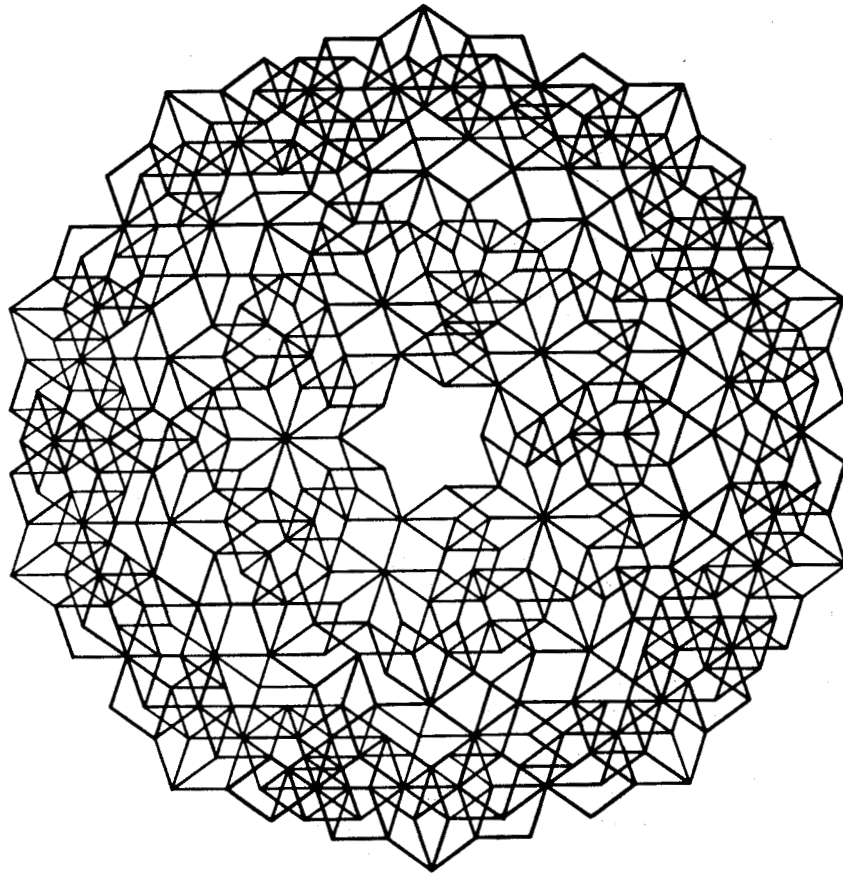
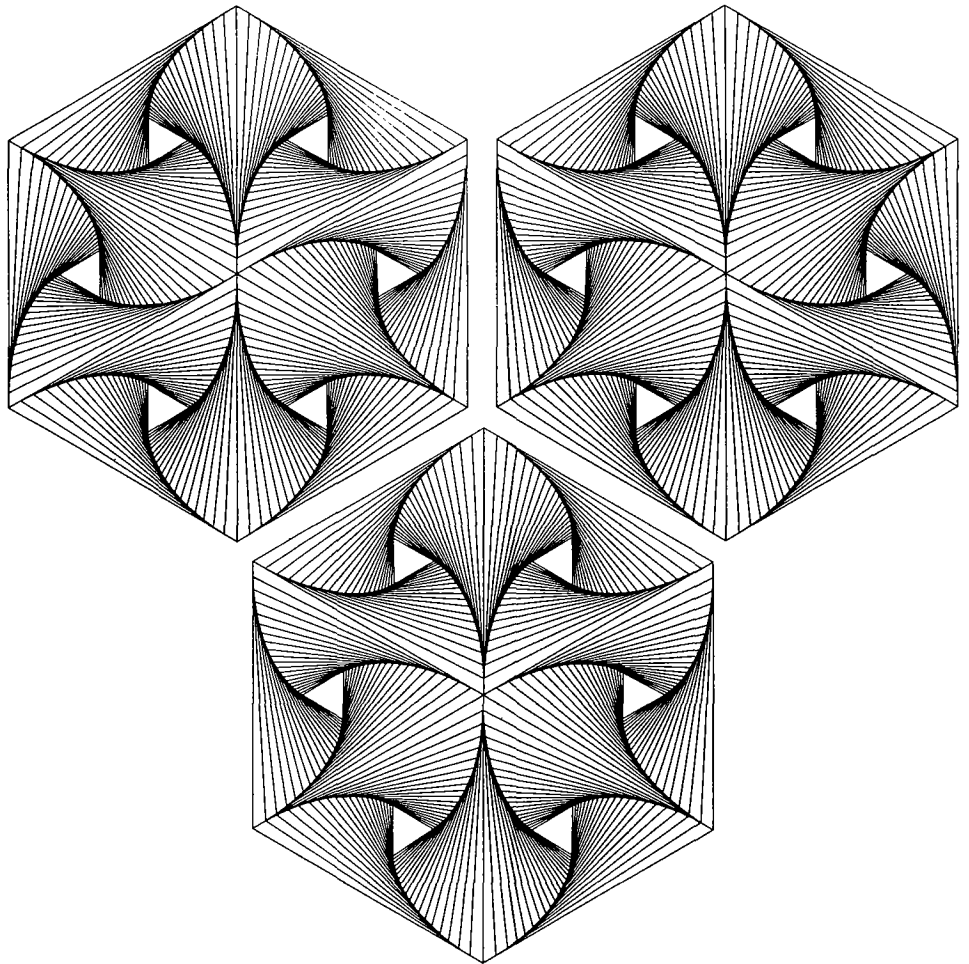
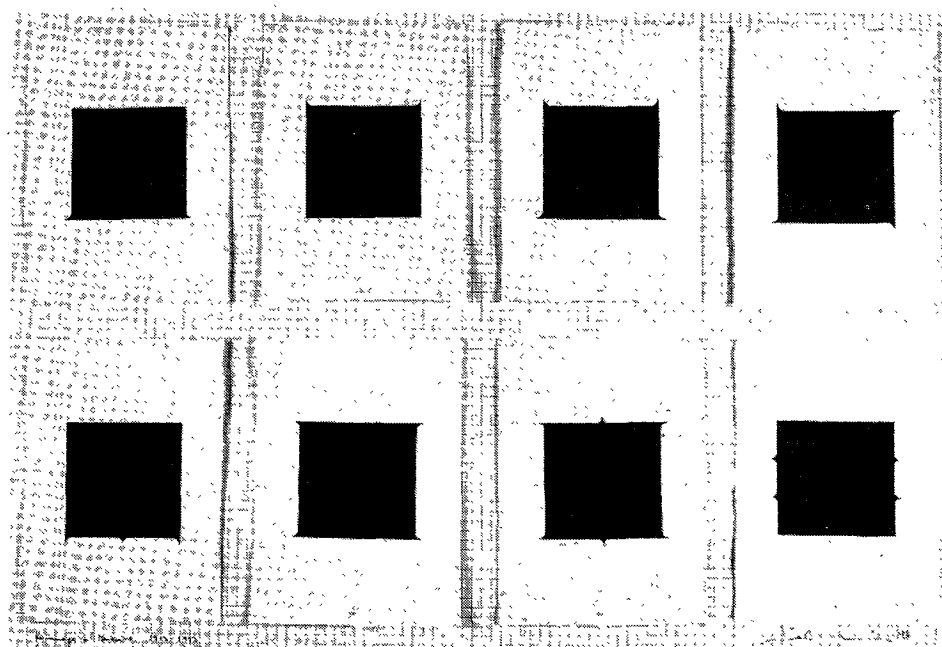




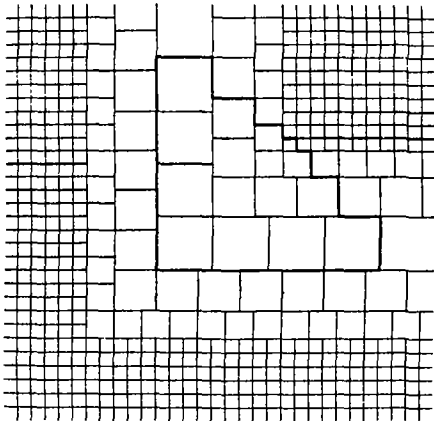
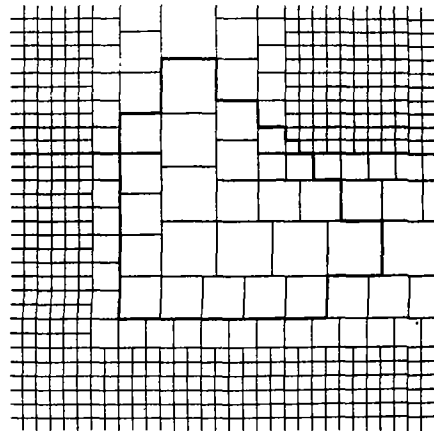
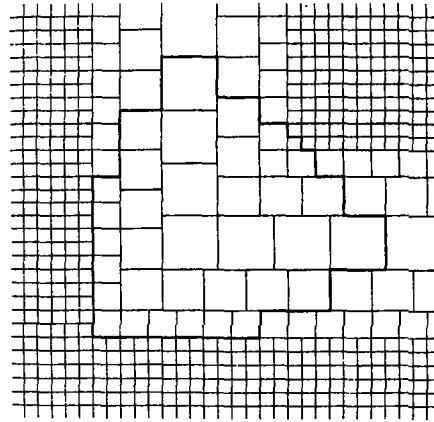
Quasicrystal Dome, 1991, computer drawing, 87 × 112 cm, (detail).



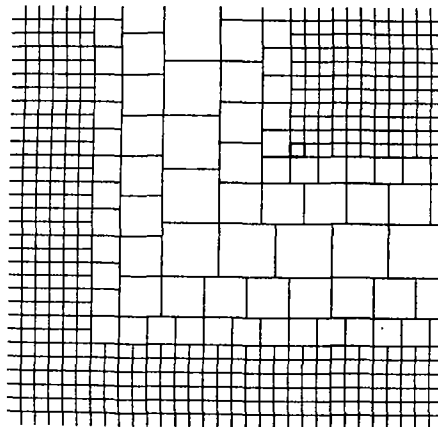
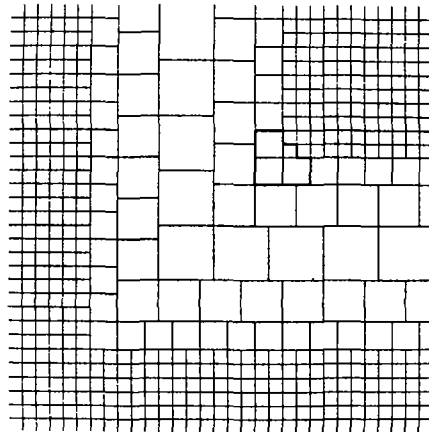
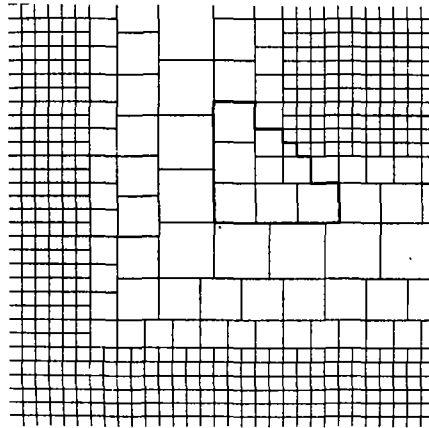
Dissymmetric Kaleidoscopes (Hommage à Pasteur), Variations on a classic design, 1961/1990, computer drawing, cover design for *Symmetry: Culture and Science*.



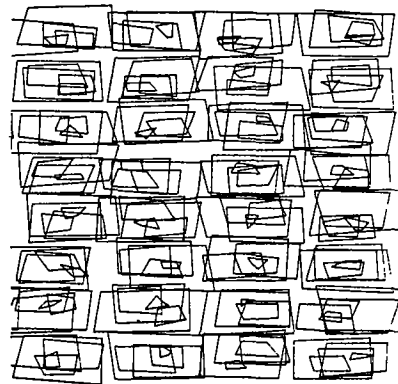
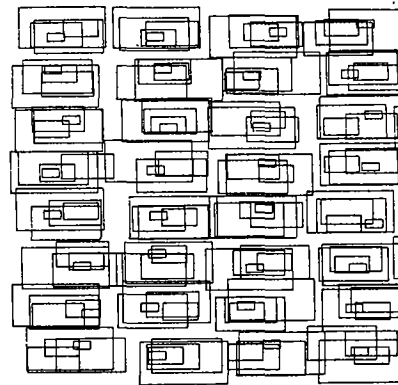
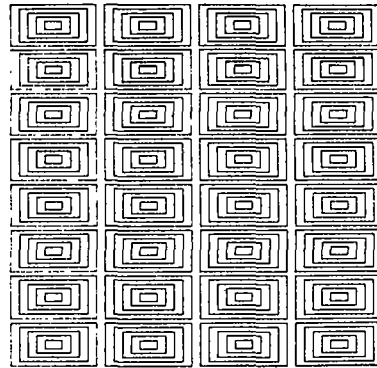
Homage to Malevich 1913-1993, 1993, 8 drawings, 29 × 21 cm each, on a board of 71,5 × 105 cm.



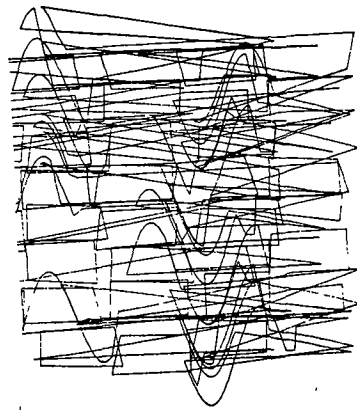
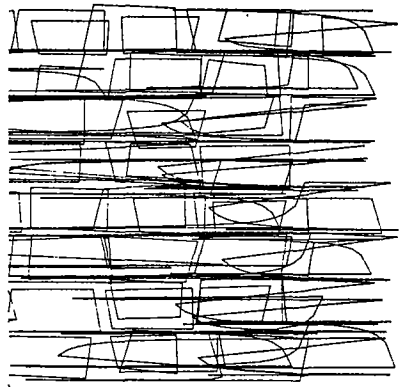
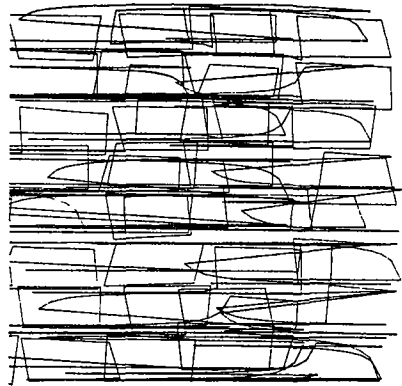
Relation system 1 - 1978 + Meta square, $6 \times 6 \rightarrow 1 \times 1$, 19..



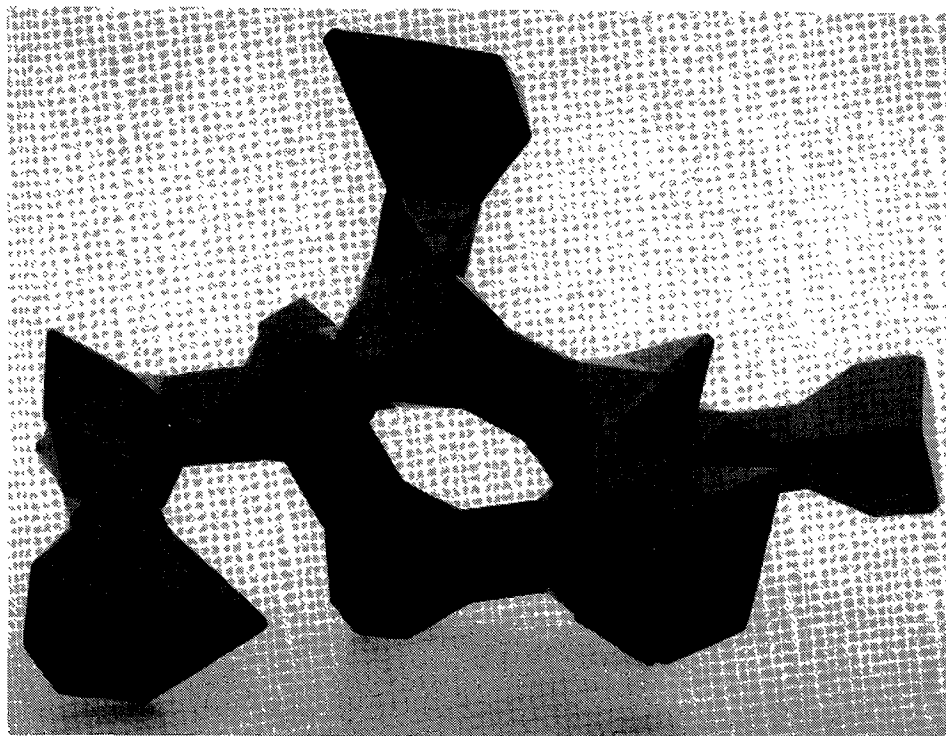
Relation system 1 – 1978 + Meta square, $6 \times 6 \rightarrow 1 \times 1$, 19..



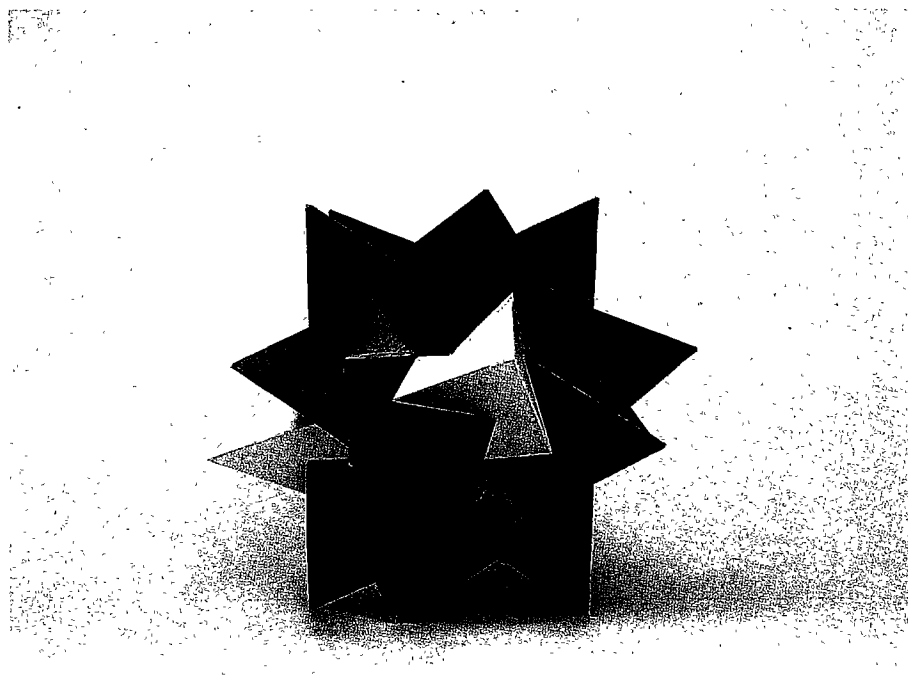
Cycle Symmetry-breaking, 1-6, 1976, computer drawings, 30 × 40 cm each.



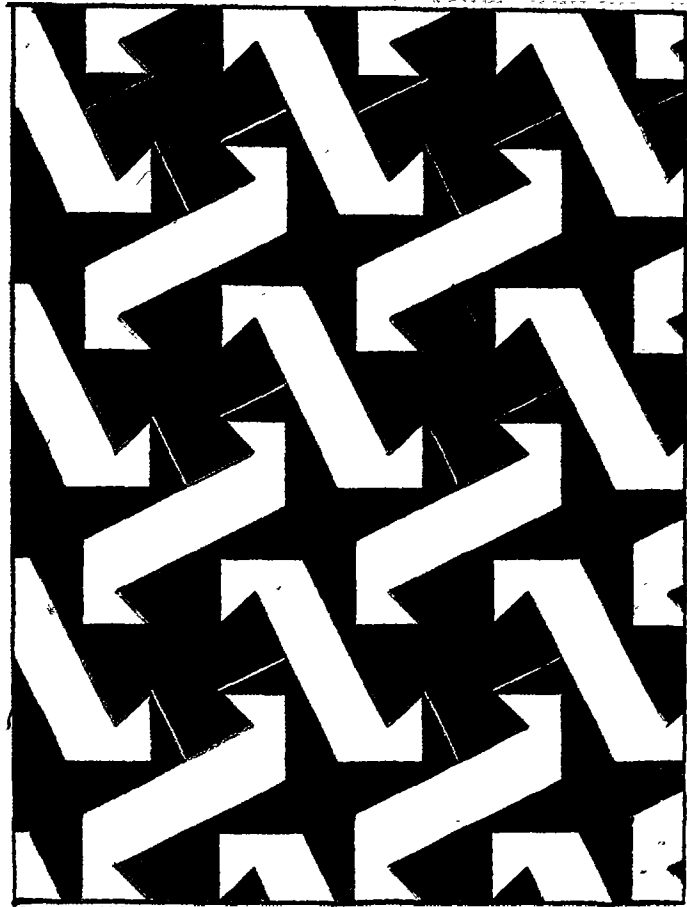
Cycle Symmetry-breaking, 1-6, 1976, computer drawings, 30 × 40 cm each.



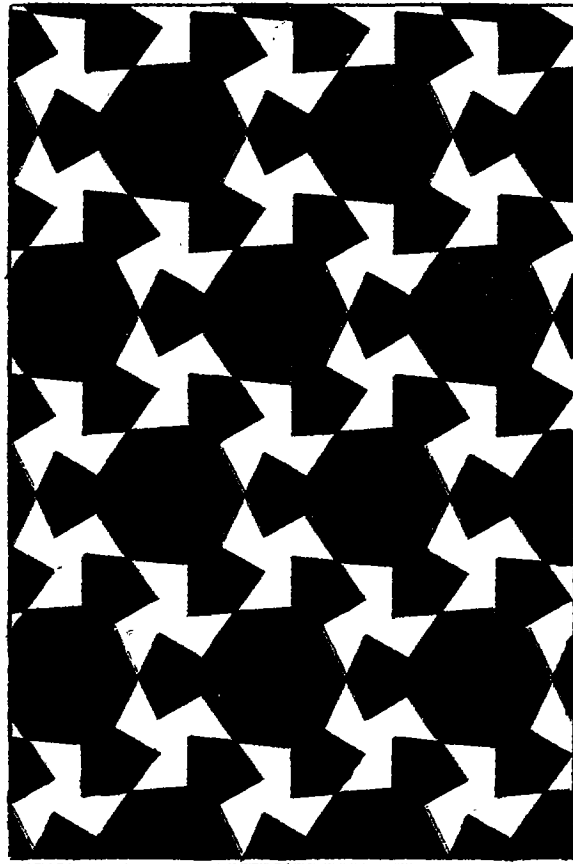
Molecule, painted cardboard, 32 × 49 cm.



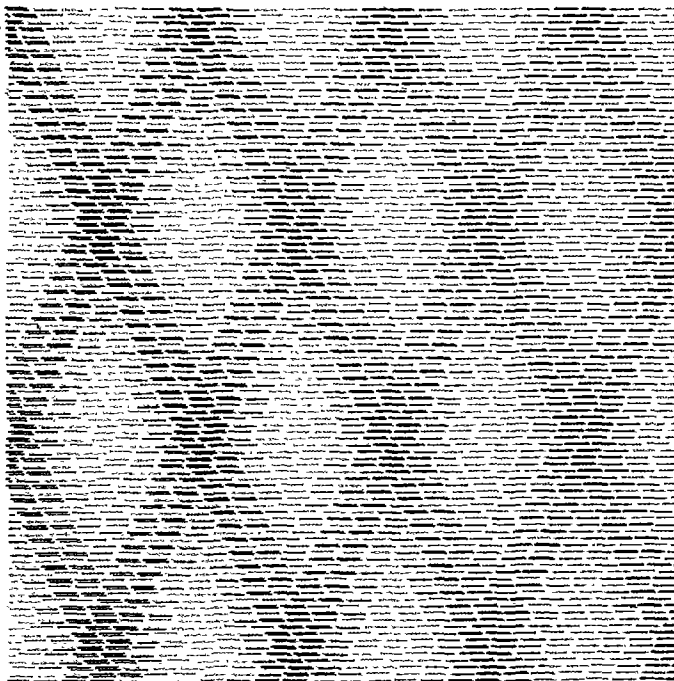
Space – Proportions – Form – Modules, 1993, painted paper, 34 cm.



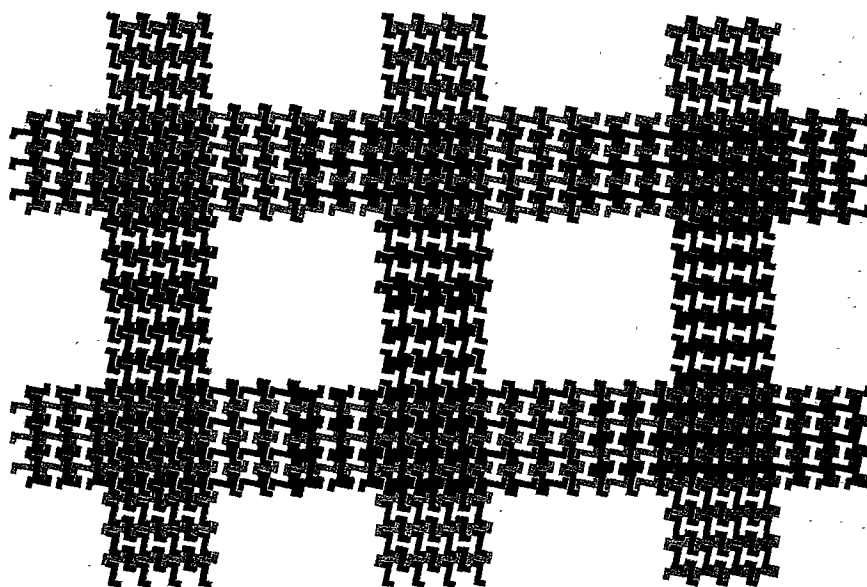
Patterns made from discrete plane symmetry groups, colour copy, 29,7 × 20,8 cm.



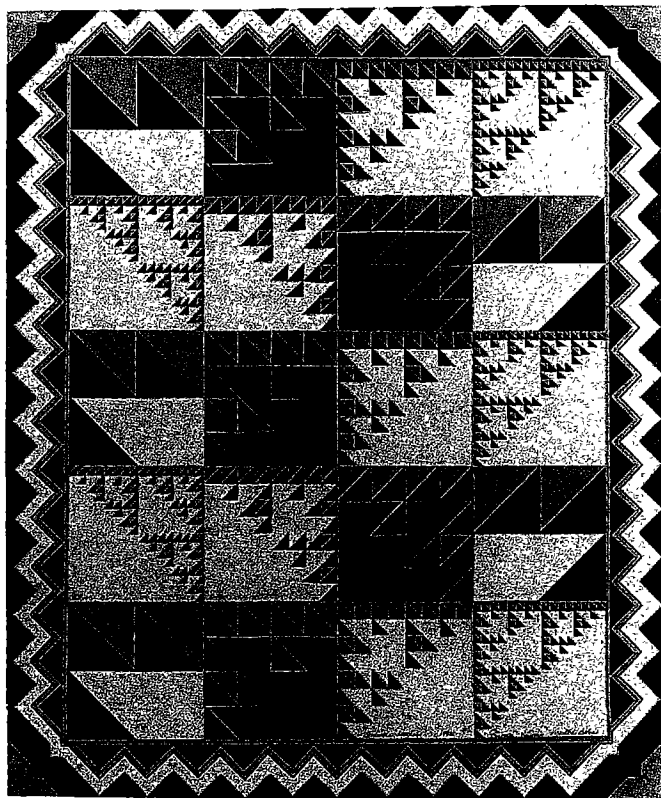
Patterns made from discrete plane symmetry groups, colour copy, 29,7 × 20,8 cm.



Breaks, 2464 lines in seven colours, 1989, computer drawing, 48 × 48 cm.

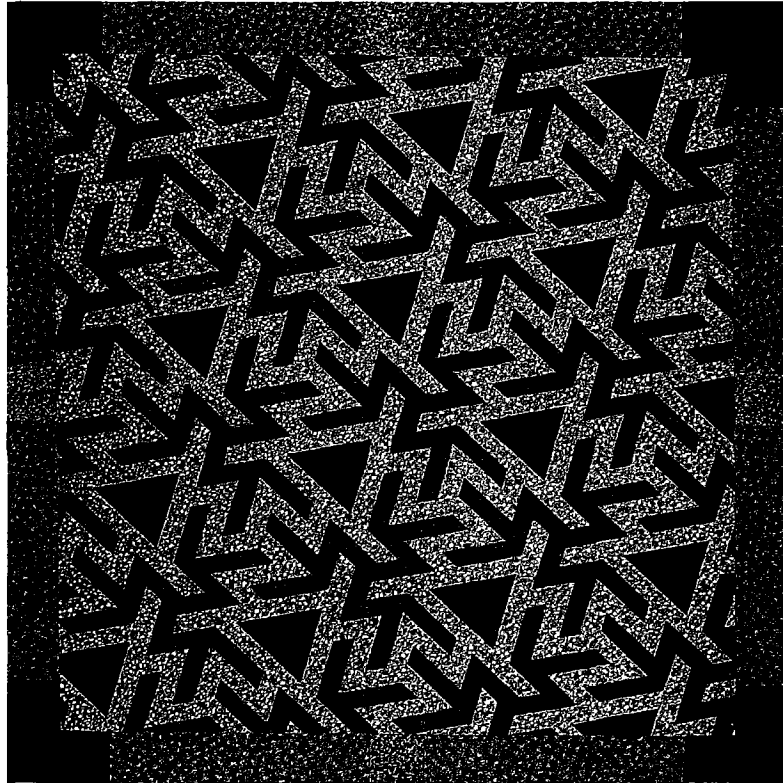


Untitled, 1993, tempera on paper, 111 × 160 cm.



FRACTAL CONCEPTS
Seminole Fractal © Rochelle Newman & Martha Boles
From the PLANAR DIMENSION Series

Fractal Concepts, 1992, photographic poster, 76,7 × 71 cm.



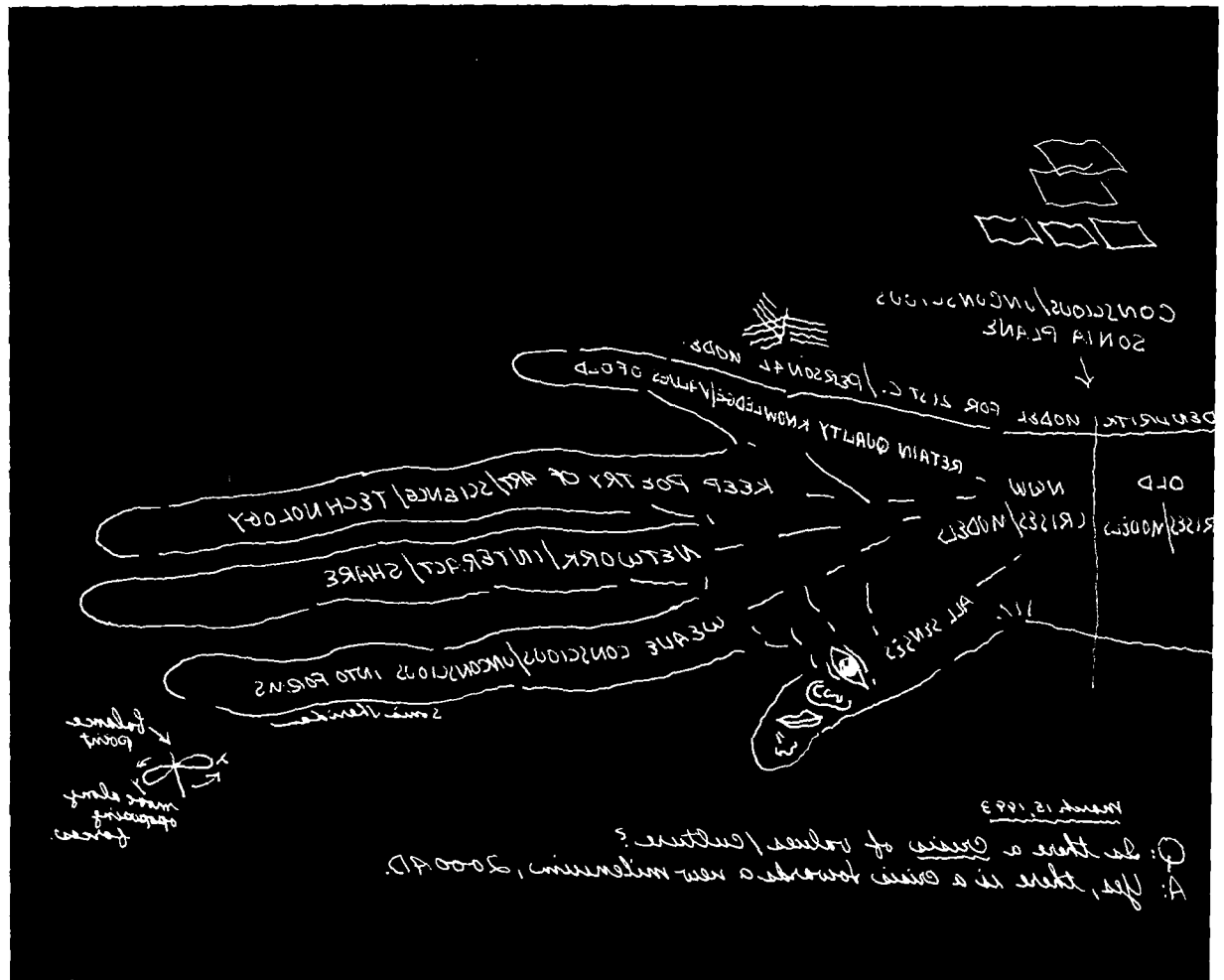
Inaggo, 1991, acrylic on canvas, 60,5 × 60,5 cm.



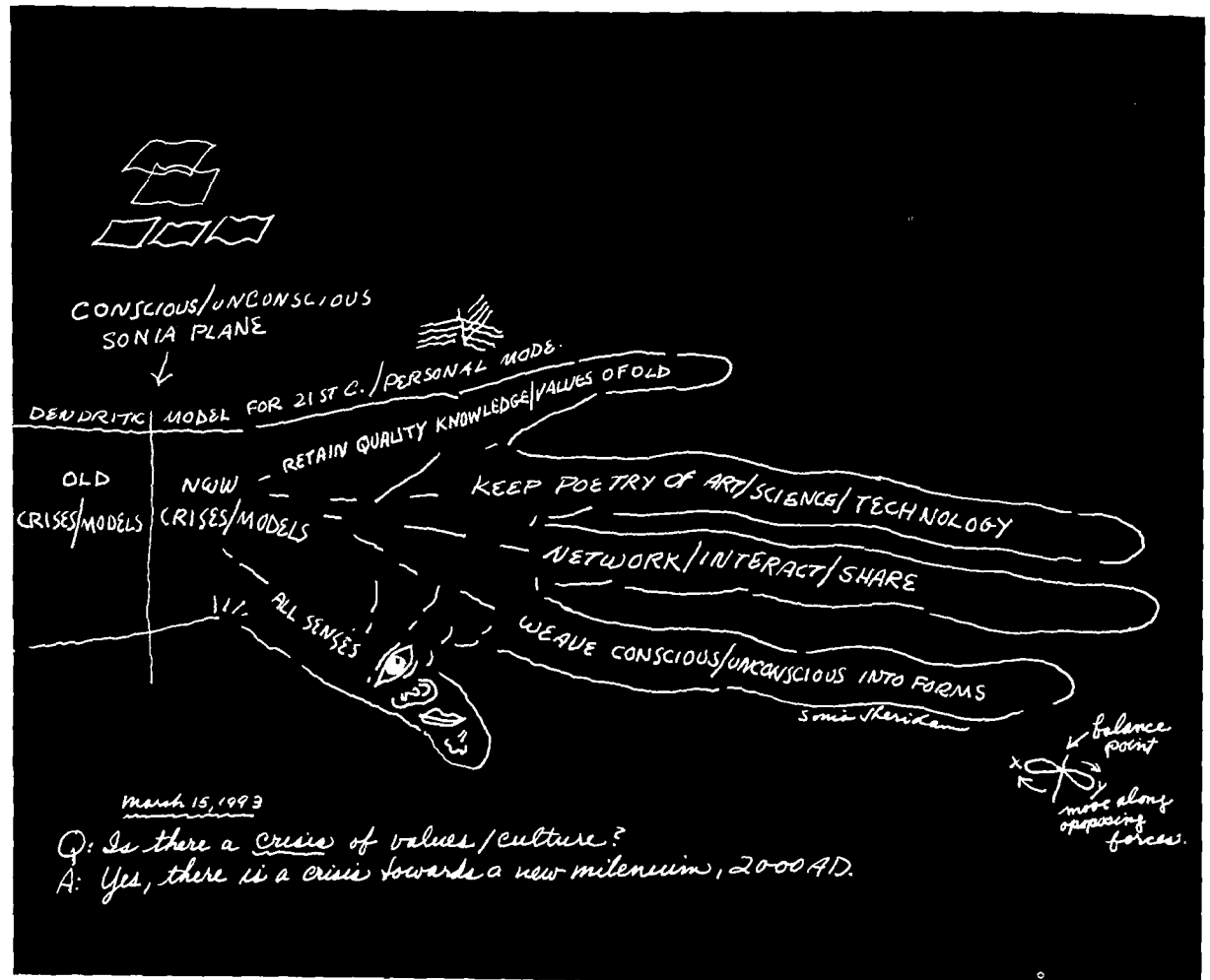
Quotation, 1983, pen drawing, 43,5 × 30,6 cm.



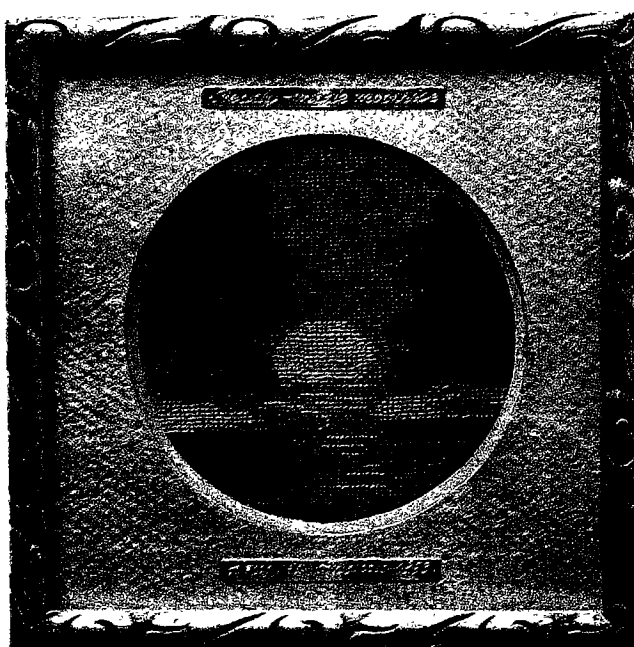
Why am I Symmetrical – or Almost, 1993, coffee drawing, 38,3 × 24,3 cm.



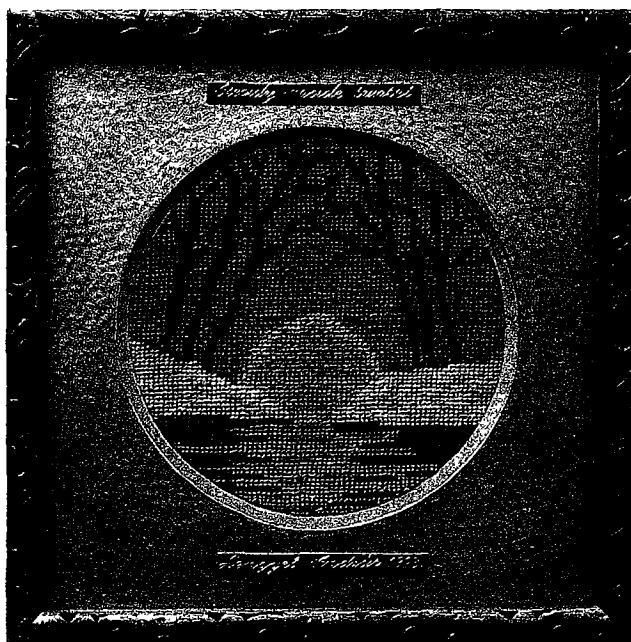
Crisis? 1993, photo of a drawing, 21,5 × 56 cm.



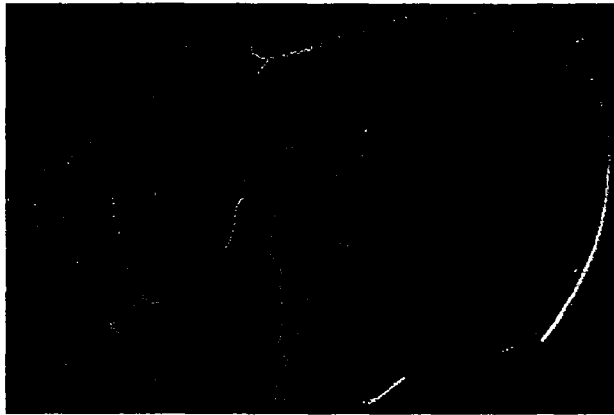
Crisis? 1993, photo of a drawing, 21,5 × 56 cm.



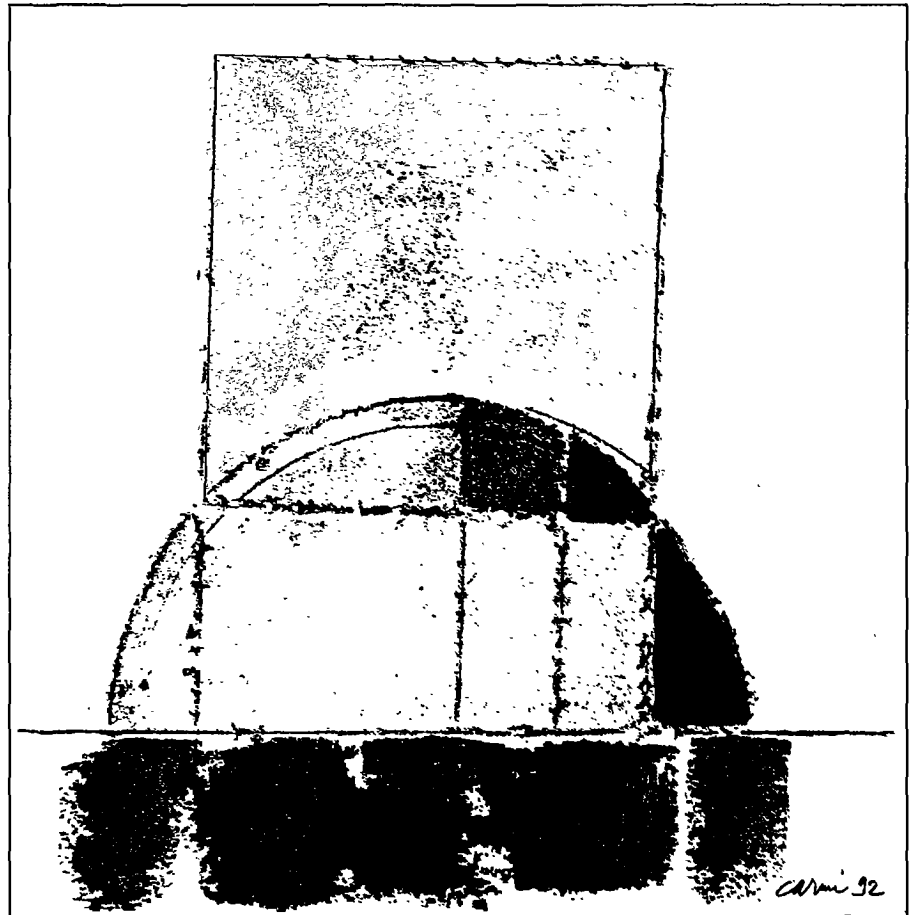
Ready-made Moonrise, 1993, framed goblin, 14,5 × 14,5 cm.



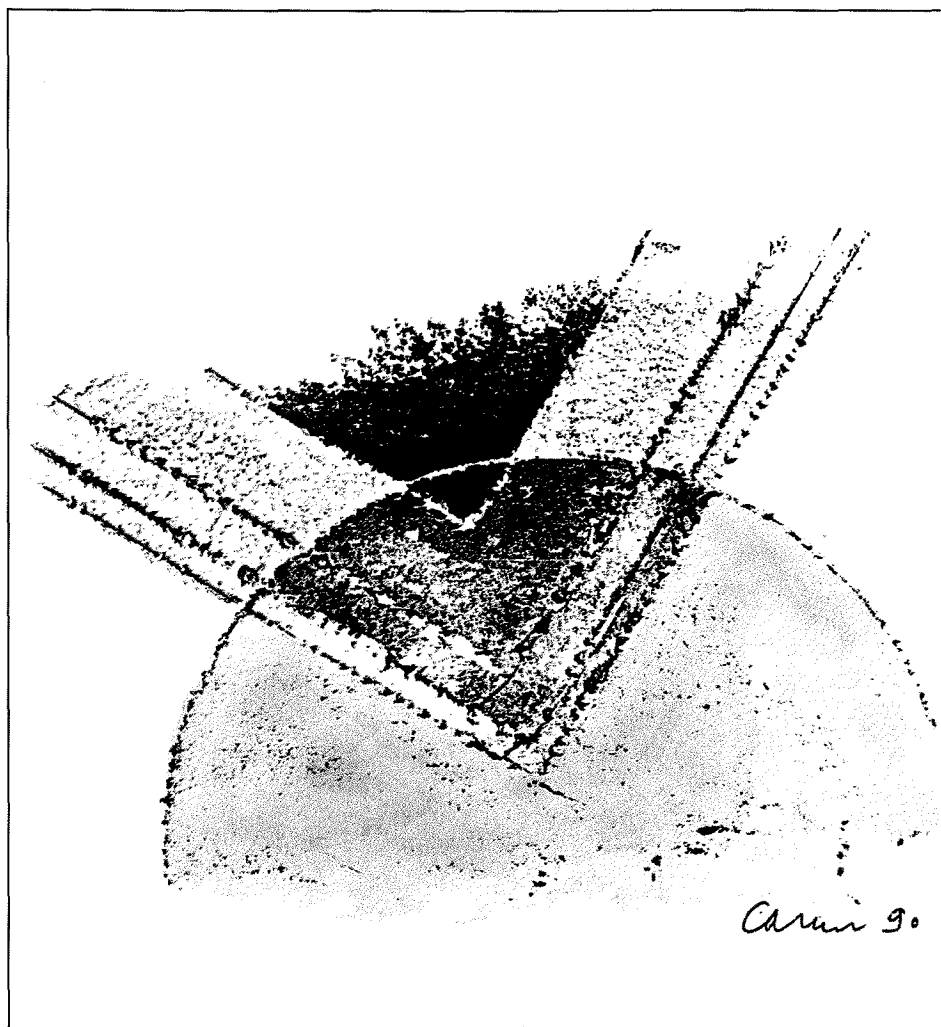
Ready-made Sunset, 1993, framed goblin, 14,5 × 14,5 cm.



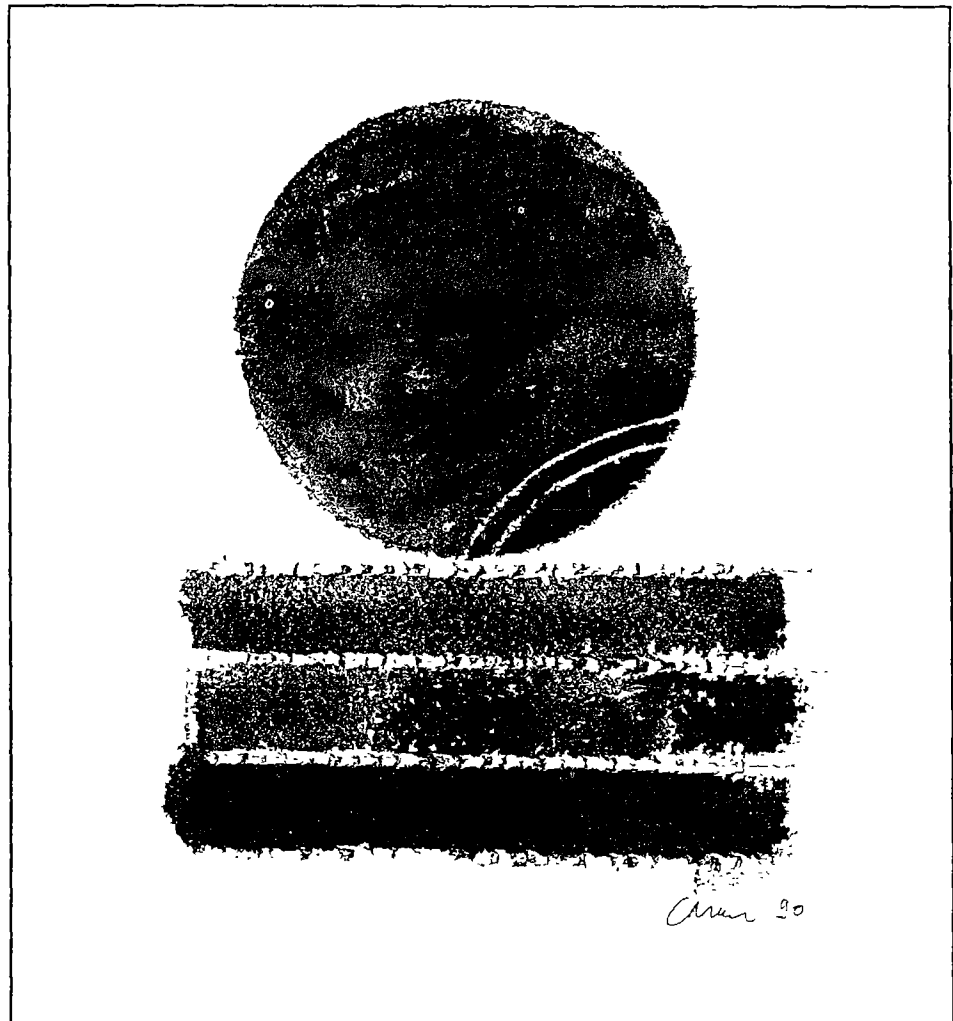
The Garden, 1992, frame from the computer animation.



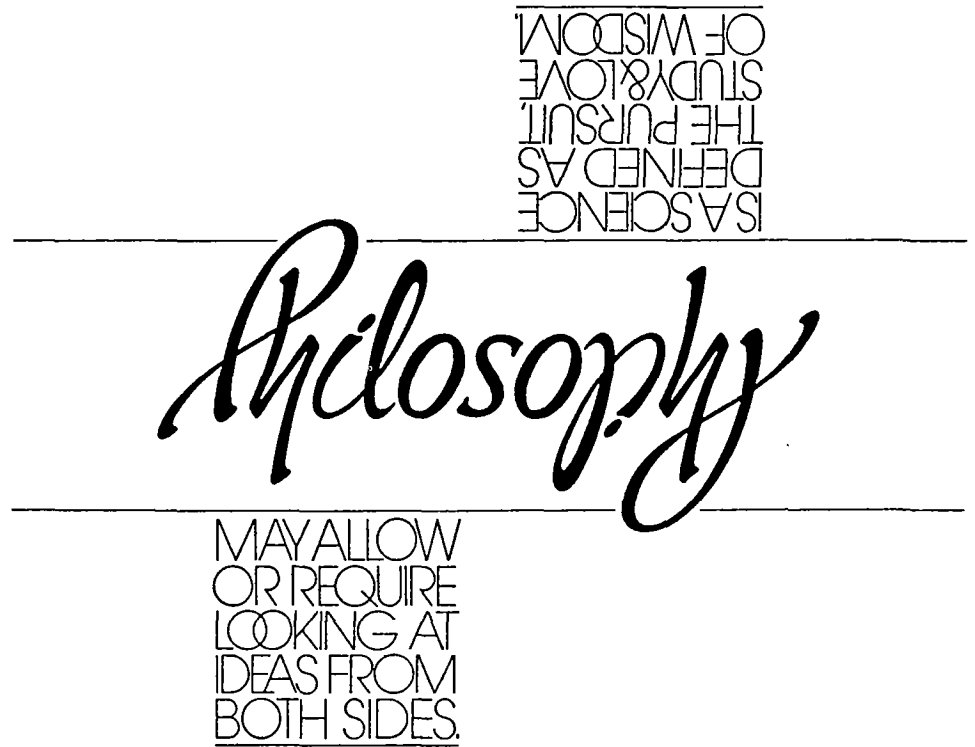
Imaginary Signal I, 1992, watercolour, 24 × 21 cm, cover design for *Symmetry: Culture and Science*.



Imaginary Signal II, 1990, watercolour, 24 × 21 cm, cover design for *Symmetry: Culture and Science*.



Imaginary Signal III, 1990, watercolour, 24 × 21 cm, cover design for *Symmetry: Culture and Science*.



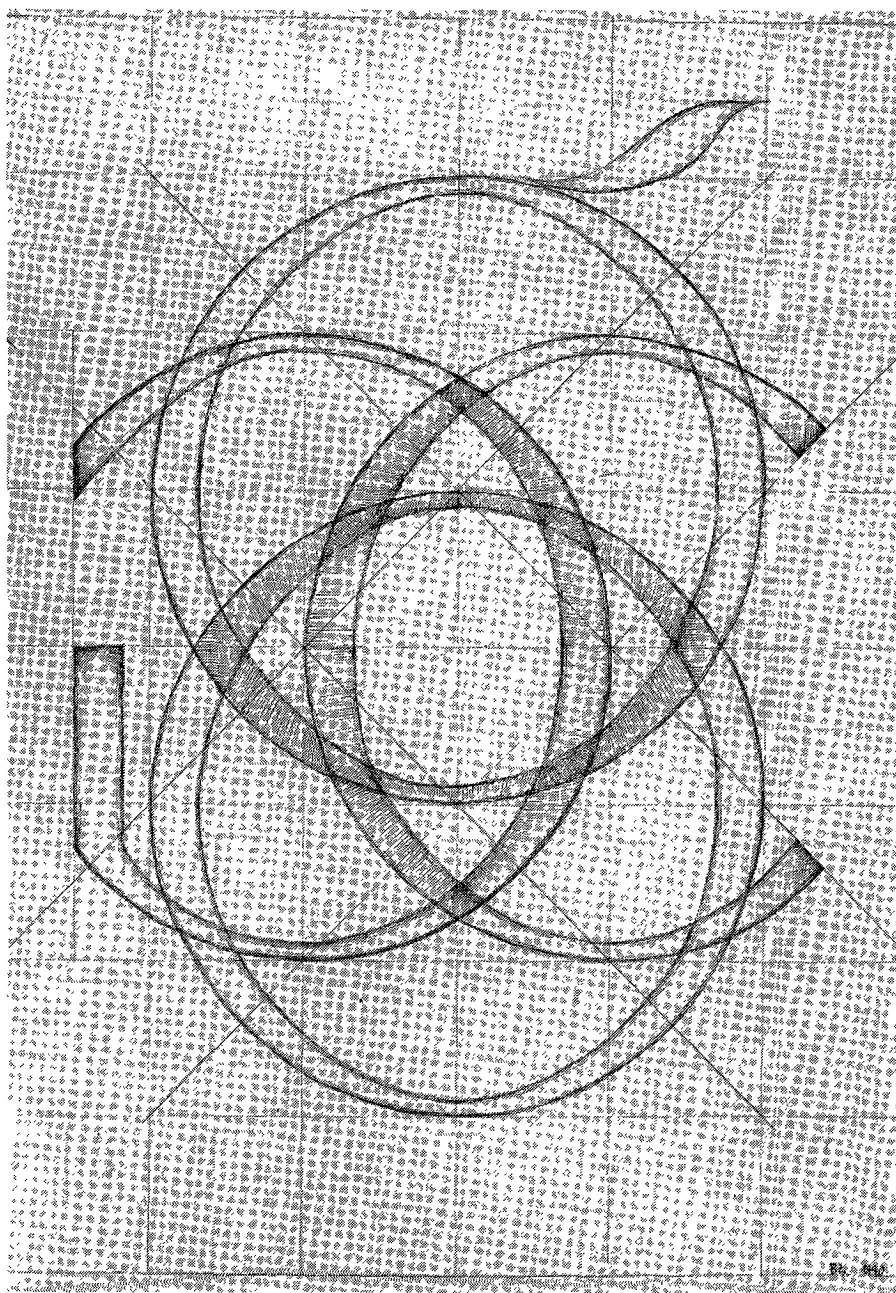
Philosophy, Dissymmetrical ambigram, 21 × 29.7 cm.

THE BEAUTY OF AN
ENTIRETY, WHICH
ORIGINATES FROM
THE HARMONY OF
ITS COMPONENTS.

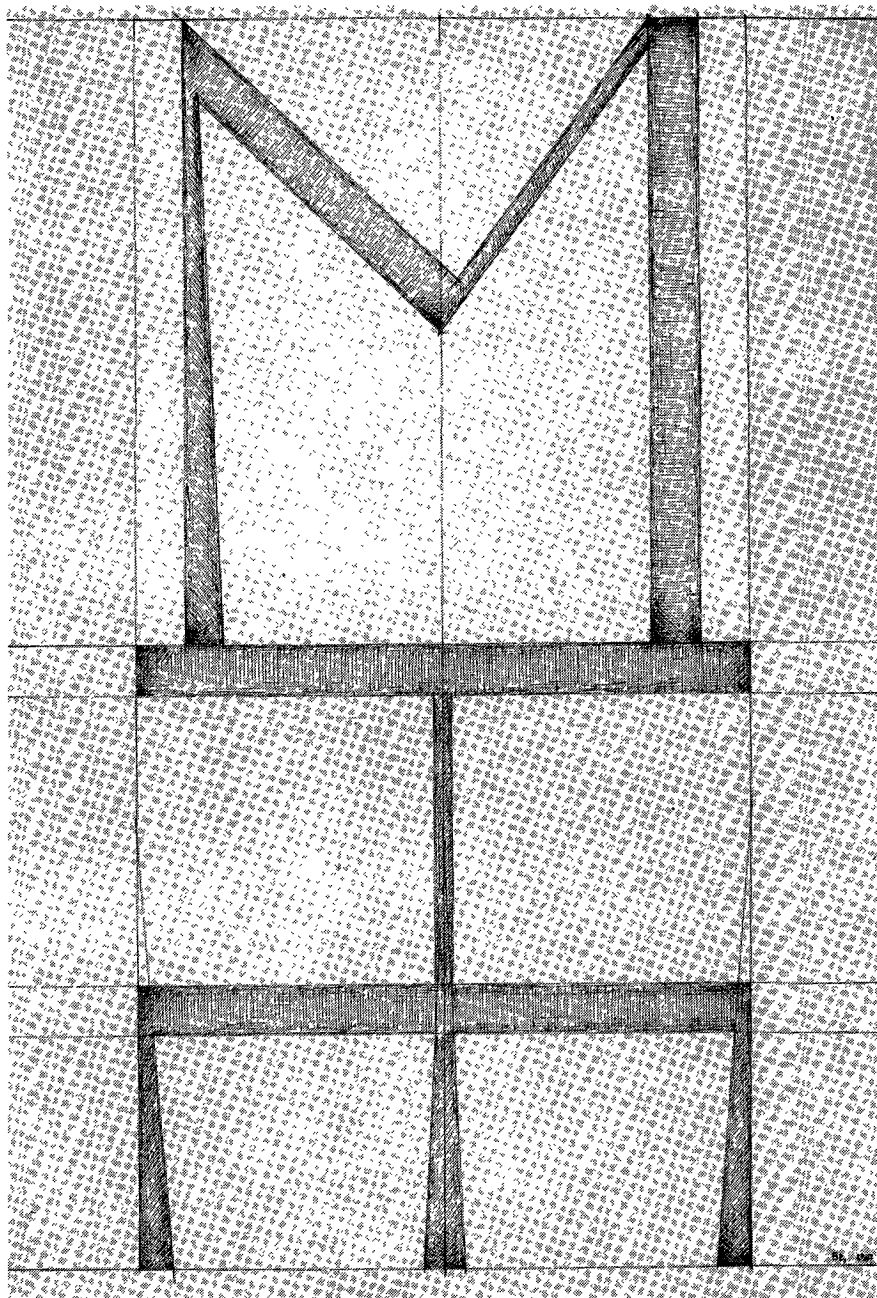
Symmetry

CORRESPONDING
POSITION, SHAPE
& SIZE OF PARTS
ON THE OPPOSITE
SIDES OF AN AXIS.

Symmetry, Dissymmetrical ambigram, 29.7 × 21 cm.



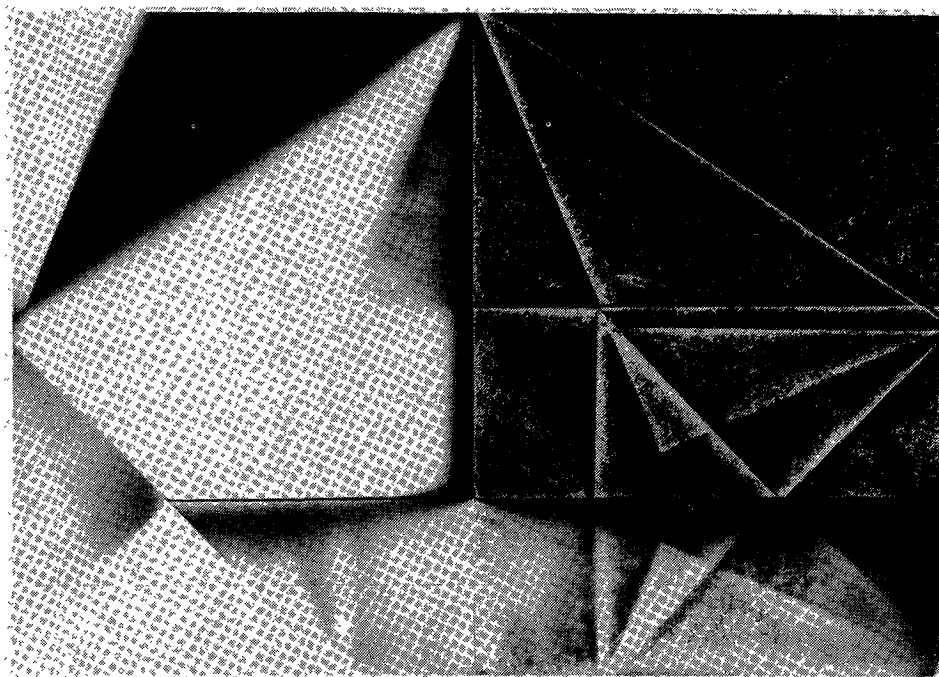
Ideogramma, 1990(?), colour pen drawing, 43,5 × 30,6 cm.



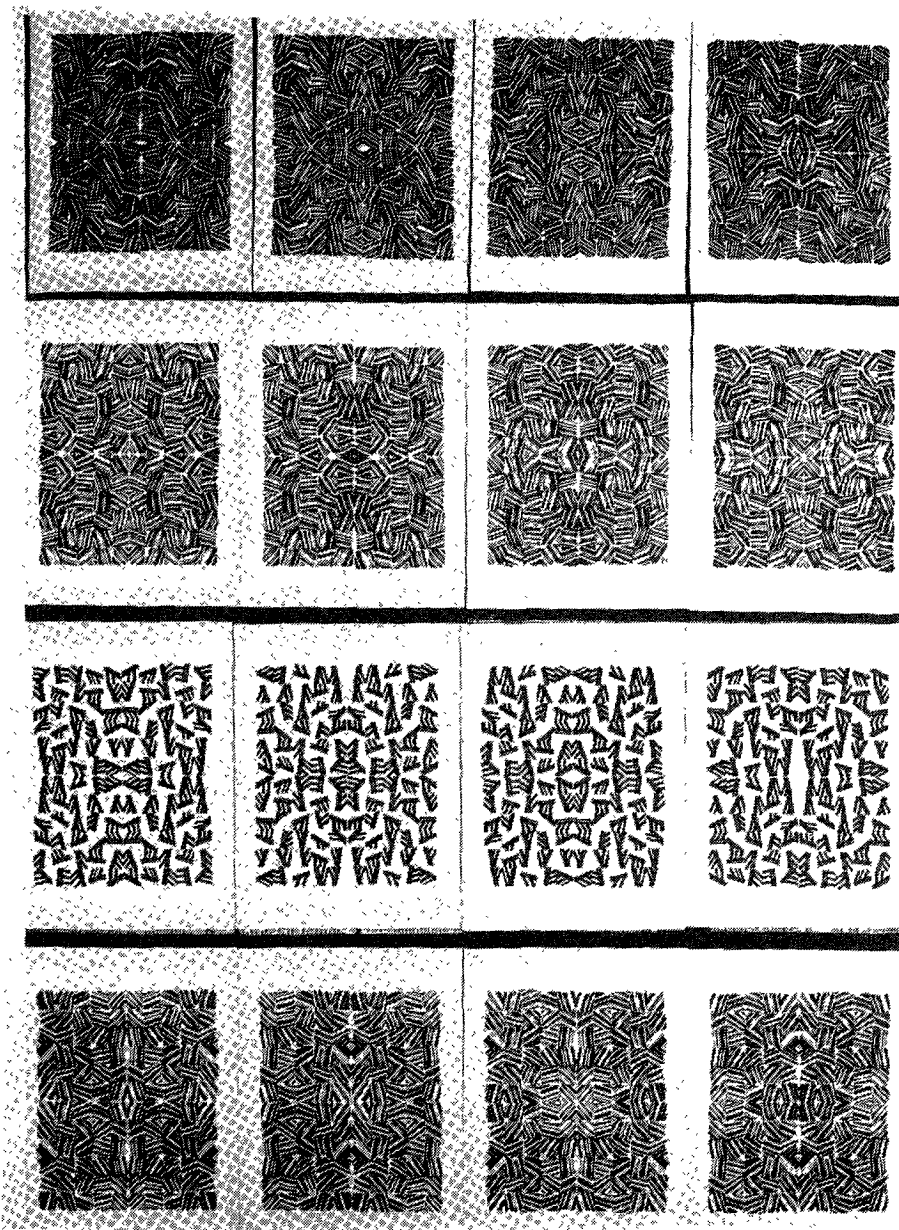
Ideogramma, 1987(?), colour pen drawing, 43,5 × 30,6 cm.



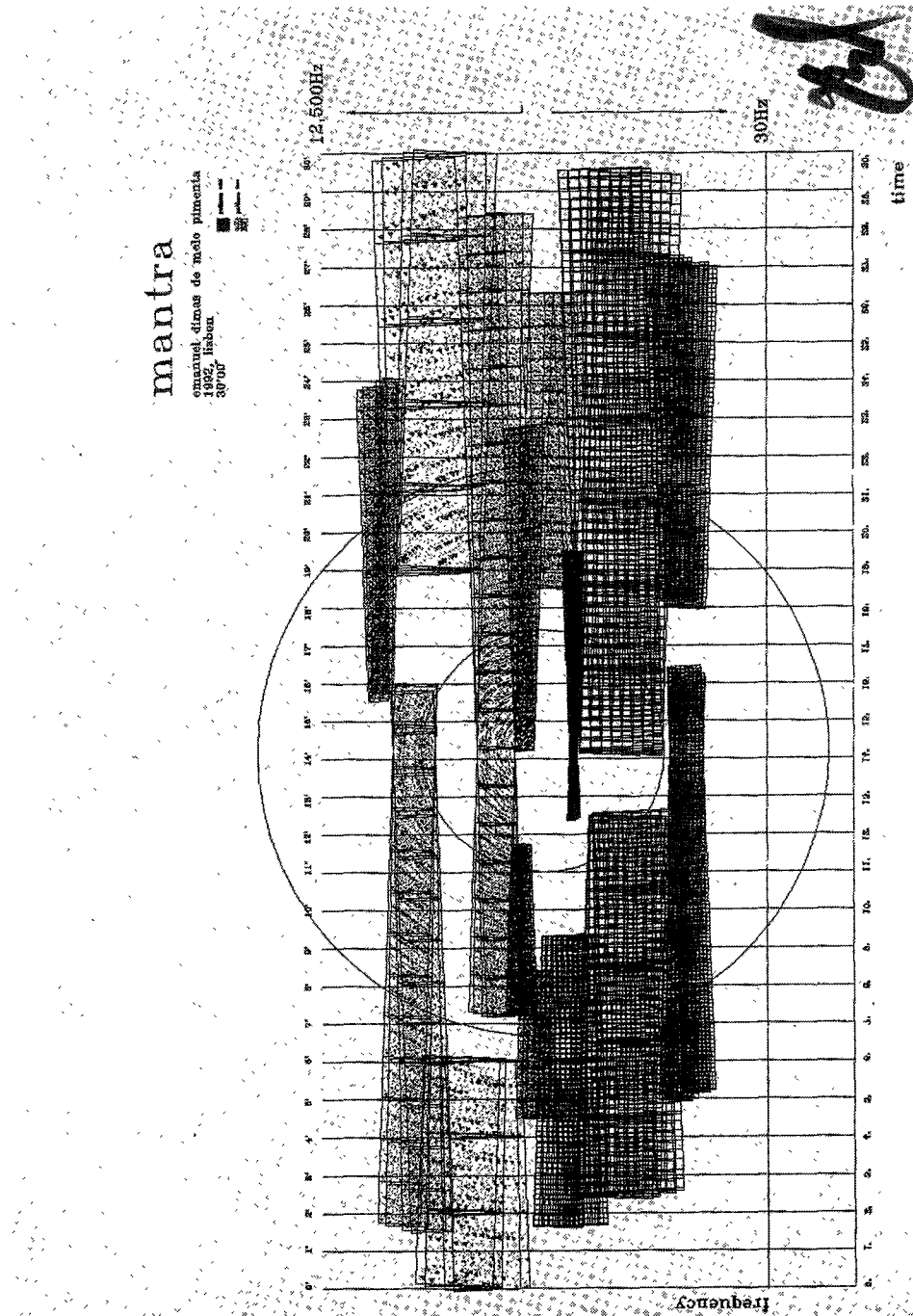
Interconnection, 1987, photo 41,3 × 31,3 cm.



Photogram, from the series *Hidden Structures*.



Direction - Shape - Form, 1983, photos taken from ink drawings, 3 × 16 pieces,
21 × 16 cm each.



Mantra, computer drawing, 21 × 29,8 cm.

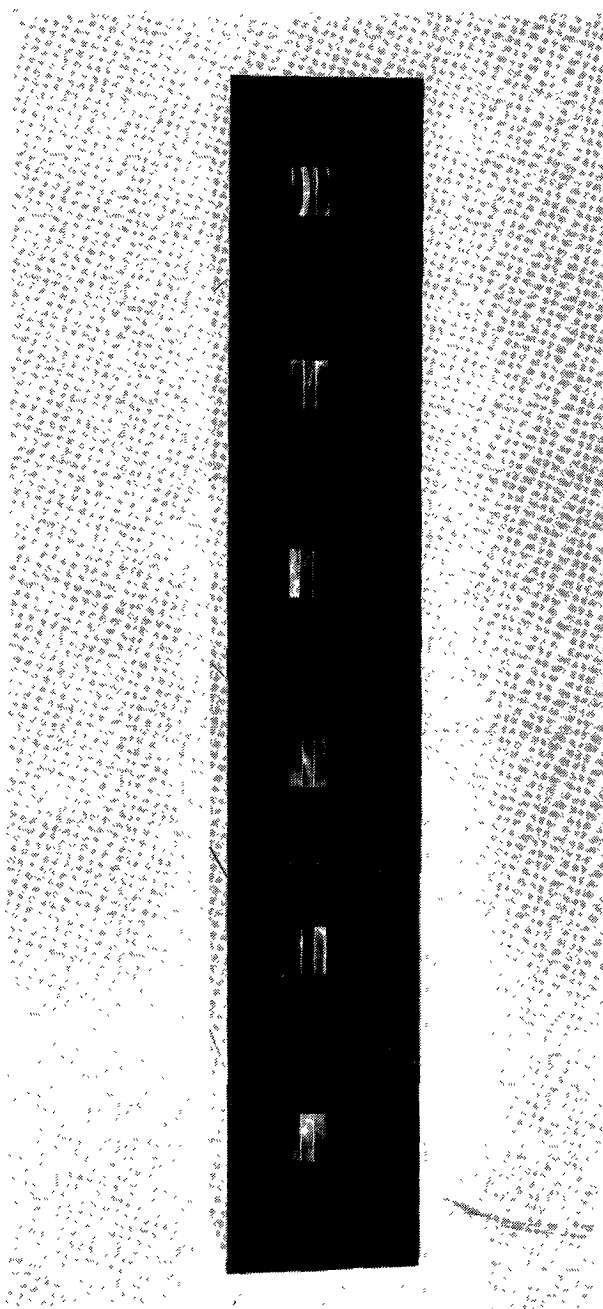


Younger Marilyn, symmetrical image of the young actress, computer generated colour photo, 22 × 17,5 cm;

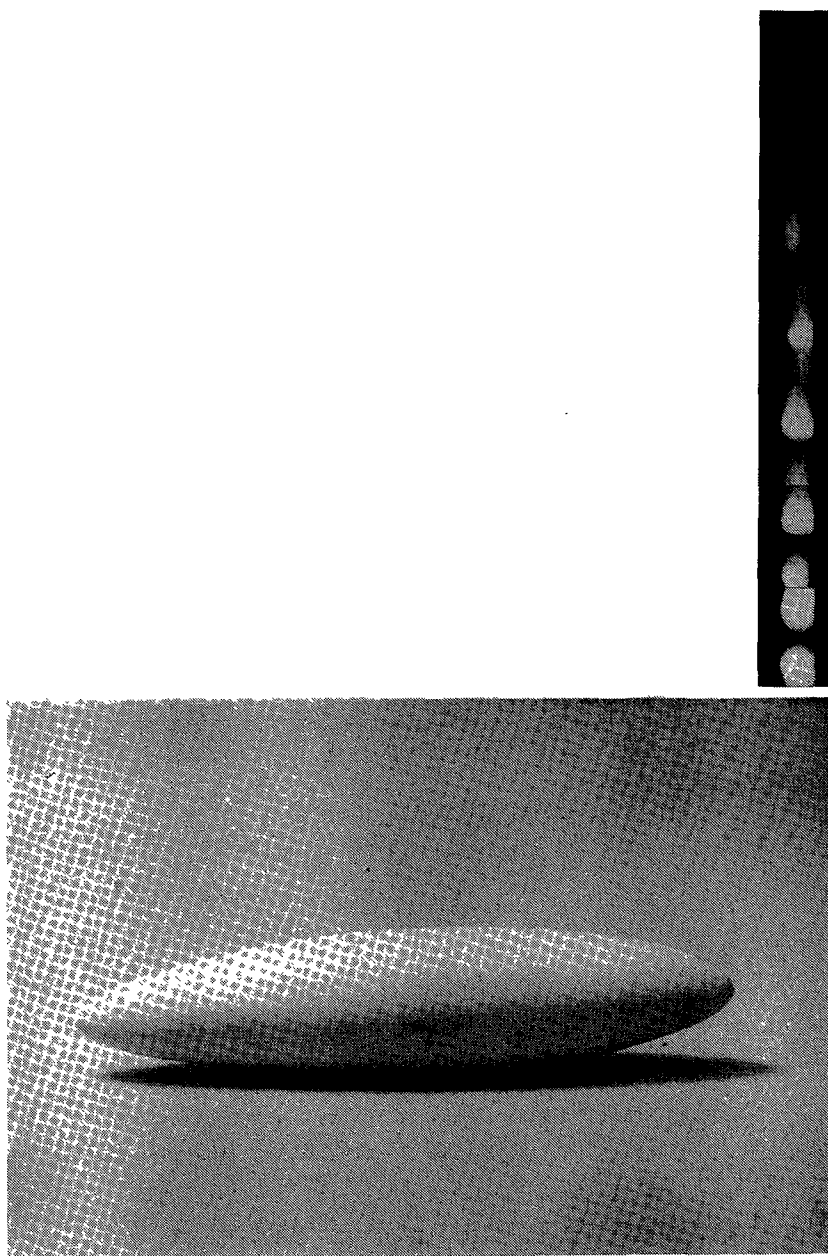
Older, symmetrical hypothesis of middle-aged Marilyn, computer generated colour photo, 23,5 × 19,5 cm.



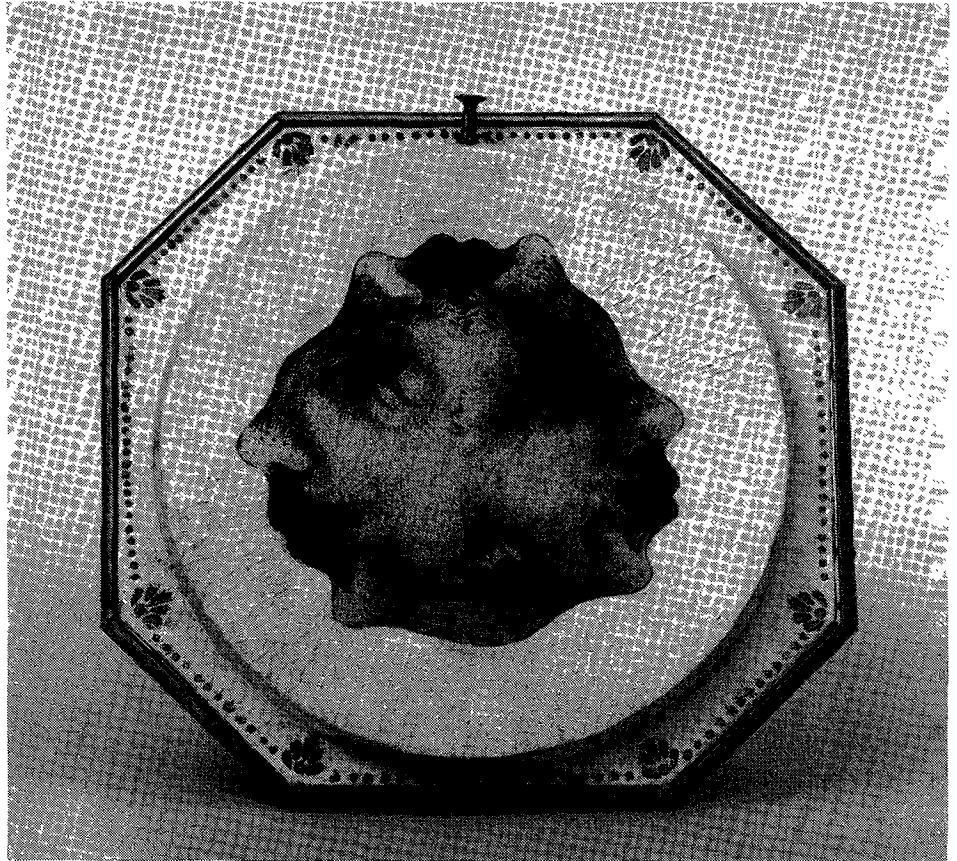
Portrait, 1993, photo collage, 40 × 60 cm.



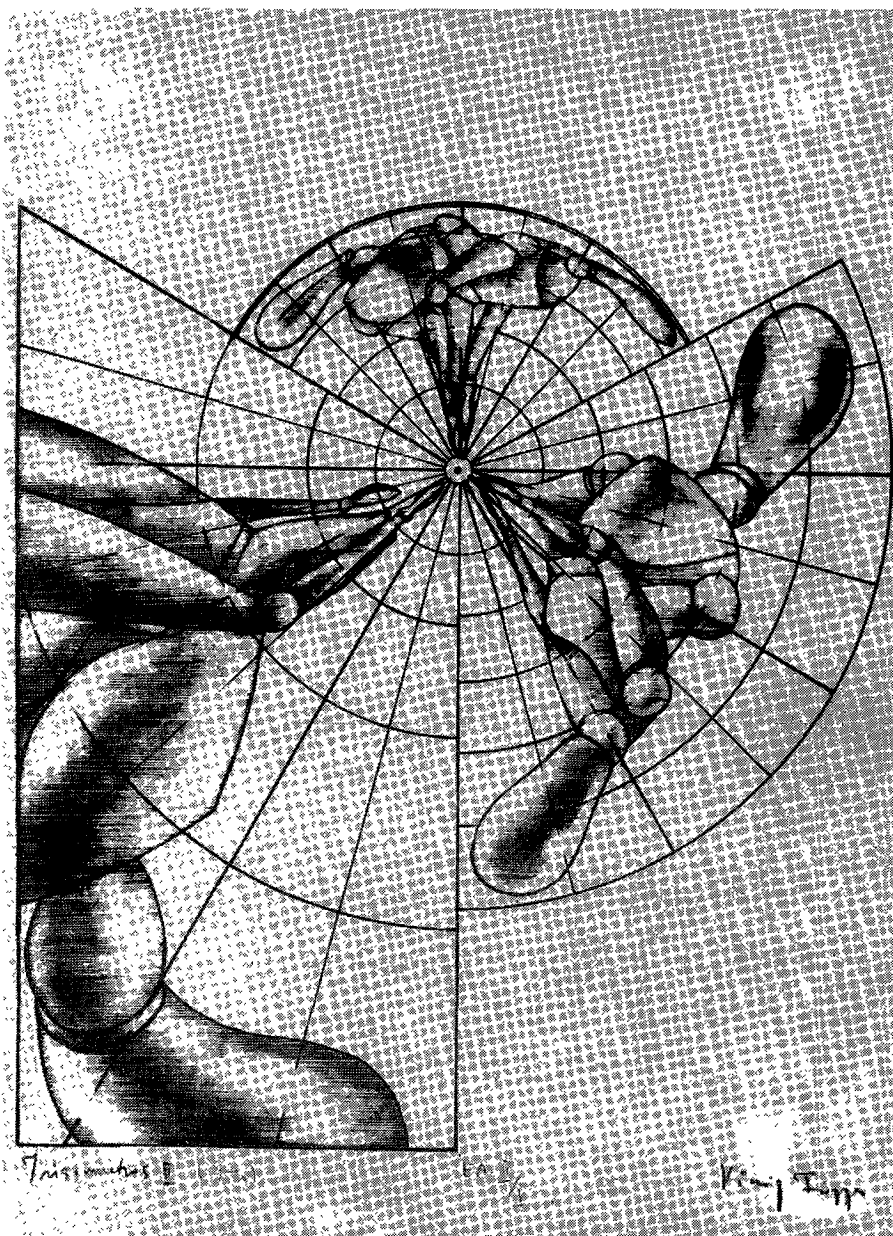
Tower, 1993, X-Ray photos in wooden boxes, 30 × 30 × 30 cm each.



*Ellipsoid and its X-Ray photographs, plaster of Paris, 6 × 26 cm,
photo 193 × 16,5 cm.*



Sixfolded Selfportrait, 1984, lithography, 32 × 35 cm.



Projection, 1984, lithography, 62,5 × 45 cm.

There are many disciplinary periodicals and symposia in various fields of art, science, and technology, but broad interdisciplinary forums for the connections between distant fields are very rare. Consequently, the interdisciplinary papers are dispersed in very different journals and proceedings. This fact makes the cooperation of the authors difficult, and even affects the ability to locate their papers.

In our 'split culture', there is an obvious need for interdisciplinary journals that have the basic goal of building bridges ('symmetries') between various fields of the arts and sciences. Because of the variety of topics available, the concrete, but general, concept of symmetry was selected as the focus of the journal, since it has roots in both science and art.

SYMMETRY: CULTURE AND SCIENCE is the quarterly of the *INTERNATIONAL SOCIETY FOR THE INTERDISCIPLINARY STUDY OF SYMMETRY* (abbreviation: *ISIS-Symmetry*, shorter name: *Symmetry Society*). *ISIS-Symmetry* was founded during the symposium *Symmetry of Structure (First Interdisciplinary Symmetry Symposium and Exhibition)*, Budapest, August 13-19, 1989. The focus of *ISIS-Symmetry* is not only on the concept of symmetry, but also its associates (asymmetry, dissymmetry, antisymmetry, etc.) and related concepts (proportion, rhythm, invariance, etc.) in an interdisciplinary and intercultural context. We may refer to this broad approach to the concept as *symmetrology*. The suffix *-logy* can be associated not only with knowledge of concrete fields (cf., biology, geology, philology, psychology, sociology, etc.) and discourse or treatise (cf., methodology, chronology, etc.), but also with the Greek terminology of proportion (cf., *logos*, *analogia*, and their Latin translations *ratio*, *proportio*).

The basic goals of the *Society* are

- (1) to bring together artists and scientists, educators and students devoted to, or interested in, the research and understanding of the concept and application of symmetry (asymmetry, dissymmetry);
- (2) to provide regular information to the general public about events in symmetrology;
- (3) to ensure a regular forum (including the organization of symposia, congresses, and the publication of a periodical) for all those interested in symmetrology.

The *Society* organizes the triennial *Interdisciplinary Symmetry Congress and Exhibition* (starting with the symposium of 1989) and other workshops, meetings, and exhibitions. The forums of the *Society* are *informal* ones, which do not substitute for the disciplinary conferences, only supplement them with a broader perspective.

The Quarterly - a non-commercial scholarly journal, as well as the forum of *ISIS-Symmetry* - publishes original papers on symmetry and related questions which present new results or new connections between known results. The papers are addressed to a broad non-specialist public, without becoming too general, and have an interdisciplinary character in one of the following senses:

- (1) they describe concrete interdisciplinary 'bridges' between different fields of art, science, and technology using the concept of symmetry;
- (2) they survey the importance of symmetry in a concrete field with an emphasis on possible 'bridges' to other fields.

The Quarterly also has a special interest in historic and educational questions, as well as in symmetry-related recreations, games, and computer programs.

The regular sections of the Quarterly:

- **Symmetry: Culture & Science** (papers classified as humanities, but also connected with scientific questions)
- **Symmetry: Science & Culture** (papers classified as science, but also connected with the humanities)
- **Symmetry in Education** (articles on the theory and practice of education, reports on interdisciplinary projects)
- **SFS: Symmetric Forum of the Society** (calendar of events, announcements of *ISIS-Symmetry*, news from members, announcements of projects and publications)
- **Symmetro-graphy** (biblio/disco/software/ludo/historio-graphies, reviews of books and papers, notes on anniversaries)

Additional non-regular sections:

- **Symmetrospective: A Historic View** (survey articles, recollections, reprints or English translations of basic papers)
- **Symmetry: A Special Focus on ...** (round table discussions or survey articles with comments on topics of special interest)
- **Symmetric Gallery** (works of art)
- **Mosaic of Symmetry** (short papers within a discipline, but appealing to broader interest)
- **Research Problems on Symmetry** (brief descriptions of open problems)
- **Recreational Symmetry** (problems, puzzles, games, computer programs, descriptions of scientific toys; for example, tilings, polyhedra, and origami)
- **Reflections: Letters to the Editors** (comments on papers, letters of general interest)

Both the lack of seasonal references and the centrosymmetric spine design emphasize the international character of the *Society*; to accept one or another convention would be a 'symmetry violation'. In the first part of the abbreviation *ISIS-Symmetry* all the letters are capitalized, while the centrosymmetric image *iSiS!* on the spine is flanked by 'Symmetry' from both directions. This convention emphasizes that *ISIS-Symmetry* and its quarterly have no direct connection with other organizations or journals which also use the word *Isis* or *ISIS*. There are more than twenty identical acronyms and more than ten such periodicals, many of which have already ceased to exist, representing various fields, including the history of science, mythology, natural philosophy, and oriental studies. *ISIS-Symmetry* has, however, some interest in the symmetry-related questions of many of these fields.

continued from inside front cover

Germany: F.R. Andreas Dress, Fakultät für Mathematik,
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[Mineralogy, Crystallography]

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[Nuclear Physics, Visual Psychology]

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[Architecture, Morphology of Space Structures]

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Alameda D. Afonso Henriques 41, 4.º Esq., P-1000 Lisboa,
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Mathematical Semiotics of Natural and Social Sciences]

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Moskovskii gosudarstvennyi universitet
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[Crystalphysics]

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Bærende Konstruktioner, Kongelige Danske
Kunstakademi - Arkitektiskole
(Laboratory for Plate Structures, Department of Structural
Science, Royal Danish Academy - School of Architecture),
Peder Skramsgade 1, DK-1054 København K (Copenhagen),
Denmark [Polyhedral Structures, Biomechanics]

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[Ars Geometrica]

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Institute of Education, University of London,
20 Bedford Way, London WC1H 0AL, England
[Geometry, Ethnomathematics, Textile Design]
Anthony Hill, 24 Charlotte Street, London W1, England
[Visual Arts, Mathematics and Art]

Yugoslavia: Slavik V. Jablan, Matematički institut
(Mathematical Institute), Knez Mihailova 35, pp. 367,
YU-11001 Beograd (Belgrade), Yugoslavia
[Geometry, Ornamental Art, Anthropology]

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Magyar Nemzeti Galéria (Hungarian National Gallery),
Budapest, Budavári Palota, H-1014 Hungary

Itsuo Sakane, Faculty of Environmental
Information, Keio University at Shonan Fujisawa Campus,
5322 Endoh, Fujisawa 252, Japan

Cognitive Science: Douglas R. Hofstadter, Center for Research
on Concepts and Cognition, Indiana University,
Bloomington, Indiana 47408, U.S.A.

Computing and Applied Mathematics: Sergei P. Kurdyumov,
Institut prikladnoi matematiki im. M.V. Keldysha RAN
(M.V. Keldysh Institute of Applied Mathematics, Russian
Academy of Sciences), 125047 Moskva, Miuskaya pl. 4, Russia

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Rua Tierno Galvan, Lote 5B - 2.º C, P-1200 Lisboa, Portugal

Art and Biology: Werner Hahn, Waldweg 8, D-35075
Gladenbach, F.R. Germany

Evolution of the Universe: Jan Mozrzymas, Instytut Fizyki,
Uniwersytet Wrocławski
(Institute of Theoretical Physics, University of Wrocław),
ul. Cybulskiego 36, PL 50-205 Wrocław, Poland

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Department of Graphics, College of Liberal Arts,
Kyoto University, Yoshida, Sakyo-ku, Kyoto 606, Japan

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Sirius Incorporated, 1976 Munden Point, Virginia Beach,
VA 23457-1227, U.S.A.

Pattern Mathematics: Bert Zaslów,
Department of Chemistry, Arizona State University, Tempe,
AZ 85287-1604, U.S.A.

Polyhedral Transformations: Haresh Lalvani,
School of Architecture, Pratt Institute, 200 Willoughby Avenue,
Brooklyn, NY 11205, U.S.A.

Proportion and Harmony in Arts: S. K. Heninger, Jr.,
Department of English, University of North Carolina at Chapel
Hill, Chapel Hill, NC 27599-3520, U.S.A.

Shape Grammar: George Stiny, Graduate School of Architecture
and Urban Planning, University of California Los Angeles,
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Stephen G. Davies (Journal *Tetrahedron Asymmetry*)

Bruno Gruber (Symposia *Symmetries in Science*)

Alajos Kálmán (International Union of Crystallography)

Roger F. Malina (Journal *Leonardo* and International Society for
the Arts, Sciences, and Technology)

Tohru Ogawa and Ryuji Takaki (Journal *Forma* and Society for
Science on Form)

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Old Town Alexandria
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Symmetry

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