terms of its broad front appeal today, indicates the receding interest in a purely theoretically based art. Then again, honor in the breach is itself a Romantic update of a theory of art—one leading to a revived interest today in sensibility.⁸

Pincus-Witten's notion of 'honor in the breach' is telling. First, it becomes clear that some contemporary understandings of his day's systems-based (i.e. 'Conceptual') art were surprisingly restrictive.⁹ For while the author acknowledges elsewhere the many pressures exerted by social and political institutions, he clearly does not think of those as operating as and by way of systems *themselves* and, therefore, irrevocably entwined with 'epistemological examinations of "pure knowledge"'. While he cursorily notes that 'aspects of the conceptual movement addressed art wholly as a function of linguistic systems replete with philosophical and political ramifications', and eventually 'splintered into subsequent evolutions instigated by neo-Marxist critiques of capitalist culture', the implication is that such 'theory'-driven systems could not help but remain somewhat rarefied, perhaps even a little 'pinched' and 'scholarly'.¹⁰ In addition, the way 'out' of such closed systems (the way to 'open' them) seemed to be, for Pincus-Witten, a return to 'sensibility', to 'ontology' – in effect, to the body. Such a blatant division of the cerebral and the corporeal inscribed a much too easy equation, in which the body connoted the experiential while the mind performed the ideational mechanics of Enlightenment thinking, unmoored – in fact, necessarily removed –

from any unscientific relation to the world. For Pincus-Witten, a kind of residual will to autonomy handed down from Minimalism remained present in work that took methods operating by way of self-fulfilling, self-exhausting systematic tacks.¹¹ It was this perceived will to autonomy that seemingly occluded any 'outside' of epistemology for Pincus-Witten, and with it the messy, uncontrollable stuff of subjectivity, ethics and politics.

Such a largely rhetorical (even polemical) move by Pincus-Witten is helpful in defining just what a 'system' is, particularly as we look to the 1960s and 1970s as a period when ostensibly 'closed systems' become pried, cracked, breached or pleaded 'open'. In her recent book on the 1960s, for instance, art historian Pamela M. Lee gives a round-up of the disparate systems-related paradigms of that moment, remarking on fields as seemingly unrelated as cybernetics, environmental science and linguistics, to name just three.¹² Yet, such a discussion of the vicissitudes of systems suggests not that artists were taking them up with any *specificity*, any faithfulness, but that, on the contrary, they were taking systems up *abstractly*, as materials themselves to be transformed. Indeed, one wonders if it is not reasonable to posit systemicity at large as a kind

of 1960s zeitgeist, not only unsanctimoniously appropriated by disparate art practices, but issuing *from* them as well.¹³ The seemingly inherent bond – though perhaps really more a seductive analogy – between much art of the late 1960s and systemic inquiry corresponded to a shared desire to mark, and sometimes *make*, processes and contexts rather than discrete objects per se. And so, counter-intuitively perhaps, recourse to 'systems' enabled rather than denied access to the rhizomatic, perpetually variable and vehemently nonlinear, while making visible the myriad structures designed to contain and order.

This reading of art's intersection with an overarching concept (rather than any well-honed particular) of 'system' perhaps allows for a very different conception of artists operating in the 'epistemological' realm. In fact, considering works by, say, LeWitt in these terms undoes Pincus-Witten's argument that such exercises exist as necessarily closed. Taking up a *model* of 'system' rather than ascribing to any one of its literal (i.e., practically applied) permutations is to question *systemicity* itself, to experiment within rather than adhere to any rigorously defined set of terms. Does opening a system disable it or simply give it the means to expand indefinitely? Having identified a system (or five or eight), is it

always necessary to resist said system, jamming its metaphorical machinery, or is allowing it to run its course the most disabling move of all? *Pace* Foucault, are not the systems you *can't* see or access really the ones to worry about? And finally, are closed systems always so insidious as they sound, or do they, by framing themselves so completely, refer nonetheless to what they do not include?¹⁴ The set of questions, admittedly, shows this author's cards. While not every artist engaging elements of systemicity in the 1960s and 1970s would consider the possible socio-political tenets of such engagements as part of their work (or even unwelcome by-products of it), there can be no denying that, as Adrian Piper (b. 1948) once put it, 'artists are social: we are not exempt from the forces or the fate of this society'.¹⁵

This last sentence appears in Piper's 1973 essay titled, 'In Support of Meta-Art', from which my epigraph is also borrowed. The piece assumes a blatantly political stance, insisting that artists take responsibility for revealing the conditions – from material to institutional – of art making as such. Indeed, the prefix 'meta', itself culled from the language of systems, suggests that there is an inherent contingency between utter immersion in practices of art making and distanced reflection upon the

contextual framework supporting such practices. Dismissing the notion that any artist should attempt to (or possibly could) illuminate the workings of an entire social context, Piper makes the point that it is by concentrating on the very limited (i.e., closed) parameters of art that she is able to tap into social, ethical, philosophical and political values, and thus 'suggest the conditions of the society'.¹⁶ Piper had, five years previously, put forward a similarly constructed argument, in which the micro is invoked as an unexpected route towards the macro. Her 1967 'A Defence of the "Conceptual" Process in Art' parried negative claims that Conceptual art was the vulgar product of detached, 'objective' artists who refused deeply subjective involvement in the making of their work.¹⁷ For Piper, the less decision-making imposed upon a work of art, the better. Indeed, for her, the real 'limitations' to art were those compelled by the criteria – and the contrivance – of personal 'tastes'. She writes, 'Choices made through the criteria of subjective likes and dislikes are to me nothing more than a kind of therapeutic ego-titillation that only inhibit further the possibility of sharing an artistic vision (as if it weren't difficult enough a thing to do as it is)'.¹⁸

Given the trajectory of Piper's work in the years between these two texts (during which she moved from, for example, her 1968 *Sixteen Permutations on a Planar Analysis of a Square* to her performative 'Mythic Being' series of the early 1970s), it is possible to see how the notion of 'systemicity' could be read, by a single artist, as extending logically from the ostensibly hermetically analytical through to the socially investigative. *Sixteen Permutations* constituted a self-generating, ultimately self-eradicating, system of geometric variations. Yet 'Mythic Being', in taking subjectivity rather than geometry as its material, also tested the limits and end-points of variations, particularly those that strained imposed structures of social hierarchy, such as race, gender and class. And in both cases the artist adopted strictly delineated processes, utilising strategies that could appear dogmatic, closed, parodic or self-interested, but which ultimately revealed themselves not only as 'open' but as viable strategies of resistance: systems taken up and internally divided.

A reading of systems-inflected art as dialectically balanced between miming and mining oppressive socio-political structures

was taken up specifically by Benjamin H.D. Buchloh in his 1990 essay, 'Conceptual Art 1962–1969: From the Aesthetic of Administration to the Critique of Institutions'.¹⁹ There, the art historian nominates the square (and its three-dimensional equivalent, the cube) the self-reflexive form extraordinaire. The square and the cube, with their recourse to spatial mapping and psychic administration, not to mention a vehement (if fictive) stance against illusionism, amounted to what Buchloh sees as the 'visual forms that correspond most accurately to the linguistic form of the tautology'.²⁰ And yet, for Buchloh, here the inherently needless repetition constitutive of tautology did *not* drive it back in on itself indefinitely or rhetorically but, rather, extended smoothly into the fabric of capitalist culture. Anything but epistemologically pure withdrawal from the world, aesthetic tautology was born from particularly modern conditions and the newly formed post-war middle class. Indeed, as Buchloh sees it, 'this aesthetic identity is structured much the way this class's social identity is, namely as one of merely administering labor and production (rather than producing) and of the distribution of commodities'.²¹

While the story of Conceptual art (and narratives arguing strains of Minimalism as itself 'proto-Conceptual') is often propped on the fantasy of non-referential, radically self-reflexive strategies, Buchloh argues for the unfeasibility of such a paradigm. In fact, he points to the ways in which Minimalism and its 'posts-' are not only aligned with their historical moments but completely entwined with those moments' effects and affects. Arguing that an increasingly passive population acclimated itself to the conditions of Debordian spectacle culture,²² Buchloh addresses parallels of the cube both in material (industrial and mass production) and social (akin to Gramsci's production of consent²³) spheres. Not merely 'destabiliz[ing] the boundaries of the traditional artistic categories of studio production, by eroding them with modes of industrial production in the manner of Minimalism', he writes, artworks using the square and the cube 'went further in their critical revision of the studio versus the discourse of production/consumption'.²⁴ One has only to revisit Hal Foster's crucial 1986 'The Crux of Minimalism', to remember that Pop and Minimalism – generally thought antithetical in impulse, if temporally coincidental – have plenty in common, from serial production to an apparent reductivism, to the use of the ready-made,

even down to supposed blockages in or transcendence of meaning.²⁵ Such an overlap, Foster suggests, points out the conditions of high capitalism in the 1960s and, significantly for the current discussion, how those conditions might indicate not only a collapse of the distinction between avant-garde and commercial strategies but also a general collapse of subjectivity on a large-scale.

It is for these reasons that Buchloh, in looking at artists ranging from Robert Morris (b. 1931) to LeWitt, Ed Ruscha (b. 1937) to Hans Haacke (b. 1936), Andy Warhol (1928–87) to Daniel Buren (b. 1938), suggests that the potency of tautology lies in its equal ability to critique institutions *and* support them. Tautology, as Buchloh defines it, is not only the character of the spectacle (which 'covers the entire surface of the world and bathes endlessly in its own glory', writes Debord), but is, by the early 1960s, 'a universal condition of experience'.²⁶ (It is significant that in taking tautology as model, and in dubbing its properties 'universal' for the mid-twentieth century, it is possible to render questions regarding race, class, gender and community null and void.) Interestingly, to brace oneself against the socio-political consequences of tautology, then, one needed to be willing to be even more heavily armed

with it. In 'successful' instances of institutional critique (Buren, Lawrence Weiner [b. 1940] and Haacke were named as such by Buchloh), tautological structures (social and aesthetic) were critically approached by retaining, even magnifying, recognisable links to instrumentalising traditions while destabilising and exposing them, temporarily rendering their procedures as modifiable.

Buchloh ends his essay by disclosing that Conceptual art, as far as he is concerned, ultimately failed, and not to his surprise. Its temporary usurpation of the aesthetic of administration, utilised to effect a strong critique of institutions, was borrowed back – enhanced and unstoppable – by the culture industry that had spawned it anyhow. Buchloh's lament (understandably put forward at the end of a decade that had seen the rise of Neo-Expressionist painting) seemed to occlude the possibility of any outside to the system of culture: to resist it was, all said and done, to feed it against your will. And yet, artistic resistances continued (and continue), nonetheless. How and why do they perpetuate – against heavily stacked odds and even while bound, we are told, to be unsuccessful?

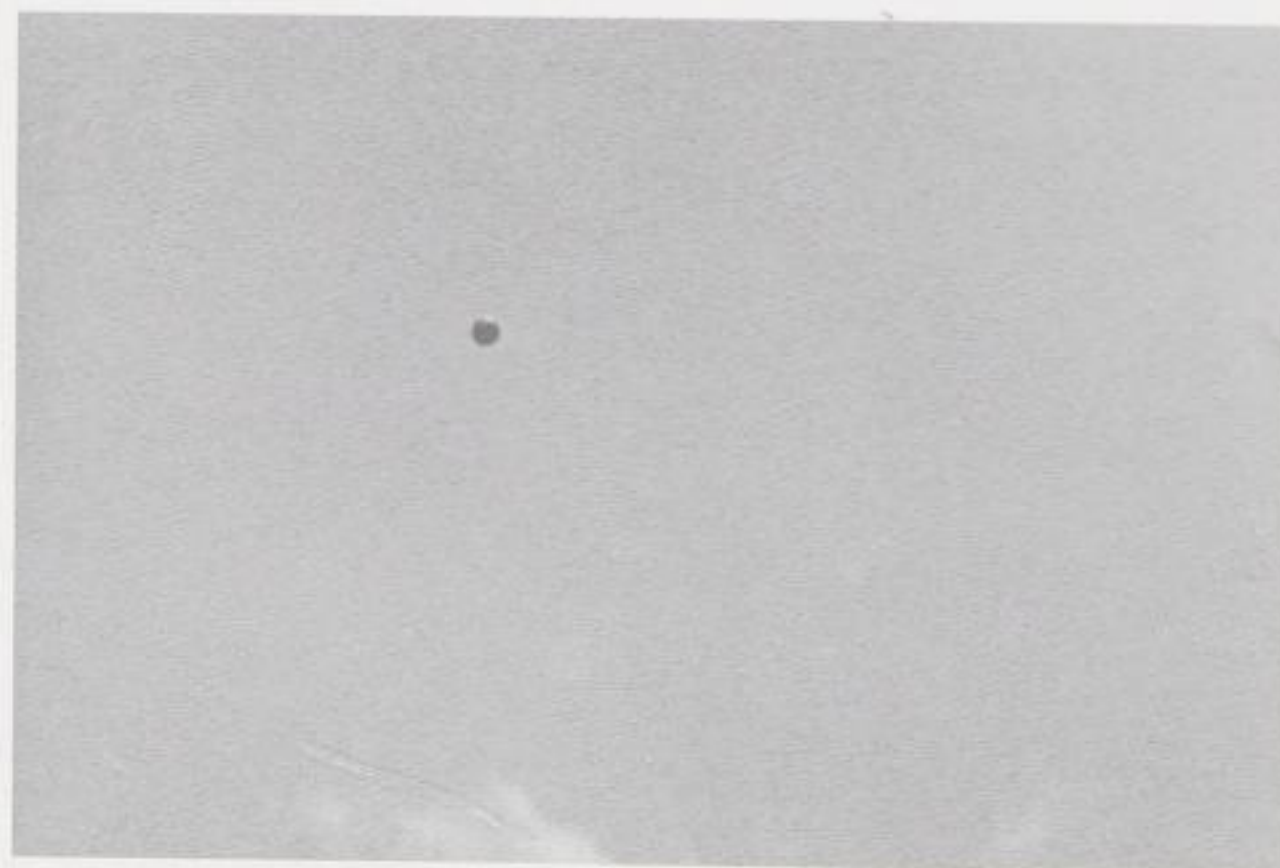
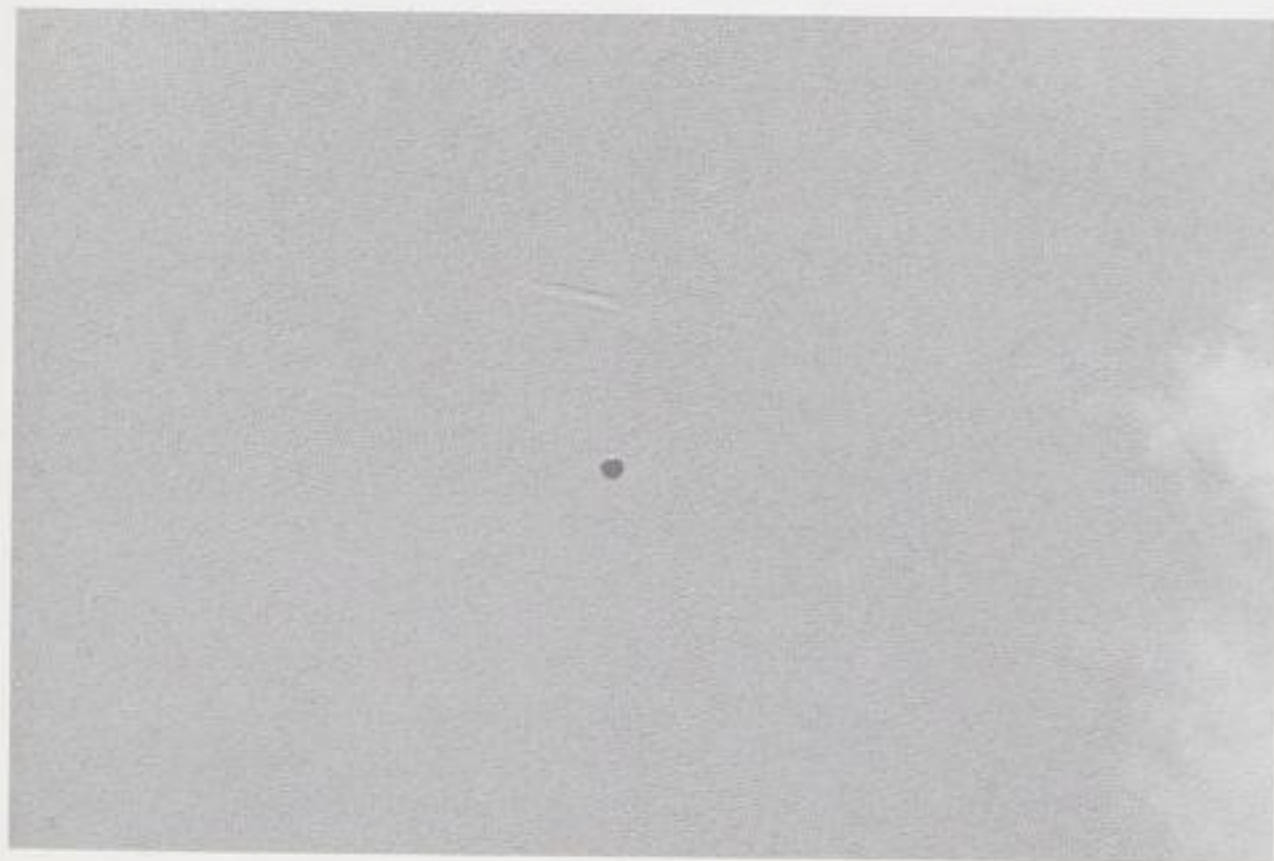
II.

'Measurement is one of our means of believing that the world can be reduced to a function of human understanding. Yet, when forced to surrender its transparency, measurement reveals an essential nothing-ness. The yardstick does not say that the thing we are measuring is one yard long. Something must be added to the yardstick in order to assert anything about the length of the object. This something is a purely mental act ... "an assumption".'

Mel Bochner²⁷

Early in life, we are told: *you are not the centre of the universe*. This statement, however, speaks to one of the fundamental problems of our worldly experience, since, to all intents and purposes, we cannot help but perceive things as if we are. It is hardly my contention that artists should strive to regain the (fictive) sense of world-self convergence they may have (briefly) experienced as children but, rather, that we consider how this inherent aspect of subjecthood (its self-centring-at-any-cost impulse, so to speak) might, in fact, have something to say about the way in which systemicity operates in artistic procedures. Mel Bochner's 'Serial Art, Systems, Solipsism', written in 1967, posits the artist who uses serial

methods as someone making work that is not merely self-centred but out-and-out solipsistic.²⁸ Solipsism is, of course, the idea that an object (or subject) can know nothing but itself and its own modifications and so, ultimately, presumes that said 'self' is the only thing in existence. Usually dealt as a slanderous jab, Bochner utilises the term affectionately, dubbing solipsistic serialists only those artists for whom he holds the highest respect – Eadweard Muybridge (1830–1904), LeWitt, Donald Judd (1928–94), Robert Smithson (1938–73), Hanne Darboven (b. 1941), Eva Hesse, and Dan Graham (b. 1942) among them.

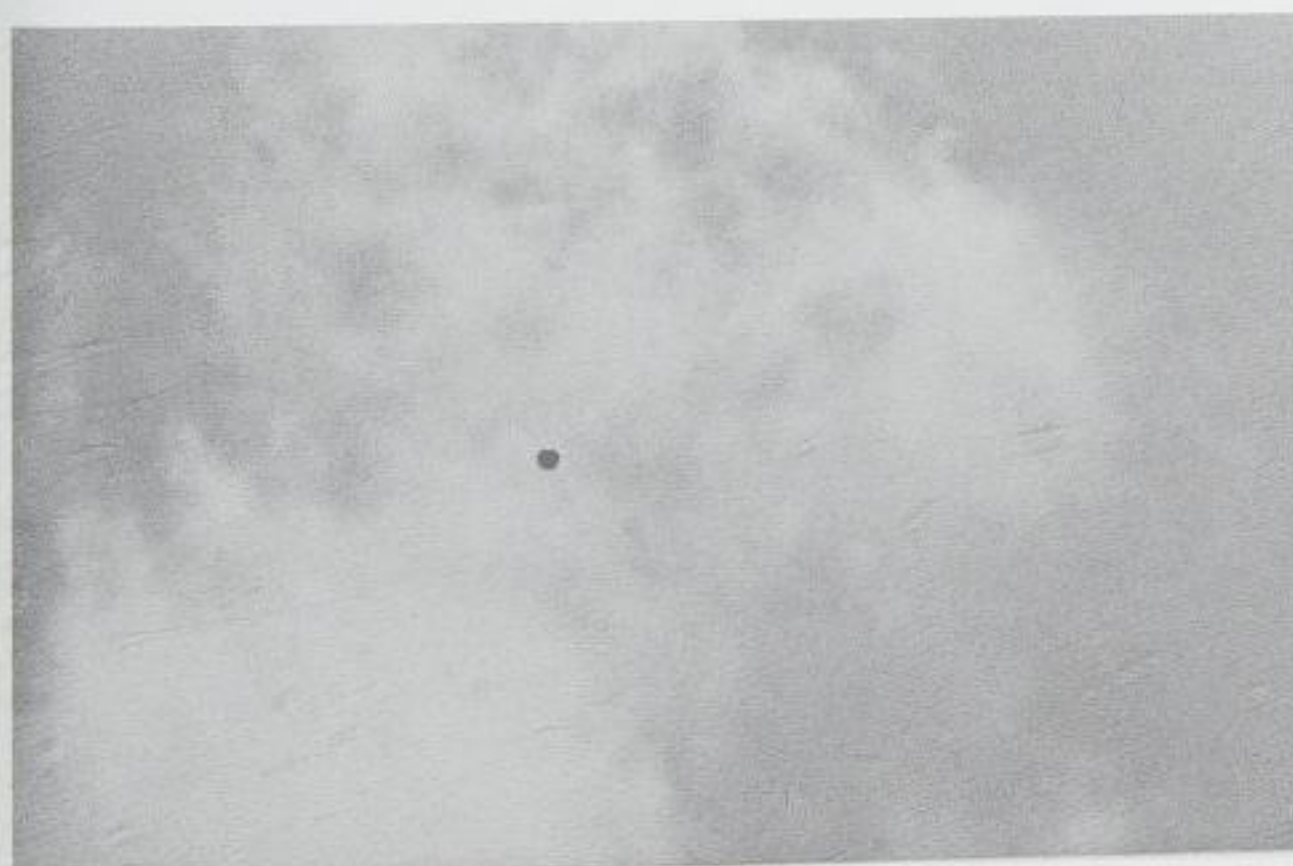


Bochner readily admits that 'no stylistic or material qualities unite the artists using this approach because what form the work takes is unimportant', but goes on to use LeWitt as his prime example of the solipsistic method. LeWitt's is, Bochner argues, a 'rigid system of logic that excludes individual personality factors as much as possible. As a system it serves to enforce the boundaries of his work as "things-in-the-world" separate from both maker and observer.'²⁹ Interestingly, Bochner's recourse to Husserlian phenomenology³⁰ both enforces the supposed boundaries between work, maker and observer, and makes clear the impossibility of separating them. And

while touted as founded on rigid logic and little else, LeWitt's structures are inherently *haywire*, imploding in on their obsessively rendered frameworks. Bochner concedes (though does not question the implications) that when one stands before a LeWitt, 'one is overwhelmed with a mass of data – lines, joints, angles. By controlling so rigidly the conception of the work and never adjusting it to any predetermined ideas of how a work of art should look, LeWitt arrives at a unique perceptual breakdown of conceptual order into visual chaos.'³¹ Such a description, on the face of things, would seem to make the solipsist not so very different from the tautologist; indeed, Bochner describes serial

art as 'highly abstract and ordered manipulations of thought [that] is self-contained and non-referential'.³² And yet, one major difference applies. Where tautology operates by way of seemingly needless repetition, a magnification of its terms can reveal those of the structure it subconsciously resembles, whether institutional or aesthetic (though likely both). Solipsism, on the other hand, magnifies *not* that structure but instead the terms appropriated – by whatever means – to *deny its existence*. This is to say, the solipsist operates according to a kind of exponential negativity by which, as Bochner puts it, 'random dimensions of reality lose their qualities of extension. They become flat and static.'³³

Fig.43
John Baldessari,
*Trying to Photograph
a Ball so that it is in the
Center of the Picture* 1972–3
Courtesy the artist and
Marian Goodman Gallery,
New York



Such a flattening, of course, does not make reality disappear but does render it manageable. This is the *something* that Bochner insists must be 'added to the yardstick in order to assert anything about the length of the object'. And while that *something* can be characterised as 'purely a mental act ... "an assumption"', it seems clear that the mental act corresponds largely to managing an *interior* reality rather than any exterior one. In her 1978 'LeWitt in Progress', Rosalind Krauss (b. 1940) stresses the compulsive system utilised by an artist who, until then, was almost universally understood as simply applying mathematical formulas to visual form.³⁴ Comparing the artist to the protagonist of Samuel Beckett's novel *Molloy* (1951), she marks the similarity

between LeWitt's process and the fictional character's system for stone sucking. Owning some sixteen stones and having four coat pockets in which to divide them, Molloy ultimately realises he has to do away with symmetry to ensure the stones' continual circulation. A self-imposed activity, sucking stones is all consuming and conveniently off-kilter, so that it will hardly become mechanical or habitual, but rather will remain a source of satisfying discomfort. (One is reminded of John Baldessari's 1972–3 *Trying to Photograph a Ball so that it is in the Center of the Picture*; the resulting suite of photographs shows an orange ball thrown against a blue sky, in imperfect approximations of exactitude: see fig. 43.) Similarly, Krauss argues, LeWitt is compelled to play out what she sees as

subversive ideas, these addressing themselves to 'the purposelessness of purpose, to the spinning gears of a machine disconnected from reason'.³⁵ After this stunning reading, however, Krauss distils what she takes to be Molloy's and LeWitt's shared 'extraordinary performance[s] of thinking' as simply 'pretext[s] for a display of skill'. Dubbing Molloy's frantic circulation of stones and LeWitt's permutating squares as 'false "problem[s]"' that manifest fully in 'the brilliance of the routine', Krauss' reading is that such systems operate as no more than marvellous exercises, logical gymnastics. And yet, I would argue, Molloy's and LeWitt's obsessive recourses to systemicity operate far more urgently than such an assessment would allow. Hardly inconsequential games of intellectual skill, they provide mechanisms for

Fig.44
Valie Export,
Finger Square from
*The Geometric
Sketchbook of Nature*
Courtesy Charim
Galerie, Vienna

a kind of self-preservation.³⁶ Billed by Krauss as tasks self-assigned to delight their executors, both stone sucking and *122 Variations of Incomplete Open Cubes* 1974–81 might be seen, rather, as methods employed to lessen the brunt of stimulus, to literally slow down and thus re-make not so much the *real* as one's relationship to it. Freud's concept of the protective shield (Reizschutz) lends another way of thinking the solipsist who, by insistently denying the world, is only all the more aware of its pressures and exertions. By establishing one or several (nearly magical) systems to keep the outside at bay, the solipsist cultivates a kind of shield, one predicated on mental manoeuvres of perpetual ordering and reordering. (It is interesting to note that, in General Systems Theory, open systems are unsurprisingly characterised by their dynamism, but they

also rather counter-intuitively tend towards higher levels of organisation than do closed systems, which themselves generally maintain or decrease in organisation over time.) Freud describes this protective shield as a kind of corpuscular psychic membrane generated by its owner to play the functional role of literally sampling from the world and letting in only survivable amounts of its otherwise overwhelming stimuli.³⁸

If the dead-end of tautological systemicity is that it literally obtains its shape from those structures it attempts to resist, solipsism offers a quite different set of terms. Indeed, the eccentricity that Pincus-Witten identified in much Post-Minimalist work (though he failed to see its manifestations in 'Epistemology')



may be attributed to a move away from tautology and toward solipsism. The solipsist's objects, procedures and ideologies express discrete, self-generated (and self-generating) systems used to navigate – rather than mirror – the world. The solipsist, by definition, cannot appropriate systems culled from outside him or herself. And yet, ironically, by so diligently honing methods to resist exteriority, the solipsist ultimately reveals the delicate connection between self and social. The solipsist presents a possibility heretofore unconsidered: by constructing a means of denying the world, one necessarily constructs

a system of belief in relation to it. Such a system is often seemingly strange or illogical, not grounded in collective experience but in individual tactics of negotiation. But this is precisely why the solipsist, despite all best intentions, is so invested in the world. Prying open seemingly closed systems by disregarding their imperatives involves not only a knowledge of them but a (likely ill-founded) faith that they can be subverted; the question for the solipsist becomes, *How to manage the unmanageable?* Make it flat, make it mine, hold it at arm's length, rotate it, catalogue it, ingest it (but only in pieces).



Fig.45
Joan Jonas,
Vertical Roll 1972 (detail)
Electronic Arts Intermix,
New York

(opposite)
Fig.46
Martha Rosler,
Gladiators 2004
Courtesy the artist
and Gorney Bravin
+ Lee, New York



In other words: pretend, suspend, assume. LeWitt once defined Conceptual artists (but let's substitute solipsists since the rules are meant to be changed) as 'mystics rather than rationalists. They leap to conclusions that logic cannot reach.'³⁹

It would seem contradictory to posit the self-interested solipsist as potentially the most socially and politically engaged of artists and yet, I would argue, this is the case. By obsessively and even mythically concocting largely unsurpassable (because illogical parading as logical) protective systems (by, that is,

leaping to conclusions unreachable by logic), the solipsist simultaneously constructs a clear illustration of present threats *and* unusual means to deter them. The metaphor of tautology disallowed anything but an all-consuming 'universal experience', whereby systems could necessarily be recognised in institutional and commercial guises but never in subjective ones. The solipsist, however, is *all subject*, disbelieving of 'universal experience' altogether. No wonder that, considered in terms of solipsism, much work of the 1960s and 1970s may be understood as addressing

not only the tautological systems of administration but, often under the radar, those of subjectivity and identity as well. One can, for instance, read Mel Bochner's 1969 *Measurement: Room* (no.14) as perfectly logical-tautological; and yet, while clearly commenting on the ideational structures of linguistic theory, institutional practice and art history (Minimalism most particularly), the work also addresses its viewer overtly, invoking literal and figurative practices of measurement both social and bodily (how do *you* measure up?). The ongoing experiments of Valie Export (b. 1940) in the landscape and *as* architecture

Fig. 47
Jeremy Deller,
*Cop with Flowers San
Antonio, Texas* (still from
Memory Bucket 2003)
Courtesy Gavin Brown's
enterprise, New York

(opposite)
Fig. 48
Jeremy Deller,
Untitled (still from
Memory Bucket 2003)
Courtesy Gavin Brown's
enterprise, New York



challenged the Freudian distinction between *being and having* by inhabiting both terms, often simultaneously (fig.44). Export's best works, like Piper's, show how deeply related the epistemological and the bodily are, testing and confusing the limits of both and paying particular attention to their operations in social structures and hierarchies. If these artists' works have been described as politically and aesthetically 'aggressive' (think of Export's 1969 *Genital Panic* or Piper's 1970 *Catalysis III*), this is a telling simplification of what is their inherently *defensive* nature. Indeed, one can argue for the many complicated guises of defensiveness and

its socio-political nature. The lovely plunges off bikes and trees and into the canals and rivers of Amsterdam enacted by Bas Jan Ader (1942–75) were as much a defence against the loss of Romanticism as a reclamation of it. Works by Hélio Oiticica (1937–80) and Lygia Clark (1920–88), such as the former's *Penetrables* and the latter's *Relational Objects*, defended against the notion of a self that was not contingent, positing all subjects as richly defined by communal and multiply sensorial experience. *Vertical Roll* by Joan Jonas (b. 1936) defended against containment by so many systems – technology, gender, language – by

causing them to stutter, to show their seams (fig.45). In 1973 Mary Kelly (b. 1941) dispelled Lacan's own well-concocted defence against the possibility for female desire⁴⁰ with *Post-Partum Document*. Martha Rosler (b. 1943) made *Bringing the War Home: House Beautiful* in 1969–72 as a defence against the apathetic numbness born of late capitalism. Now, in the face of the Bush administration and its war on Iraq, she has taken up producing these images anew – after a thirty-year hiatus – to insist that some systems merely go underground for a time.

Such examples of solipsism would seem to contradict the notion of a self that recognises nothing but its own existence. While admittedly pressing the boundaries of its definition, I have suggested the possibility that solipsism manifests highly individualised systems, which are created and sustained by artists in order to critically – and often pleasurably – inhabit an otherwise tautologically limited world. One wonders, writing in 2005, what role systemicity plays in art, let alone other social and institutional spheres. The visibility and emphasis on systems in the 1960s and 1970s must have appeared as overwhelming and impending to artists, yet now the logic of the system seems to have taken on an omnipotent status: both everywhere and nowhere at once. It is instructive to take the model of Rosalind Krauss's 'Sculpture in the Expanded Field' as model for such thorough propagation. Writing

in 1978, Krauss argued that the category 'sculpture' had become so radically elastic that it was hard to keep anything from being included in its scope.⁴¹ Such an ostensible 'expansion', however, she argued, could just as well be considered an out-and-out collapse. Perhaps such a dialectic applies to systemicity. Now that there is nothing not run by, referring to, or bound by systemicity, it operates as at once all-inclusive and weirdly obsolescent as an ideological structure.

It is, thus, tempting to end the present discussion by recognising the limits of the solipsistic, to show the ways in which it can and has been usurped. Yet, a crucial dimension of solipsism is that its manifestations, no matter how politically or socially illuminating, are modelled neither on politics nor society but, rather, on systems that will resist certain





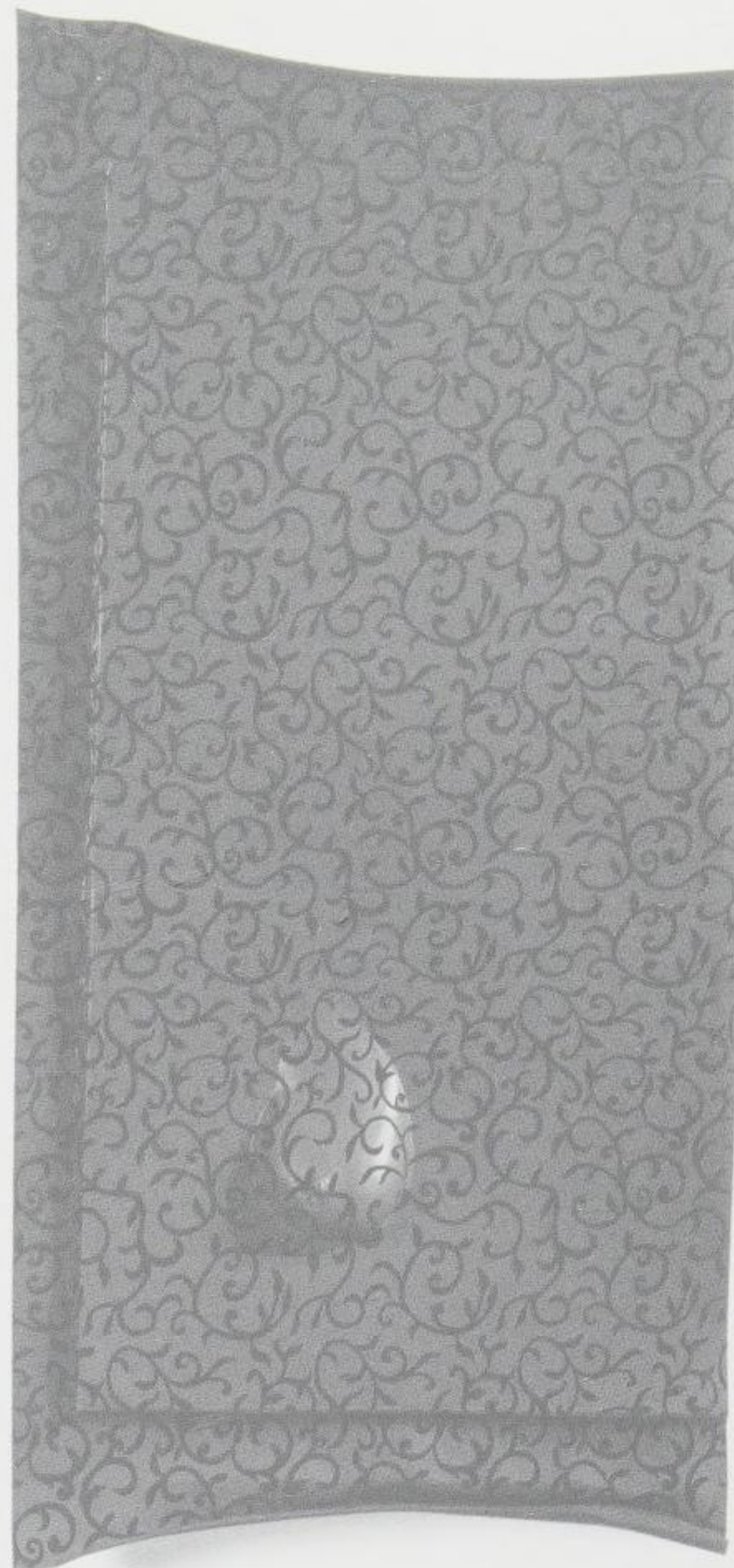
Fig. 49
Lucy McKenzie and
Pauline Olowaska,
Oblique Composition
2003 (production still)
Courtesy Cabinet Gallery,
London

Fig. 50
Trisha Donnelly,
Canadian Rain 2002
Courtesy the artist and
Casey Kaplan, New York

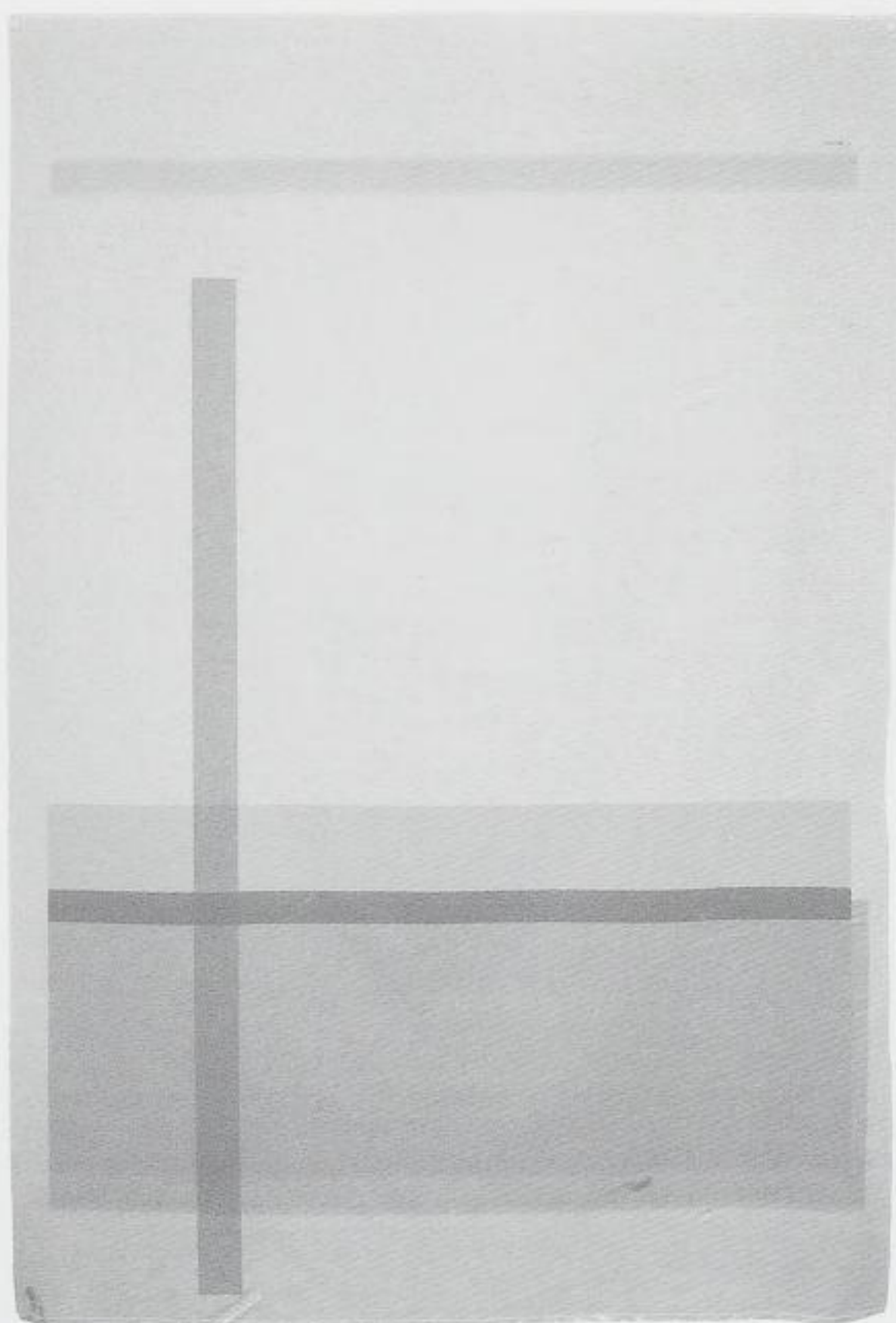
of their terms. Not mimicking the culture industry or its modes of administration, the solipsistic system reveals something of the modes of day-to-day existence experienced by its makers – these illogical and sometimes even contradictory. Wittgenstein's assessment that 'Solipsism, when its implications are followed out strictly, coincides with pure realism' is hardly disputable, particularly if we consider that 'pure realism' is experienced *individually* rather than generally.⁴²

This is hardly to say that the solipsist does not fail; indeed, solipsism's success as an intimate, politically invested system is *predicated* on its failure to remain impenetrable, self-involved, in denial of the world. And its defence mechanisms, too, can be seen as failures: these mythically produced belief systems are less literal protection than sleights of hand performing as such. Yet, as *systems of belief* that must be considered

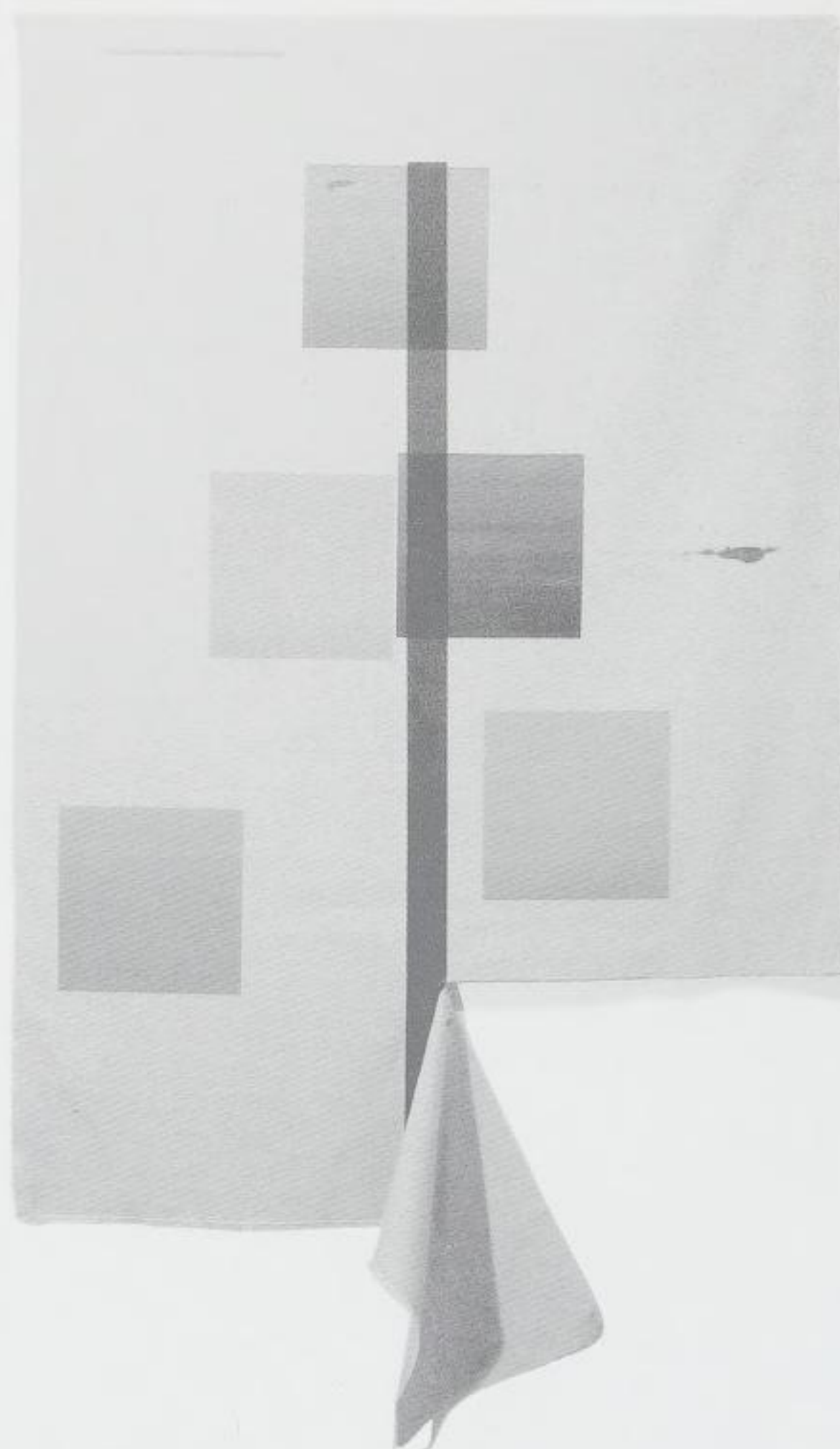
unexpected sites of 'realism', the solipsist's endeavours – aesthetic, ideational, bodily – disable (however delicately) any tautologically totalising (read: global) system, any 'universal experience', from fully assuming unfettered representation. The stubborn solipsist lays pitfalls sometimes without even trying. *Pretend, suspend, assume.* And so I conclude with my own hopeful list of contemporary solipsists: Jeremy Deller (b. 1966), Trisha Donnelly (b. 1974), Wade Guyton (b. 1972), Lucy McKenzie (b. 1977) and Seth Price (b. 1973), all of whom move stones of sorts through systematically conceived, eccentrically manifested, pockets and mouths (figs. 47–52).⁴³ Or perhaps I just need to believe they do.



(above)
Fig.51
Seth Price,
Different Kinds of Art 2004
Courtesy Reena Spaulings
Fine Art



(below)
Fig.52
Wade Guyton,
Untitled 2004
Courtesy the artist



Notes

1 Adrian Piper, 'In Support of Meta-Art', <i>Artforum</i> , October 1973, pp.79–81. Reprinted in <i>Conceptual Art: A Critical Anthology</i> , eds. Alexander Alberro and Black Stimpson, Cambridge, Mass. 1999, pp.298–301.	10 Pincus-Witten 1977, p.17.	1967–1992, Cambridge, Mass. 1996, pp.3–4.	to an exterior is first pursued by focusing on an <i>interior</i> . Husserl discusses the necessity of first reflecting on the content of the mind to the exclusion of all else.	way of the very personal information provided to them (and filtered by them) from the world. The role of such singular interpretations leading to greater social understanding was largely based on the exchange of speech. Thus, the attentiveness to language by artists such as Weiner and Bochner can be seen as not simply investigations of words per se but, in addition, as interpretive tools for understanding the world.
2 Robert Pincus-Witten, <i>Postminimalism</i> , New York, 1977, p.13. Having sworn off his own participation in the 'closed formalist machine of judgment', the critic's later essays in the same volume are filled with lavish biographical detail. In fact, essays on Mel Bochner and Jackie Ferrara, among others, detail not only the lives of the artists but Pincus-Witten's experiences learning about them.	11 This particular proto-Conceptualist understanding of Minimalism, of course, largely discounts the dialectical nature of much Minimalist work whose formalism was both upheld and undone by its phenomenological underpinnings. The seeming incongruity of a very general abstract form – such as the cube – appealing very particularly to the viewer's body (not to mention its position in space and time) might in fact <i>link</i> mind and body in a way not theretofore articulated in the history of art. Pincus-Witten's initial intuition to tangle the three strands of Post-Minimalism (and, thus, the body and theatricality with epistemology) seems more compelling than his ultimately overriding wish to divide them.	18 <i>Ibid.</i> , p.3.	31 <i>Ibid.</i>	
3 <i>Ibid.</i> , p.14.	12 See Pamela Lee, <i>Chronophobia: On Time in the Art of the 60s</i> , Cambridge, Mass. 2004, especially Chapters 1 and 4. Lee's particular interest in systems is in the way they necessarily play out in <i>time</i> , never graspable as gestalt. Such a reading is, of course, deeply linked to (and contextualised by Lee in terms of) Michael Fried's famous deploration of Minimalist objects, which he felt elided 'presentness' and promoted 'theatricality'.	19 Benjamin H.D. Buchloh, 'Conceptual Art 1962–1969: From the Aesthetic of Administration to the Critique of Institutions', <i>October</i> , 55, Winter 1990, pp.105–143.	32 <i>Ibid.</i> , p.100.	
4 <i>Ibid.</i> , p.15.	13 The term 'systemicity' relates to Systems Dynamics and describes a variety of complex, dynamic behaviour. There are three main strands of systems theory associated with the 1960s and 1970s – biology, cybernetics, and information theory. All are variously concerned with communication and transaction and posit the importance of dynamic relationships whose sensitive balances are obtained through the constant, if often incredibly subtle, shuttling of input and output.	20 <i>Ibid.</i> , p.130.	33 <i>Ibid.</i>	
5 <i>Ibid.</i>	14 The idea of 'closed systems', as aligned with 'formalism', 'theory', science and unidirectionality, is more a parody of systemicity (and formalism, theory, and science) than any sustainable description of it.	21 <i>Ibid.</i> , p.128.	34 Rosalind Krauss, 'Sol LeWitt in Progress', in <i>The Originality of the Avant-Garde and Other Modernist Myths</i> , Cambridge, Mass. 1985, pp.244–58.	43 In his recent <i>Memory Bucket</i> , Deller presents <i>versions</i> of place and memory (Waco and Crawford, Texas; official reports <i>and</i> personal narratives) because versions exist. Wade Guyton produces paintings that are not painted and drawings that are not drawn – objects that simultaneously bear the odour of 'periods' we are belatedly taught to view as avant-garde (i.e. Constructivism) and those dismissed as 'surface' (i.e. 1970s furniture design). Lucy McKenzie resurrects and combines styles and scenes – e.g. the Bauhaus and Cabaret Voltaire (think art and design icons from the 1920s <i>and</i> alternative bands from the 1980s; both make appearances here) – while attending to the literal <i>labour</i> (gendered and classed) supporting them. Seth Price presents <i>representation as such</i> as so many examples of mute vessels, filled and refilled with meaning. His last exhibition included lunar landscapes of bread, sheets of moulded plastic bulging with breasts and fists, stacked DVDs of a beheading downloaded from the Internet and a 1970s home video by Joan Jonas of a predictably heated debate between Richard Serra and Robert Smithson. Trisha Donnelly often makes her rituals uncomfortably visible: in her video <i>Canadian Rain</i> , she enacts a series of weird arm gestures that are ostensibly her version of a rain dance but which are so inexplicably moving that one wonders about their actual effects. In her last live performance in New York, she walked a group through the city streets and then pronounced she had – for some ten seconds or so – stopped time and then started it up again. As with Bochner's solipsists, these artists make works that have little affinity stylistically or materially; what is clear to this generation of navel-gazers, however, is that in building their own systems of belief they refer not so much to math or Minimalism as to mythic constructions that traffic as history.
6 Pincus-Witten's rationale for this alignment with gender was well intentioned, even recuperative, but ultimately reinscribed the age-old stereotype of 'women's art', describing the works included in this category as sharing an impulse toward the emotional, the organic and the colourful.	15 Piper, 1973, p.301.	22 Guy Debord's (1931–94) famous characterisation of the contemporary condition as <i>spectacle</i> summarised a number of his ideas: that all forms of relationships have become completely mediated; that the possibility for experience has emptied out; that nothing exists outside of the workings of capitalism. Guy Debord, <i>The Society of the Spectacle</i> , Detroit, 1970.	35 <i>Ibid.</i> , p.255.	
7 <i>Ibid.</i> , p.17.	16 <i>Ibid.</i> , p.300.	23 Antonio Gramsci (1891–1937) argues, in his Marxist conception, that hegemony is maintained because it generates popular identification (the fantasy of choice) with its own oppressive systems. See his <i>Prison Notebooks</i> , New York, 1992.	36 <i>Ibid.</i> , p.258.	
8 <i>Ibid.</i> , p.18.	17 Adrian Piper, 'A Defense of the "Conceptual" Process in Art', in <i>Out of Order, Out of Sight. Volume II: Selected Writings in Art Criticism</i>	24 <i>Ibid.</i> , p.133	37 While Krauss <i>does</i> note the similarity in kind between LeWitt's processes and those of obsessive neurotics – both focused around compulsion, repetition, ritual and exactitude – she ultimately aligns these traits with 'an outburst of skill' rather than a psychological / subjective state.	
9 The nomination 'conceptualism' is, like other such terms, largely debated, both in terms of definition and time period. The recent <i>Conceptual Art</i> anthology, edited by Alberro and Stimpson, takes the years 1966 to 1977 to describe Conceptual art's temporal brackets. (It is interesting to note that these are nearly the exact years chosen by Pincus-Witten for Post-Minimalism.) 'Conceptual' was used by Pincus-Witten in order to broadly denote art of the late 1960s and early 1970s that was particularly drawn to linguistics. Artists, critics and historians used (and continue to use) the term in various ways, and some – many the most associated with Conceptual practices – found it limiting. Mel Bochner, for instance, felt 'conceptualism' marked too easy a dichotomy between perception and intellection and appeared to link material absence with transcendent value. See his 'Excerpts from Speculation (1967–1970)', in <i>Artforum</i> , May 1970, pp.70–3. Reprinted in <i>Conceptual Art</i> , 1999, pp.192–6.		25 In Foster's <i>The Return of the Real</i> , Cambridge, Mass. 1996, pp.34–69. Originally published in <i>Individuals</i> , Los Angeles and New York, 1986, pp.162–83.	38 Hal Foster has compellingly written on the role of the protective shield, particularly as it operates in spectacle culture, which typically subsumes any critical impulse into waves of distraction. His discussion of technology as <i>both</i> a stimulus and shield against that stimulus is especially pertinent to my own discussion, since the 1960s and 1970s see such a (correlatable) rise in both capitalist production and technological innovation. See his 'Whatever Happened to Postmodernism?', in Foster, 1996, particularly page 220.	
		26 Debord as quoted in Buchloh, <i>ibid.</i> , p.130. From Debord 1970, section 13, n.p.; Buchloh, p.129.	39 Sol LeWitt, 'Sentences on conceptual art', in <i>O-9</i> , no. 5, January 1969, p.3.	
		27 Quoted in Anne Rorimer, <i>New Art in the 60s and 70s: Redefining Reality</i> , London, 2001, pp.184–5.	40 Jacques Lacan (1901–81).	
		28 Mel Bochner, 'Serial Art, Systems, Solipsism', <i>Arts Magazine</i> , Summer 1967; reprinted in <i>Minimal Art: A Critical Anthology</i> , ed. Gregory Battcock, Berkeley, 1995, pp.92–102.	41 In Krauss's <i>The Originality of the Avant-Garde and Other Modernist Myths</i> , Cambridge, Mass. 1985, pp.276–90.	
		29 <i>Ibid.</i> , p.101.	42 Ludwig Wittgenstein (1889–1951), <i>Tractatus Logico-Philosophicus</i> , trans. D.F. Pears and B. F. McGuiness, London, 1922, section 5.64. It is no surprise that Wittgenstein was incredibly important to many of the artists under discussion here. His notion of 'realism' was one predicated on radical interpretation – individuals can only learn to interpret their social environments by	

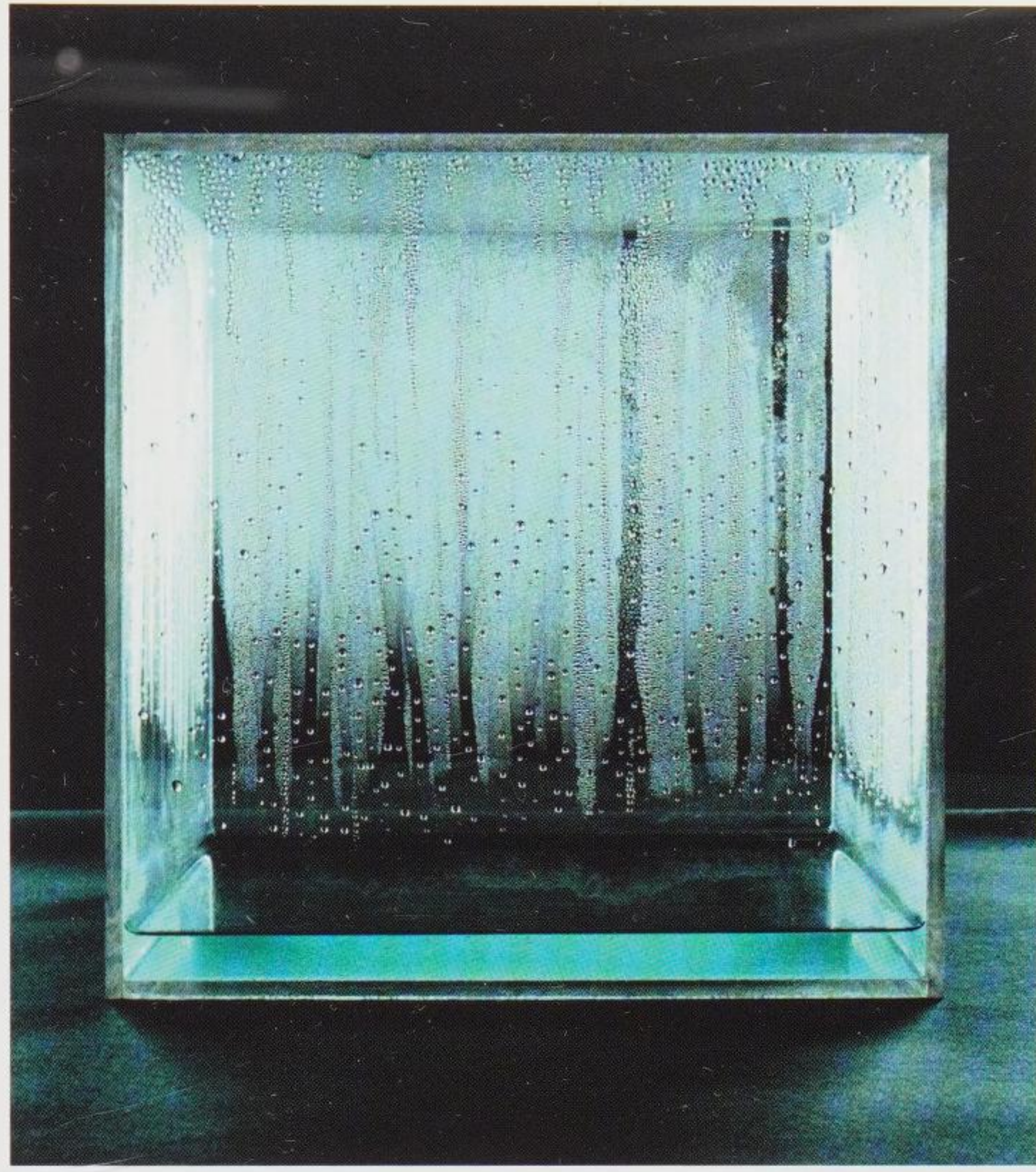
Works

Bas Jan Ader	Donald Judd
Carl Andre	Ilya Kabakov
John Baldessari	Sol LeWitt
Mel Bochner	Richard Long
Alighiero e Boetti	Mangelos
Marcel Broodthaers	Gordon Matta-Clark
Lygia Clark	Cildo Meireles
Braco Dimitrijević	Bruce Nauman
Valie Export	Hélio Oiticica
Robert Filliou	Adrian Piper
Gilbert & George	Charles Ray
Dan Graham	Gerhard Richter
Hans Haacke	Martha Rosler
Eva Hesse	Robert Smithson
Sanja Iveković	Andy Warhol
Joan Jonas	



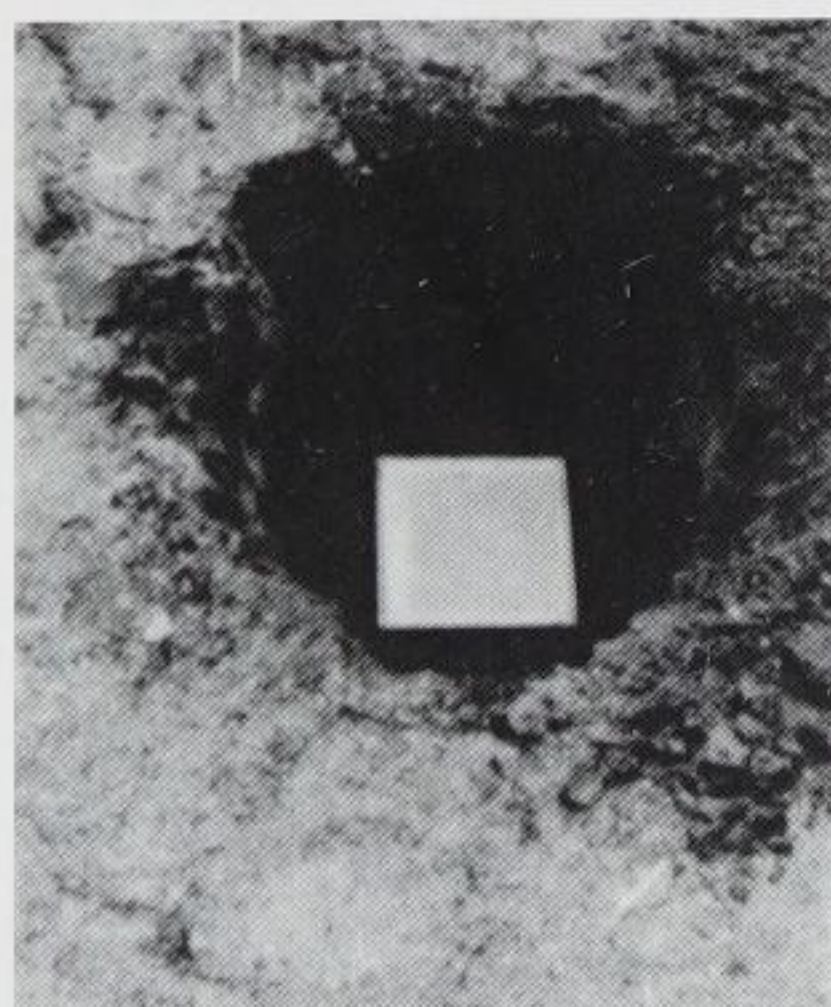
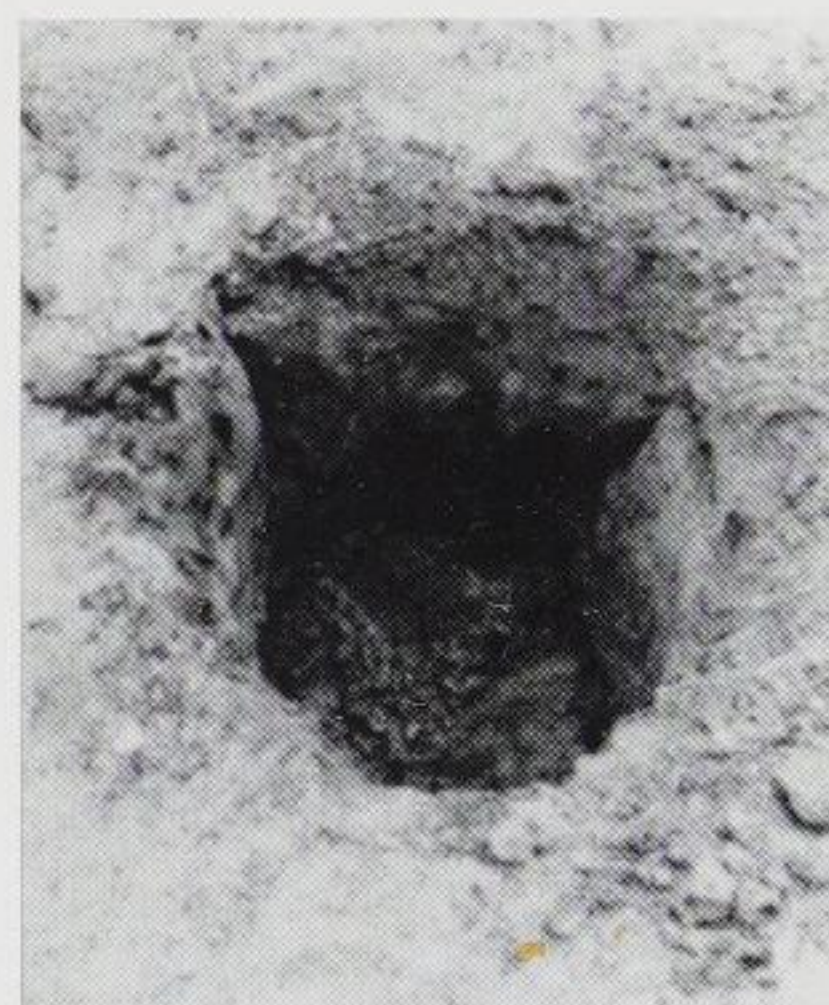
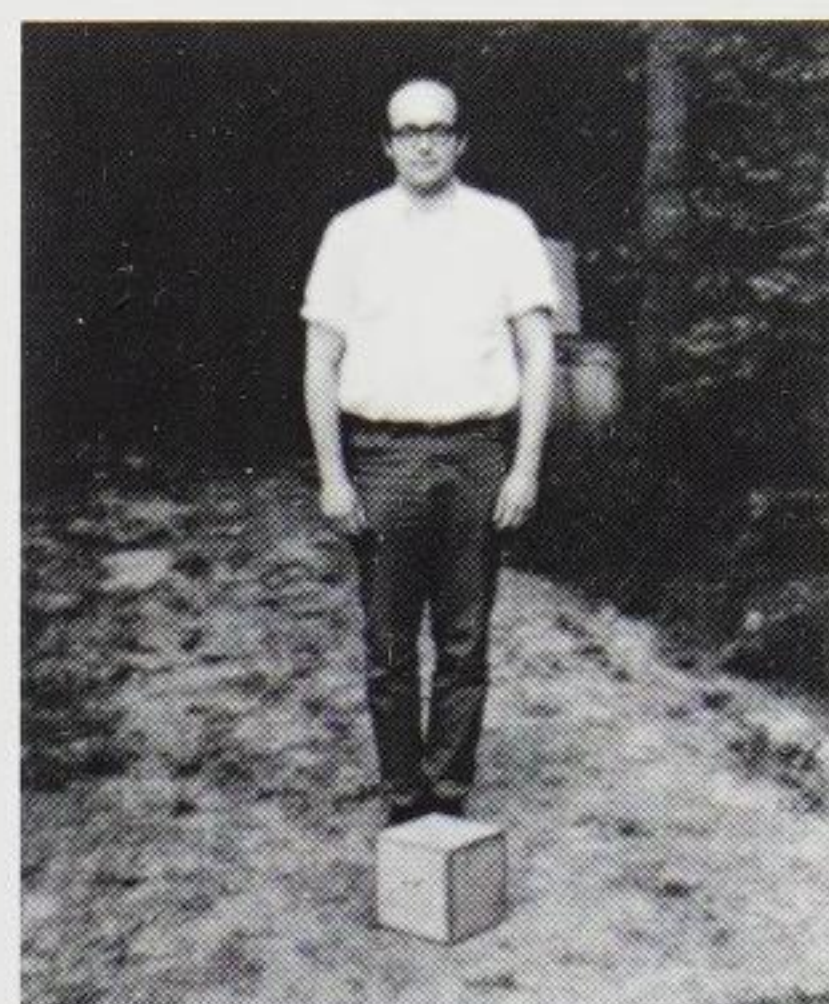
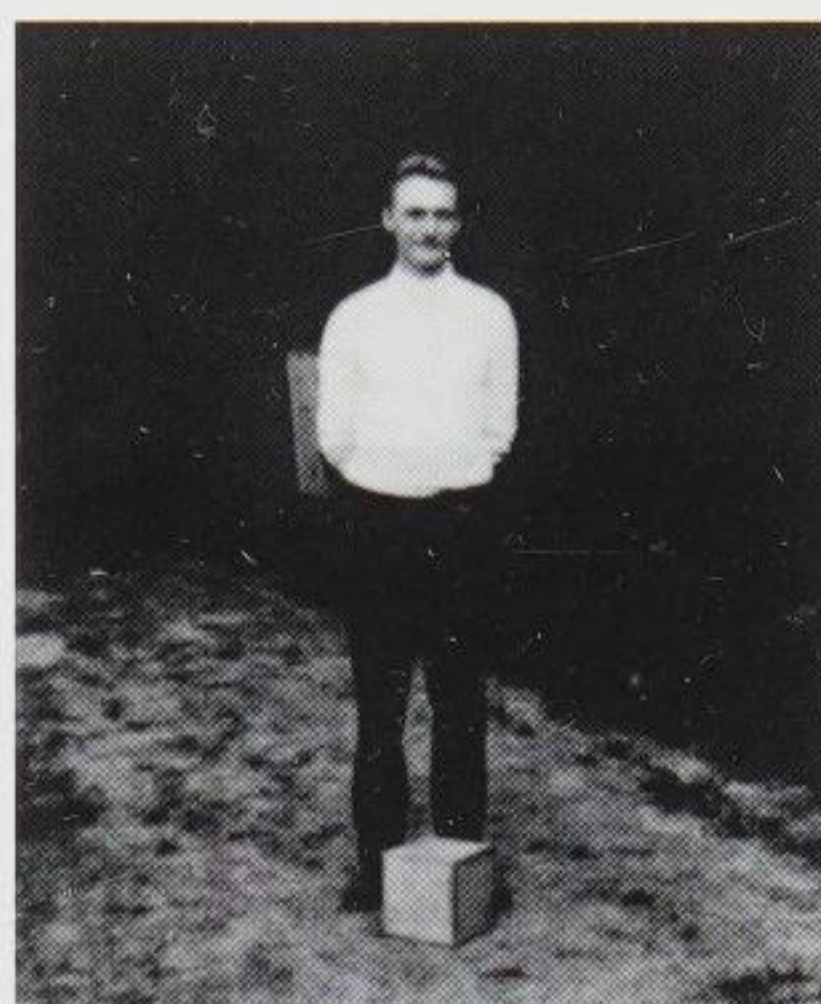
1
Donald Judd
Untitled 1963 (1969)
Estate of Dan Flavin

2
Hans Haacke
Condensation Cube 1963–5
MACBA, Museu d'Art
Contemporani de Barcelona.
Gift National Committee and
Board of Trustees Whitney
Museum of American Art

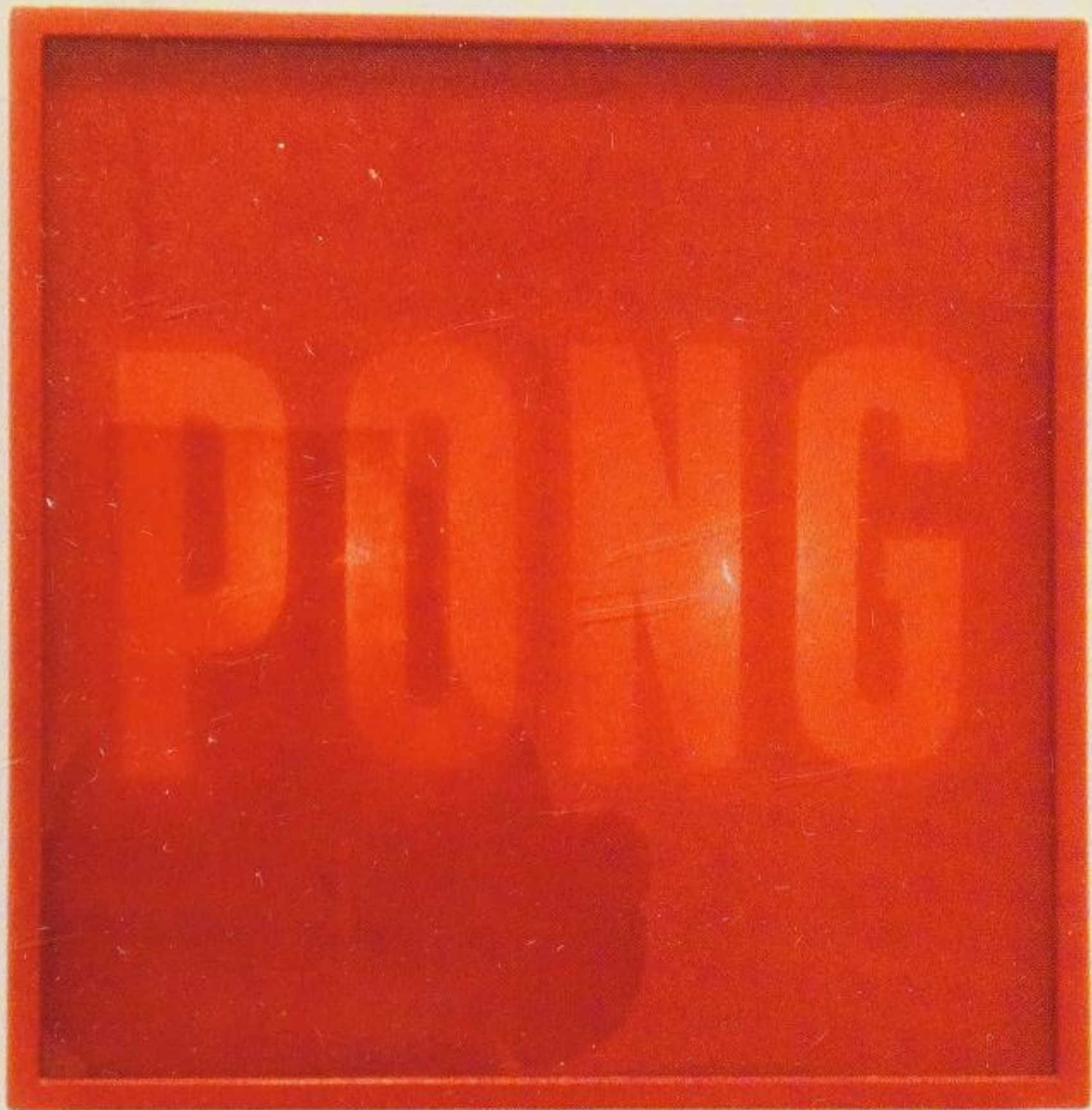


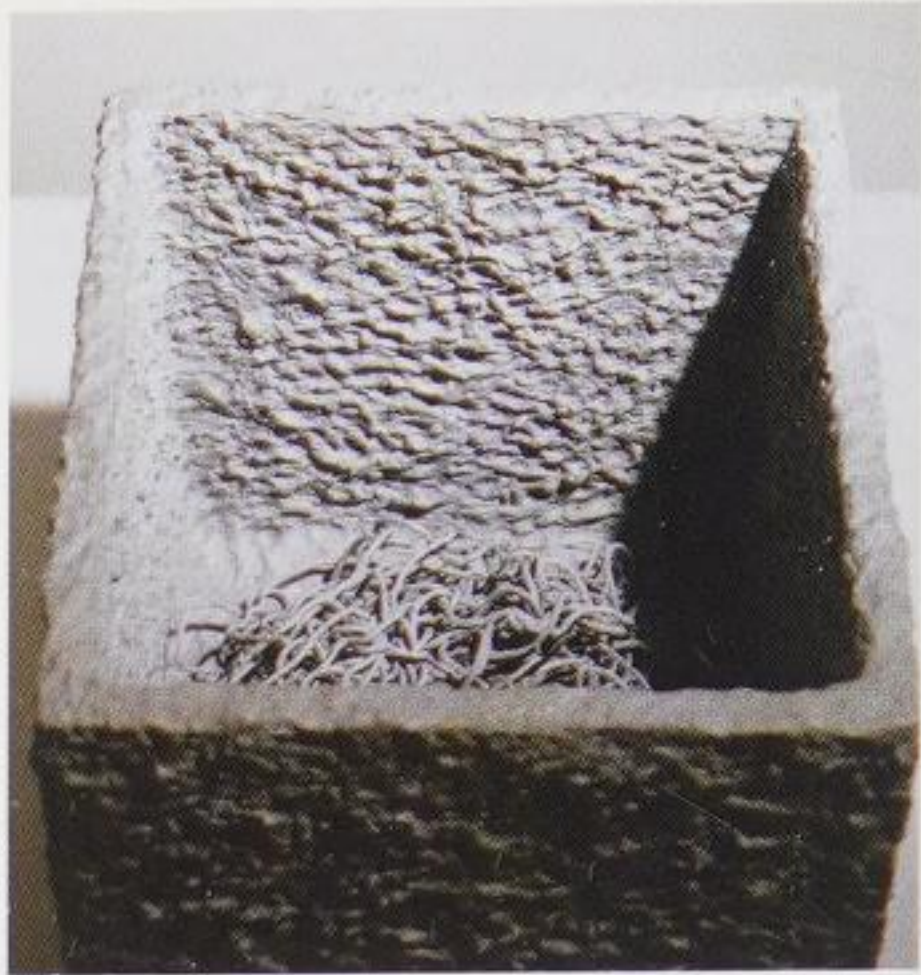
84—85

3
Sol LeWitt
*Buried Cube Containing
an Object of Importance
but Little Value* 1968
LeWitt Collection,
Chester, Connecticut





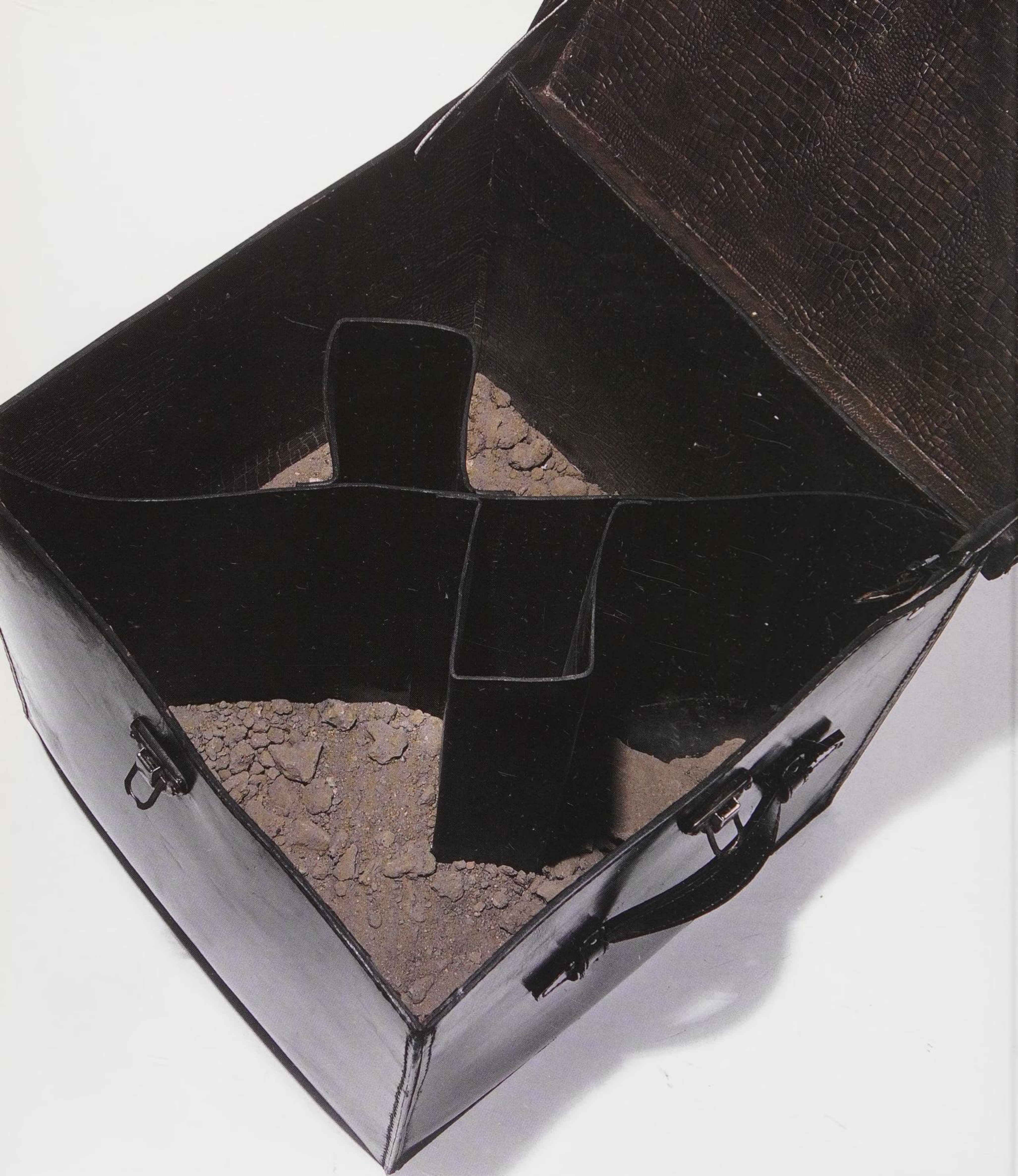




5
Eva Hesse
Inside I 1967
The Estate of Eva Hesse.
Courtesy Hauser
& Wirth Zürich London

6
Hélio Oiticica
Meteor 18, B-331:
Homage to Cara
de Cavalo 1965
Collection Gilberto
Chateaubriand MAM RJ





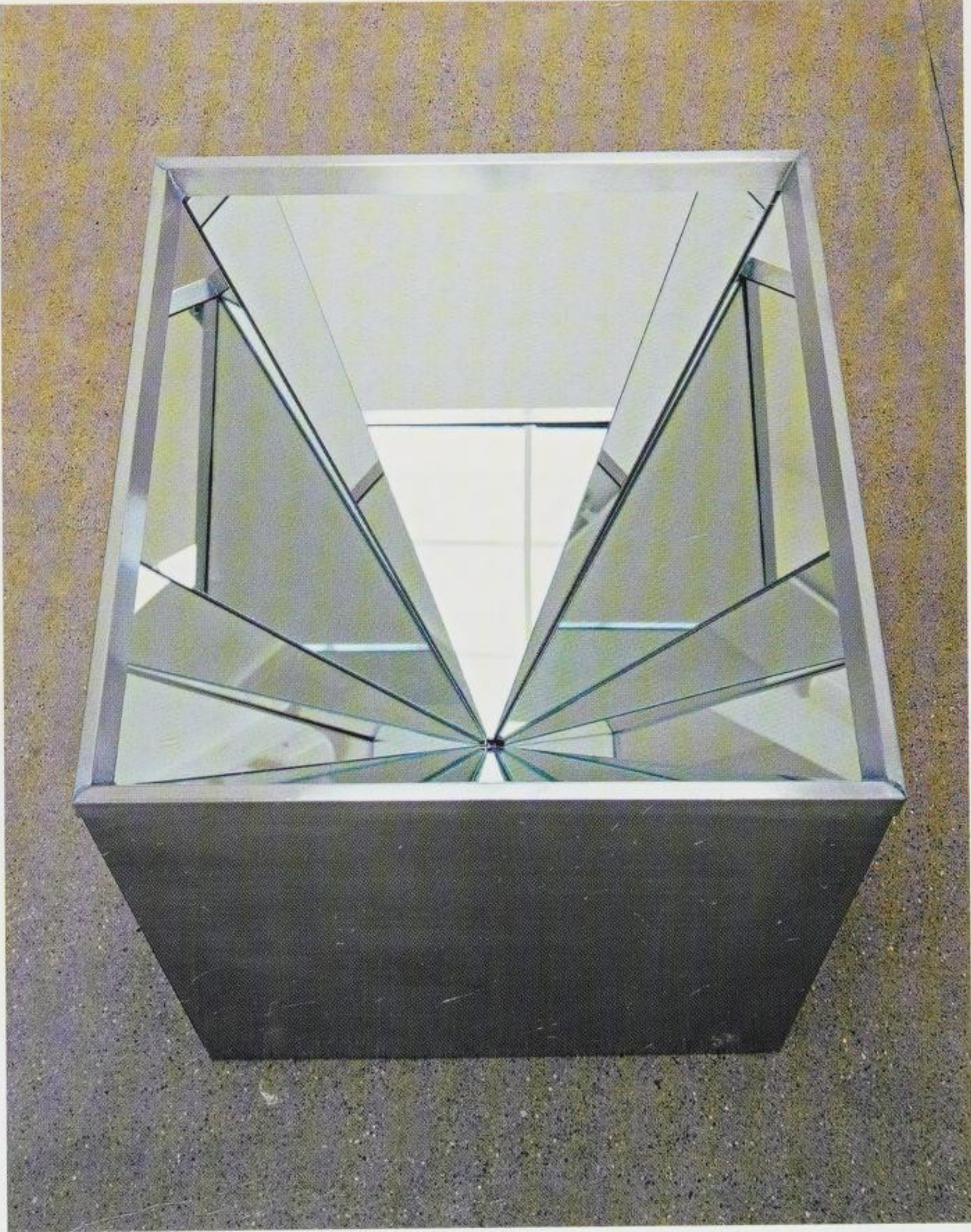
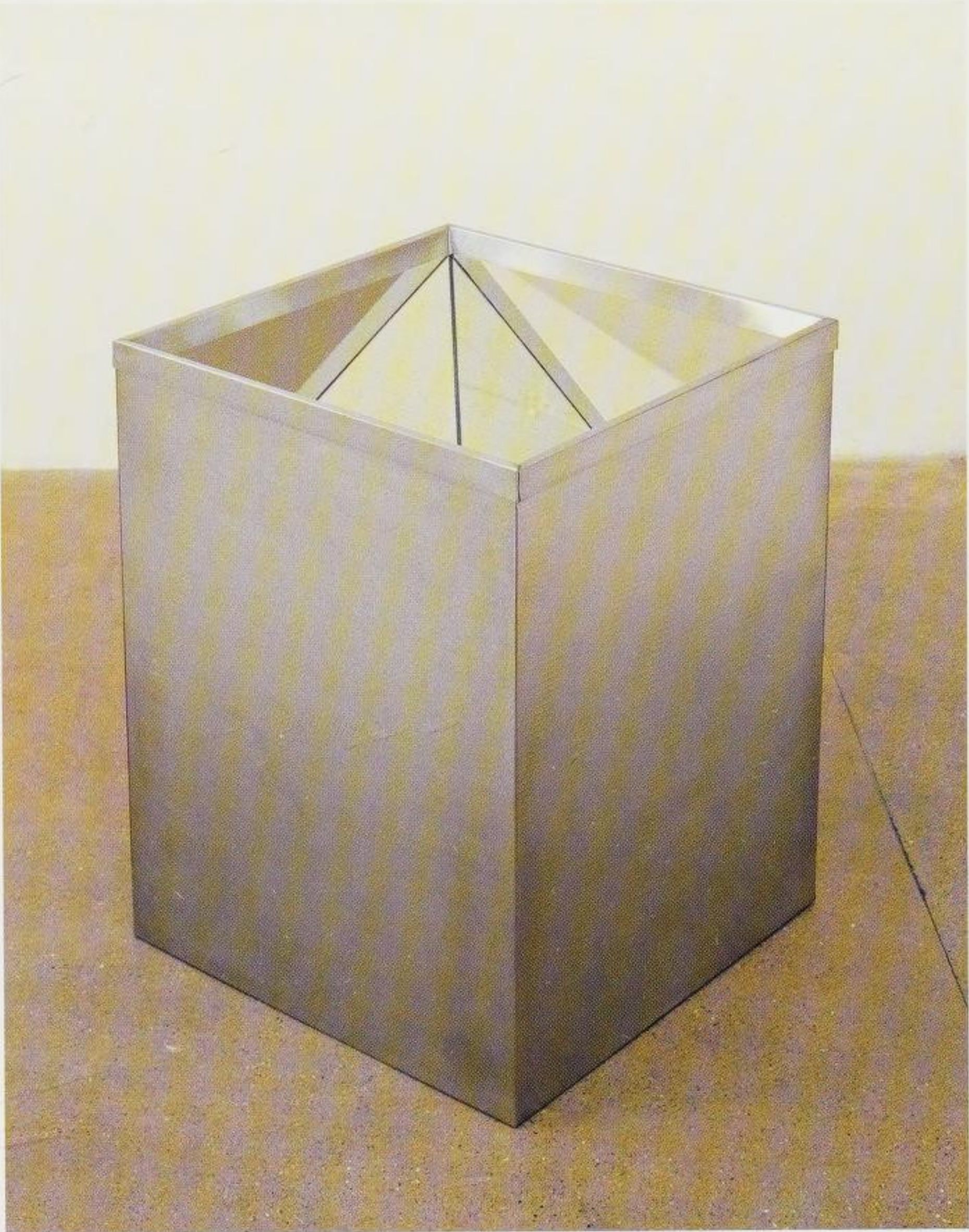
7
Cildo Meireles
*Geographical Mutations:
Frontier Rio-São Paulo 1969*
Collection Fundação de
Serralves, Museu de Arte
Contemporânea, Porto



92—93

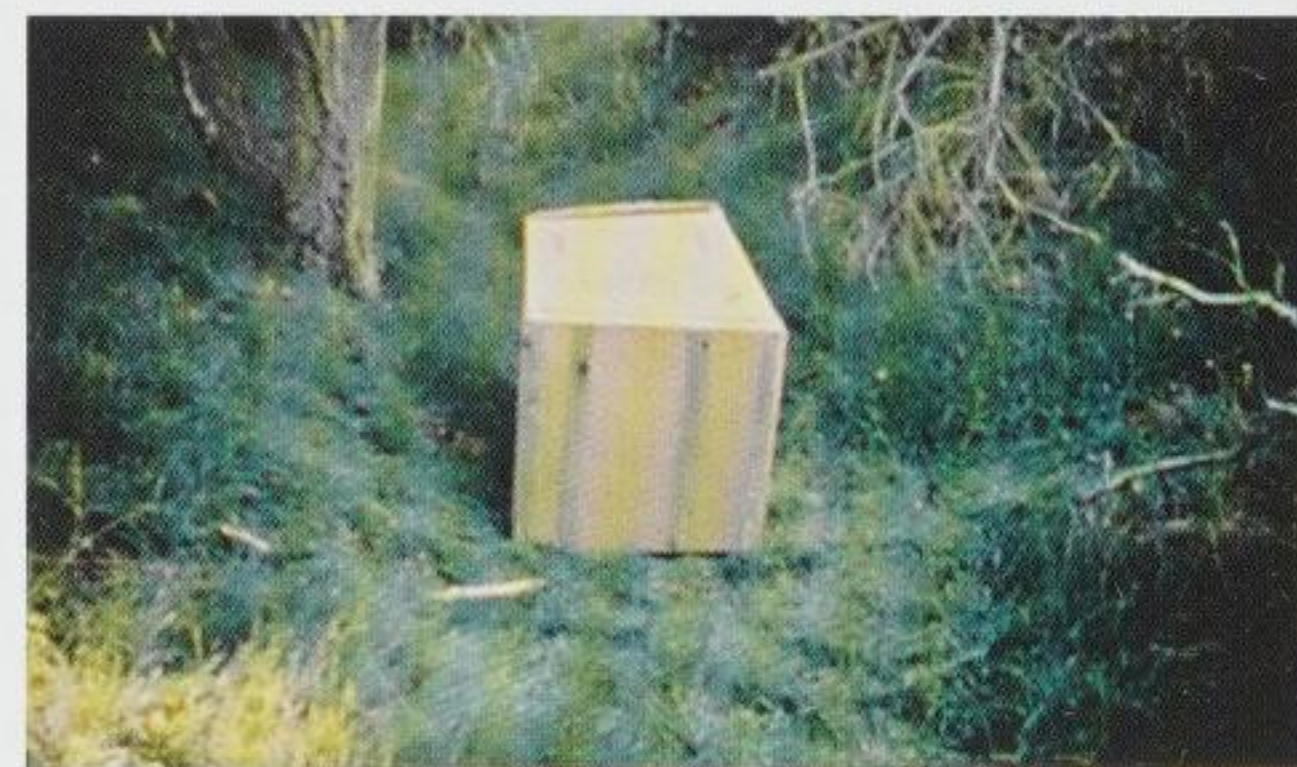


9
Robert Smithson
Four-sided Vortex 1967
Collection of the Weltkunst
Foundation, Courtesy
Lisson Gallery, London

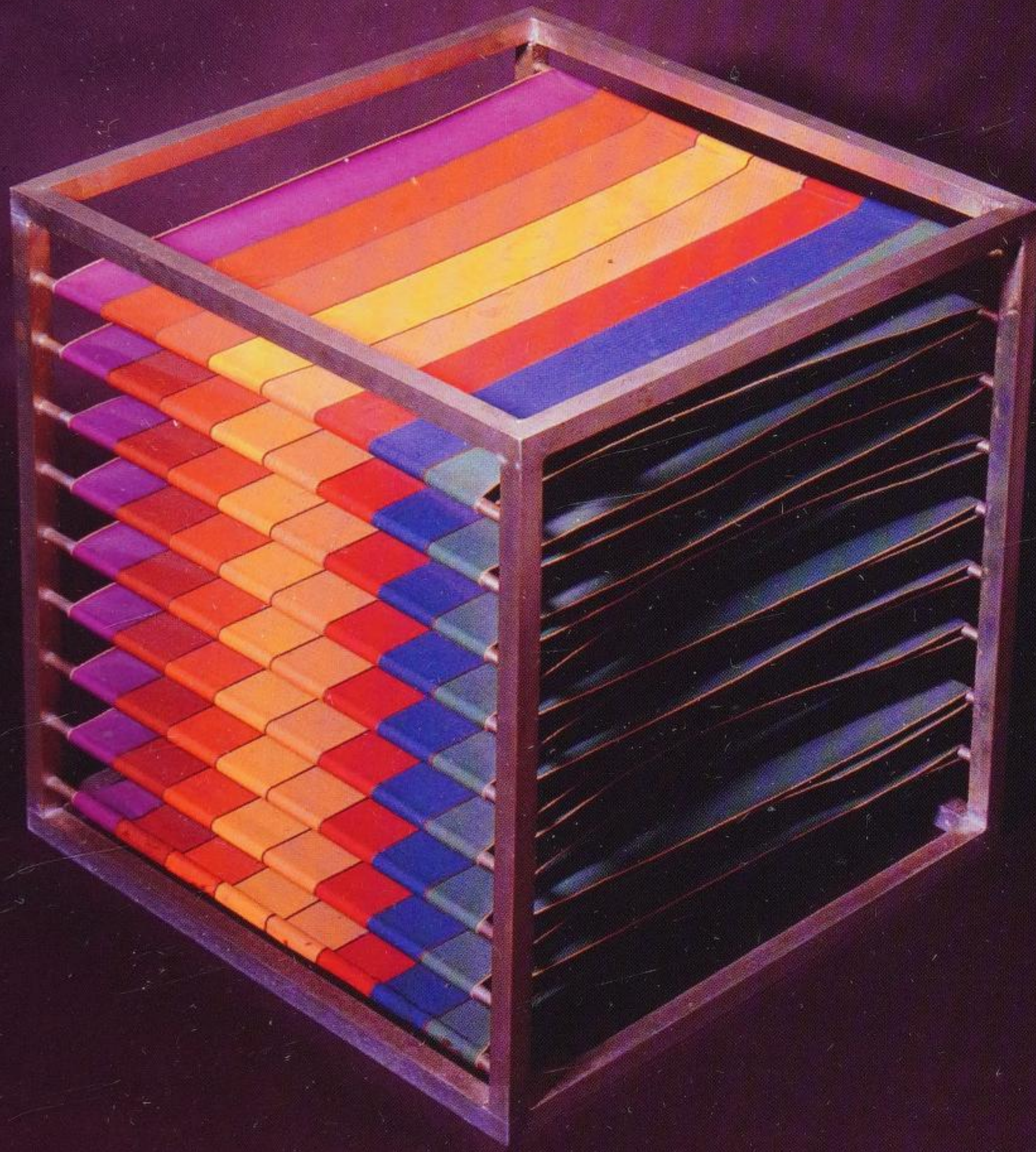




10
Bas Jan Ader
Untitled (Tea Party) 1972
Museum Boijmans Van
Beuningen, Rotterdam



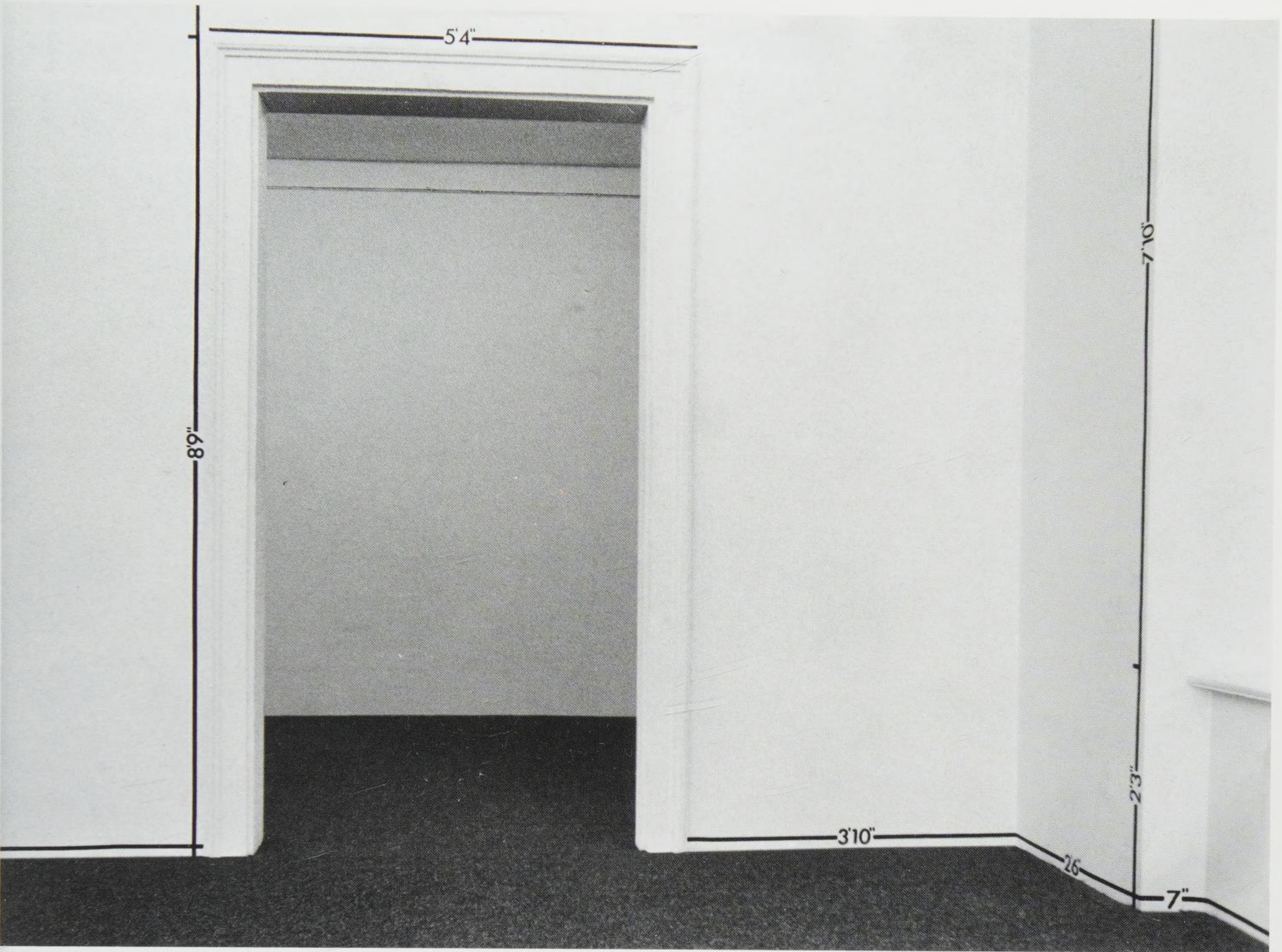


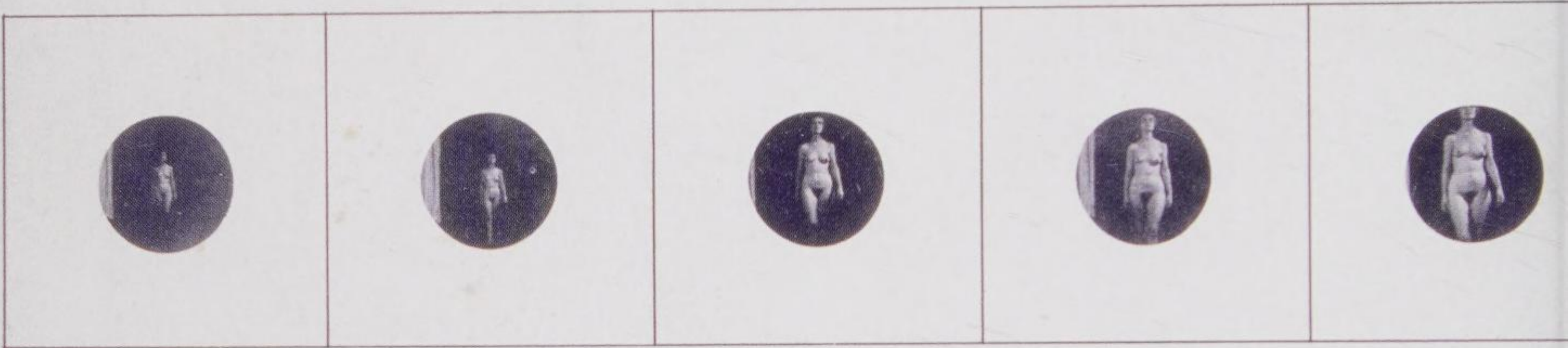




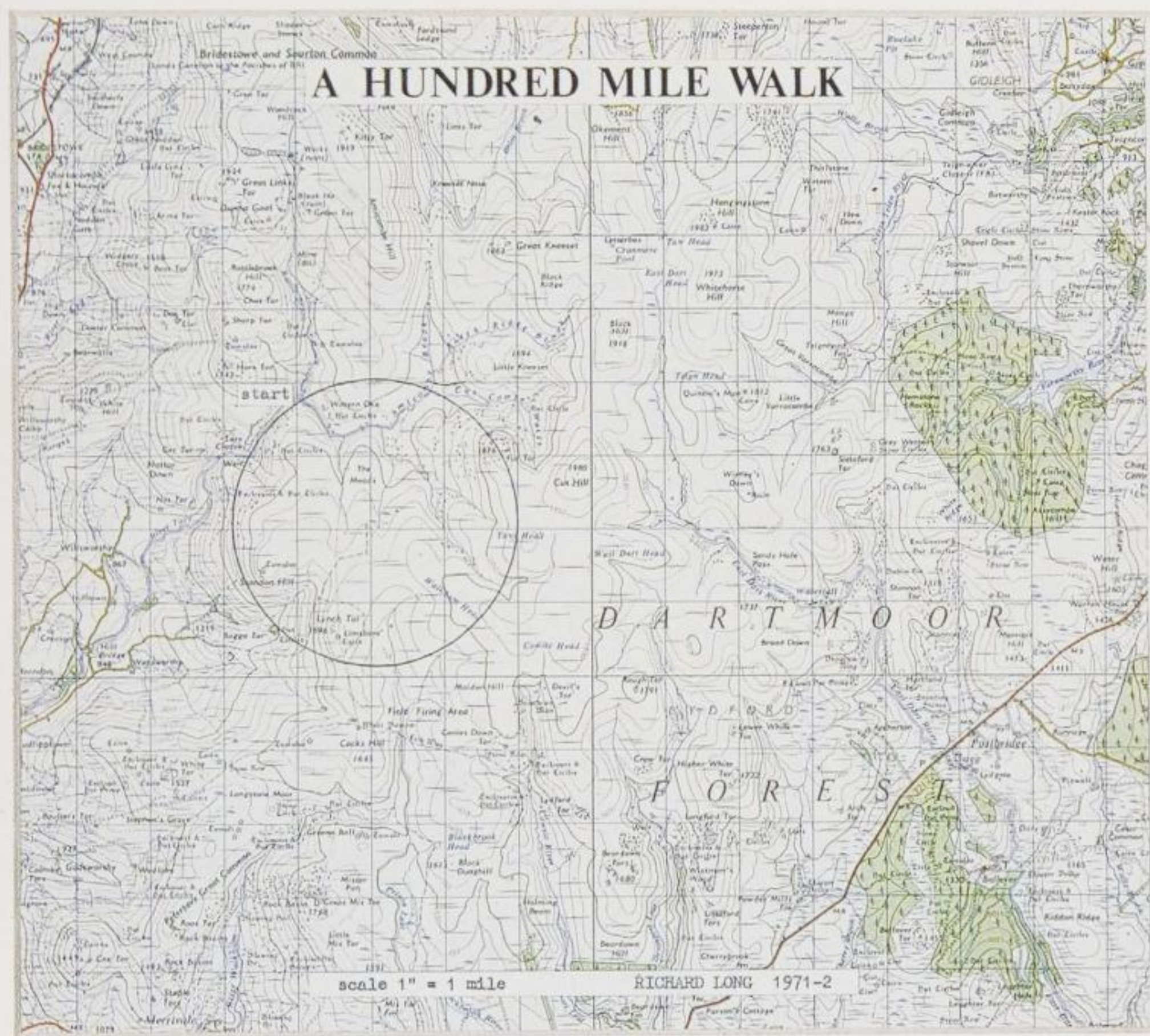
13
Carl Andre
*144 Magnesium
Square* 1969
Tate. Purchased 1973

14
Mel Bochner
Measurement: Room 1969
Museum of Modern Art,
New York. Committee on
Painting and Sculpture
Funds, 1997









- Day 1 Winter skyline, a north wind
- Day 2 The Earth turns effortlessly under my feet
- Day 3 Suck icicles from the grass stems
- Day 4 As though I had never been born
- Day 5 In and out the sound of rivers over familiar stepping stones
- Day 6 Corrina, Corrina
- Day 7 Flop down on my back with tiredness
Stare up at the sky and watch it recede



16
Richard Long
A Hundred Mile Walk 1971-2
Tate. Purchased 1973

17
Richard Long
A Line Made by Walking 1967
Tate. Purchased 1976



18
 Adrian Piper
Catalysis IV 1970–1
 Collection of Thomas
 Erben, New York



19
 Adrian Piper
Food for the Spirit 1971
 Collection Fundação de
 Serralves, Museu de Arte
 Contemporânea, Porto



20
John Baldessari
Police Drawing 1972
Electronic Arts
Intermix, New York



21
Joan Jonas
*Organic Honey's
Visual Telepathy*
1972 (detail)
Electronic Arts
Intermix, New York

22
Joan Jonas
Duet 1972 (detail)
Electronic Arts
Intermix, New York





24

Robert Smithson
Hotel Palenque 1969
Solomon R. Guggenheim
Museum, New York

Purchased with funds contributed
by the International Director's
Council and Executive Committee
Members: Edythe Broad, Henry
Buhl, Elaine Turner Cooper, Linda
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Joannou, Cindy Johnson, Barbara
Lane, Linda Macklowe, Brian
McIver, Peter Norton, Willem
Pepler, Denise Rich, Rachel
Rudin, David Teiger, Ginny
Williams, Elliot Wolk, 1999



25
Martha Rosler
*Vital Statistics of a
Citizen, Simply
Obtained* 1977
Electronic Arts
Intermix, New York



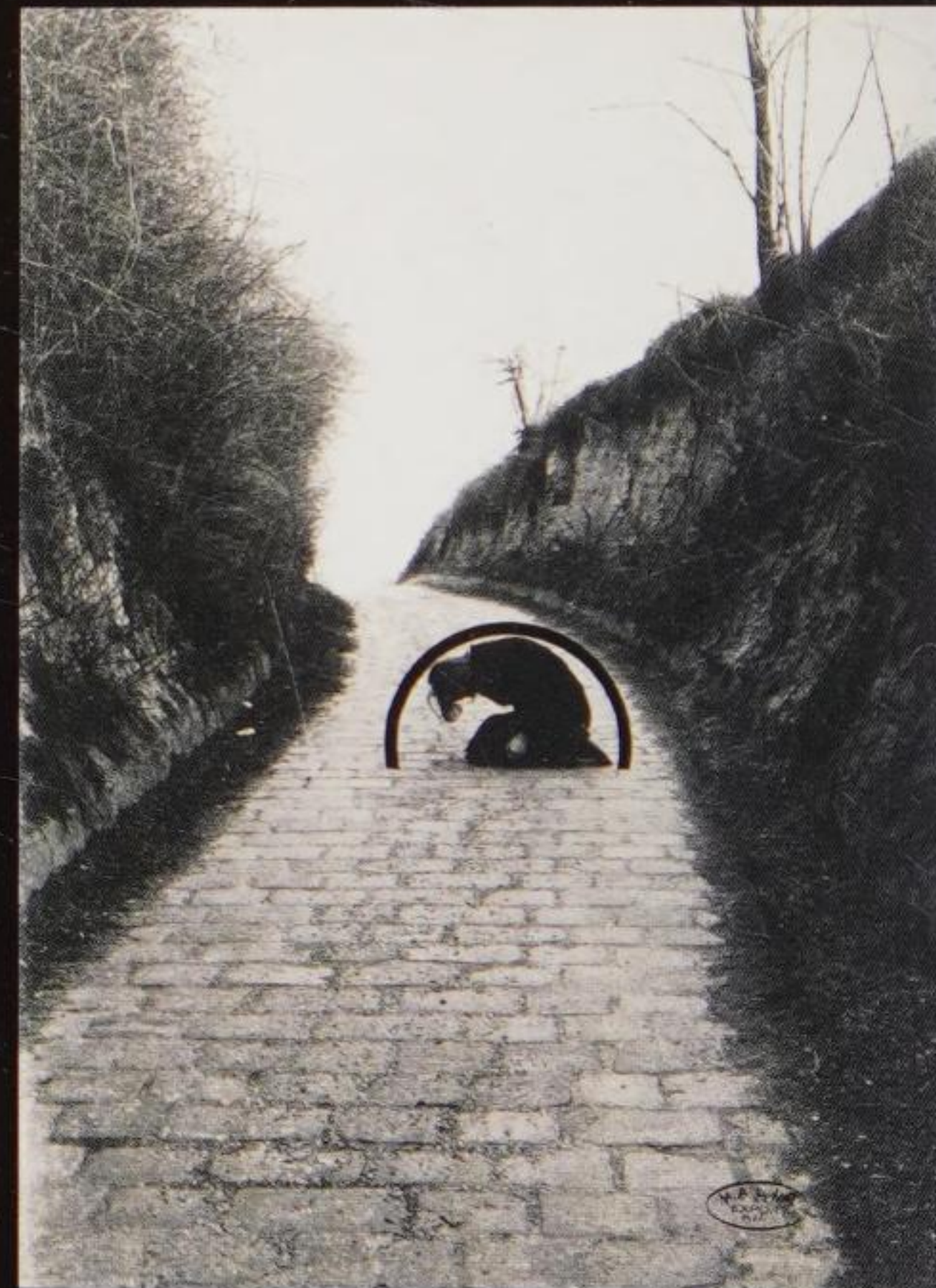
26
Martha Rosler
*Semiotics of the
Kitchen* 1975
Electronic Arts
Intermix, New York





28
Valie Export
Curve Up 1976
Courtesy Charim Galerie,
Vienna

29
Valie Export
Squat Upon II 1972
Courtesy Charim Galerie,
Vienna

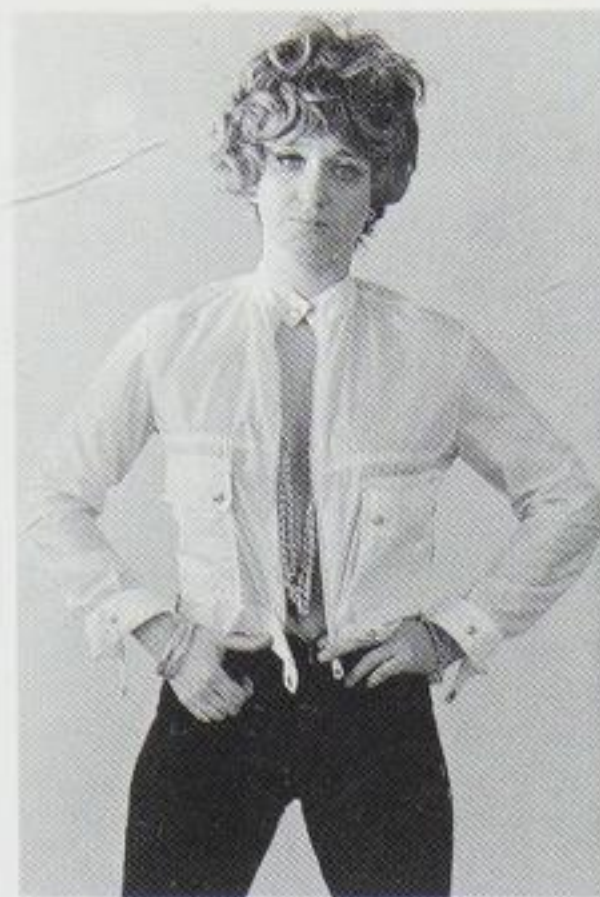


30
Valie Export
*Valie Export –
Smart Export* 1970
Courtesy Charim Galerie,
Vienna

31
Valie Export
Identity Transfer 1 1968
Courtesy Charim Galerie,
Vienna

32
Valie Export
Identity Transfer 2 1968
Courtesy Charim Galerie,
Vienna

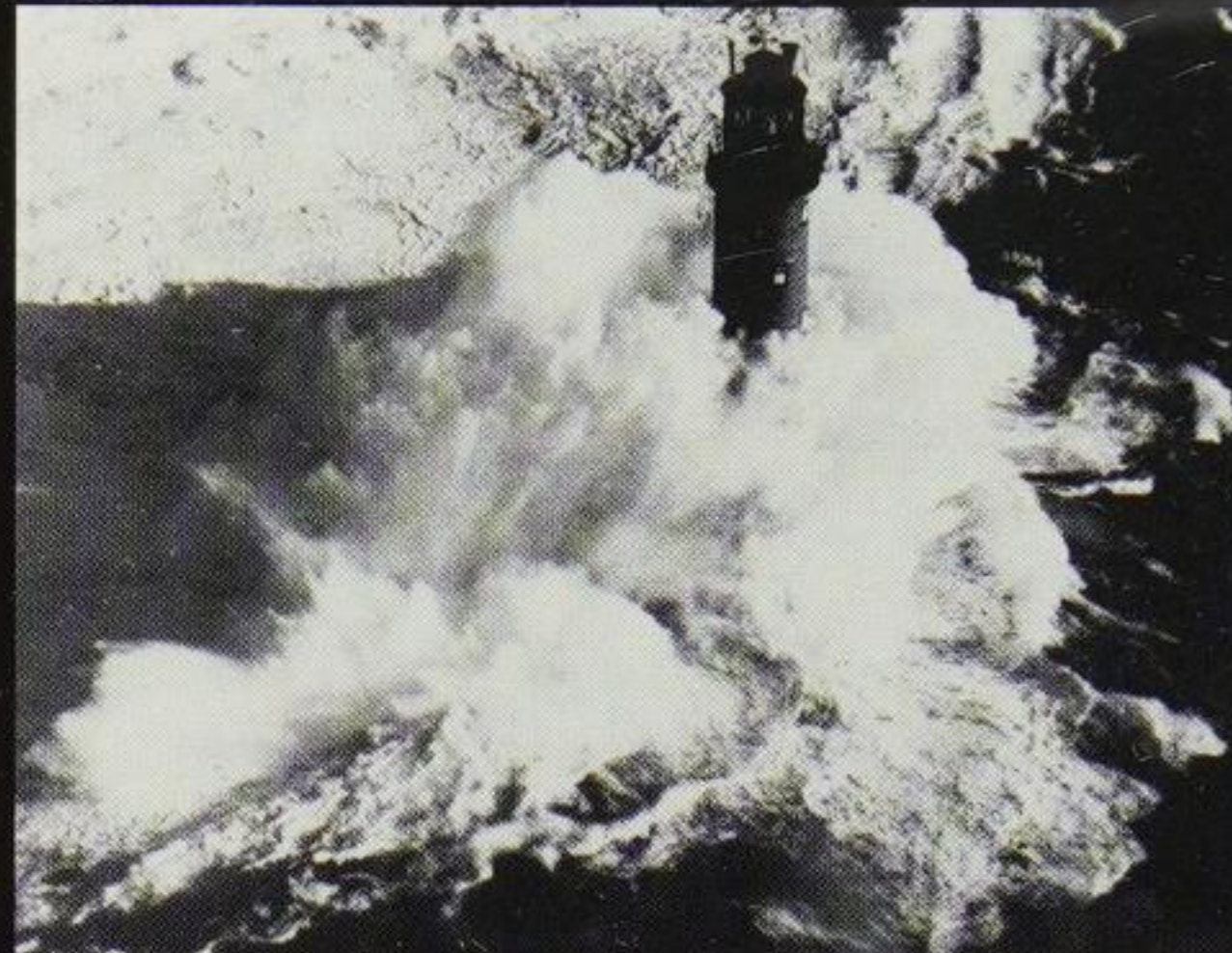
33
Valie Export
Identity Transfer 3 1968
Courtesy Charim Galerie,
Vienna





34
Gordon Matta-Clark
and Anarchitecture
Anarchitecture 1974 (details)
Lent by the Estate of Gordon
Matta-Clark, courtesy David
Zwirner, New York, and the
Canadian Centre for
Architecture, Montreal

Page Two



A black and white photograph of a large, multi-tiered, conical object, possibly a monument or a large vase, with a white label attached to its side that reads "NOT HANG BASE". The object is surrounded by floral arrangements and other decorative items.



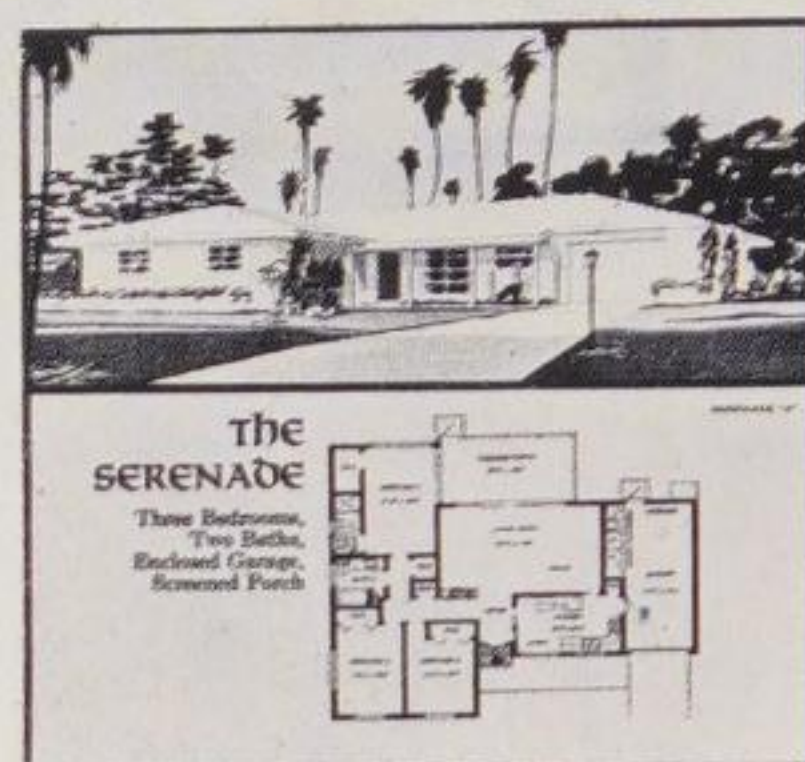
Homes for America

D. GRAHAM

Belleplain
 Brooklawn
 Colonia
 Colonia Manor
 Fair Haven
 Fair Lawn
 Greenfields Village
 Green Village
 Plainsboro
 Pleasant Grove
 Pleasant Plains
 Sunset Hill Garden

Garden City
 Garden City Park
 Greenlawn
 Island Park
 Levittown
 Middleville
 New City Park
 Pine Lawn
 Plainview
 Plandome Manor
 Pleasantide
 Pleasantville

Large-scale 'tract' housing 'developments' constitute the new city. They are located everywhere. They are not particularly bound to existing communities; they fail to develop either regional characteristics or separate identity. These 'projects' date from the end of World War II when in southern California speculators or 'operative' builders adapted mass production techniques to quickly build many houses for the defense workers over-concentrated there. This 'California Method' consisted simply of determining in advance the exact amount and lengths of pieces of lumber and multiplying them by the number of standardized houses to be built. A cutting yard was set up near the site of the project to saw rough lumber into those sizes. By mass buying, greater use of machines and factory produced parts, assembly line standardization, multiple units were easily fabricated.



"The Serenade" - Cape Coral unit, Fla.

Each house in a development is a lightly constructed 'shell' although this fact is often concealed by fake (half-stone) brick walls. Shells can be added or subtracted easily. The standard unit is a box or a series of boxes, sometimes contemptuously called 'pillboxes.' When the box has a sharply oblique roof it is called a Cape Cod. When it is longer than wide it is a 'ranch.' A



Set-back, Jersey City, New Jersey

The logic relating each sectioned part to the entire plan follows a systematic plan. A development contains a limited, set number of house models. For instance, Cape Coral, a Florida project, advertises eight different models:

- A The Sonata
- B The Concerto
- C The Overture
- D The Ballet
- E The Prelude
- F The Serenade
- G The Nocturne
- H The Rhapsody

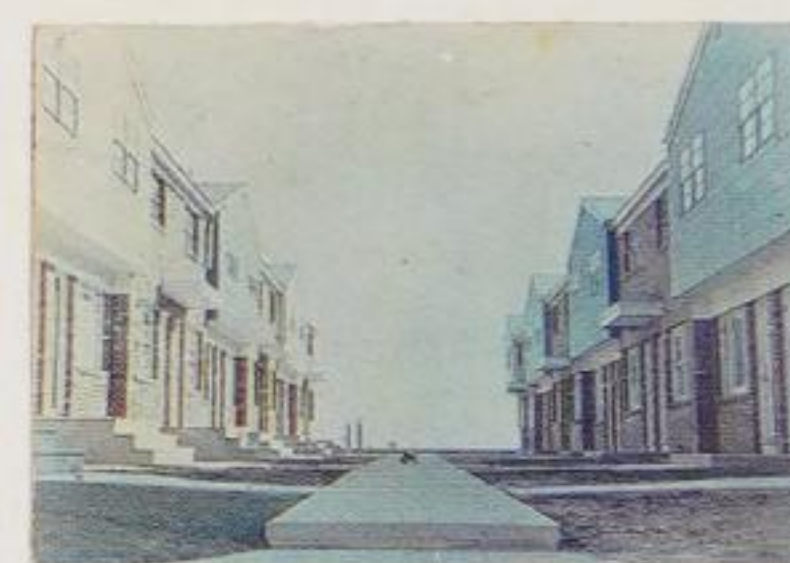


Two Entrance Doorways, 'Two Home Homes', Jersey City, N.J.

two-story house is usually called 'colonial.' If it consists of contiguous boxes with one slightly higher elevation it is a 'split level.' Such stylistic differentiation is advantageous to the basic structure (with the possible exception of the split level whose plan simplifies construction on discontinuous ground levels).

There is a recent trend toward 'two home homes' which are two boxes split by adjoining walls and having separate entrances. The left and right hand units are mirror reproductions of each other. Often sold as private units are strings of apartment-like, quasi-discrete cells formed by subdividing laterally an extended rectangular parallelepiped into as many as ten or twelve separate dwellings.

Developers usually build large groups of individual homes sharing similar floor plans and whose overall grouping possesses a discrete flow plan. Regional shopping centers and industrial parks are sometimes integrated as well into the general scheme. Each development is sectioned into blocked-out areas containing a series of identical or sequentially related types of houses all of which have uniform or staggered set-backs and land plots.



Center Court, Entrance Development, Jersey City, N.J.

In addition, there is a choice of eight exterior colors:

- 1 White
- 2 Moonstone Grey
- 3 Nickle



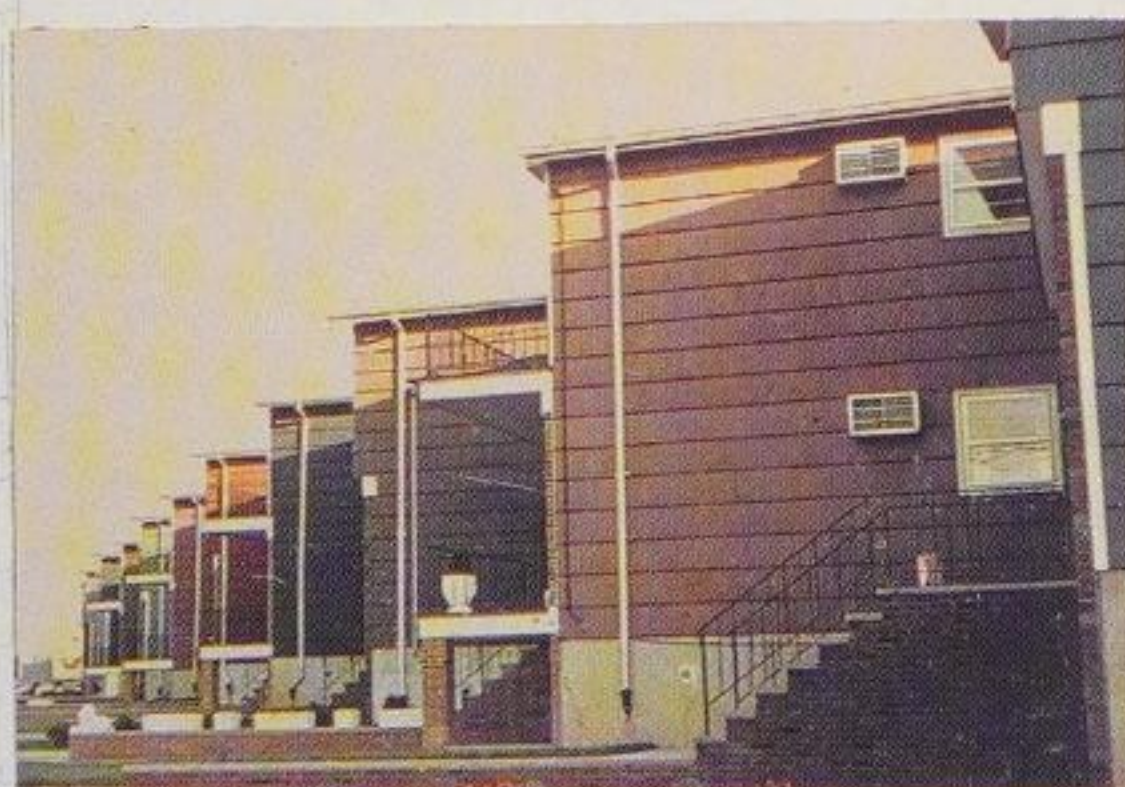
LAWN GREEN

- 4 Seafoam Green
- 5 Lawn Green
- 6 Bamboo
- 7 Coral Pink
- 8 Colonial Red

As the color series usually varies independently of the model series, a block of eight houses utilizing four models and four colors might have forty-eight times forty-eight or 2,304 possible arrangements.



Housing Development, rear view, Bayonne, New Jersey



Housing Development, front view, Bayonne, New Jersey

Dan Munk



Interior of Model Home, Staten Island, N.Y.

Each block of houses is a self-contained sequence — there is no development — selected from the possible acceptable arrangements. As an example, if a section was to contain eight houses of which four model types were to be used, any of these permutational possibilities could be used:



Bedroom of Model Home, S.I., N.Y.

AABBCCDD	ABCDABCD
AABBDDCC	ABDCABDC
AACCBDD	ACBDACBD
AACDDBB	ACDBACDB
AADDCCBB	ADBCADBC
AADDBBCC	ADCBADCB
BBAADDCC	BACDBACD
BBCCAADD	BCADBCAD
BBCCDDAA	BCDABCD
BBDDAACC	BDACBDAC
BBDDCCAA	BDCABDCA
CCAABDD	CABDCABD
CCAADDDB	CADBCADB
CCBBDDAA	CBADCBAD
CCBBAADD	CBDACBDA
CCDDAABB	CDABCDAB
CCDDBBAA	CDBACDBA
DDAABBCC	DACBDACB
DDAACCBB	DABCDABC
DDBBAAAC	DBACDBAC
DDBBCCAA	DBCADBCA
DDCCAABB	DCABDCAB
DDCCBBAA	DCBADCB



Basement of House, New Jersey



'Discount Store', Swanton on Route, New Jersey

The 8 color variables were equally distributed among the house exteriors. The first buyers were more likely to have obtained their first choice in color. Family units had to make a choice based on the available colors which also took account of both husband and wife's likes and dislikes. Adult male and female color likes and dislikes were compared in a survey of the homeowners:

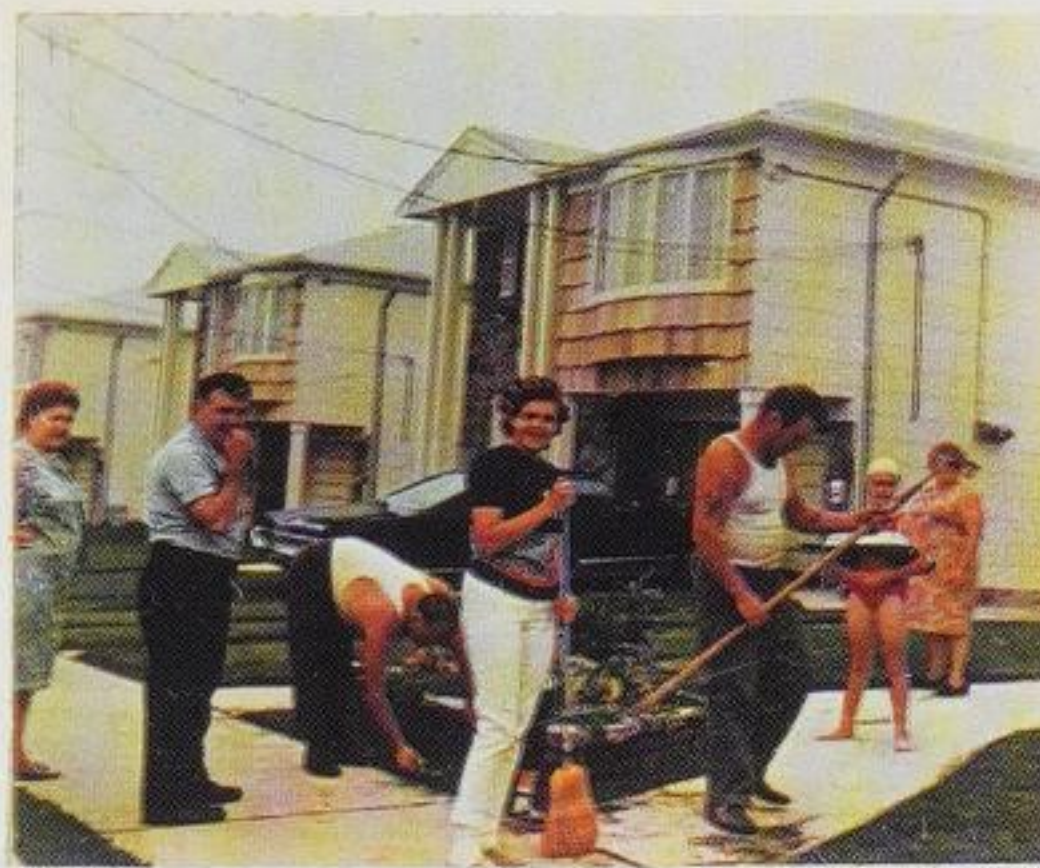
'Like'

Male

Skyway
Colonial Red
Patio White
Yellow Chiffon
Lawn Green
Nickle
Fawn
Moonstone Grey

Female

Skyway Blue
Lawn Green
Nickle
Colonial Red
Yellow Chiffon
Patio White
Moonstone Grey
Fawn



Two Family Units, Staten Island, N.Y.

'Dislike'

Male

Lawn Green
Colonial Red
Patio White
Moonstone Grey
Fawn
Yellow Chiffon
Nickle
Skyway Blue

Female

Patio White
Fawn
Colonial Red
Moonstone Grey
Yellow Chiffon
Lawn Green
Skyway blue
Nickle



Car Hop, Jersey City, N.J.

A given development might use, perhaps, four of these possibilities as an arbitrary scheme for different sectors; then select four from another scheme which utilizes the remaining four unused models and colors; then select four from another scheme which utilizes all eight models and eight colors; then four from another scheme which utilizes a single model and all eight colors (or four or two colors); and finally utilize that single scheme for one model and one color. This serial logic might follow consistently until, at the edges, it is abruptly terminated by pre-existent highways, bowling alleys, shopping plazas, car hops, discount houses, lumber yards or factories.

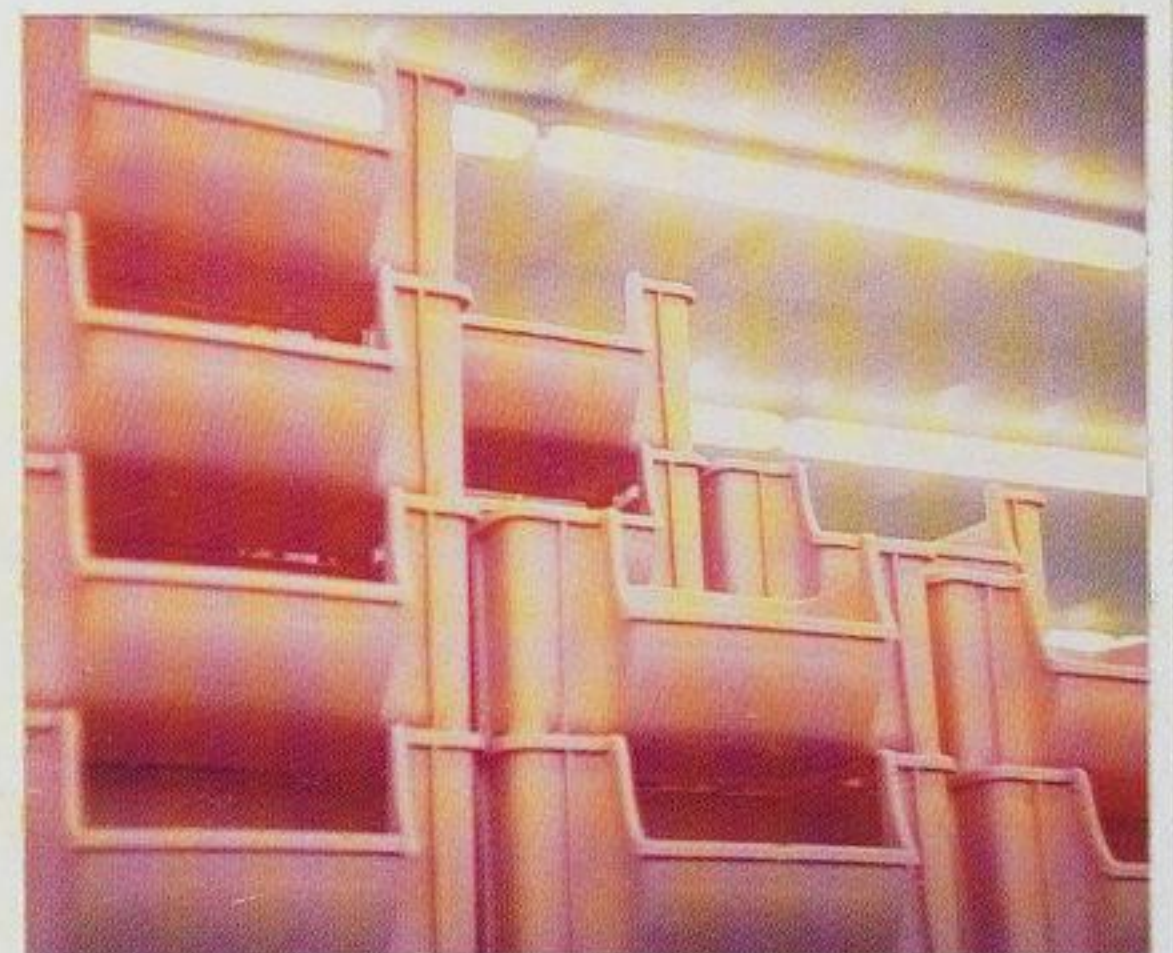


'Split-Level', 'Two Home Homes', Jersey City, N.J.



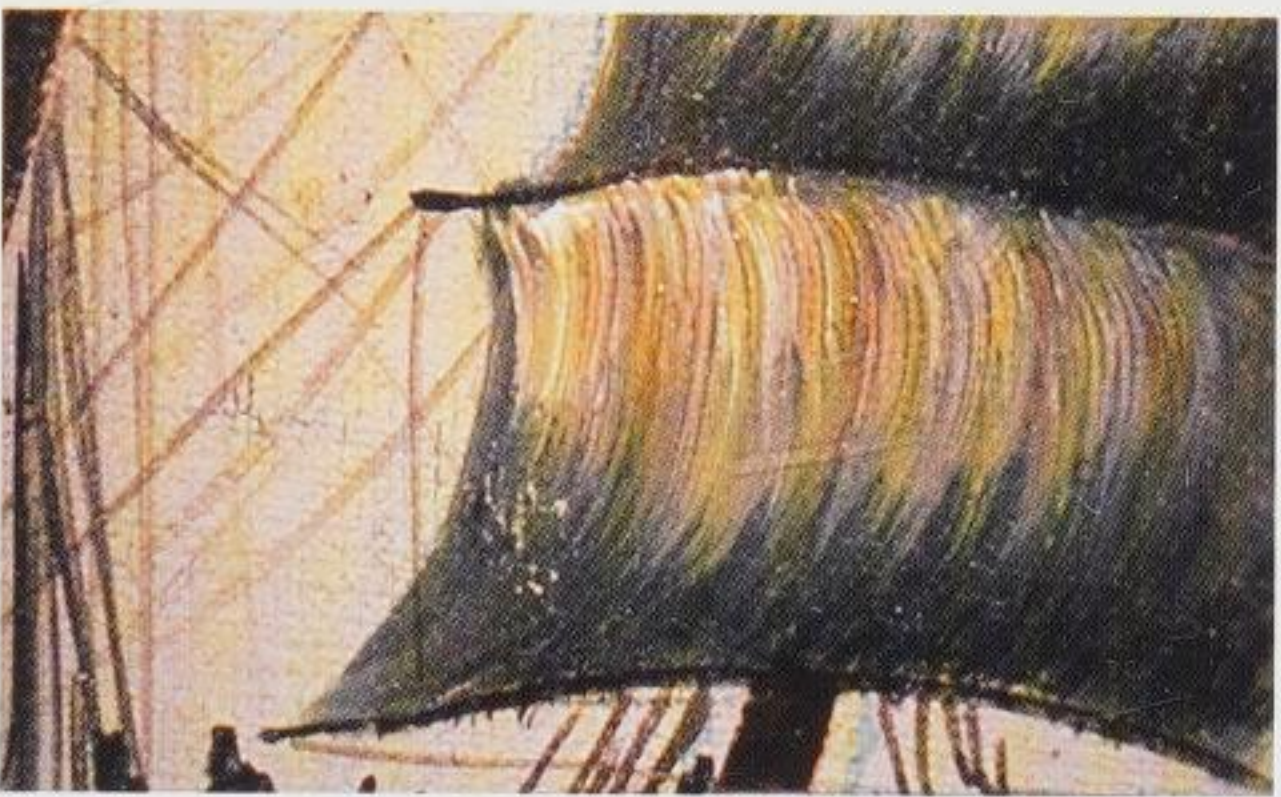
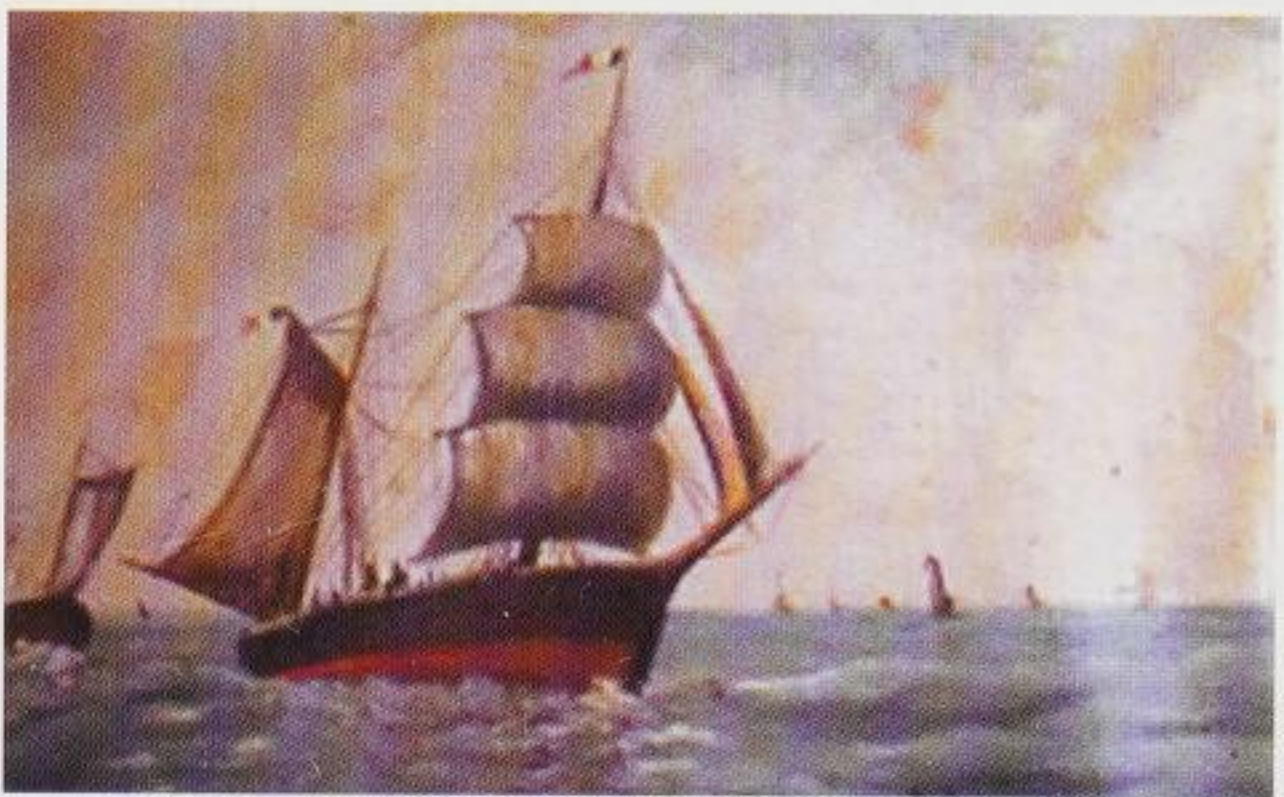
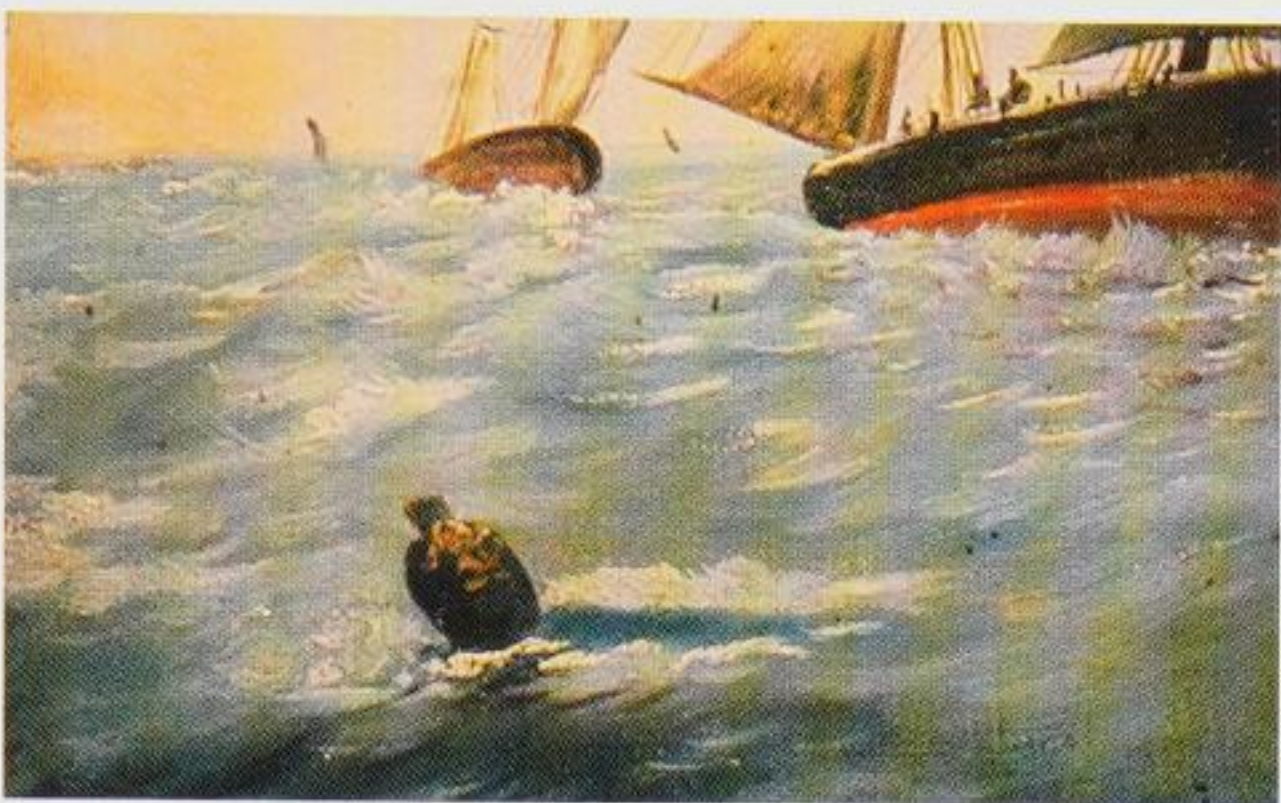
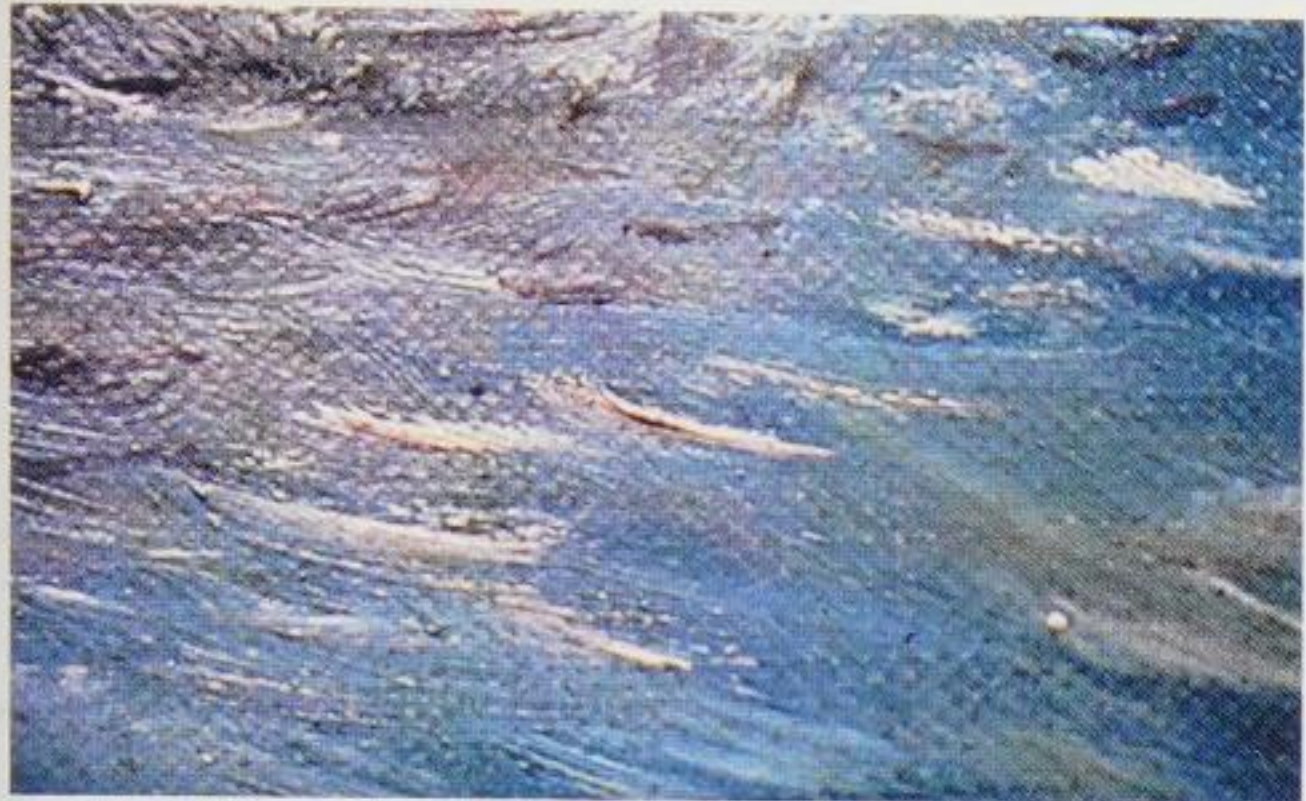
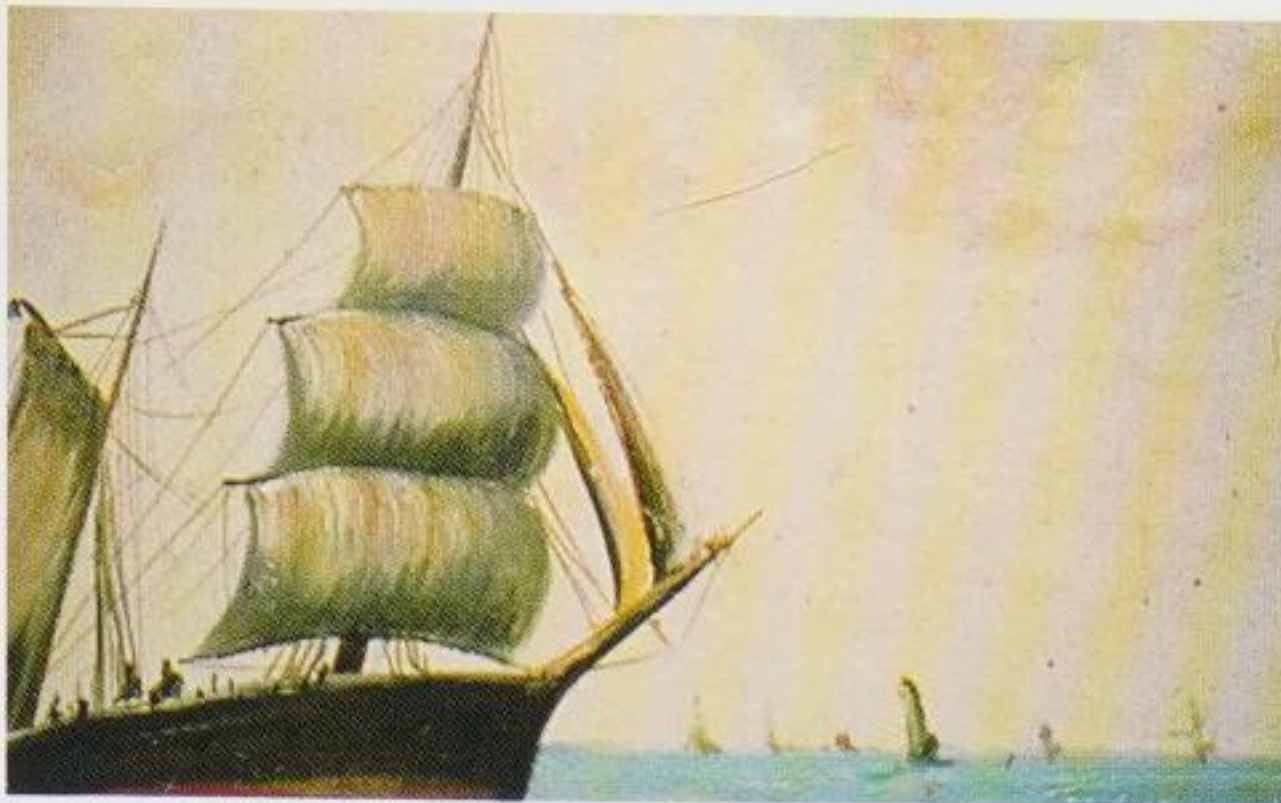
'Ground-Level', 'Two Home Homes', Jersey City, N.J.

Although there is perhaps some aesthetic precedence in the row houses which are indigenous to many older cities along the east coast, and built with uniform facades and set-backs early this century, housing developments as an architectural phenomenon seem peculiarly gratuitous. They exist apart from prior standards of 'good' architecture. They were not built to satisfy individual needs or tastes. The owner is completely tangential to the product's completion. His home isn't really possessable in the old sense; it wasn't designed to 'last for generations'; and outside of its immediate 'here and now' context it is useless, designed to be thrown away. Both architecture and craftsmanship as values are subverted by the dependence on simplified and easily duplicated techniques of fabrication and standardized modular plans. Contingencies such as mass production technology and land use economics make the final decisions, denying the architect his former 'unique' role. Developments stand in an altered relationship to their environment. Designed to fill in 'dead land' areas, the houses needn't adapt to or attempt to withstand Nature. There is no organic unity connecting the land site and the home. Both are without roots — separate parts in a larger, pre-determined, synthetic order.

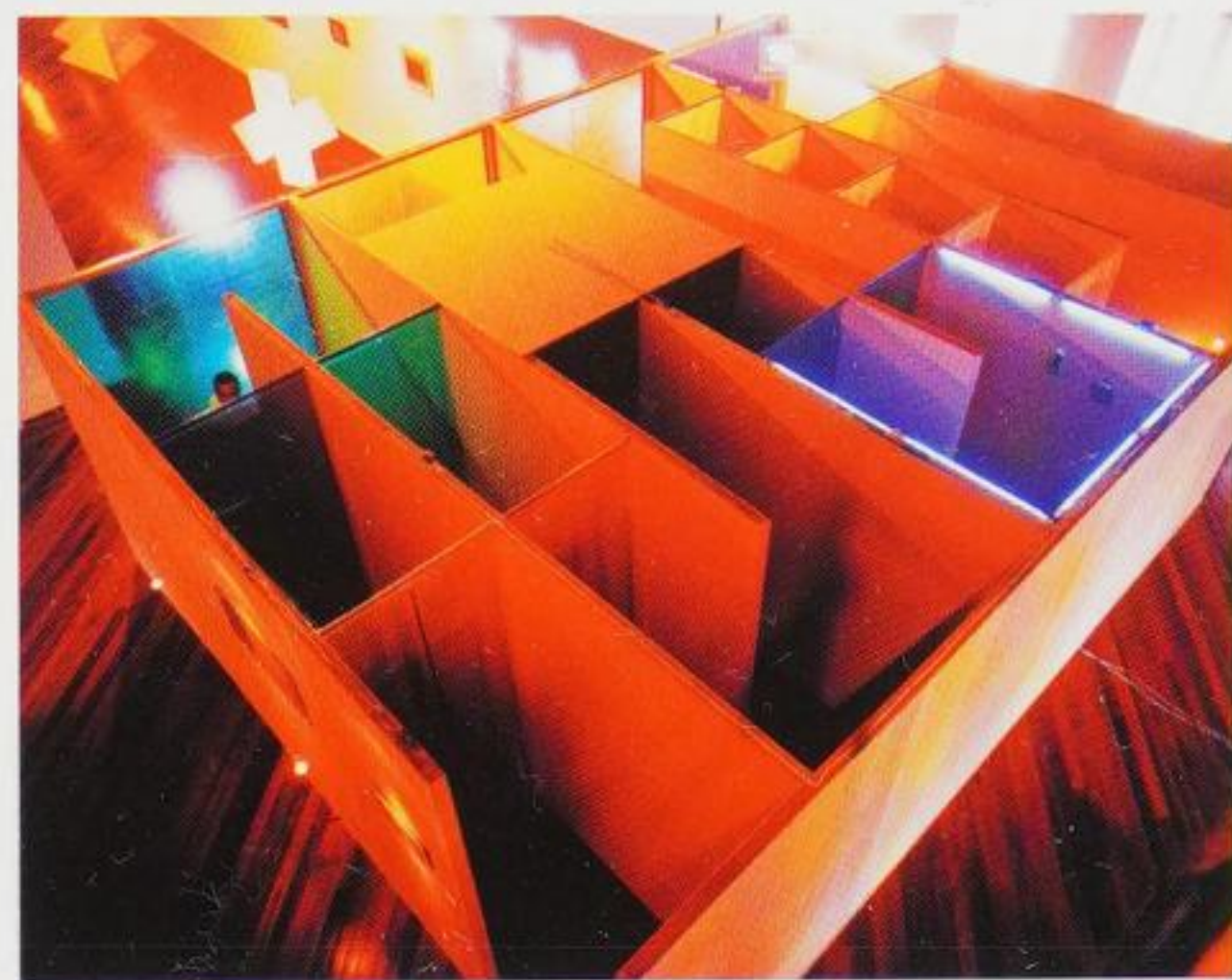


Kirkland Trays, 'Discount House', New Jersey



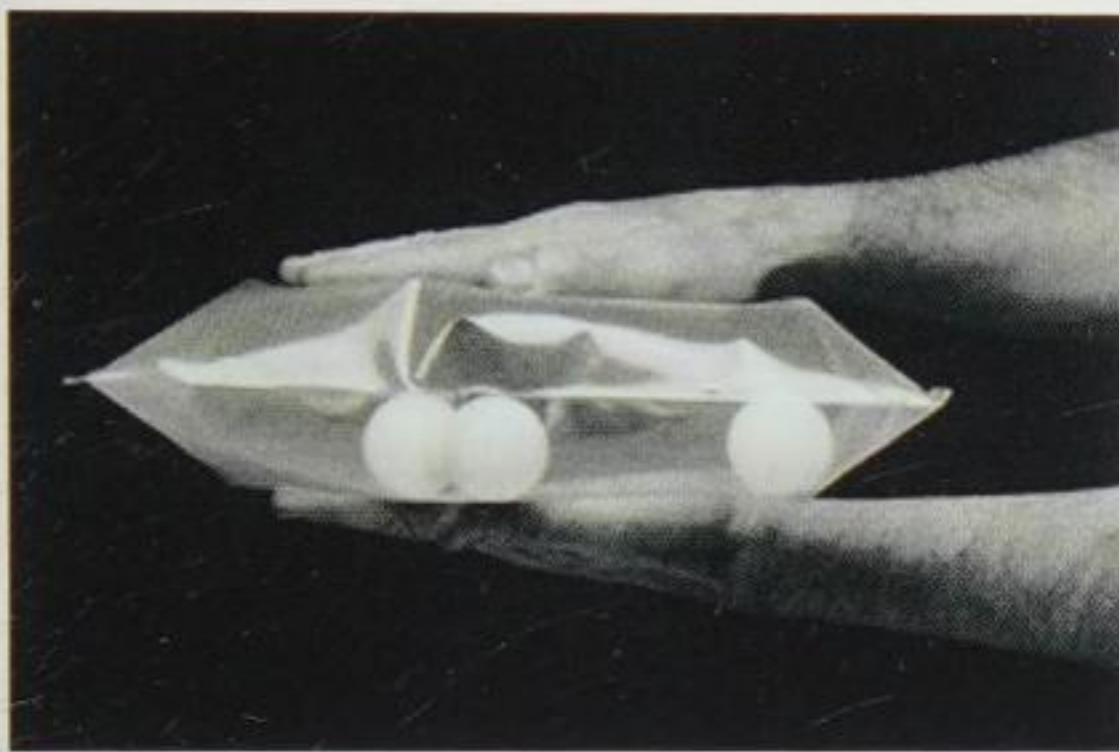






38
Hélio Oiticica
Projeto Filtro –
Para Vergara NY 1972
1972 (2005)
Projeto Hélio Oiticica,
Rio de Janeiro





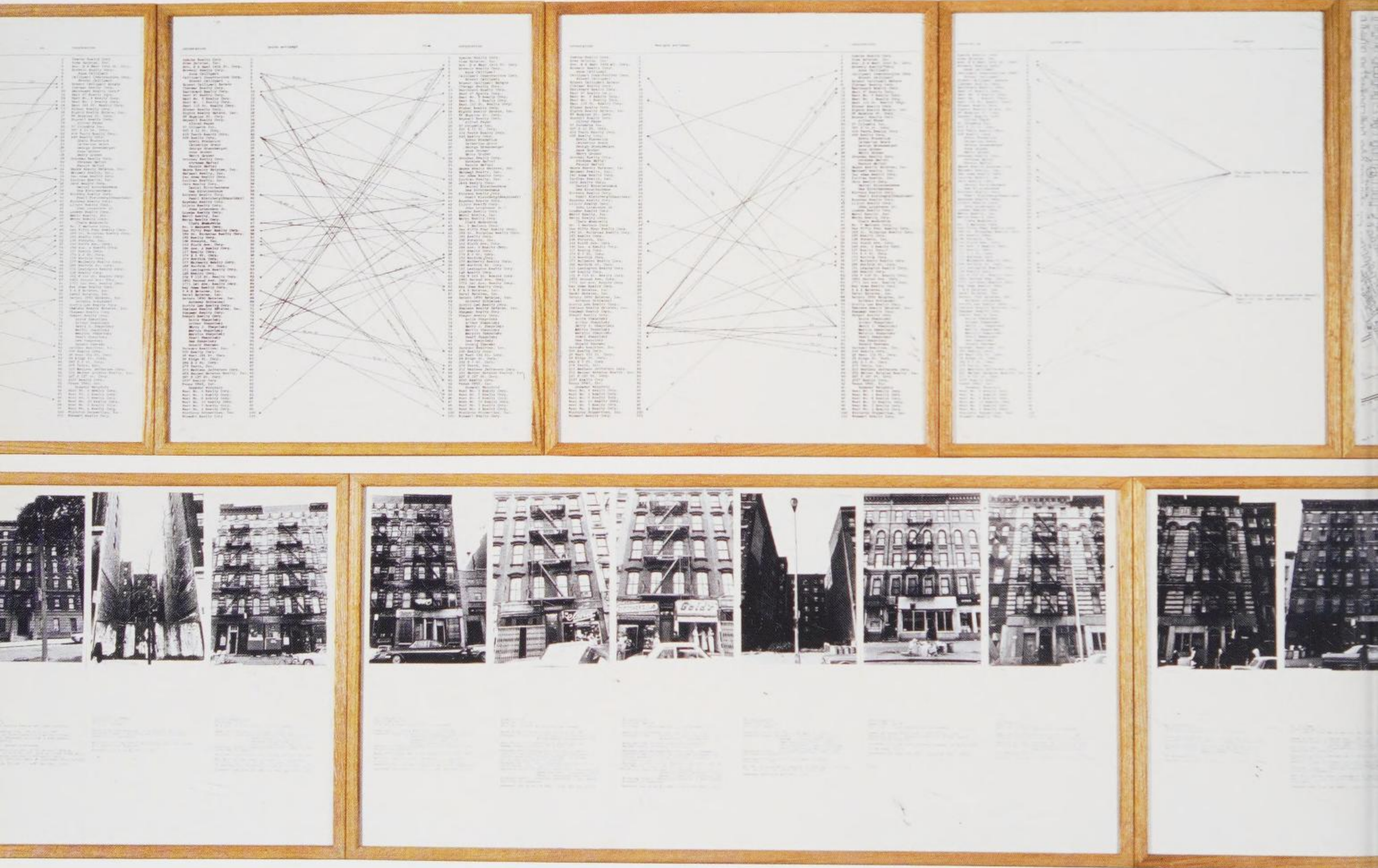
40
Lygia Clark
*Sensorial Objects: Draw
with Your Finger* 1966 (2005)
Coleção Família Clark

41
Lygia Clark
*Sensorial Objects:
Stone and Air* 1966 (2005)
Coleção Família Clark

42
Lygia Clark
*Sensorial Objects:
Ping-pong* 1966 (2005)
Coleção Família Clark

43
Lygia Clark
*Sensorial Objects:
Sensorial Gloves* 1966 (2005)
Coleção Família Clark

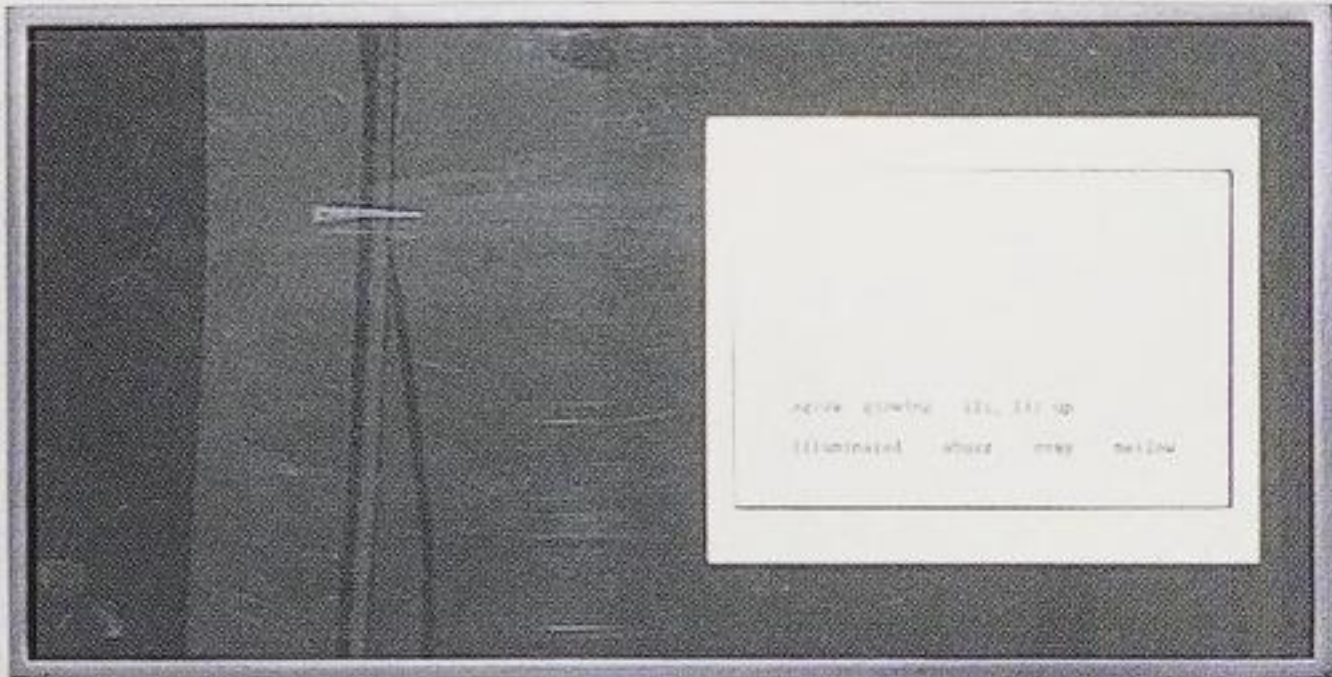




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6 Callipari Construction Corp.
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8 Ernest Callipari Estate
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99 West No. 2 Realty Corp.
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101 Womart Realty Corp.

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90 227 E 127 St. Corp.
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95 West No. 1 Realty Corp.
96 West No. 6 Realty Corp.
97 West No. 10 Realty Corp.
98 West No. 3 Realty Corp.
99 West No. 2 Realty Corp.
100 Winthrop Properties, Inc.
101 Womart Realty Corp.



new coming ill, ill up
illuminated above may below



high, illuminated, illuminated
high, heart, stopped, too up



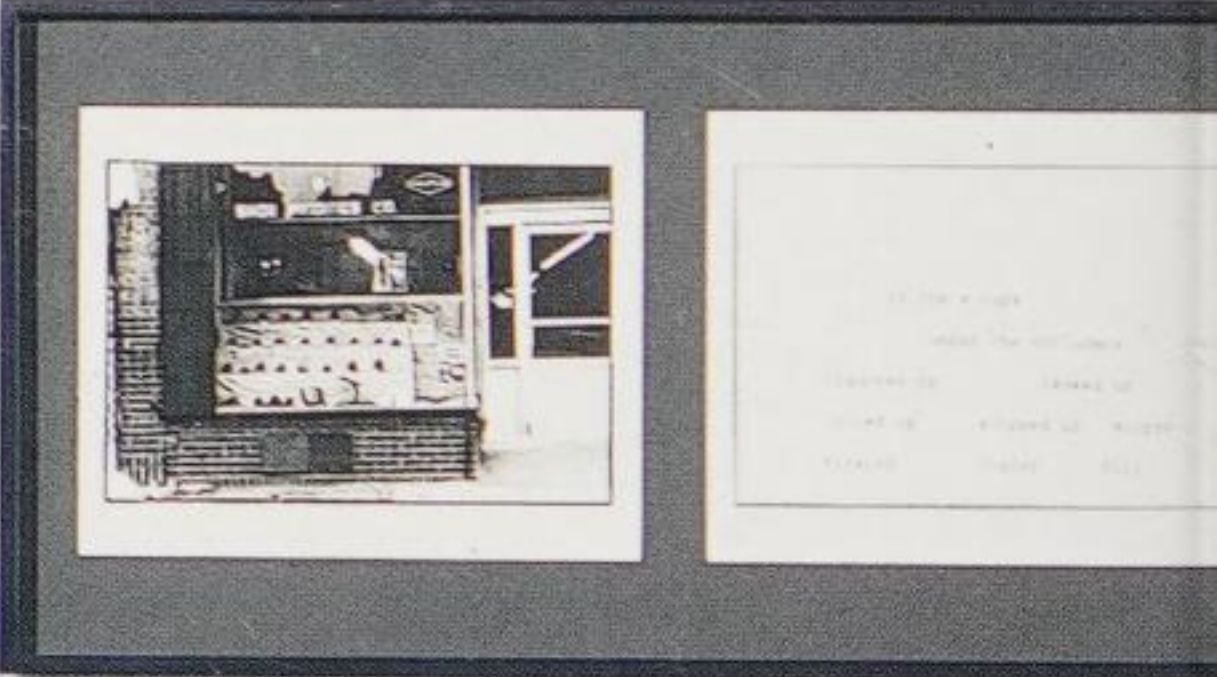
illuminated, illuminated, illuminated
illuminated, illuminated, illuminated
illuminated, illuminated, illuminated



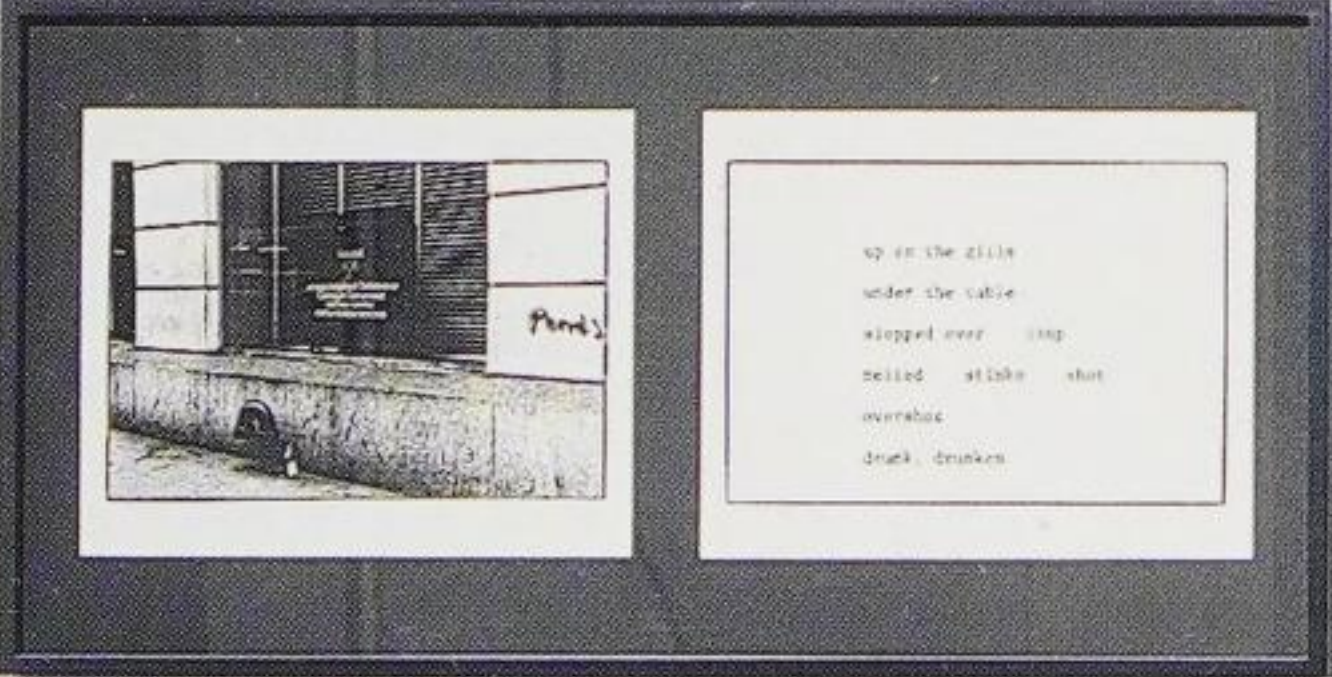
waited
waited
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waited



the other side of the street
the other side of the street
the other side of the street
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the other side of the street



the other side of the street
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the other side of the street



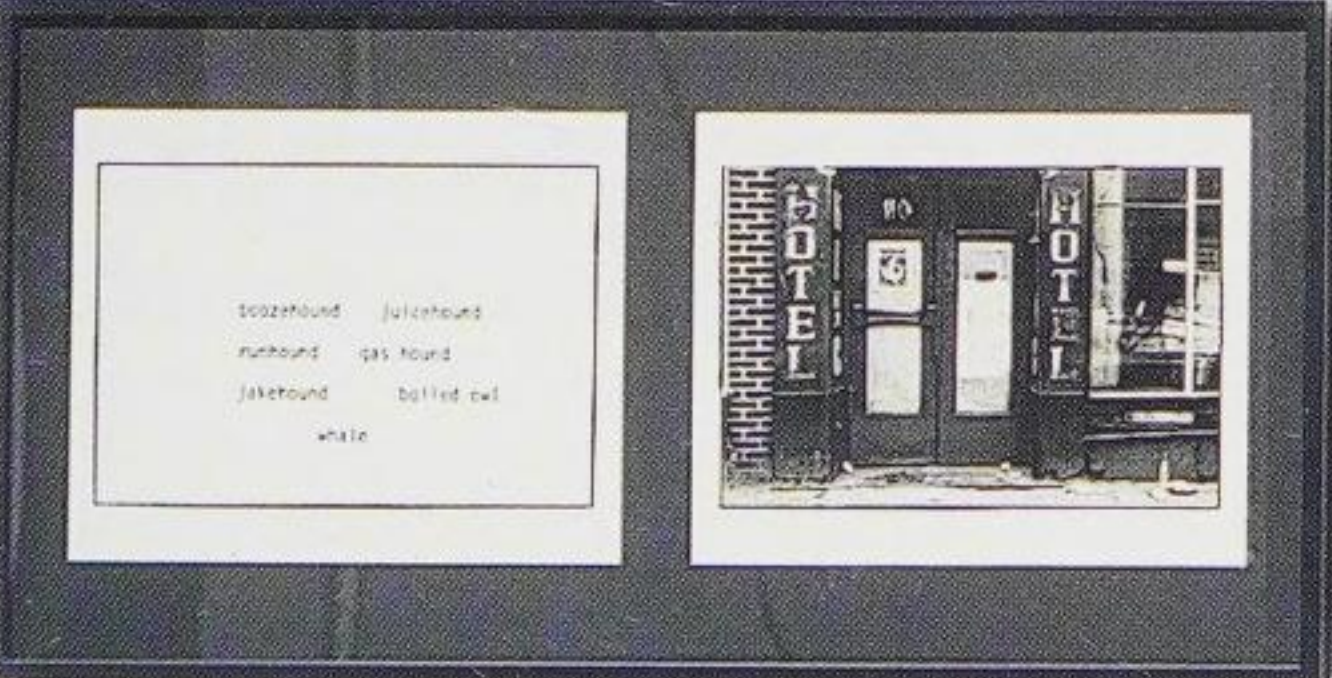
up on the side
under the table
knocked over
knocked over
knocked over
knocked over



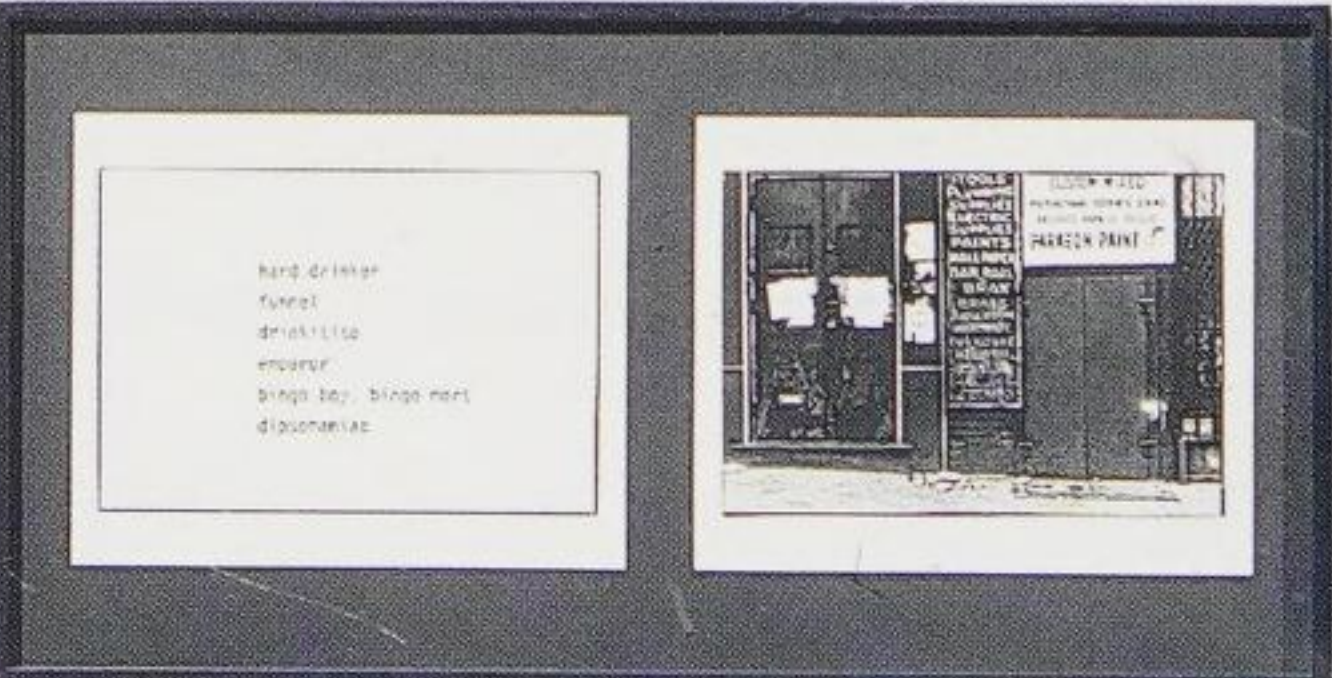
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knocked over



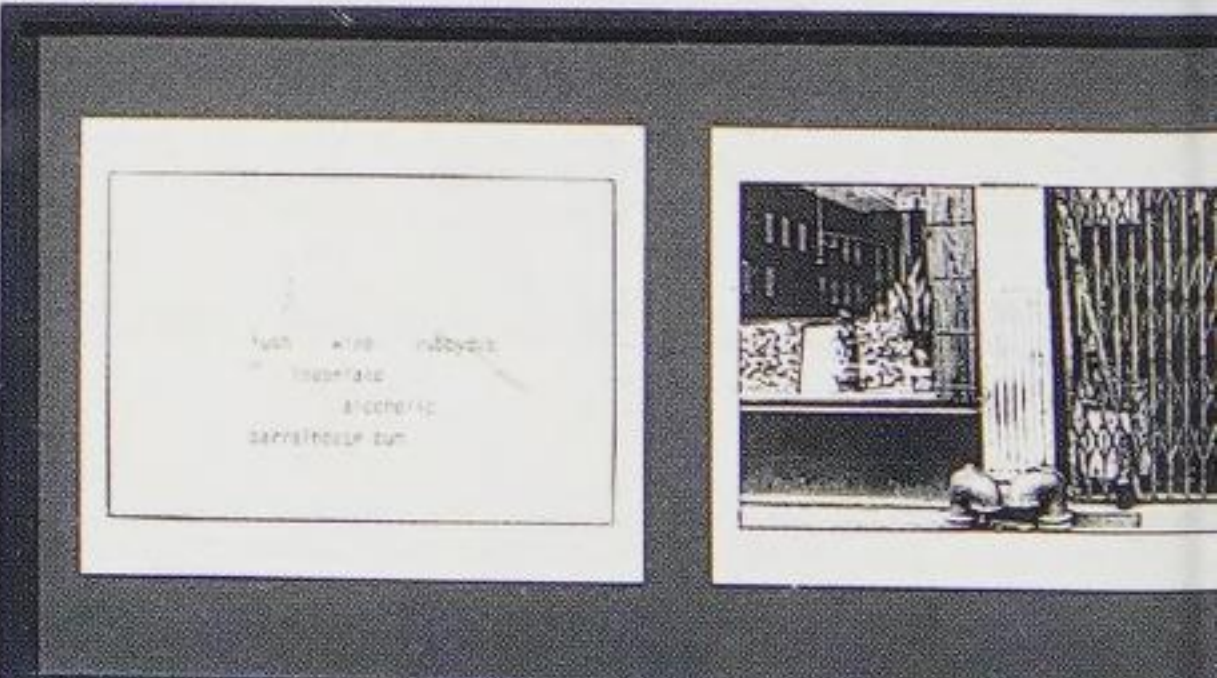
knocked over
knocked over
knocked over
knocked over
knocked over
knocked over



soberfound, juicefound
runfound, gas found
jokefound, bottled owl
white



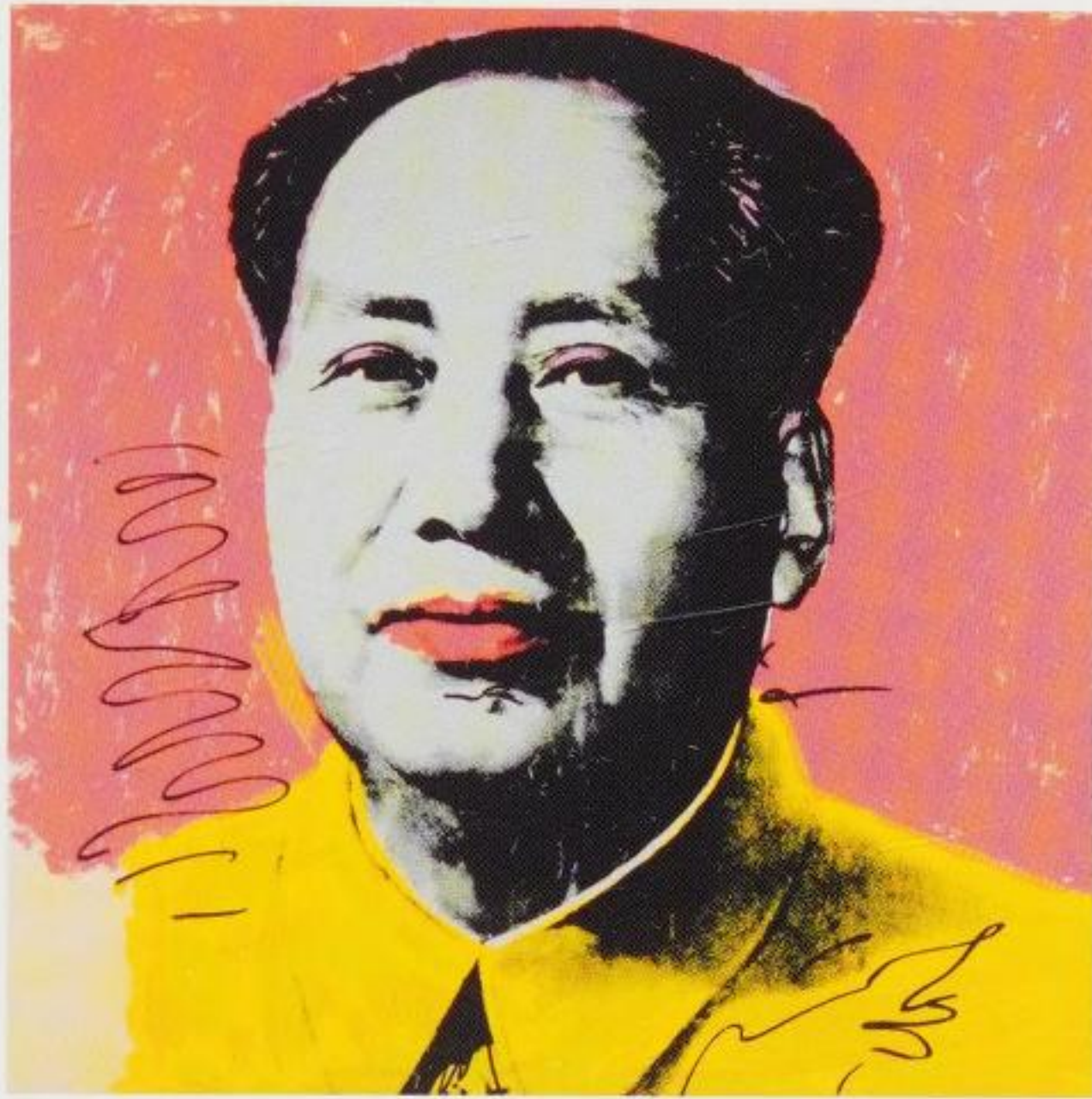
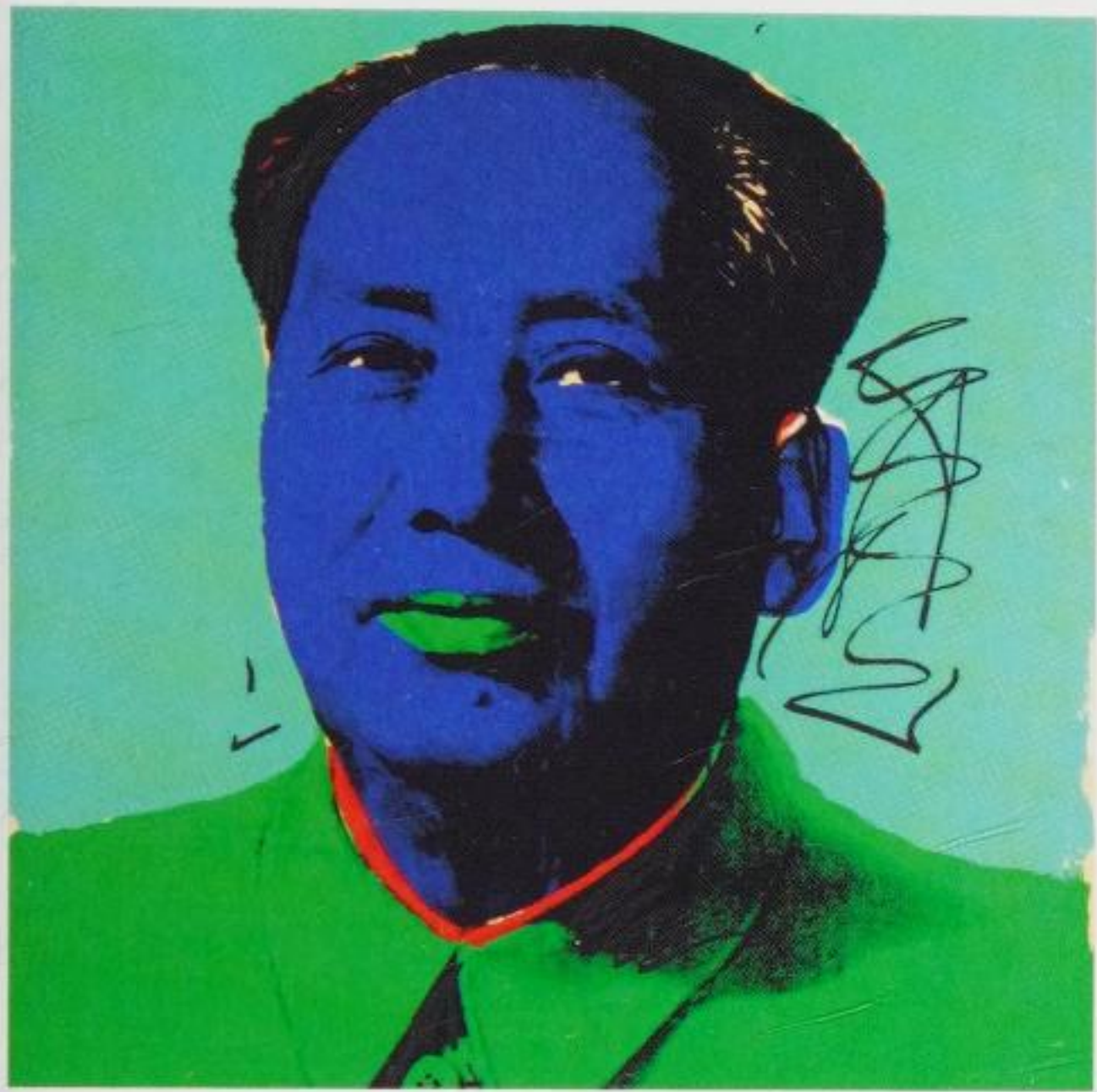
hard drinker
funnel
drunkillig
enough
bingo boy, bingo man
dipodomias

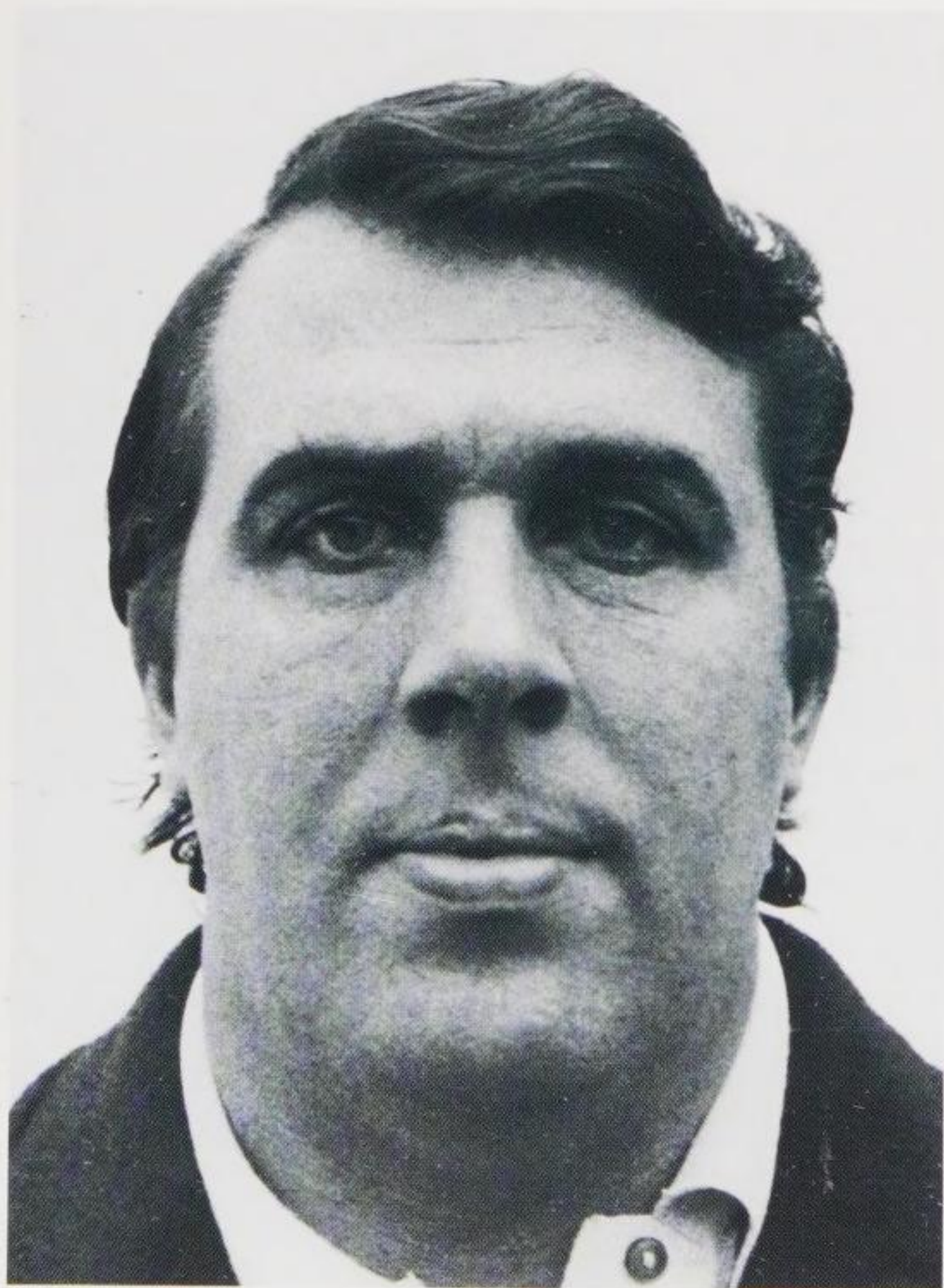


fun, wine, rubber
rubber
rubber
rubber
rubber
rubber









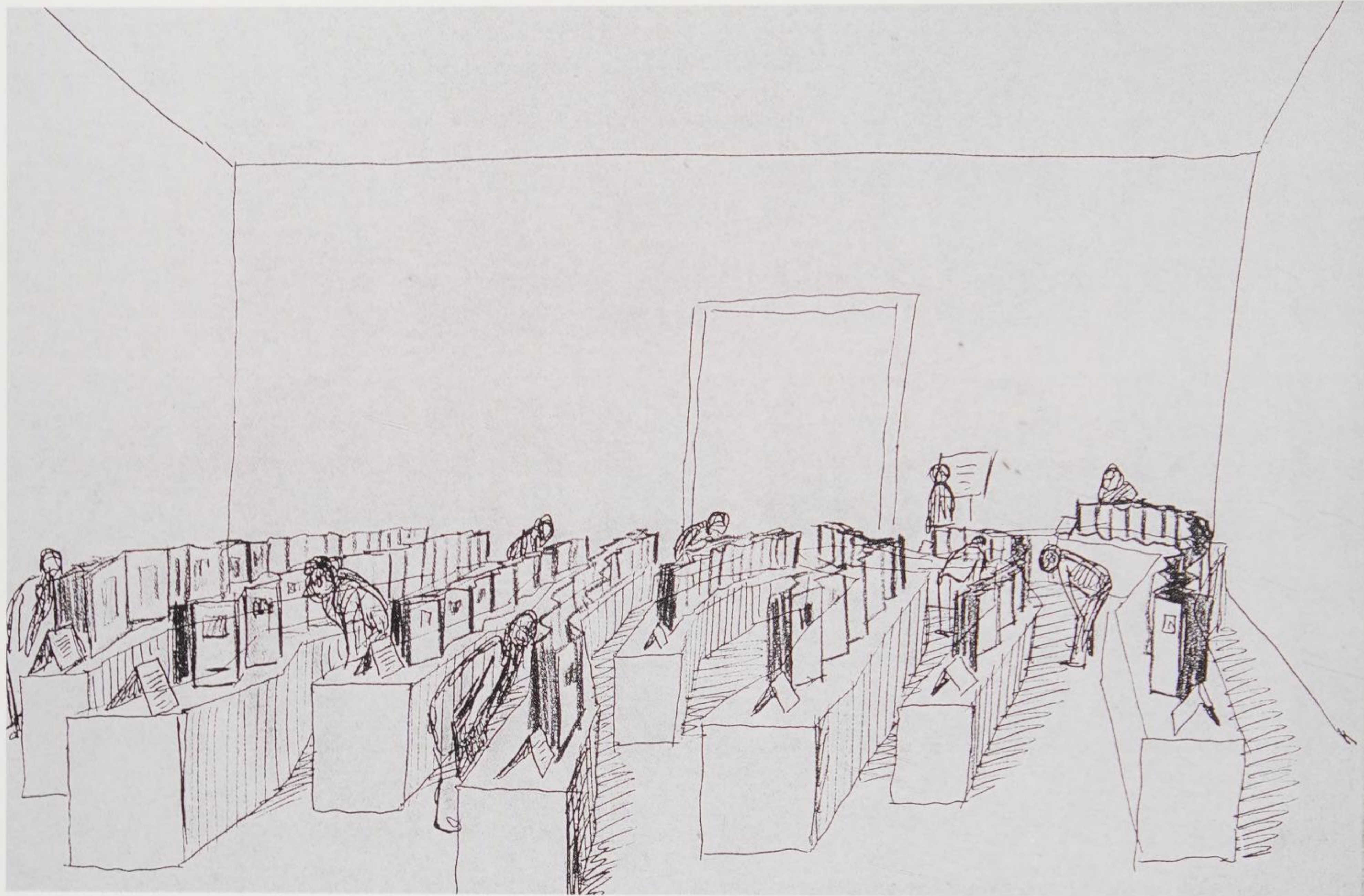


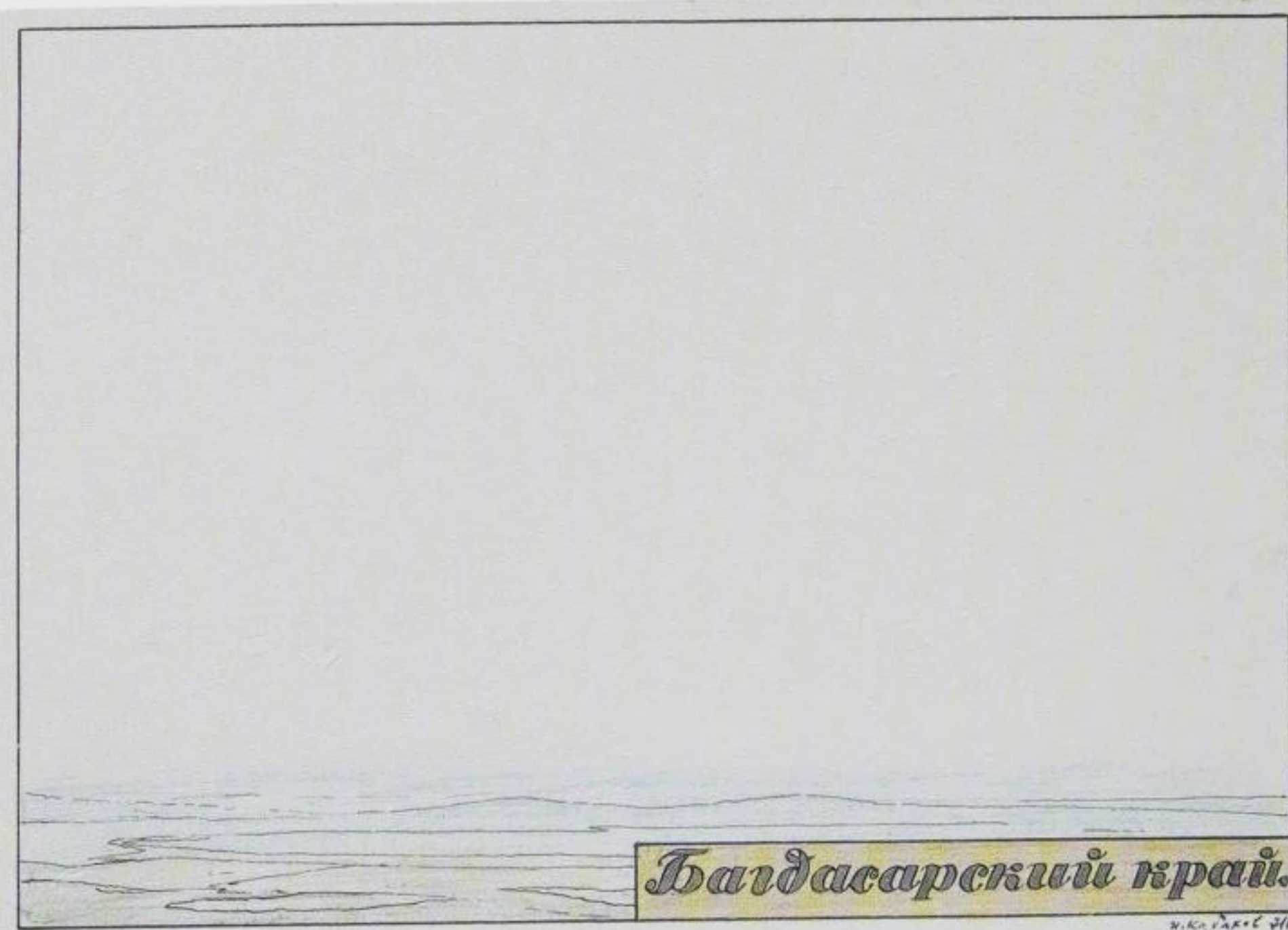
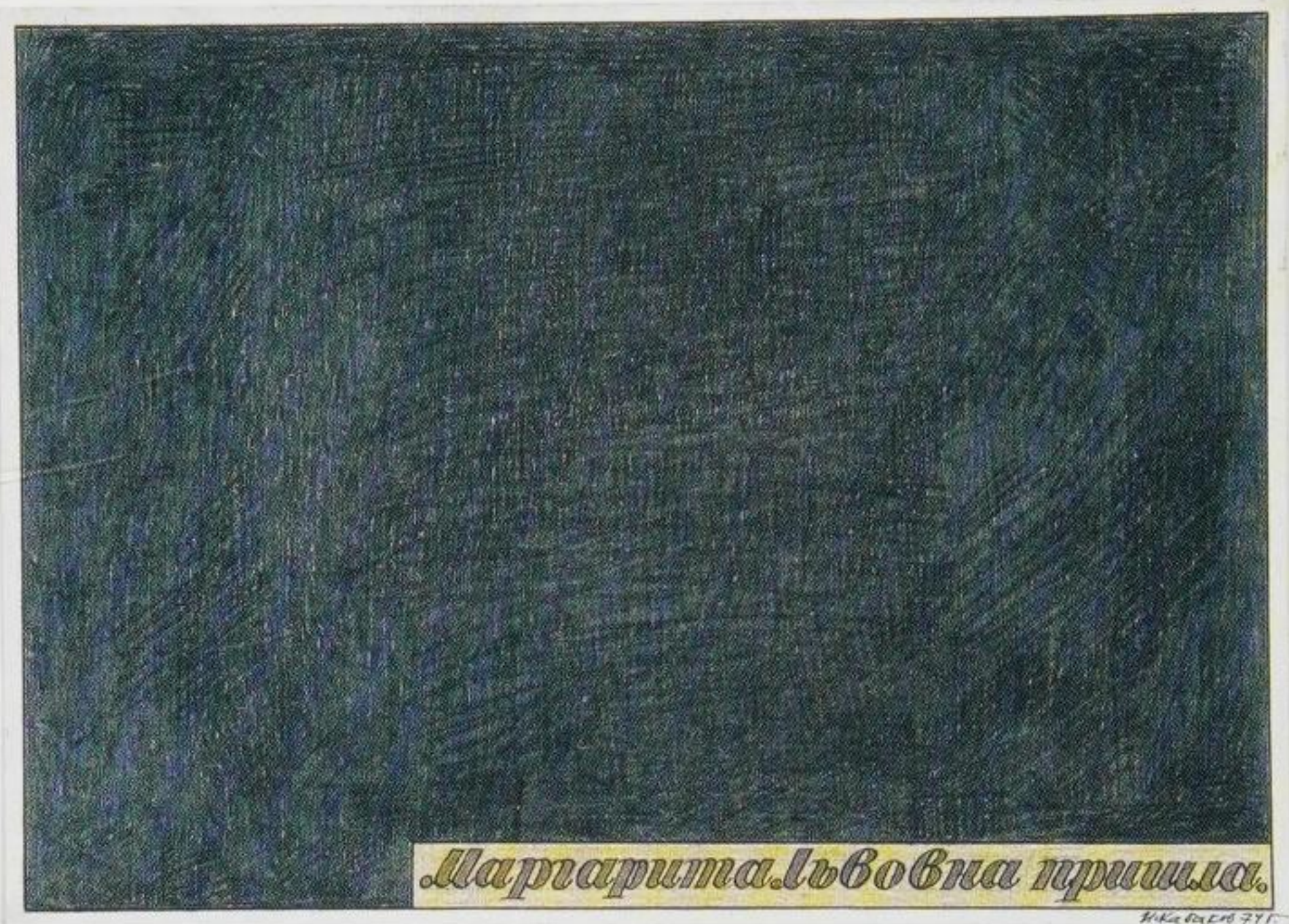
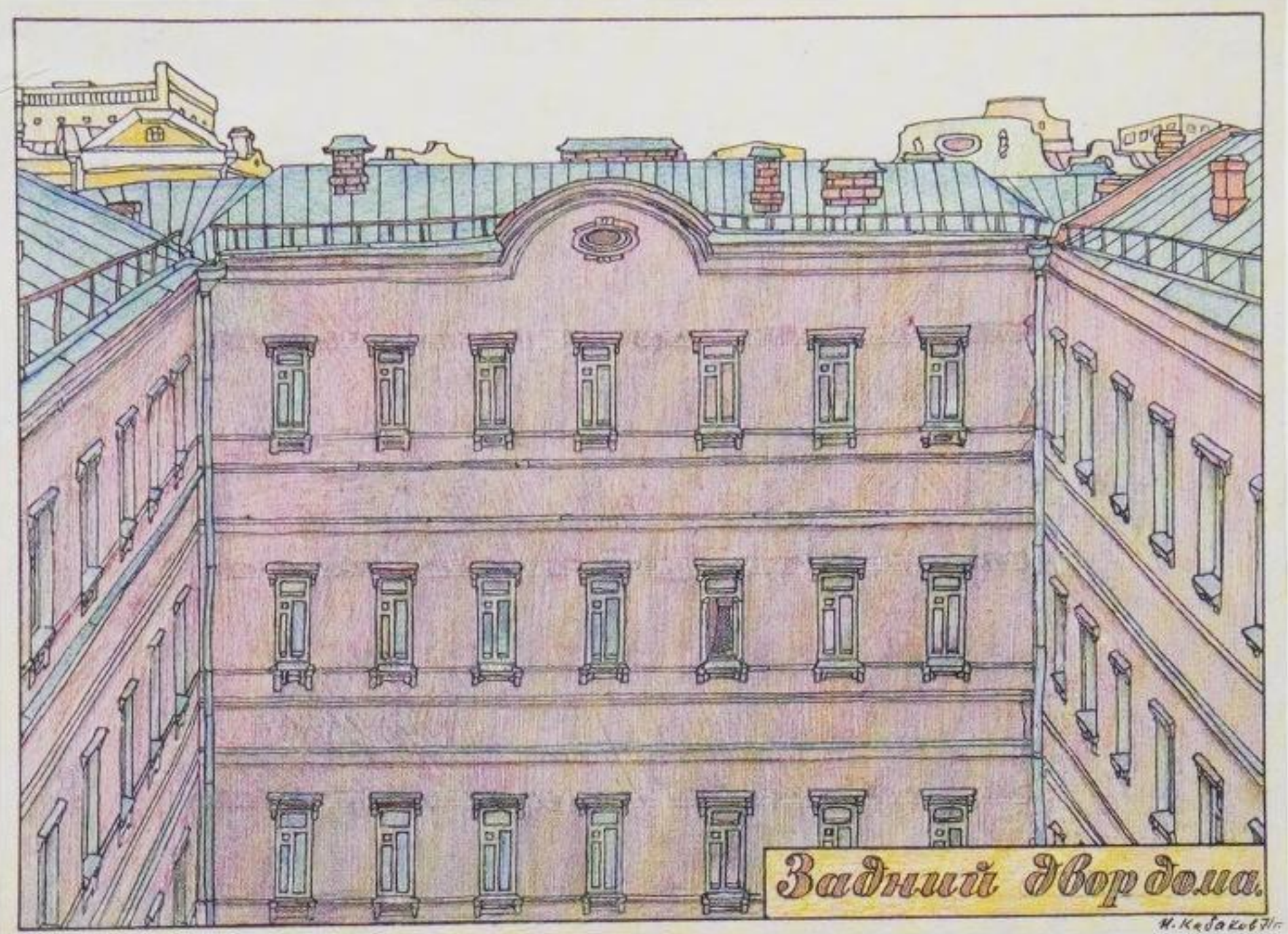
LA BIENNALE

LA BIENNALE











50
Mangelos
Energija 1977-8
Private Collection.
Courtesy Peter Freeman,
Inc., New York

51
Mangelos
Numberconcept
Pitagoras 1977-8
Courtesy Mrs
Zdravka Bašičević
Mangelos and
Peter Freeman,
Inc., New York

52
Mangelos
Le Manifeste sur
la machine 1977-8
Courtesy Mrs
Zdravka Bašičević
Mangelos and
Peter Freeman,
Inc., New York







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Perhaps you think 18-year-olds should vote, your curfew should be lifted and math be outlawed forever. But there's one thing on which you agree with millions of women in 106 countries—the modern internally worn sanitary protection—Tampax tampons.

Why does a girl with a mind of her own go along with women all over the world?

Tampax tampons give total comfort, total freedom. There are no belts, pins, pads. No odor.

They can be worn in the tub or shower—even in swimming. There's nothing to show under the sleekest clothes. And Tampax tampons are so easy to dispose of, too—the container-applicator just flushes away, like the Tampax tampon.

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C	24
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A	21
A	0030
A	0033
A	0050
A	0057
A	0032
A	0079
A	0047
A	0042
A	0079
A	0033
A	0033
A	0025
A	0029
A	0041
A	0036
A	0059
A	0041
A	0059
A	0034
A	0037
A	0059
A	0059
A	0055
A	0056
A	0058

FIGURATIVE
BY
DAN
GRAHAM



If nature didn't, Warner's will.

Our Comfort Curve™ bra with low-cut sides will do it for \$5. Warner's®

THE WARNER GROUP



oktobar 1974. Telefonirao Vojo, mu.

Vestire attillato. Sicura. Anche in certi giorni.

Lines mini l'invisibile

nei giorni di flusso leggero

perché
mettere un
assorbente
normale

quando oggi
ce n'è uno
piccolo
così?

Lines Mini è l'assorbente piccolo che non si nota e non si muove perché aderisce da solo alla mutandina.

prezzo da 10 L.900

"JUNA BELLA", august 1975.



septembar 1975.

Veet, la carezza che depila il tuo corpo

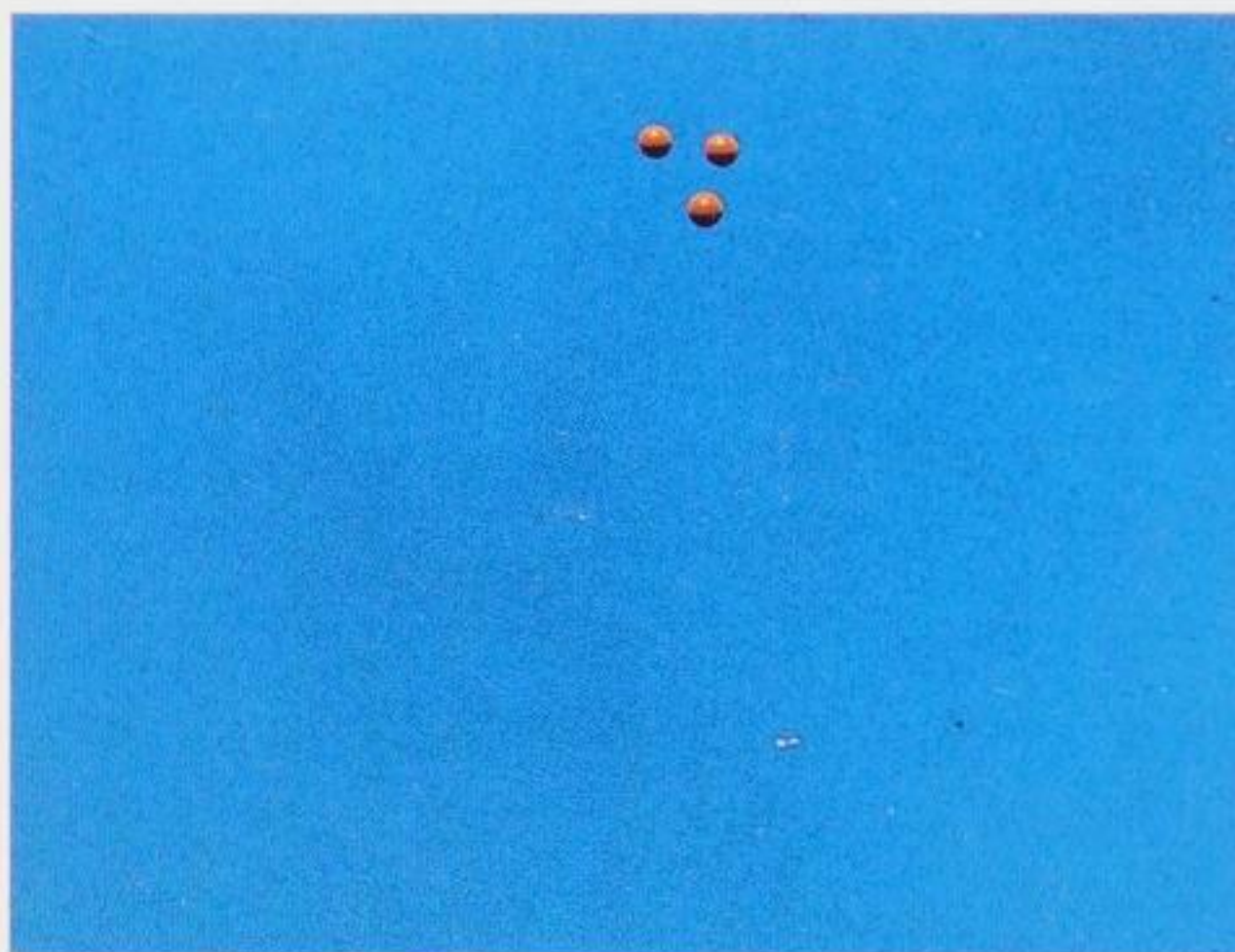
Veet è un'ormone non di base.
Strofina per depilare la pelle molle e setole di donna.
Veet è talmente dolce e gentile con la tua pelle che la puoi usare non solo per depilarti gambe e ascelle, ma anche per il viso.
Prima la crema condiziona ogni pelo, Veet rapidamente sulla pelle.
Ha un delicato e gradevole profumo di fiori.
Dopo pochi istanti le tue gambe e le tue ascelle saranno lisce e morbide.
Dolce, rapida, efficace.
Il motivo per cui molte donne continuano a scegliere Veet.
Veet si muove gentile con te.
E con te.

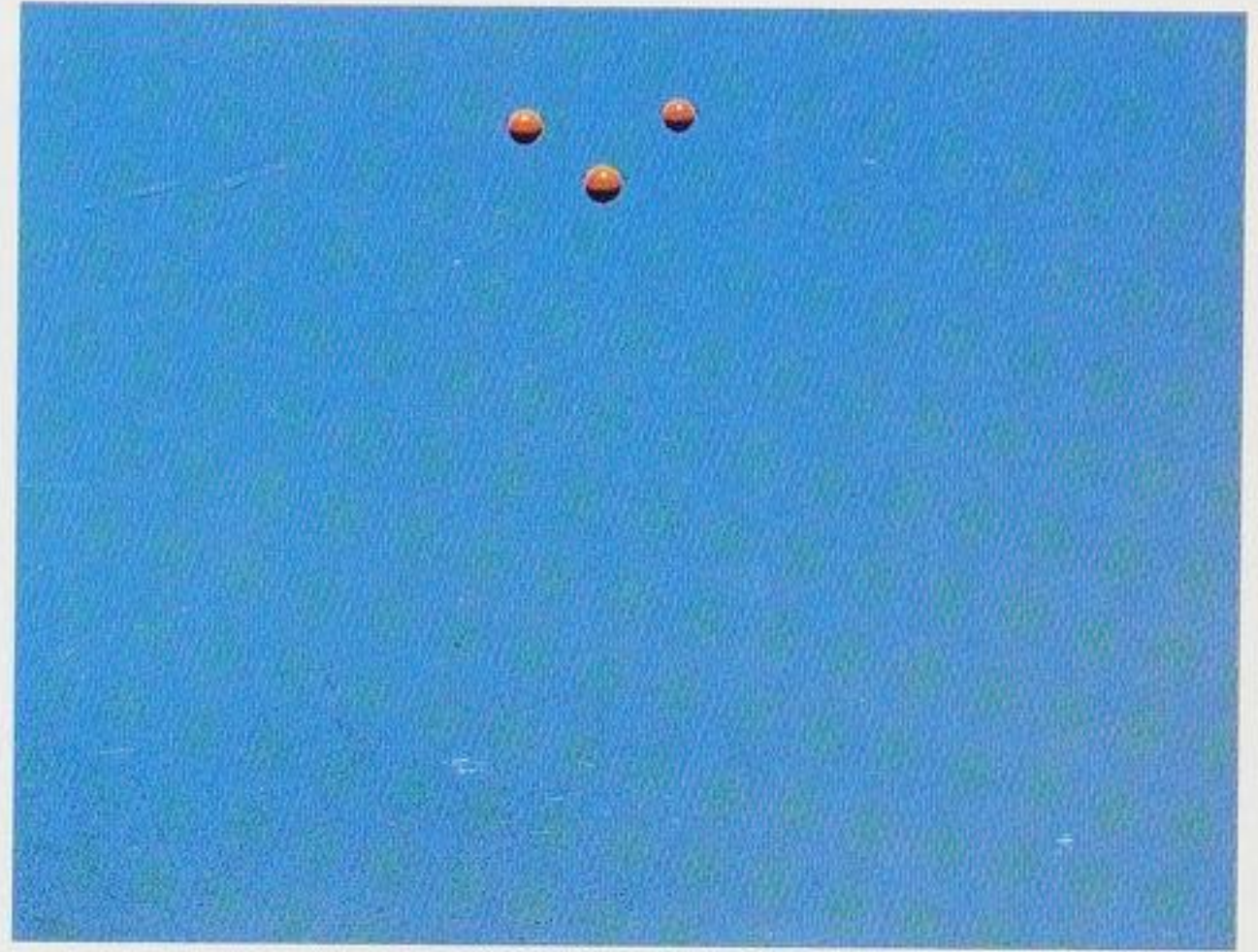
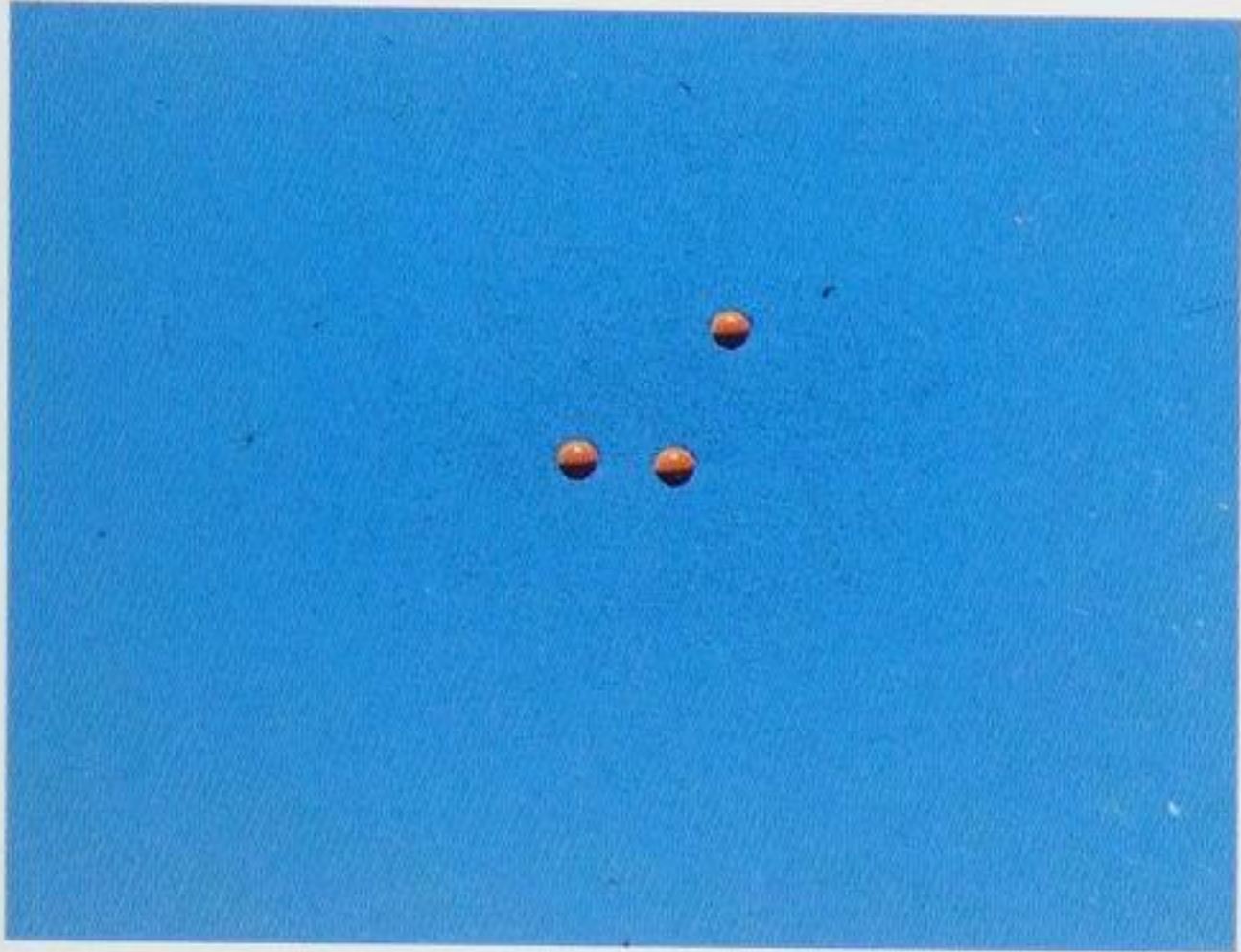
Un modo per essere più donna

"AMICA", juli 1975.

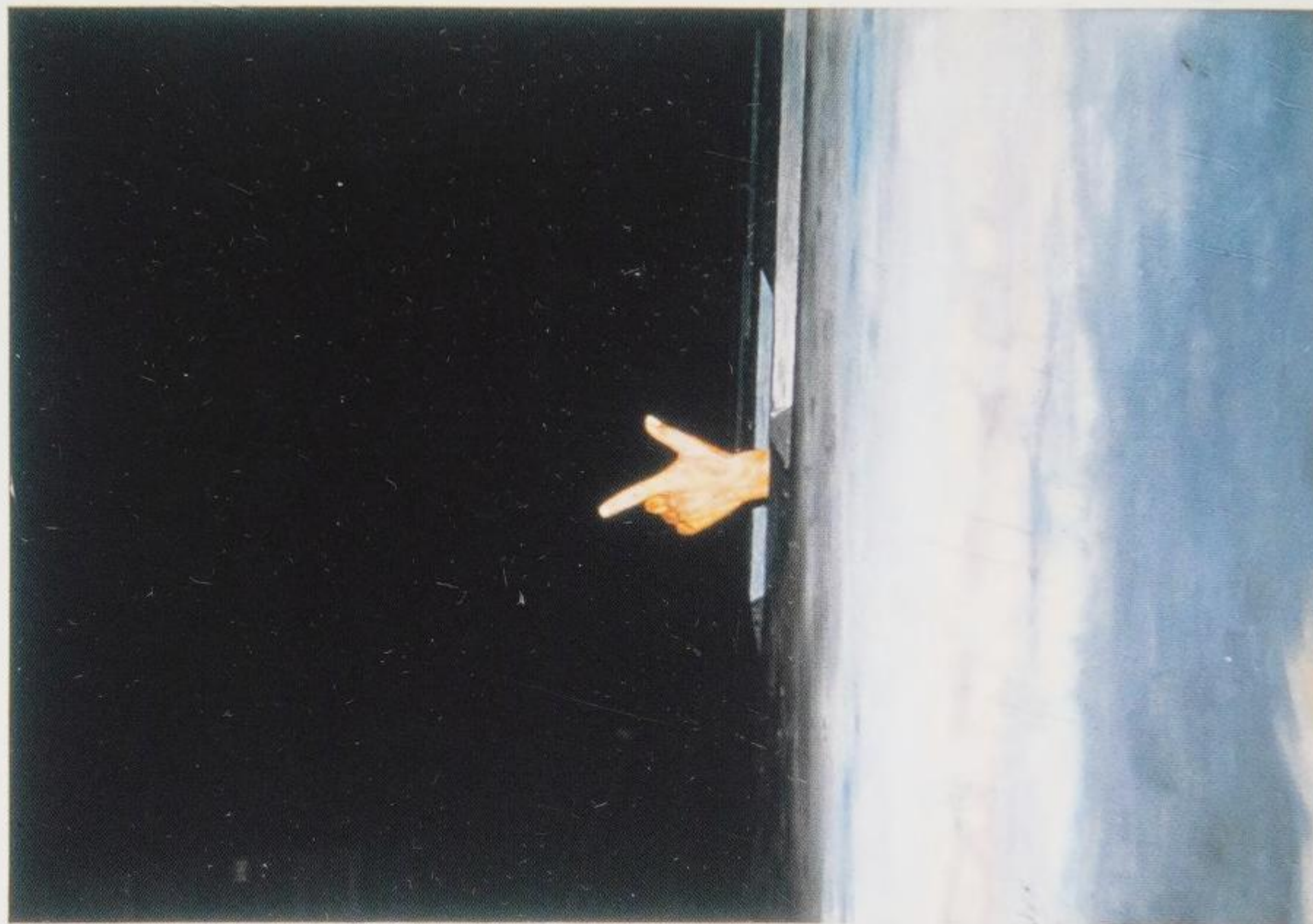
57
John Baldessari
*Throwing Three
Balls in the Air to
Get an Equilateral
Triangle* 1972-3
Courtesy the artist
and Marian
Goodman Gallery,
New York

142—143





58
John Baldessari
Commissioned Painting:
A Painting by Patrick X.
Nidorf 1969
Courtesy the artist and
Marian Goodman
Gallery, New York



A PAINTING BY PATRICK X. NIDORF O.S.A.



A PAINTING BY GEORGE WALKER



60
Cildo Meireles
Virtual Spaces:
Canto II 1967-8
Luisa Malzoni Strina

61
Dan Graham
Public Space/
Two Audiences 1976
Collection Herbert







63
Robert Filliou
Permanent Creation
Tool Box No.2 1969
Eric Decelle, Brussels

64
Robert Filliou
8 Measurement Poems
(réalisé sous licence par
Emmett Williams) 1966
Collection Irmeline Lebeer

150—151









66
Charles Ray
Plank Piece I-II 1973
Anthony d'Offay, London

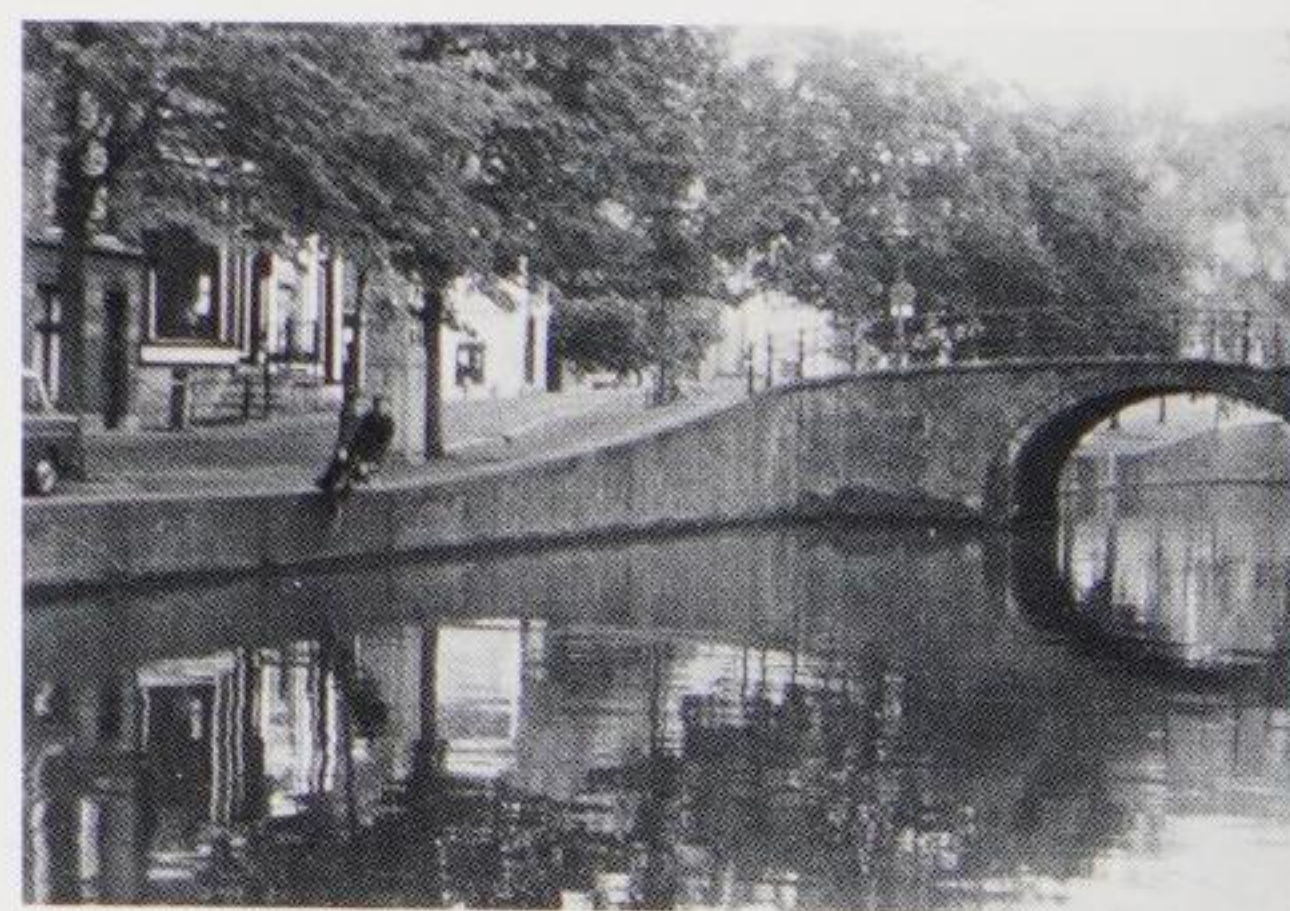
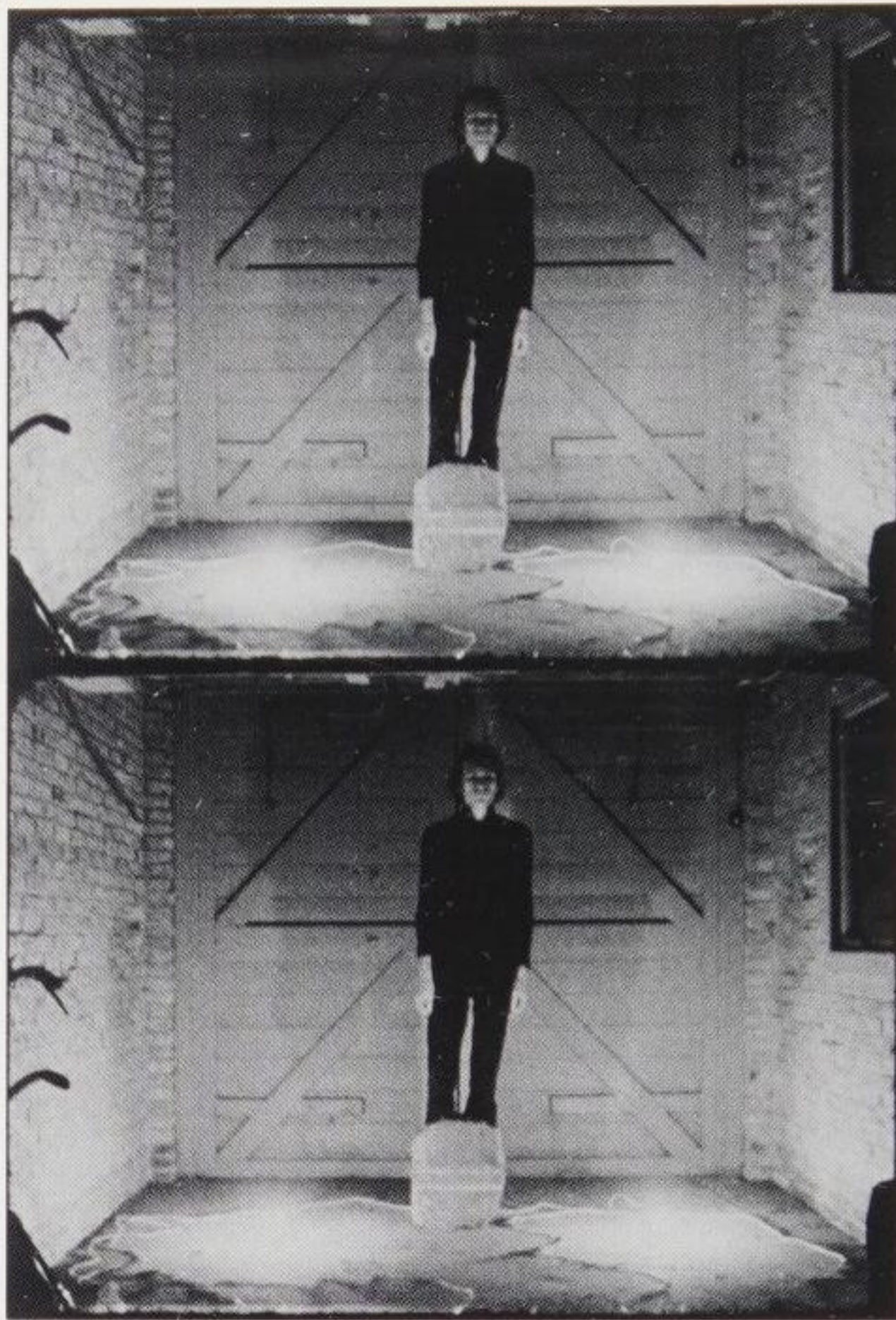
67
Charles Ray
Untitled (Glass Chair) 1976
Collection Brian D. Butler,
Santa Monica



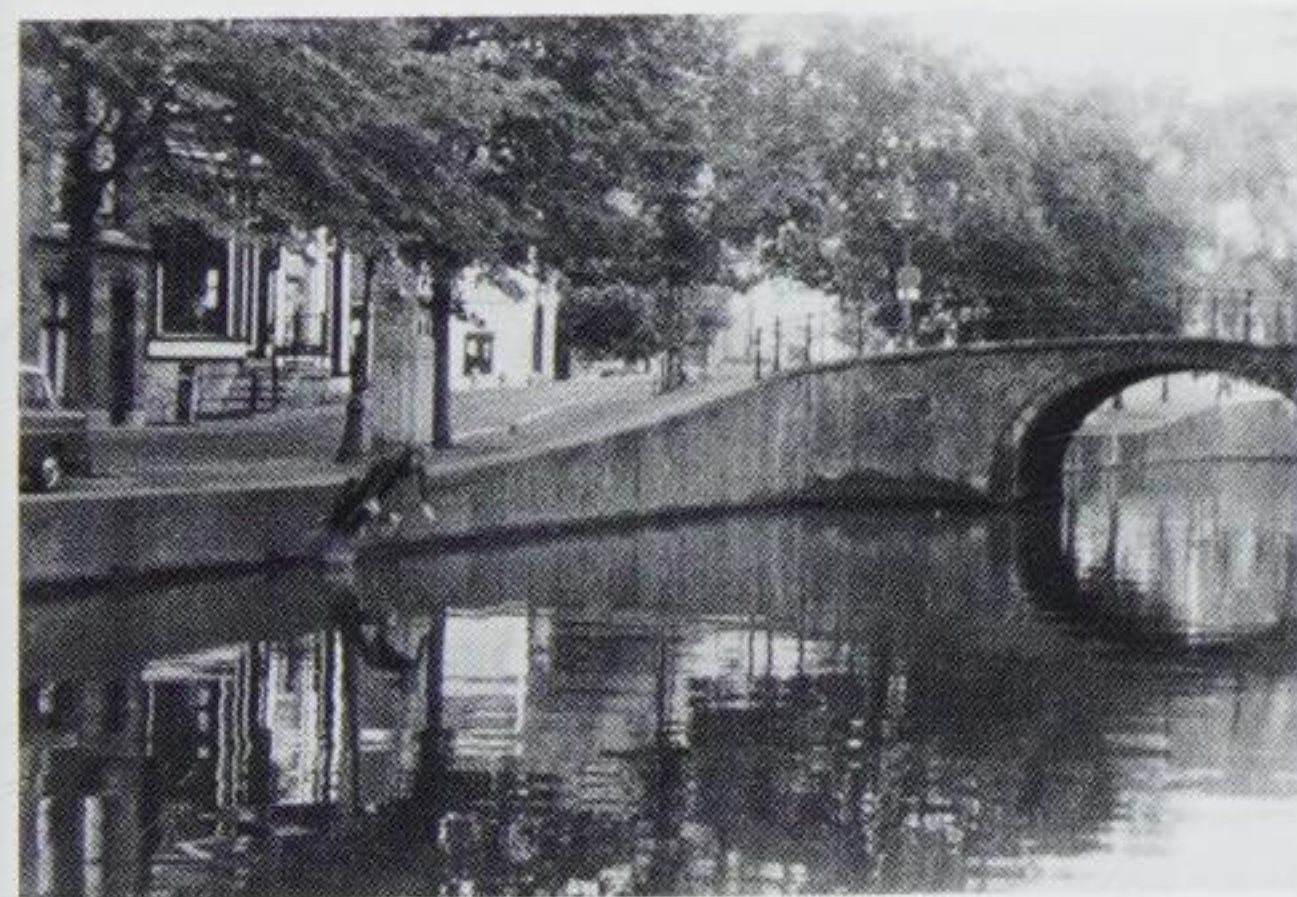


Nightfall.

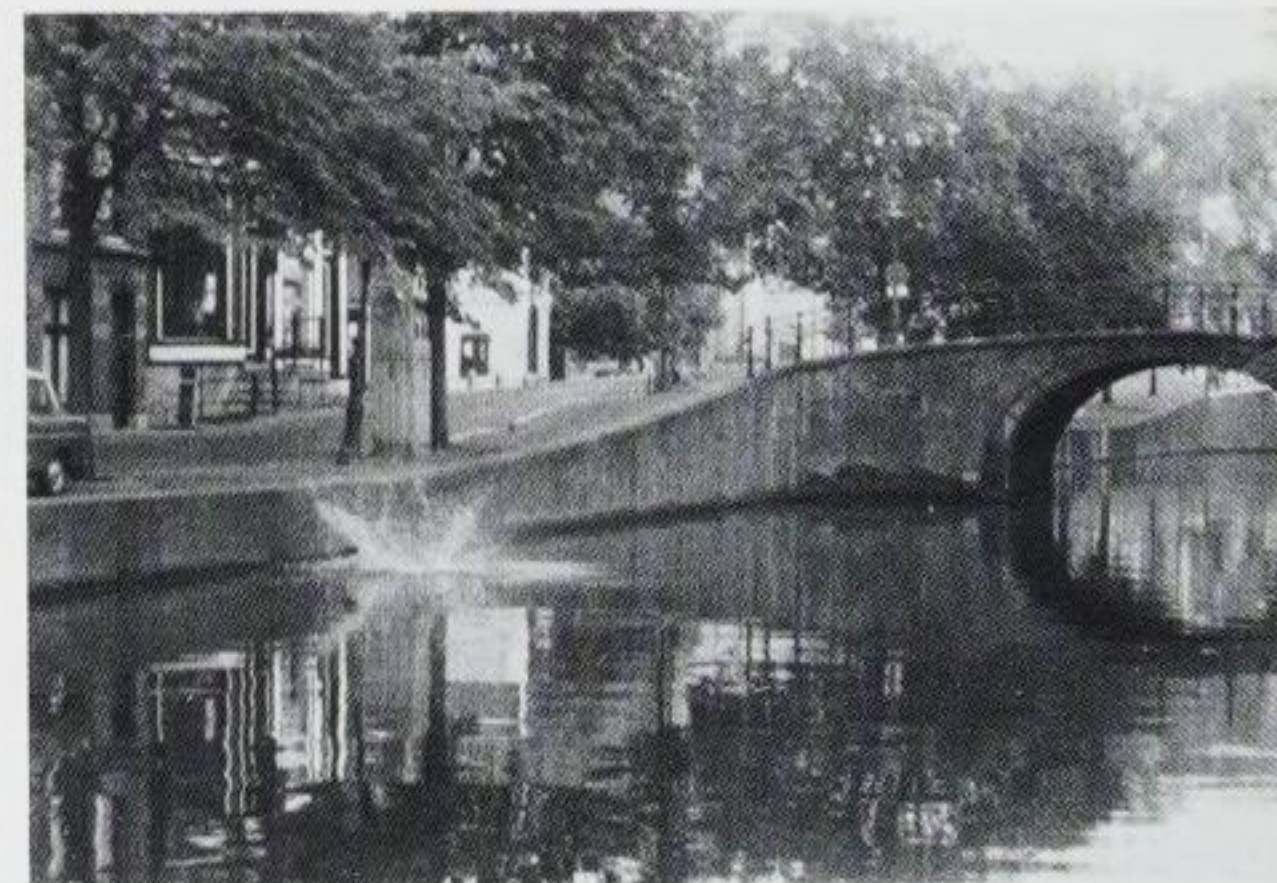
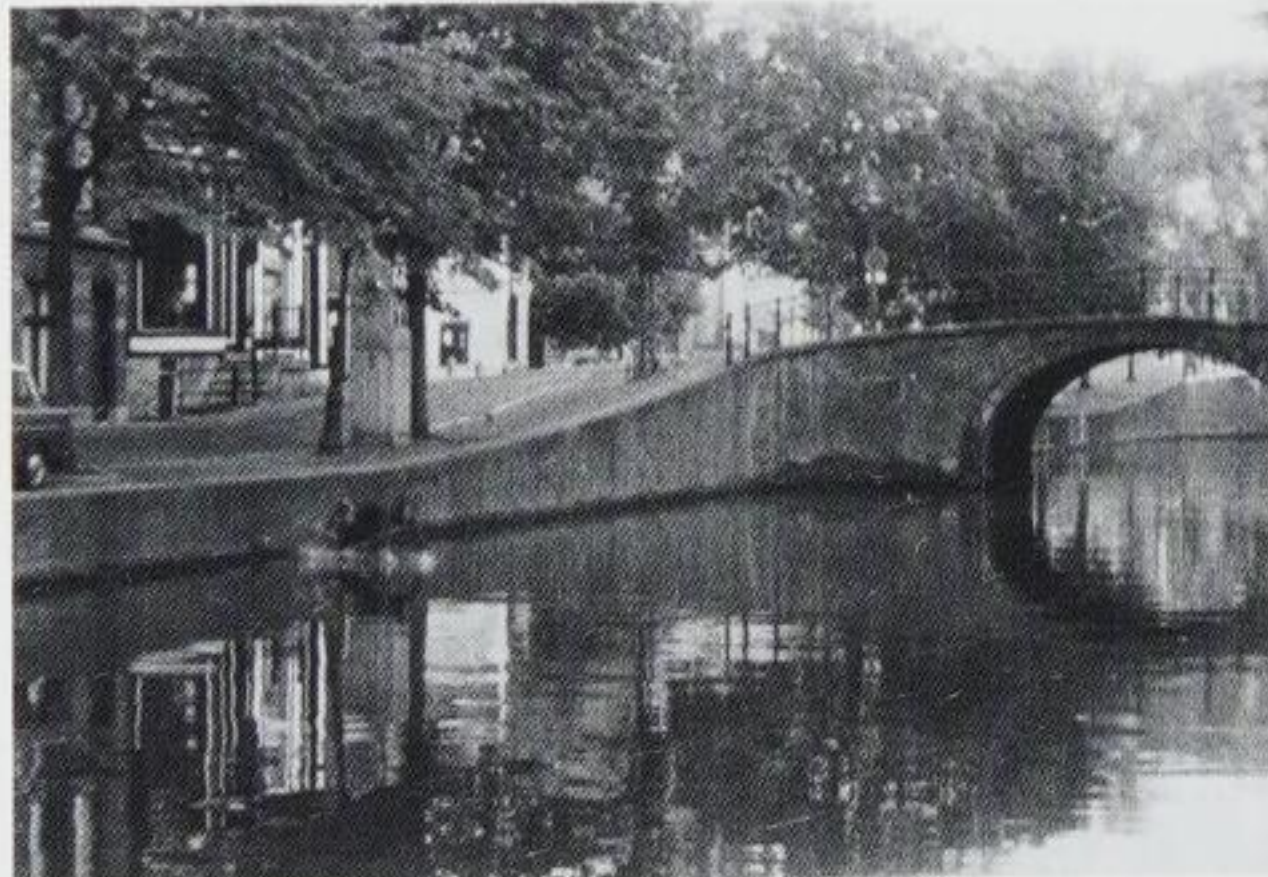
Nightfall.



68
Bas Jan Ader
Nightfall 1971 (detail)
Courtesy Bas Jan Ader Estate
and Patrick Painter Editions



69
Bas Jan Ader
Fall II 1970 (detail)
Courtesy Bas Jan Ader Estate
and Patrick Painter Editions





70
Bas Jan Ader
Primary Time 1974 (detail)
Courtesy Bas Jan Ader Estate
and Patrick Painter Editions

71
Bas Jan Ader
In Search of the Miraculous
(*One Night in Los Angeles*)
1973 (details)
Collection Philip Aarons and
Shelley Fox Aarons, New York



yeh I've been searchin'



yeh I've been searchin'



I've been searchin'



Oh yeh, searchin' capital way



Oh yeh, searchin'



I'm searchin'



Searchin' capital way



and I'm like that, I'll be there, I'm



you know I'll bring her home, I'm



gonna find her



gonna find her



will you be there, I'm



and if I don't find a man, you know I will



and if I don't find a man, you know I will



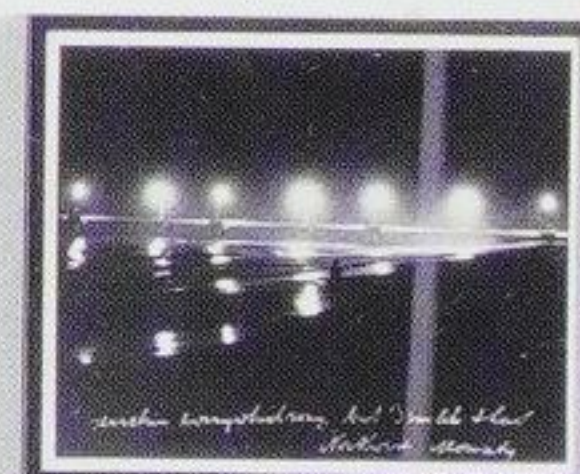
you know I'll bring her home, I'm



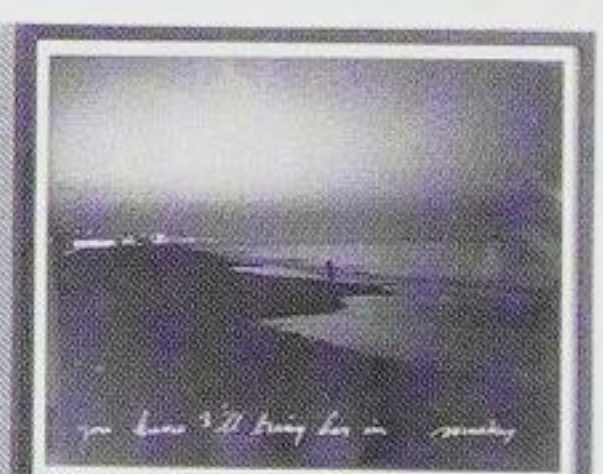
gonna find her



Oh yeh, searchin' my own way



searchin' capital way, but I'll be there, I'm



you know I'll bring her home, I'm



Archive

Mel Bochner

Jack Burnham

Dick Higgins

Donald Judd

Thomas Kuhn

Sol LeWitt

Mário Pedrosa

The Serial Attitude

Mel Bochner

First published in *Artforum*, December 1967

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What order-type is universally present wherever there is any order in the world? The answer is, serial order. What is a series? Any row, array, rank, order of precedence, numerical or quantitative set of values, any straight line, any geometrical figure employing straight lines, and yes, all space and all time.

Josiah Royce, Principles of Logic

Serial order is a method, not a style. The results of this method are surprising and diverse. Edward Muybridge's photographs, Thomas Eakins's perspective studies, Jasper Johns's numerals, Alfred Jensen's polyptychs, Larry Poons's dots and ellipsoids, Donald Judd's painted wall pieces, Sol LeWitt's orthogonal multi-part floor structures all are works employing serial logics. This is not a stylistic phenomenon. Variousness of the above kind is sufficient grounds for suggesting that rather than a style we are dealing with an attitude. The serial attitude is a concern with how order of a specific type is manifest.

Many artists work 'in series'. That is, they make different versions of a basic theme; Morandi's bottles or de Kooning's women for example. This falls outside the area of concern here. Three basic operating assumptions separate serially ordered works from multiple variants:

- 1 The derivation of the terms or interior divisions of the work is by means of a numerical or otherwise systematically predetermined process (permutation, progression, rotation, reversal).
- 2 The order takes precedence over the execution.
- 3 The completed work is fundamentally parsimonious and systematically self-exhausting.

Serial ideas have occurred in numerous places and in various forms. Muybridge's photographs are an instance of the serialization of time through the systematic subtraction of duration from event. Muybridge simultaneously photographed the same activity from angles of 180, 90, and 45, and printed the three sets of photographs in three horizontally parallel rows. By setting up alternative reading logics within a visually discontinuous sequence he completely fragmented perception into what Stockhausen called, in another context, a 'directionless time-field'.

Robert Rauschenberg's *Seven White Panels* and Ellsworth Kelly's orthogonal eight-foot-square *Sixty-Four* are anomalous works of the early 1950s. Both paintings fall within the concept of modules. Modular ideas differ

considerably from serial ideas although both are types of order. Modular works are based on the repetition of a standard unit. The unit, which may be anything (Andre's bricks, Morris's truncated volumes, Warhol's soup cans) does not alter its basic form, although it may appear to vary by the way in which units are joined. While the addition of identical units may modify simple gestalt viewing, this is a relatively uncomplex order form. Modularity has a history in the 'cultural methods of forming' and architectural practice. Frank Stella has often worked with modular sets, and in his Concentric Square paintings he has serialized color arrangement. Some of the early black paintings, like *Die Fahne Hoch*, employed rotational procedures in the organization of quadrants.

Logics which precede serial works may often be absurdly simple and available. In Jasper Johns' number and alphabet paintings the prime set is either the letters A-Z or the numbers 0-9. Johns chose to utilize convention. The convention happened to be serial. Without deviating from the accustomed order of precedence he painted all the numbers or letters, in turn, beginning again at the end of each sequence until all the available spaces on the canvas were filled. The procedure was self-exhausting and solipsistic. Other works of Johns are noteworthy in this context, especially his *Three Flags* which is based on reverse perspective and, of course, the Map paintings. His drawings in which all the integers 0-9 are superimposed are examples of a straightforward use of simultaneity.

An earlier example of simultaneity appears in Marcel Duchamp's *Nude Descending a Staircase*. Using the techniques of superimposition and transparency he divided the assigned canvas into a succession of time intervals. Due to the slight variation in density it is impossible to visualize specific changes as such. Alternations are leveled to a single block of information which subverts experiential time.

Duchamp has said this idea was suggested to him by the photographic experiments of Dr Etienne Jules Marey (1830-1904). Marey, a French physiologist, began with ideas derived from the work of Muybridge, but made a number of significant conceptual and mechanical changes. He invented an ingenious optical device based on principles of rotation similar to Gatling's machine gun. This device enabled him to photograph multiple points of view on a single photographic plate. In 1890 he invented his 'chronophotograph', which was capable of recording, in succession, 120 separate photos per second. He

attempted to visualize the passage of time by placing a clock within camera range, obtaining by this method a remarkable 'dissociation of time and image'.

Types of order are forms of thought. They can be studied apart from whatever physical form they may assume. Before observing some further usages of seriality in the visual arts, it will be interesting to survey several other areas where parallel ideas and approaches also exist. In doing this I wish to imply neither metaphor nor analogy.

My desire was for a conscious control over the new means and forms that arise in every artist's mind.
Arnold Schoenberg

Music has been consistently engaged with serial ideas. Although the term 'serial music' is relatively contemporary, it could be easily applied to Bach or even Beethoven. In a serial or dodecaphonic (twelve tone) composition, the order of the notes throughout the piece is a consequence of an initially chosen and ordered set (the semi-tonal scale arranged in a definite linear order). Note distribution is arrived at by permuting this prime set. Any series of notes (or numbers) can be subjected to permutation as follows: 2 numbers have only 2 permutations (1,2;2,1); 3 numbers have 6 (1,2,3; 1,3,2; 2,1,3; 2,3,1; 3,1,2; 3,2,1); 4 numbers have 24; ... 12 numbers have 479,001,600. Other similarly produced numerical sequences and a group of pre-established procedures are used to give the exact place in time for each sound, the coincidence of sounds, their duration, timbre and pitch.

The American serial composer Milton Babbitt's *Three Compositions for Piano* can be used as a simplified example of this method (see George Perle's *Serial Composition and Atonality* for a more detailed analysis). The prime set is represented by these integers: P=5,1,2,4. By subtracting each number in turn from a constant of such value that the resulting series introduces no numbers not already given, an inversion results (in this case the constant is 6): I=1,5,4,2. A rotational procedure applied to P and I yields the third and fourth set forms: Rp=2,4,5,1; Ri=4,2,1,5.

Mathematics – or more correctly arithmetic – is used as a compositional device, resulting in the most literal sort of 'programme music', but one whose course is determined by a numerical rather than a narrative or descriptive 'programme'.
Milton Babbitt

The composer is freed from individual note-to-note decisions which are self-generating within the system he devises. The music thus attains a high degree of conceptual coherence, even if it sometimes sounds 'aimless and fragmentary'.

The adaptation of the serial concept of composition by incorporating the more general notion of permutation into structural organization – a permutation the limits of which are rigorously defined in terms of the restrictions placed on its self-determination constitutes a logical and fully justified development, since both morphology and rhetoric are governed by one and the same principle.
Pierre Boulez

The form itself is of very limited importance, it becomes the grammar for the total work.
Sol LeWitt

Language can be approached in either of two ways, as a set of culturally transmitted behavior patterns shared by a group or as a system conforming to the rules which constitute its grammar.
Joseph Greenberg, Essays in Linguistics

In linguistic analysis, language is often considered as a system of elements without assigned meanings ('uninterpreted systems'). Such systems are completely permutational, having grammatical but not semantic rules. Since there can be no system without rules of arrangement this amounts to the handling of language as a set of probabilities rather than a set of fixed meanings. Many interesting observations have been made about uninterpreted systems which are directly applicable to the investigation of any array of elements obeying fixed rules of combination. Studies of isomorphic (correspondence) relationships are especially interesting.

Practically all systems can be rendered isomorphic with a system containing only one serial relation. For instance, elements can be reordered into a single line, i.e. single serial relation by arranging them according to their coordinates. In the following two-dimensional array, the coordinates of C are (1,3), of T(3,2):

R	P	D
L	B	T
C	U	O

Isomorphs could be written as:

R, P, D, L, B, T, C, U, O
or
R, L, C, P, B, U, D, T, O

An example of this in language is the ordering of direction in writing to correspond to the ordering in time of speech. All the forms of cryptography from crossword puzzles to highly sophisticated codes depend on systematic relationships of this kind.

The limits of my language are the limits of my world.
Ludwig Wittgenstein

Certain terms, not common in an art context, are necessary for a discussion of serial art. As yet, these terms, often abused have remained undefined. Some of the following definitions are standard, some are derived from the above investigations, the rest are tailored to specific problems of the work itself:

Abstract System
A system in which the physical units that are to function as objects have not been specified.

Binary
Consisting of two elements.

Definite Transition
A rule that requires at some definite interval before or after a given unit, some other unit is required or excluded.

Grammar
That aspect of the system that governs the permitted combinations of elements belonging to that system.

Isomorphism
A relation between systems so that by rules of transformation each unit of one system can be made to correspond to one unit of the other.

Orthogonal
Right angled.

Permutation
Any of the total number of changes in order which are possible within a set of elements.

Probability
The ratio of the number of ways in which an event can occur in a specified form to the total number of ways in which the event can occur.

Progression
A discrete series that has a first but not necessarily a last element in which every intermediate element is related by a uniform law to the others.
(a) Arithmetic Progression
A series of numbers in which succeeding terms are derived by the addition of a constant number (2,4,6,8,10 ...)
(b) Geometric Progression
A series of numbers in which succeeding terms are derived by the multiplication by a constant factor (2,4,8,16,32 ...)

Reversal
An operation consisting of an inversion or upside-down turn within a series.

Rotation
An operation consisting of an axial turn within a series.

Sequence
State of being in successive order.

Series
A set of sequentially ordered elements, each related to the preceding in a specifiable way by the logical conditions of a finite progression, i.e., there is a first and last member, every member except the first has a single immediate predecessor from which it is derived and every member except the last a single immediate successor.

Set
The totality of points, numbers, or other elements which satisfy a given condition.

Simultaneity
A correspondence of time or place in the occurrence of multiple events.

An odd 'free' utilization of series was Allan Kaprow's *18 Happenings in 6 Parts*. His initial set was capriciously chosen - seven smiles, three crumpled papers and nineteen lunch box sounds. The nineteen lunch box

sounds were snapping noises made by recording a few and then altering them until nineteen variations were obtained. The arrangement of sounds was 3,12,7,8,10,2,15,6,1,13,5,18,4,19,17,9,14. While this is a completely arbitrary use of row technique it does present an interesting possibility for the routinization of real-time events. Sports, such as football, are based on similar concepts of sequentially fixed probabilities of random movement.

Alfred Jensen's involvement appears to be with an unorthodox Pythagorean appreciation of 'Number' judging from such titles as *Square Root 5 Figurations*, *Twice Six and Nine*, and the recent *Timaeus* (Plato's dialogue on aesthetics). For Plato, as well as Pythagoras, 'Number' had an ideal existence and was viewed as paradigmatic (a concept which has been reintroduced into mathematical logic by Russell and Whitehead's concept of number as a 'class of classes'). Whatever the derivation, order in Jensen's paintings is defined in terms of progressional enlargement and diminishment of adjacent rectangular spaces. Although his color choices seem arbitrary their placement is not, being arranged in bilateral symmetries or systematic rotations. The checkerboard pattern which he adheres to is one of the oldest binary orders.

The structure of an artificial optic array may, but need not, specify a source. A wholly invented structure need not specify anything. This would be a case of structure as such. It contains information, but not information about, and it affords perception but not perception of.

James J. Gibson,

The Senses Considered as Perceptual Systems

Perspective, almost universally dismissed as a concern in recent art, is a fascinating example of the application of prefabricated systems. In the work of artists like Ucello, Durer, Piero, Saendredam, Eakins (especially their drawings), it can be seen to exist entirely as methodology. It demonstrates not how things appear but rather the workings of its own strict postulates. As it is, these postulates are serial.

Perspective has had an oddly circular history. Girard Desargues (1593–1662) based his non-Euclidean geometry on an intuition derived directly from perspective. Instead of beginning with the unverifiable Euclidean axiom that parallel lines never meet, he accepted instead the visual evidence that they do meet at the point where they

intersect on the horizon line (the 'vanishing point' or 'infinity' of perspective). Out of his investigations of 'visual' (as opposed to 'tactile') geometry came the field of projective geometry. Projective geometry investigates such problems as the means of projecting figures from the surface of three-dimensional objects to two-dimensional planes. It has led to the solution of some of the problems of mapmaking. Maps are highly abstract systems, but since distortion of some sort must occur in the transformation from three to two dimensions, maps are never completely accurate. To compensate for distortion, various systems have been devised. On a topographical map, for example, the lines indicating levels (contour lines) run through points which represent physical points on the surface mapped so that an isomorphic relation can be established. Parallels of latitude, isobars, isothermal lines and other grid coordinate denotations, all serialized, are further cases of the application of external structure systems to order the unordered.

Another serial aspect of mapmaking is a hypothesis in topology about color. It states that with only four colors all the countries on any map can be differentiated without any color having to appear adjacent to itself. (One wonders what the results might look like if all the paintings in the history of art were repainted to conform to the conditions of this hypothesis.)

In the early paintings of Larry Poons it was not difficult to discern the use of serialization. The rules of order varied, sometimes they appeared to be based on probabilities of position and/or direction and/or shape (dot or ellipsoid). Definite transitions or replacements occurred in some paintings. Enforcer appears to be based on a system of quadrant reversal and rotation.

Although Donald Judd's chief concerns seem to be 'specific objects' he has utilized various modular and serial order types. One of Judd's untitled galvanized iron pieces, consisting of four hemicylindrical sections projecting from the front face of a long rectangular volume, is based on the progression: 3,4,3 1/2,3 1/2,4,3,4 1/2. The first, third, fifth, and seventh numbers are the ascending proportions of the widths of the metal protrusions. The second, fourth, and sixth numbers are the widths of the spaces between. The numbers are not measurements but proportional divisions of whatever length the work is decided to be. Fascinating progressions of the above kind can be found listed in Jolly's *Compilation of Series*.

Sol LeWitt orders his floor pieces by permuting linear dimension and binary volumetric possibilities. Parts of his eighteen-piece Dwan Gallery (Los Angeles) exhibition could have appeared at one of three height variables, in one of two volumetric variables (in this case all were open) and in one of two positional variables, on a constant 3 x 3 square grid. The complexity and visual intricacy of this work seems almost a direct refutation of Whitehead's dictum that the higher the degree of abstraction the lower the degree of complexity. LeWitt's two-dimensional orthogonal grid placement system is related to the principles of order in mapmaking.

Other artists are currently exploiting aspects of seriality. Dan Flavin's *Nominal Three to Wm. of Ockham* (author of the law of parsimony) is based on an arithmetic progression. Jo Baer's paintings, Hanne Darboven's complicated drawings, Dan Graham's concrete poetry, Eva Hesse's constructions, William Kolakoski's programmed asterisks, Bernard Kirschenbaum's crystallographic sculpture, and Robert Smithson's pyramidal glass stacks all suggest future possibilities of serial methodology.

Systems Esthetics

Jack Burnham

First published in *Artforum*, September 1968

A polarity is presently developing between the finite, unique work of high art, that is, painting or sculpture, and conceptions that can loosely be termed *unobjects*, these being either environments or artifacts that 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 that seems to run counter to the waning revolution of abstract and nonobjective art. The evolution embraces a series of absolutely logical and incremental changes, wholly devoid of the fevered iconoclasm that 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 *eminence 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 technostucture. 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, that is, 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. Judgement demands precise socio-technical models. Earlier the industrial state evolved by filling consumer needs on apiecemeal 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 neighbourhoods, industrial complexes, farms, transportation systems, information centers, recreation centers, or any of the other matrices 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' 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-a-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, and so on, 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 system esthetic is literal in that all phases of the life cycle of a system are relevant. There is no end product that 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 onesized canvas ... The single theme, one formal device, one colour-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 antinovelist, 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 that 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 YMHA 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 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 by 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 kinesthesia 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 experiencing 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 that 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 GRAV, 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 Perreault has pointed out. Besides emphasizing that the context of art is fluid, they are a *reductio ad absurdum* of the entire market mechanism that 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' eight-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 possess 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 monetary 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 publicised 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 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 of '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 ongoing 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 that have crystallized 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 place, 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 that, through the nature of 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 ourselves 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 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 that 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 Arbitr 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 E.S. Quade, 'Methods and Procedures' in *Analysis for Military Decisions*, Santa Monica, November 1964, p.153
- 2 John Kenneth Galbraith, *The New Industrial State*, Boston 1967, pp.343–53
- 3 Christopher Caudwell (pseud.), *Illusion and Reality: A Study of the Sources of Poetry*, London 1937, p.111
- 4 Morse Peckham, *Man's Rage for Chaos: Biology, Behavior and the Arts*, New York 1967, p.314
- 5 Michael Fried, 'Art and Objecthood' *Artforum*, Summer 1967, p.15
- 6 Ludvig von Bertalanffy, *Robots, Men and Minds*, New York 1967, p.69
- 7 Anonymous 'Ad Reinhardt, Painter, Is Dead, Reduced Colour to Bare Minimum' in *The New York Times*, 1 September 1967
- 8 Donald Judd, 'Specific Objects' in *Contemporary Sculpture*, New York 1965, p.78
- 9 Robert Morris, 'Anti Form', *Artforum*, April 1968, p.35
- 10 Robert Smithson 'Towards the Development of an Air Terminal Site' *Artforum*, Summer 1967, pp.36–40
- 11 Fried, op cit., p.19
- 12 Jay Jacobs, March 1968 'More Les' the ART gallery, Ivoryton, Connecticut, p.27
- 13 Dan Flavin (with introduction by), *Dan Flavin: Pink and Gold*, exh. cat., The Museum of Contemporary Art, Chicago 1967
- 14 Hans Haacke (with statement by), *Hans Haacke*, exh. cat., Howard Wise Gallery, New York January 1968
- 15 Allen Kaprow, 'The Happenings are Dead – Long Live Happenings' *Artforum*, March 1966, pp.36–9
- 16 Naum Gabo, *Gabo: Constructions, Sculptures, Paintings, Drawings, Engravings*, Cambridge, Mass., 1957, p.153

Intermedia

Dick Higgins

First published in *Something Else Newsletter* 1, 1966

170—171

Much of the best work being produced today seems to fall between media. This is no accident. The concept of the separation between media arose in the Renaissance. The idea that a painting is made of paint on canvas or that a sculpture should not be painted seems characteristic of the kind of social thought—categorizing and dividing society into nobility with its various subdivisions, untitled gentry, artisans, serfs and landless workers—which we call the feudal conception of the Great Chain of Being. This essentially mechanistic approach continued to be relevant throughout the first two industrial revolutions, just concluded, and into the present era of automation, which constitutes, in fact, a third industrial revolution.

However, the social problems that characterize our time, as opposed to the political ones, no longer allow a compartmentalized approach. We are approaching the dawn of a classless society, to which separation into rigid categories is absolutely irrelevant. This shift does not relate more to East than West or vice versa. Castro works in the cane fields. New York's Mayor Lindsay walks to work during the subway strike. The millionaires eat their lunches at Horn and Hardart's. This sort of populism is a growing tendency rather than a shrinking one.

We sense this in viewing art which seems to belong unnecessarily rigidly to one or another form. We view paintings. What are they, after all? Expensive, handmade objects, intended to ornament the walls of the rich or, through their (or their government's) munificence, to be shared with the large numbers of people and give them a sense of grandeur. But they do not allow of any sense of dialogue.

Pop art? How could it play a part in the art of the future? It is bland. It is pure. It uses elements of common life without comment, and so, by accepting the misery of this life and its aridity so mutely, it condones them. Pop and Op are both dead, however, because they confine themselves, through the media which they employ, to the older functions of art, of decorating and suggesting grandeur, whatever their detailed content or their artists' intentions. None of the ingenious theories of the Mr. Ivan Geldoway combine can prevent them from being colossally boring and irrelevant. Milord runs his Mad Avenue gallery, in which he displays his pretty wares. He is protected by a handful of rude footmen who seem to feel that this is the way Life will always be. At his beck and call is Sir Fretful

Callous, a moderately well-informed high priest, who apparently despises the Flame he is supposed to tend and therefore prefers anything which titillates him. However, Milord needs his services, since he, poor thing, hasn't the time or the energy to contribute more than his name and perhaps his dollars; getting information and finding out what's going on are simply tooooooo exhausting. So, well protected and advised, he goes blissfully through the streets in proper Louis XIV style.

This scene is not just characteristic of the painting world as an institution, however. It is absolutely natural to (and inevitable in) the concept of the pure medium, the painting or precious object of any kind. That is the way such objects are marketed since that is the world to which they belong and to which they relate. The sense of 'I am the state,' however, will shortly be replaced by 'After me the deluge,' and, in fact, if the High Art world were better informed, it would realize that the deluge has already begun.

Who knows when it began? There is no reason for us to go into history in any detail. Part of the reason that Duchamp's objects are fascinating while Picasso's voice is fading is that the Duchamp pieces are truly between media, between sculpture and something else, while a Picasso is readily classifiable as a painted ornament. Similarly, by invading the land between collage and photography, the German John Heartfield produced what are probably the greatest graphics of our century, surely the most powerful political art that has been done to date.

The ready-made or found object, in a sense an intermedium since it was not intended to conform to the pure medium, usually suggests this, and therefore suggests a location in the field between the general area of art media and those of life media. However, at this time, the locations of this sort are relatively unexplored, as compared with media between the arts. I cannot, for example, name work which has consciously been placed in the intermedium between painting and shoes. The closest thing would seem to be the sculpture of Claes Oldenburg, which falls between sculpture and hamburgers or Eskimo Pies, yet it is not the sources of these images themselves. An Oldenburg Eskimo Pie may look something like an Eskimo Pie, yet is neither edible nor cold. There is still a great deal to be done in this direction in the way of opening up aesthetically rewarding possibilities.

In the middle 1950's many painters began to realize the fundamental irrelevance of Abstract Expressionism, which was the dominant mode at the time. Such painters as Allan Kaprow and Robert Rauschenberg in the United States and Wolf Vostell in Germany turned to collage or, in the latter's case, de-collage in the sense of making work by adding or removing, replacing and substituting or altering components of a visual work. They began to include increasingly incongruous objects in their work. Rauschenberg called his constructions 'combines' and went so far as to place a stuffed goat—spattered with paint and with a rubber tire around its neck—onto one. Kaprow, more philosophical and restless, meditated on the relationship of the spectator and the work. He put mirrors into his things so the spectator could feel included in them. That wasn't physical enough, so he made enveloping collages which surrounded the spectator. These he called 'environments.' Finally, in the Spring of 1958, he began to include live people as part of the collage, and this he called a 'happening.'

The proscenium theater is the outgrowth of Seventeenth Century ideals of social order. Yet there is remarkably little structural difference between the dramas of Davenant and those of Edward Albee, certainly nothing comparable to the difference in pump construction or means of mass transportation. It would seem that the technological and social implications of the first two industrial revolutions have been evaded completely. The drama is still mechanistically divided: there are performers, production people, a separate audience and an explicit script. Once started, like Frankenstein's monster, the course of affairs is unalterable, perhaps damned by its inability to reflect its surroundings. With our populist mentality today, it is difficult to attach importance—other than what we have been taught to attach—to this traditional theater. Nor do minor innovations do more than provide dinner conversation: this theater is round instead of square, in that one the stage revolves, here the play is relatively senseless and whimsical (Pinter is, after all, our modern J. M. Barrie—unless the honor belongs more properly to Beckett). Every year fewer attend the professional Broadway theaters. The shows get sillier and sillier, showing the producers' estimate of our mentality (or is it their own that is revealed?). Even the best of the traditional theater is no longer found on Broadway but at the Judson Memorial Church, some miles away. Yet our theater schools grind out thousands on thousands of performing

and production personnel, for whom jobs will simply not exist in twenty years. Can we blame the unions? Or rents and real estate taxes? Of course not. The subsidized productions, sponsored at such museums as New York's Lincoln Center, are not building up a new audience so much as reactivating an old one, since the medium of such drama seems weird and artificial in our new social milieu. We need more portability and flexibility, and this the traditional theater cannot provide. It was made for Versailles and for the sedentary Milords, not for motorized life-demons who travel six hundred miles a week. Versailles no longer speaks very loudly to us, since we think at eighty-five miles an hour.

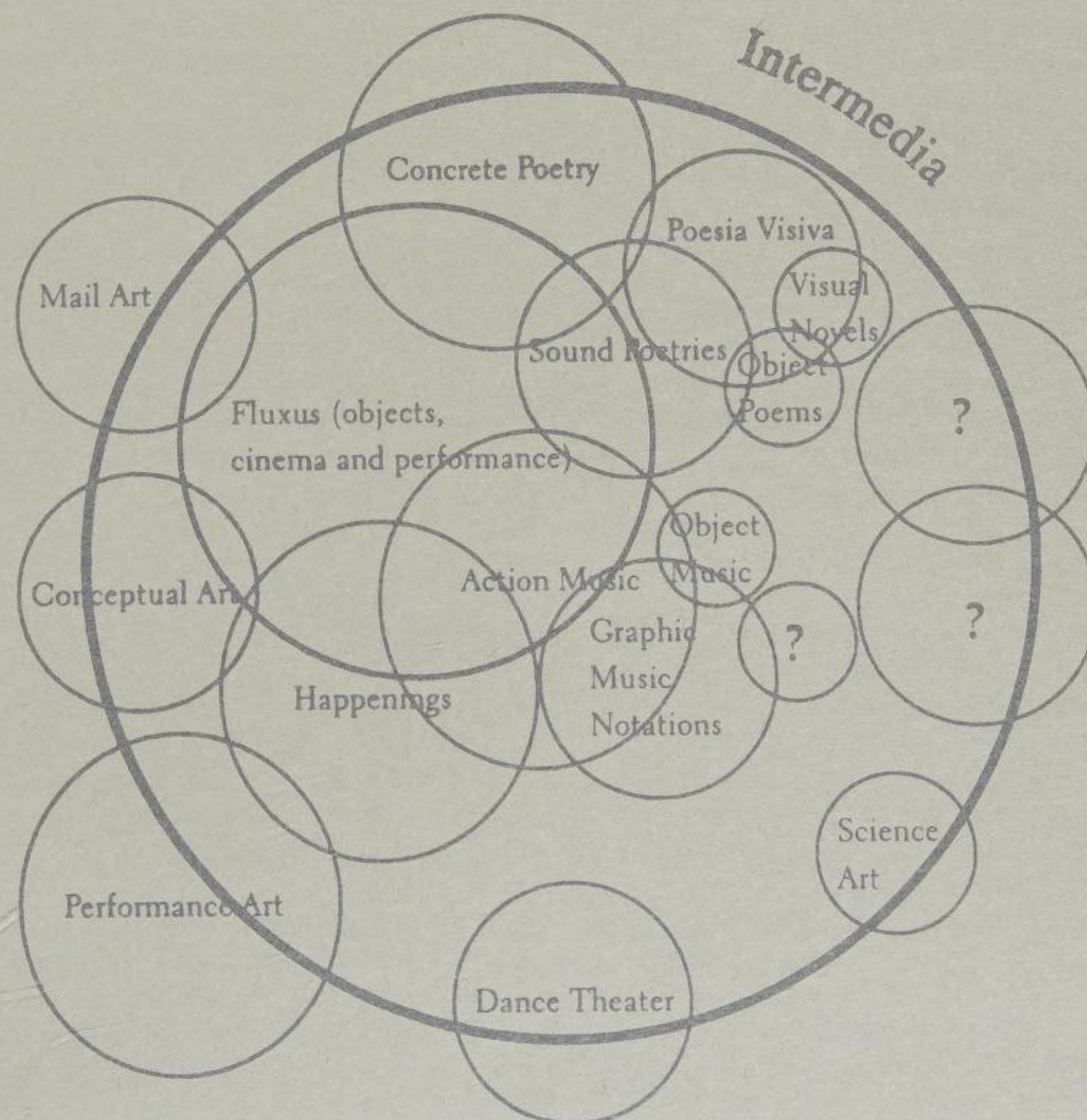
In the other direction, starting from the idea of theater itself, others such as myself declared war on the script as a set of sequential events. Improvisation was no help; performers merely acted in imitation of a script. So I began to work as if time and sequence could be utterly suspended, not by ignoring them (which would simply be illogical) but by systematically replacing them as structural elements with change. Lack of change would cause my pieces to stop. In 1958 I wrote a piece, *Stacked Deck*, in which any event can take place at any time, as long as its cue appears. The cues are produced by colored lights. Since the colored lights could be used wherever they were put and audience reactions were also cuing situations, the performance-audience separation was removed and a happening situation was established, though less visually-oriented in its use of its environment and imagery. At the same time, Al Hansen moved into the area from graphic notation experiments, and Nam June Paik and Benjamin Patterson (both in Germany at the time) moved in from varieties of music in which specifically musical events were frequently replaced by non-musical actions.

Thus the Happening developed as an intermedium, an uncharted land that lies between collage, music and the theater. It is not governed by rules; each work determines its own medium and form according to its needs. The concept itself is better understood by what it is not, rather than what it is. Approaching it, we are pioneers again, and shall continue to be so as long as there's plenty of elbow-room and no neighbors around for a few miles. Of course, a concept like this is very disturbing to those whose mentality is compartmentalized. *Time, Life* and the High

Priests have been announcing the death of Happenings regularly since the form gained momentum in the late fifties, but this says more about the accuracy of their information than about the liveliness of the form.

We have noted the intermedia in the theater and in the visual arts, the Happening and certain varieties of physical constructions. For reasons of space we cannot take up here the intermedia between other areas. However, I would like to suggest that the use of intermedia is more or less universal throughout the fine arts, since continuity rather than categorization is the hallmark of our new mentality. There are parallels to the Happening in music, for example in the work of such

composers as Philip Corner and John Cage, who explore the intermedia between music and philosophy, or Joe Jones, whose self-playing musical instruments fall into the intermedium between music and sculpture. The constructed poems of Emmett Williams and Robert Filliou certainly constitute an intermedium between poetry and sculpture. Is it possible to speak of the use of intermedia as a huge and inclusive movement of which Dada, Futurism and Surrealism are early phases preceding the huge ground-swell that is taking place now? Or is it more reasonable to regard the use of intermedia an irreversible historical innovation, more comparable for example, to the development of instrumental music than, for example, to the development of Romanticism?



Specific Objects

Donald Judd

Written in 1964. First published in *Arts Yearbook 8*, 1965

172—173

Half or more of the best new work in the last few years has been neither painting nor sculpture. Usually it has been related, closely or distantly, to one or the other. The work is diverse, and much in it that is not in painting and sculpture is also diverse. But there are some things that occur nearly in common.

The new three-dimensional work doesn't constitute a movement, school or style. The common aspects are too general and too little common to define a movement. The differences are greater than the similarities. The similarities are selected from the work; they aren't a movement's first principles or delimiting rules. Three-dimensionality is not as near being simply a container as painting and sculpture have seemed to be, but it tends to that. But now painting and sculpture are less neutral, less containers, more defined, not undeniable and unavoidable. They are particular forms circumscribed after all, producing fairly definite qualities. Much of the motivation in the new work is to get clear of these forms. The use of three dimensions is an obvious alternative. It opens to anything. Many of the reasons for this use are negative, points against painting and sculpture, and since both are common sources, the negative reasons are those nearest commonage. 'The motive to change is always some uneasiness: nothing setting us upon the change of state, or upon any new action, but some uneasiness.' The positive reasons are more particular. Another reason for listing the insufficiencies of painting and sculpture first is that both are familiar and their elements and qualities more easily located.

The objections to painting and sculpture are going to sound more intolerant than they are. There are qualifications. The disinterest in painting and sculpture is a disinterest in doing it again, not in it as it is being done by those who developed the last advanced versions. New work always involves objections to the old, but these objections are really relevant only to the new. They are part of it. If the earlier work is first-rate it is complete. New inconsistencies and limitations aren't retroactive; they concern only work that is being developed. Obviously, three-dimensional work will not cleanly succeed painting and sculpture. It's not like a movement; anyway, movements no longer work; also, linear history has unravelled somewhat. The new work exceeds painting in plain power, but power isn't the only consideration, though the difference between it and expression can't be too great either. There are other ways than power and form in which one kind of art can be more

or less than another. Finally, a flat and rectangular surface is too handy to give up. Some things can be done only on a flat surface. Lichtenstein's representation of a representation is a good instance. But this work which is neither painting nor sculpture challenges both. It will have to be taken into account by new artists. It will probably change painting and sculpture.

The main thing wrong with painting is that it is a rectangular plane placed flat against the wall. A rectangle is a shape itself; it is obviously the whole shape; it determines and limits the arrangement of whatever is on or inside of it. In work before 1946 the edges of the rectangle are a boundary, the end of the picture. The composition must react to the edges and the rectangle must be unified, but the shape of the rectangle is not stressed; the parts are more important, and the relationships of color and form occur among them. In the paintings of Pollock, Rothko, Still and Newman, and more recently of Reinhardt and Noland, the rectangle is emphasized. The elements inside the rectangle are broad and simple and correspond closely to the rectangle. The shapes and surface are only those which can occur plausibly within and on a rectangular plane. The parts are few and so subordinate to the unity as not to be parts in an ordinary sense. A painting is nearly an entity, one thing, and not the indefinable sum of a group of entities and references. The one thing overpowers the earlier painting. It also establishes the rectangle as a definite form; it is no longer a fairly neutral limit. A form can be used only in so many ways. The rectangular plane is given a life span. The simplicity required to emphasize the rectangle limits the arrangements possible within it. The sense of singleness also has a duration, but it is only beginning and has a better future outside of painting. Its occurrence in painting now looks like a beginning, in which new forms are often made from earlier schemes and materials.

The plane is also emphasized and nearly single. It is clearly a plane one or two inches in front of another plane, the wall, and parallel to it. The relationship of the two planes is specific; it is a form. Everything on or slightly in the plane of the painting must be arranged laterally.

Almost all paintings are spatial in one way or another. Yves Klein's blue paintings are the only ones that are unspatial, and there is little that is nearly unspatial, mainly Stella's work. It's possible that not much can be done with both an upright rectangular plane and an absence of space. Anything on a surface has space behind it. Two colors on

the same surface almost always lie on different depths. An even color, especially in oil paint, covering all or much of a painting is almost always both flat and infinitely spatial. The space is shallow in all of the work in which the rectangular plane is stressed. Rothko's space is shallow and the soft rectangles are parallel to the plane, but the space is almost traditionally illusionistic. In Reinhardt's paintings, just back from the plane of the canvas, there is a flat plane and this seems in turn indefinitely deep. Pollock's paint is obviously on the canvas, and the space is mainly that made by any marks on a surface, so that it is not very descriptive and illusionistic. Noland's concentric bands are not as specifically paint-on-a-surface as Pollock's paint, but the bands flatten the literal space more. As flat and unillusionistic as Noland's paintings are, the bands do advance and recede. Even a single circle will warp the surface to it, will have a little space behind it.

Except for a complete and unvaried field of color or marks, anything spaced in a rectangle and on a plane suggests something in and on something else, something in its surround, which suggests an object or figure in its space, in which these are clearer instances of a similar world - that's the main purpose of painting. The recent paintings aren't completely single. There are a few dominant areas, Rothko's rectangles or Noland's circles, and there is the area around them. There is a gap between the main forms, the most expressive parts, and the rest of the canvas, the plane and the rectangle. The central forms still occur in a wider and indefinite context, although the singleness of the paintings abridges the general and solipsistic quality of earlier work. Fields are also usually not limited, and they give the appearance of sections cut from something indefinitely larger.

Oil paint and canvas aren't as strong as commercial paints and as the colors and surfaces of materials, especially if the materials are used in three dimensions. Oil and canvas are familiar and, like the rectangular plane, have a certain quality and have limits. The quality is especially identified with art.

The new work obviously resembles sculpture more than it does painting, but it is nearer to painting. Most sculpture is like the painting which preceded Pollock, Rothko, Still and Newman. The newest thing about it is its broad scale. Its materials are somewhat more emphasized than before. The imagery involves a couple of salient resemblances to other visible things and a number of more oblique

references, everything generalized to compatibility. The parts and the space are allusive, descriptive and somewhat naturalistic. Higgins' sculpture is an example, and, dissimilarly, Di Suvero's. Higgins' sculpture mainly suggests machines and truncated bodies. Its combination of plaster and metal is more specific. Di Suvero uses beams as if they were brush strokes, imitating movement, as Kline did. The material never has its own movement. A beam thrusts, a piece of iron follows a gesture; together they form a naturalistic and anthropomorphic image. The space corresponds.

Most sculpture is made part by part, by addition, composed. The main parts remain fairly discrete. They and the small parts are a collection of variations, slight through great. There are hierarchies of clarity and strength and of proximity to one or two main ideas. Wood and metal are the usual materials, either alone or together, and if together it is without much of a contrast. There is seldom any color. The middling contrast and the natural monochrome are general and help to unify the parts.

There is little of any of this in the new three-dimensional work. So far the most obvious difference within this diverse work is between that which is something of an object, a single thing, and that which is open and extended, more or less environmental. There isn't as great a difference in their nature as in their appearance, though. Oldenburg and others have done both. There are precedents for some of the characteristics of the new work. The parts are usually subordinate and not separate as in Arp's sculpture and often in Brancusi's. Duchamp's ready-mades and other Dada objects are also seen at once and not part by part. Cornell's boxes have too many parts to seem at first to be structured.

Part-by-part structure can't be too simple or too complicated. It has to seem orderly. The degree of Arp's abstraction, the moderate extent of his reference to the human body, neither imitative nor very oblique, is unlike the imagery of most of the new three-dimensional work. Duchamp's bottle-drying rack is close to some of it. The work of Johns and Rauschenberg and assemblage and low-relief generally, Oilman's reliefs for example, are preliminaries. Johns's few cast objects and a few of Rauschenberg's works, such as the goat with the tire, are beginnings.

Some European paintings are related to objects, Klein's for instance, and Castellani's, which have unvaried fields of low-relief elements. Arman and a few others work in three dimensions. Dick Smith did some large pieces in London with canvas stretched over cockeyed parallelepiped frames and with the surfaces painted as if the pieces were paintings. Philip King, also in London, seems to be making objects. Some of the work on the West Coast seems to be along this line, that of Larry Bell, Kenneth Price, Tony Delap, Sven Lukin, Bruce Conner, Kienholz of course, and others. Some of the work in New York having some or most of the characteristics is that by George Brecht, Ronald Bladen, John Willenbecher, Ralph Ortiz, Anne Truitt, Paul Harris, Barry McDowell, John Chamberlain, Robert Tanner, Aaron Kuriloff, Robert Morris, Nathan Raisen, Tony Smith, Richard Navin, Claes Oldenburg, Robert Watts, Yoshimura, John Anderson, Harry Soviak, Yayoi Kusama, Frank Stella, Salvatore Scarpitta, Neil Williams, George Segal, Michael Snow, Richard Artschwager, Arakawa, Lucas Samaras, Lee Bontecou, Dan Flavin and Robert Whitman. H.C. Westermann works in Connecticut. Some of these artists do both three-dimensional work and paintings. A small amount of the work of others, Warhol and Rosenquist for instance, is three-dimensional.

The composition and imagery of Chamberlain's work is primarily the same as that of earlier painting, but these are secondary to an appearance of disorder and are at first concealed by the material. The crumpled tin tends to stay that way. It is neutral at first, not artistic, and later seems objective. When the structure and imagery become apparent, there seems to be too much tin and space, more chance and casualness than order. The aspects of neutrality, redundancy and form and imagery could not be coextensive without three dimensions and without the particular material. The color is also both natural and sensitive and, unlike oil colors, has a wide range. Most color that is integral, other than in painting, has been used in three-dimensional work. Color is never unimportant, as it usually is in sculpture.

Stella's shaped paintings involve several important characteristics of three-dimensional work. The periphery of a piece and the lines inside correspond. The stripes are nowhere near being discrete parts. The surface is farther from the wall than usual, though it remains parallel to it. Since the surface is exceptionally unified and involves little or no space, the parallel plane is unusually distinct. The order is not rationalistic and underlying but is simply

order, like that of continuity, one thing after another. A painting isn't an image. The shapes, the unity, projection, order and color are specific, aggressive and powerful.

Painting and sculpture have become set forms. A fair amount of their meaning isn't credible. The use of three dimensions isn't the use of a given form. There hasn't been enough time and work to see limits. So far, considered most widely, three dimensions are mostly a space to move into. The characteristics of three dimensions are those of only a small amount of work, little compared to painting and sculpture. A few of the more general aspects may persist, such as the work's being like an object or being specific, but other characteristics are bound to develop. Since its range is so 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, much nearer to what is usually called a form, having a certain kind of form. Because the nature of three dimensions isn't set, given beforehand, something credible can be made, almost anything. Of course something can be done within a given form, such as painting, but with some narrowness and less strength and variation. Since sculpture isn't so general a form, it can probably be only what it is now - which means that if it changes a great deal it will be something else; so it is finished.

Three dimensions are real space. That gets rid of the problem of illusionism and of literal space, space in and around marks and colors - which is riddance of one of the salient and most objectionable relics of European art. The several limits of painting are no longer present. A work can be as powerful as it can be thought to be. Actual space is intrinsically more powerful and specific than paint on a flat surface. Obviously, anything in three dimensions can be any shape, regular or irregular, and can have any relation to the wall, floor, ceiling, room, rooms or exterior or none at all. Any material can be used, as is or painted.

A work needs only to be interesting. Most works finally have one quality. In earlier art the complexity was displayed and built the quality. In recent painting the complexity was in the format and the few main shapes, which had been made according to various interests and problems. A painting by Newman is finally no simpler than one by Cezanne. In the three-dimensional work the whole thing is made according to complex purposes, and these are not scattered but asserted by one form. It isn't

necessary for a work to have a lot of things to look at, to compare, to analyze one by one, to contemplate. The thing as a whole, its quality as a whole, is what is interesting. The main things are alone and are more intense, clear and powerful. They are not diluted by an inherited format, variations of a form, mild contrasts and connecting parts and areas. European art had to represent a space and its contents as well as have sufficient unity and aesthetic interest. Abstract painting before 1946 and most subsequent painting kept the representational subordination of the whole to its parts. Sculpture still does. In the new work the shape, image, color and surface are single and not partial and scattered. There aren't any neutral or moderate areas or parts, any connections or transitional areas. The difference between the new work and earlier painting and present sculpture is like that between one of Brunelleschi's windows in the Badia di Fiesole and the facade of the Palazzo Rucellai, which is only an undeveloped rectangle as a whole and is mainly a collection of highly ordered parts.

The use of three dimensions makes it possible to use all sorts of materials and colors. Most of the work involves new materials, either recent inventions or things not used before in art. Little was done until lately with the wide range of industrial products. Almost nothing has been done with industrial techniques and, because of the cost, probably won't be for some time. Art could be mass-produced, and possibilities otherwise unavailable, such as stamping, could be used. Dan Flavin, who uses fluorescent lights, has appropriated the results of industrial production. Materials vary greatly and are simply materials - formica, aluminum, cold-rolled steel, plexiglas, red and common brass, and so forth. They are specific. If they are used directly, they are more specific. Also, they are usually aggressive. There is an objectivity to the obdurate identity of a material. Also, of course, the qualities of materials - hard mass, soft mass, thickness of 1/32, 1/16, 1/8 inch, pliability, slickness, translucency, dullness - have unobjective uses. The vinyl of Oldenburg's soft objects looks the same as ever, slick, flaccid and a little disagreeable, and is objective, but it is pliable and can be sewn and stuffed with air and kapok and hung or set down, sagging or collapsing. Most of the new materials are not as accessible as oil on canvas and are hard to relate to one another. They aren't obviously art. The form of a work and its materials are closely related. In earlier

work the structure and the imagery were executed in some neutral and homogeneous material. Since not many things are lumps, there are problems in combining the different surfaces and colors and in relating the parts so as not to weaken the unity.

Three-dimensional work usually doesn't involve ordinary anthropomorphic imagery. If there is a reference it is single and explicit. In any case the chief interests are obvious. Each of Bontecou's reliefs is an image. The image, all of the parts and the whole shape are coextensive. The parts are either part of the hole or part of the mound which forms the hole. The hole and the mound are only two things, which, after all, are the same thing. The parts and divisions are either radial or concentric in regard to the hole, leading in and out and enclosing. The radial and concentric parts meet more or less at right angles and in detail are structure in the old sense, but collectively are subordinate to the single form.

Most of the new work has no structure in the usual sense, especially the work of Oldenburg and Stella. Chamberlain's work does involve composition. The nature of Bontecou's single image is not so different from that of images, which occurred in a small way in semiabstract painting. The image is primarily a single emotive one, which alone wouldn't resemble the old imagery so much, but to which internal and external references, such as violence and war, have been added. The additions are somewhat pictorial, but the image is essentially new and surprising; an image has never before been the whole work, been so large, been so explicit and aggressive. The abatised orifice is like a strange and dangerous object. The quality is intense and narrow and obsessive. The boat and the furniture that Kusama covered with white protuberances have a related intensity and obsessiveness and are also strange objects. Kusama is interested in obsessive repetition, which is a single interest. Yves Klein's blue paintings are also narrow and intense.

The trees, figures, food or furniture in a painting have a shape or contain shapes that are emotive. Oldenburg has taken this anthropomorphism to an extreme and made the emotive form, with him basic and biopsychological, the same as the shape of an object, and by blatancy subverted the idea of the natural presence of human qualities in all things. And further, Oldenburg avoids trees and people. All of Oldenburg's grossly anthropomorphized objects are

manmade - which right away is an empirical matter. Someone or many made these things and incorporated their preferences. As practical as an ice-cream cone is, a lot of people made a choice, and more agreed, as to its appearance and existence. This interest shows more in the recent appliances and fixtures from the home and especially in the bedroom suite, where the choice is flagrant. Oldenburg exaggerates the accepted or chosen form and turns it into one of his own. Nothing made is completely objective, purely practical or merely present. Oldenburg gets along very well without anything that would ordinarily be called structure. The ball and cone of the large ice-cream cone are enough. The whole thing is a profound form, such as sometimes occurs in primitive art. Three fat layers with a small one on top are enough. So is a flaccid, flamingo switch draped from two points. Simple form and one or two colors are considered less by old standards. If changes in art are compared backwards, there always seems to be a reduction, since only old attributes are counted and these are always fewer. But obviously new things are more, such as Oldenburg's techniques and materials. Oldenburg needs three dimensions in order to simulate and enlarge a real object and to equate it and an emotive form. If a hamburger were painted it would retain something of the traditional anthropomorphism. George Brecht and Robert Morris use real objects and depend on the viewer's knowledge of these objects.

The Response to Crisis

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First published in *The Structure of Scientific Revolutions*, University of Chicago Press 1962

Let us then assume that crises are a necessary precondition for the emergence of novel theories and ask next how scientists respond to their existence. Part of the answer, as obvious as it is important, can be discovered by noting first what scientists never do when confronted by even severe and prolonged anomalies. Though they may begin to lose faith and then to consider alternatives, they do not renounce the paradigm that has led them into crisis. They do not, that is, treat anomalies as counter-instances, though in the vocabulary of philosophy of science that is what they are. In part this generalization is simply a statement from historic fact, based upon examples like those given above and, more extensively, below. These hint what our later examination of paradigm rejection will disclose more fully: once it has achieved the status of paradigm, a scientific theory is declared invalid only if an alternate candidate is available to take its place. No process yet disclosed by the historical study of scientific development at all resembles the methodological stereotype of falsification by direct comparison with nature. That remark does not mean that scientists do not reject scientific theories, or that experience and experiment are not essential to the process in which they do so. But it does mean - what will ultimately be a central point - that the act of judgment that leads scientists to reject a previously accepted theory is always based upon more than a comparison of that theory with the world. The decision to reject one paradigm is always simultaneously the decision to accept another, and the judgment leading to that decision involves the comparison of both paradigms with nature *and* with each other.

There is, in addition, a second reason for doubting that scientists reject paradigms because confronted with anomalies or counterinstances. In developing it my argument will itself foreshadow another of this essay's main theses. The reasons for doubt sketched above were purely factual; they were, that is, themselves counterinstances to a prevalent epistemological theory. As such, if my present point is correct, they can at best help to create a crisis or, more accurately, to reinforce one that is already very much in existence. By themselves they cannot and will not falsify that philosophical theory, for its defenders will do what we have already seen scientists doing when confronted by anomaly. They will devise numerous articulations and *ad hoc* modifications of their theory in order to eliminate any apparent conflict. Many of the relevant modifications and qualifications are, in fact,

already in the literature. If, therefore, these epistemological counterinstances are to constitute more than a minor irritant, that will be because they help to permit the emergence of a new and different analysis of science within which they are no longer a source of trouble. Furthermore, if a typical pattern, which we shall later observe in scientific revolutions, is applicable here, these anomalies will then no longer seem to be simply facts. From within a new theory of scientific knowledge, they may instead seem very much like tautologies, statements of situations that could not conceivably have been otherwise.

It has often been observed, for example, that Newton's second law of motion, though it took centuries of difficult factual and theoretical research to achieve, behaves for those committed to Newton's theory very much like a purely logical statement that no amount of observation could refute.¹ In Section X we shall see that the chemical law of fixed proportion, which before Dalton was an occasional experimental finding of very dubious generality, became after Dalton's work an ingredient of a definition of chemical compound that no experimental work could by itself have upset. Something much like that will also happen to the generalization that scientists fail to reject paradigms when faced with anomalies or counterinstances. They could not do so and still remain scientists.

Though history is unlikely to record their names, some men have undoubtedly been driven to desert science because of their inability to tolerate crisis. Like artists, creative scientists must occasionally be able to live in a world out of joint - elsewhere I have described that necessity as 'the essential tension' implicit in scientific research.² But that rejection of science in favor of another occupation is, I think, the only sort of paradigm rejection to which counterinstances by themselves can lead. Once a first paradigm through which to view nature has been found, there is no such thing as research in the absence of any paradigm. To reject one paradigm without simultaneously substituting another is to reject science itself. That act reflects not on the paradigm but on the man. Inevitably he will be seen by his colleagues as the carpenter who blames his tools.³

The same point can be made at least equally effectively in reverse: there is no such thing as research without counter-instances. For what is it that differentiates normal science from science in a crisis state? Not, surely, that the

former confronts no counterinstances. On the contrary, what we previously called the puzzles that constitute normal science exist only because no paradigm that provides a basis for scientific research ever completely resolves all its problems. The very few that have ever seemed to do so (e.g., geometric optics) have shortly ceased to yield research problems at all and have instead become tools for engineering. Excepting those that are exclusively instrumental, every problem that normal science sees as a puzzle can be seen, from another viewpoint, as a counterinstance and thus as a source of crisis. Copernicus saw as counterinstances what most of Ptolemy's other successors had seen as puzzles in the match between observation and theory. Lavoisier saw as a counterinstance what Priestley had seen as a successfully solved puzzle in the articulation of the phlogiston theory. And Einstein saw as counterinstances what Lorentz, Fitzgerald, and others had seen as puzzles in the articulation of Newton's and Maxwell's theories. Furthermore, even the existence of crisis does not by itself transform a puzzle into a counterinstance. There is no such sharp dividing line. Instead, by proliferating versions of the paradigm, crisis loosens the rules of normal puzzle-solving in ways that ultimately permit a new paradigm to emerge. There are, I think, only two alternatives: either no scientific theory ever confronts a counterinstance, or all such theories confront counterinstances at all times.

How can the situation have seemed otherwise? That question necessarily leads to the historical and critical elucidation of philosophy, and those topics are here barred. But we can at least note two reasons why science has seemed to provide so apt an illustration of the generalization that truth and falsity are uniquely and unequivocally determined by the confrontation of statement with fact. Normal science does and must continually strive to bring theory and fact into closer agreement, and that activity can easily be seen as testing or as a search for confirmation or falsification. Instead, its object is to solve a puzzle for whose very existence the validity of the paradigm must be assumed. Failure to achieve a solution discredits only the scientist and not the theory. Here, even more than above, the proverb applies: 'It is a poor carpenter who blames his tools.' In addition, the manner in which science pedagogy entangles discussion of a theory with remarks on its exemplary applications has helped to reinforce a confirmation-theory drawn predominantly from other sources. Given

the slightest reason for doing so, the man who reads a science text can easily take the applications to be the evidence for the theory, the reasons why it ought to be believed. But science students accept theories on the authority of teacher and text, not because of evidence. What alternatives have they, or what competence? The applications given in texts are not there as evidence but because learning them is part of learning the paradigm at the base of current practice. If applications were set forth as evidence, then the very failure of texts to suggest alternative interpretations or to discuss problems for which scientists have failed to produce paradigm solutions would convict their authors of extreme bias. There is not the slightest reason for such an indictment.

How, then, to return to the initial question, do scientists respond to the awareness of an anomaly in the fit between theory and nature? What has just been said indicates that even a discrepancy unaccountably larger than that experienced in other applications of the theory need not draw any very profound response. There are always some discrepancies. Even the most stubborn ones usually respond at last to normal practice. Very often scientists are willing to wait, particularly if there are many problems available in other parts of the field. We have already noted, for example, that during the sixty years after Newton's original computation, the predicted motion of the moon's perigee remained only half of that observed. As Europe's best mathematical physicists continued to wrestle unsuccessfully with the well-known discrepancy, there were occasional proposals for a modification of Newton's inverse square law. But no one took these proposals very seriously, and in practice this patience with a major anomaly proved justified. Clairaut in 1750 was able to show that only the mathematics of the application had been wrong and that Newtonian theory could stand as before.³ Even in cases where no mere mistake seems quite possible (perhaps because the mathematics involved is simpler or of a familiar and elsewhere successful sort), persistent and recognized anomaly does not always induce crisis. No one seriously questioned Newtonian theory because of the long-recognized discrepancies between predictions from that theory and both the speed of sound and the motion of Mercury. The first discrepancy was ultimately and quite unexpectedly resolved by experiments on heat undertaken for a very different purpose; the second vanished with the general theory of relativity after a crisis that it had had no role in

creating.⁴ Apparently neither had seemed sufficiently fundamental to evoke the malaise that goes with crisis. They could be recognized as counterinstances and still be set aside for later work.

It follows that if an anomaly is to evoke crisis, it must usually be more than just an anomaly. There are always difficulties somewhere in the paradigm-nature fit; most of them are set right sooner or later, often by processes that could not have been foreseen. The scientist who pauses to examine every anomaly he notes will seldom get significant work done. We therefore have to ask what it is that makes an anomaly seem worth concerted scrutiny, and to that question there is probably no fully general answer. The cases we have already examined are characteristic but scarcely prescriptive. Sometimes an anomaly will clearly call into question explicit and fundamental generalizations of the paradigm, as the problem of ether drag did for those who accepted Maxwell's theory. Or, as in the Copernican revolution, an anomaly without apparent fundamental import may evoke crisis if the applications that it inhibits have a particular practical importance, in this case for calendar design and astrology. Or, as in eighteenth-century chemistry, the development of normal science may transform an anomaly that had previously been only a vexation into a source of crisis: the problem of weight relations had a very different status after the evolution of pneumatic-chemical techniques. Presumably there are still other circumstances that can make an anomaly particularly pressing, and ordinarily several of these will combine. We have already noted, for example, that one source of the crisis that confronted Copernicus was the mere length of time during which astronomers had wrestled unsuccessfully with the reduction of the residual discrepancies in Ptolemy's system.

When, for these reasons or others like them, an anomaly comes to seem more than just another puzzle of normal science, the transition to crisis and to extraordinary science has begun. The anomaly itself now comes to be more generally recognized as such by the profession. More and more attention is devoted to it by more and more of the field's most eminent men. If it still continues to resist, as it usually does not, many of them may come to view its resolution as *the* subject matter of their discipline. For them the field will no longer look quite the same as it had earlier. Part of its different appearance results simply from

the new fixation point of scientific scrutiny. An even more important source of change is the divergent nature of the numerous partial solutions that concerted attention to the problem has made available. The early attacks upon the resistant problem will have followed the paradigm rules quite closely. But with continuing resistance, more and more of the attacks upon it will have involved some minor or not so minor articulation of the paradigm, no two of them quite alike, each partially successful, but none sufficiently so to be accepted as paradigm by the group. Through this proliferation of divergent articulations (more and more frequently they will come to be described as *ad hoc* adjustments), the rules of normal science become increasingly blurred. Though there still is a paradigm, few practitioners prove to be entirely agreed about what it is. Even formerly standard solutions of solved problems are called in question.

When acute, this situation is sometimes recognized by the scientists involved. Copernicus complained that in his day astronomers were so 'inconsistent in these [astronomical] investigations . . . that they cannot even explain or observe the constant length of the seasonal year.' 'With them,' he continued, 'it is as though an artist were to gather the hands, feet, head and other members for his images from diverse models, each part excellently drawn, but not related to a single body, and since they in no way match each other, the result would be monster rather than man.'⁵ Einstein, restricted by current usage to less florid language, wrote only, 'It was as if the ground had been pulled out from under one, with no firm foundation to be seen anywhere, upon which one could have built.'⁶ And Wolfgang Pauli, in the months before Heisenberg's paper on matrix mechanics pointed the way to a new quantum theory, wrote to a friend, 'At the moment physics is again terribly confused. In any case, it is too difficult for me, and I wish I had been a movie comedian or something of the sort and had never heard of physics.' That testimony is particularly impressive if contrasted with Pauli's words less than five months later: 'Heisenberg's type of mechanics has again given me hope and joy in life. To be sure it does not supply the solution to the riddle, but I believe it is again possible to march forward.'⁷

Such explicit recognitions of breakdown are extremely rare, but the effects of crisis do not entirely depend upon its conscious recognition. What can we say these effects are? Only two of them seem to be universal. All crises

begin with the blurring of a paradigm and the consequent loosening of the rules for normal research. In this respect research during crisis very much resembles research during the pre-paradigm period, except that in the former the locus of difference is both smaller and more clearly defined. And all crises close in one of three ways. Sometimes normal science ultimately proves able to handle the crisis-provoking problem despite the despair of those who have seen it as the end of an existing paradigm. On other occasions the problem resists even apparently radical new approaches. Then scientists may conclude that no solution will be forthcoming in the present state of their field. The problem is labelled and set aside for a future generation with more developed tools. Or, finally, the case that will most concern us here, a crisis may end with the emergence of a new candidate for paradigm and with the ensuing battle over its acceptance. This last mode of closure will be considered at length in later sections, but we must anticipate a bit of what will be said there in order to complete these remarks about the evolution and anatomy of the crisis state.

The transition from a paradigm in crisis to a new one from which a new tradition of normal science can emerge is far from 'a cumulative process, one achieved by an articulation or extension of the old paradigm. Rather it is a reconstruction of the field from new fundamentals, a reconstruction that changes some of the field's most elementary theoretical generalizations as well as many of its paradigm methods and applications. During the transition period there will *be* a large but never complete overlap between the problems that can be solved by the old and by the new paradigm. But there will also be a decisive difference in the modes of solution. When the transition is complete, the profession will have changed its view of the field, its methods, and its goals. One perceptive historian, viewing a classic case of a science's reorientation by paradigm change, recently described it as 'picking up the other end of the stick,' a process that involves 'handling the same bundle of data as before, but placing them in a new system of relations with one another by giving them a different framework.'⁸ Others who have noted this aspect of scientific advance have emphasized its similarity to a change in visual gestalt: the marks on paper that were first seen as a bird are now seen as an antelope, or vice versa.⁹ That parallel can be misleading. Scientists do not see something *as* something else; instead, they simply see it. We have

already examined some of the problems created by saying that Priestley saw oxygen as dephlogisticated air. In addition, the scientist does not preserve the gestalt subject's freedom to switch back and forth between ways of seeing. Nevertheless, the switch of gestalt, particularly because it is today so familiar, is a useful elementary prototype for what occurs in full-scale paradigm shift.

The preceding anticipation may help us recognize crisis as an appropriate prelude to the emergence of new theories, particularly since we have already examined a small-scale version of the same process in discussing the emergence of discoveries. Just because the emergence of a new theory breaks with one tradition of scientific practice and introduces a new one conducted under different rules and within a different universe of discourse, it is likely to occur only when the first tradition is felt to have gone badly astray. That remark is, however, no more than a prelude to the investigation of the crisis-state, and, unfortunately, the questions to which it leads demand the competence of the psychologist even more than that of the historian. What is extraordinary research like? How is anomaly made law-like? How do scientists proceed when aware only that something has gone fundamentally wrong at a level with which their training has not equipped them to deal? Those questions need far more investigation, and it ought not all be historical. What follows will necessarily be more tentative and less complete than what has gone before.

Often a new paradigm emerges, at least in embryo, before a crisis has developed far or been explicitly recognized. Lavoisier's work provides a case in point. His sealed note was deposited with the French Academy less than a year after the first thorough study of weight relations in the phlogiston theory and before Priestley's publications had revealed the full extent of the crisis in pneumatic chemistry. Or again, Thomas Young's first accounts of the wave theory of light appeared at a very early stage of a developing crisis in optics, one that would be almost unnoticeable except that, with no assistance from Young, it had grown to an international scientific scandal within a decade of the time he first wrote. In cases like these one can say only that a minor breakdown of the paradigm and the very first blurring of its rules for normal science were sufficient to induce in someone a new way of looking at the field. What intervened between the first sense of trouble and the recognition of an available alternate must have been largely unconscious.

In other cases, however - those of Copernicus, Einstein, and contemporary nuclear theory, for example - considerable time elapses between the first consciousness of breakdown and the emergence of a new paradigm. When that occurs, the historian may capture at least a few hints of what extraordinary science is like. Faced with an admittedly fundamental anomaly in theory, the scientist's first effort will often be to isolate it more precisely and to give it structure. Though now aware that they cannot be quite right, he will push the rules of normal science harder than ever to see, in the area of difficulty, just where and how far they can be made to work. Simultaneously he will seek for ways of magnifying the breakdown, of making it more striking and perhaps also more suggestive than it had been when displayed in experiments the outcome of which was thought to be known in advance. And in the latter effort, more than in any other part of the post-paradigm development of science, he will look almost like our most prevalent image of the scientist. He will, in the first place, often seem a man searching at random, trying experiments just to see what will happen, looking for an effect whose nature he cannot quite guess. Simultaneously, since no experiment can be conceived without some sort of theory, the scientist in crisis will constantly try to generate speculative theories that, if successful, may disclose the road to a new paradigm and, if unsuccessful, can be surrendered with relative ease.

Kepler's account of his prolonged struggle with the motion of Mars and Priestley's description of his response to the proliferation of new gases provide classic examples of the more random sort of research produced by the awareness of anomaly.¹⁰ But probably the best illustrations of all come from contemporary research in field theory and on fundamental particles. In the absence of a crisis that made it necessary to see just how far the rules of normal science could stretch, would the immense effort required to detect the neutrino have seemed justified? Or, if the rules had not obviously broken down at some undisclosed point, would the radical hypothesis of parity non-conservation have been either suggested or tested? Like much other research in physics during the past decade, these experiments were in part attempts to localize and define the source of a still diffuse set of anomalies.

This sort of extraordinary research is often, though by no means generally, accompanied by another. It is, I think, particularly in periods of acknowledged crisis that scientists have turned to philosophical analysis as a device for unlocking the riddles of their field. Scientists have not generally needed or wanted to be philosophers. Indeed, normal science usually holds creative philosophy at arm's length, and probably for good reasons. To the extent that normal research work can be conducted by using the paradigm as a model, rules and assumptions need not be made explicit. In Section V we noted that the full set of rules sought by philosophical analysis need not even exist. But that is not to say that the search for assumptions (even for non-existent ones) cannot be an effective way to weaken the grip of a tradition upon the mind and to suggest the basis for a new one. It is no accident that the emergence of Newtonian physics in the seventeenth century and of relativity and quantum mechanics in the twentieth should have been both preceded and accompanied by fundamental philosophical analyses of the contemporary research tradition.¹¹ Nor is it an accident that in both these periods the so-called thought experiment should have played so critical a role in the progress of research. As I have shown elsewhere, the analytical thought experimentation that bulks so large in the writings of Galileo, Einstein, Bohr, and others is perfectly calculated to expose the old paradigm to existing knowledge in ways that isolate the root of crisis with a clarity unattainable in the laboratory.¹²

With the deployment, singly or together, of these extraordinary procedures, one other thing may occur. By concentrating scientific attention upon a narrow area of trouble and by preparing the scientific mind to recognize experimental anomalies for what they are, crisis often proliferates new discoveries. We have already noted how the awareness of crisis distinguishes Lavoisier's work on oxygen from Priestley's; and oxygen was not the only new gas that the chemists aware of anomaly were able to discover in Priestley's work. Or again, new optical discoveries accumulated rapidly just before and during the emergence of the wave theory of light. Some, like polarization by reflection, were a result of the accidents that concentrated work in an area of trouble makes likely. (Malus, who made the discovery, was just starting work for the Academy's prize essay on double refraction, a subject widely known to be in an unsatisfactory state.) Others, like the light spot at the center of the shadow of a

circular disk, were predictions from the new hypothesis, ones whose success helped to transform it to a paradigm for later work. And still others, like the colors of scratches and of thick plates, were effects that had often been seen and occasionally remarked before, but that, like Priestley's oxygen, had been assimilated to well-known effects in ways that prevented their being seen for what they were.¹³ A similar account could be given of the multiple discoveries that, from about 1895, were a constant concomitant of the emergence of quantum mechanics.

Extraordinary research must have still other manifestations and effects, but in this area we have scarcely begun to discover the questions that need to be asked. Perhaps, however, no more are needed at this point. The preceding remarks should suffice to show how crisis simultaneously loosens the stereotypes and provides the incremental data necessary for a fundamental paradigm shift. Sometimes the shape of the new paradigm is foreshadowed in the structure that extraordinary research has given to the anomaly. Einstein wrote that before he had any substitute for classical mechanics, he could see the interrelation between the known anomalies of black-body radiation, the photoelectric effect, and specific heats.¹⁴ More often no such structure is consciously seen in advance. Instead, the new paradigm, or a sufficient hint to permit later articulation, emerges all at once, sometimes in the middle of the night, in the mind of a man deeply immersed in crisis. What the nature of that final stage is - how an individual invents (or finds he has invented) a new way of giving order to data now all assembled - must here remain inscrutable and may be permanently so. Let us here note only one thing about it. Almost always the men who achieve these fundamental inventions of a new paradigm have been either very young or very new to the field whose paradigm they change.¹⁵ And perhaps that point need not have been made explicit, for obviously these are the men who, being little committed by prior practice to the traditional rules of normal science, are particularly likely to see that those rules no longer define a playable game and to conceive another set that can replace them.

The resulting transition to a new paradigm is scientific revolution, a subject that we are at long last prepared to approach directly. Note first, however, one last and apparently elusive respect in which the material of the last three sections has prepared the way. Until Section VI, where the concept of anomaly was first introduced,

the terms 'revolution' and 'extraordinary science' may have seemed equivalent. More important, neither term may have seemed to mean more than 'non-normal science,' a circularity that will have bothered at least a few readers. In practice, it need not have done so. We are about to discover that a similar circularity is characteristic of scientific theories. Bothersome or not, however, that circularity is no longer unqualified. This section of the essay and the two preceding have educed numerous criteria of a breakdown in normal scientific activity, criteria that do not at all depend upon whether breakdown is succeeded by revolution. Confronted with anomaly or with crisis, scientists take a different attitude toward existing paradigms, and the nature of their research changes accordingly. The proliferation of competing articulations, the willingness to try anything, the expression of explicit discontent, the recourse to philosophy and to debate over fundamentals, all these are symptoms of a transition from normal to extraordinary research. It is upon their existence more than upon that of revolutions that the notion of normal science depends.

- 1 See particularly the discussion in N.R. Hanson, *Patterns of Discovery*, Cambridge 1958, pp.99–105
- 2 T.S. Kuhn, 'The Essential Tension: Tradition and Innovation in Scientific Research', in *The Third (1959) University of Utah Research Conference on the Identification of Creative Scientific Talent*, ed. Calvin W. Taylor, Salt Lake City 1959, pp.162–77. For the comparable phenomenon among artists, see Frank Barron, 'The Psychology of Imagination', *Scientific American*, CXCIX, September 1958, 151–66, esp. 160
- 3 W. Whewell, *History of the Inductive Sciences*, revised ed., London 1847, vol.II, 220–1
- 4 For the speed of sound, see T.S. Kuhn, 'The Caloric Theory of Adiabatic Compression', *ibid.*, XLIV 1958, pp.136–7. For the secular shift in Mercury's perihelion, see E.T. Whittaker, *A History of the Theories of Aether and Electricity*, II, London 1953, pp.151, 179
- 5 Quoted in T.S. Kuhn, *The Copernican Revolution*, Cambridge, Mass., 1957, p.138
- 6 Albert Einstein, 'Autobiographical Note', in *Albert Einstein: Philosopher-Scientist*, ed. P.A. Schilpp, Evanston, 1911, 1949, p.45
- 7 Ralph Kronig, 'The Turning Point', in *Theoretical Physics in the Twentieth Century: A Memorial Volume to Wolfgang Pauli*, ed. M. Fierz and V.F. Weisskopf, New York 1960, pp.22, 25–6. Much of this article describes the crisis in quantum mechanics in the years immediately before 1925.
- 8 Herbert Butterfield, *The Origins of Modern Science, 1300–1800*, London, 1949, pp.1–7
- 9 Hanson, *op. cit.*, chap. i
- 10 For an account of Kepler's work on Mars, see J.L.E. Dreyer, *A History of Astronomy from Thales to Kepler*, 2nd ed., New York 1953, pp.380–93. Occasional inaccuracies do not prevent Dreyer's précis from providing the material needed here. For Priestley, see his own work, esp. *Experiments and Observations on Different Kinds of Air* London, 1774–5
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- 12 T.S. Kuhn, 'A Function for Thought Experiments', in *Mélanges Alexandre Koyre*, ed. R. Taton and I.B. Cohen, Paris, 1963
- 13 For the new optical discoveries in general, see V. Ronchi, *Histoire de la lumière*, Paris, 1956 chap. vii. For the earlier explanation of one of these effects, see J. Priestley, *The History and Present State of Discoveries Relating to Vision, Light and Colours*, London, 1772, pp.498–520.
- 14 Einstein, *ibid.* cit.
- 15 This generalization about the role of youth in fundamental scientific research is so common as to be a cliché. Furthermore, a glance at almost any list of fundamental contributions to scientific theory will provide impressionistic confirmation. Nevertheless, the generalization badly needs systematic investigation. Harvey C. Lehman (Age and Achievement [Princeton, 1953]) provides many useful data; but his studies make no attempt to single out contributions that involve fundamental reconceptualization. Nor do they inquire about the special circumstances, if any, that may accompany relatively late productivity in the sciences.

Paragraphs on Conceptual Art Sol LeWitt

First published in *Artforum*, September 1967

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The editor has written me that he is in favor of avoiding 'the notion that the artist is a kind of ape that has to be explained by the civilized critic'. This should be good news to both artists and apes. With this assurance I hope to justify his confidence. To continue a baseball metaphor (one artist wanted to hit the ball out of the park, another to stay loose at the plate and hit the ball where it was pitched), I am grateful for the opportunity to strike out for myself.

I will refer to the kind of art in which I am involved as conceptual art. In conceptual art the idea of concept is the most important aspect of the work. When an artist uses a conceptual form of art, it means that all of the planning and decisions are made beforehand and the execution is a perfunctory affair. The idea becomes a machine that makes the art. This kind of art is not theoretical or illustrative of theories; it is intuitive, it is involved with all types of mental processes and it is purposeless. It is usually free from the dependence on the skill of the artist as a craftsman. It is the objective of the artist who is concerned with conceptual art to make his work mentally interesting to the spectator, and therefore usually he would want it to become emotionally dry. There is no reason to suppose however, that the conceptual artist is out to bore the viewer. It is only the expectation of an emotional kick, to which one conditioned to expressionist art is accustomed, that would deter the viewer from perceiving this art.

Conceptual art is not necessarily logical. The logic of a piece or series of pieces is a device that is used at times only to be ruined. Logic may be used to camouflage the real intent of the artist, to lull the viewer into the belief that he understands the work, or to infer a paradoxical situation (such as logic vs. illogic). The ideas need not be complex. Most ideas that are successful are ludicrously simple. Successful ideas generally have the appearance of simplicity because they seem inevitable. In terms of idea the artist is free to even surprise himself. Ideas are discovered by intuition.

What the work of art looks like isn't too important. It has to look like something if it has physical form. No matter what form it may finally have it must begin with an idea. It is the process of conception and realization with which the artist is concerned. Once given physical reality by the artist the work is open to the perception of all, including the artist. (I use the word 'perception' to mean the

apprehension of the sense data, the objective understanding of the idea and simultaneously a subjective interpretation of both.) The work of art can only be perceived after it is completed.

Art that is meant for the sensation of the eye primarily would be called perceptual rather than conceptual. This would include most optical, kinetic, light and color art.

Since the functions of conception and perception are contradictory (one pre-, the other postfact) the artist would mitigate his idea by applying subjective judgment to it. If the artist wishes to explore his idea thoroughly, then arbitrary or chance decisions would be kept to a minimum, while caprice, taste and other whimsies would be eliminated from the making of the art. The work does not necessarily have to be rejected if it does not look well. Sometimes what is initially thought to be awkward will eventually be visually pleasing.

To work with a plan that is pre-set is one way of avoiding subjectivity. It also obviates the necessity of designing each work in turn. The plan would design the work. Some plans would require millions of variations, and some a limited number, but both are finite. Other plans imply infinity. In each case however, the artist would select the basic form and rules that would govern the solution of the problem. After that the fewer decisions made in the course of completing the work, the better. This eliminates the arbitrary, the capricious, and the subjective as much as possible. That is the reason for using this method.

When an artist uses a multiple modular method he usually chooses a simple and readily available form. The form itself is of very limited importance; it becomes the grammar for the total work. In fact it is best that the basic unit be deliberately uninteresting so that it may more easily become an intrinsic part of the entire work. Using complex basic forms only disrupts the unity of the whole. Using a simple form repeatedly narrows the field of the work and concentrates the intensity to the arrangement of the form. This arrangement becomes the end while the form becomes the means.

Conceptual art doesn't really have much to do with mathematics, philosophy or any other mental discipline. The mathematics used by most artists is simple

arithmetic or simple number systems. The philosophy of the work is implicit in the work and is not an illustration of any system of philosophy.

It doesn't really matter if the viewer understands the concepts of the artist by seeing the art. Once out of his hand the artist has no control over the way a viewer will perceive the work. Different people will understand the same thing in a different way.

Recently there has been much written about minimal art, but I have not discovered anyone who admits to doing this kind of thing. There are other art forms around called primary structures, reductive, rejective, cool, and mini-art. No artist I know will own up to any of these either. Therefore I conclude that it is part of a secret language that art critics use when communicating with each other through the medium of art magazines. Mini-art is best because it reminds one of mini-skirts and long-legged girls. It must refer to very small works of art. This is a very good idea. Perhaps mini-art shows could be sent around the country in matchboxes. Or maybe the mini-artist is a very small person, say under five feet tall. If so, much good work will be found in the primary schools (primary school primary structures).

If the artist carries through his idea and makes it into visible form, then all the steps in the process are of importance. The idea itself, even if not made visual is as much a work of art as any finished product. All intervening steps-scribbles, sketches, drawings, failed work, models, studies, thoughts, conversations-are of interest. Those that show the thought process of the artist are sometimes more interesting than the final product.

Determining what size a piece should be is difficult. If an idea requires three dimensions then it would seem any size would do. The question would be what size is best. If the thing were made gigantic then the size alone would be impressive and the idea may be lost entirely. Again, if it is too small, it may become inconsequential. The height of the viewer may have some bearing on the work and also the size of the space into which it will be placed. The artist may wish to place objects higher than the eye level of the viewer, or lower. I think the piece must be large enough to give the viewer whatever information he needs to understand the work and placed in such a way that will facilitate this understanding. (Unless the idea is of impediment and requires difficulty of vision or access.)

Space can be thought of as the cubic area occupied by a three-dimensional volume. Any volume would occupy space. It is air and cannot be seen. It is the interval between things that can be measured. The intervals and measurements can be important to a work of art. If certain distances are important they will be made obvious in the piece. If space is relatively unimportant it can be regularized and made equal (things placed equal distances apart), to mitigate any interest in interval. Regular space might also become a metric time element, a kind of regular beat or pulse. When the interval is kept regular whatever is irregular gains more importance.

Architecture and three-dimensional art are of completely opposite natures. The former is concerned with making an area with a specific function. Architecture, whether it is a work of art or not, must be utilitarian or else fail completely. Art is not utilitarian. When three-dimensional art starts to take on some of the characteristics of architecture such as forming utilitarian areas it weakens its function as art. When the viewer is dwarfed by the large size of a piece this domination emphasizes the physical and emotive power of the form at the expense of losing the idea of the piece.

New materials are one of the great afflictions of contemporary art. Some artists confuse new materials with new ideas. There is nothing worse than seeing art that wallows in gaudy baubles. By and large most artists who are attracted to these materials are the ones that lack the stringency of mind that would enable them to use the materials well. It takes a good artist to use new materials and make them into a work of art. The danger is, I think, in making the physicality of the materials so important that it becomes the idea of the work (another kind of expressionism).

Three-dimensional art of any kind is a physical fact. This physicality is its most obvious and expressive content. Conceptual art is made to engage the mind of the viewer rather than his eye or emotions. The physicality of a three-dimensional object then becomes a contradiction to its non-emotive intent. Color, surface, texture, and shape only emphasize the physical aspects of the work. Anything that calls attention to and interests the viewer in this physicality is a deterrent to our understanding of the idea and is used as an expressive device. The conceptual artist would want to ameliorate this emphasis on materiality as

much as possible or to use it in a paradoxical way. (To convert it into an idea.) This kind of art then, should be stated with the most economy of means. Any idea that is better stated in two dimensions should not be in three dimensions. Ideas may also be stated with numbers, photographs, or words or any way the artist chooses, the form being unimportant.

These paragraphs are not intended as categorical imperatives but the ideas stated are as close as possible to my thinking at this time. These ideas are the result of my work as an artist and are subject to change as my experience changes. I have tried to state them with as much clarity as possible. If the statements I make are unclear it may mean the thinking is unclear. Even while writing these ideas there seemed to be obvious inconsistencies (which I have tried to correct, but others will probably slip by). I do not advocate a conceptual form of art for all artists. I have found that it has worked well for me while other ways have not. It is one way of making art; other ways suit other artists. Nor do I think all conceptual art merits the viewer's attention. Conceptual art is only good when the idea is good.

Environmental Art, Postmodern Art: Hélio Oiticica [Arte Ambiental Arte Pós-Moderna, Hélio Oiticica'] Mário Pedrosa

First published in *Correio da Manhã*, 26 June 1966'
Annotated translation by Michael Asbury 2004

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By now we have reached the demise of so-called 'modern art'. That was a period inaugurated by the Demoiselles d'Avignon, itself inspired by the then recently discovered African art. Consequently, criteria for the appreciation of art are no longer the same as those issued from the cubist experience. We find ourselves in another cycle, one that is cultural rather than purely artistic. Initiated, one could say by Pop Art, this cycle is radically different from that which preceded it. This new cycle, with its anti-art vocation could be called postmodern. (*En passant*, one could state that Brazil participates in this movement no longer as a follower but as its precursor. The young artists associated with old concrete art and above all with neoconcretism, with Lygia Clark as their leader, in many ways anticipated Op and even Pop Art. Hélio Oiticica was the youngest of the group).²

During their apprenticeship within the exercise of modern art, the natural virtuality – the extreme formal basis of perception, which once again was explored by artists – became subordinated, disciplined and contained by exalting and refining actual formal values. In the present phase of art placed in the position of anti-art, of 'postmodern art', the opposite takes place: actual aesthetic values tend to be absorbed into the formal character of perceptive and situationist structures. The fact that formal sensibility is intensified by emotions or states of feeling is a perfectly understood psychological phenomenon. Today's avant-garde artists don't move away from such phenomena as was the case with artists of classical modernism, but above all neither do they deliberately search for them as did the romantic-subjective artists of 'Abstract Expressionism' and 'Lyrical abstraction'. It is not expressivity in itself that interests today's avant-garde. On the contrary, above all it fears the hermetic individual subjectivism. We thus observe in Pop objectivity in itself and in Op (in the US) objectivity for itself.³ 'New Figuration' itself, where the leftovers of subjectivity have nested, wants above all to narrate, to pass on a message whether mythical or collective. When the message is individual then it is passed on through humor.

Already in 1959, when the romantic fads of *l'Informel* and *Tachisme* were dominant around the world, young Oiticica, with his indifference to fashion, abandoned the two-dimensional frame in order to construct, with a frank and violent monochromaticism, his first unusual object or relief in space. Having naturally been initiated via the pristine formal values – a rare characteristic among current avant-garde artists – he remains faithful to them.

This he achieves through the structural rigor of his objects, the discipline that his objects contain, the sumptuousness of his colours and arrangement of materials, in short, the purity of his products. He wants everything to be beautiful, impeccably pure and intractably precise, like a Matisse in the splendour of his art of 'luxury, calm and voluptuousness'. Baudelaire with 'The Flowers of Evil' is perhaps a distant godfather of this aristocratic adolescent, this dancer from Mangueira.⁴ (Oiticica nevertheless does not possess the Baudelarian Christian guilt.) Naïve in his beginnings, concrete art apprenticeship almost incapacitated his evolution into maturity. His expression had been extremely individualistic, obtaining a purely sensorial exaltation while nevertheless not reaching the actual psychic level where the passage towards image, sign, emotion and consciousness takes place. He did not reach the heart of such a passage. Yet, his behaviour suddenly changed: abandoning one day his ivory tower, his studio, he joined the *Estação Primeira* where he undertook his arduous initiation into popular culture at the foot of that carioca⁵ myth, the Mangueira hill. Surrendering to a true rite of passage, he carried with him – into Mangueira's samba and its constantly 'tough' surroundings – his unrepentant aesthetic unconventionality.

He left his spatial reliefs and 'nuclei' at home and progressed into a primary experience of colour, which he named 'penetrable'. This consisted of a wooden construction with sliding doors where the viewer closed himself inside a realm of colour.

Colour became invasive, one could feel its physical presence, reflect upon it, touch it stand on it, breath it. As with Lygia Clark's 'bichos' the spectator abandons passive contemplation, becoming attracted to an action that lies beyond his conventional considerations as he moves into the field of interest of the artist. Once there, he would take part in a process of direct communication through gesture and action. This is what today's avant-garde artists worldwide desire and it is here the secret motivation behind *happenings* can be found.

Nuclei are hollow structures with suspended coloured panels tracing a path under a latticed roof. In the 'nucleus', colour is no longer imprisoned but sets alight the surrounding space with violent oranges and yellows. These colour-substances loose themselves in the environment while responding to it. As they reverberate and touch upon things, flesh becomes coloured, clothes

and drapes are set alight. The environment is ardent, it becomes incandescent, the atmosphere is one of decorative preciousness and at once aristocratic, with something plebeian and perverse about it. The violence of light and colour evokes at times Van Gogh's nocturnal billiard room where those colours reverberate and which according to the artist were symbolic of 'terrible human passions'.⁶

Oiticica called his art environmental and it is in effect precisely that. In it nothing is isolated.⁷ There is no work that is appreciated on its own as a painting. The perceptive sensorial field dominates. Within such a field the artist created a 'hierarchy of orders' – reliefs, nuclei, bólides (boxes), and capes, standards, tents ('parangolés') – 'all of which are geared to creating an environmental world'.⁸ It was during his initiation into samba that the artist parted from visual experience, in its purity, to an experience of touch, movement, of sensual fruition of materials where body in its entirety, previously reduced to the visual, would become a source of total sensoriality. The wooden boxes perform an obvious passage into the haptic and tactile domains. Opening up like pigeon-holes which irradiate an interior luminosity, these boxes provide unexpected views through sliding panels, drawers containing earth, coloured powder, and so on. The juxtaposition of contrasting colours is prolonged through successive tactile contrasts and friction between solid and liquid, hot and cold, smooth and rugged, rough and soft, porous and dense elements. Rugged and colourful canvases emerge from the boxes as if disembowelled. Drawers are filled with powder. And then there are the glass containers, in the first series of which colour is reduced to pure pigment. The most diverse materials succeed each other, grounded brick, red lead, earth, pigments, plastics, canvas, charcoal, water, aniline, crushed shells. Mirrors at the bases of nuclei and mirrors inside boxes provide new internal spatial dimensions. A meticulously shaped bottle like those intended for liquor is filled with translucent green liquid. From its neck emerge luxurious porous green canvases of an absurd preciousness that remind one of artificial flowers. Here we find an unconscious challenge to the good taste of aesthetes. This unusual decorative vase he named *Homage to Mondrian*, one of his gods. Displayed on a table amongst boxes, glasses, nuclei, and capes, that flask is a nod to a Louis XV vision of luxury within a suburban interior. One of the boxes, one of the most surprising and beautiful with its interior full of irised circumvolutions (screens), is illuminated by a neon light.

The variety amongst these box and glass bóides is enormous. Leaving aside the macrocosm, everything that takes place within these objects seems to have been touched by a strange experience.

It could be said that the artist transfers to one's hands – that touch and dive, sometimes with cloves, into powder, charcoal, shells – the message of rigor, luxury and excitement that vision used to provide. In this way, he goes around the entire sensorial-tactile motor gamut.

The artist now sees himself confronted for the first time by a new reality, the world of consciousness, of the soul's state, of world values. Now everything must be aligned within a notion of significant behaviour. In effect, the pure and crude sensorial totality so deliberately sought and decisive in Oiticica's art, finally transcends into another environment. The artist – that absolute sensorial machine – is shaken by human flaws as he is convulsively imprisoned in the dirty passions of the ego and by the tragic dialectic of the social encounter. There is thus a symbiosis of extremes – the radical aesthetic refinement and the psychic radicalism – that involves the total personality. The aesthetic unconventionality, a luciferian sin, and the social psychic unconventionality, an individual sin, are merged. The mediator in this symbiosis of both those Manichean unconventionalities was the Mangueira samba school.

The expression of this absolute unconventionality is his *Homage to Cara de Cavalo*,⁹ a monument to authentic pathetic beauty, in which formal values were not supreme. It consists of a box without a lid, prudishly covered by a screen that requires lifting in order for one to see what lies below. Its internal walls are covered with a photograph that appeared in the local newspapers at the time in which 'Cara de Cavalo' appears lying on the floor with open arms as if crucified, his body riddled with bullet-holes. Explicitly with words, it is the emotional content that absorbs the artist. (In another bóide, thought and emotion burst out from the, as ever, magnificently decorative and sensorial carapace, expressed in a poem of love hidden inside the box under a blue cushion.) Beauty, sin, revolt and love confer to the work of this young artist a new accent in Brazilian art. Moral reprimands are pointless. If precedents are required, perhaps this may be one: Hélio is the grandson of an anarchist.

- 1 Originally published in *Correio da Manhã*, 26 June 1966, the text was reprinted in: Amara, Aracy, ed. (1981) *Mário Pedrosa: Dos Murais de Portinari aos Espaços de Brasília*. Série Debates 170. São Paulo: Editora Perspectiva, pp.205–9. It was subsequently reprinted in: Figueiredo, L., Pape, L. & Salomão, W. eds. (1986) *Hélio Oiticica: Aspiro ao Grande Labirinto*. Rio de Janeiro: Rocco, pp.9–13. Note: in this version the text is dated 1965, which may indicate the date the article was written rather than published. Pedrosa nevertheless discusses Oiticica's *Homage to Cara de Cavalo*, which dates from 1966, making the earlier date unlikely.
- 2 Pedrosa's reference to Lygia Clark suggests the possibility of pairing the current essay on Oiticica with his previous essay *A significação de Lygia Clark* (The Significance of Lygia Clark) published in 1960 in the pages of the *Jornal do Brasil*'s weekend supplement (22–3 Oct.). In that essay, Pedrosa disassociated Clark's work from what he saw as the 'decadence' of international sculpture. His main critique was that sculpture had become a mere follower of painting. Positing Lygia Clark in opposition to such a condition of dependency, he claimed that her work stemmed from a personal and profound process of discovery. It is therefore ironic that this was a process that began with painting. It was the breaking away from the picture frame that allowed the work to 'move' towards the viewer, to invite his/her participation. Pedrosa associated such a development with the statements made by Gabo and Pevsner in the 'Constructivist Manifesto' where they affirmed their 'conviction that only spatial constructions would touch the heart of the future human masses.' Although not in total agreement, Pedrosa was certainly aware of Ferreira Gullar's arguments expressed in the neoconcrete essay 'Theory of the Non-Object' of 1959 central to which (as Donald Judd would observe in 'Specific Objects' of 1965) was the increasing difficulty in distinguishing categories such as painting and sculpture. How the critic contextualised such an ambivalence underwent a shift between 1960 – when he made his historical reference to Pevsner and Gabo's spatial constructions in relation to Clark's work – and 1966 when he evoked the 'transcendence of the pictorial plane into the social space' in order to define Oiticica's work as postmodern. Pedrosa's assertiveness with regard to the emancipation of Brazilian art is thus a product of this shift. In other words, Oiticica's encounter with Brazilian popular culture through his experiences of samba at the Mangueira shanty-town provide a social context for the formal innovations Pedrosa had previously observed in the work of Lygia Clark. Oiticica's achievement, the underlying subject of Pedrosa's essay, was to create a syncretic relationship between the high ideals of constructivist formalism and the popular extravagance of carnival through the possibility of a common experience of colour.
- 3 In 1967 Oiticica would become involved in the organisation of an exhibition at the Museum of Modern Art in Rio de Janeiro entitled *New Brazilian Objectivity*. It was an exhibition that in many ways responded at a national level to the advent of Op and Pop Art. Oiticica contributed an essay to the catalogue entitled 'General Scheme of the New Objectivity' outlining the six principle characteristics of Brazilian art at that moment as can be noted in his opening paragraphs: '1 – A general Constructive Will; 2 – a tendency towards the object as easel painting is negated and surpassed; 3 – spectator participation (corporal, tactile, visual, semantic, etc.); 4 – a positioning in relation to political, social and ethical problems; 5 – a tendency towards collective propositions and consequently the abolition of 'isms' characteristic of art of the first half of the century

(a tendency which could be associated with Mário Pedrosa's concept of postmodern art); 6 – the resurfacing and new formulations of the concept of anti-art.'

It was however Oiticica's contribution to the exhibition itself – an 'environmental' installation entitled *Tropicália* – that has come to be considered as having defined the era.

- 4 Oiticica evolved through the hierarchy of the Samba School *Estação Primeira da Mangueira* becoming a *Passista*, one of the principle dancers in the samba school parade. In Rio most shanty-towns or *favelas* have their own samba school which compete against each other during the annual *Carnaval Carioca*.
- 5 Carioca was originally the name of a river that cut across the city of Rio de Janeiro. The river has long been absorbed by the urban fabric and the name is now associated with that which belongs to the city: its people and customs. It is his relation to carnival in Rio that makes Oiticica a typically *carioca* artist.
- 6 Pedrosa's mention of 'terrible human passions' was perhaps a reference to Oiticica's own sexuality and the role that it had played within his 'rite of passage' at Mangueira. Oiticica created in 1966 a work based on Van Gogh's billiard room (*Appropriation, Snooker Room*, after Van Gogh's *Night Café Atmosphere*) which he exhibited at the Whitechapel Gallery in 1969. This consisted of a real billiard table which according to the art critic Guy Brett became very popular with young east-end working class men during the course of the exhibition.
- 7 At the 'Whitechapel Experience' (Oiticica's preferred title for that exhibition) the environmental character was central to Oiticica's concept and according to Brett proved to be one of the main difficulties during the exhibition's process of negotiation and organisation.
- 8 Oiticica followed a meticulous system of categorisation, naming and numbering each item he produced as can be noted in the example below.
- 9 *Bólide 18 Poema Caixa 2, Homenagem a Cara de Cavalo* (Box Bólide 18 Poem Box 2 Homage to *Cara de Cavalo*) of 1966, exhibited for the first time at the exhibition 'The Brazilian Artist and Mass Iconography' held at the *Escola Superior de Desenho Industrial* (ESDI), 1968. Oiticica wrote a text about this homage in the catalogue of his Whitechapel Gallery exhibition (unpaginated) from which the following except was taken: 'I knew Cara de Cavalo personally, and I can say that he was my friend, but for society he was public enemy number one, wanted for audacious crimes and assaults – what perplexed me then was the contrast between what I knew of him as a friend [...] and the image made by society [...] This homage is an anarchic attitude against all kind of armed forces: police, army, etc. I make protest poems (in capes and boxes) that have more social sense, but this to Cara de Cavalo reflects an important ethical moment, decisive for me, for it reflects an individual revolt against every social conditioning.'

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Sabine Breitwieser, *White Cube/Black Box: Video, Installation, Film: Werkschau Valie Export und Gordon Matta-Clark*, exh. cat., Generali Foundation, Vienna 1996.

Robert Filliou

Born La Sauve, France, 1926
Died 1987

Robert Filliou: Génie sans talent, exh. cat., Musée d'Art Moderne, Villeneuve d'Ascq 2003. Texts by Sylvie Jouval, Jean-Hubert Martin, and Heike van den Valentyn.

Robert Filliou and E. Regenwetter, *Le Siège des idées*, Brussels 1997.

Robert Filliou, exh. cat., Centre Pompidou, Paris 1991.
Robert Filliou, retrospective, exh. cat., Musée de Nîmes, Nîmes 1991. Text by Thomas Kellein.

Gilbert & George

Gilbert born Dolomites, Italy, 1943
George born Devon, England, 1942
Live and work in London

Gilbert & George, exh. cat., Kunsthau Bregenz, Bregenz 2002.

Gilbert & George, *The Words of Gilbert and George: with portraits of the artists from 1968 to 1997*, London 1997.

Wolf Jahn, *The Art of Gilbert & George, or An Aesthetic of Existence*, London 1989

Carter Ratcliff, *Gilbert & George: The Complete Pictures 1971–1985*, London 1986.

Dan Graham

Born Urbana, Illinois, USA, 1942
Lives and works in New York.

Marianne Brouwer (ed.), *Dan Graham Works 1965–2000*, exh. cat., Museu de Arte Contemporânea de Serralves 2000.

Dan Graham, *Two-Way Mirror Power: Selected Writings by Dan Graham on his Art*, Cambridge, Mass., New York, and London 1999.

Dan Graham: Video/Architecture/Performance, exh. cat., Generali Foundation, Vienna 1995.

Benjamin Buchloh (ed.), *Dan Graham Video Architecture Television: Writings on Video and Video Works 1970–1978*, Halifax and New York 1979.

Hans Haacke

Born Cologne, Germany, 1936
Lives and works in New York

Walter Grasskamp, Molly Nesbit and Jon Bird, *Hans Haacke*, London 2004.

Hans Haacke, *Hans Haacke AnsichtsSachen/Viewing Matters*, exh. cat., Museum Boijmans van Beuningen, Rotterdam 1999.

Brian Wallis (ed.), *Hans Haacke: Unfinished Business*, exh. cat., New Museum of Contemporary Art, New York 1986. Text by Rosalyn Deutsche.

Hans Haacke, *Framing and Being Framed: 7 Works 1970–75*, Halifax and New York 1975. Texts by Hans Haacke, Jack Burnham, Howard S. Becker, and John Walton.

Eva Hesse

Born in Hamburg, Germany 1936
Died 1970

Elisabeth Sussman (ed.), *Eva Hesse*, exh. cat., San Francisco Museum of Modern Art, Yale University Press, New Haven and London, 2002.

Mignon Nixon (ed.), *Eva Hesse*, Cambridge, Mass. and London 2002.

Lesley K. Baier (ed.), *Eva Hesse: a Retrospective*, Yale University Art Gallery, New Haven 1992.

Lucy R. Lippard, *Eva Hesse*, New York 1976.

Sanja Iveković

Born Zagreb, Croatia, 1949
Lives and works in Zagreb

Sanja Iveković: Women's House 1998–2002, exh. cat., Muzej Suvremene Umjetnosti, Zagreb 2003.

Silvia Eiblmayr, *Sanja Iveković Personal Cuts*, exh. cat., Galerie im Taxipalais, Innsbruck 2001.

Sanja Iveković: Double-Life 1959–1975, exh. cat., Galerija suvremene umjetnosti, Zagreb 1976, reprint Generali Foundation, Vienna 2001.

Sanja Iveković: Tragedy of a Venus, exh. cat., Gallery of Contemporary Art, Zagreb 1976.

Joan Jonas

Born New York, New York, USA, 1936
Lives and works in New York

Joan Jonas: Performance Video Installation 1968–2000, exh. cat., Galerie der Stadt, Stuttgart 2001.

Joan Jonas: Works 1968–2000, exh. cat., Queens Museum of Art, New York 2000. Includes a conversation with Jonas, Susan Howe, and Jeanne Heuving, and texts by Carlos Amorales, Barbaar Clausen, Sung Kim, Astrid Klein, John Miller, Paul Miller, and Marina Warner.

Dorine Mignot (ed.), *Joan Jonas*, exh. cat., Stedelijk Museum, Amsterdam 1994.

Douglas Crimp (ed.), *Joan Jonas: Scripts and Descriptions 1968–1982*, Berkeley and Eindhoven 1983.

Donald Judd

Born Excelsior Springs, Missouri, USA, 1928
Died 1994

Nicholas Serota (ed.), *Donald Judd*, exh. cat., Tate Modern, London 2004.

Donald Judd 1969–1991, exh. cat., The Museum of Modern Art, Saitama, and The Museum of Modern Art, Shiga 1999.

Essays by Gen Umezu, Sachiko Oaski, Marianne Stockebrand; interview by John Coplans; and selected writings by Donald Judd.

Barbara Haskell, *Donald Judd*, exh. cat., Whitney Museum of American Art, New York 1988. *Donald Judd*, exh. cat., Stedelijk van Abbemuseum,

Eindhoven, Städtische Kunsthalle, Düsseldorf, ARC/Musée d'Art Moderne de la Ville de Paris, Fundació Joan Miró, Barcelona 1987.

Essays by Rainer Crone and Rudi Fuchs.

Ilya Kabakov

Born Dnepropetrovsk, Ukraine, Russia, 1933
Lives and works in New York

Ilya Kabakov, London 1998.

Texts by Boris Groys, David A. Ross, and Iwona Blazwick.

Amei Wallach, *Ilya Kabakov: The Man Who Never Threw Anything Away*, New York 1996. Introduction by Robert Storr.

Ilya Kabakov: 10 Albums 10 Characters, exh. cat., Riverside Studios, London 1989.

Ilya Kabakov: Ten Characters, exh. cat., Institute of Contemporary Art, London 1989.

Sol LeWitt

Born in Hartford, USA, 1928
Lives in Connecticut

George Stolz (ed.), *Sol LeWitt: Fotografia*, exh. cat., Fundación Ico, Madrid 2003. Nicholas Baume, *Sol LeWitt: Incomplete Open Cubes*, exh. cat., Wadsworth Atheneum Museum of Art, Hartford, Connecticut 2001.

Gary Garrels, *Sol LeWitt: A Retrospective*, exh. cat., San Francisco Museum of Art 2000.

Alicia Legg (ed.), *Sol LeWitt*, exh. cat., Museum of Modern Art, New York 1978.

Essays by Lucy Lippard, Bernice Rose, and Robert Rosenblum.

Richard Long

Born Bristol, England, 1945
Lives and works in Bristol

Susan Daniel-McElroy, Andrew Dalton, and Peter Evans, *Richard Long: A Moving World*, exh. cat., Tate St. Ives 2002.

Richard Long, exh. cat., Palazzo delle Esposizioni, Rome 1994.

Richard Long, Selected Walks 1979–1996, Edinburgh 1999.

Richard Long: Walking in Circles, New York and London 1991. Texts by Anne Seymour and Hamish Fulton.

Dimitrije Bašičević Mangelos

Born Sid, Croatia, 1921
Died 1987

Mangelos nos. 1 to 9 1/2, exh. cat., Museu de Arte Contemporânea de Serralves, Porto 2003.

Mangelos: Teze ali manifesti: Theses or Manifestos, exh. cat., Moderna Galerija, Ljubljana 1999.

Branka Stipančić, *Rijeci I slike/Words and Images*, exh. cat., Soros Center for Contemporary Art, Zagreb 1995.

Mangelos, exh. cat., Galerija Doma JNA, Zagreb 1986.

Includes interview with the artist by Stilinovic Mladen.

Gordon Matta-Clark

Born New York, New York, USA, 1943
Died 1978

James Atlee and Lisa LeFeuvre, *Gordon Matta-Clark: The Space Between*, exh. cat., Centre of Contemporary Art, Glasgow 2003.

Pamela M. Lee, *Object To Be Destroyed: The Work of Gordon Matta-Clark*, Cambridge, Mass. and London 2000.

Catherine Morris, *Food*, exh. cat., White Columns, New York 2000.

Gordon Matta-Clark: A Retrospective, exh. cat., Museum of Contemporary Art, Chicago 1986.

Introduction by Mary Jane Jacob, Robert Pincus-Witten.

Cildo Meireles

Born Rio de Janeiro, Brazil, 1948
Lives and works in Rio de Janeiro

Cildo Meireles, exh. cat., Musée de Strasbourg, Strasbourg 2003.

Texts by Cécile Dazord, Guy Brett, Maaretta, and others.

Includes interview with the artist by Hans-Ulrich Obrist.

Gerardo Mosquera, Paulo Herkenhoff, and Dan Cameron, *Cildo Meireles*, exh. cat., Museum of Modern Art, São Paulo 2000.

Paulo Venâncio Filho, *Cildo Meireles Ouro e Paus*, exh. cat., Joel Edelstein Arte Contemporânea, Rio de Janeiro 1995.

Bartomeu Mari, *Cildo Meireles*, exh. cat., IVAM Centre del Carme, Valencia 1995

Bruce Nauman

Born Fort Wayne, Indiana, USA, 1941
Lives and works in New Mexico

Bruce Nauman, exh. cat., Hayward Gallery, London 1998. Texts by François Albers, Michele De Angelus, Christine van Assche, Chris

Dercon, Vincent Labaume, Jean-Charles Masséra, Tony Oursler, Christina Ricupero, Willoughby Sharp, Joan Simon, Marcia Tucker, and Gijs van Tuyl.

Christine Hoffmann (ed.), *Bruce Nauman: Interviews, 1967–1988*, Amsterdam 1996.

Bruce Nauman, exh. cat., Walker Art Center, Minneapolis 1994. Texts by Neal Benezra, Kathy Halbreich, Paul Schimmel, and Robert Storr. with a catalogue raisonné by Joan Simon.

Bruce Nauman: Work from 1965 to 1972, exh. cat., Los Angeles County Museum of Art 1972. Texts by Jane Livingston and Marcia Tucker.

Hélio Oiticica

Born Rio de Janeiro, Brazil, 1937
Died 1980

Luciano Figueiredo, *Hélio Oiticica: Obra e Estratégia*, exh. cat., Museu de Arte Moderna Rio de Janeiro 2002

Carlos Basualdo, *Hélio Oiticica: Quasi-Cinemas*, exh. cat., Wexner Center for the Arts, Columbus 2001.

Hélio Oiticica, exh. cat., Galerie National de Jeu de Paume, Witte de With, and Projeto Hélio Oiticica 1992.

Hélio Oiticica, exh. cat., Whitechapel Gallery, London 1969.

Adrian Piper

Born Harlem, New York, USA, 1948
Lives and works in New York

Sabine Breitwieser, *Adrian Piper. Desde 1965*, exh. cat., Museu d'Art Contemporani de Barcelona 2003.

Maurice Berger, *Adrian Piper: A Retrospective*, exh. cat., Fine Arts Gallery, University of Maryland 1999.

Adrian Piper, *Out of Order, Out of Sight. Volume One: Selected Writings in Meta-art: 1968–1992*, Cambridge, Mass. and London 1996.

Adrian Piper, *Out of Order, Out of Sight. Volume Two: Selected Writings in Art Criticism: 1968–1992*, Cambridge, Mass. and London 1996.

Charles Ray

Born Chicago, Illinois, USA, 1953
Lives and works in Los Angeles

Paul Schimmel, *Charles Ray*, exh. cat., Museum of Contemporary Art, Los Angeles 1998. Texts by Paul Schimmel and Lisa Phillips.

Lars Nittve, *Charles Ray*, exh. cat., Rooseum Center for Contemporary Art, Malmö 1994. Essay by Bruce W. Ferguson.

Lucinda Barnes and Dennis Cooper, *Charles Ray*, exh. cat., Newport Harbor Art Museum, Newport Beach 1990.

Gerhard Richter

Born Dresden, Germany, 1932
Lives and works in Cologne

Robert Storr, *Gerhard Richter: Forty Years of Painting*, exh. cat., Museum of Modern Art, New York 2002.

Gerhard Richter 1962–1993, exh. cat., 3 vols., Musée d'Art Moderne de la Ville de Paris 1993.

Gerhard Richter: Bilder aus den Jahren 1962–1974, exh. cat., Kunsthalle Bremen 1976.

Gerhard Richter: Arbeiten 1962–1971, exh. cat., Kunstverein für die Rheinlande und Westfalen, Düsseldorf 1971.

Martha Rosler

Born Brooklyn, USA, 1943
Lives and works in Brooklyn

Martha Rosler, *Decoys and Disruptions: Selected Writings, 1975-2001*, New York 2004.

Catherine de Zegher (ed.), *Martha Rosler: Positions in the Life World*, exh. cat., Ikon Gallery, Birmingham, and Generali Foundation, Vienna 1999.

Martha Rosler, Benjamin Buchloh, and Anthony Vidler, *Martha Rosler: In the Place of the Public: Observations of a Frequent Flyer*, exh. cat., Museum of Modern Art, Frankfurt 1998.

Martha Rosler, *Service: a trilogy on colonization: A budding gourmet; McTowers maid; Tijuana maid*, New York 1978.

Robert Smithson

Born Passaic, USA, 1938
Died 1973

Eugenie Tsai and Cornelia Butler, *Robert Smithson*, exh. cat., Museum of Contemporary Art, Los Angeles 2004. Additional essay by Thomas Crow, and interview with Robert Smithson by Moira Roth.

Robert Smithson: Mapping Dislocations, exh. cat., James Cohan Gallery, New York 2001.

Ann Reynolds, *Learning from New Jersey and Elsewhere*, Cambridge, Mass. 2000.

Robert Hobbs, *Robert Smithson: Sculpture*, Ithaca and London 1981.

Texts by Lawrence Alloway, John Coplans, and Lucy Lippard.

Andy Warhol

Born Pittsburgh, Pennsylvania, USA
Died 1987

Heiner Bastian, *Andy Warhol: Retrospective*, with essays by Kirk Varnedoe, Donna De Salvo, Peter-Klaus Schuster and Antje Dallman, exh. cat., Tate Modern, London 2001.

Frayda Feldman and Jörg Schellmann, *Andy Warhol Prints: A Catalogue Raisonné 1962-1987*, 4th edn, New York 2003.

Annette Michelson (ed.), *Andy Warhol*, Cambridge, Mass. and London 2001. Texts by Thomas Crow, Hal Foster, Rosalind E. Krauss, and Benjamin Buchloh.

Andy Warhol: A Factory, exh. cat., Palais des Beaux-Arts de Bruxelles, Brussels 1999.

General**Group Exhibitions**

Ann Goldstein, *A Minimal Future? Art as Object 1958-1968*, exh. cat., Museum of Contemporary Art, Los Angeles 2004.

Lisa Dennison and Nancy Spector, *Singular Forms (Sometimes repeated): Art from 1951 to the Present*, exh. cat., Guggenheim Museum, New York 2004.

Lynn Zelevansky, *Beyond Geometry: Experiments in Form, 1940s-70s*, exh. cat., Los Angeles County Museum of Art 2004.

Helen Molesworth, et al, *Work Ethic*, exh. cat., Baltimore Museum of Art 2003.

Maurice Fréchuret, *Les années 70: l'art en cause*, exh. cat., Musée d'art contemporain, Bordeaux 2003.

Philip Armstrong, et al, *Ars Painting: Division and Displacement*, exh. cat., Wexner Center for the Arts, Columbus 2001.

Vivências/Lebenserfahrung/life experience, exh. cat., Generali Foundation, Vienna 1999.

Clive Phillpot and Andrea Tarsia, *Live in Your Head: Concept and Experiment in Britain 1965-75*, Whitechapel Art Gallery, London 2000.

The Experimental Exercise of Freedom: Lygia Clark, Gego, Mathias Goeritz, Hélio Oiticica, and Mira Schendel, exh. cat., Museum of Contemporary Art, Los Angeles 1999.

Global Conceptualism: Points of Origin, 1950s-1980s, exh. cat., Queens Museum of Art, New York 1999.

Circa 1968, exh. cat., Fundação de Serralves, Porto 1999.

Paul Schimmel (ed.), *Out of Actions: Between Performance and the Object 1949-1979*, exh. cat., Museum of Contemporary Art, Los Angeles 1998.

Ingrid Schaffner and Matthias Winzen (eds.), *Deep Storage: Collecting, Storing, and Archiving in Art*, exh. cat., PS.1 Contemporary Art Center, New York 1998.

Sarah J. Rogers (ed.), Heidi Gilpin and Brian Massumi, *Body Mécanique: Artistic Explorations of Digital Realms*, exh. cat., Wexner Center for the Arts, Columbus 1998.

Dara Meyers-Kingsley, *Reel work: Artists' Film and Video of the 1970s*, exh. cat., Museum of Contemporary Art, Miami 1996.

Anne Goldstein and Anne Rorimer, *Reconsidering the Object of Art: 1965-1975*, exh. cat., Museum of Contemporary Art, Los Angeles 1995.

Gravity and Grace: the Changing Condition of Sculpture 1965-1975, exh. cat., Hayward Gallery, London 1993.

Robert Storr, *Dislocations*, exh. cat., Museum of Modern Art, New York 1991.

Richard Armstrong and Richard Marshall, *The New Sculpture 1965-75: Beyond Geometry and Gesture*, exh. cat., Whitney Museum of American Art, New York 1990. *Pier + Ocean: Construction in the Art of the Seventies*, exh. cat., Hayward Gallery, London 1980.

Lucy Lippard, *Issue: Social Strategies by Women Artists*, exh. cat., Institute of Contemporary Art, London 1980.

About Time: Video, Performance, and Installation by 21 Women Artists, exh. cat., Institute of Contemporary Art, London 1980.

Documenta 6: vol.1 *Malerei, Plastik/Environment, Performance*; vol.2 *Fotografie, Film, Video*; vol.3 *Handzeichnungen, utopisches Design, Bücher* Kassel 1977.

Art Systems in Latin America, exh. cat., Institute of Contemporary Art, London 1974.

Systems, exh. cat., Whitechapel Art Gallery, London 1972. With an introduction by Stephen Bann.

When Attitudes Become Form: Works, Concepts, Processes, Situations, Information, exh. cat., Kunsthalle, Bern and Institute of Contemporary Arts, London 1969.

Collections

Sabine Breitwieser, *Occupying Space: Sammlung Generali Foundation Collection*, Vienna 2003.

General Texts

Alexander Alberro, *Conceptual Art and the Politics of Publicity*, Cambridge, Mass. 2003.

Suzaan Boettger, *Earthworks: Art and Landscape of the Sixties*, Berkeley and Los Angeles 2002.

Peter Osborne (ed.), *Conceptual Art*, London 2002.

Helena Reckitt (ed.), *Art and Feminism*, London 2001.

Anne Rorimer, *New Art in the 60s and 70s: Redefining Reality*, London 2001.

Patricia Norvell and Alexander Alberro, *Recording Conceptual Art*, Berkeley, Los Angeles and London 2001.

James Meyer (ed.), *Minimalism*, London 2000. Erika Suderburg (ed.), *Space, Site, Intervention: situating installation art*, Minneapolis 2000.

Tracey Warr (ed.), *The Artist's Body*, London, 2000.

Michael Newman and Jon Bird (eds.), *Rewriting Conceptual Art*, London 1999. Stephen Paul Miller, *The Seventies Now: Culture as Surveillance*, Durham and London 1999.

Edward J. Sullivan (ed.), *Latin American Art in the Twentieth Century*, London 1996.

Donald Kuspit, *The New Subjectivism: Art in the 1980s*, Ann Arbor and London 1988.

Ira Schneider and Beryl Korot (eds.), *Video Art: An Anthology*, New York and London 1976.

Lucy Lippard, *Six years: the dematerialization of the art object from 1966-1972*, New York and London, 1973.

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Archive essays
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Bas Jan Ader
All My Clothes 1970
Black and white photograph
28.5 x 35.2
Museum Boijmans Van
Beuningen, Rotterdam

Bas Jan Ader
Fall II 1970
16 mm black and white
silent film transferred to DVD
34 sec.
Courtesy Bas Jan Ader
Estate and Patrick Painter
Editions (69)

Bas Jan Ader
Broken Fall (Geometric) 1971
16 mm black and white silent
film transferred to DVD
1 min. 54 sec.
Courtesy Bas Jan Ader Estate
and Patrick Painter Editions

Bas Jan Ader
*Broken Fall (Organic),
Amsterdamse Bos,
Holland* 1971
16 mm black and white silent
film transferred to DVD
1 min. 36 sec.
Courtesy Bas Jan Ader Estate
and Patrick Painter Editions

Bas Jan Ader
Nightfall 1971
16 mm black and white
silent film transferred to DVD
4 min. 22 sec.
Courtesy Bas Jan Ader
Estate and Patrick Painter
Editions (68)

Bas Jan Ader
*On the Road to a New Neo
Plasticism Westkapelle
Holland* 1971
4 colour photographs
Each 28 x 28
Museum Boijmans Van
Beuningen, Rotterdam

Bas Jan Ader
*In Search of the
Miraculous (One Night
in Los Angeles)* 1973
18 black and white
photographs with ink
Each 20.3 x 25.4
Collection Philip Aarons
and Shelley Fox Aarons,
New York (71)

Bas Jan Ader
Untitled (Tea Party) 1972
6 colour photographs
Each 13 x 20.3
Museum Boijmans Van
Beuningen, Rotterdam (10)

Bas Jan Ader
Primary Time 1974
Colour silent U-matic
videotape transferred to DVD
25 min. 47 sec.
Courtesy Bas Jan Ader
Estate and Patrick
Painter Editions (70)

Carl Andre
144 Magnesium Square 1969
Magnesium
1 x 364.8 x 365.8
Tate. Purchased 1973 (13)

John Baldessari
*Commissioned Painting:
A Painting by Nancy
Conger* 1969
Oil or acrylic on canvas
155 x 119.4 x 5.1
Courtesy the artist
and Marian Goodman
Gallery, New York

John Baldessari
*Commissioned Painting:
A Painting by Patrick
X. Nidorf* 1969
Oil or acrylic on canvas
155 x 119.4 x 5.1
Courtesy the artist and
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John Baldessari
*Commissioned Painting:
A Painting by George
Walker* 1969
Oil or acrylic on canvas
155 x 119.4 x 5.1
Courtesy the artist
and Marian Goodman
Gallery, New York (59)

John Baldessari
Police Drawing 1972
Black and white video
23 min. 9 sec.
Electronic Arts Intermix,
New York (20)

John Baldessari
*Throwing Three Balls
in the Air to Get an
Equilateral Triangle* 1972-3
5 colour photographs
mounted on board
Each 40.6 x 50.8
Courtesy the artist and
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Mel Bochner
Measurement: Room 1969
Tape and Letraset on wall
Dimensions variable
Museum of Modern Art,
New York, Committee on
Painting and Sculpture
Funds, 1997 (14)

Alighiero e Boetti
Ping Pong 1966
Painted glass, wood
and electric mechanism
50 x 50 x 20
Goetz Collection, Munich (4)

Alighiero e Boetti
Zig Zag 1966
Fabric and aluminium
50 x 50 x 50
Collection Sergio Bertola,
Genoa (12)

Alighiero e Boetti
Mappa 1971
Embroidery
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Private Collection (62)

Marcel Broodthaers
Bateau Tableau 1973
Slide projection, 80 slides
Dimensions variable
Marie Puck Broodthaers (37)

Marcel Broodthaers
Un Jardin d'hiver 1974
Mixed media installation
Friedrich Christian Flick
Collection, Zurich (36)

Lygia Clark
Dialogue Goggles 1968
Diving goggles made to be
used by two participants
4.3 x 15
Coleção Família Clark (39)

Lygia Clark
*Sensorial Objects:
Sensorial Gloves* 1966 (2005)
Gloves and balls of various
materials and sizes
Coleção Família Clark (43)

Lygia Clark
*Sensorial Objects: Draw
with Your Finger* 1966 (2005)
Plastic bag and water
Coleção Família Clark (40)

Lygia Clark
*Sensorial Objects:
Ping-pong* 1966 (2005)
Plastic bag, water
and ping-pong balls
Coleção Família Clark (42)

Lygia Clark
*Sensorial Objects:
Stone and Air* 1966 (2005)
Plastic bag and stones
Coleção Família Clark (41)

Braco Dimitrijević
*The Casual Passer-By
I Met at 11.28 am, London,
October* 1972 1972
Photograph on paper
40.9 x 101.6
Tate. Purchased 1983

Braco Dimitrijević
*The Casual Passer-By
I Met at 1.43 PM,
Venice* 1976 1976
Photograph on
photosensitive linen
360 x 460
Courtesy the artist (47)

Braco Dimitrijević
Venice 1976
Framed certificate
86 x 66
Courtesy the artist

Braco Dimitrijević
*Monument to David Harper,
the Casual Passer-by I Met at
11.28 AM, London* 1972 1972
Black and white photograph
and certificate
44 x 106
Courtesy the artist

Braco Dimitrijević
*John Foster, the Casual
Passer-by I Met at 10.05 AM,
London* 1972 1972
Black and white photographs
and certificate
44 x 75
Courtesy the artist

Valie Export
Identity Transfer 1 1968
Black and white photograph
100 x 74
Courtesy Charim Galerie,
Vienna (31)

Valie Export
Identity Transfer 2 1968
Black and white photograph
100 x 74
Courtesy Charim Galerie,
Vienna (32)

Valie Export
Identity Transfer 3 1968
Black and white photograph
100 x 74
Courtesy Charim Galerie,
Vienna (33)

Valie Export and Peter Weibel,
*From the Portfolio of
Doggedness (Aus der
Mappe der Hundigkeit)* 1968
5 black and white photographs
95 x 135
Courtesy Charim Galerie,
Vienna (27)

Valie Export
*Action Pants:
Genital Panic* 1969
4 silkscreen posters on paper
Each 66 x 46
Courtesy Charim
Galerie, Vienna

Valie Export
*Valie Export -
Smart Export* 1970
Black and white photograph
71.5 x 63
Courtesy Charim Galerie,
Vienna (30)

Valie Export
*Squat Upon II
(Aufhockung II)* 1972
Vintage black and white
photograph and ink
56 x 79
Courtesy Charim Galerie,
Vienna (29)

Valie Export
Curve Up (Aufbeugung) 1976
Vintage black and white
photograph and ink
56 x 79
Courtesy Charim Galerie,
Vienna (28)

Robert Filliou
*8 Measurement Poems
(réalisé sous licence par
Emmett Williams)* 1966
8 wooden measurement
sticks and collaged elements
191 x 7.5 x 3.5
180.5 x 5 x 8
182 x 6 x 3
181 x 4.5 x 3.5
175 x 4.5 x 4.5
92 x 4.5 x 8
775 x 6 x 5.5
795 x 5 x 6.5
Collection Irmeline Lebeer (64)

Robert Filliou
*Permanent Creation
Tool Box No. 2* 1969
Wood and metal
5 x 56 x 20.5
Eric Decelle, Brussels (63)

Robert Filliou
*I Hate Work which
is Not Play* 1970
Wood, ball-point pen,
nail, and crayon
77 x 60 x 5.5
Eric Decelle, Brussels

Gilbert & George
*Balls: The Evening
Before the Morning After -
Drinking Sculpture* 1972
Photographs on board
210.8 x 438.2
Tate. Purchased 1972 (23)

- Dan Graham
Figurative 1965
Part 1: Two-page magazine layout
58 x 73
Part 2: Scheme for magazine page advertisement
49 x 40
Collection Herbert (55)
- Dan Graham
Homes for America 1966–7
Slide projection
Dimensions variable
Courtesy the artist
- Dan Graham
Homes for America 1966–7
Black and white photographs, colour photographs, handwritten and typed texts on board
102 x 77
Daled Collection, Brussels (35)
- Dan Graham
Public Space/Two Audiences 1976
Two rooms divided by glass, one mirrored wall, muslin, fluorescent lights, wood
280 x 280 x 650
Collection Herbert (61)
- Hans Haacke
Condensation Cube 1963–5
Plexiglass and water
76 x 76 x 76
MACBA. Museu d'Art Contemporani de Barcelona.
Gift of the National Committee and Board of Trustees, Whitney Museum of American Art (2)
- Hans Haacke
Shapolsky et al., Manhattan Real Estate Holdings, a Real-Time Social System as of May 1, 1971 1971
33 panels, including 2 maps, 146 black and white photographs with typewritten data-sheets framed in 23 sets, six charts, and an explanatory panel
1 panel 56 x 106
1 panel 56 x 391
23 panels 56 x 106.2
8 panels 66.2 x 56.5
Centre Pompidou, Paris (44)
- Eva Hesse
Inside I 1967
Acrylic, papier-mâché over wood, cord and wire
30.5 x 30.5 x 30.5
The Estate of Eva Hesse. Courtesy Hauser & Wirth Zürich London (5)
- Eva Hesse
Inside II 1967
Acrylic, papier-mâché with sawdust over wood, cord, metal weights and paper
13.3 x 17.8 x 17.8
The Estate of Eva Hesse. Courtesy Hauser & Wirth Zürich London
- Sanja Iveković
Double Life: Documents for Autobiography 1959–75
Photographs and magazine pages on paper
Each 42 x 59
Museum of Contemporary Art, Zagreb (56)
- Joan Jonas
Duet 1972
Black and white sound video
3 min. 39 sec.
Electronic Arts Intermix, New York (22)
- Joan Jonas
Organic Honey's Visual Telepathy 1972
Black and white sound video
23 min.
Electronic Arts Intermix, New York (21)
- Joan Jonas
Vertical Roll 1972
Black and white sound video
20 min.
Electronic Arts Intermix, New York
- Donald Judd
Untitled 1963 (1969)
Light cadmium red oil on wood with purple plexiglass
49.5 x 123.2 x 123.2
Estate of Dan Flavin (1)
- Ilya Kabakov
Sitting-in-the-closet-Primakov 1972
Accordion album of 47 images
Each 83.5 x 35.5 x 13
Centre Pompidou, Paris (49)
- Sol LeWitt
Muybridge I 1964
Painted wood, black and white photographs, lightbulbs
27 x 245 x 24
LeWitt Collection, Chester, Connecticut (15)
- Sol LeWitt
Buried Cube Containing an Object of Importance but Little Value 1968
Black and white photographs, ink, pencil, graph paper
27 x 42
LeWitt Collection, Chester, Connecticut (3)
- Richard Long
A Square of Ground 1966
Painted plaster on plywood base
9.5 x 32 x 27
Tate. Purchased with funds provided by the Knapping Fund 1991
- Richard Long
A Line Made by Walking 1967
Photograph and pencil on board
37.5 x 32.4
Tate. Purchased 1976 (17)
- Richard Long
Untitled 1967
Drawing, photograph and mixed media on board
60.8 x 81.2
Tate. Purchased 1976
- Richard Long
A Hundred Mile Walk 1971–2
Pencil, map, printed text, photographs and labels on board
21.6 x 48.3
Tate. Purchased 1973 (16)
- Dimitrije Mangelos
Hegel Globus 1977–8
Silver paint and acrylic on globe made from plastic and metal
38 x diameter 26
Courtesy Mrs Zdravka Bašičević Mangelos and Peter Freeman, Inc., New York
- Dimitrije Mangelos
Le Manifeste sur la machine 1977–8
Acrylic and plastic letters on globe made from wood, metal and paper
46 x diameter 36
Courtesy Mrs Zdravka Bašičević Mangelos and Peter Freeman, Inc., New York (52)
- Dimitrije Mangelos
Numberconcept Pitagoras 1977–8
Plastic letters and acrylic on globe made from wood, metal and paper
46 x diameter 36
Courtesy Mrs Zdravka Bašičević Mangelos and Peter Freeman, Inc., New York (51)
- Dimitrije Mangelos
Energija 1977–8
Acrylic and oil on globe made of wood, metal and printed paper
46 x diameter 36
Private Collection. Courtesy Peter Freeman, Inc., New York (50)
- Gordon Matta-Clark and Anarchitecture
Anarchitecture 1974
Photographs and drawings mounted on board; CD and heat lamp
Lent by the Estate of Gordon Matta-Clark, courtesy David Zwirner, New York, and the Canadian Centre for Architecture, Montreal (34)
- Cildo Meireles
Virtual Spaces: Cantos II (Espaços virtuais: Canto II) 1967–8
Wood, canvas, and paint and woodblock flooring
305 x 100 x 100
Luisa Malzoni Strina (60)
- Cildo Meireles
Geographical Mutations: Frontier Rio–São Paulo (Mutações geográficas: fronteira Rio–São Paulo) 1969
Leather box with earth
60 x 60 x 60
Collection Fundação de Serralves, Museu de Arte Contemporânea, Porto (7)
- Cildo Meireles
Insertions into Ideological Circuits: Coca-Cola Project (Inserções em circuitos ideológicos: Projeto Coca-Cola) 1970 (2005)
Glass and impressed text
Height 18
Courtesy the artist (53)
- Cildo Meireles
Insertions into Ideological Circuits: Currency Project (Inserções em circuitos ideológicos: Projeto Cédula) 1970
6 banknotes
Courtesy the artist (54)
- Bruce Nauman
Dance or Exercise on the Perimeter of a Square 1967–8
Black and white sound video
10 min.
Electronic Arts Intermix, New York (8)
- Bruce Nauman
Going Around the Corner Piece 1970
Wallboard, video cameras, and video monitors
600 x 600
Centre Pompidou, Paris (72)
- Hélio Oiticica
Meteor 18, B-331: Homage to Cara de Cavalo (Bólide 18, B-331: Homenagem a Cara de Cavalo) 1967
Wood, photograph, fabric, nylon, plastic, and pigment
40 x 30.5 x 68.5
Collection Gilberto Chateaubriand MAM RJ (6)
- Hélio Oiticica
Projeto Filtro – Para Vergara 1972/1972 (2005)
Mixed media and sound
600 x 800
Projeto Hélio Oiticica, Rio de Janeiro (38)
- Adrian Piper
Sixteen Permutations on the Planar Analysis of a Square 1968
Model and collaged photocopies and text on paper
Model: 140 x 34 x 34.3
Framed collage: 97.8 x 69.9 x 2.5
Courtesy the artist
- Adrian Piper
Catalysis III 1970
Black and white photograph on board
21.6 x 28
Collection of Thomas Erben, New York
- Adrian Piper
Catalysis IV 1970–1
Black and white photograph on board
21.6 x 28
Collection of Thomas Erben, New York (18)

Lenders

Adrian Piper
Food for the Spirit 1971
14 black and white
photographs
Each 38 x 38
Collection Fundação de
Serralves, Museu de Arte
Contemporânea, Porto (19)

Charles Ray
All My Clothes 1973
Kodachrome photographs
mounted on board
22.9 x 152.4
Museum of Contemporary
Art, Los Angeles. Gift of
Lannan Foundation (65)

Charles Ray
Plank Piece I-II 1973
2 black and white photographs
mounted on ragboard
Each 101 x 68.5
Anthony d'Offay, London (66)

Charles Ray
Untitled 1973
Black and white photograph
mounted on ragboard
52.1 x 108
Museum of Contemporary
Art, Los Angeles. Gift
of Lannan Foundation

Charles Ray
Untitled (Glass Chair) 1976
94 x 182.9 x 182.9
Wood and glass
Collection Brian D. Butler,
Santa Monica (67)

Gerhard Richter
48 Portraits 1972 (1998)
48 black and white
photographs on aluminium

70 x 55
MACBA Collection.
Museu d'Art Contemporani
de Barcelona. Gift of Miarmau
Foundation (48)

Martha Rosler
*The Bowery in Two
Inadequate Descriptive
Systems* 1974-5
45 gelatin silver prints
of text and image on
24 backing boards
Each 30 x 60
Whitney Museum of
American Art, New York.
Purchase with funds from
John L. Steffens (45)

Martha Rosler
Semiotics of the Kitchen 1975
Black and white sound video
23 min. 9 sec.
Electronic Arts Intermix,
New York (26)

Martha Rosler
*Vital Statistics of a Citizen,
Simply Obtained* 1977
Colour sound video
39 min. 20 sec.
Electronic Arts Intermix,
New York (25)

Robert Smithson
Monuments of Passaic 1967
Artforum, vol. 6, no. 4,
December 1967, pp. 48-51

Robert Smithson
Four-sided Vortex 1967
Stainless steel and mirror
90.2 x 71.1 x 71.1
Collection of the Weltkunst
Foundation, Courtesy the
Lisson Gallery, London (9)

Robert Smithson
Hotel Palenque 1969
31 chromogenic development
transparencies and audio CD
Dimensions variable
Solomon R. Guggenheim
Museum, New York.
Purchased with funds
contributed by the
International Director's
Council and Executive
Committee Members: Edythe
Broad, Henry Buhl, Elaine
Terner Cooper, Linda
Fishbach, Ronnie Heyman,
Dakis Joannou, Cindy
Johnson, Barbara Lane, Linda
Macklowe, Brian McIver,
Peter Norton, Willem Peppler,
Denise Rich, Rachel Rudin,
David Teiger, Ginny Williams,
Elliot Wolk, 1999 (24)

Andy Warhol
Brillo 1964
Painted wood
Tate. Lent by the Froehlich
Foundation, Stuttgart 2000 (11)

Andy Warhol
Mao Tse-Tung 1972
10 screenprints on paper
Each 91.4 x 91.4
Tate. Purchased 1984 (46)

Public collections

Canadian Centre for
Architecture

Centre Pompidou

Fundação de Serralves
Museu de Arte
Contemporânea

MACBA, Museu d'Art
Contemporani de Barcelona

Museum Boijmans Van
Beuningen, Rotterdam

Museum of Contemporary
Art, Los Angeles

Museum of Contemporary
Art, Zagreb

Museum of Modern Art,
New York

Museu de Arte Moderna,
Rio de Janeiro

Solomon R. Guggenheim
Museum

Whitney Museum
of American Art

Private collections

Collection of Philip Aarons
and Shelley Fox Aarons,
New York

Mrs Zdravka Bašičević
Mangelos and Peter
Freeman, Inc., New York

John Baldessari and Marian
Goodman Gallery, New York

Collection Sergio Bertola

Marie Puck Broodthaers

Collection Brian D. Butler,
Santa Monica, USA

Charim Gallery, Vienna

Coleção Família Clark

Anthony d'Offay, London

Daled Collection

Braco Dimitrijević

Electronic Arts Intermix

Eric Decelle, Brussels

Estate of Bas Jan Ader and
Patrick Painter Editions

Estate of Dan Flavin

Estate of Eva Hesse and
Hauser & Wirth Zürich London

Estate of Gordon Matta-Clark
and David Zwirner Gallery

Collection of Thomas Erben,
New York

Friedrich Christian Flick
Collection

Goetz Collection, Munich

Dan Graham

Collection Herbert

Collection Irmeline Lebeer

LeWitt Collection,
Chester, USA

Marian Goodman Gallery,
New York

Cildo Meireles

Adrian Piper

Projeto Hélio Oiticica,
Rio de Janeiro

Luisa Malzoni Strina

Collection of the Weltkunst
Foundation, Courtesy Lisson
Gallery, London

*And all other private lenders
who wish to remain
anonymous*

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Open Systems examines how international artists rethought the object of art in the late 1960s and early 1970s. Connecting with the increasingly urgent political developments of the decade, artists began to make their work more responsive to the world around them. *Open Systems* offers a way into this complex and highly diverse period.

Building on the principles of 1960s avant-garde movements such as Fluxus, Minimalism and Neo-concretism, artists moved from focusing on the object to wide-ranging experiments in dance, performance and, most notably, film and video. One widely shared characteristic of their work was their adoption of experimental aesthetic 'systems' to generate their art – in particular in relation to the cube – a development that was to have a profound influence on artists for decades to come.

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ISBN 1-85437-565-2



9 781854 375650 >

UK £24.99
US \$49.50
Can. \$69.00

KQ-727-398



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