

THE MACHINE AND PAINTING : AN INVESTIGATION
INTO THE INTERRELATIONSHIP(S) BETWEEN
TECHNOLOGY AND PAINTING SINCE 1945

Sybille Hennig

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My thanks also to Margot Schulz-Leist, without whom neither I nor, for more reasons than one, this essay would have seen the light of day.

WHERE THERE IS NO VISION, THE PEOPLE PERISH.

Proverbs, 29.18

The end of the human race will be that it will eventually die of civilization.

Ralph Waldo Emerson.

We say that the painter interrogates the world. It is not quite true - the painter is interrogated by the world and it is his job to give an answer.

Renato Guttuso.



Head 1914

INTRODUCTION

We, i.e. contemporary Western man, live in a society which has increasingly embraced Science and Technology as the ultimum bonum. The Machine, i.e. Science and Technology, has come to be seen as an impersonal force, a New God - omniscient, omnipotent: to be worshipped and, alas, also to be feared. This mythologem has come to pervade almost every sphere of our lives in a paradigmatic way to the extent where it is hardly ever recognized for what it is and hence fails to arouse the concern it merits.

While some of the more perceptive minds - such as Erich Fromm, Rufino Tamayo, Carl Gustav Jung, Konrad Lorenz and Arthur Koestler, to mention but a few - have started ringing the alarm bells, the vast majority of our species seem to plunge ahead with their blinkers firmly in place (more or less contented as long as they can persuade themselves that these blinkers were manufactured according to latest technological and scientific specifications). Man's uniquely human powers - his creative intuition, his feelings, his moral and ethical potential, have become sadly neglected and mistrusted.

Homo sapiens - "homo maniacus" as Koestler suggests? - is now at a crossroads: he has reached a point where the next step could be the last step and result in the annihilation of man as a species. Alternately, avoiding that, there is the outwardly less drastic but essentially equally alarming possibility of men becoming robots, while a third alternative has yet to be found.



A religious cult in Tennessee, U.S.A., whose ceremonies include the handling of poisonous snakes. Hysteria is induced by music, singing, and hand clapping. People pass the snakes from hand to hand (sometimes participants are fatally bitten).

While it does appear as if a lot of young people, noticeably among students, have started reacting against the overmechanization of life, these reactions often tend to follow the swing-of-the-pendulum principle and veer towards the other extreme, throwing out the baby with the bathwater and falling prey to freak-out cults in a kind of mass-irrationalism, rejecting science and technology altogether.

Artists who by their very nature perhaps are particularly sensitive - in a kind of seismographic way - to the currents and undercurrents of their age, have become aware of the effects of science and technology on our way of living, and many of them have in one way or another taken a stand in relation to the position of man in our highly technological world. Looking at the art produced over the last four decades, it is truly astonishing to what extent our changed world reflects in our art - a world and a Weltbild very different from that of our ancestors even just a few generations ago.

The purpose of the present study is to survey some of the observations and commentaries that painters and certain kindred spirits from the sciences over the last few decades have offered, in the hope of, if not answering, at least defining and posing anew some of the questions that confront us with ever-increasing urgency.



Venus of Willendorf



Bison Charging Altamira

CHAPTER ONEPATHOGENESIS : PARTHENOGENESIS

In the beginning there was magic. For primitive man, no split between artistic and scientific processes existed; both were interwoven and together constituted magic. Of this magic the Shaman was the custodian and arbiter - he was the link between the world of men and the world of those forces, both seen and unseen, not understood by men.

Magic was essential to primitive man in dealing with his world - the physical world of nature and animals and fellow humans as well as the non-physical world of religious and transcendental experience. Hence we have the Shaman performing his rites and fulfilling a multiplicity of roles - being medicine man and healer, as well as poet, artist, and religious mediator.

As man's cultural evolution progressed, specialization set in in Western man and a split occurred between reason and imagination, intellect and feeling functions, until the position crystallized to the point where we had men of science on the one extreme and men of art on the other - representing apparently irreconcilable opposites. These came to be seen not as complementary functions or poles on the continuum of the human spirit and its activities but as ways of dealing with the world which fought each other and where only the one *or* the other could be "right", to the exclusion of the other.



attributed to Giotto *Ognissanti Madonna*

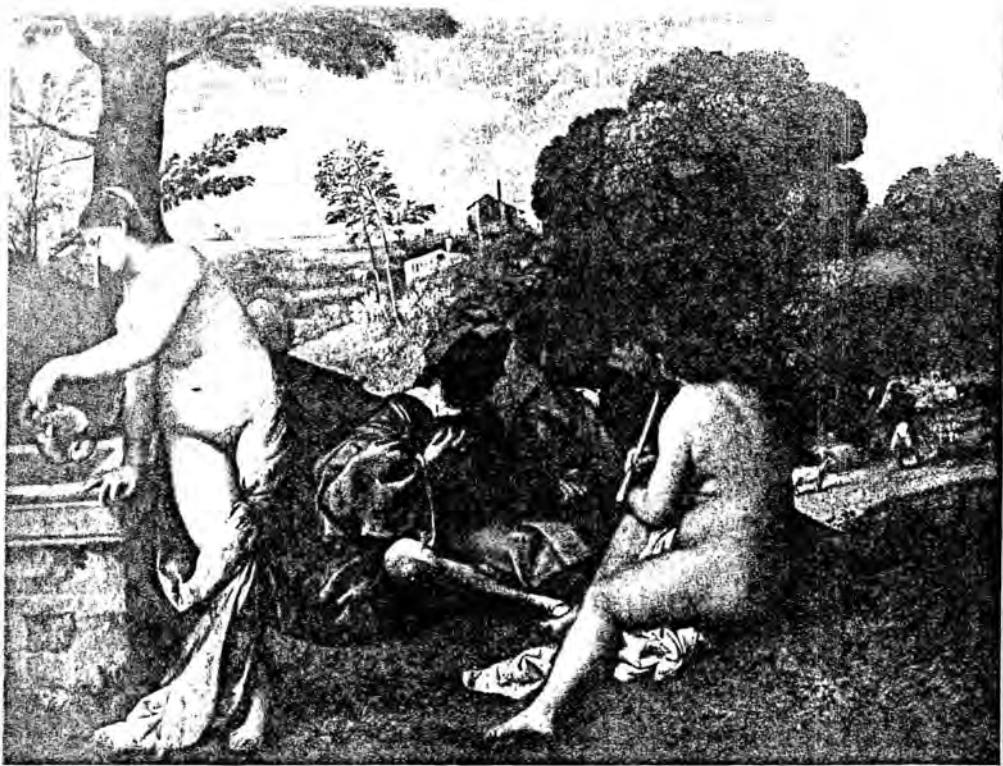
In mediaeval times, the emphasis fell on feeling, on faith and believing, and the spirit of scientific enquiry was decried as heresy and suppressed and fought with well-nigh fanatic vehemance. With the advent of the Renaissance, a blossoming of the human faculties occurred and the "universal man" became the new ideal. Both scientific and artistic activities flourished, much ancient knowledge was rediscovered and taken further. Man discovered himself as man - neither of god-like magnificence on the one hand nor of insect-like insignificance on the other, but somewhere inbetween, with a growing awareness of his human capabilities. It was characteristic of Renaissance man to be involved in more than one field of interest and enquiry. In as far as the ideal man was the "universal man", Leonardo da Vinci was not really an exception in principle but rather in the degree or magnitude of his genius.

Yet there was another, less positive, facet to the Renaissance phenomenon, for a rift arose between man's traditional Christianity and his rational or intellectual mind: "With the dawning of the Renaissance, a revolutionary change began to occur in man's conception of the world. The 'upward' movement (which reached its climax in the Middle Ages) went into reverse - man turned back to the earth."¹ He rediscovered the beauties of nature and the body, made the first circumnavigation of the earth, and proved the world to be a sphere. The laws of mechanics and causality became the foundations of science. "The world of religious feeling, of the irrational, and of mysticism, which had played so great a part in mediæval times, was more and more submerged by the triumphs of

1. Jung, C.G. *Man & His Symbols*, p.244.



Titian *The Holy Magdalen*



Giorgione *Fête Champêtre*

logical thought."¹

Similarly and simultaneously, art became more realistic and sensuous. It broke away from the religious subjects of the Middle Ages and embraced the whole visible world, taking interest and delight in nature. "It was overwhelmed by the manifoldness of the earth, by its splendour and horrors, and became what Gothic art had been before it - a true symbol of the spirit of the age."²

Aniela Jaffé points out that in spite of the far-reaching changes in art, philosophy, and science brought about by the Renaissance, the central symbol of Christianity remained unchanged. Christ was still represented on the Latin cross, as he is today. "That meant that the centre of religious man remained anchored on a higher, more spiritual plane than that of earthly man, who had turned back to nature. Thus a rift arose between man's traditional Christianity and his rational or intellectual mind. Since that time, these two sides of modern man have never been brought together. In the course of the centuries, with man's growing insight into nature and its laws, this division has gradually grown wider; and it still splits the psyche of the Western Christian in the 20th Century."³

Fromm offers an interesting observation when he points out that in the East "paradoxical thought led to tolerance and an effort towards self-transformation whereas in the West the Aristotelian standpoint

1. Jung, *op. cit.*, p.244.

2. Jaffé in Jung, *op. cit.*, p.244.

3. Jung, *op. cit.*, p.245.

led to dogma and science, to the Catholic Church, and to the discovery of atomic energy."¹

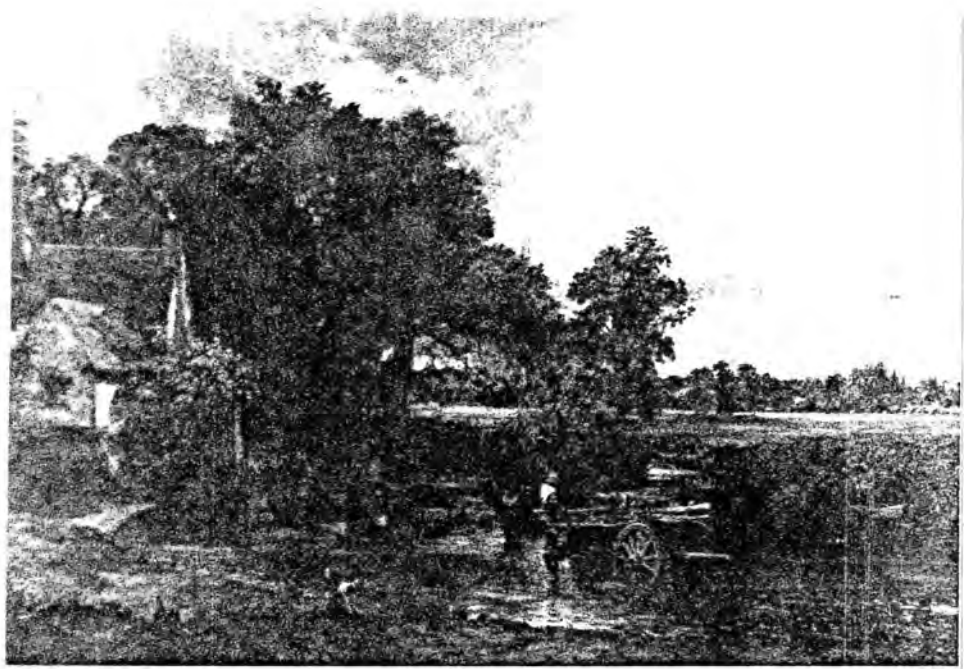
As Jaffé points out above, matters did not improve as the centuries rolled on; they went from bad to worse, passing through the so-called Age of Reason or Enlightenment, and with that to the Industrial Revolution. The Age of Enlightenment and the Scientific Revolution seemed to signal a new departure for man. "They did, in so far as the conquest, and subsequent rape, of Nature are concerned; but they did not solve, on the contrary they deepened, his predicament."²

With the advent of the Industrial Revolution, we soon enter into our own epoch of fully-fledged mechanization and a growing scientific materialism with a concomitant commercialization of practically all spheres of life. The Industrial Revolution brought about changes in our world which were both technological and socio-economic-cultural. Together with the change in our physical environment - which became more and more man-made - came changes in the way we see and relate to ourselves, leading to a sometimes severe degree of alienation, not only from nature and other men, but also from ourselves. In the words of Robert Hughes, we live, "Unlike our grandparents ... in a world that we ourselves made. Until about fifty years ago,"³ he continues, "images of Nature were the keys to feeling in art. Nature - its cycles of growth and decay, its responses to wind, weather, light, and the passage of the seasons, its ceaseless renewal, its infinite complexity of form and behaviour on every level,

1. Fromm, *The Art of Loving*, p.69.

2. Koestler, A. *The Ghost in the Machine*, p.238.

3. Hughes, R. *The Shock of the New*, p.324



John Constable *The Hay Wain* 1819-21

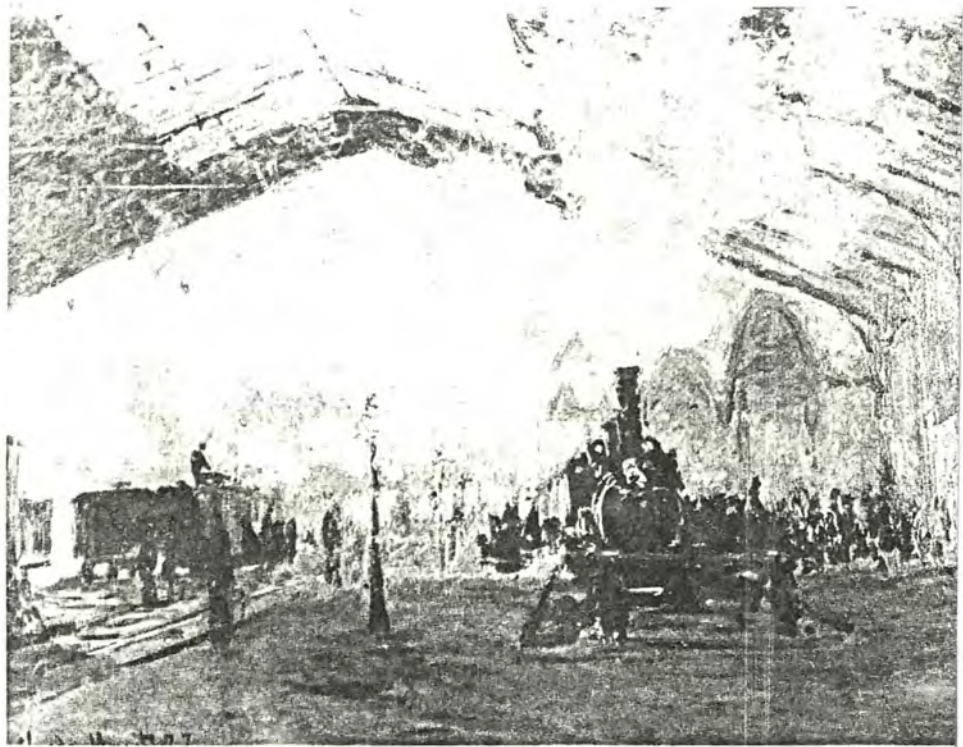
from the molecule to the galaxy - provided the governing metaphors within which almost every relationship of the Self to the Other could be described and examined. The sense of a natural order always in some way correcting the pretensions of the self gave mode and measure to pre-modern art."¹ If this sense has become dimmed, it is partly because for most people, Nature has been replaced by the culture of congestion - of cities and mass media. "We are crammed like battery hens with stimuli, and what seems significant is not the quality or meaning of the messages, but their excess."² We have what has been termed a "fantastic overload" and it has changed our art. Particularly over the last thirty years, the combination of capitalism in its twentieth-century form and electronics has given us a new habitat, our "forest of media".³ The extent to which culture has replaced nature can be gauged, too, from colloquial expressions - where people once spoke of jumping off the nearest cliff, they now more often talk of doing the same from the nearest high-rise.

Enormous as the changes were that technology and the Industrial Revolution brought about in man's social and political life, they were, although frequently tackled in literature, largely bypassed in art. It was as if art went into a kind of state of shock for some time, and artists either continued to paint from a more or less pastoral premise or else painted merely the superficial aspects of what had happened to and in their world, producing pictures that were either illustrative or anecdotal.

1. Hughes, *op. cit.*, p.324.

2. *Loc. cit.*

3. *Loc. cit.*



Claude Monet *Gare St. Lazare* 1877



W.M. Turner *Rain, Steam and Speed*

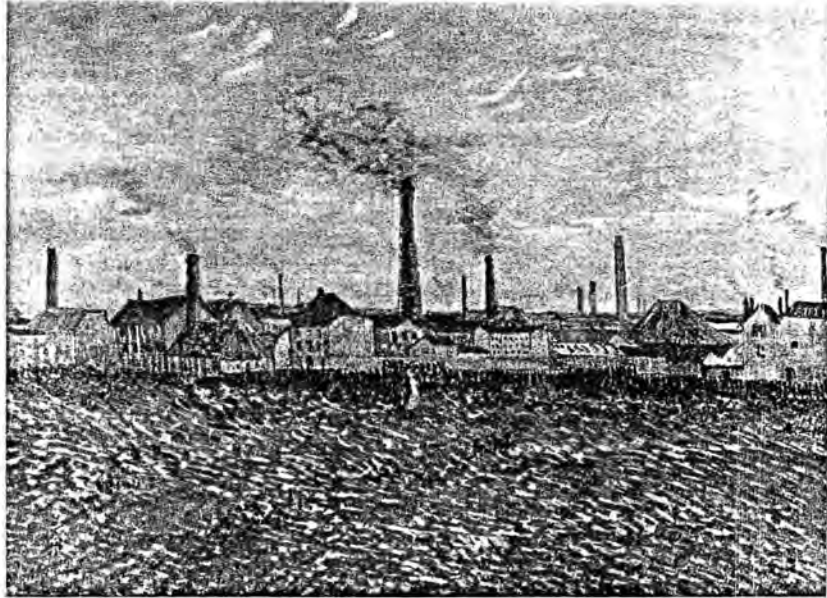
Thus Joseph Wright "of Derby" - sometimes referred to as "the" painter of the Industrial Revolution - combines, as in his painting *Experiment with an Air Pump* (1768) his fascination for lighting effects



Joseph Wright "of Derby" *Experiment with an Air Pump*

(cf. the dramatic, somewhat caravaggesque candle lighting) with pathetic anecdote.

In other instances, the new subject matter was treated purely pictorially, as in Turner's *Rain, Steam and Speed*, Monet's *Gare St. Lazare*, Van Gogh's *The Huth Factories at Clichy* (1887), or Seurat's drawings of industrial cityscapes. Even paintings by artists who were concerned with the worker's situation - Courbet, Millet, Pissarro - make no profound statements on his social or human situation. In the words of Klingender: "The alliance that had grown up in the later part of the eighteenth century between science and art was based on a common foundation of optimism.



Vincent van Gogh *The Luth Factories at Clichy* 1887

When political economy abandoned the humanist standpoint for a sophisticated defence of property, the link between science and art was broken."¹

Not that there wasn't at least one exception to this rule: William Morris, who had studied both architecture and painting for some time (the latter under the influence of Rossetti) was emphatically anti-industrialist in his poems and other writings and actively supported a socialist theory for the regeneration of man by handicraft. In 1861 he founded the firm of Morris & Co., to produce wallpapers, furniture, tapestries, and stained-glass windows (many of which were designed by Burne-Jones), carpets and furnishing materials in a style entirely different from that of contemporary Victorian decoration. With his Kelmscott Press, founded in 1890, he did much to raise the standards of book design and printing, favouring a revival of mediaeval blackletter where Lucien Pissarro's Eragny Press (1896) concentrated on modern type faces.

Critics of Morris's mediaevalism should yet give him credit for his protest against commercialism and his assertion of the necessity for natural decoration and pure colour, produced by hand work and inspired by a passion for beauty irrespective of cheapness or quickness of manufacture - even if it may be said that in a sense he evaded the problem of machine production.

There were two reasons why art could not or would not probe the changed dimension of life straightaway - one being the tremendous

1. Hultén, K.G. Pontus. *The Machine as seen at the End of the Mechanical Age*, p.10.



Robert Cottingham *Roxy* 1972

optimism that accompanied the early stages of the technological revolution - so that there seemed to be no problem - the other, and this applies more poignantly to the later stages, being a lack of metaphors to give expression to a changed Weltbild - a Weltbild, furthermore, in which the work of art faced unprecedented competition from its surroundings. In the twentieth century's culture of mass media art could not easily be experienced the way in which it could be before. There were too many distracting elements around competing for attention. The background to the organized sound of Gregorian Chant in a mediaeval monastic community, for instance, was not haphazard noise. "Silence - the silence of nature itself, in which the random noises of culture were swallowed up - was one of the dominant facts of medieval life outside the cloister as well as inside it."¹ And Hughes comments that "In an ill-articulated world, a place not yet crammed with signs, images, and designed objects, the impact of a choir heard in the vast petrified forest of a Gothic cathedral might well have exceeded anything we take for 'normal' cultural experience today. Now we see the same cathedral through a vast filter that includes our eclectic knowledge of all other cathedrals (visited or seen in photographs), all other styles of building from primitive *muraghi* to the World Trade Centre, the ads in the streets outside it, the desanctification of the building, its conversion into one more museum-to-itself, the secular essence of our culture, the memory of 'mediaeval' sideshows at Disney World, and so on and so forth ..."² Another factor in all this

1. Hughes, *op. cit.*, p.324.

2. *Ibid*, p.324-5.

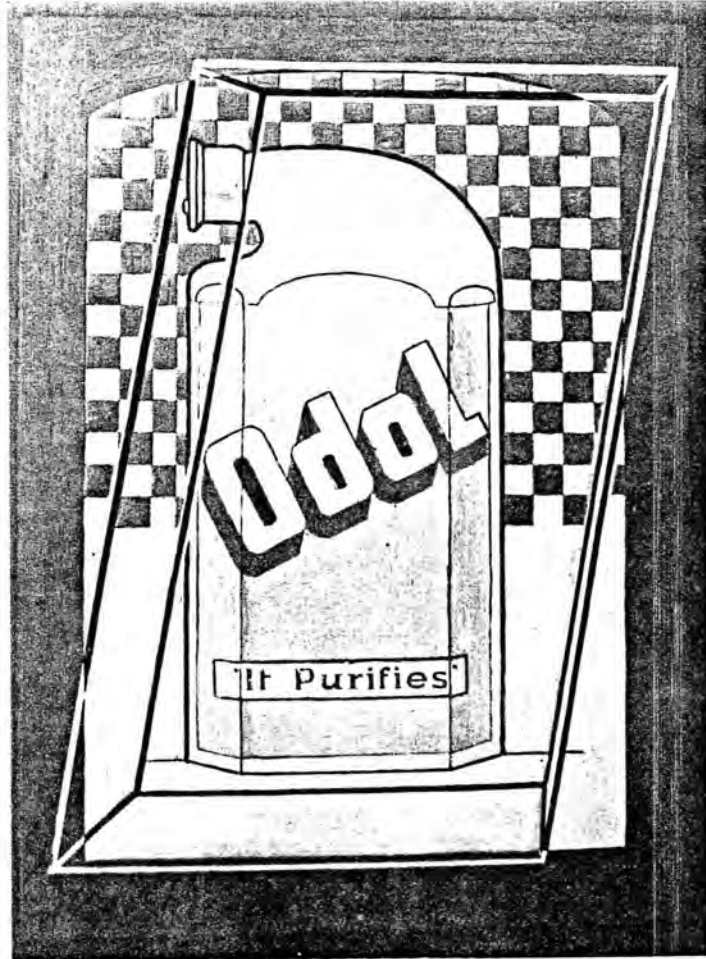
is that nothing could be retrieved or reproduced, and therefore the "pre-technological ear listened to - as the pre-technological eye was obliged to scrutinize - one thing at a time. Objects and images could not, except at the cost of great labour, be reproduced or multiplied. There was no print, no film, no cathode-ray tube. The idea that we would live immersed in a haze of almost undifferentiated images, that the social function of this image-haze would be to erode distinction rather than multiply the possible discriminations about reality, would have been unthinkable to our great-grandparents - let alone to our remote ancestors."¹

Thus, a situation developed where art had to compete with a "torrent of signs that were more vivid than its own images"² and where the only way for it to defend itself against the incursion of a mass environment seemed to lie in assimilating the signs and other elements of the new environment.

So one has, in the early twentieth century, artists like Joseph Stella painting *Battle of lights, Coney Island* (1914) or *New York Interpreted V : The Bridge* (1922), or Stuart Davis painting a bottle of *Odol* (1924) on which both the name and the slogan ("It purifies") are clearly legible - in contrast to the label on a bottle of absinthe in a Degas or the book titles in a Van Gogh or a Cézanne portrait. (The Pop artists of the 1960's, about whom I shall speak more fully later, were to take this dialectical interplay between the language of the sign and that of the painting further, without

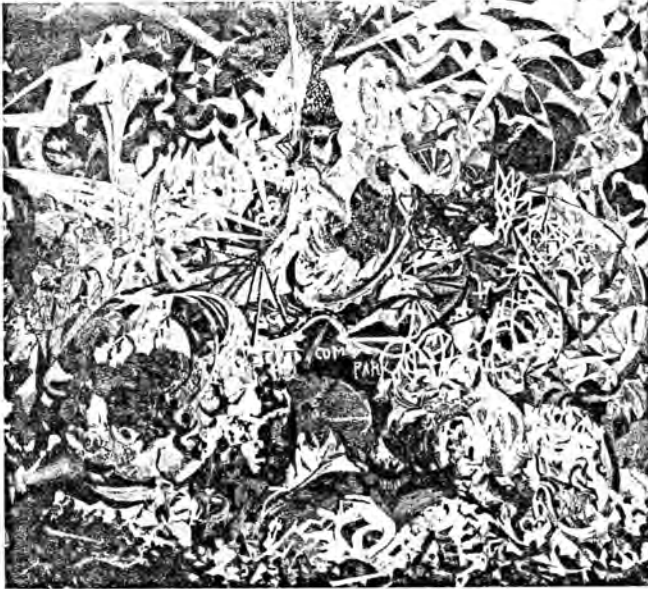
1. Hughes, *op. cit.*, p.325.

2. *Loc. cit.*

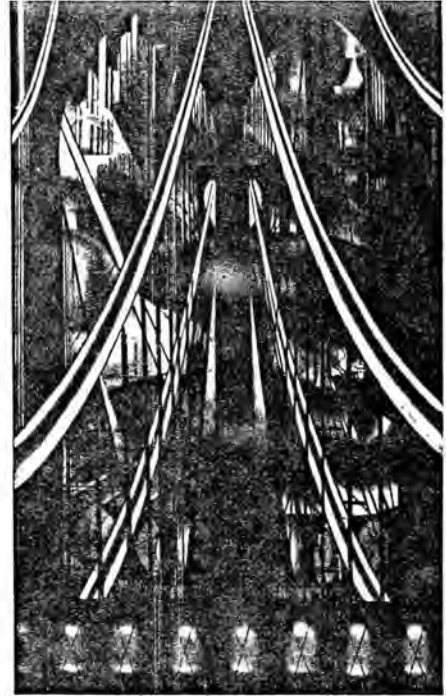


Stuart Davis *Odol* 1924

however, making any profound statements - barring a very few exceptions perhaps.)



Joseph Stella *Battle of Lights, Coney Island* 1914



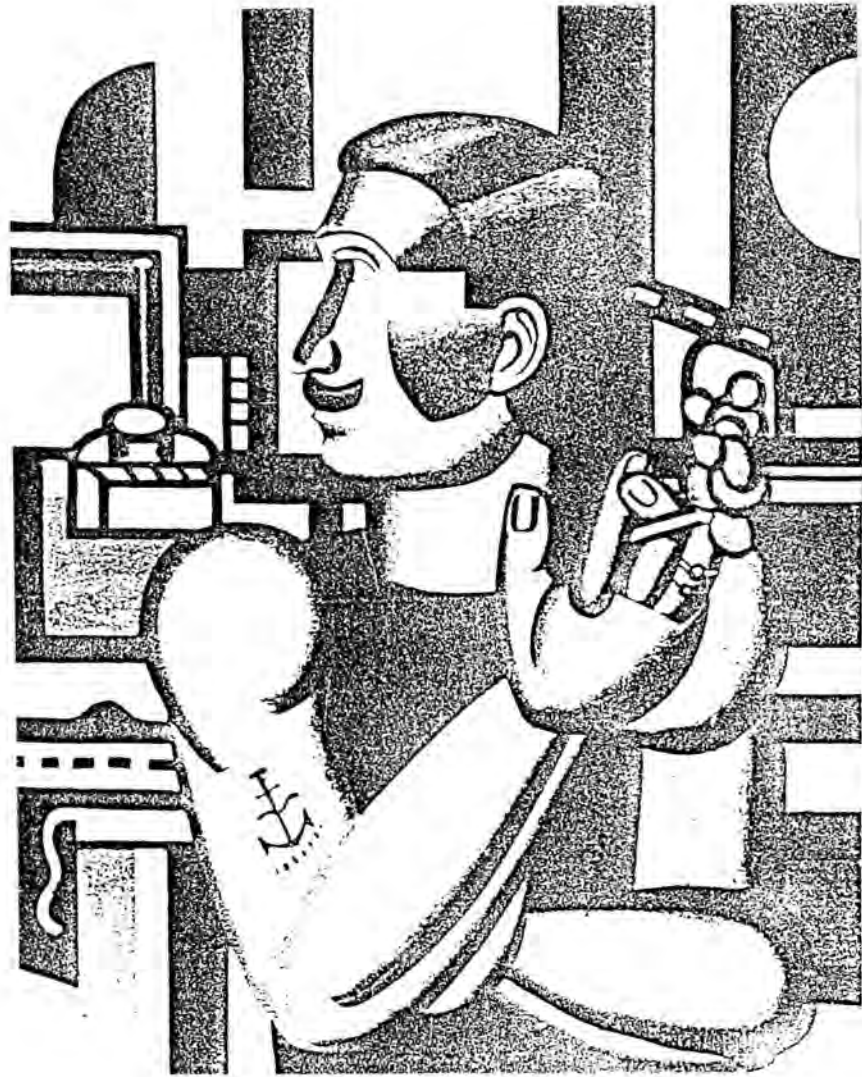
New York Interpreted V: The Bridge

Joseph Stella

1922

The changes in Western man's view of the world and of himself between 1880 and 1914 were so far-reaching that they produced as many problems for artists as they did stimuli. For instance: "How could you make paintings that might reflect the immense shifts in consciousness that this altering technological landscape implied? How could you produce a parallel dynamism to the machine age without falling into the elementary trap of just becoming a machine illustrator? And above all, how, by shoving sticky stuff like paint around on the surface of a canvas, could you produce a convincing record of process and transformation?"¹

1. Hughes, *op. cit.*, p.16.



Fernand Léger *The Mechanic* 1920

Cubism grappled with at least the first of these questions and was the first painting style to reflect a radical change in man's way of seeing the world in almost five hundred years. In this, I believe, it runs parallel to and reflects the change in the scientific world view which, before Einstein and quantum physics, was influenced, if not shaped, by the work of Newton, Descartes, Bacon, and others in the seventeenth century and which was very much a mechanistic view "that sees the world as a machine made of separate objects working together."¹

In the Cartesian system, all material things - human beings, animals, plants and inorganic nature - are seen as machines, ruled by the same inexorable laws derived from mathematics and so susceptible of analysis by the quantitative methods of mathematics. And although mathematical methods could only deal with quantitative, not qualitative, phenomena, they were, in the seventeenth century, nevertheless applied to all human experience. Only those properties of matter that could be objectively measured - its dimensions, mass, and motion - were regarded as real. "Those that depended on the subjective senses - color, taste, and odor - were considered to possess no external reality."²

This view changed dramatically during the first three decades of this century. For the first time, physicists studied atoms, their structure, and then the structure of sub-atomic particles. And they found that most of the classical concepts could no longer be

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1. Dr Fritjof Capra as quoted by Jocelyn Ryder-Smith in "Einstein and the Buddha", *The Listener*, 11th March, 1982, p.12.
 2. Hultén, *The Machine ...*, p.8.

maintained to describe this new atomic and sub-atomic reality. The new view that emerged no longer sees the world as a machine consisting of separate objects, but rather as an organic whole or network, a web of relationships which includes the observer in a very essential way. "One overriding and crucial result is that these sub-atomic particles cannot be understood as isolated physical entities. Instead, they are interconnections or correlations between various processes of observation and measurement."¹

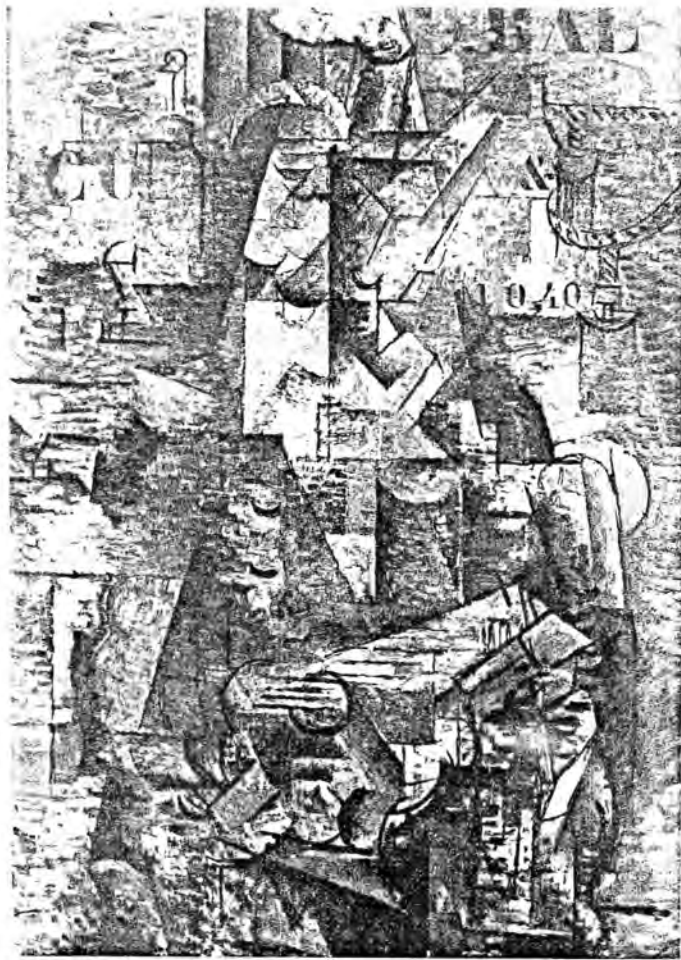
Part of Dubuffet's philosophy, as expressed in his *Anticultural Positions* speech in 1951, was the same distrust of analysis, which makes him prefer to observe an object or phenomenon in its surroundings rather than divorced from them. "If there is a tree in the country, I don't bring it into my laboratory to look at it under my microscope. Because I think the wind which blows through its leaves is necessary for knowledge of the tree and cannot be separated from it ..."²

One can, then, legitimately say that an object consists of molecules, which in turn consist of atoms, and the atoms consist of particles - "but these particles are no longer independent entities - they are interconnections in one dynamic network of relationships. And then ... by implication, if the particles are not independent, then the atoms are not independent, and then the solids, liquids and gases formed by atoms are not independent, so everything is interconnected and everything is one single whole."³

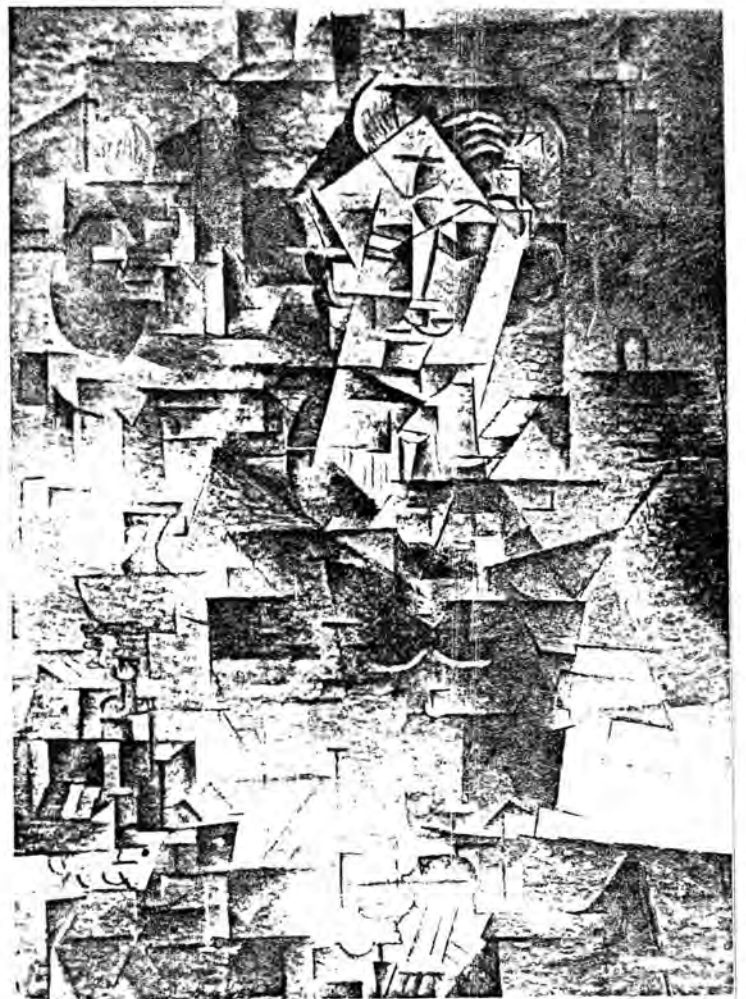
1. Capra, *op. cit.*, p.12.

2. Dubuffet as quoted in *Jean Dubuffet: A Retrospective*, p.18.

3. Capra, *op. cit.*, p.12.



Georges Braque *The Portuguese* 1911



Pablo Picasso *Portrait of Daniel-Henry Kahnweiler* 1910

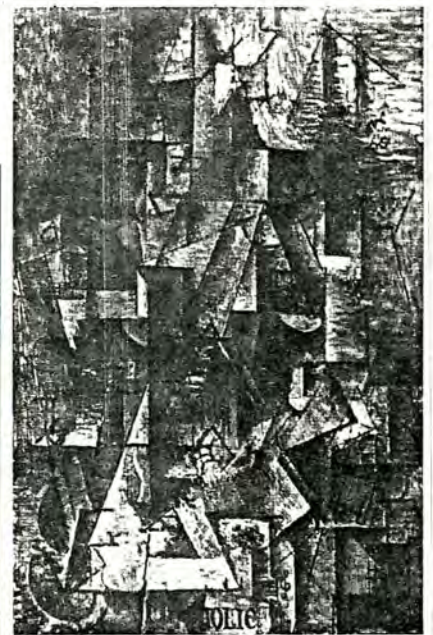
This same conception of the relativity of things and of their inter-relatedness, their changed aspects when viewed from different viewpoints, becomes evident in the Cubists' works. Whether one looks at Georges Braque's *La Roche - Guyon* of 1909 or his *The Portuguese* (1911), or Picasso's *Ma Jolie* of the same year, or his portraits of Vollard or Kahnweiler, one feels that these painters approached and reflected reality in much the same way as the physicists did, and that instead of paintings of solid, apprehensible reality we have here "metaphors of relativity and connection"¹ - the world is presented as a field of shifting relationships which includes the on-looker in an essential way: "Reality ... is interaction".²



Chateau La Roche-Guyon
Braque 1909



Braque *La Roche-Guyon*

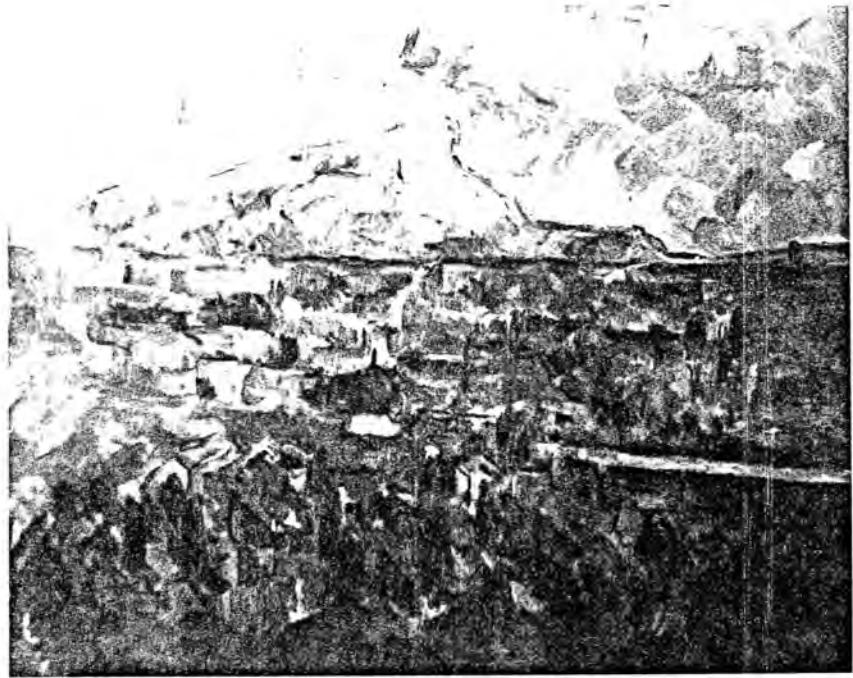


Picasso *Ma Jolie* 1911

Concomitantly, doubt becomes part of a painting's subject and "the statement, 'This is what I see', becomes replaced by the question, 'Is this what I see? ... Indeed," Hughes observes, "the idea that

1. Hughes, *op. cit.*, p.29.

2. *Ibid.*, p.17.



Paul Cézanne *Mont Ste. Victoire* 1904-6



Fernand Léger *The Cardplayers* 1917

doubt can be heroic, if it's locked into a structure as grand as that of the paintings of Cézannes old age, is one of the keys to our century, a touchstone of modernity itself. Cubism would take it to an extreme."¹

The Cubist painter Fernand Léger displayed few of these doubts and very consciously embraced the Machine and its possibilities in "a sustained confession of modernist hope."² He believed that he "could make images that would cut across the barriers of class and education - a didactic art for the man in the street, not highly refined but clear, definite, pragmatic, and rooted in everyday experience."³

In *The Cardplayers* (1917), he painted his fellow soldiers as though they were automata, constructed from tubes, barrels, and linkages. Léger confessed that his great visual epiphany in the trenches had been "the breech of a 75-millimetre gun in the sunlight, the magic of light on white metal"⁴, and he applies the forms of mechanized warfare to the human body. Even the insignia and medals on these robot-like human beings might be factory brands. But, as Hughes says, all this may look more austere than it was meant to. And, once more, it is worth quoting Hughes: "What interested Léger about the machine was not its inhumanity - he was not a Kafka or a Fritz Lang - but its adaptability to systems, and this is the

1. Hughes, *op. cit.*, p.18.

2. *Ibid.*, p.34.

3. *Loc. cit.*

4. *Ibid.*, p.36.



Fernand Léger *The Three Women* 1921



Pablo Picasso *Les Femmes d'Alger (O. K. version)* 1907

underlying theme of his grandest social image, *The Three Women* (1921)."¹ Bodies and furniture are geometrically simplified, "as deliberate as an Alexandrine", according to Hughes, who calls this "one of the supreme didactic paintings of French classicism, embodying an idea of society-as-machine, bringing harmony and an end to loneliness. This philosophical harem, though dealing with a subject not unlike that of Picasso's *Demoiselles*, is far from it in spirit. Instead of Picasso's fragmented vision of *les belles dames sans merci*, we are offered a metaphor of human relationships working as smoothly as a clock, all passion sublimated, with the binding energy of desire transformed into rhythms of shape."²

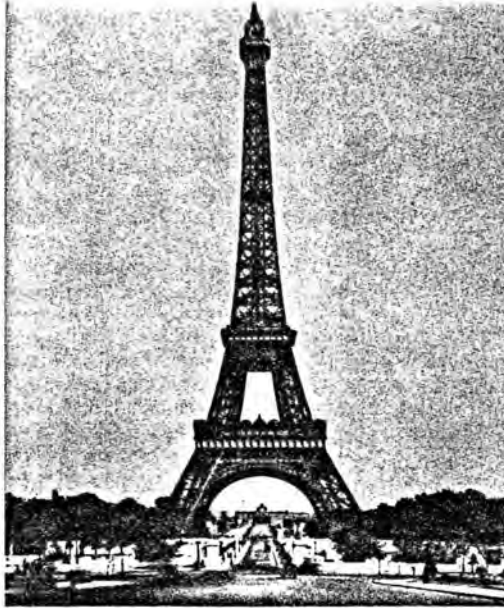
Robert Delaunay, too, was thoroughly imbued with an optimistic sense of modernity, and for him, as for many of his contemporaries, the master-image of modern man's achievements and potential was the Eiffel Tower - built for the Paris World Fair in 1889 - which he painted at least thirty times and which he viewed "with real ecstasy as an ecumenical object, the social condenser of a new age."³ In his painting *The Red Tower* (1911-12) he depicts it astride the city, its vast grid rising over Paris with the sky reeling through it - a potent image of modernist aspirations with light seen through structure.

Futurism, which was primarily an Italian phenomenon and more or less coincided timewise with Cubism, manifested as the most vociferously optimistic painting movement of the early twentieth century. It produced a dynamic war-glorifying, machine-worshipping art that

1. Hughes, *op. cit.*, p.36

2. *Loc. cit.*

3. *Loc. cit.*



Gustave Eiffel *Eiffel Tower, Paris* 1889



Robert Delaunay *The Red Tower* 1911-12

utilized the form-breaking techniques of Cubism in a more actively coloristic manner on subjects involving speed, motion, and machinery. To them, as they proclaim in the Futurist Manifesto, "... a roaring motorcar, which looks as though running on shrapnel, is more beautiful than the *Victory of Samothrace*."¹ Balla and Severini may be regarded as typical exponents of the Futurist sensibility, while Boccioni, who was probably the most gifted as well as the most contemporary of the Futurists, went further by setting the goal of exploring and depicting the new emotions born of the meeting between man and the mechanized world. Realizing how complex would be the interference of machines in people's emotional lives, he could not limit himself to the over-enthusiasm for the mechanical world displayed by most of his colleagues - however understandable this explosive enthusiasm might be in the light of Italian (art-) history and the Italian temperament. Boccioni was not content to "sing the love of danger" and of glistening metal, speed, etc.

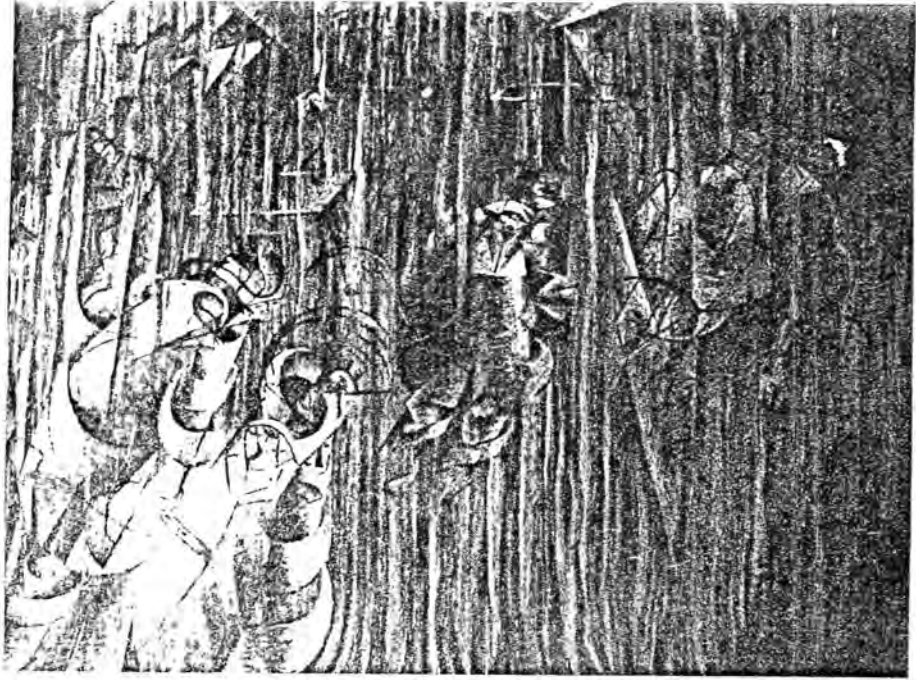


Gino Severini *Red Cross Train* 1914

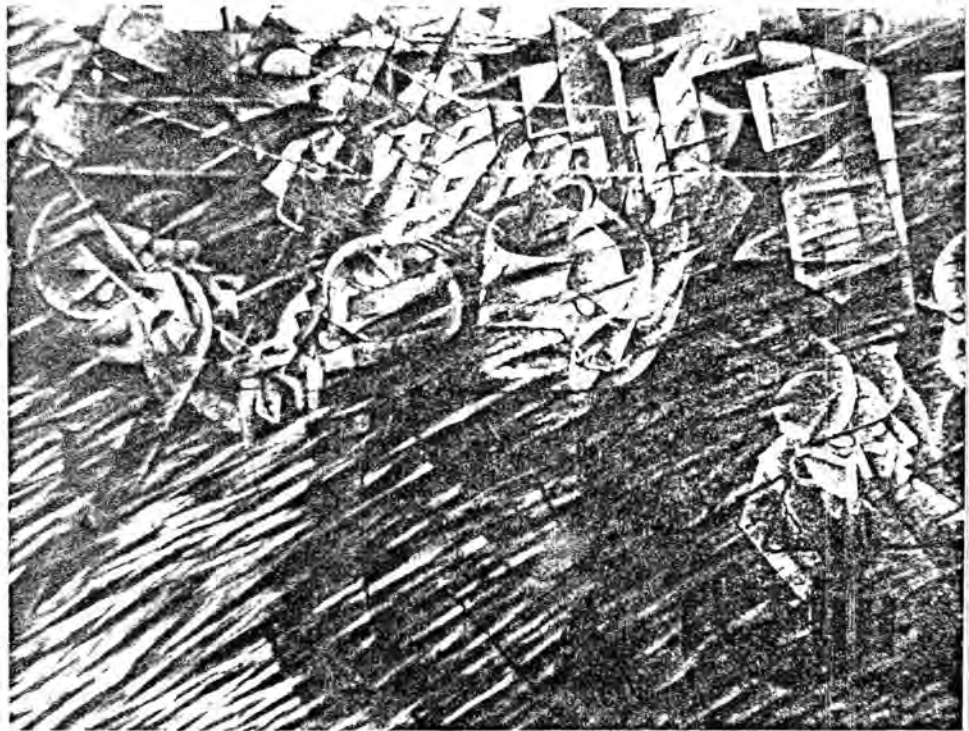
Centering on the railway station, he conceived and developed the idea of "the painting of states of mind".² In three paintings

1. Quoted in Nash, J.M. *Cubism, Futurism and Constructivism*, p.31.

2. Boccioni as quoted in Hultén, *The Machine ...*, p.60.



Umberto Boccioni *States of Mind: Those Who Stay* 1911



Umberto Boccioni *States of Mind: Those Who Go* 1911

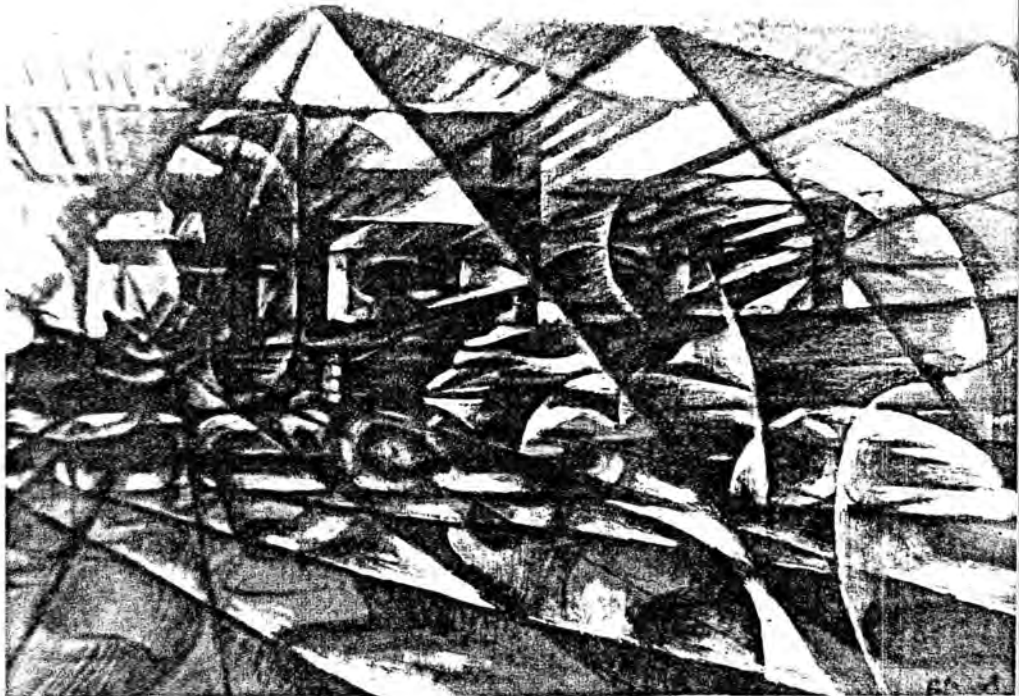


Umberto Boccioni *States of Mind: The Farewells* 1911

called *States of Mind*, *Those Who Stay*, ... *The Farewells*, and ... *Those Who Go*, respectively, he makes us realize that goodbyes in a railway station are not the same as those said at a stage-coach. In a station, the departures are more final - not because trains go faster and farther than stage-coaches, but because those who enter into a train become part of a system while those who stay behind are outside that system. Those who leave become a group, even though a minute earlier they may have been unknown to one another. In ... *The Farewells*, Boccioni shows how drastically the locomotive has split people into two groups. His depiction of the locomotive itself is a strong and quite beautiful image. For the



Giacomo Balla *Dynamism of a Dog on a Leash* 1912



Giacomo Balla *Speeding Auto* 1913

arch-Futurist Severini, however, these paintings were a bit too much and he criticized them as "literary and unclear".



Gino Severini *Dynamic Hieroglyph of the Bal Tabarin* 1912

The Russian Constructivists and Suprematists and the Dutch De Styl group, too, clearly show their spiritual affinity to the machine age - or at least a certain conception of it. The Constructivists after the war sought to emulate the precision and structure of machines in abstractions depicting, or made with, machine techniques or materials. The revolutionary zeal with which the Russian Constructivists, largely led by Vladimir Tatlin, joined their powers with that of the socio-political revolution is largely to be understood in the historical context of their national-historical situation.

Tatlin called himself a "materialist constructivist" and declared that only mathematically calculated and unvarying proportions of forms, together with the appropriate use of materials with maximum economy - that is the "complete lack of caprices, emotional flights,

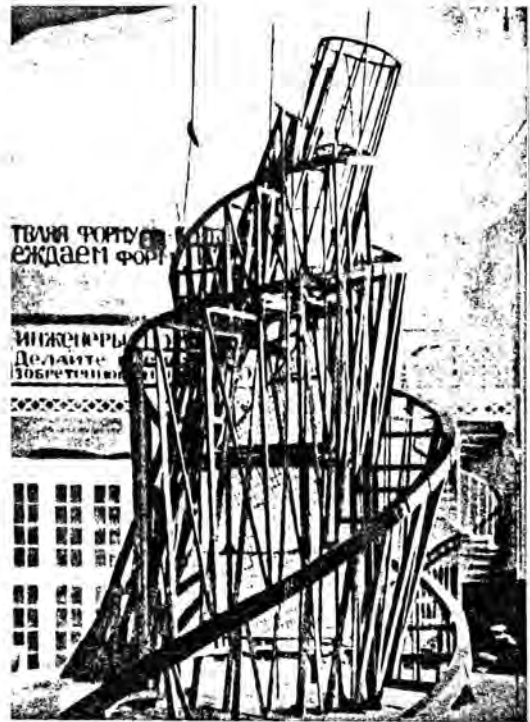
and the 'annoying futilities' of artists"¹ constituted the basis and absolute criterion of beauty.

The Constructivists sought to change their country through art and design, to create not just a style, but a new "rational" man.

There is a kinship here with the outlook of the Purists, who felt that paintings should be able to compete with machine-made products in precision and crafts-

manship. The emphasis fell on joining of parts, precise draughtsmanship, and machine smoothness of colouring. Like Constructivism, it was to be an art unsullied by decoration, fantasy, or individuality, inspired by the machine as a form of creation from which all unnecessary detail has been eliminated. This rather arid doctrine produced no art to speak of, though it did influence the architecture of Le Corbusier (Charles-Edouard Jeanneret).

The historical importance of Purism, as that of Russian Constructivism and of De Styl Movement, lies, according to Bernard Myers, "in the speed with which their streamlined qualities have been absorbed by various industrial arts. All kinds of utilitarian objects from household appliances to automobiles, from furniture to boxes

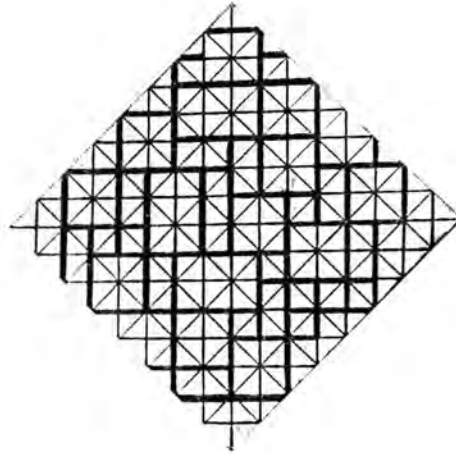


Model for Monument to the Third International

Vladimir Tatlin

1919-20

1. Tatlin, quoted by one of his pupils, in Hultén, *The Machine ...*, p.109.



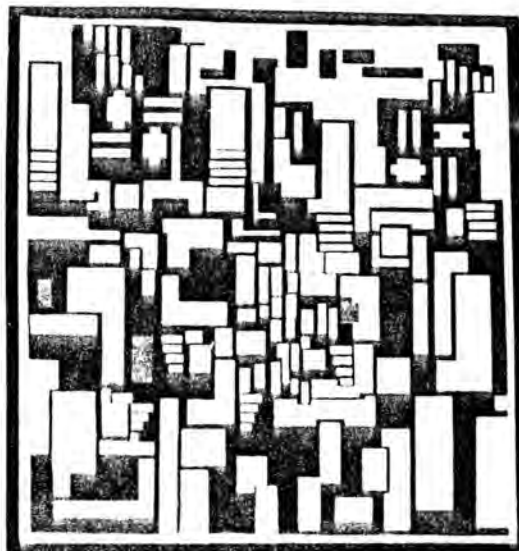
Piet Mondrian *Composition in Gray* 1919



Paul Cézanne *The Card Players* c.1892



Theo van Doesburg *Card Players* 1916-17

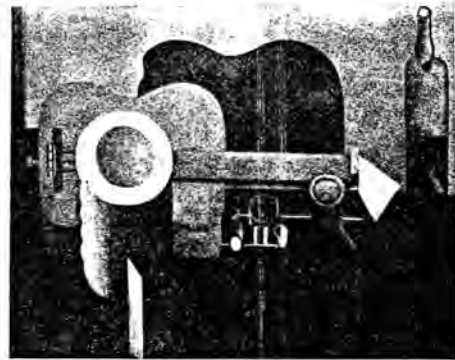


Theo van Doesburg *Card Players* 1917

for commercial products, have been influenced by this viewpoint."¹



Amedee Ozenfant *Still Life* 1920



Charles-Edouard Jeanneret *Still Life* 1920

The Bauhaus, the most famous school of architecture, design and craftsmanship of modern times, was founded in 1919 at Weimar in Germany by Walter Gropius. Influenced to some extent by the ideas of Van Doesburg and De Styl, it attempted to face the problem of machine production which William Morris had evaded or rejected. It was revolutionary in its emphasis on learning by doing, of developing an aesthetic on the basis of sound craftsmanship, and incorporated an awareness of the new mathematics and physics. Teaching embraced a broad spectrum of arts and crafts and was carried out by an equally broad spectrum of personalities, amongst them, for instance, Kandinsky, Klee, Feininger, and Moholy-Nagy.

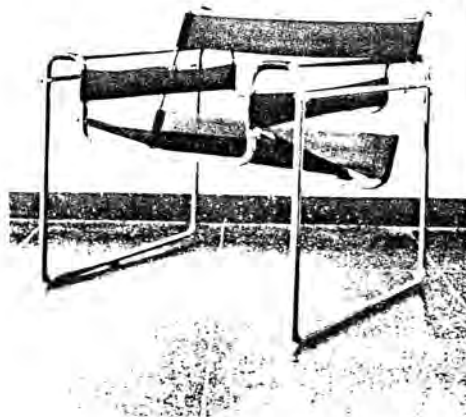
An important aspect of the curriculum was that it was never static, but remained in a continual state of change and development. In 1923 the emphasis was on training designers for industry. After the move to Dessau, the emphasis on architecture was increased, and Gropius said: "We want to create a clear organic architecture, whose inner logic will be radiant and naked, unencumbered by lying

1. Myers, Bernard. *Art and Civilization*, p.368.

facades and trickeries; we want an architecture adapted to our world of machines, radios and fast motor cars, an architecture whose function is clearly recognizable in the relation of its form."¹

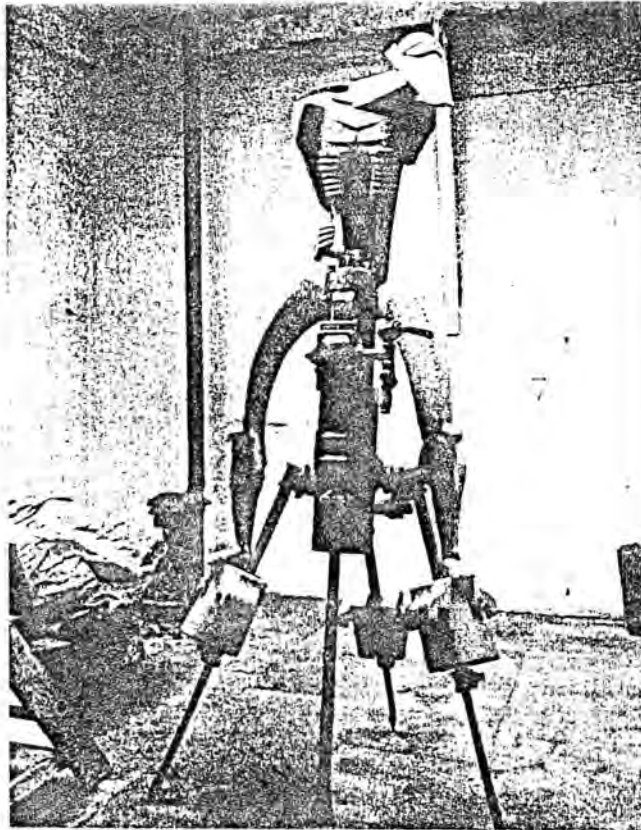
After the founding of the New Bauhaus in Chicago in 1937 (now the Institute of Design of the Illinois Institute of Technology) Moholy-Nagy, through his books *The New Vision* and *Vision in Motion* and his directorship of the school, greatly influenced the teaching of design in that country.

The greatest practical achievements of the Bauhaus were probably in interior, product and graphic design.



Marcel Breuer *Aino chair* 1925

1. Quoted in Arnason, H.H. *A History of Modern Art*, p.259.



The Rock Drill (plaster model mounted on a drill, 1915)

By no means all European artists before World War One felt the simple optimism about the Machine that the Futurists and their ilk clung to. Some saw it as threatening and dehumanizing.

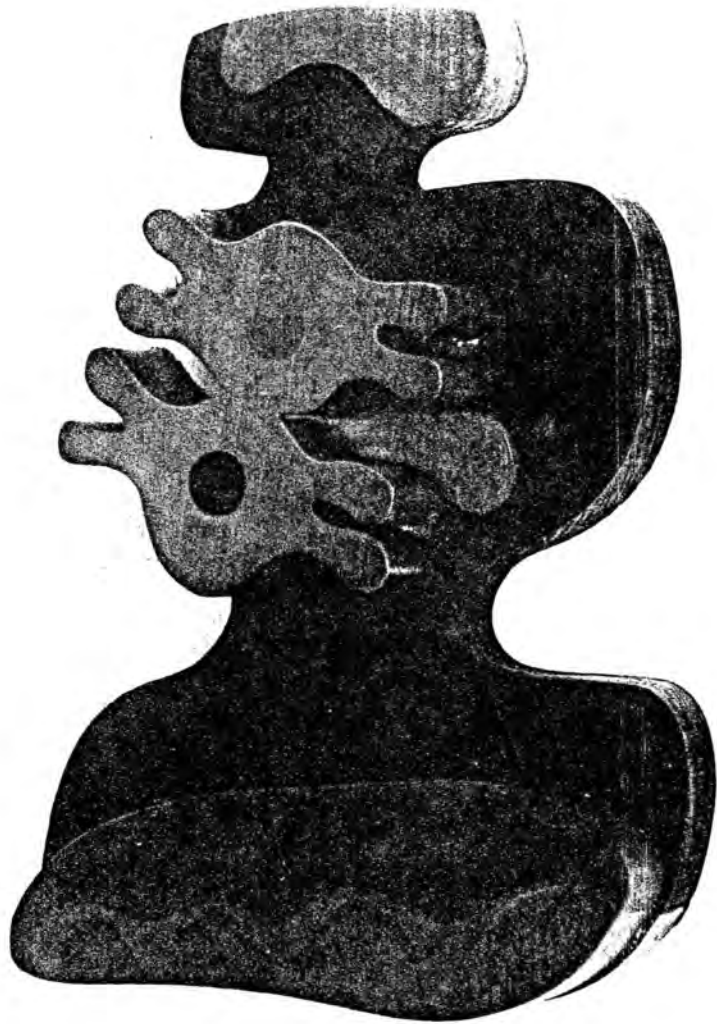
One of the fundamental myths generated by the Industrial Revolution was the idea that man's creations could rise against him and eventually destroy him. This was already the basic theme in Mary Shelley's *Frankenstein* of 1818.

Almost a century later, Jacob Epstein was to take up this idea and embody it in his Vorticist sculpture, *The Rock Drill*, 1913-14; a sort of bronze arthropod mounted on the legs and bit (or penis) of a pneumatic drill. "This" Epstein later wrote, "is the sinister armoured figure of today and tomorrow. Nothing human, only the terrible Frankenstein's monster into which we have transformed ourselves."¹



Jacob Epstein *The Rock Drill* 1913-14
cast 1962

1. Hughes, *op. cit.*, p.48



Hans Arp *Birds in an Aquarium* c.1920

Then there was Dada. The Dadaists were shocked, outraged, and disgusted that a culture that professed to be rational, enlightened, and which prided itself on being highly civilized - embracing high ideals and seemingly entering an epoch in which human evolution would achieve an unprecedented flowering - could irrupt into the wholesale barbarism just witnessed in World War One.

Hans Arp, the most gifted of the Zurich Dada, wrote: "Repelled by the slaughter-houses of the world war, we turned to art. We searched for an elementary art that would, we thought, save mankind from the furious madness of these times."¹ As the Dadaists saw it, machinery had raped Europe from end to end, killing millions: the only hope seemed to lie in a fresh start, a cultural infancy. If the Futurist's version of Zarathustra was the Machine, Dada's was the Child.

Thus, the art or "anti-art" manifestations of Dada were mostly characterized by an over-emphasis on spontaneity and protest against established conventional norms and structures. The Dadaists were intensely critical of the traditions, premises, rules, logical bases, even the concepts of order, coherence, and beauty that had guided the creation of art throughout history: After World War One, all rationality, all structure and manifestations of the culture that had produced these, were suspect.

Much of the Dada sensibility found its expression in the Cabaret Voltaire in performances of shocked outrage accompanied by a wildly imaginative humour. There were Duchamp's ready-mades, "signed" by him, Picabia's drawings of bits of machinery with incongruous titles,

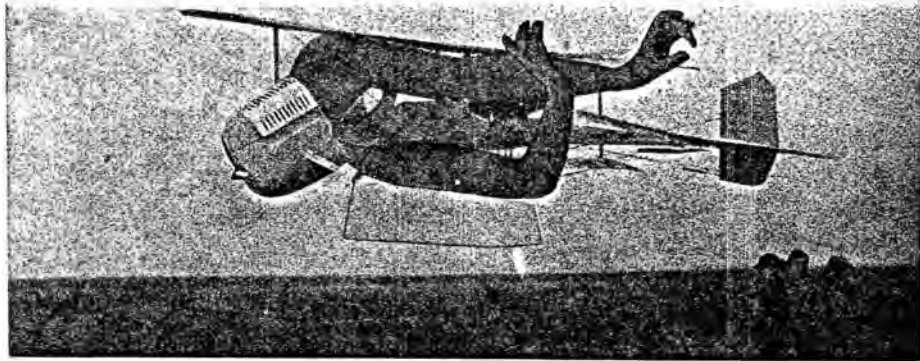
1. Hughes, *op. cit.*, p.61.



Otto Dix *Cardplaying War-Cripples* 1920

incoherent poetry, a lecture given by thirty-eight lecturers in unison, and so on.

But there was also, for instance, Max Ernst's *Murdering Airplane* (1920), of which Robert Hughes gives a penetrating analysis, calling it



Max Ernst *Murdering Airplane* 1920

"an astonishing revelation of dread".¹ "Hovering above the flat horizon, which is the shell-flattened landscape of Northern France (Ernst had served in the trenches as an infantryman), the chimerical aircraft is half machine, half bad angel, and the aura of fear that it suggests is very far from the metaphors of angelic modernity that Robert Delaunay, a few years before, had extracted from Blériot's innocent monoplane. Its female arms give it an air of monstrous coquettishness, and the three tiny figures of soldiers are powerless against its visitation. It sums up the feeling of being strafed."²

1. Hughes, *op. cit.*, p.71.

2. *Loc. cit.*

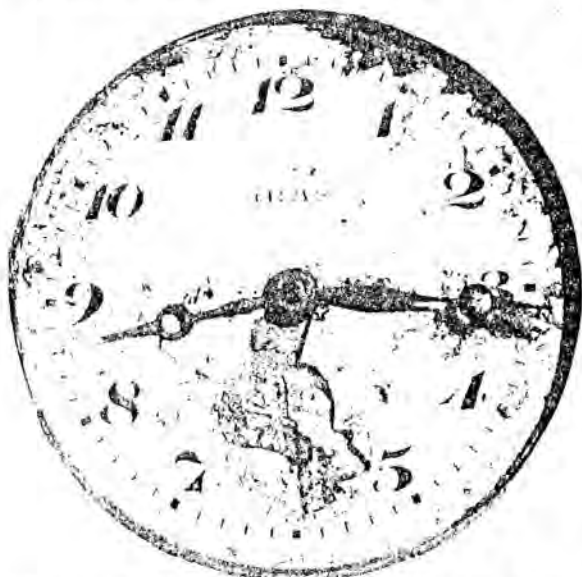
The Dadaists' reaction is often condemned as "nihilistic" and destructive and criticized as not having put anything positive in the place of that which they pulled down from its pedestals. However, their emotion was genuine, and characteristic of the first stages of pain and shock and agonized disbelief that follow catastrophe. Only sensitive, feeling human beings could have been capable of such an intense reaction. So, though Dada itself never evolved into an art style - as Cubism and Futurism did - it did and does stand for a particular sensibility that was anti-sham, anti-dehumanization; and if Dada itself never provided much of an alternative proposition to that which it pulled down, at least in pulling things down it cleared a space in which others could then build up again. As Picasso once said, "Destruction is an inevitable part of creation" - and so, in the bigger scheme of things, the Dadaists have a place. Underlying even their wildest antics, there was a seriousness of purpose and a search for new vision and content that went beyond any merely frivolous desire to outrage the bourgeoisie. Despite their avowed negativism, their outlook was at least in part a return to Kandinsky's¹ inner necessity and a protest against rationalized and mechanized death: hence an affirmation of *life* forces.

1. Kandinsky, *Concerning the Spiritual in Art*.

SUNDAY TIMES, July 28 1985

WORLD

40 years after the Bomb



A watch stopped 40 years ago by Hiroshima's blast

ON the morning of August 6, 1945, time stopped for Hiroshima at 8.16 — the moment at which the first atomic bomb reduced the bustling Japanese city to charred rubble.

That moment 40 years ago also heralded the dawn of a new era: the atomic age.

The Hiroshima bomb was the result of a nuclear test in the New Mexico desert less than a month before. The ingredients of that prototype included Scotch tape and Kleenex tissues, as well as a core of fissionable plutonium.

But it was powerful enough to shake the earth, turn the night to noon, and raise a mushroom cloud 11 kilometres high.

Even more startling was the horror it brought to Hiroshima. A busy coastal city became a funeral pyre; a woman went out searching for her husband and found only his teeth in a heap of ash.

This report, extracted from a Newsweek special issue, tells how a Japanese girl witnessed the falling of the bomb — and survived it.

By PETER GOLDMAN

ONE brilliant summer's morning in 1945, Kaz Tanaka looked up at the sky over Hiroshima and saw the beginning of the end of her world.

She was 18 then, slender and pert, and her mind was filled with teenage things. She had wakened with a slight fever, just bothersome enough to keep her home from her job as a messenger in a war plant.

But she felt well enough to be up and about. The August sun was already oppressively hot and her father had asked her to water a tree in front of their property.

She ran across the courtyard, let herself out the front gate and saw a girlfriend standing across the street. The two were gossiping happily when they heard the drone of a B-29 bomber overhead. It was just before 8.15.

The plane did not frighten Kaz.

For one thing, Hiroshima had been almost untouched by the air war, though it was Japan's eighth largest city and home to a major army garrison.

Angels

For another, Kaz had been born in California and, although her father had returned to Japan while she was still in nappies, she liked to tell people she was the American in the family.

She even felt a kind of distant kinship with the B-29s that flew regularly overhead, bound north for Tokyo and other targets. People in Hiroshima called them "B-san" (Mister B), but Kaz thought of them as her American silver angels.

"It's just another angel," she thought, squinting up into the bright August sky.

And she waved at the plane, calling: "Hi, angel!"

A white spot appeared in the sky, as small and innocent-looking as a scrap of paper. It was falling away from the plane, drifting down toward the girls. The journey took 43 seconds.

"Oh, my gosh," Kaz said, "don't tell me that's a parachute!"

No man could be that brave, she thought.

Then the air exploded in blinding light and colour, the rays shooting outward as in a child's drawing of the sun, and Kaz was flung to the ground so violently that her two front teeth broke off — though she didn't know it then; she had sunk into unconsciousness.

Words failed the Japanese who tried later to describe that split-second glimpse of the apocalypse; they had to



KAZ TANAKA
'Silver angel' ruined her life

create a new one, "pika-doun" (flash-boom), as if the childlike simplicity of the term could make what had happened comprehensible.

When Kaz regained consciousness, the world around her was as still as death. Her girlfriend lay beside her. Her mother lay pinned under the wreckage of the gate — she had come out to scold Kaz for leaving it open.

Her father had been behind the house tending the vegetables, working in shorts so as not to dirty his clothes. When he came staggering across the garden, blood was running from his nose and mouth; by the next day the exposed parts of his body would have turned a dark, chocolate brown.

Numbed

What had been the finest house in the neighbourhood teetered crazily for a few moments at a 45-degree angle to the ground. Then it came crashing down in splinters, making so much noise that the neighbours thought a second bomb had fallen.

Kaz had been hit in the back by flying timber and cut by shards of wood. But she felt nothing.

People were just shapes in a dense, grey fog of dust and ash.

A mushroom cloud towered 11 kilometres over the remains of the city, the signature of a terrifying new age.

Kaz never saw it. She was inside it.

Kaz Tanaka later suffered terribly from radiation sickness. Her gums and bowels bled and she was ablaze with fever. The sickness abated after several weeks, but Kaz has suffered frequent recurrences that have made her adult life a nightmare.

CHAPTER TWOMAINSTREAM AND OTHER MOVEMENTS AFTER 19451. The Watershed and after

1945 represents more than just a convenient point of demarcation for the historian or art historian. If World War One did a lot to shake mankind's faith in its own rationality and the millennial possibilities of the Machine, World War Two might be thought to have exploded it altogether. And indeed, 1945 can be regarded as a watershed in human history and, as art is inextricably entwined with human fate, a watershed in artistic endeavour.

It is the year in which the second world war ended - a war in which machines played an overwhelmingly important part - and also the year in which the thermonuclear bomb was dropped on Hiroshima.

By 1945 nobody alive could still entertain any illusions that the possibilities inherent in the machine were only positive. Seven years of mechanized warfare and the bomb dropped on Hiroshima had severely rocked man's belief in the mechanical millennium. As Arthur Koestler suggested, we might start a new calendar - at least in our minds - dating from that event. This would posit us now in the year 40 p.H. - post Hiroshima.

Doubts about the Machine (technology) arose which should rather be doubts about man's *use* of technology. The one-time optimism turned into profound pessimism, anxiety, and terror; and technology got a bad name, which really amounts to misplacing the blame by apportioning responsibility to an entirely man-made

phenomenon; and it is man really, not "Technology", that should shoulder it. We shall return to this concept presently.

Painting over these last forty years has reflected just how much our world and our conception of ourselves in it has changed.

This change was not immediately apparent as a wave of immeasurable relief swept through Europe and the rest of the Western world with the liberation from the terrors and oppression of the war in 1945. But artists, like the rest of afflicted humanity, needed time and effort to reorientate themselves. It was not immediately recognized that this war had disrupted creative activity at least as radically as the 1914-18 war had, and for a while it seemed possible to continue creating from the same premises and concepts, even stylistic forms, that had constituted the basis for much pre-war art, and which had been battled for at such length. "For many artists, the war had been a continuation by other means of the defence of the same ideals against the same enemy."¹

However, it became apparent that man had to reassess not only his world but also his position in it and, with that, his own nature.

Soon after the war, an exhibition of works by Picasso and Matisse (both of whom had kept working right through the war years) was held in Paris - a gesture of attempted re-assurance, one surmises, not so much to the artists concerned as to a public whose world had been disrupted and disfigured by seven years of mechanized

1. Émile Langui, "Expressionism since 1945 and the Cobra Movement", *Figurative Art since 1945*, p.59.

warfare. "Life blossoms on the ruins"¹, A. Hammacher prophesied immediately after the liberation of the occupied territories - which in the face of so much destruction can be read either as wishful thinking or as a supreme statement of faith. But, indeed, though not exactly springing into immediate blossom, life forces did begin to stir again.

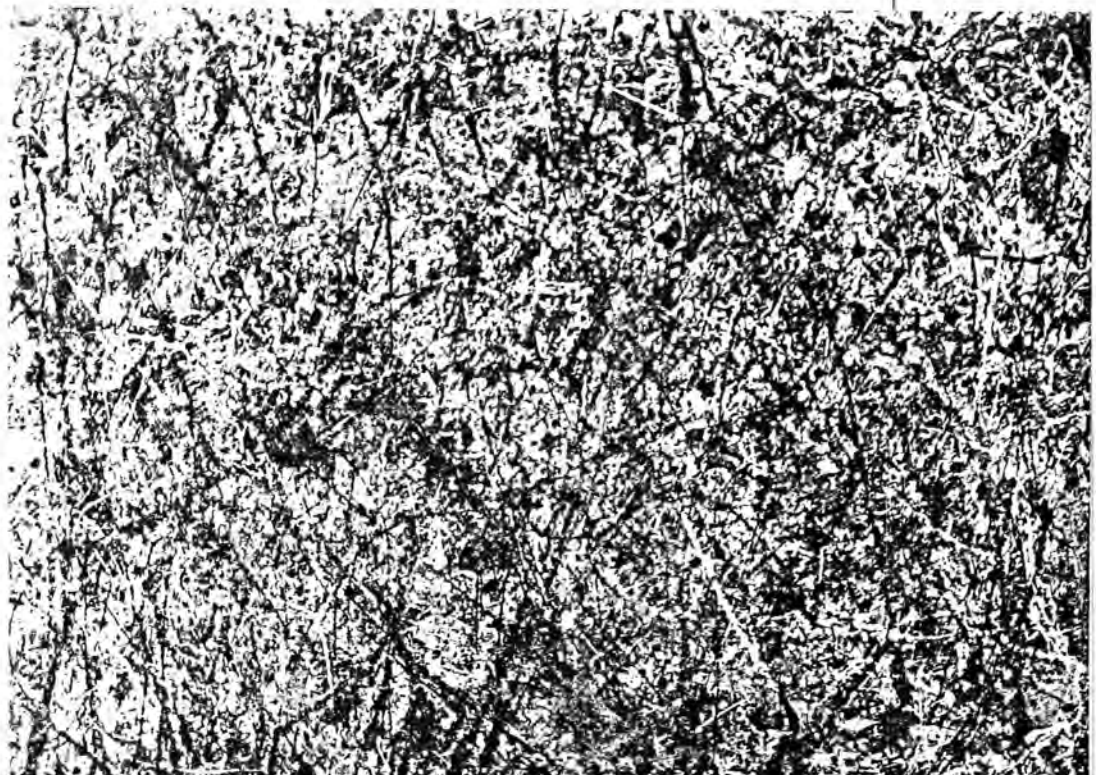
In terms of art movements, Abstract Expressionism was the first reaction to the horrors that a too one-sided utilization of the mind can visit on us. Man had seen his Mechanical Paradise turn into a Mechanical Chamber of Horrors in which he became dehumanized and estranged. In such a situation the most urgent task was for him to re-find and re-define himself - only after that could he go about adjusting the outer world once more to inner reality: a more truly human reality. This is where Abstract Expressionism came in, and in this context it is worth quoting Alfred Manessier at some length: "What we have to reconquer is the weight of lost reality. We must make for ourselves a new heart, a new spirit, a new soul, in the measure of man. The painter's true reality lies neither in Abstraction nor in realism, but in the reconquest of his weight as a human being. At present, non-figurative art seems to me to offer the one opportunity for the painter to approach the inward reality of himself and to grasp the consciousness of his essential self, or even of his being", and he goes on to say that via this process he can eventually even "reach the outward reality of the world."² Manessier

1. *Figurative Art since 1945*, p.59.

2. Quoted in Jung, ... *Symbols*, p.268.



Willem de Kooning *Composition* 1955



Jackson Pollock *Lavender Mist* 1950

may not be the most typical Abstract Expressionist, but what he says in the above gives to my mind a poignant insight into the *raison d'être* of the broad spectrum of painterly styles variously described as Abstract Expressionism, L'Art Autre, L'Art Informel, Tachisme, or Action Painting, all representing what Hughes calls "a rummaging for the authentic residues of the self"¹.

Works like Jackson Pollock's *Lavender Mist* (1950), or *Ocean Greyness* (1953) and Willem de Koning's *Night Square* (1950-51) or his *Composition* of 1955 - to name but some -



Jackson Pollock *Ocean Greyness* 1953

reflect an intense process of the painter getting in touch with the source of his own vitality which had nothing to do with the logic of machines. These artists were painting, in the words of

1. Hughes, *op. cit.*, p.265.



Willem de Kooning *Night Square* 1950-51



Andy Warhol *Marilyn Monroe* 1967

Jean Bazaine, the "pure rhythm of [their] feelings, the most secret pulse of [their] heart."¹



Wols oil 1949

There is a danger in this total immersion in the inner world of the Self, and it is necessary that the painter should sooner or later return to the outside world of concrete reality and, in fact, repeatedly re-establish contact with it if he is not to lose his balance. The fact that a number of artists who continued to practice in the Abstract Expressionist vein ended up committing suicide seems to imply that they didn't know when to stop and catch themselves up as it were - but a discussion of this would take us too far out of the present context.

Suffice it to say that the next generation of painters emphatically did turn back to outward reality, albeit a generally banal one.

1. Jung, ... *Symbols*, p.268.



Derek Boshier *Identikit Man* 1962



Michelangelo *The Creation of Adam*

2. "Cold the Sense and Lost the Motive of Action"¹ - POP

The Pop artists set out to embrace the Machine and its products as evidenced in the urban environment, wholesale. Pop art has often been praised for being optimistic and taking a positive stance vis-a-vis urban industrial machine culture, but it evaded any of the profounder issues inherent in its subject matter and the alleged optimism was thus a mindless one. Pop is slick, superficial, and shallow - albeit accomplished superficiality. Unlike the work of George Grosz and the Social realists of the 1930's who were attacking the ugliness and inequities of urban civilization, Pop's attitude to Machine culture is not satirical or antagonistic.

Yet, however, shallow one deems Pop Art to be, one cannot ignore it in the context of the present enquiry, because of

- a) its involvement with technology and its products as subject matter and the machine-derived preoccupation with repetition and mass production (cf. Warhol) and
- b) because its very shallowness and depersonalized attitude reflects that of modern man in a technological society generally.

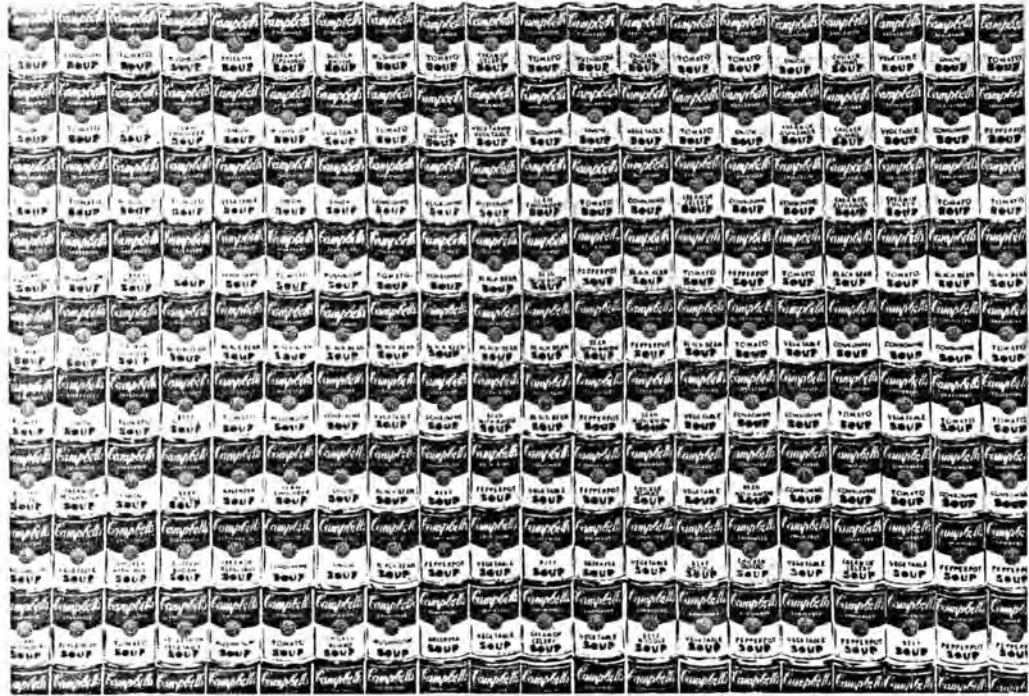
The image of man does not often figure on a Pop canvas. Instead, to use Emerson's words, "things are in the saddle and ride mankind"² - and not the things of Nature but the things that are the products of the Machine. When man does appear in a Pop work, he

1. Eliot, T.S. "East Coker", *Collected Poems 1909-62*, p.200.

2. Lippard, Lucie R. *Pop Art*, p.7.



Warhol Marilyn Monroe 1967



Warhol 200 Campbell's Soup Cans 1962



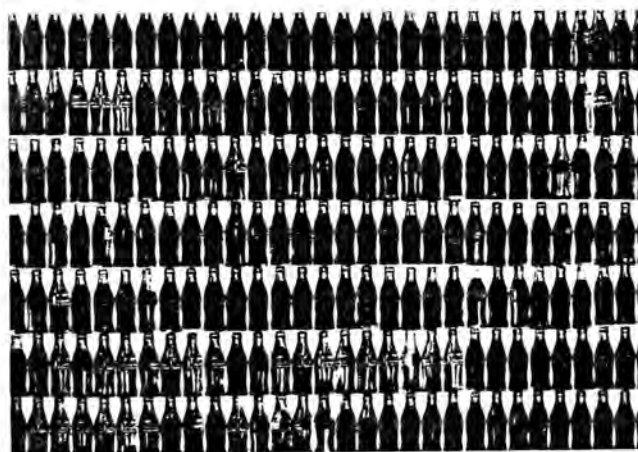
Warhol Marilyn Monroe Diptych 1962

does so as a robot "remotely controlled by the consumers' index or as a sentimentalized parody of the ideal".¹

The Pop work taken individually resembles its source material (the sign, the advert, the billboard, etc.); it, too, distracts for a brief moment and in some cases entertains on a superficial level - ever so momentarily. Pop work en masse resembles the city environment: you get an overload of superficially titillating visual bombardment whose essential meaninglessness leaves you bored. Sensing this boredom without taking time out to reflect on its cause, the city dweller seeks the answers in seeking out *more* of the same thing and quantity or repetitiveness replaces quality or meaning.

Pop was the art of alienated urban man who relies on an ever increasing number of external stimuli and the amusement industry to keep him from meeting himself.

Andy Warhol's images, protopop, feed on this repetition of mass and machine culture quite blatantly. He declared, "I want to be a machine",



Warhol *Green Coca Cola Bottles* 1962

1. Lippard, *op. cit.*, p.9.



Warhol *Four Campbell's Soup Cans* 1965

taking the opposite stance from Jackson Pollock who fifteen years earlier had stated that he wanted to be nature (like a mediumistic force, with all nature's unpredictability, variety, and energy). Warhol-the-machine goes for the production-line image, producing endless repetitions of *Green Coca Cola Bottles* (1962), *Campbell's Soup Cans*, or *Marilyn Monroe* and *Mao Tse-Tung* (1973): all commercial commodities which he produces and presents in a cool, uninvolved manner.

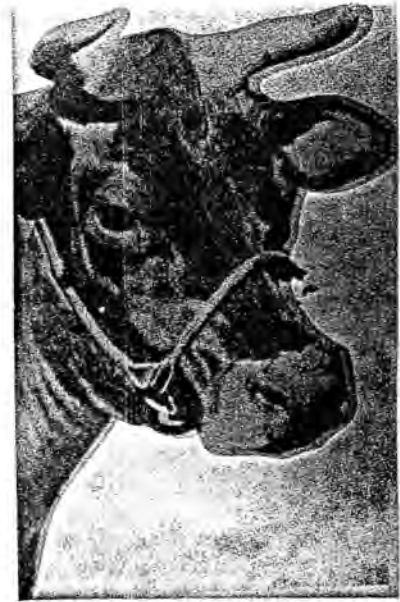
He has called himself "a spokesman for those whose tearglands dried up after World War Two". Aligning himself with the spectator who looks on the horrors of modern life with the detachment with which he views something on TV, Warhol presents his *Death and Disaster Series* with no more sentiment - either pro or con - than his *Brillo Boxes*.



Warhol *Electric Chair* 1965

What all his images - whether of things or of people - have in common, is the attitude of being an uninvolved spectator.

Warhol and his work serve as an excellent illustration of the link between the Machine and commercialization. He turned not only his images into pure commercial product, but also himself, and in the process did more than any other painter to turn the art world into the art business.



Warhol *Cow Wall Paper*

Richard Hamilton, one of the initiators of English Pop, in 1955 staged an exhibition of "Man, Machine, and Motion" at the Institute of Contemporary Art (ICA), in which he explored the visual explosion of the twentieth century as a source of evocative images.

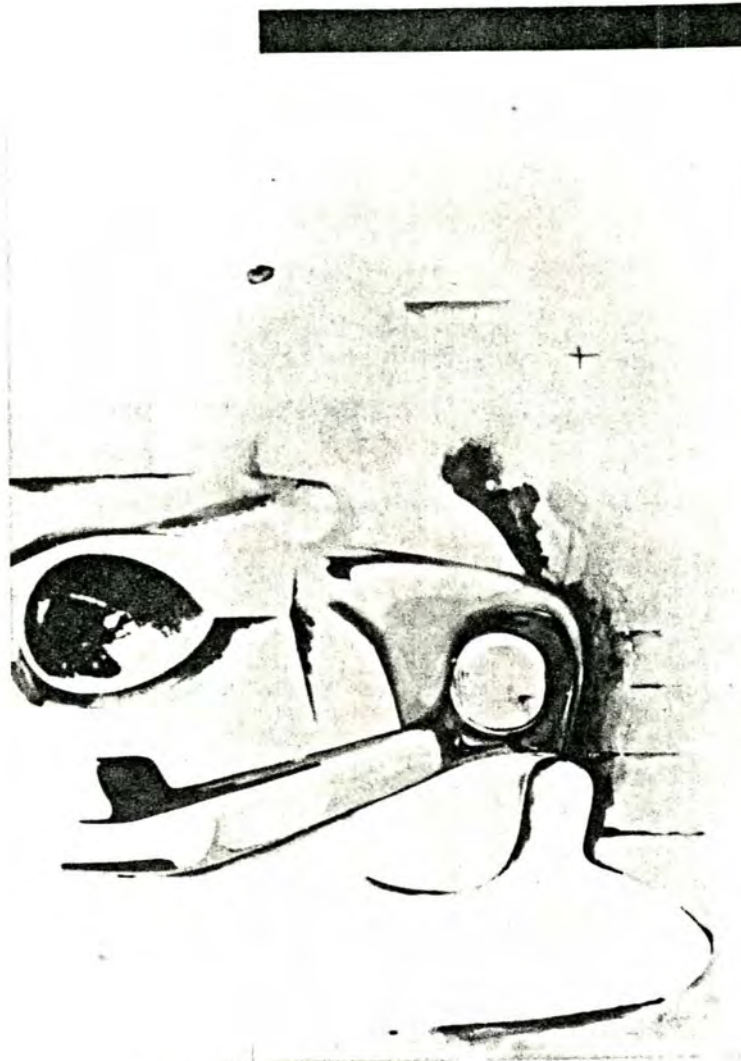
He is the only British Pop artist to produce a satirical work as the result of activist involvement when he portrayed Hugh Gaitskell in 1964 as "a famous monster of film land" because he regarded Gaitskell as a major obstacle to the adoption of a reasonable nuclear policy by the Labour Government.



Hugh Gaitskell as a Famous Monster of Film Land



Richard Hamilton *Just What Is It That Makes Today's Homes So Different, So Appealing* 1956



Hamilton *Homage à Chrysler Corp.* 1957

In 1956, an exhibition called "This is Tomorrow" was held at the London ICA, taking a look at the mass imagery of the early electronic age. Here, Hamilton exhibited a small but telling, semi-ironic collage entitled *Just What Is It That Makes Today's Homes So Different, So Appealing?* (1956). It reads like an inventory of technological novelties complete with moon ceiling, brand-new vacuum cleaner, magnetic tape, packaged ham, a large Ford emblem on the lampshade, a telephoning lady on the television screen, the muscle man and the strip-show dame displaying their physique as Product (not forgetting the giant-sized phallic sucker he is holding, with the word "POP" printed on it), and, visible through the window, the movie theatre's billboard advertizing *The Jazz Singer* - a technological innovation in that sphere (wide screen and magnetic sound).

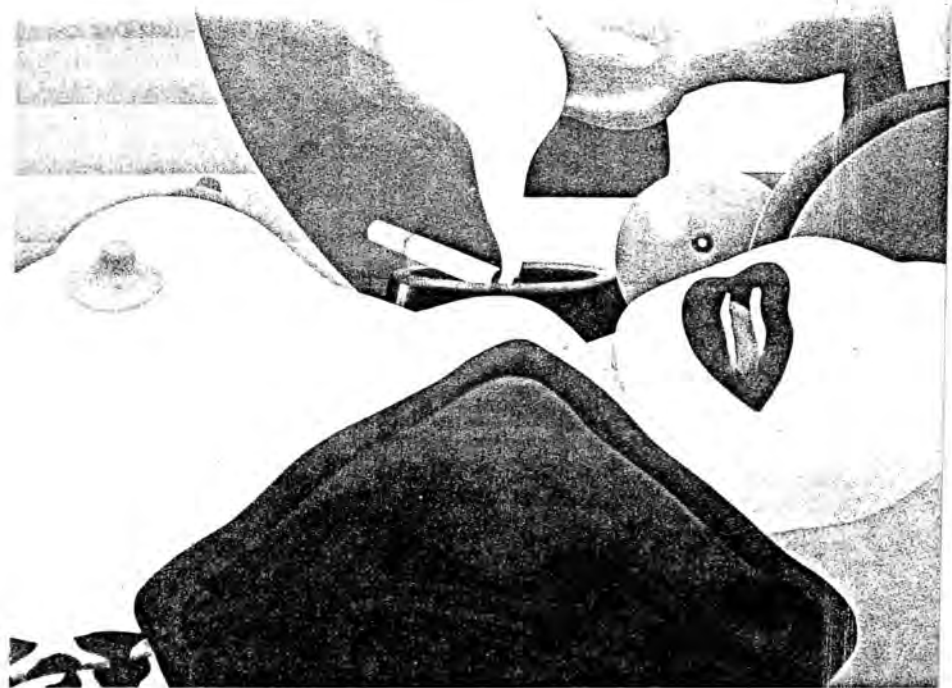
This collage contained as in a nucleus all the elements that later Pop artists were to draw on for their images: Lichtenstein was to use the comic as source material (in *Just What Is It ...* there is a framed *Young Romance* comic on the wall), Rosenquist would use the equivalents of the packaged ham on the table, and so on.

In 1957, Hamilton produced in his *Hommage à Chrysler Corp.* an amalgam of pieces taken from Chrysler's Plymouth and Imperial "ads" with some General Motors and a bit of Pontiac material. The end result combines an effect of Bug-Eyed Monster with traces of "the Equisite Form bra diagram and Voluptua's lips"¹ as Lucie

1. Lippard, *op. cit.*, p.41.



Peter Phillips *Custom Painting No.3* 1964-5

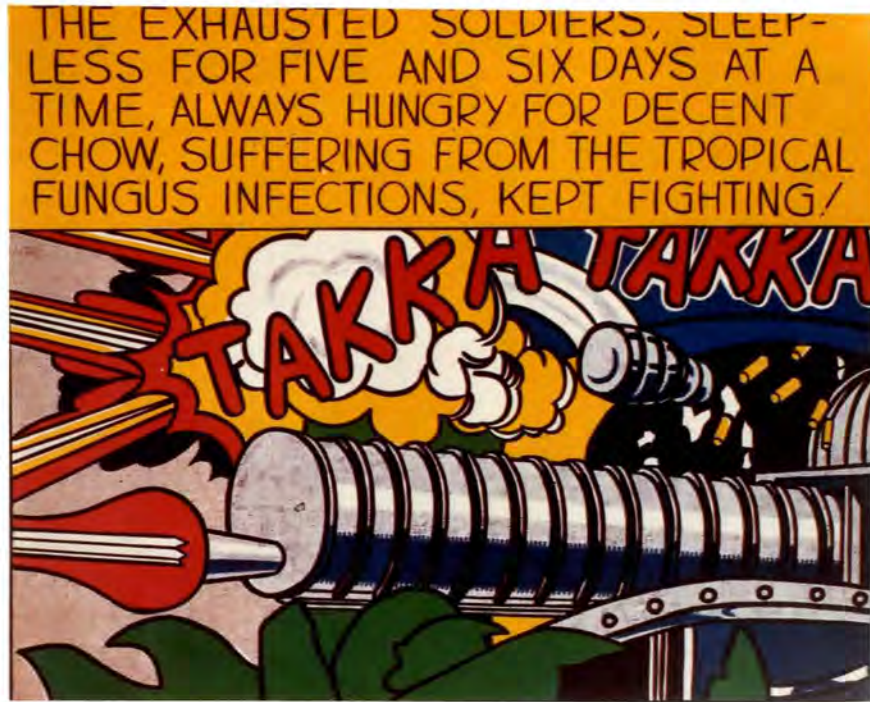


Tom Wesselman *Great American Nude No. 99*

Lippard puts it; a piece of mechanomorphic eroticism.

Although one of Pop's initiators, Hamilton cannot be regarded as a typical protagonist of Pop proper.

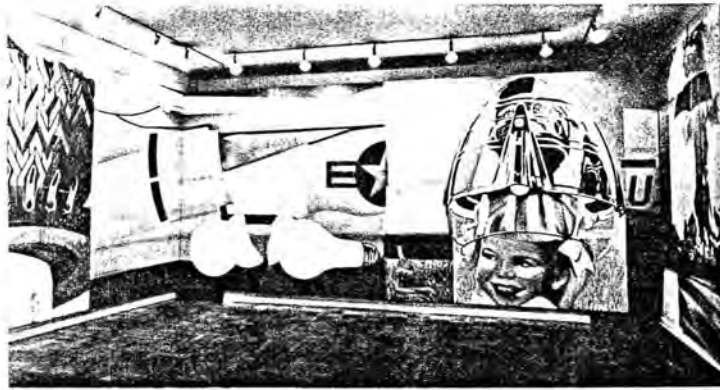
Roy Lichtenstein's *Takka Takka* (1962) is a depiction of a comic



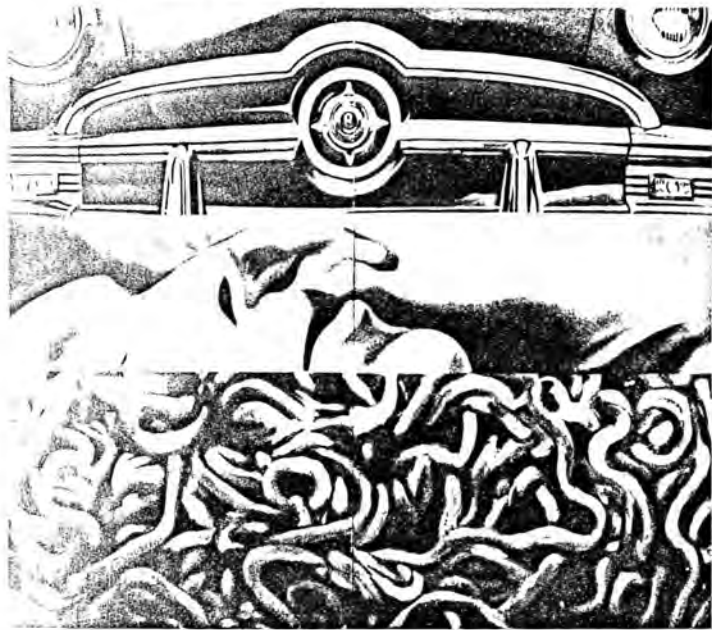
Roy Lichtenstein *Takka Takka* 1962

strip depiction of cannons in action - as coolly unemotional and uninvolved as his source material, possibly a little more elegant, and yet another step further removed from reality.

James Rosenquist deals with mass products such as cars in an uncritical way in as far as he does not transform them. Always depicting them in their original size, he juxtaposes them with other elements, often out of scale. In *I Love You with My Ford* (1961) the car is associated with lovers and disaster. The motif that at first sight creates the strongest visual impression is that of the bloody spaghetti (or viscera drenched in



James Rosenquist *The F-111* 1965



James Rosenquist *I Love You With My Ford* 1961



Edward Kienholz *Back Seat Dodge -38* 1964

tomato sauce). The overall impression this composition gives, is that the world of cars subjugates everything else into deadly stillness. The presentation, nonetheless, remains cool and detached.

His *The F-III* may be even larger but is skimmed over even faster in its brash superficiality.

In contrast to Rosenquist's *Ford* stands Edward Kienholz's tableau of a *Back Seat Dodge - '38* (1964). Utilizing practically the same "ingredients" of car, lovers, and mutilation, it shows involvement, and comments: certainly not a Pop work. In the words of K.G. Pontus Hultén, "In a city [Los Angeles] where death is not accepted as real, real life, too, becomes impossible. With his tableau, Kienholz has forced people to recognize time and has given them a history whether they want one or not."¹

The model of the car, as well as details such as the brand names on the beer bottles, the raccoon tail, etc., all relate to the war years. Not only are we forced into a confrontation with past and present, we are also told of a machine that has lost its innocence. Mirrors in the car give back our own reflection, making us participants rather than merely spectators. It is not a specimen in a nightmare museum of the recent past that we are looking at but rather a poignant challenge to reassess the present by having the past forced at us.

1. Hultén, *The Machine ...*, p.183.

The work of Peter Phillips is typically Pop in its readiness to accept the material uncritically, and he has written that his awareness of machines, advertizing, and mass communications probably differs from that of an older generation that's been without these factors: "I've lived with them ever since I can remember and so it's natural to use them without thinking."¹ Says he.

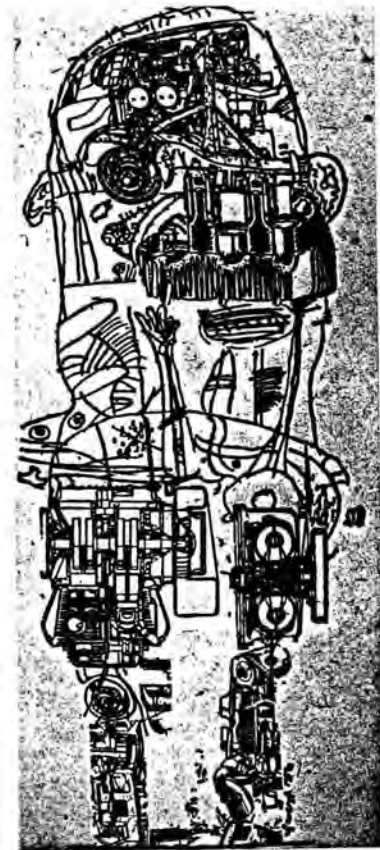
The plastic, prefabricated aspect of Pop is particularly evident in works such as Tom Wesselman's *Great American Nude No 57* (1964) (and the rest of his production-line plastic nudes) where the faceless human is turned into a commodity no different from those you can pick off the supermarket shelves.

One wonders what has happened to Tom Wesselman. Has he gone the way of all plastic?

Not plastic, and not Pop - though initially proceeding from a basis of ideas that were to become the springboard for Pop - is the work of Eduardo Paolozzi. Paolozzi, after 1954, became obsessed with the relations of technology to art and created in his drawings and sculptures a human image suffused with technology. The most striking and typical are his 1955 drawings of a man with a camera or other machinery embedded in his face as if it were part of the head. This and his junk sculpture *Saint Sebastian No 2* (1957) call to mind the words of Erich Fromm, sociologist and psychologist, when he points out the danger of men turning into robots: "In the 19th century the

1. Lippard, *op. cit.*, p.60.

problem was that *God is dead*; in the twentieth century the problem is that *man is dead*.¹ He elaborates that in the nineteenth century inhumanity meant cruelty; whereas in the twentieth century it means schizoid self-alienation. And whereas in the past men were in danger of becoming slaves, "the danger of the future is that men may become robots. True enough," he continues, "robots do not rebel. But given man's nature, robots cannot live and remain sane, they become 'Golems', they will destroy their world and themselves because they cannot stand any longer the boredom of a meaningless life."²



Paolozzi Drawing (n.d.)

Paolozzi's sculptures, though often cast in bronze, were basically assemblages of machine parts metamorphosed into human or animal monsters: humanized machines confronting dehumanized people.

As regards humanized machines, an article in a recent *Sunday Times Magazine*³ reports of a Florida robot in a nuclear power

1. Fromm, *The Sane Society*, p.360.

2. *Loc. cit.*

3. Johnny Black, "Do you suffer from Technophobia?", *Sunday Times Magazine*, August 12, 1984, p.50.

DO YOU SUFFER FROM

TECHNOPHOBIA?

JOHNNY BLACK computes the machineries of anxiety which are claiming victims in today's stressful electronic world

THERE is, within all of us, a nagging anxiety that technology is leaving us behind, that we are no longer in control of the flashing, blinking, whirring, shiny machines that assault us on all sides.

The amount of pain you feel on coming into contact with a new idea is said to be a reasonable indication of your age. But it is, in fact, normal and healthy to react to the unknown — even in the shape of a gleaming, integrated, five-memory digital computerised food processor — with mistrust and doubt.

My video repair-man recently admitted that he feels "blind panic" nowadays when he goes out on a job because he no longer understands half the machines his customers own.

If the professional technicians feel blind panic, it's no wonder that hapless consumers have problems. The Americans have a word for it — technophobia — and although the compilers of the Oxford English Dictionary have not yet approved it, I see it every day all around me.

An elderly lady I knew in Edinburgh always left her electric plugs in all the time because she feared the electricity might seep out. Whether she expected to wake up in the morning with electric puddles on the floor, or whether she expected it to build up and explode like gas, was never clear to me. She was simply afraid of something unknown to her; something that wasn't around when she was a child. She was a victim of technophobia.



The fear of machines and technology stretches as far back as The Luddites of the early 19th Century, who, afraid that such new-fangled contraptions as the spinning jenny

would cause unemployment, broke into factories and smashed any machines they found. However, it was 1970 before Alvin Toffler, in his influential book "Future Shock", identified the anxiety arising from technological change as "a new and powerfully upsetting psychological disease".

A clinical psychologist I know says: "I'm surprised in a way that I don't see large numbers of people who suffer from technophobia. Most phobias are still the old ones, innate fears connected with small, fast and harmful things like spiders, snakes or rats. These fears are an extreme manifestation of a logical fear, but the specific fear of snakes can, for example, become generalised to include a fear of such objects as the flex on an electric kettle."

These old innate fears almost pale into insignificance in our technologically-bewildering modern world, alongside the fears that progress can offer us.

The fear of nuclear power, for example, is easy to understand, especially in a world where ex-President Richard Nixon once boasted of the ease with which he could "press a button and in 45 minutes 75-million people would die".

Hardly surprising, then, that there are those who feel their lives are constantly in the balance, but, on a smaller scale, it's also technophobia that grips those poor souls who can't cope with zebra crossings. Seemingly incapable of pressing the button that tells them when to cross, they gawp at the passing traffic for five minutes before ambling 100m down the road and crossing in the time-honoured look left-right tradition.

Even your convenient microwave oven takes on a sinister aspect when you consider the death of Samuel Yannon, a New York radio transmitter technician who in 1974 lost his sight and memory

before dying, the first victim of microwave sickness.

In the last decade, we've had to come to terms with home computers, video recorders, remote-control, the calculator, the micro-hi-fi, pushbutton phones, digital watches, laser discs and countless other devices which invade our homes and which, when they break down, leave us feeling helpless because we cannot open them up and poke

around among the wires until they're fixed. There are no wires, no moving parts, nothing an ordinary mortal can understand as a working part.

Nobel Prize-winner Arno Penzias has observed that "technology provides us with everything but a way to say no to it ... It can provide us with a state where choices are taken away from us. That is scary."

The Big Brother who watches over us today is the computer. I have a colleague who has such an innate mistrust of electronic surveillance that he refuses to have a credit card or a cash dispenser card and only reluctantly tolerates his cheque guarantee card, fearing that once his name is on one computer, it is available to all computers.

The Americans would call him a logi-zomechanophobe (a person with a fear of thinking machines) but his fear is perfectly understandable. Another friend, a publisher, is furiously resisting finding out about computer bar codes (those little stripes you find on almost everything you buy now), even though the major distributors will soon refuse to handle uncoded books, which could put her out of business.

Whether the Oxford English Dictionary likes it or not, technophobia is here to stay and, provided we learn to live with it and treat it with respect, it could help us shape a better future by making us think twice about progress for its own sake, rather than for ours. There is nothing unnatural about the machines themselves, or our fear of them. We are simply living in an era of rapid change, a time of transition in which, as Russian composer Igor Stravinsky has pointed out: "We can neither put back the clock nor slow down our forward speed and as we are already flying pilotless, on instrument controls, it is even too late to ask where we are going."

If that thought depresses you, consider the Florida robot in a nuclear power plant which, according to an eye-witness lab worker, "worked its arm into an unnatural position" and began smashing itself to pieces — the world's first electronic suicide attempt. Perhaps there's some slight consolation in the thought that even the machines can't cope with the stress of modern living. They're getting more like us every day. ●

50 Sunday Times Magazine, August 12, 1984

EASTERN PROVINCE HERALD, WEDNESDAY, FEBRUARY 19, 1986

Kids at Cape find Kitt a car of few words

HERALD CORRESPONDENT
CAPE TOWN — Kitt, the jet-black Pontiac Trans-Am of Knightrider, yesterday growled and beeped his way into the hearts of dozens of goggle-eyed young fans.

Children flocked around the "Knight Industries Two Thousand" on display in a Parow chainstore, and gasped as Kitt deftly answered every question.

"Okay, huster, what you doing here?" asked three-year-old Shaun Lombard, while sitting in the driver's seat of the darkened cabin.

"I am in your wonderful country on a visit," answered a metallic contralto.

"But what you gonna do here?" said Shaun.

"I am in your wonderful country on a visit," said Kitt, obviously not prepared to answer the more piercing of questions.

"Heey, stupid," shouted Shaun, "why do you keep saying the same thing?"

"Thank you for coming," said Kitt, "I hope you enjoy Knightrider."

Most of the children were not fazed by Kitt's

limited vocabulary. Nico van Niekerk gazed intently at the dazzling dashboard as the car told him "I have come all the way from Hollywood".

"It's great," said Nico. Asked if he thought Kitt was real, he said: "Of course he is real!"

Martin Moolman, 13, gripping the steering wheel tightly, breathed, "This is incredible," as Kitt said: "I can not reveal any technological secrets".

"Do you speak Afrikaans?" asked Martin. "Thank you for coming," came the cool reply.

plant which, "according to an eye-witness lab worker, 'worked its arm into an unnatural position' and began smashing itself to pieces"¹ - which, the author wryly comments, "represents the world's first electronic suicide attempt"². And he speculates that there is perhaps some slight consolation in the thought that even machines can't cope with the stress of modern living. "They're getting more like us every day."³

Technophobia and related stress reactions and manifestations are ubiquitous.

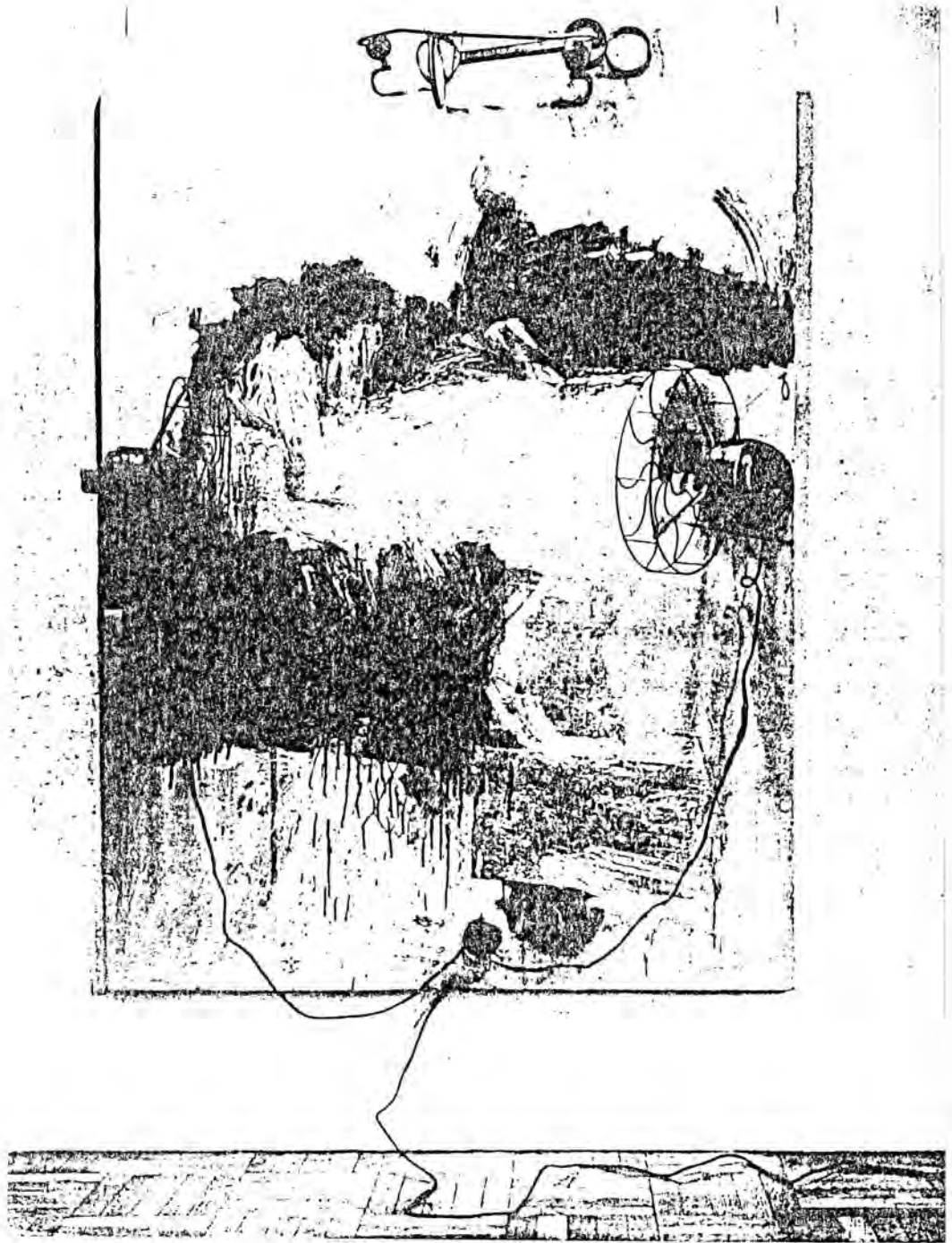
The popularity of a TV programme such as "Knight Rider" - in which "Kit" the car, the Machine, is humanized, can think, feel, and talk, be enthusiastic or sad - seems to indicate a longing for a more humanly proportioned world (though this longing is probably far from being conscious in the majority of cases).

The surfaces of Paolozzi's sculptures often carry the imprint of war memories, with traces of manufactured objects, from bombsights to polyethylene toys. He has given this sort of thing expression in words, too, as for instance in his lines which evoke the memory of a crashed Nazi plane in World War Two:

Twisted and pulled still recognizable crashed JUNKER
part of the anatomy fuselage exposed like a wounded beast
zinc-alloy piece filled with Scottish clay
Fragment of an autobiography

4

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1. Black, *op. cit.*, p.50
 2. *Loc. cit.*
 3. *Loc. cit.*
 4. Lippard, *op. cit.*, p.35; originally in Eduardo Paolozzi, "Notes from a lecture at the ICA 1958", *Uppercase*, London, n.d. (probably 1958).



Robert Rauschenberg. American, born 1925

© *Pantomime*, 1961

Combine painting: oil on canvas with electric fans, 7 × 5'

Robert Rauschenberg, who consciously set out to explore the "gap between art and life"¹, often uses technical devices in his "combine-paintings" to involve the surrounding space. So, some incorporate radios whose sound fills the space of the room, thus belonging both to the piece and to "life". In other instances electric lights are made to serve the same purpose. In his *Pantomime* of 1961 two fans are employed, and Hultén says of this that the two currents of air moving over the painting behind them keep it fresh and in constant relation to the atmosphere of the room: "The display of electronic cords connects the work of art to the current of life."² This maybe so, but it does sound a bit pseudo-profound.

Pop had strong links with themes of technology and was, whatever its other aesthetic derivations, very much a product of man in a technological society.

3. Seers Without Vision

While technology is evidently the concern of many artists of our time, and while they can see man as assaulted by the Machine, their response has often been to try and meet it on its own terms and compete with it.

In this, they have fallen prey to the same paradigm as the man in the street: the Machine and "scientific" procedure have become the yardstick against which any endeavour, including human

1. Lippard, *op. cit.*, p.6. He is often quoted as saying that "Painting relates to both art and life. Neither can be made. (I try to act in that gap between the two)."

2. Hultén, *The Machine ...*, p.188.

FARMER'S WEEKLY

ESTABLISHED 1911 REGISTERED AT THE GPO AS A NEWSPAPER

73046

FARMER'S WEEKLY

INCORPORATING
BOEREWEEKBLAD

50c EXCL GST

Zimbabwe 45c

NOVEMBER 18, 1983

SUPERCOW!
she performs like
a machine

**FARM DAMS
ON THE
CHEAP**

THE PICK

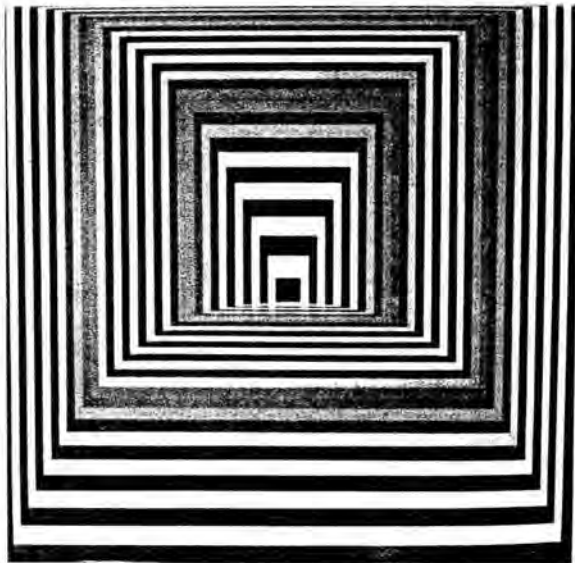


endeavour and experience, is measured. The *Farmer's Weekly* of November 18, 1983 announces in Bodoni Bold a "SUPERCOW! She performs like a Machine". In many instances, the artist, too, tries to become a supercow. Having lost confidence in his uniquely *human* qualities and abilities, he now throws these overboard, and in vying with the Machine, becomes one.

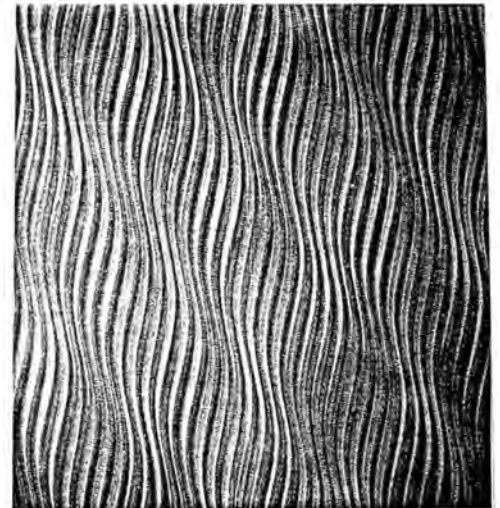
(Warhol, already referred to, is not the only one.) Not only the man in the street, then, has become alienated from himself (as from nature and his fellow men), but the artist has, too. The prophet, the seer, has lost not his voice, but his vision.

In this sense both Op and Kinetic Art are unmistakable products of a highly technological age.

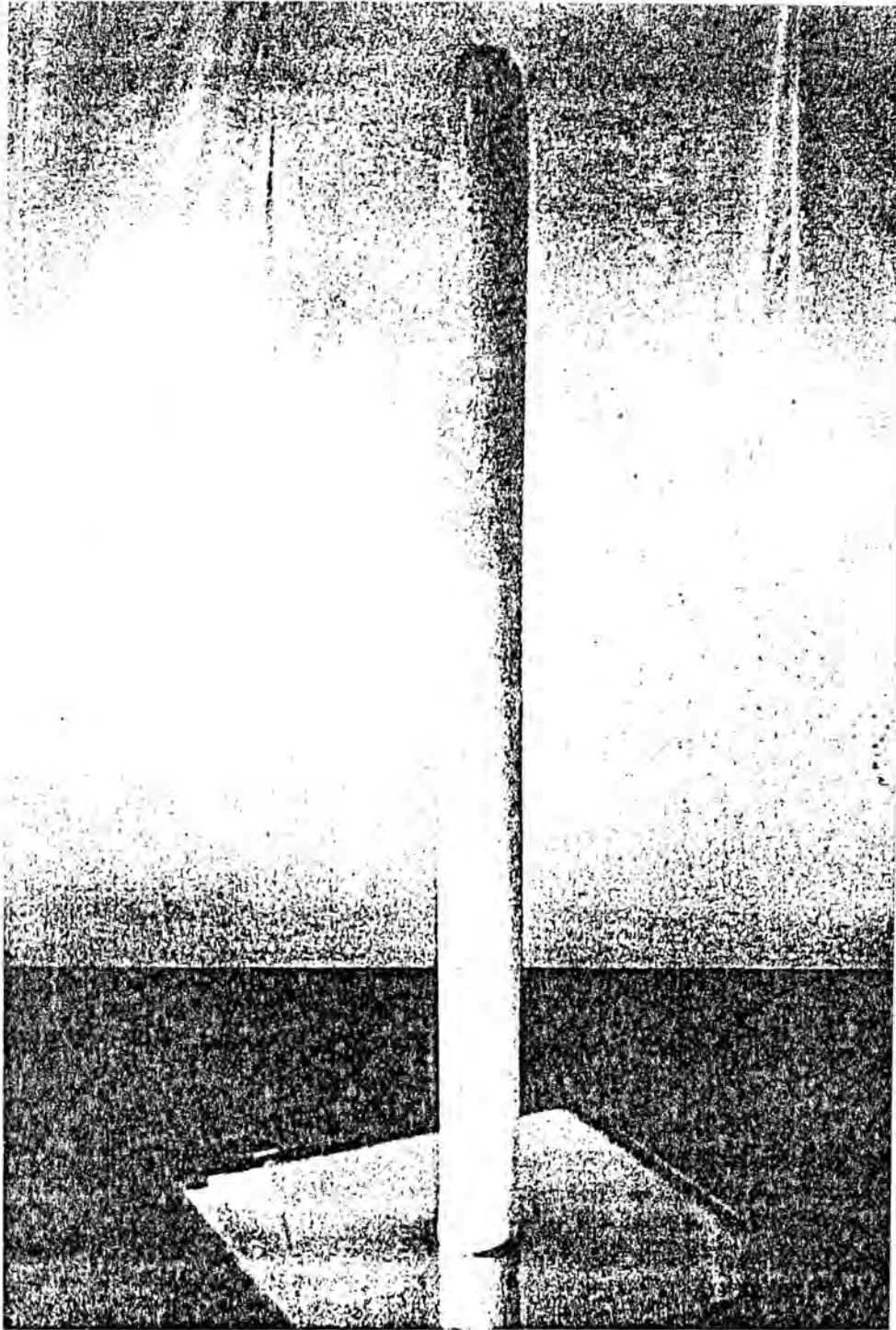
Op Art tickles the retina, and the work of even its most highly acclaimed protagonists, such as Vasarely and Bridget Riley - though extremely polished technically - do nothing more profound for the viewer than dazzle and bewilder his physical perception.



Victor Vasarely *Vonal-Köz* 1968



Bridget Riley *Orphean Elegy*



Hans Haacke

German, born 1936

© *Ice Stick*, 1966

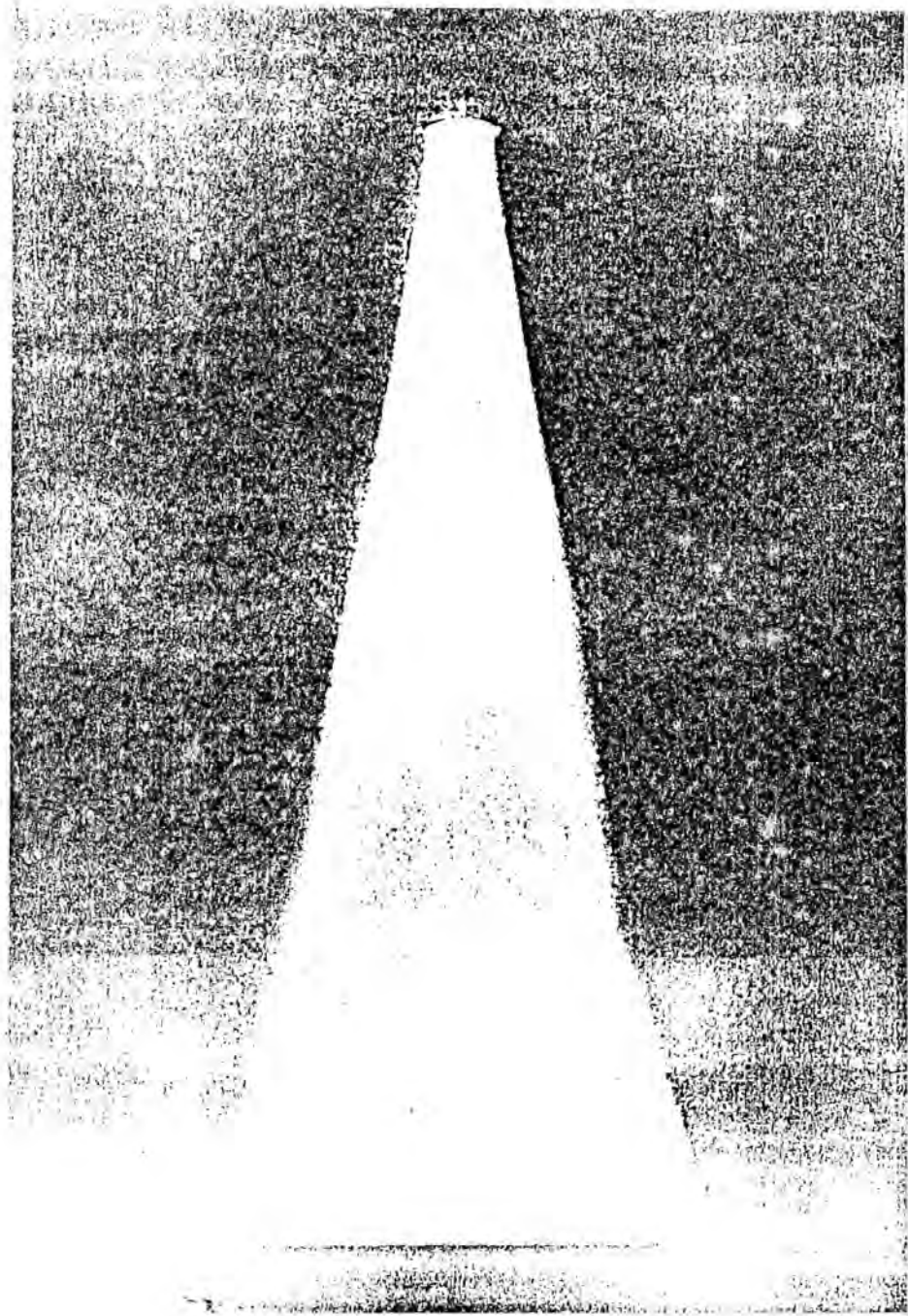
Refrigeration unit, 54" high,
on base 14" high

Kinetic Art is based on the idea that light and movement can create a work of art. Objects usually made of moving pieces of metal, glass, or similar materials are made to gyrate and in combination with changing effects of coloured lights, create shadows and reflections - whirring and flickering "like egg-beaters on amphetamine"¹, to borrow Robert Hughes' fitting phrase. The addition of a fourth dimension, time, to the existing three of the traditional art work was expected to forge a link between technology and art and to involve the viewer in the work's matrix. ... The result: Keeping up with the Einsteins can be as pseudo-productive as keeping up with the Joneses.

As in the example of Kinetic Art, the machine (i.e. technology) is often seen as having outstripped art in its development and artists fear that in the process the work of art has become redundant and obsolete. Dazzled by the undoubted achievements and unprecedented new materials of technology, these artists tend to confuse medium and essence (or message) and seek the answer in abandoning old techniques in favour of experimenting with laser beams, computer systems and sound synthesizers, sometimes in collaboration with engineers. All this usually amounts to is that the medium becomes the message (or a kind of "cerebral masturbation" as Dr Tsion Avital of Tel-Aviv and Ben-Gurion Universities put it)², and technique or material - instead of giving outward form to a content, a vision - replaces vision.

1. Hughes, *op. cit.*, p.385.

2. As stated in a personal interview by Dr T. Avital in Grahams-town at Rhodes University in April 1983.



Jean Dupuy

French, born 1925 (artist)

Ralph Martel

American, born 1935 (engineer)

Heart Beats Dust, 1968

This was sadly evident in the results of a competition arranged by the international organization Experiments in Art and Technology (E.A.T.) which invited the "effective collaboration"¹ between engineer and artist and was held as an extension to a major exhibition entitled *THE MACHINE* at the Museum of Modern Art in 1968. (Significantly, the jury of the competition was announced to consist of "scientists and engineers from the technical community who are not necessarily familiar with contemporary art"² - or any other art, one may safely assume.)

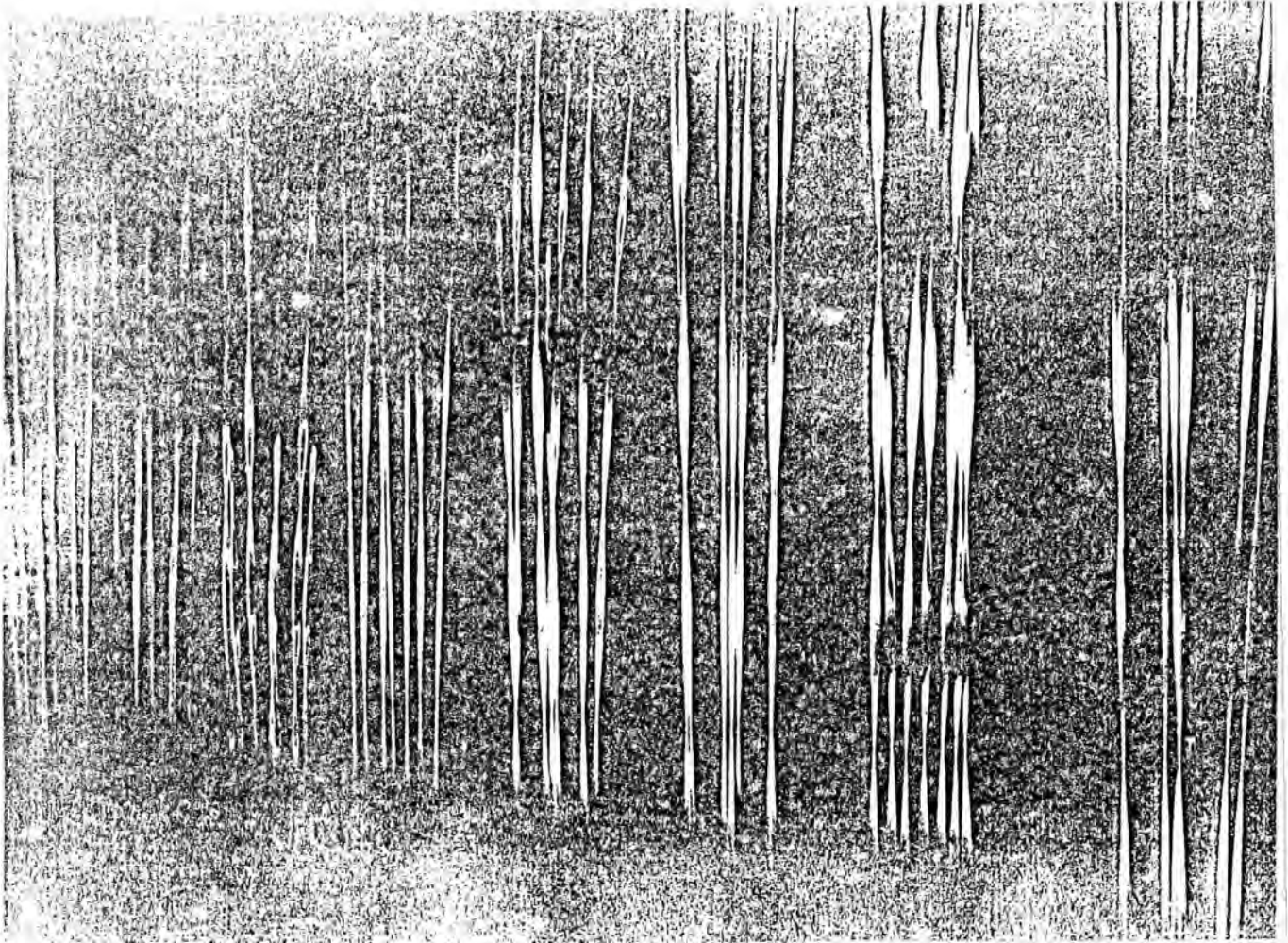
The works that won awards in this competition, judging from their reproductions and descriptions in the catalogue, are variations on a non-theme and include pieces like a sculpture called *Heart beats Dust* (1968), made by the artist (so designated in the catalogue) Jean Dupuy and the engineer Ralph Martel.

I must here apologize for the poor quality of this and a number of other reproductions I am using: unfortunately it proved impossible for me to obtain a copy of Hultén's catalogue when I wanted to photograph some of the examples referred to in my text. The two universities in South Africa which have it on record, reported their copies as missing. I therefore had to make photostatic or photographic copies of those photostats I made when I did have the catalogue on loan previously.

The speculation that SOMEBODY must have the missing catalogue copies with their spectacular embossed-aluminium covers does not seem far-fetched and seems to be yet another indication that

1. Hultén, *The Machine* ..., p.198.

2. *Loc. cit.*



Wen-Ying Tsai. American, born China, 1928 (artist and engineer)

Frank T. Turner. American, born 1911 (engineer)

④ Cybernetic Sculpture, 1968

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HELLO GU DU HERE

RYN 06/7/86

HULTEN, X G P

THE MACHINE AS SEEN AT THE END OF THE A MECHANICAL AGE
SORRY, OUR COPY IS Y STILL MISSING.

24-4211 SA

6-20177 SA

INTER-LIBRARY LOANS - 4 FEB 1986

I'm afraid Wits and
Aunt Natal have both
replied once again
"still missing" - see copy
of Natal's reply
Attached.

Very Sorry -
Cue A shot

whether people are "pro" or "con" technology (and for that matter, art), it intrigues them endlessly. Whether the Machine edifies, mystifies, or terrifies us, we seem inescapably drawn into a confrontation with it.

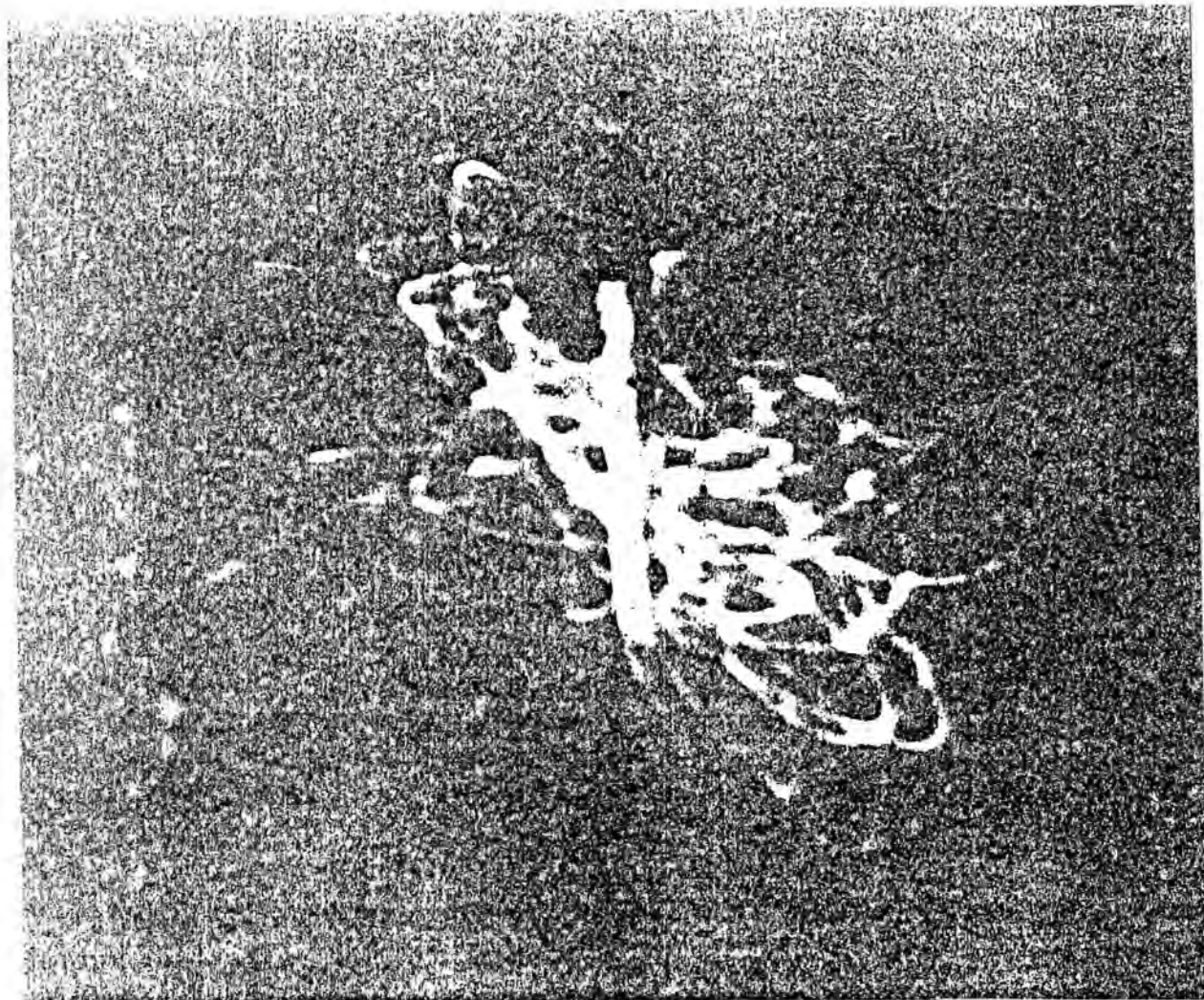
Heart beats Dust consists of dust enclosed in a glass-faced cube and made visible by a light beam of high intensity. The dust is "activated by acoustic vibrations produced by the rhythm of heart beats."¹ Pontus Hultén (the director of the Moderna Museet in Stockholm and compiler-coordinator [director] of this exhibition) proceeds to call this sculpture the achievement of "A sensitive collaboration between natural forces within and outside the human body."² As so often with more recent developments in art, one is hard put to say what is more pretentious: the work in question or the interpretation assigned it by the cogniscenti.

Another case in point from the above exhibition - lest it appear that the work just described is an exception in its pretentious emptiness - is the fruit of the combined labours of one Wen-Ying Tsai (artist and engineer) and one Frank T. Turner (engineer). Entitled simply *Cybernetic Sculpture* (1968), it consists of multiple stainless steel units, each 9'4" high x 20" diameter at base; oscillator, stroboscopic lights, and electronic equipment. Again, it amounts to no more than a playing, on the most superficial level, with technical possibilities.

The same verdict can be passed about *ELLI* by John W. Anthes and Tracy S. Kinsel. What *ELLI* does here, we did with torches

1. Hultén, *The Machine ...*, p.200

2. *Loc. cit.*



John William Anthes. American, born 1946 (artist)
Tracy S. Kinsel. American, born 1930 (engineer)
ELLI. 1968

or "sparklers" when we were very young - I fail to see how achieving the same effect with Laser turns the end result into a profound work of art. According to Hultén, we have in *ELLI* (short for Electronic Laser Light Image) "the completely dematerialized sculpture that Gabo predicted as a further step beyond his *Standing Wave* in 1920."¹ Let any further comment dematerialize, too.

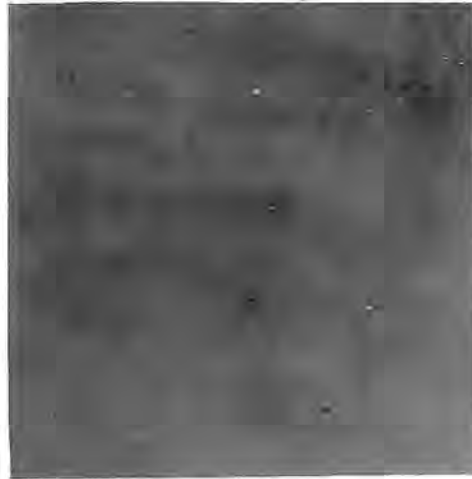
The underlying rationale in these works is really the same as that underlying Op and what may be called stage-one Kinetic Art - "rationale" being the operative word rather than true creativity which always proceeds from a basis of experience and encounter.²

The nature of the work of art used to consist - and to my mind still does - of bodying forth in perceptible form (visual or tactile or aural) the process and outcome of an encounter between the artist and his or her world. It thus entailed two fundamental and absolutely essential prerequisites: content or meaning on the one hand and form on the other. If form is lacking, content is shot in that it remains an incommunicable part of chaos; alternatively, if content is lacking, form is merely an empty shell - much ado about nothing.

1. Hultén, *The Machine ...*, p.206.

2. For an elucidating discussion of the creative act, I recommend reading Rollo May's chapter "Creativity and Encounter" in his *The Courage to Create*, and also Carl G. Jung's "The Transcendent Function - a Paper on Active Imagination", contained in his *Collected Works*, Vol. 8, *The Structure and Dynamics of the Psyche*.

The Minimal work of art can serve as an excellent illustration of this. It certainly has no content, and it can even be asked whether it has "form" in the strict sense of the word. The Emperor's new clothes are rich and opulent by comparison - at least they have an emperor to reveal.



Minimal work: Robert Ryman *Untitled* 1973

Another movement, Photorealism, was very much an attempt to compete with and if possible outdistance the machine - in this case the camera. It also represents another aspect of the artist's fascination with replication already shown by the Pop artists.

No amount of painstaking labour was too much for the Photorealists in trying to prove that anything the camera could do, they could do too - and BIG. They missed the chance of making fruitful use of the newly acquired freedom the Industrial Revolution had provided. What a waste and what a shame.

Chuck Close would take photographs of his subject - using the finest four-by-five camera obtainable - and then blow these up in his pictures which he executed with the narrow zone of focus the camera



Chuck Close *Self Portrait* 1968

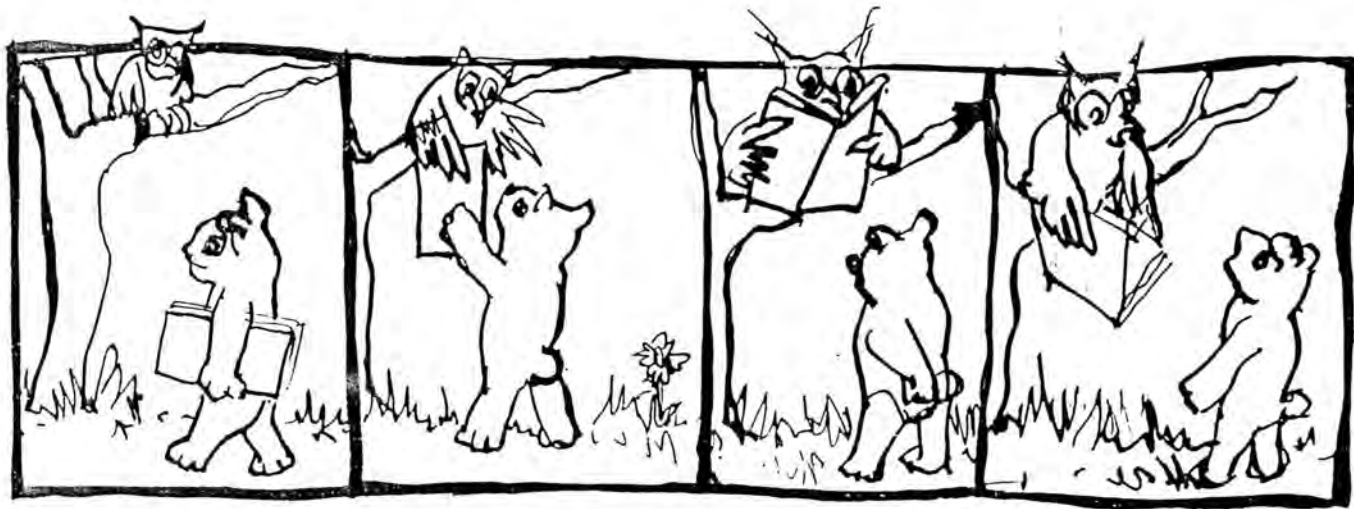
would leave when the lens is set at a wide aperture. His portraits are pictures of photographs rather than of persons and, according to an eye-witness, become interesting only when viewed from so close by that the skin, for example, begins to look like a lunar landscape, and the picture is thus enjoyed for the wrong reasons. Close works from a perfectly made picture in an extremely mechanical way and on a gigantic scale. His portrait of *Linda* (1975-6), for instance, measures 274 x 213 cm. His *Self-portrait* of 1968 measures 8'11½" x 6'11½". It seems significant that even in something as intensely personal as a selfportrait the artist avoids the direct encounter with the self and confronts himself only via the machine.

Another photorealist, Richard Estes, interestingly enough, works in a highly traditional way. He works with oil on canvas and, like a romantic painter, he works from chaos towards order. In one of his earlier works, *Bus Window* (1969), the windscreen of what has become the commonplace of urban transport fills the



Richard Estes *Bus Window* 1969

Facsimile (drawn by hand) of a *Winnie the Pooh* strip



"Pooh, this is complete and utter tripe!!"
"I know - I wrote it on my typewriter."

(Et tu, Pooh... !)

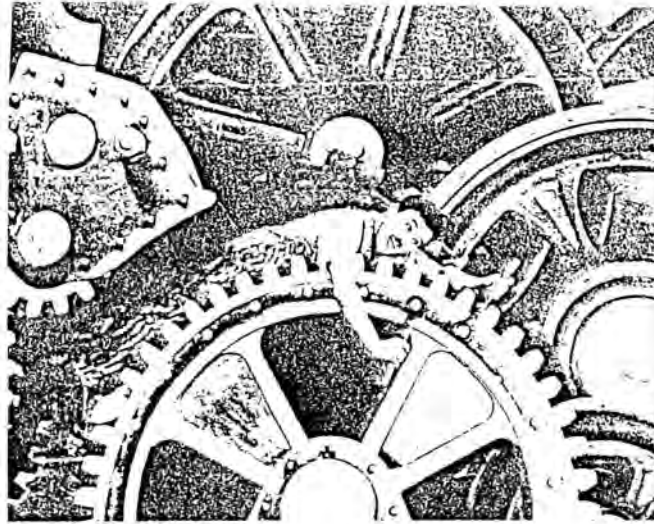
entire canvas. What one sees is mostly chrome, glass, and steel; and the reflections from all this technology blot out almost completely the image of man. This bus has an anonymous quality about it which gives one the uneasy feeling that it moves not at the discretion and direction of people (who are hardly discernible through the painted reflections, etc.), but moves as an inexorable, blind, impersonal force divorced from human will - Technology with a capital T.

As concerns technology with a capital T, it is absolutely vital to remember that tools do not design themselves, or make themselves, or use or coordinate themselves. As Monte Davis asks so poignantly, "Why do we turn 'technology', an abstract noun signifying a range of human activities, into 'Technology', an external threat as impersonal as a hurricane or a glacier?"¹ On any level - whether we think of the chipped flint, the Bell System or the latest electronic complex - tools are uniquely human productions. So why, to use Davis's words again, "are we so ready to see ourselves as the apprentice rather than the sorcerer?"²

In his article "The Sorcerer's Apprehension", Davis discusses Witold Rybczynski's book *Taming the Tiger*³ in which the above question is not answered but posed in a fresh and provocative way. Case histories are presented which should debunk the sense

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1. Davis, Monte. "The Sorcerer's Apprehension", *Psychology Today*, August 1983, p.72.
 2. *Loc. cit.*
 3. Rybczynski, Witold. *Taming the Tiger*, Viking, n.d.





Technology Overtakes Charlie Chaplin in "Modern Times"

that new technologies are inevitable. It is pointed out that even the most "inevitable" technologies are pushed and pulled by social forces and may even be abandoned. Zeppelins, for instance, did not disappear from the skies simply because of the Hindenburg's fiery end, but because the Allies dismantled German industry after World War One. Subsequently the United States refused to sell helium to Germany, and all governments saw more promise in air-planes.

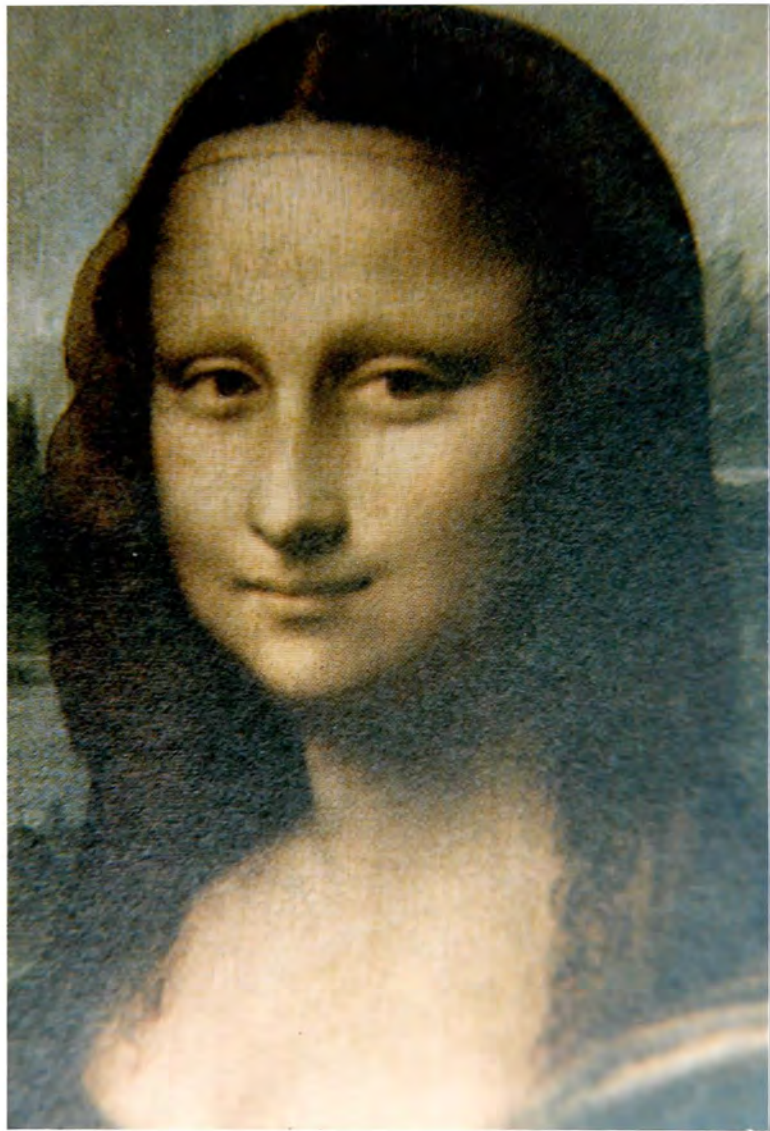
Similarly the technological merits of neither the Chrysler Air-flow (1934) or the compact, inexpensive Crosley of 1946 could ensure their survival on American roads, as few were interested in aerodynamic design or fifty-miles-per-gallon fuel efficiency.

In Western society, the increased pace of change comes from the cumulative growth of science and the immense rewards that government and capitalism direct to innovation, not from the dynamics of technology itself. Toffler supports exactly the same view when saying that, "In the West, the basic criterion for filtering out certain technical innovations and applying others remains economic profitability"¹, and he speaks in favour of a "conscious regulation of technological advance"² so as to prevent what he terms "Future Shock".

Rybczynski points out that, "Although the technology of train travel originated in Europe, an Indian train or a Russian train is used in such a way as to be unmistakably Indian or Russian ...

1. Toffler, Alvin. *Future Shock*, p.399.

2. *Ibid.*, p.389.



Leonardo *Mona Lisa*

the most important lesson that can be learnt from seeing the different emphases that different civilizations attach to technology is that [they are] determined as much by the nature of the tool user as by the nature of a tool."¹

Taming the Tiger, while being neither exhaustive nor scholarly, is a calm, clear and heartening book, because it reminds us who is in charge here. "If we find ourselves with too few software designers and too many autobody welders, we can point the finger at Technology, or else change our approach to education and careers. If we hate to see high-voltage pylons marching across our farmland, we can either waste less electricity, or pay the added cost of burying the cables. The choice is ours."²

What it all boils down to is that technology has to be used responsibly: even with a tool as simple as the hammer, it is up to us whether we crack our neighbour's skull with it or hammer a nail into the wall to hang the *Mona Lisa* or our raincoat.

A lesson in humility may be contained in the fact that certain peoples and tribes more primitive than our own, draw a clear distinction between technological progress on the one hand and ethical progress on the other. Thus, where societies such as our own tend to describe social and material progress in identical terms of growth from lower to higher levels, African society separates the two, depicting the ethical element and the technological aspects as often capable of moving in

1. Quoted by Davis, *op. cit.*, p.73.

2. *Loc. cit.*

opposing directions. A commonly stated ethical judgement in Zulu society for example illustrates this point of view: "Banakokonke kodwa yizinja" (They have everything material, but they are as contemptible as dogs, that is to say they fall on the lowest level of being). This remark is not made flippantly but as a serious comment against the violators of the social ethic. Thus, a highly ethically advanced society need not necessarily be technologically advanced; equally a technologically advanced society does not automatically possess a high ethical level. Indeed more often than not, technological advancement tends to barbarize a society, since by its very nature it implies a high degree of competitiveness for resources.

Many of Africa's crucial and fundamental philosophies emphasize that it is not through "precision" intellect that humans differ from animals (many animals actually possess a higher degree of this intellectual quality than man), but through an all-round social and philosophic^h intellect. This intellectual quality is unique to man and through it he is able to reflect not only on his past but also on new variations of cosmic relations. Thus, the complexity of human relations, their cosmic significance, and their continuity become a much greater criterion of human intellect, or reason, and history than the faculty that is developed as a result of man's confrontation with his material environment. From this viewpoint the earliest act of civilization was not the creation of a tool but the establishment of a cooperative, interactive, human community.¹

1. Kunene, Mazisi. *The Ancestors and the Sacred Mountain*, Introduction, p.11-12.

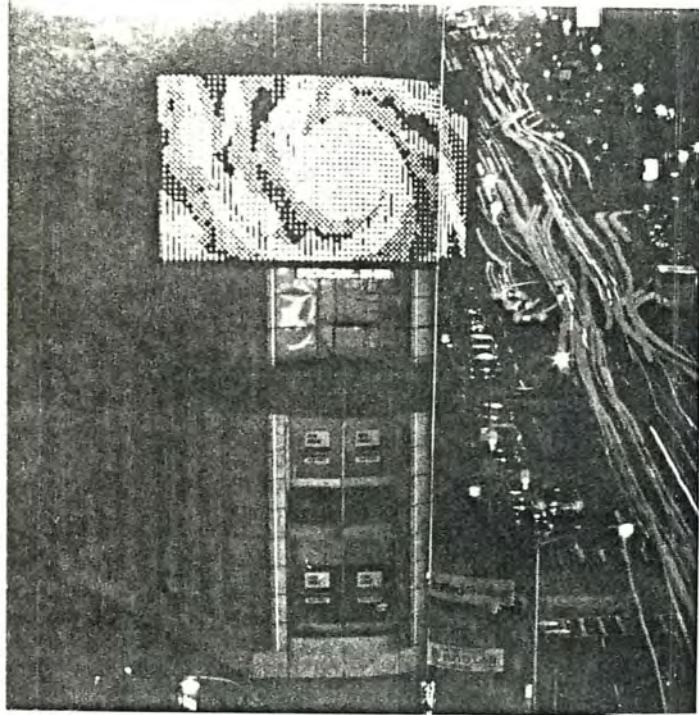
To return briefly to Photorealism, in *Roxy* (1972) by Robert Cottingham, we see a typical facet of the technological urban environment at its most impersonal shining splendour.



Robert Cottingham *Roxy* 1972

Not only has these artist_s' approach to painting got a lot to do with the machine (is in fact unimaginable without it), but very often their subject matter is technological as well. Ralph Gonigs and Robert Bechtle paint the world of Californian highways and suburbs, and John Salt that of automobile junk yards.

Photorealism is characterized by blankness and emotional numbness, perhaps in part reflecting the sensibility of America at the height of the Vietnam War, but also reflecting the artist's essential alienation in a technological society: the mechanized environment painted by mechanized man. Sherry Levine takes the camera and takes photographs of art works by, for instance, Kirchner, or simply takes photographs of photographs - is this some kind of cynical comment, perhaps?



John Torrento *Messages to the public* 1982
computer-generated image for Spectacolor sign-
board in Times Square, New York.



The artist at work: Kenneth Snelson with studies for
Portrait of an Atom 1984

Emphasis on the phenomenal achievements of science and technology in our epoch has been so pronounced that artists can possibly be excused for losing confidence in their own voice - but not for long, for if art gives up its claims to seriousness as a field of expression of human values and feelings, not only is *it* shot, but man will have to go in search of his soul minus a very valuable ally.

4. The Nineteen-seventies and -eighties

The 1970's, as also the first half of the 1980's, is at first sight a period difficult to characterize or categorize (in contrast with, for instance, the sixties). If there is one underlying trend of sensibility, it may best be described as consisting of marked uncertainty in artistic (as in other) quarters leading to a flailing about for new directions and some kind of "benchmark", and a lot of vacillation.

Thus, in many instances, artists still succumbed to the delusionary obsession of having to compete with the Machine. "THE FUTURE" was seen as lying in science and technology and the artist had to be "with it".

Kinetic Art having come to be regarded as technologically rudimentary, a number of artists turned their attention and energies to that most awe-inspiring and sophisticated machine, the computer, and proceeded to produce computer-generated images. Others experimented with holograms. Edward Lucie-Smith sees holography as recently emerging from its artistic infancy.¹ He speaks of the work of

1. Lucie-Smith, E. *Art in the Seventies*, p.116.

Harriet Casdin-Silver as verging on the Surrealist and of Rudie Berkhoudt's as a "manipulation of abstract geometrical shapes".¹

To my mind, 3-D-photography was only sustained by its novelty, and as for computer-generated images, their best and probably only place lies in science-fiction motion pictures. A survey of the art of the seventies reveals that in this vastly over-documented period works which have actually made creative use of new technological possibilities have been extremely scarce if not actually non-existent. One can understand the initial excitement over these possibilities - nonetheless the results were superficial and banal at best. The rhetoric surrounding much of this work was - once again - just that: rhetoric.

What is noticeable is just how much emphasis is placed on and what frequent reference is made to the importance of "inter-play" and "interaction" between the work of art and the viewer. Viewers are invited to press buttons or levers etc. to make things happen. The work of art then becomes a kind of pin-ball machine - as if technical "interaction" could replace the experiential interaction that occurs between the viewer and the work of art traditionally. It seems as if the art experience is getting further and further removed not only from the artist, but from the viewer as well (and how could it be otherwise? For if the artist has no encounter or experience to convey in his work, how should the viewer find it there?) - The above would appear to indicate a sub-conscious awareness on the artist's part that genuine possibilities for experiential interaction, or in other words,

1. Lucie-Smith, *op. cit.*, p.116.

communication, are lacking in the work; but interaction there must be, so: put a lever somewhere that can be physically pushed or pulled and, hey presto! We have "interaction"!

Emshwiller, an abstract artist turned filmmaker, maintains that "Leonardo da Vinci would have been fascinated by the computer"¹ as "he always wanted the esthetic and scientific worlds to co-exist".² Emshwiller calls his own computer-produced images "21-st century prints" and sells them for "under \$1,000".³ Mechanization and commercialization still go hand in hand in a relationship that seems to become ever more inseparable (not, let it be stressed, through some inherent inevitability, but by virtue of the value system of the society that spawns them) and together they are overriding practically completely any artistic concerns.

As to Da Vinci's alleged complicity in the above-mentioned phenomenon: unfortunately, Da Vinci cannot be reached for comment at this stage, but it is the author's considered speculation that, however excited Da Vinci would have been about the computer's potential, his vision of the coexistence of the scientific and artistic worlds would have differed markedly from that of Mr Emshwiller.

1. Gardner, P. "The Electronic Palette", *Art News*, February 1985, Vol. 85, No. 2, p.71.

2. *Loc. cit.*

3. *Loc. cit.*

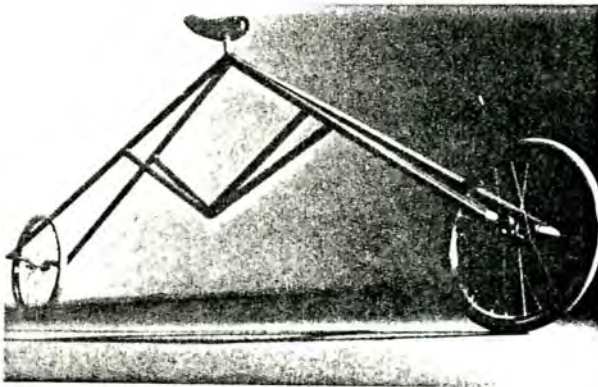
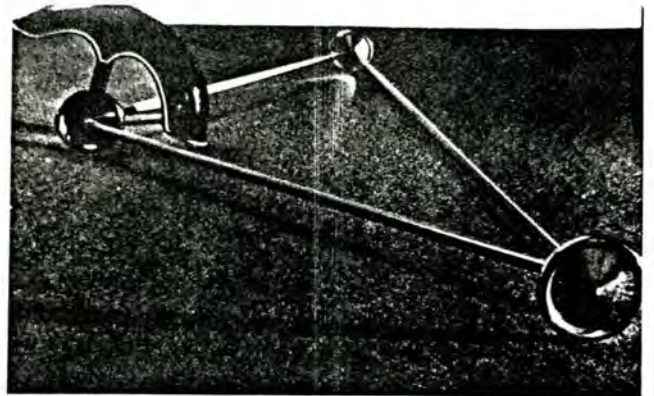


Kenneth Snelson

image from *Portrait of an Atom* 1984Keith Haring *Tokyo* 1983

computer-generated image

Another facet of the seventies-syndrome was widespread disillusionment with the Machine. One reaction amid the general queasiness took the form of producing absurd machines such as Gianni Piacentino's *Rhombus Shaped Bicycle* or his *Street Triangle*.

Gianni Piacentino *Rhombus Shaped Bicycle*Piacentino *Street Triangle*

There was - and is - also a lot of nostalgia for the recent past. In addition there came, almost predictably, a powerful upsurge of expressionistic styles: an act of self-affirmation, often

fierce, always emphatic, proving that the sentient human being - however besieged - is still here.



Antonio Saura *Gina*

After the molecular disturbances of the seventies it looks, in the first half of the present decade, as if some degree of sedimentation or crystallization is taking place. There is still no one unitary trend discernible, but that, in any case, would not be desirable, as any culture needs diversity and a healthy amount of disagreement (for cross-fertilization of ideas) if it is not to atrophy.



THE WAVE OF THE FUTURE, designed by Judy Kirpich and Bradley Pomeroy.

Thus, on the one hand, there are manifestations such as the above poster, called *THE WAVE OF THE FUTURE* and described as "An artist's interpretation of classic images *without* the use of a computer. (The grids are done by hand.)"¹ This poster has won a place in four exhibitions, has received two awards, and is available at twenty-five dollars apiece.

From other quarters one hears reports such as the following: in France, "A youthful mood permeates the galleries, where brash junkyard esthetics and retro nostalgia are much in evidence."²

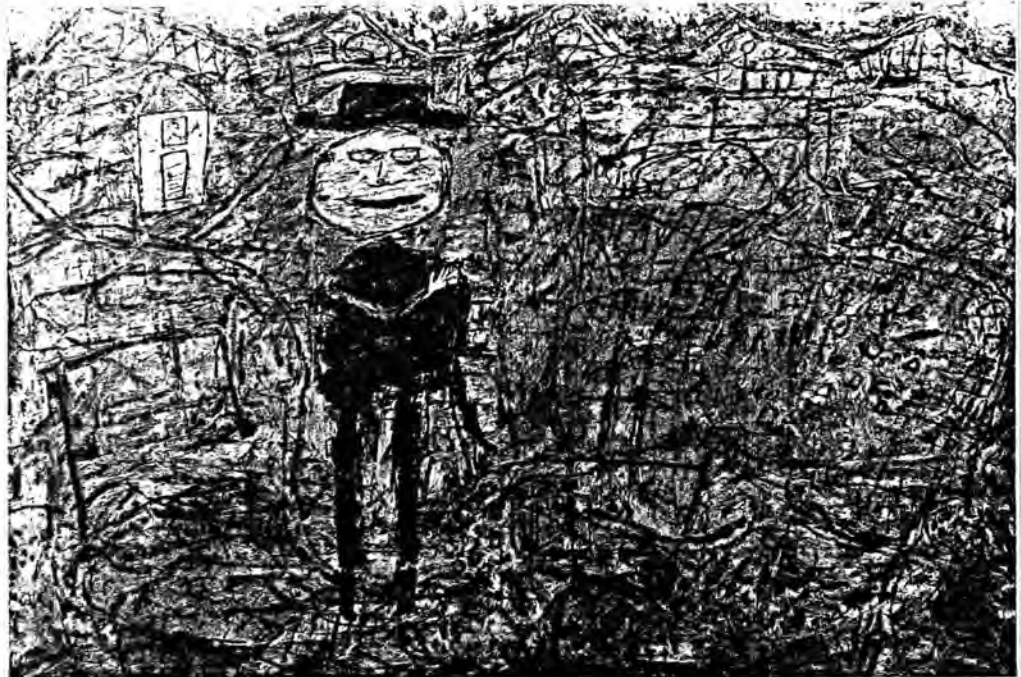
Paging through recent art magazines with their many advertisements and promotional articles about artists and art works, one cannot help asking oneself whether the eighties are not a time

1. Advertized in *Art News*, January 1985, p.129.

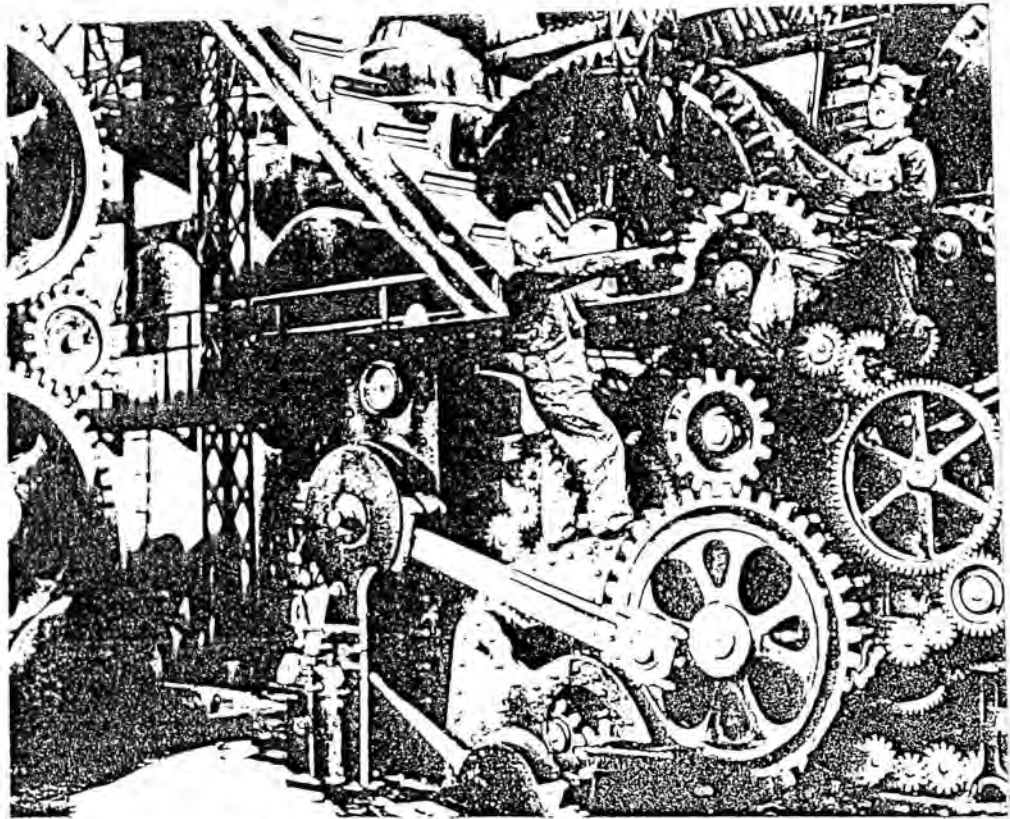
2. Michael Gibson in *Art News*, February 1985, p.63.

dominated by the industrial aesthetic. At the same time one takes heart on seeing that in the last decade or so, there has been a return to emphasis on content. This is evidenced, for example, by an exhibition called *Content: A Contemporary Focus 1974-1984*, held at the Hirshhorn Museum in Washington, D.C.

Even more courage-inspiring is a good long look at the work of some artists who have singlemindedly remained outside any fashionable mainstream groups and trends to pursue their individual vision as dictated from within.



Dubuffet *The Strayed Traveller* 1950



Charles Chaplin ▶ Still from "Modern Times." 1936

CHAPTER THREEINDIVIDUAL ARTISTS LARGELY OUTSIDE
THE MAINSTREAM1. Giacometti, Dubuffet, Francis Bacon

Fortunately for us, there have been and still are some painters who haven't sold out to science or bureaucratic misconceptions of it and in whose work man still has a place, albeit one that is generally fraught with anxiety and that often shows his world as a very threatened one.

Thus Giacometti, after World War Two, produced images of man that were evocative in their haunting sense of the loneliness of modern man, though Giacometti denied any conscious intention of commenting on the condition of man.

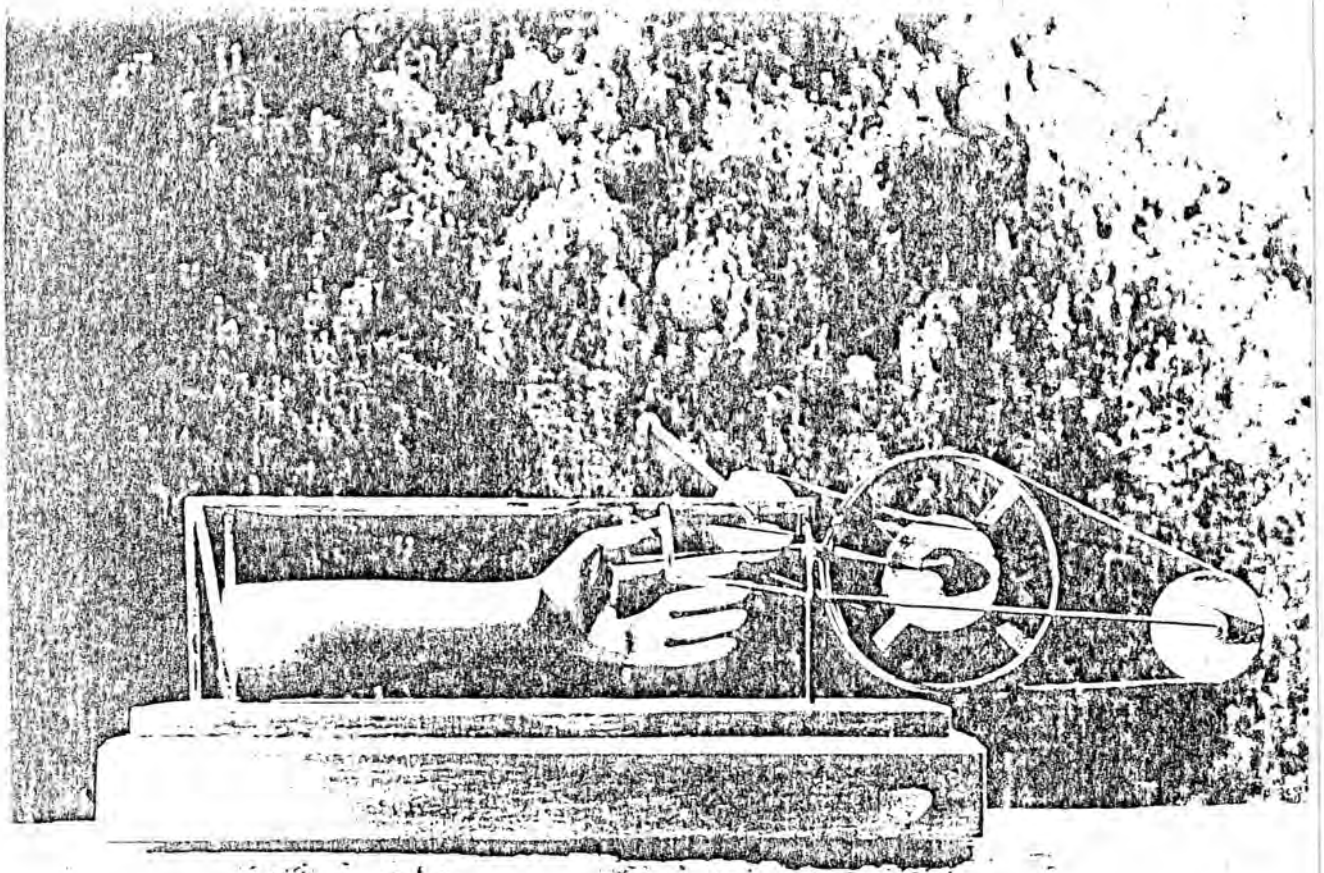
The *Head of a Man on a Rod* (1974), of which he did several versions, is really two profiles pressed together, scarred and pitted in effects that are both a horrible laceration of the flesh and the translation of the face into a rugged, rocky landscape.

In his paintings and in his sculptures, his standing or walking figures with their "gaunt frames, knobby ravaged skin, and wiry solitude in the immensities of space generated about them by their own etiolation, seemed to be the visual





Alberto Giacometti *Portrait of David Sylvester* 1960



Alberto Giacometti. Swiss, 1901—1966
© *The Captured Hand (Main prise)*. 1932

metaphor of Existentialist Man."

In *The Artist's Mother* (1950), the figure is almost completely assimilated into the network of linear details of the bourgeois living room. Although these details are nowhere spelt out, they still obtrude in an atmosphere that becomes oppressive, while the old woman sits in their midst. In a later portrait, of the critic *David Sylvester* (1960), the elimination of environmental detail is carried to the point where the figure remains alone in a void, surrounded by the aura of a destroyed world.

It is in the threedimensional *The Captured Hand*, executed in 1932 already, that Giacometti produced his clearest statement about man's predicament in a technological world. It is also one of his most pessimistic works. "The image of the hand about to be caught in the machine, and the idea of one's own hand turning the crank, seem to sum up the tragic predicament of our modern world"², says Pontus Hultén, to continue that "a crank is made to be turned, and before we are aware of it, without thinking of the consequences, we respond to the invitation. The evolution of technology [in this view] cannot stop, though its dangers become increasingly obvious. We feel trapped in an inevitable process of escalation, which accelerates at a more and more rapid pace."³. The anxiety and sense of crisis that Giacometti has here rendered in terms of sculpture is the same as that manifested by

1. Hughes, *op. cit.*, p.265.

2. Hultén, *The Machine ...*, p.159.

3. *Loc. cit.*



Jean Dubuffet *Illustration of a Faucet* 1965



Dubuffet *View of Paris: The Life of Pleasure* 1944

Chaplin in *Modern Times*, or by Friedrich Georg Juenger in his strongly polemic book, *The Failure of Technology*.¹ Few works of art so directly enlist the spectator's participation as does *The Captured Hand*, which in a fraction of a second converts his natural response to the crank into a shudder down his spine.

Another artist - and one of the most significant ones - to emerge after World War Two and take a strong stand vis-a-vis the condition of modern man, was the Frenchman Dubuffet. No more enchanted with the contemporary scene than Giacometti, he embodies his reaction to the encountered dehumanization of Western man that has occurred via technology and the peculiarities of the accompanying civilization in images that draw on the man-made and urban as much as on phenomena of nature. Where he depicts man-made (often banal) objects, these are usually anthropomorphized, as for example in his *Illustration of a Faucet* (1965) where the shape of the tap is "organicised" and performs a rhythmic, almost-human dance.

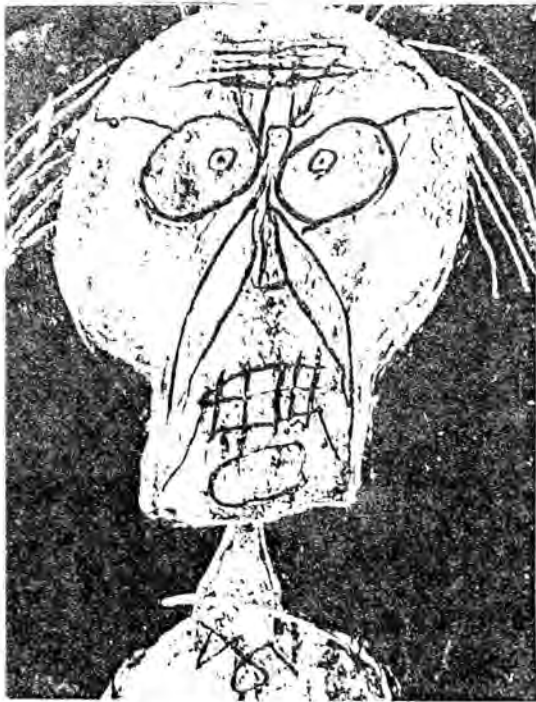
In his *View of Paris, the Life of Pleasure* (1944) he depicts an urban street with puppets of people conducting their "life of pleasure" in a joyless, mechanized way in front of a staffage which suggests the uniformity and anonymity of city blocks.

In the face of what a supposedly sane and sophisticated society has achieved, Dubuffet denounces the categorization and classification that characterize Western thought (and which are constructs of the logical, rational mind) in favour of a continuous,

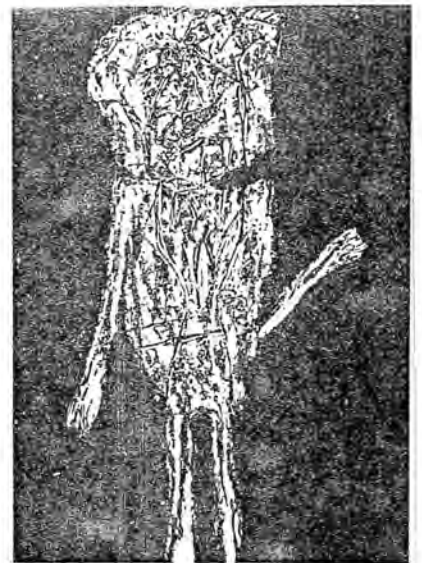
1. *Die Perfektion der Technik*, Frankfurt a.M., 1946; English translation with an introduction by Frederick D. Wilhelmsen (Gateway Editions, Inc.), Chicago, Henry Regnery Company, 1956.



Dubuffet *The Hunter* 1949

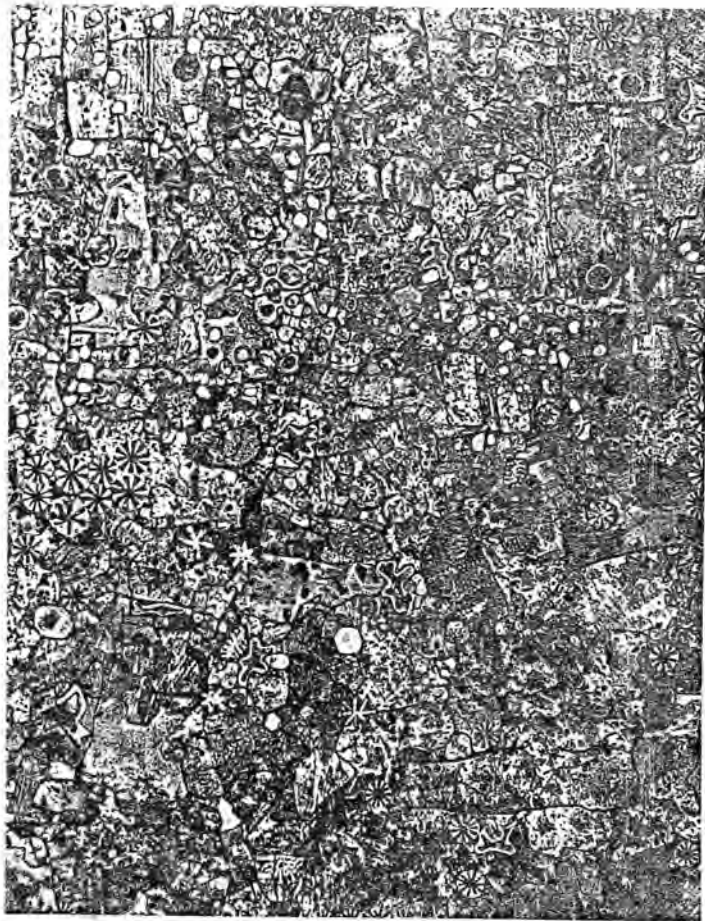


DUBUFFET. *Dhotel shaded with apricot*, 1947.



Dubuffet *Bertelé Wildcat* 1946

undifferentiated universe. He seeks his inspiration in the art of the insane, the primitive, and the naïve - whose works have to him an authenticity and original passion that he finds entirely lacking in the work of professional artists, and which, one may add, is in dialectical contrast to the logic of machines and the sensibility derived from them. In a world that shows the often horrendous results of man led astray by an exaggerated belief in his own rationality and where he is often more an efficient robot than a feeling, experiencing human being, Dubuffet seeks to imbue his works with the vibrancy of divine madness as understood by the ancient Greeks, who emphasized the need to balance the Apollonian principle with the Dionysian.



Dubuffet *Run Grass, Jump Pebbles* 1955

Again and again, Dubuffet's works stress man's primal unity with the universe,

which has been annihilated by the artificial conventions and repressions of civilization. Art, to him, has always been the place where ultimate issues hang in the balance, and he remains a harsh opponent of cultural pretension and a fervent partisan of original, indigenous expression. He is

keenly aware of modern

man's psychic isolation and portrays him as an abstract cipher with a diffuse presence of humours and psychic states and no clearly defined identity.

Into an unbalanced situation where rationalism, formalism, and structuralism predominate, Dubuffet brings a vibrant Dionysian life-spirit-anxious, and seemingly irrational at times, but always emphatically ALIVE.



Dubuffet *Ca Lamuchon* 1973-4



Francis Bacon *Study After Velázquez's Portrait of Pope Innocent X* 1953

Also very much alive but suffering, twisted and tortured, is the art of Francis Bacon. More than any other, Bacon's work conveys the anxiety and oppression of our times obsessed by the menace of total extinction through the weapons we ourselves created. By means of their peculiar manipulation of space and livid ghostly colours, his pictures evoke that panicky paralysis of fright that our age has good reason to know. Space in Bacon's pictures is like a locked cage sprung on figures that, aghast and desperate, seek to flee the trap. By limiting his technique



BACON. *Two Figures in a Room*, 1958



FRANCIS BACON. *Study for a Portrait*, 1958.

to broad areas of flowing colour, he enhances the terrible force of themes that in themselves harrow the viewer. His figures appear almost more like mutations than humans, and the red with which he floods many of his paintings, is the blood of decay rather than life.



Tamayo *Man Looking at the Firmament* 1957

He was influenced by the photography of Muybridge and his studies of motion. Thus he often used stills as part of his source material, as he did for instance for the painting *On the Steps of the Odessa* for which he referred to photos of the screaming nurse, culled from the film *The Battleship Potemkin*.



Francis Bacon

2. The Artist and his Time: a) Tamayo

The painter who has been perhaps the most consciously and explicitly concerned with man's predicament in a technological world and who has been especially articulate about it, is Rufino Tamayo.

Amongst his chief preoccupations are science and technology, with all the aesthetic speculations, the challenge, and the

terrors they have provoked. He grants validity to art made of machine parts, or utilizing mechanized movement, or fabricated from machine-made materials. But his own concern is overwhelmingly with man: "We are in a dangerous situation, and the danger is that man may be absorbed and destroyed by what he has created."¹

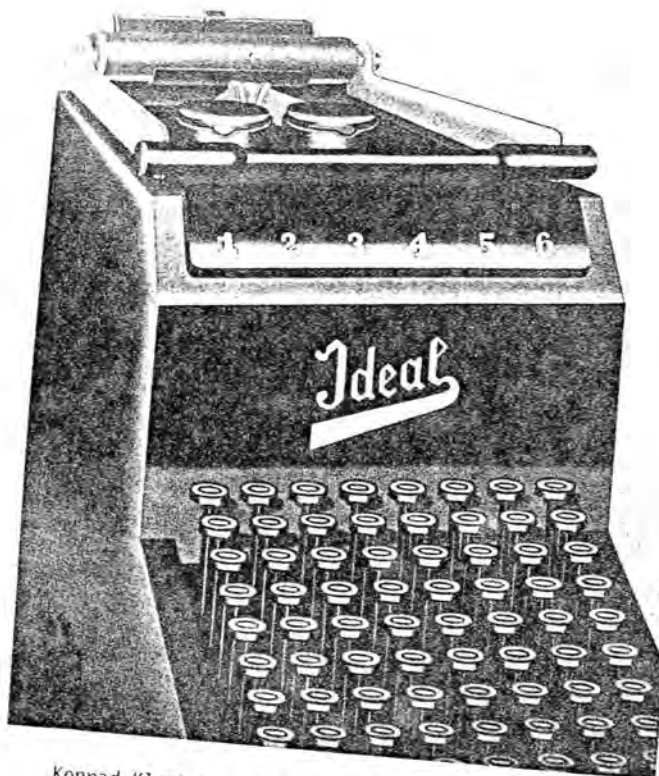
This echoes the misgivings and warnings of people like the sociologist and psychologist Erich Fromm, who has pointed out that "our dangers are war and robotism".² The ethologist Konrad Lorenz also voiced some serious warnings about the predicament of modern man - as have a number of other scholars and observers of contemporary life. But of these I shall treat in a later chapter.

As the main body of Tamayo's mature work falls into the time after 1945, and as it is then that he becomes noticeably concerned with the problems of man in a technological world, he can legitimately be regarded as one of the main spokesmen for our age and our situation. Not uncharitably, but with great concern and perception, he exposes the raw nerve of our dis-ease.

In the early 1940's, there is still a certain stillness in Tamayo's works and especially his figures, which differentiates them strongly from Picasso's pictures of the same period. But by about 1946 his figures have lost their look of rootedness and their air of being immobilized in a rôle assigned them for

1. Genauer, Emily. *Rufino Tamayo*, p.21.

2. Fromm, Erich. *The Sane Society*, p.360.



Konrad Klapheck *The Ideal Husband* 1964

eternity, "to break out, trembling and quaking, eventually hurling themselves through a terrifyingly hostile milieu,"¹ without any obvious direction or purpose.

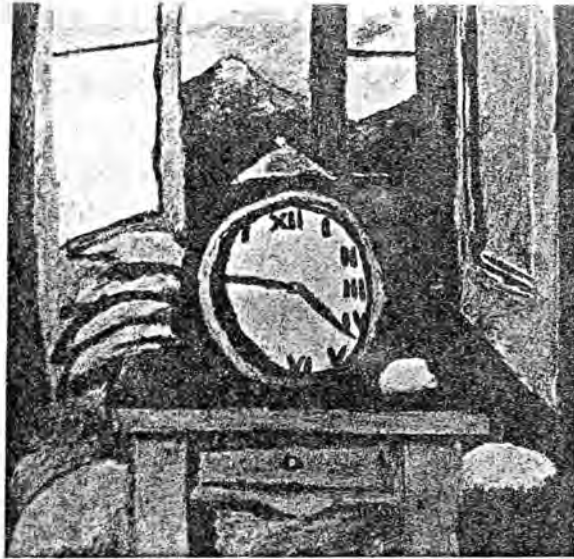
"I am painting", he says, "the vibrations being produced by electronics in man and his environment right now. I am thinking specifically about - but painting in metaphors - how man has permitted technological advances to pollute his natural resources; how they have required and made possible the construction of buildings of such scale that they block out our light and air and fence in our streets, and how they produce lethal weaponry. I'm haunted by the fear that technology will reduce men and women to robots and calculating machines, if it even lets them live at all."²

Tamayo sees technology in big, mythic terms, as an implacable, devastating force looming over men much the way the gods loomed over ancient Mexico, where they were the source of light, energy, rain, fire - all the gifts men required to live, but which also regularly demanded cruel blood sacrifices. This does not mean that Tamayo sees technology as an impersonal force divorced from human volition. To him it is the root of present-day man's great dilemma, at the root of his frailty and fear, but at the same time the instrument by which he can rise above himself and his present needs.

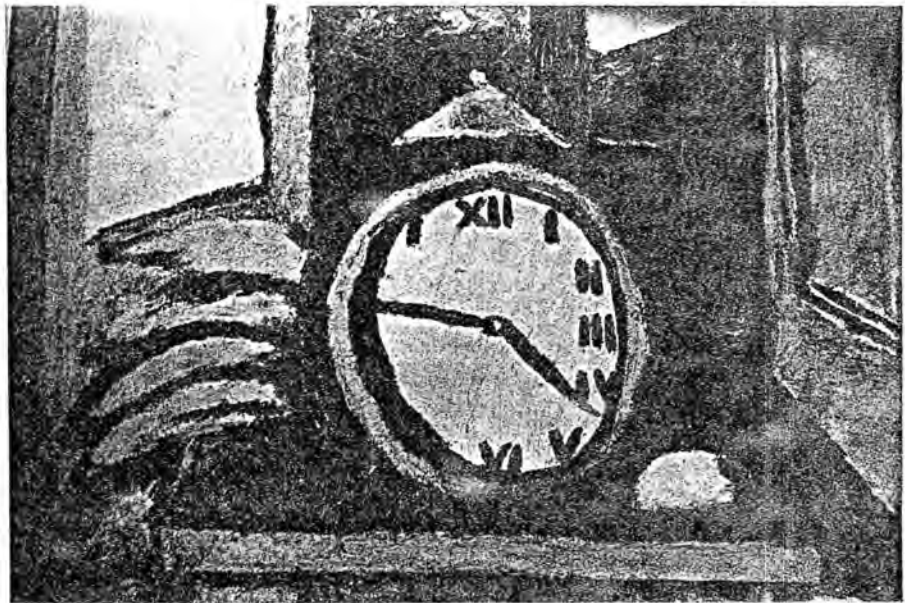
In many of his most striking pictures since the mid-forties,

1. Genauer, *op. cit.*, p.61.

2. *Ibid.*, p.21.



Rufino Tamayo *The Alarm Clock* (n.d.)



Tamayo has depicted that dilemma and consequent anguish. He has seldom depicted the machine itself - except as, in his own words, "lifeless apparatus to which terrible things are done"¹ - but he has been extraordinarily successful in hinting at it in his paintings, which depict man in a world haunted by his own creations and often exude an ominous ambience, amounting to powerful statements about this "brave, new world" of ours.

Thus, *The Alarm Clock* presents a view out of a claustrophobic interior, where an alarm clock stands on a table in front of the open window, onto a landscape that is formidable and silent. One can almost hear the clock at the centre ticking away ominously, measuring time ...

Then there is *Man Looking at Aeroplanes* and *The Indifferent Stewart* ("menaced by monsters, fancy lights, risking enchantment"^{2?})



Tamayo *The Indifferent Stewart* (n.d.)

1. Genauer, *op. cit.*, p.22.

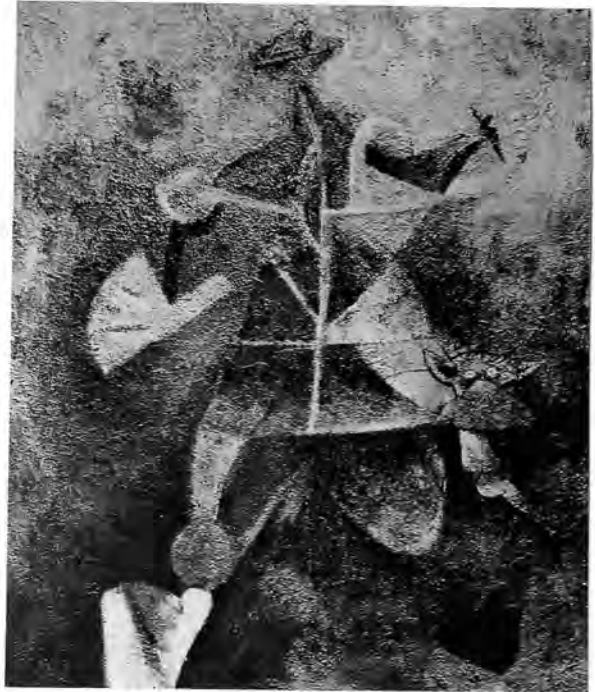
2. From Eliot, T.S. "East Coker", *Collected Poems 1909-1962*, p.199.



Tamayo *Cataclysm* 1946

Or what of *Hombre Perseguido* - a man persecuted by what? The spiritual void of the high machine-age? The effects of radiation? Loneliness, existential anxiety, and other spectres of Existential Man?

As Genauer puts it, Tamayo "paints a corrupted way of life in which the unseen machine is felt as a metaphoric instrument of our own greed and stupidity, the equivalent of primeval forces which have led in other periods to cataclysmic devastation."¹



Tamayo *Hombre Perseguido* (n.d.)

In *Man looking at the Firmament* (1957), one sees frightened, lonely man confronted by forces bigger and more powerful than himself and which he does not always comprehend.



1. Genauer, *op. cit.*, p.24.

A passage from Aeschylus's "Prometheus Bound" rings as if written for one such of Tamayo's paintings:

"Savage winds convulse the sky
Hurricanes shake the earth from its foundations
The waves of the sea rise up and drown the stars ..."¹

But whereas in pre-technological society man's existence was mainly threatened by forces of nature outside himself, these have now largely been harnessed. The forces that threaten him now, are of his own making and/or lie within himself. "To his detriment", says Konrad Lorenz, "man has learnt to govern all the forces of his extraspecific environment, but he knows so little about himself that he is helplessly at the mercy of intraspecific selection."² The next task for man is to learn to understand and harness his own nature as well as take charge of his technology in a responsible way. Never has the Delphic oracle's injunction "Know thyself" been more urgent.

Tamayo's figures of the last forty years are ever haunted and move in a milieu in which they no longer feel at home. They are "seemingly skinned alive by a world they made themselves."³ Vulnerable and trembling, they stand in a space charged with hostility. When they laugh, it is more a hysterical bellow that does not seem to stand a chance against the endless night in which it occurs. In this perpetual darkness, the skies are "alive with menacing labyrinths of nebulae about to explode."⁴

1. As quoted in Genauer, *op. cit.*, p.25.

2. Lorenz, K. *Civilized Man's Eight Deadly Sins*, p.18.

3. Genauer, *op. cit.*, p.25.

4. *Loc. cit.*



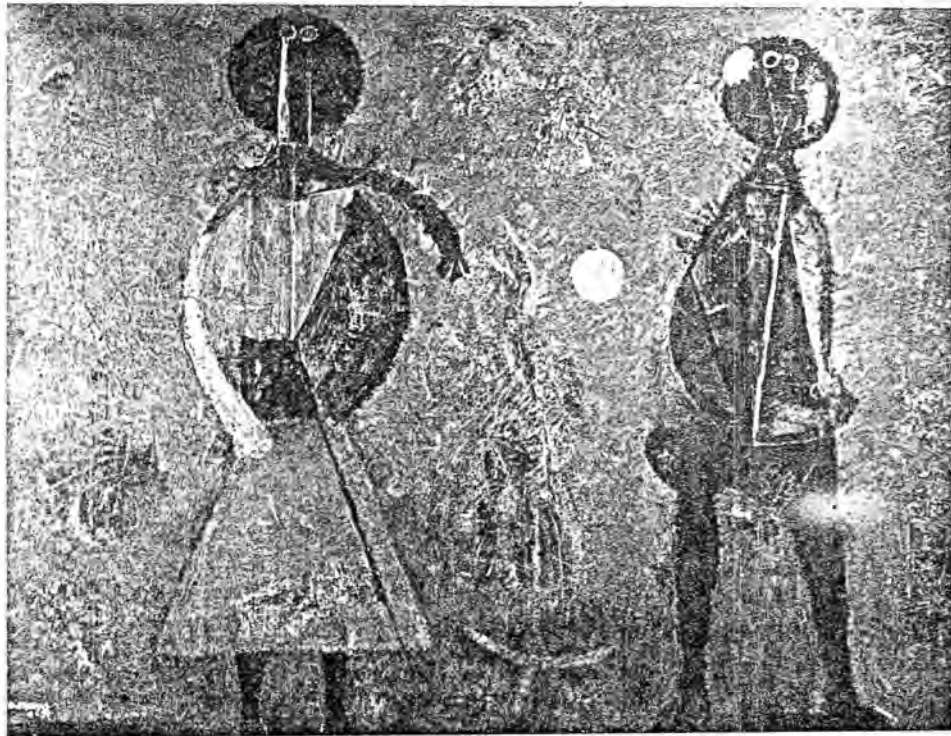
Tamayo *Man* 1953



Tamayo *Woman Laughing* 1950

Sometimes they scream out like wounded, howling dogs. At other times they reach desperately to the stars or bellow in diabolic exultation; and the night around them only reverberates and echoes. It does not answer.

Where two figures are depicted in the same space, as in *Couple in the Shadows* (n.d.), their loneliness and inability to relate



Tamayo *Couple in the Shadows* (n.d.)

even to each other is accentuated. Man, unable to relate to himself or his world (which no longer makes sense to him) is not helped by another's presence, because he can't relate to the other either. A couple in a universe estranged ...

His figures are tortured beings, distorted, disturbed, and fragmented, vibrating.



Tamayo *Tortured Being* 1949

What a contrast to his figures of the 1930's who still look solid and rooted to the earth.



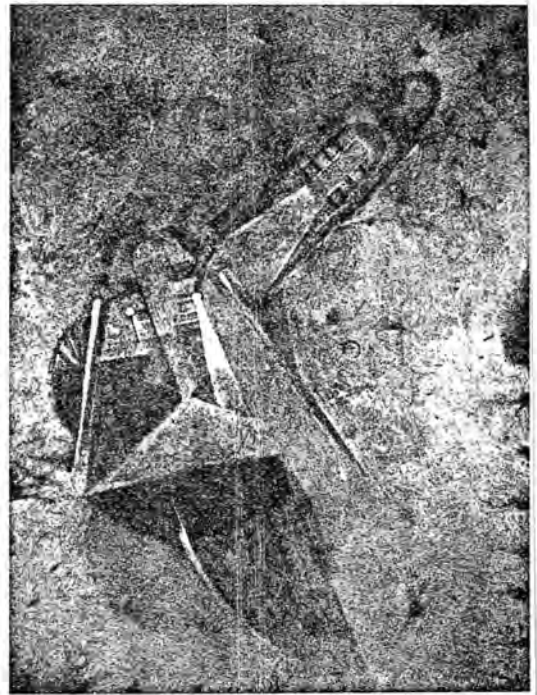
Tamayo *Woman of Oaxaca* 1938



Tamayo *Woman in Grey* 1931



Tamayo *Men in Space* 1971



Tamayo *Two Women in Space* 1970

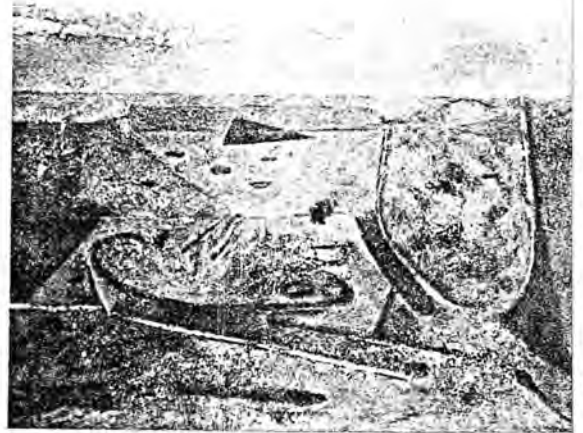


Tamayo *Supersonic Plane* 1956

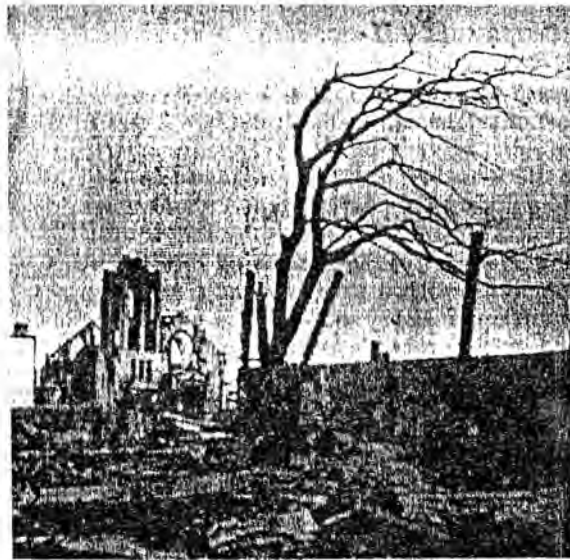
Tamayo's paintings of eroded and arid landscapes come across as metaphors of modern man's psychic landscape as much as they could be visions of what remains should we wipe ourselves off the surface of the earth with the next bomb.



Tamayo *Eroded Landscape* 1972

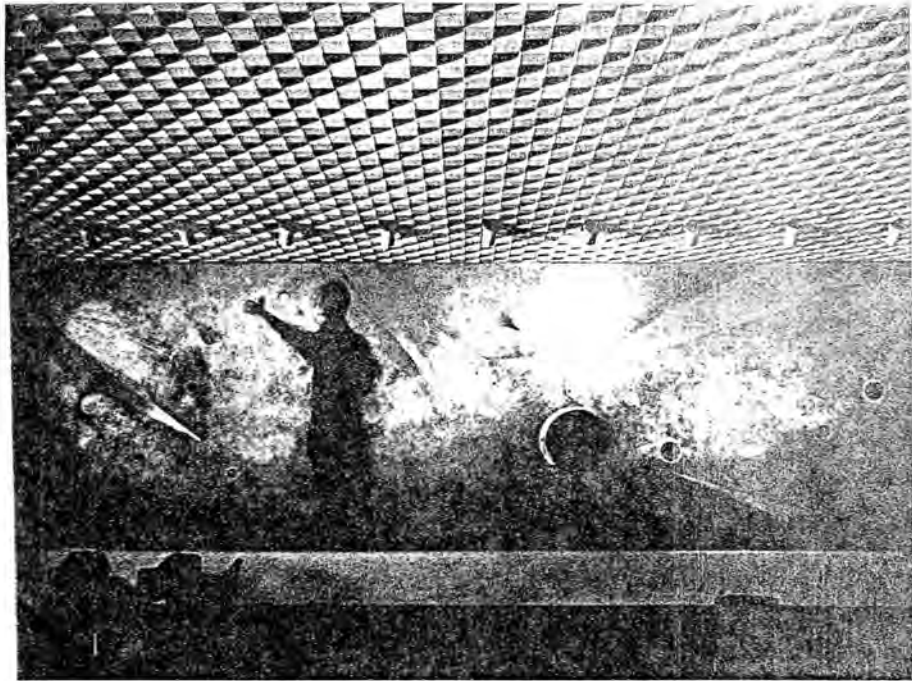


Tamayo *Arid Landscape* 1973



Japan's eighth largest city was reduced in a moment to a desert of ash in which the living could not even count the dead

In the mural, *Man Confronting Infinity* (1971), the artist once



Tamayo *Man Confronting Infinity* 1971

again uses mainly dark, sombre colours, and both man, the moon (or is it a black sun?), and the landscape are silhouetted in black. Yet, in spite of the sombreness, there is a glimpse of magic and mystery, of light behind darkness, of infinity and glimmers of light and hope:

"There is a secret rhythm in the stars' insane gyrations, a distant order that lets us glimpse the safety of the eternal return to the point of departure."¹

In his paintings, in spite of or concomitant with, the much-evident sense of tragedy and desolation that pervades his depopulated landscapes or the space in which his figures move, there is also the implication that all need not be lost: the universe, the cosmos and the cosmic are still there, and so is man. But he has to make himself at home in it again.

1. Quoted in Genauer, *op. cit.*, p.25, from Aeschylus, "Prometheus Unbound" in *Greek Plays in Modern Translation*, edited by Dudley Fitts, translated by Edith Hamilton, Dial, New York, 1947, p.538-39.

He has to realize that the technology which has guided man to the moon could also be pushing him "over the edge of our value system into a situation where reason, sensibility, and feeling are all sacrificed, and man becomes a kind of apparatus directed by electronics."¹

At the same time, Tamayo makes clear his conviction that dehumanization is not the inevitable consequence of such an eventuality. Far from it being a doom decreed by angry gods, man has created it and man can control it. He does not have to become enslaved by his own creation. "The vibrations being produced by electronics are not reducing man to a machine, which has its own brute power, but to a helpless, quivering instrument powerless to move, to think, to feel."² And as those vibrations pervade every aspect of our environment, it is this image of modern man assaulted which Tamayo sees as the tragedy of our time and which he feels driven to paint again and again. But he emphasizes that "Science and technology need not be dehumanizing at all. The fact is that man is creating all this."³ And along with Tamayo, I'm "praying that a new kind of humanism may emerge, in which man, harnessing the technology he has invented, lives more fully as a man."⁴

1. Genauer, *op. cit.*, p.21.

2. *Loc. cit.*

3. *Ibid.*, p.22.

4. *Loc. cit.*



Picasso *Seated Bather* 1930

The Artist and his Time: b) Picasso

What genuine painters do is to reveal the underlying psychological and spiritual climate of their time and their world; "thus, in the works of a great painter we have a reflection of the emotional and spiritual condition of human beings in that period of history."¹ As Rollo May further points out, "If you wish to understand the psychological and spiritual temper of any historical period, you can do no better than to look long and searchingly at its art. For in art the underlying spiritual meaning of the period is expressed directly in symbols."²

By this is not meant that the artist is didactic or sets out to teach or to make propaganda - if he does, his powers of expression are strangled and broken, and the direct relation to the inarticulate or "unconscious" levels of the culture is destroyed. Artists have the power to reveal the underlying meaning of any period precisely because the essence of art is the powerful and alive encounter between the artist and his or her world.

Nowhere, according to Rollo May,³ was this encounter demonstrated more vividly than in the famous seventy-fifth anniversary exhibition of Picasso's works, shown in New York in 1957.

May takes us on a conducted tour through this exhibition, pointing out how the work of each decade reflects the spiritual temper of the times.

1. May, R. *The Courage ...*, p.52.

2. *Loc. cit.*

3. *Loc. cit.*

Thus, in the early 1920's, for instance, Picasso paints classical Greek figures, often bathers by the sea. About these paintings there hovers an aura of escapism reflecting the escapist mood of the decade following the First World War.

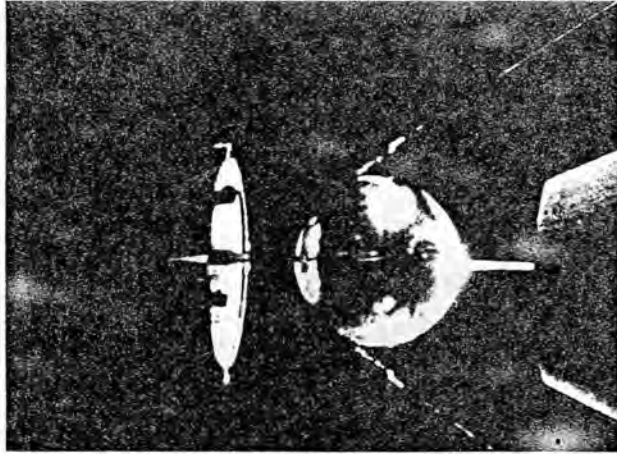
"Toward the end of the twenties and in the early thirties", May observes, "these bathers by the sea become pieces of metal, mechanical, gray-blue curving steel. Beautiful indeed, but impersonal, unhuman."¹ He describes how at this point in the exhibition one was gripped with an ominous foreboding - the prediction of the beginning of the time when people were to become impersonal, objectivized, numbers. "It was the ominous prediction of the beginnings of 'man, the robot'."²

Art thus does not only reflect the spiritual climate of the times, it is often also prophetic in its vision of things to come. It is not only in Picasso's work that this can be seen to apply. In Tamayo's work, for example, such instances occur, too. On restudying many paintings by Tamayo whose shapes did not clearly identify themselves when they were first done, it is impossible to avoid recognizing and reading them years later as "uncannily clairvoyant projections of events that were not actually to happen for a long time."³ One example is his painting, *The Astronomer*, done in 1956.

1. May, *The Courage* . . . , p.53.

2. *Loc. cit.*

3. Genauer, *op. cit.*, p.26.



Sputnik I, the first Russian earth satellite, launched on 4 October 1957, and (below) French newspaper reports on the dog sent into orbit in Sputnik II and the trajectories of the two satellites.

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« GRAND SPOUTNIK »
POURSUIT SA COURSE
État de santé de la chienne satisfaisant
Le docteur Fred Singer, père du projet
-Far Side, rassure l'opinion américaine

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CHAIN VOYAGEUR SPATIAL: L'HOMME

APRÈS LES RÉFLEXES

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DE SPOUTNIK

The above article
describes the
situation of the
dog in orbit.
The dog is
in good health.

The dog is
in good health.
The dog is
in good health.



Tamayo *The Astronomer* 1954

It is a rather dark, brooding, mysterious canvas, mostly in rusty browns, with archlike streaks of grey and brief touches of blood red. Apart from a shape on the left resembling Piccard's stratospheric balloon, its surface is inhabited largely by a whirling, sharply faceted geometric form, "somewhat suggesting the head of a man but also carrying a clearly animal-like image spiralling through space."¹ Three years *after* it was painted the Russians launched their Sputnik satellite carrying a dog whose physical reactions to weightlessness could be recorded by Soviet scientists. Viewers coming upon this painting in exhibitions are invariably astonished at what they first regard as an atypically "realistic" (for Tamayo) painting of Sputnik carrying the dog Laika, of man himself in lunar orbit,

1. Genauer, *op. cit.*, p.26

and of two spacecraft in docking action. Other paintings of Tamayo's, too, bear witness to his sometimes prophetic vision of man in space, "maddened and shattered by [the] vibrations"¹ of sonic aircraft or otherwise trembling in space.

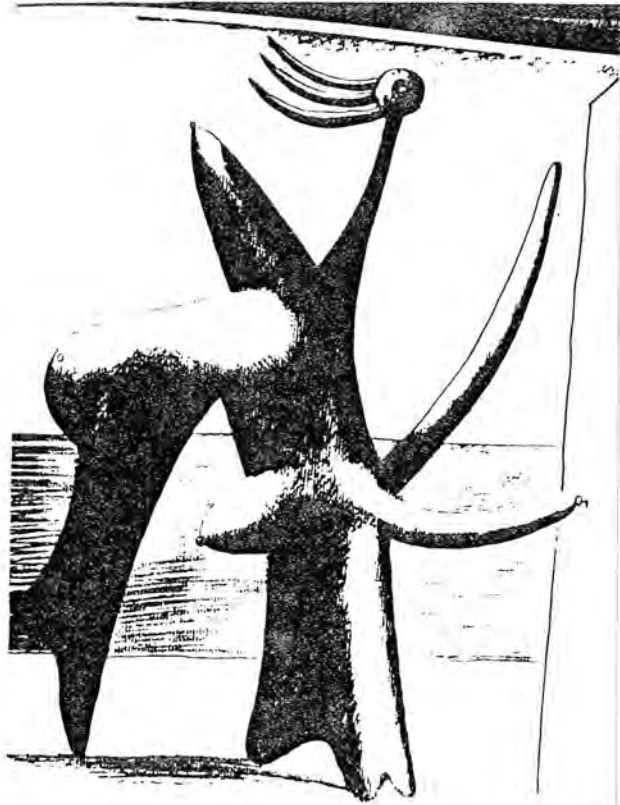
Also partially prophetic, at least in its wider implications, is Picasso's great painting of 1937 - *Guernica*. Here, figures



Picasso *Guernica* 1937

are torn apart, split from each other, all painted in stark white, grey, and black - the tones of a newspaper, the source from which Picasso learned of the event. Also, in denying himself colour, Picasso not only makes his statement starkly clear, but redoubles the impact. The wide spaces of the canvas became a stage on which his cast of men, women and beasts lived out the nightmare of the tragedy of unseen horror visited on helpless people. From the ceiling an electric light bulb, disguised as the sun, casts on the scene a mechanical glare.

1. Genauer, *op. cit.*, p.54.



Picasso *Bather* (n.d.)

This painting was Picasso's pained outrage against the inhumanity of the bombing of the helpless Spanish town of Guernica by fascist planes during the Spanish Revolution (when on a Gestapo visit to Picasso's studio in Paris, some years later, a Nazi officer noticed a reproduction of *Guernica* lying on a table and asked, "Did you do this?", the artist answered, "No, you did") - but it is much more than that. It is the most vivid portrayal imaginable of the atomistic, split-up, fragmentized state of contemporary human beings, and implies the conformism, emptiness, and despair that were to go along with this.

In the late thirties and the forties, Picasso's portraits become more and more machinelike - people turned literally into metal. Faces and figures become increasingly distorted. It is as though persons no longer exist as individuals, and their places are taken by hideous witches or distorted and grotesque mannikins. Pictures are no longer *named*, but *numbered*.

The bright colours in which the artist delighted in his earlier periods, are now largely gone. "In those rooms at the exhibit one feels as though darkness has settled upon the earth at noon"¹ says Rollo May and adds that, "As in the novels of Kafka, one gets a stark and gripping feeling of the modern individual's loss of humanity."² May tells how the first time he saw this exhibit, he was so overcome with the foreboding picture of "human beings losing their faces, their individuality, their

1. May, *The Courage ...*, p.53.

2. *Loc. cit.*

humanity, and the prediction of the robot to come"¹, that he could look no longer and had to hurry out of the room and onto the street again.

Certainly Picasso all the way through did paintings in a lighter vein as well: in order to preserve his sanity he'd "play" with paintings and sculptures of animals and his own children. But the mainstream of his work is a portrayal of our modern condition, which has been psychologically portrayed and documented by Riesman, Mumford, Fromm, Tillich, and others. The whole is an unforgettable portrait of modern man and woman in the process of losing their person and their humanity.



Picasso *The Charnel House* 1945

Picasso's reaction to inhumanity and the callousness of war was personal, not political-practical. "He did not blame systems or institutions, simply the dreadful flaws in the minds of men."²

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1. May, *The Courage* ..., p.54.
 2. Thomas, D. *Picasso and his art*, p.80.



Picasso *Still-life with Bull's Skull* 1942



Picasso *Cat Devouring a Bird* 1939

Thus, in a painting he called *The Charnel House* (1945) he utters a cry of despair on behalf of the victims. It is without colour, like *Guernica*; but unlike *Guernica*, it is also without symbolism. It merely makes the unequivocal statement: here is what men have done to other men - reduced them to offal.

When Picasso's political friends urged him to make a similar statement which would expose the West as aggressors in Korea, Picasso painted a scene in which a group of naked women and children stand vis-a-vis the weapons of a helmeted execution squad. But he gives no indication which side the soldiers represent; the painting could stand for any such atrocity of our time - as so often with great paintings, a universal truth is expressed through a specific image which becomes symbolic.

In *Cat devouring a bird* (1939) and *Still-life with Bull's Skull* (1942) Picasso has expressed metaphorically the cruelty and grimness of the accelerating crisis in Europe.

In one sense genuine artists are so bound up with their epoch that they cannot communicate separated from it.

And in this sense, too, the historical situation conditions the creativity. For, as Rollo May rightly asserts, "the consciousness which obtains in creativity is not the superficial level of objectified intellectualization, but it is an encounter with



Nude Dressing her Hair

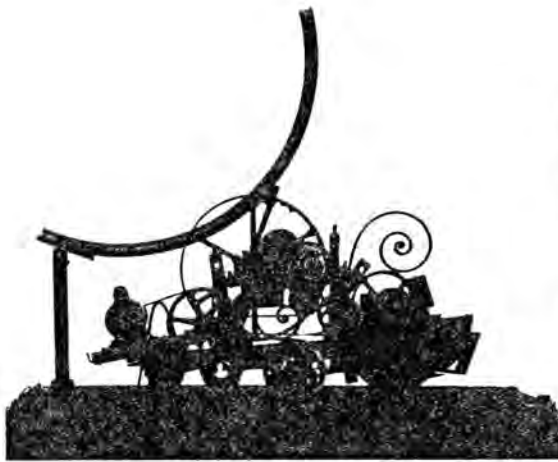
Picasso

1940

the world that undercuts the subject-object split. 'Creativity ... is the encounter of the intensively conscious human being with his or her world',¹

This intensive consciousness is embodied in the work of both Tamayo and Picasso to an extraordinary degree.

3. Two Sculptors



Tinguely *M.K. III*

In the context of this essay it is also necessary to take a look at some sculptural or quasi-sculptural works, as the theme under discussion has often found a stronger or more explicit response in sculptural than in painted works. This may be in part because the materials and processes of sculpture, as well as the three-

dimensional form, resemble more closely the raw materials, processes, and final forms of technology. From there it is but a short step towards commentary on the works, ideas, and tools of science and technology through quasi-analogy, parody, or wittily sardonic non-functional "machines".

When Alexander Calder used machines, it was to enable his three-dimensional constructions to animate space instead of merely

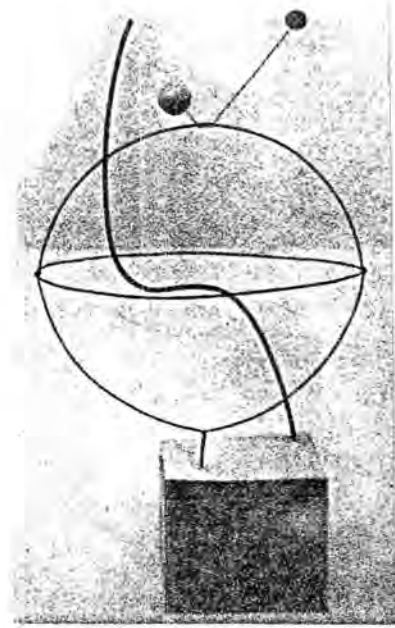
1. May, *The Courage* ..., p.54.



Oldenburg *Soft Toilet* 1966

displacing it.

The Swiss artist Jean Tinguely and the American Claes Oldenburg, who are among the more notable of their generation, extend Calder's approach but are not content to just animate space. They use or imitate machines or machine parts ingeniously and wittily incorporated into their work to satirize machinery and our machine culture.



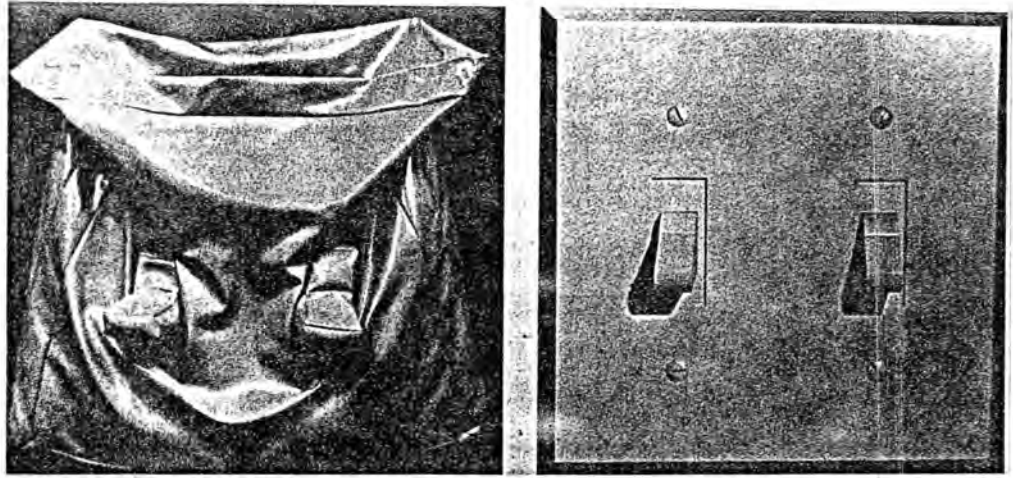
Calder *Universe* 1931

- a) Oldenburg's work has roots in Pop but with Expressionist-Surrealist sources, and in its irony goes well beyond the limits of the archetypal Pop sensibility.

His objects, unlike those of proto-Pop, undergo a metamorphosis, are re-created and humanized. He declared that he was for an art that was "political-erotic-mystical"¹, and he likes to "take an object and deprive it of its function completely."² This he does when familiar, prosaic washstands, typewriters, engines, or radiators, are carefully rendered but collapse in violation of their essential nature and become disturbing commentaries on the values of contemporary life. Often, his objects are made of vinyl and canvas, stuffed with kapok. Texture,

1. Lippard, *op. cit.*, p.110.

2. Hughes, *op. cit.*, p.359.



Oldenburg *Switches Sketch* 1964

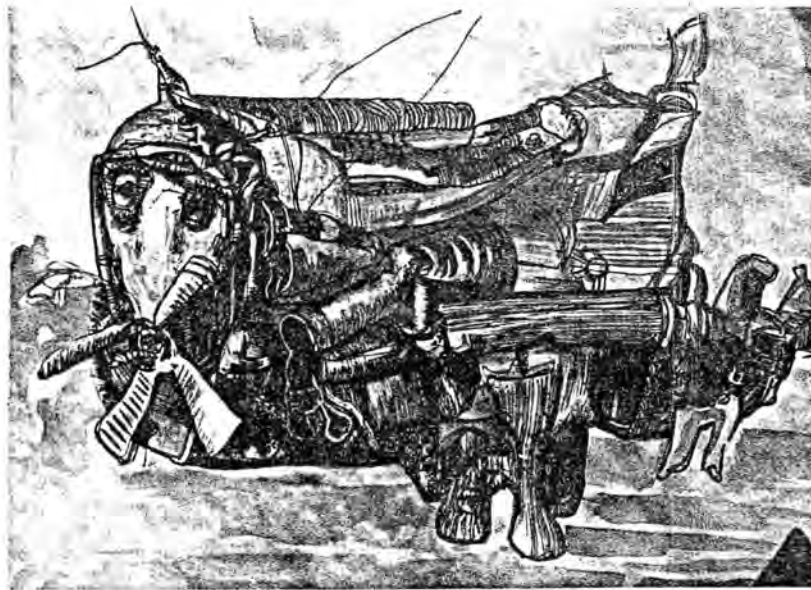


Oldenburg *Bacon, Lettuce and Tomato* 1963

size, and structure also differ from that of their real-life models. Thus, a double lightswitch is enlarged to 42 x 42 inches, and in its soft vinyl version reminds of an ageing torso with sagging breasts. The hard version, constructed from wood, has a more "male" rigour.

His numerous constructions of fast-food items, as for example *Two Cheeseburgers with Everything* (1962), or the gigantic *Bacon, Lettuce, and Tomato* "sandwich" (1963) would appear to represent a comment on food as machine-age merchandise (plastic food for plastic people?).

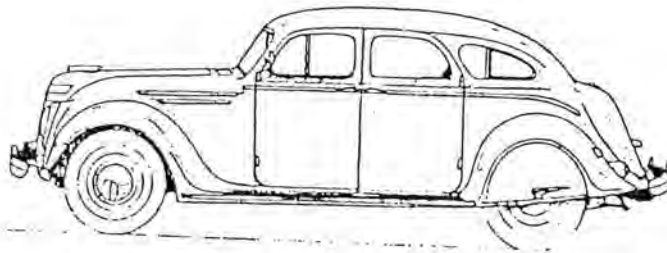
The most complex of Oldenburg's "soft" projects is the *Airflow (Number 6), Soft Engine* (1966), 53 $\frac{1}{8}$ " high x 71 $\frac{7}{8}$ " long x 17 $\frac{3}{4}$ " deep, it is made of stencilled and painted canvas with kapok



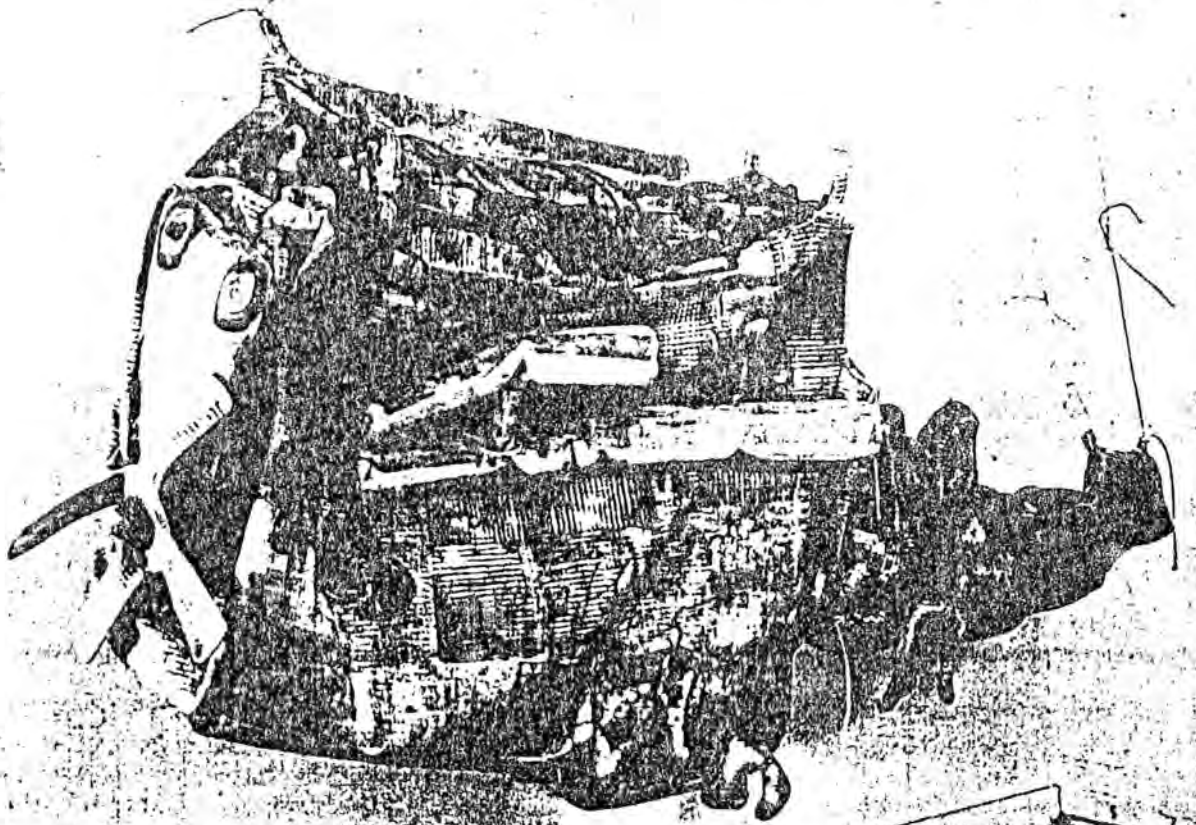
Drawing after Oldenburg's *Airflow (Number 6) Soft Engine* 1966 S. Hennig 1983

stuffing, and Oldenburg calls it "a perception of mechanical nature as body."¹ The model he chose for his soft engine is

1. As quoted by Pontus Hultén in *The Machine ...*, p.186.



Claes Oldenburg
© *Airflow Profile* (working drawing for sculptural print), 1968



Claes Oldenburg. American, born Sweden, 1929
© *Airflow (Number 6), Soft Engine.* 1966

that of the Chrysler Airflow of the mid-thirties - the first commercial streamlined automobile. He says of it further that "The Airflow is imagined as a place with many different sized objects inside it, like a gallery, a butcher shop, like the store - and could be just as inexhaustible a subject. Science/fiction. Auto-eroticism. I am a technological liar."¹

Among the sources of inspiration for the Airflow is a text by D.H. Lawrence on Walt Whitman, which Oldenburg inscribed on one of his many preparatory drawings. In this text, Lawrence attacks Whitman for his unclear, all-embracing and all-consuming ways (which qualities Lawrence sees as typically American) and has a vision of Whitman as a man in a car:

"He was everything

and everything was in him. He drove an automobile with a very fierce headlight, along the track of a fixed idea through the darkness of this world. And he saw Everything that way. Just as a motorist does in the night.... I, seeing Walt go by in his great fierce poetic machine, think to myself: What a funny world that fellow sees! ... God save me, I feel like creeping down a rabbit-hole, to get away from all these automobiles rushing down the ONE IDENTITY track to the goal of ALLNESS!"²

Oldenburg also made a series of proposals for monuments, few of which were actually built. Of these, a *Giant Soft Fan*, ten

1. Hultén, *The Machine* ..., p.186.

2. *Ibid.*, p.187.



Oldenburg *Clothespin* 1976

feet high, found a place on Bedloe's Island in New York harbour and was first exhibited suspended from the top of the Buckminster Fuller dome for the U.S. Pavilion at Expo '67, which, the artist said, "may make it a representative object".¹



Giant Soft Fan

Claes Oldenburg 1966-67

Another commonplace object "deprived of its function completely", and successfully turned into a strange monument, is his *Clothespin* of 1976. Forty feet high, it dominates its site in Philadelphia in a manner that suggests that the world of real objects has risen against its makers. It exudes a peculiar sense of threat, but is yet not without humour. Nor are puns and art references lacking (cf. for instance the Magrithean experience of the vastly enlarged comb leaning over a suddenly diminutive bed). Put into a real city against the backdrop of bland highrises, its impact is particularly disturbing. Through hints and ambiguities of shape, its jaws - which face one another and are bound together by the spring-clip - remind of Brancusi's embracing lovers. Reading the *Clothespin* as a whole, one sees it to have two legs and reads it as an image of man. With its sharp angles and gleaming,

1. Hultén, *The Machine ...*, p.187.



Jean Tinguely, *Artist of the Machine*

By LILI FOLDIS

EUREKA

'For me, the machine is first and foremost an instrument that gives me the chance to be poetic. If we respect machines and enter into the spirit of machines, we may be able to make a joyful machine. . . Isn't that a fantastic idea?'

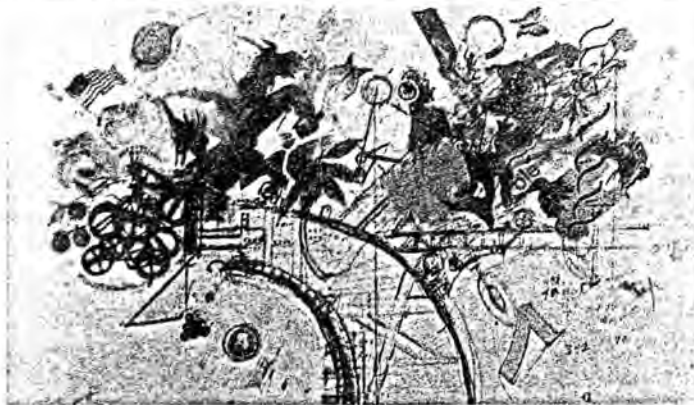
—JEAN TINGUELY

compressing springclip on the "torso", it suggests an authority figure, a parody of the hero in sculpture.

Oldenburg's objects are - as Apollinaire said of Picasso's - "impregnated with humanity".¹ Their "elephantine sadness"² is suffused with humour and humanism - but it is a humanism devoid of sentimentality.

- b) Tinguely's relationship to the machine is a generally joyful one. Often referred to as "The Artist of the Machine", he has said, "For me, the machine is first and foremost an instrument that gives me the chance to be poetic. If we respect machines and enter into the spirit of machines, we may be able to make a joyful machine ... Isn't that a fantastic idea?"³

From a functional machine one demands order and precision, reliability and regularity. Tinguely's point of departure in his "meta-mechanics" (which term suggests an analogy with physics



Tinguely plans his meta-machines with drawings. This one is for a work named *Chaos I*.

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1. Lippard, *op. cit.*, p.110
 2. *Loc. cit.*
 3. Foldes, Lili. "Jean Tinguely, Artist of the Machine", *Reader's Digest*, April 1984, p.165.

and meta-physics) is mechanical disorder, in which the laws of chance are given reign. He pits the emancipated machine against the functional one and thus allows his creations to attain a "glorious life of improvisation, happy inefficiency, and shabbiness, expressing an enviable freedom."¹

The most joyful of his machines - and this is not to call it frivolous - is probably *Eureka*, placed in a Zürich park in 1964. The Swiss industrialist Walter Bechtler, who confessed to it giving him a scare at first, "one morning [came to realize] that it was a protest against the tendency in our times to deify machines."² He says, "I grasped then that, while his approach was humorous on the surface, Tinguely was being deadly serious underneath."³

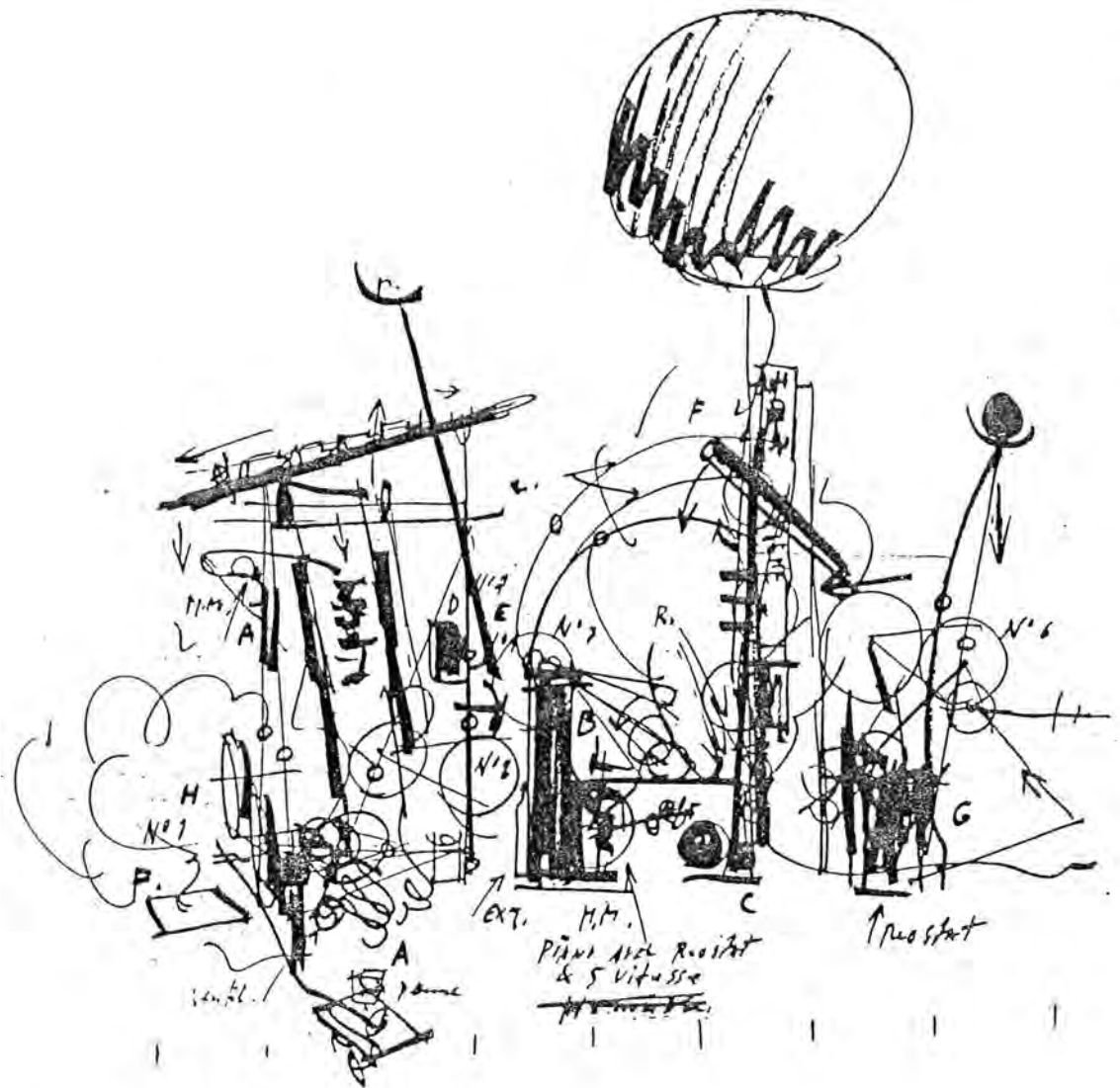
The same interplay of humour and seriousness, with layers of multiple meanings, can be seen in Tinguely's self-destroying *Homage to New York* of 1960. Built over a period of three weeks, it was created from numerous diverse objects lovingly collected on New York's Newark and Summit city dumps (which are, as Billy Klüver⁴ points out, very "much a reflection of the general

1. Hultén, *The Machine* ..., p.165.

2. Foldes, *op. cit.*, p.111.

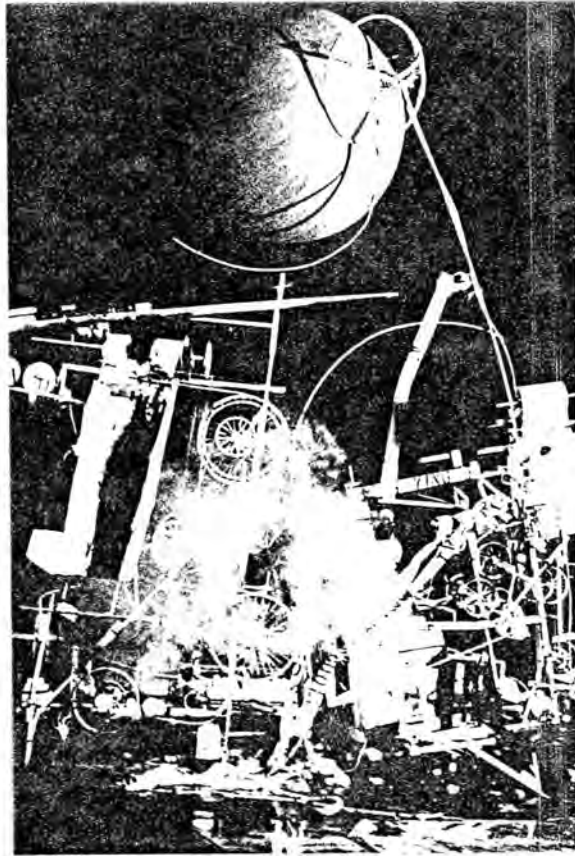
3. *Loc. cit.*

4. For a lively account and analysis of the creation and self-destruction of this work, I suggest reading Billy Klüver's essay, "The Garden Party". Klüver, a Swedish-born research scientist at the Bell Telephone Laboratories in New Jersey, was closely involved in the work and wrote his essay on it two days after the event. It appeared as "Tinguely's Contraption" in *The Nation* (New York), Vol. CXC, March 26, 1960, p.267, and is also reproduced in *The Machine as Seen at the End of the Mechanical Age*, Museum of Modern Art, N.Y., 1968, p.169-71.



Jean Tinguely
© Homage to New York (preliminary drawing), 1960

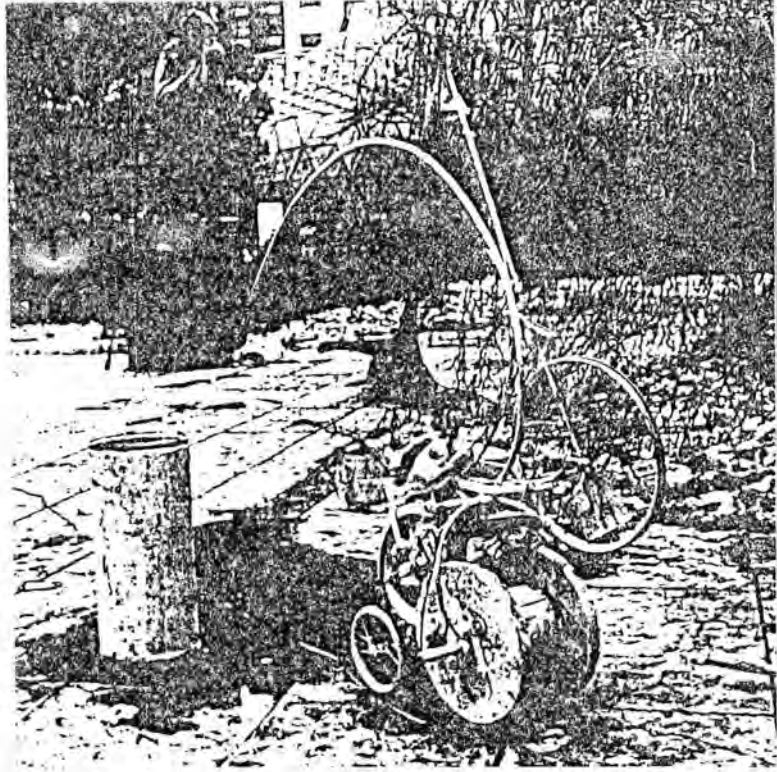
neighbourhood."¹) Bicycle and baby-carriage wheels, a cable drum, a rusty oil can, the insides of an old piano, a radio, an old Addressograph machine, and many other sundry parts went into the grand finale of the construction.



Jean Tinguely *Homage to New York*

They all underwent transformations, and the Addressograph machine, for instance, turned into a percussion machine with cans and a big bell, making a fantastic noise. Meta-machines and a drawing machine were included, as was a stench-producing mechanism (which failed to operate); and a way was found to produce a thick white smoke. On March 17, 1960, Tinguely's machine was put into action in the sculpture garden of the Museum of Modern Art, where it set itself on fire and destroyed

1. Hultén, *The Machine ...*, p.169.



Jean Tinguely

© *Homage to New York, remnant.* 1960

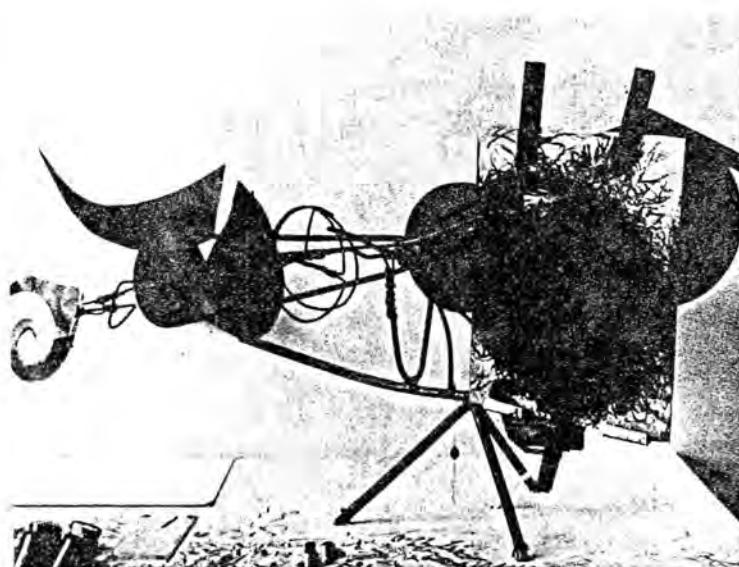
itself in twenty-eight minutes, delivering all the while a spectacle full of "beautiful humour, poetry, and confusion."¹

Despite some critics' opinion to the contrary, the self-destruction of Tinguely's machine is not an act of protest against the machine or an act of nihilism and despair, but represents the "ideal of good machine behaviour. For anyone concerned with the relations between machines and human beings this is an obvious truth."² (This idea had already been expressed in Claude Shannon's "Little Black Box", in which, when you pull a switch, a lid opens and a hand emerges that throws the switch in the off position, whereupon the lid closes again over the hand.) As the first and probably most important of Tinguely's self-destroying machines, *Homage to New York* - despite its humour - sheds a harsh light on our present situation and the complexity of its structure.

He also made some auto-creative machines, of which *Meta-matic No. 8* (1958) is an entertaining and thought-provoking example. Consisting of sheet metal, wood, wire, and a motor, it produces art, churning out drawings not unlike those of the Abstract Expressionists (probably constituting to some extent a somewhat devastating critique of art informel - though that is not its only meaning). In the joining of the machine, which is used for mass production on a basis of standardization, and art, which in our century has come to represent faith in the individual, the ultimate liberty, the art-making machines also

1. Hultén, *The Machine ...*, p.169.

2. *Ibid.*, p.171.



Tinguely *Metamatic No. 8*

do it yourself

and create
your own abstract painting
with

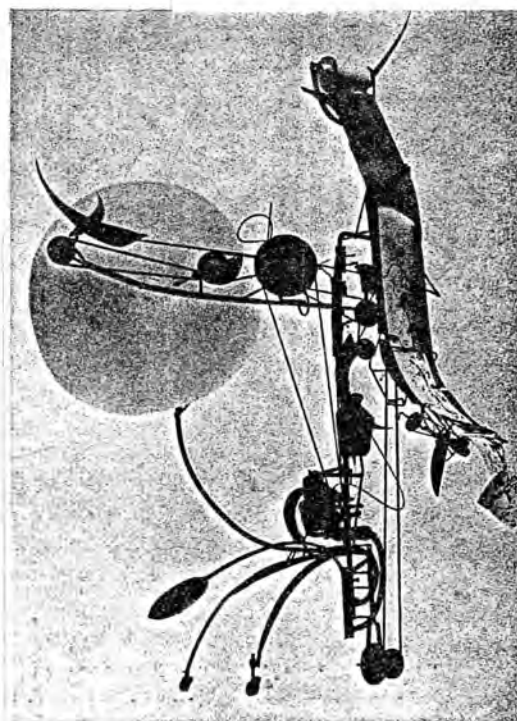
tinguely's «meta - matics»

(a machine producing
paintings)

from the 1st to 31st of july

iris clert gallery 3 rue des beaux-arts
paris 6 dan. 44-76
open 11 - 13, 16 - 23 h

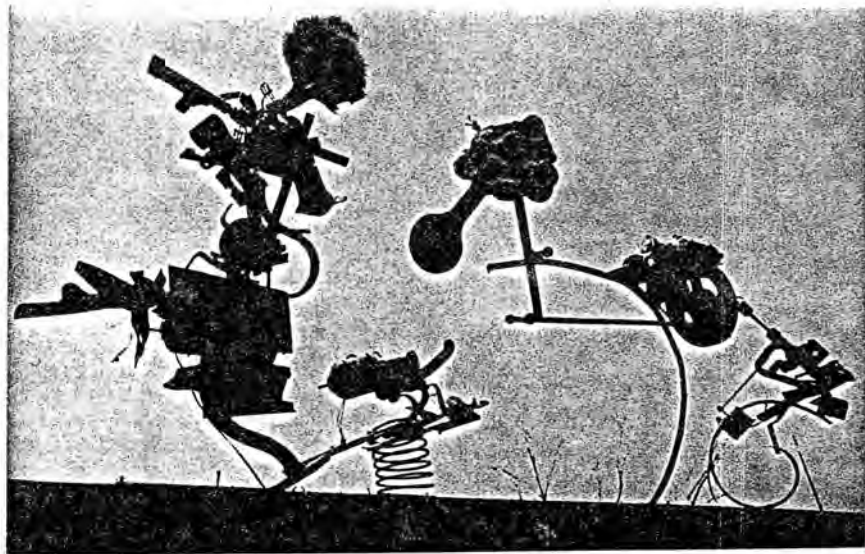
a prize of 50,000 f. is offered by the gallery to the best painting made
on tinguely's «meta-matics».



Tinguely *Metamatic No. 17*

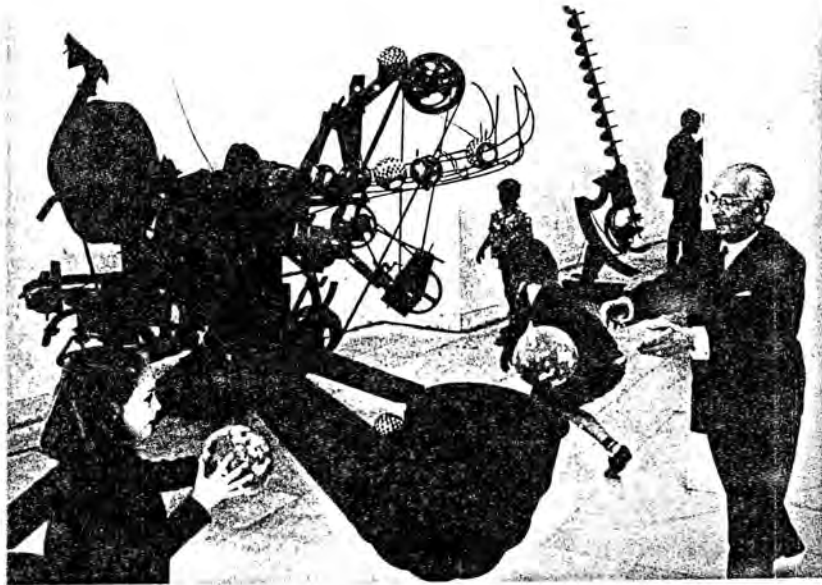
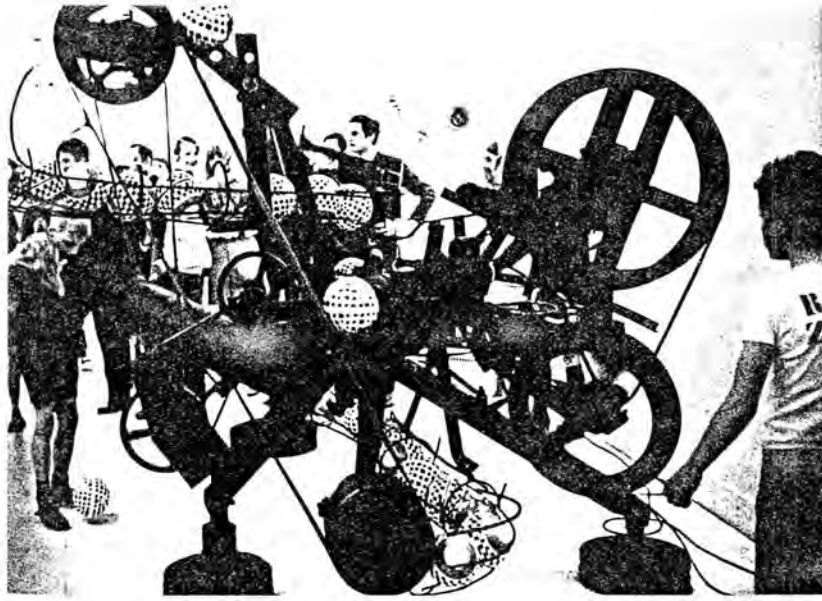
"stretch a tentacle into the heart of our civilization."¹ Art typifies the fullest expression of the creative process. The Machine we require to be rational, efficient, and serviceable; "at the same time we are frightened of it because it has now become so clever and powerful. There is little dignity in our present relations with machines."²

When one looks at Tinguely's painting machines in this light, it becomes evident that the basic idea is one of *collaboration*. Tinguely seems to imply that there could be great times if we could get on better emotional terms with machines. As he says, "If you respect the machine, if you enter into a game with the machine, ... perhaps you can make a truly joyous machine - by joyous, I mean free."³



Tinguely *Pop, Hop, and Op. & Co.* 1965

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1. Hultén, *The Machine ...*, p.166.
 2. *Ibid.*, p.166-67.
 3. *Ibid.*, p.167.



Tinguely *Rotoxasa I* 1967

Pop, Hop, and Op. & Co. (1965) is a gleefully satirical comment on the mechanization of art history as witnessed in the sixties. In the rapidly accelerating commercialization of the art scene in New York and elsewhere art became viewed as a consumer product and had to conform to the dialectic of the New ("Neophilia" was the name of the game) which demanded a new styling package every year and had dynamic obsolescence built into it just as the auto industry of Detroit in its heyday had.¹

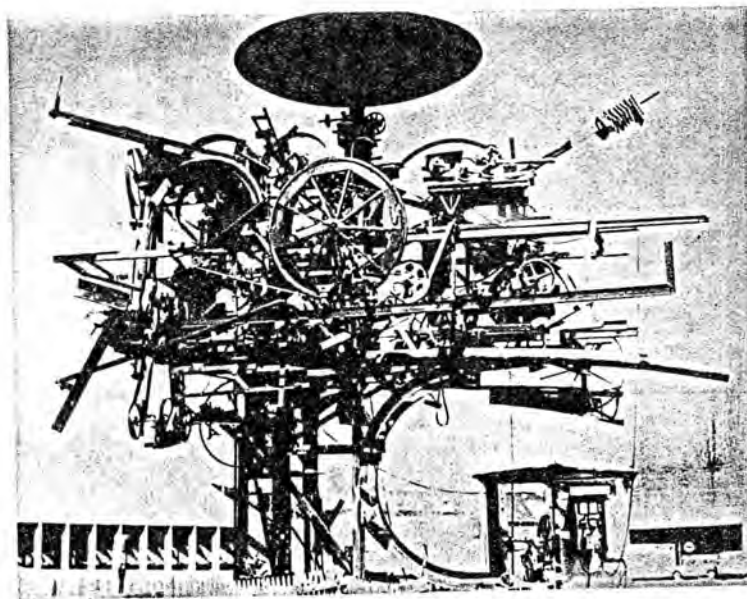
This was the climate surrounding *Pop, Hop, and Op. & Co.*, which was created as the Kinetic Art package came on the market. Tinguely, as a convinced individualist, observed this phenomenon, and his feelings about the rise of "Hop" art, "mec" art, or as Hans Richter called it, the "movement movement", in the above context can be deduced from the title of this work.

In connection with *Rotozaza, No. 1* (1967) Pontus Hultén reports that Tinguely tried for many years to find a department store that would let him fill its display windows with a series of machines that would systematically destroy the articles it offers for sale.

The production of articles that nobody really needs, but which occupy the ground floors of all big stores, is one of the many outward symptoms of something essentially wrong in a world of

1. As Pontus Hultén has pointed out in the work quoted (p.173), "ultimately, these standards will lead to the destruction of art as the independent expression of an individual, for a society based on standardized values will not long tolerate the existence of an individualistic kind of art."

Neophilia and the seeds of robotism seem to go hand-in-hand.



Tinguely Eureka 1964

overproduction and undernourishment. "In order to control overproduction, without going through the intricacies of selling the product, it becomes necessary for a wilfully destructive war to be going on permanently somewhere"¹, elucidates Hultén and points out that over 150 billion dollar per year were being spent on the actual or potential destruction of lives and property, compared to the capital transfer from rich to poor countries of about ten billion dollar per annum - this including a large share for military aid.

The *Rotozaza*, then, is a producing machine with the process reversed. Instead of taking away with you what the machine has produced, you have to throw it back in. This is what the machine demands.

"The cynical cycle of production for conspicuous consumption, built-in obsolescence, and expendability could hardly be better told than by the *Rotozaza* - the machine that immediately eats up its output. It is, Pontus Hultén says, "an instead-of-war machine."²

It is obvious that Tinguely loves the machine, but does not endorse the mechanistic sensibility so often derived from it. Instead, he seeks to restore some dignity to our relationship with machines, and proposes that "We must be the creative masters of changing reality - which we are, by the definition of Man."³

1. Hultén, *The Machine* ..., p.174

2. *Loc. cit.*

3. *Ibid.*, p.171.

Horror now 40 years ago

By LESLIE NAKASHIMA

HIROSHIMA, Japan — Returning to Hiroshima today, it is hard to remember the city I saw 40 years ago as a correspondent for United Press a fortnight after the atomic bombing.

My report, transmitted from a United States warship in Yokohama harbour to New York, read in part:

"Alighting from the train, I found that Hiroshima station, one of the largest in eastern Japan, had gone out of existence. Getting out into the open I was dumbfounded with the destruction before me.

"The centre of the city had been razed and there was a sweeping view to the foot of the mountains to the south-east and north of the city. In other words, what had been a city of 300 000 had vanished."

I had also gone to see if my mother had survived.

A little more than three kilometres from the city centre, I found my mother's house had been heavily damaged by the bomb's overpressure but she was alive. She said she was weeding grass in a relative's vegetable field when she saw the flash, threw herself face down on the ground and was saved.

Today there is only one visible relic of the atomic destruction of August 6, 1945 — the preserved "Atomic Dome" of the Industry Promotion Hall in Hiroshima's beautiful Peace Memorial Park.

For the 190 000 killed in the bombings, the suffering is long over. For the 370 000 victims who live on, it continues. Worse is the likelihood that a legacy of suffering and firmity will be passed on to their children and, perhaps, to their children's children.

They are the "Hibakusha" or "Explosion-affected persons" — the direct and indirect victims of the bombings and radiation that followed. To doctors and scientists, they are a living laboratory of the effects of radiation on the human body.

To the Japanese, they are objects of pity and sometimes discrimination. They receive free medical treatment for an alarming array of ailments but their sons and daughters complain of discrimination in marriage due to lingering fears about the genetic flaws they could pass on.

An uninformed visitor to Hiroshima today would, however, have no inkling of the destruction then. Modern Hiroshima is a city of tree-lined streets and river banks, lush trees and benches where people sit enjoying summer's evening cool.

Large department stores and office buildings, covered shopping centres and modern hotels are bustling. Fast food joints do a brisk business.

There is a new railway station where I once found nothing. It is a seven-storey building with a beer garden and steam bath on the roof, a 155-room hotel, restaurants, stores and even a medical clinic.

Nevertheless, its million citizens have not forgotten the horror of the bombing.



Their appeal is simple and sincere: abolish nuclear weapons. Their slogan reflects that sentiment: "No more Hiroshimas."

This year, on August 6, at 8.15am, Hiroshima citizens will solemnly observe the 40th anniversary of the bombing. In the stone chest of the Memorial Cenotaph, the names of more atom bomb victims will be added to the 113 271 already there.

Nagasaki, which suffered the consequences of the second bomb three days after Hiroshima, will host with Hiroshima the First World Conference of Mayors for Peace through Inter-city Solidarity. Sixty-two mayors from 23 countries plan to attend. They will find many things but not hatred for the United States.

"I still am against use of the atomic bomb," said Keiso Yoneda, a spokesman for the conference. "But we now feel that it could not be helped because it was a part of war."

Hiroshima continues to be a tourist attraction, drawing more than seven million visitors last year alone. Americans topped the list at 35.9 per cent, followed by tourists from China, Hong Kong and Taiwan.

"There has been a marked upswing of younger people this year, indicating their interest in the abolition of nuclear weapons and a desire that the atom bombing of Hiroshima and Nagasaki will not be repeated," Yoneda said.

"I don't blame the United States for using the A-bomb because it was a part of war," said patient Choi Yong Ka, a Korean resident of Hiroshima when the bomb fell. "It helped to shorten the war but I strongly feel that the A-bomb should never be used again." — UPI

CHAPTER FOURWHAT SOME SCIENTISTS SAY

What the painting scene over the last four decades reflects about the state of modern man and his world, is amply corroborated by statements and observations of a number of psychologists and sociologists, as well as some other scholars and observers with a scientific background. Amid the general cacophony pervading our sick society, these voices urging measures towards sanity have tried to get a hearing.

Thus Erich Fromm,¹ psychologist and sociologist, has put a keen diagnostic finger on the feverish pulse of a sick society, reported his observations, and points out some potential roads to sanity.

Fromm underlines quite correctly that there is a remarkable similarity in the criticisms and diagnosis of the mental ill health of contemporary society - remarkable especially in view of the fact that it comes from people with different philosophical and political views. And he cites people such as the British socialist, R.H. Tawney, E. Mayo, Frank Tannenbaum, and L. Mumford.²

There has been much research into the pathology of civilized communities, and to the above list one can add the doctor and ethnologist

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1. Among his books relating to modern man's predicament are *The Sane Society*, Routledge and Kegan Paul, London, 1956, and *The Art of Loving*. Both these books were first published in the fifties and have been reprinted an astonishing and perhaps heartening number of times. Other related books by him are *Man for Himself : An Enquiry into the Psychology of Ethics* (1942) and *The Fear of Freedom* (1949), all by Routledge and Kegan Paul.
 2. Fromm, *The Sane Society*, p.217.



Aunt Entity (Tina Turner), the deadly ruler of Bartertown leads her Imperial Guards against Mad Max in MAD MAX BEYOND THUNDERDOME

Civilization and its malcontents

Mad Max beyond Thunderdome

directed by George Miller and George Ogilvie starring Mel Gibson, Tina Turner and Bruce Spence

CIVILIZATION has been destroyed and a new society has risen in the desert - a phoenix born of man's primitive past and the remnants of modern technology.

Ancient rituals have been renewed and refined with mechanical ingenuity. In a thriving market city called Bartertown, anything is subject to trade, a sip of water, a human life. The showplace of the city is Thunderdome, a circus of justice where differences are settled and

the public entertained. Two men enter. One man leaves.

Mel Gibson once again plays the legendary hero in the post-apocalyptic world of MAD MAX BEYOND THUNDERDOME, the third in the highly-successful adventures that began with MAD MAX and continued with THE ROAD WARRIOR.

Beneath Bartertown is Underworld, a subterranean industrial complex where methane gas is produced and converted to power by a derelict railroad locomotive.

The machinery is operated by Master Blaster, two men so inexorably linked that they are known by a single name. Master Angelo Rossitto is a crippled dwarf and technological genius. Blaster (Paul Larsson) is a hulking giant, his head encased in a leather

helmet.

Although Aunt Entity (Tina Turner) rules Bartertown - and enforces its code through her paladin, Ironbar Bassey (Angry Anderson) - her authority has been challenged by Master Blaster.

Seeking a way to separate the mechanical wizard from his looming, helmeted protector, she offers Max a bargain. His belongings have been purchased by Dr Dealgood (Ted Hodgeman), the glib auctioneer whose sales force consists of two brassy harlots, Tweedledum and Tweedledumder.

They will be returned after Max meets Blaster in the Thunderdome, where elastic hunger ropes and strategically placed weapons provide the setting for an improvisational ballet of death.

But win or lose, Max is warned,

he must not violate the rigid rules of combat...

In contrast to Bartertown is the Crack in the Earth, a deep canyon inhabited by a tribe of wild children. Descended from the survivors of an airplane crash, they await the return of Captain Walker, the pilot whose memory has been passed on through "the telling."

When the children discover Max and his pet monkey half dead in the desert, they hail him as the long-lost aviator who will lead them to "tomorrow-morrow-land", a place of "high scrapers and the v.v.v. video." The innocence and hope of the children stir feelings in Max buried since the holocaust.

A strange, rattle-taggle band, some 50 children and a lone, weary warrior embark on the journey back to Bartertown.

Konrad Lorenz, Arthur Koestler with his multi-disciplinary background in the sciences, Alvin Toffler who created quite a stir and flutter with his book *Future Shock*¹ in the early seventies, H.R. Rookmaaker (late professor in History of Art at the Free University of Amsterdam) who, while writing with a specifically Christian bias, still arrives at exactly the same diagnosis as the others mentioned. Carl Gustav Jung² cannot be omitted from this list as he was one of the first to see the writing on the wall and address his not inconsiderable powers of perception and analysis to the problem confronting modern men and women. James Harvey Robinson as early as 1921 voiced his concern in a small but poignant volume called *The Mind in the Making*.³ The historian, H.G. Wells, a contemporary of Robinson's, proposed that history is coming more and more to be "a race between education and catastrophe."⁴

The term "schizophrenic society" has been much bandied about, and not without reason. Bleuler, a Swiss psychiatrist, introduced a definition of Schizophrenia which described the disorder as being characterized primarily "by disorganization of thought processes, a lack of coherence between thought and emotion."⁵ The "splitting" refers to a "splitting within the intellect and between intellect

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1. Toffler, A. *Future Shock* (see Bibliography of this essay).
 2. Jung's *Modern Man in Search of his Soul*, *The Undiscovered Self*, and *Man and His Symbols* are just some of his books which have bearing on our theme.
 3. Robinson, J.H. *The Mind in the Making*.
 4. Quoted in Robinson, *op. cit.*, p.147
 5. Coleman, James C., et al. *Abnormal Psychology and Modern Life*, p.396.



and emotion."¹ A pithier diagnosis in nuclei of our society is hardly imaginable, and Fromm, for example, speaks of our "schizoid self-alienation."²

While twenty, thirty years ago some of these authors could and did regard themselves as "prophets-in-the-wilderness", this attitude became obsolete faster than they had dared to hope, and they soon found that they were talking to an intelligent and appreciative audience. By now, at least partial awareness of the dangers threatening us has found its way by a sort of process of osmosis or diffusion right down to more popular levels, evidence of which can be found not only in *Time Magazine* and *Psychology Today*, but also in, for instance, *Reader's Digest* and *The Sunday Times* or, for that matter, the daily papers. Television and the cinema, too, reflect overtly and covertly a general dis-ease with life as it is. The broad masses of people thus do get a certain amount of awareness-jolting, but whether they can be made to act in time remains at this stage an open question: The public is aware that there is a problem, but it is not aware of the magnitude and urgency of the problem. In the words of Bob Dylan:

"Something is happening here
but you don't know what it is,
Do you, Mister Jones?" (from *Ballad of a Thin Man*)



1. Coleman, et al., *op. cit.*, p.396

2. Fromm, *The Sane Society*, p.360

New charges hit Illmensee

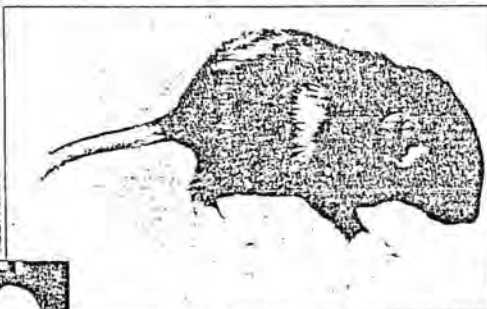
Debra MacKenzie, Geneva

KARL Illmensee, the Swiss biologist who was cleared earlier this year of charges of scientific fraud, is coming under renewed assault for scientific and financial irregularities.

- Documents seen by *New Scientist* suggest that he has:
- obtained grants from the National Institutes of Health (NIH) in the US to pay salaries for workers in his laboratory who were already being paid by the University of Geneva;
- falsely claimed that his wife, who worked in his laboratory, had a doctorate;
- gave unlikely explanations for the scientific results, involving an experimental mouse, after being accused of fraud.

It also appears that, six years ago, Illmensee was severely criticised by referees of a paper of his on other mouse embryo experiments. While Illmensee has been reinstated at the University of Geneva, his Swiss research grants have been cancelled and 25 of the 30 workers in his laboratory have resigned.

The first accusations against Illmensee were launched at a departmental seminar in 1982 by members of his own laboratory. He was accused of fraud in the presentation of research at the laboratory. Hugo Greppe, then dean of science, first tried to calm things by filing the evidence with a notary in Geneva. The evidence was to remain on file for five years as a surety for his future good behaviour. But faculty pressure finally resulted in the case being referred to an international commission of scientists



Illmensee's 1978 cloned mouse: Where did the white genes come from? Left, Illmensee



and lawyers in August 1983. On 27 January the commission reported "no compelling evidence of fraud". All but one of the discrepancies unearthed in Illmensee's laboratory records did not

significantly change the conclusions of the work, and the commission preferred to leave the matter to the traditional arbiter of scientific doubts, the repetition of the experiments (*New Scientist*, 23 February, p 3). Illmensee has since claimed, however, that changes in his stock cell cultures might make such repetition impossible. Other parties to the dispute have not been satisfied by this result. Members of Illmensee's department have formed a commission of inquiry of their own, and members of Geneva's parliament have asked for the government to inquire into a number of cases of alleged fraud at its university in the last decade. On 14 March, the Swiss National Science Foundation (SNSF) cancelled a grant to Illmensee of £318 000 because of the "carelessness" uncovered by the international commission.

But carelessness in Illmensee's laboratory may have extended beyond the

Mystery of Illmensee's mice

WHEN an international commission gave its largely clean bill of health to Illmensee's research earlier this year, it left unresolved one issue which, it said, "contained an element of doubt." The doubt surrounded the photograph of a mouse which had been included with Illmensee's grant proposal to the NIH in 1982. The exact origins of this mouse now form the central issue in a review by NIH of its funding of Illmensee's work. The review may be published next month.

Illmensee claimed that the mouse was produced when a tumour cell from a mouse ovary was implanted into a mouse embryo at the very early blastocyst stage. The fact that the tumour cells were integrated into normal tissue in this mouse seemed to be an important breakthrough in cancer genetics. But these experiments immediately came under a cloud as Illmensee's fellow workers made charges of fraud in the work.

Joachim Huarte, a graduate student in Illmensee's laboratory who conducted the experiments, said that the mouse never

ovarian carcinomas in another part of his application. This said: "We will continue to produce chimeric mice from the pluripotent carcinoma." These mice have never been produced.

Peter Hoppe, who produced the testicular carcinoma chimeras with Illmensee at the Jackson laboratories in the US, told the international commission last January that the team got no coat chimeras such as the one Illmensee claimed from the series.

There is thus no hard evidence for either testicular or ovarian chimeras. Workers in Illmensee's lab think one was invented to explain the other.

Moreover the photograph sent to the NIH is of a black and white mouse. According to the workers, neither type of mouse used to produce the claimed chimera was white. Strangely, a photograph of an almost identical mouse accompanied Illmensee's paper with Peter Hoppe and Carlo Croce in 1978 (see photo above). That mouse was said to have arisen from a mouse cell, implanted into another



Research fraud

New ways of shading truth

Los Angeles **P**RESSURE to publish and a lingering "pre-med syndrome" among medical researchers contribute not only to the relatively rare cases of outright scientific fakery, but also to various much more frequent abuses of scientific publication, according to medical researchers and journal editors speaking at the annual meeting of the American Association for the Advancement of Science.

Dr Edward Huth, editor of *Annals of Internal Medicine*, said that journals and scientific societies should consider adopting a precise definition of authorship to prevent one of the most frequent abuses, "false authorship". Other common abuses that he had encountered were the practice of slicing one study into a series — "salami science" — and repetitive publication.

Huth said false authorship usually occurs when a department chairman, laboratory technician or anyone not directly responsible for the intellectual content of the paper is listed as an author. Huth told of a case in which a researcher learned only by accident that his name had been included among the authors of a paper submitted to the *Annals*. While the researcher had provided some technical advice to the main author, at another institution, he had contributed neither to the design of the experiment nor to its execution, and had not even seen the final paper or any drafts. In fact, he had specifically declined an offer to be listed as an author.

Another common deception is statistical manipulation of data. Dr John Bailar, a statistical consultant to the *New England Journal of Medicine*, said that the deliberate misuse of statistics should be part of an "expanded definition of fraud". Inappropriate statistical tests have often been used to exaggerate the significance of the

eight signatures on the forms bore a striking similarity.

Dr Robert Petersdorf, dean of medicine and vice-chancellor for health sciences at the University of California at San Diego, suggested that the problem lies deeper. Science has become "too big, too competitive, too entrepreneurial, too bent on 'winning'". Federal research grants to medical schools have grown from \$436 million in 1960 to \$2,351 million in 1981, increasing proportionately much faster than enrolment.

Petersdorf said that the "pre-med syndrome" of intense competition and resorts to cheating carries through to competition for grants and for tenure, "eroding the moral fibre" of physicians.

The deputy editor of the *New England Journal of Medicine*, Dr Marcia Angell, suggested that grant-making agencies and

tenure committees could help eliminate these abuses at source by refusing to consider more than the three articles a candidate considers to be his best in a given year.

Whether pressures to publish are responsible for the more serious cases of fraud remains unknown. Patricia Woolf, at sociology department at Princeton University, noted that the number of papers published per scientist per year has changed little but in one group she has studied in detail, the number of "super-productive" researchers has clearly grown.

The National Institutes of Health (NIH) which investigates cases of fraud involving federal research grants, say that to receive about two reports a month of fraud or scientific misconduct, a minute fraction of the 20,000 research projects active on any given day. Dr William Raub, deputy director for extramural research and training, said that NIH will nonetheless issue this summer requiring institutions to receive federal funds to report any case suspected fraud. — Stephen Budiansky

Arianespace Sky-high insurance unfair

ARIANESPACE, the largely French company that now runs Europe's Ariane space launcher on something approaching a commercial basis, is fed up with the huge insurance premiums that are being asked of satellite makers for launch on Ariane. According to M. Frédéric d'Allest, president of Arianespace, his company is being forced to pay for the losses made by insurers of the ill-fated Palapa B-2 and Westar-6 satellites, mis-launched from and then recovered the US space shuttle, and for recent failure of Syncom IV-3 and the earlier TDRS-A, also both shuttle-launched. Insurance premiums are now so high, 20 per cent of the capital cost of Arabsat, recently launched by Ariane, for example, that the growth of the satellite communications

fact, says d'Allest. But the insurance companies are receding to have lost almost \$200 million Palapa and Westar alone, despite recovery, and another \$85 million for Arabsat, and they are fighting shy. Premiums are now around 18 per cent, with his figures for those the companies think pay, such as the Arabs. The premium is the same for the shuttle and for Arabsat. Arianespace, and they come package, making no distinction between launch to first orbit (which the shuttle accomplished perfectly) and the second phase. M. Deschamps, director-general of Arianespace, would like the insurers to make a distinction by charging the same for Ariane and the shuttle for the first

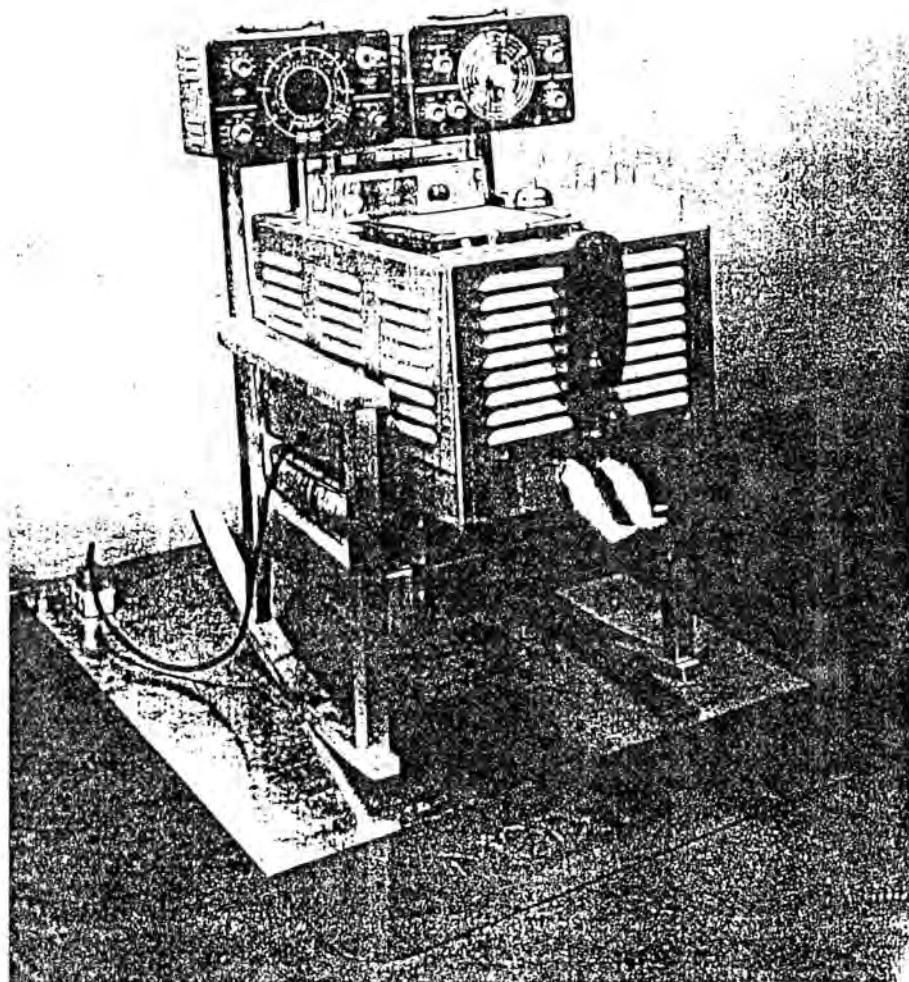
As to scientist_s proper: "Even the great ones are bloody fakes!" - to quote from their own ranks the disillusioned outcry of Dr H.F. K.O. Hennig of the National Research Institute for Oceanology in Cape Town. With this he refers to the fact that it is not uncommon for scientists to cook the books or the statistics (viewed as so vital nowadays) if it suits their purpose. The most frequent and ubiquitous deception appears to be the manipulation of statistical data, though other forms of scientific fraud are not uncommon either. One of the more spectacular cases was that concerning Illmensee's mice. Charges of fraud were laid against the Swiss biologist Karl Illmensee after he produced photos of a mouse that he claimed had been born from one into whose embryo he professed to have implanted a tumour cell and which yet resulted in a healthy mouse being born - the tumour cells allegedly having been integrated into normal tissue. This would have signified an important breakthrough in cancer genetics - had it been the genuine article, which, however, it turned out not to be.

Where we are not dealing with instances of fraudulent scientific methods, these methods still warrant some discussion, and I will broach the subject presently. First, let us return to our discussion of some of the findings by scientific observers.

a) Man the Alienated Robot

In the nineteenth century the problem was that *God is dead*, in the twentieth century the problem is that *Man is dead*. (To quote an Orwell phrase: "He's dead, but he won't lie down."¹)

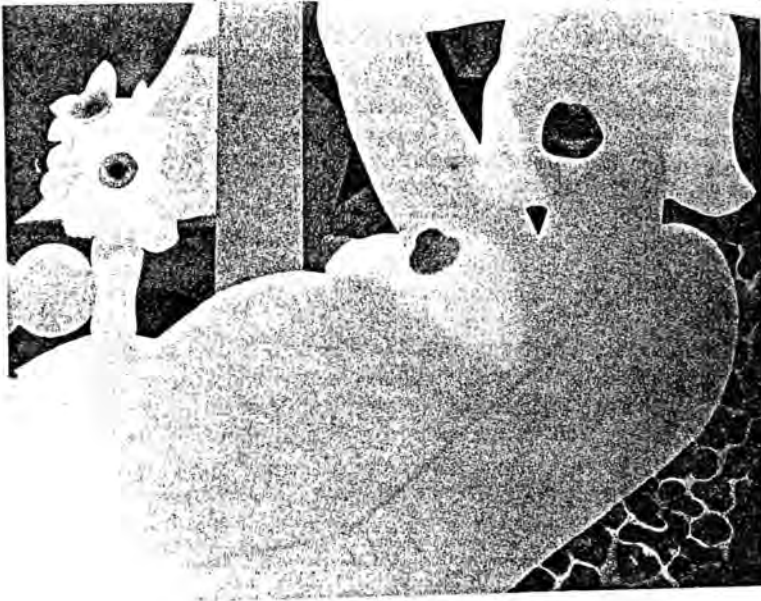
1. From Orwell, G. *Coming up for Air*.



Edward Klenholz
© The Friendly Grey Computer —
Star Gauge Model 54. 1965

This, then, is what we are surrounded by: plastic people, automatons, robots, "who make machines which act like men and produce men who act like machines."¹

Whether we look at Wesselmann's plastic nudes or Paolozzi's drawn and sculpted men-made-from-machine parts, we see a reflection of modern man: the functional parts are all there, but what has happened to "the ghost in the machine?"², to borrow Koestler's phrase.



Wesselmann *Great American Nude No. 57*

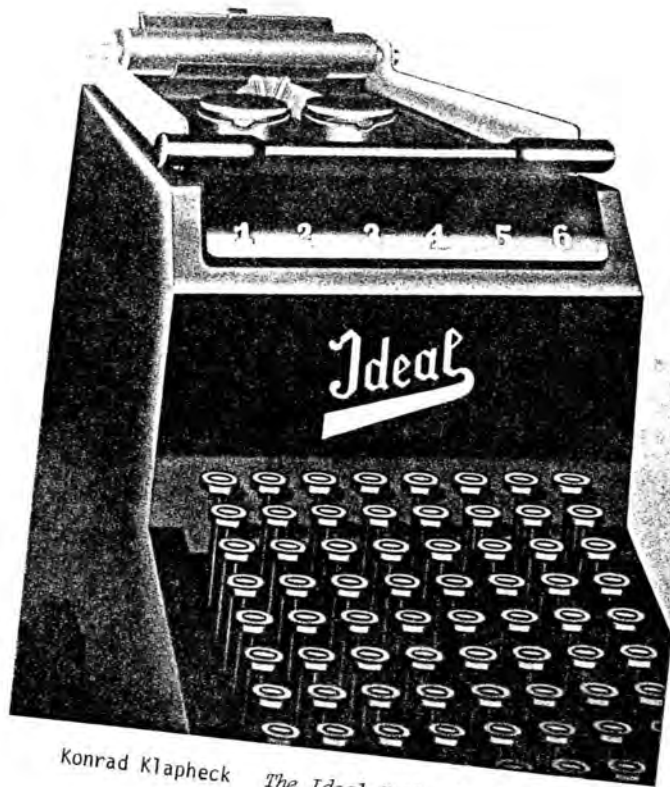


Paolozzi *Saint Sebastian No. 3*

As Fromm (and Rookmaker, and some others) diagnoses so aptly: people have largely become automatons, "Who follow without force, who are guided without leaders ...; men whose reason deteriorates while their intelligence rises, thus creating the

1. Fromm, *The Sane Society*, p.360.

2. Koestler, A. *The Ghost in the Machine*.



Konrad Klapheck *The Ideal Husband* 1964

dangerous situation of equipping man with the greatest material power without the wisdom to use it."¹

Alvin Toffler² discusses the problems arising, or likely to arise, as medical science replaces more and more human organs with machine components, and asks, "what happens to his awareness of self, his inner experience?"³. I maintain that we need not move that far into robotology to ask that question. A majority of people today have already lost that sense of self without having had any of their natural organs replaced by mechanical ones.

And, as Rollo May points out, "along with the loss of the sense of self has gone a loss of our language for communicating deeply personal meanings to each other."⁴ This, as he says, is one important facet of the loneliness now experienced by people in the Western world. While we have an excellent vocabulary for technical subjects (as both Fromm and May point out and as our own everyday observations bear out) - almost any man can name the parts of an automobile engine clearly and precisely - we stumble and get lost when it comes to communicating authentically in interpersonal relations and are "practically as isolated as deaf and dumb people who can only communicate in sign language."⁵

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1. Fromm, *The Sane Society*, p.359-60.
 2. Toffler, A. *Future Shock*, p.193-94.
 3. *Ibid.*, p.193.
 4. May, Rollo. *Man's Search for Himself*, p.64.
 5. *Loc. cit.*



Edmund Alleyn *The Big Sleep* 1968

In this audio-visual programmed complex Alleyn represents a schematization of man in a universe of electronic connections, measurements and aggressions, and at the same time a warning from a man of this century who is fascinated and disturbed at the technocratic conditioning of the individual.

As in T.S. Eliot's "hollow men":

"our dried voices, when
we whisper together
Are quiet and meaningless
As wind in dry grass
or rats' feet over broken glass
In our dry cellar."¹



Bernard Schultze *The Painter and the Model* 1967

In the same way we tend to be far more sensitive to the sounds ("heartbeat") of the machine than our own. The average contemporary man will quickly pick up if the idling speed of his car is too fast - but try and get him (or her) to realize when their own idling speed is too fast!! We seem to attach far more value and importance to our machines than to ourselves.

1. Eliot, T.S. *Collected Poems 1902 - 1962*, p.87.



Tamayo *Telefonitis* 1957

I follow Rollo May in the supposition that the "loss of the effectiveness of language ... is a symptom of a disrupted historical period."¹

This applies to language in the strict (specific) sense and also to language in the broader sense of communication in other forms such as music, poetry, and painting.

May further maintains that when a culture is in its historical phase of growing toward unity, "its language reflects the unity and power; whereas when a culture is in the process of change, dispersal and disintegration, the language likewise loses its power."²

As to the study of semantics, which gets so much attention in our day, valuable as it is, there remains the disturbing question why we have to talk so much about what words (or paintings) mean that, "once we have learned each other's language, we have little time or energy left for communicating."³

As regards art and music, they "are the voices of the sensitive spokesmen in the society communicating deeply personal meanings to others in the society, as well as to other societies and other historical periods."⁴ And May concludes that in modern art and music, we find a language which does not communicate.

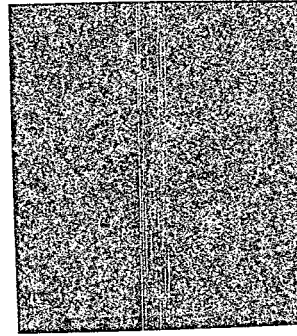
1. May, *Man's search ...*, p.65.

2. *Loc. cit.*

3. *Ibid.*, p.65-66.

4. *Ibid.*, p.66.

Erich Fromm postulates that man is "life aware of itself"¹, and that, having emerged from the animal kingdom, from instinctive adaptation, he has transcended nature - although he never leaves it. "He is a part of it - and yet, once torn away from nature he cannot re-



Dark Blue with Dark Border
Peter Joseph 1978

turn to it."² Fromm maintains further that man can only go forward by developing his reason (not to be confused with rationalism or mere "I.Q.") and by finding a new harmony, a human one, instead of the prehuman harmony which is irretrievably lost. "Once thrown out of paradise - a state of original oneness with nature - cherubim with flaming swords block his way, if he should try and return."³

One wonders whether this was ever effectively pointed out to Rousseau and his followers. Under no circumstances can we "go back to nature" and back into the trees. We simply cannot afford to throw out the child with the bathwater and then still chuck the tub after it as well. (Personally, I think there is a place for penicillin, and I'd also prefer not to fly in a

1. Fromm, *The Art of ...*, p.14.

2. *Loc. cit.*

3. *Loc. cit.*

hand-crocheted airplane, no matter how fetching the needlework that's gone into it.)

In his book, *The Sane Society*, Fromm diagnoses and discusses the plight of modern man. Posing the question whether a whole society can be sick, he answers this in an emphatic affirmative.

He defines the mentally healthy, i.e. sane person as "the productive and unalienated person; the person who relates himself to the world lovingly, and who uses his reason to grasp reality objectively; who experiences himself as a unique individual entity, and at the same time feels one with his fellow man; who is not subject to irrational authority, and accepts willingly the rational authority of conscience and reason; who is in the process of being born as long as he is alive, and considers the gift of life the most precious chance he has."¹

Fromm also emphasizes that mental health cannot be defined in terms of the individual's "adjustment" to his society, but, on the contrary, that it must be defined in terms of the adjustment of society to the needs of man, and thus stresses its role in furthering or hindering the development of mental health.

The author proceeds to outline some of the roots of our predicament, substantiating his argument with telling illustrative examples and crossreferences. His prognosis is that "we are in danger of the destruction of all civilization, or of robotization."²

1. Fromm, *The Sane ...*, p.275.

2. *Ibid.*, p.363.



Our world is dissociated like a neurotic. Above, the Berlin Wall.



Repressed unconscious content can erupt destructively in the form of negative emotions as in World War Two. Above left, Jewish prisoners in Warsaw after the 1943 uprising; right, footwear of the dead stacked at Auschwitz.

An old Jewish proverb has it that "If there are two alternatives, take the third!"

So what other alternative is there? There is the option of getting out of the rut we are moving in, "and to take the next step in the birth and self-realization of humanity."¹

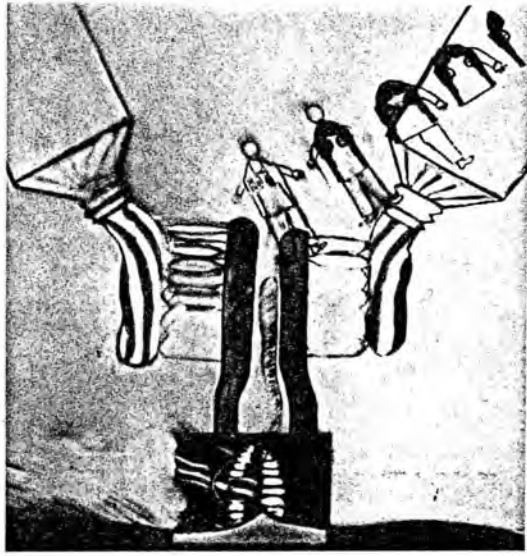
Like the doctor and ethologist Konrad Lorenz, Fromm urges us to leave behind what both regard as a merely "humanoid" phase of human history and, taking full responsibility for ourselves, develop to a stage where we can call ourselves truly human. Should we manage to attain such a stage, this would not be a Utopian world without problems and conflicts. It is man's fate that he is beset by contradictions which he has to solve without ever solving them. But: "When he has overcome the primitive state of human sacrifice, be it in the ritualistic form of the Aztecs or in the secular form of war, when he has been able to regulate his relationship with nature reasonably instead of blindly, when things have truly become his servants rather than his idols, he will be confronted with the truly human conflicts and problems."²

This means that man will have to be adventuresome, courageous, imaginative, capable of suffering and of joy, but his "powers will be in the service of life, and not in the service of death. The new phase of human history", Fromm proposes, if it comes to pass, "will be a new beginning, not an end."³

1. Fromm, *The Sane ...*, p.360.

2. *Ibid.*, p.362.

3. *Loc. cit.*



DEREK BOSHIER. *So ad men became depth men*, 1962.

In the meantime, here is modern man with no convictions of his own, almost no individuality, almost no sense of self.

Some figures quoted in the context of technological change are interesting: "While in 1850 men supplied 15 per cent of the energy for work, animals 79 per cent and machines 6 per cent, the ratio in 1960 will be 3 per cent, 1 per cent and 96 per cent respectively."¹ One shudders to think what the ratio has become by 1985. It is, however, not the changing ratio per se of these percentages that makes one shudder - after all, such a shift could free man for his more truly human pursuits. The chill down one's spine comes from the observation that man doesn't seem to know what to do with his newly-won freedom: having gained a lot more free time, he does not know what to do with it except kill it somehow, anyhow, or fill it by going on destructive rampages.

The phenomenon of alienation Fromm sees as being closely linked to one of the fundamental economic features of Capitalism: the process of *quantification* and *abstractification*, which entails a transformation of the concrete into the abstract and has stretched tentacles far beyond the balance sheet and the quantification of economic occurrences in the sphere of production into the human domain.

Today's businessman deals not only with millions of dollars, but also "with millions of customers, thousands of stockholders, and thousands of workers and employees; all these people become

1. Fromm, *The Sane* ..., p.104.



(Vietnam): Q. *And Babies?*
A. *And Babies.*

so many pieces in a gigantic machine which must be controlled, whose effects must be calculated; each man eventually can be expressed as an abstract entity, as a figure, and on this basis economic occurrences are calculated, trends are predicted, decisions are made."¹

Even in those spheres of human experience that do not involve commodities, this abstractification takes place; and a newspaper about to report a flood disaster will headline a flood by speaking of a "million-dollar catastrophe"², emphasizing the abstract quantitative element rather than the concrete aspects of human suffering.

Worse than that, people experience themselves and other people as commodities with a certain market value, seeking for instance on the "marriage market" a personality package they can "afford" in terms of the personality package they can offer in return.³ A man may be spoken of as being "worth one million dollars"⁴ - which again is an abstraction that can be expressed in a figure. The concrete human being is being lost sight of. The same attitude is expressed when a newspaper headlines on obituary with the words "Shoe Manufacturer Dies"⁵. As Fromm points out, "actually a *man* has died, a man with certain human qualities,

1. Fromm, *The Sane ...*, p.111-12.

2. *Ibid.*, p.116.

3. I recommend Erich Fromm's *The Art of Loving* for a revealing discussion of the problem of the disintegration of love in contemporary Western society.

4. Fromm, *The Sane ...*, p.116.

5. *Loc. cit.*

with hopes and frustrations, with a wife and children. "It is true", he continues, "that he manufactured shoes, or rather, that he owned and managed a factory in which workers served machines manufacturing shoes; but if it is said that a 'Shoe Manufacturer Dies', the richness and concreteness of a human life is expressed in the abstract formula of economic function."¹

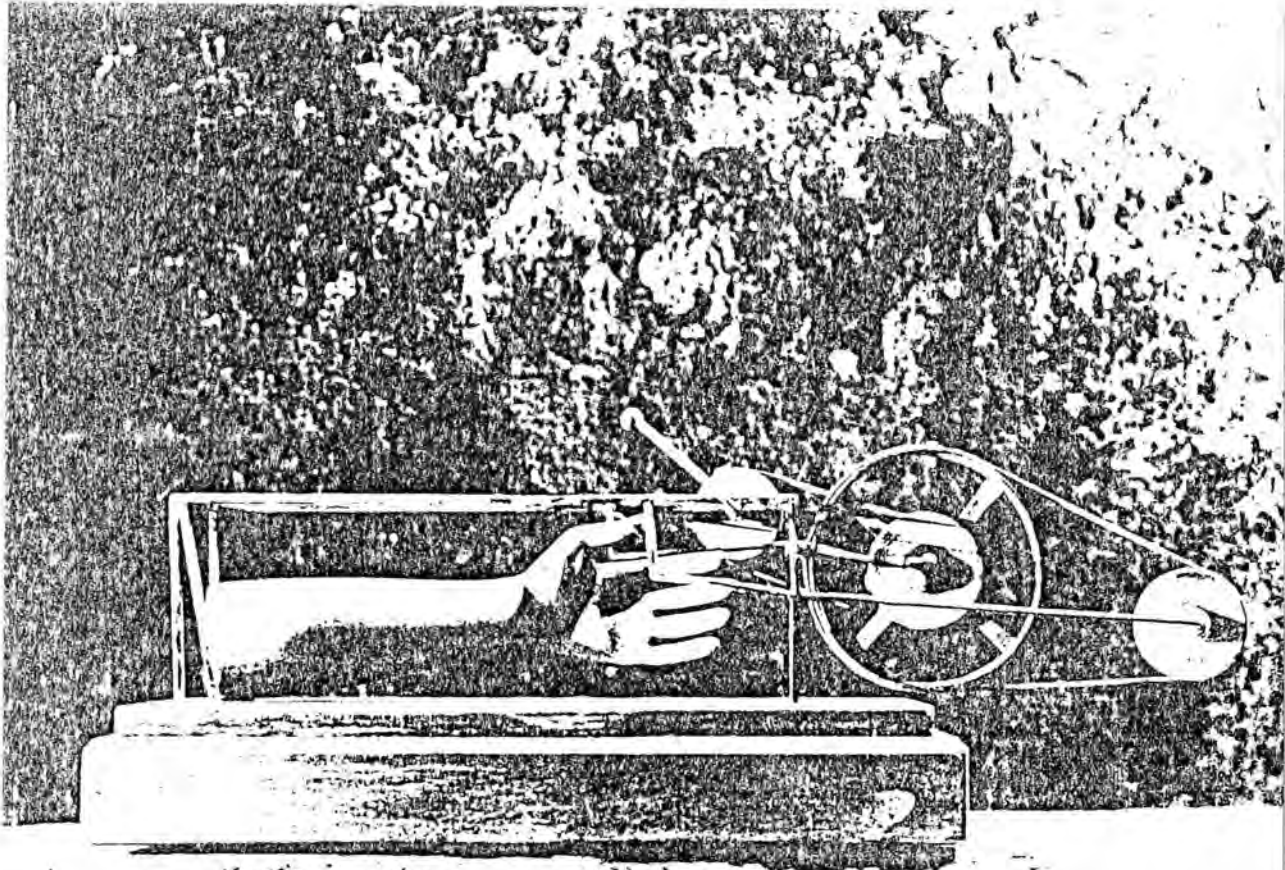
Yet another example of how commodity-thinking has entered all spheres of life, even religious thinking, can be seen when the evangelist Billy Graham says: "I am selling the greatest product in the world; why shouldn't it be promoted as well as soap?"² Popcorn, religion, soap, and human beings all get levelled in this kind of thinking, until the only perceived difference between these "commodities" would appear to be the price tag.

Before leaving Fromm, it is important to trace the connection he makes between what we now call "alienation" and what the Old Testament prophets referred to as "idolatry". The basic reason why idolatry was considered sinful was that it represented self-alienation.

Man spends his energy, his artistic capacities on building an idol; then he worships this idol, which is nothing but the result of his own human effort. "His life forces have flown into a 'thing', and this thing, having become an idol, is not experienced as a result of his own productive effort, but as

1. Fromm, *The Sane ...*, p.116.

2. Billy Graham, as quoted in *Time Magazine*, October 25, 1954 and again quoted in *The Sane Society*, p.118.



Giacometti *The Captured Hand* 1932

something apart from himself, over and against him, which he worships and to which he submits."¹

There we have it: "idolatrous man bows down to the work of his own hands. The idol represents his own life forces in an alienated form."² In our case, the idol is called "Technology".

(Need this calf be painted quite so golden?) In one sense, our culture is as religious as any: "our gods are the machine and the idea of efficiency."³

b) Other Problems

Other aspects of the contemporary dilemma that have caused concern in the scientific community are issues such as the wrecking of our environment, the entropy of feeling, the abuse of inventive powers and the increasing indoctrinability of man.

Konrad Lorenz, who was awarded the Nobel Prize for Physiology and Medicine in 1973, and whose life's work revolved around the comparative study of the ethology of man and animal, after devoting much study to the instinctive bases of human learning⁴ and other aspects of human behaviour, published a book⁵ called *Civilized Man's Eight Deadly Sins*. In this volume he draws our

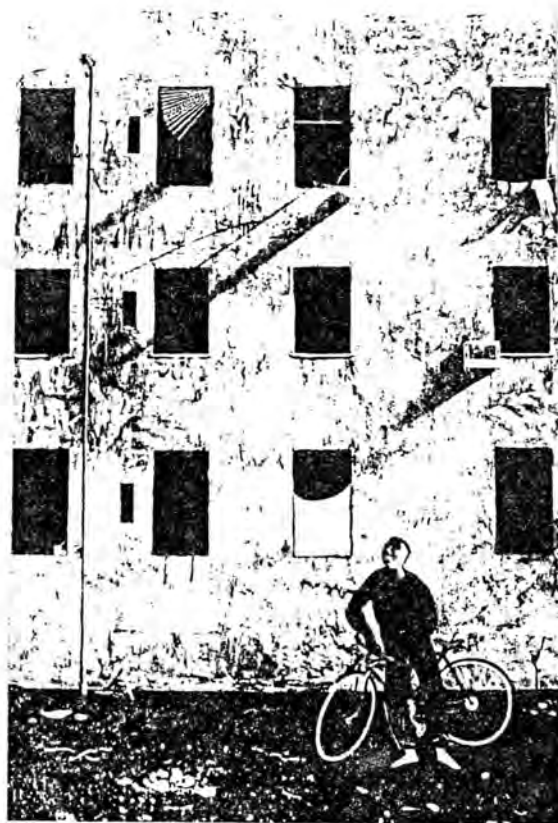
1. Fromm, *The Sane ...*, p.121-22.

2. *Loc. cit.*

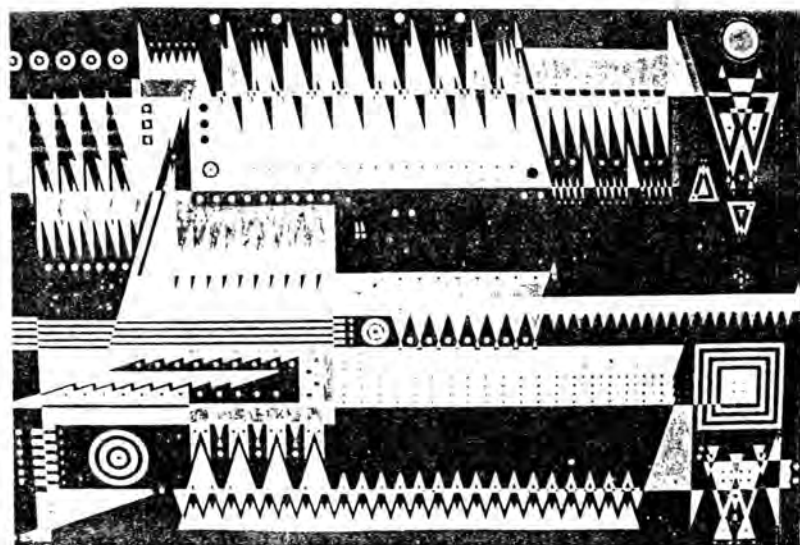
3. *Ibid.*, p.175.

4. Lorenz, Konrad. "Die instinktiven Grundlagen Menschlicher Kultur": [Innate Basis of Human Culture], in *Die Naturwissenschaften* 54, 1967, p.377-88.

5. Lorenz, Konrad. *Civilized Man's Eight Deadly Sins* (see bibliography).



Krsto Hegedusić *The Courtyard* 1958



YVES LALOY. *Under the Twinkling Stars*, 1953.

attention to eight separate but causally connected processes which are threatening to destroy not only our civilization but mankind as a species. These processes are:

1. Overpopulation of the earth which - apart from its increasing demand for food resources, etc. - forces every one of us, because of the superabundance of social contacts to shut himself off in an essentially 'inhuman' way, and which, because of the crowding of many individuals into a small space, elicits aggression.



2. Devastation of our natural environment, with destruction not only of our surroundings, "but also of man's reverential awe for the beauty and greatness of a creation superior to him."¹

Lorenz advises that the complete blindness to everything beautiful, so commonly found nowadays, is a mental illness that must be taken seriously, as it goes hand-in-hand with insensitivity to the ethically wrong.

1. Lorenz, *Civilized Man's ...*, p.76.

3. Man's race against himself, which pushes the development of technology to an ever faster pace, blinding man to all real values and depriving him of the time for the genuinely (and important!) human activity of reflection.

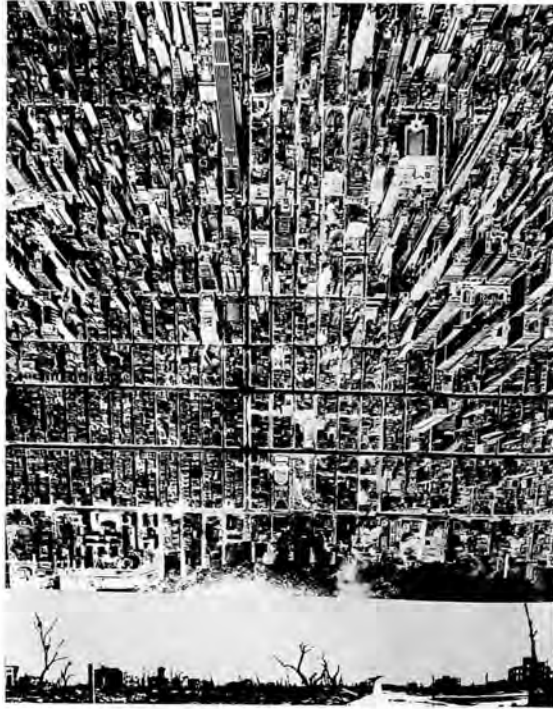
In this context, Lorenz cites his teacher Oskar Heinroth, who used to say that "After the wings of the Argus cock, the working pace of modern man is the stupidest product of intraspecific selection."¹

With the Argus cock pheasant, when in courtship, the secondary feathers are spread and then presented to the hen in a way analogous to that of the peacock's tail, which is formed by the upper tail coverts. As in the peacock, so in the Argus too, the choice of partner rests with the hen, and the mating chances of the cock are in fairly direct relation to the degree of attraction exerted on the hen by the male courtship organ. In flight, however, the peacock's tail is folded into a more or less streamlined stern and is scarcely a hindrance, whereas the elongated secondaries of the male Argus render him almost incapable of flight. "That he does not become entirely so is ... due to the fact that ground predators exert a selection pressure in the opposite direction, thereby bringing about the necessary regulating effect."²

Lorenz proposes that in the Argus, as in many other animals with similar structures, "environmental influences prevent the

1. Lorenz, *Civilized Man's ...*, p.18.

2. *Loc. cit.*



This photo shows, above, the twentieth century's greatest city - New York. Below, the end of another city - Hiroshima, 1945. Much as man seems to have gained control over nature, he has yet to gain control over his *own* nature.



Japan's eighth largest city was reduced in a moment to a desert of ash in which the living could not even count the dead

species from moving, by intraspecific selection, along monstrous evolutionary paths leading to catastrophe"¹ and points out that no such salubrious regulating forces are at work in the cultural evolution of mankind. "To his detriment, man has learnt to govern all the forces of his extraspecific environment, but he knows so little about himself that he is helplessly at the mercy of the satanic workings of intraspecific selection."²

Homo homini lupus - "Man is the predator of man", and, says Lorenz, "As no biological factor has ever done before, the competition between man and man works in direct opposition to all the forces of nature, destroying nearly all the values these have created, with a cold calculation dictated exclusively by value-blind commercial considerations."³

In this race of man against himself, anxious haste and hasty Angst take their toll on his physical health, causing high blood pressure, renal atrophy, heart disease and other maladies. They also rob him of his most essential properties in other respects. One of these is reflection. Without reflection and the ensuing self-awareness, man could never have become man. "A being unaware of the existence of its own self cannot possibly develop conceptual thought, word language, conscience, and responsible morality. A being that ceases to reflect is in danger of losing all these specifically human attributes."⁴

1. Lorenz, *Civilized Man's ...*, p.18.

2. *Loc. cit.*

3. *Loc. cit.*

4. *Ibid.*, p.20.



As regards our present conception of time, it is perhaps salutary to remind ourselves that this mechanistic way of measuring and conceiving time is of comparatively recent origin. It was only as towns increased in size and number that the life of the community began to be regulated by mechanical clocks, which appeared in the latter part of the thirteenth century and were perfected in the fourteenth. "Set high in public places, they replaced the variable liturgical hours with a secular division of the day into twenty-four equal hours."¹ This, too, I maintain, was a factor in removing ourselves further from being in touch with natural cycles, such as the rising and setting of the sun, i.e. day-night cycles and the seasons with their varying photoperiodicity, and was bound to confuse at least to some extent man's organism. I am not advocating that we necessarily return to the pre-mechanical way of measuring time, but I do suggest that the above gives pause for thought and that we must establish a new balance between the human body and cosmic forces.

To return to Lorenz, the next point he makes concerns:

4. The waning of all strong feelings and emotion, caused by self-indulgence. "The progress of technology and pharmacology furthers an increasing intolerance of everything inducing the least displeasure. Thus human beings lose the ability to experience a joy that is only attainable through surmounting serious obstacles. The natural waves of joy and sorrow ebb

1. Hultén, *The Machine* ..., p.7.

'25 000 could have mechanical hearts'

By RON CLARKE
in Los Angeles

Dr ROBERT JARVIK, developer of a mechanical heart which is used for three men a day, says that up to 25,000 people could have such hearts.

day are done at the hospital but a few are done at home. He has

August 1985

William de Humana Hospital in Louisville, Kentucky, is authorized by the US Food and Drug Administration to make mechanical hearts for patients at the hospital but versions of the hearts can be made at other hospitals.

"He has an excellent chance of living another two or three years," Jarvik said.

"A Swedish patient, Leif Stenberg, is living an acceptable and nearly normal life after receiving a mechanical heart (also a Jarvik-7) in Stockholm last April," Jarvik added.

Murray Haydon received a mechanical heart at the Louisville facility in February, but Jack Burcham, the third Louisville patient, died there in late April.

"If the mechanical heart programme really

Technology has replaced concern

Dear Editor,
With reference to the letter from B. Allen from Gramhams-town, I am a registered nurse and midwife and have always been very proud to belong to the medical profession.

However, in recent months I hear more and more people describing their stay in hospital as miserable to the least. Modern equipment and technology seem to have replaced the care and concern we were taught to give our patients.

Young mothers of first babies are given little or no help and advice. All this, I am sad to say, is happening in the large training hospitals, which in the past have been highly acclaimed. One needs to keep abreast of medical science, but not at the expense of human love and compassion.

I do appeal to all who are at present in training to place themselves at all times in the patients position and see how they would be if a doctor of evil.

It is heartbreaking to see people living in makeshift shelters in the bushes of Bethelsdorp and Kleinskool. Such conditions destroy the dignity of human beings."

Nursing News

stating to be invited to represent the committee at a council meeting and find

Psychiatrist warns on computer

HERALD CORRESPONDENT

LONDON — Some teenagers can become severely disturbed after allowing home computers to take over their lives, a leading psychiatrist has warned.

Dr Prem Misra, an Indian-born consultant psychiatrist in Glasgow, disclosed that he had treated four teenage boys for computer addiction.

Aged between 16 and 19, three of them have been successfully weaned off the computer, but the older boy who underwent treatment in hospital has still not been entirely cured.

Dr Misra found the boys suffered nightmares, illusions, excessive daydreaming and exhaustion as a result of their obsession.

"One boy became so ill that he had to be admitted to hospital for treatment and to keep him away from his computer," said Dr Misra yesterday. "He became psychotic."

In this case the treatment consisted of tranquillisers, but in the other three a reduc-

addiction danger

tion in the amount of time operating their computers was enough to effect a cure.

The patients became unbalanced after spending up to 12 hours a day playing computer games and programming their machines. The computers were the most important thing in their lives and they imagined the machines had a mind of their own.

The psychiatrist is now suggesting that parents should seek medical advice from their family doctor if children with computers show excessive daydreaming or dizziness.

Mr Ronald Coates, editor of Computer News magazine, confirms that computers are addictive.

"I have heard of couples getting divorced because husbands are spending too much time on their computers. Instead of going to bed at night with the wife, they spend hours programming their computer."

Death sentence: Killed mother

for drink money

MOSCOW — A young worker, who drank "a quarter of a bucket of wine" and then killed his mother for more drinking money, has been sentenced to death, a Moscow newspaper reported yesterday.

Sergei Gerasimov strangled his mother, Praskovia, because she refused to give him money to continue a recent day-long drinking binge that began at 8am, Moskovskaya Pravda (Moscow Truth) said.

The story was the latest in a media campaign warning against the evils of alcohol. Television, radio and newspapers have all joined in the anti-alcohol campaign since it was announced by the Soviet leader, Mr Mikhail Gorbachev, in May.

After graduating from high school and settling down to a good job and happy marriage, Gerasimov began drinking. "He cannot remember how he began drinking," the newspaper said.

"He was often absent from his (factory) job, or was drunk on the job site, and began making defective parts," the newspaper reported. Eventually he was fired and had to take a low-paying job at a vegetable stand. Then, his wife left him.

"His mother felt sorry for him and all her money was spent on her son, who demanded more and more to satisfy his drinking habit," the newspaper said.

"That day, he had a bottle of wine at 8am, right in the wine shop. He then forced his mother to give him a rouble (R2.40) for another drink. He had more drinks and forced her to give him 10 roubles (R24) more to buy a bottle of port," the report said.

After they returned home, he demanded more cash, but she refused. Gerasimov, in an alcoholic rage, then strangled her, the newspaper said.

UPI

Handwritten: Herald, Tues, Sept 3, 1985

EASTERN PROVINCE HERALD, FRIDAY, AUGUST 9, 1985

away into an imperceptible oscillation of unutterable boredom."¹ To paraphrase T.S. Eliot, the desert is not only in the heart of our brothers or in the tube train squeezed next to us, it is in us.

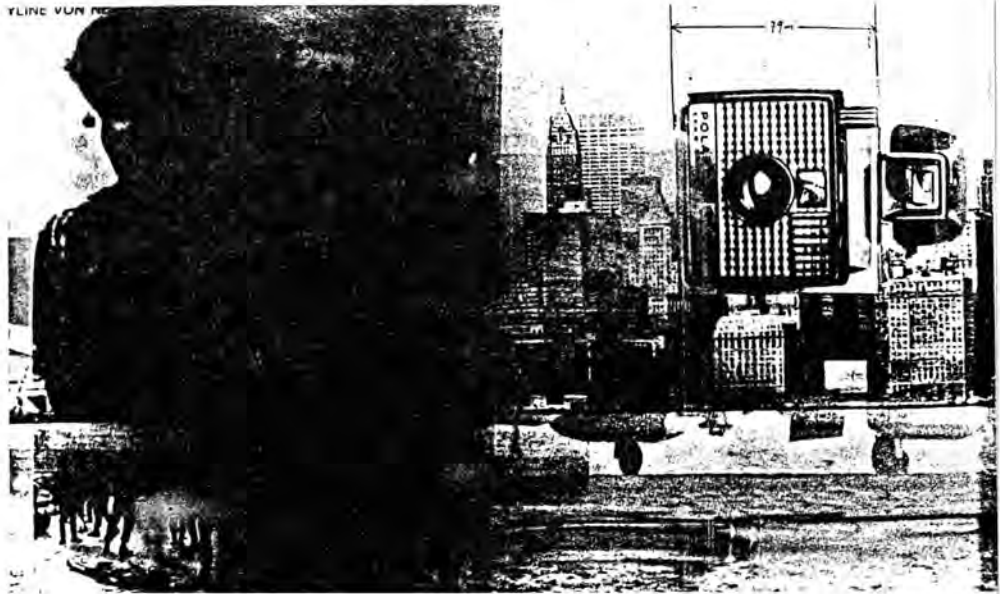
5. Genetic decay. Lorenz postulates that in our modern civilization there are no factors, apart from a few transmitted traditions of right and wrong and a so-called "innate sense of justice", that exert a selection pressure which would tend to preserve instinctive norms of social behaviour, although, as he says, with the growth of society, these are becoming more and more necessary. He points out the alarming number of infantilisms which could make a "certain type of hippie into social parasites."²

6. The break in tradition. This revolves around the critical point that is reached when the younger generation can no longer communicate with the older one and still less identify with it. This leads to the younger treating the older like an alien ethnic group, confronting it with the equivalent of national hatred. Naturally, this threatens the continuance of tradition and the possibility of transmitting proven values to future generations. As Siegfried Giedion puts it, "Equipoise is lacking between ... the past - tradition - and the future - exploration of the unknown; between the temporal and the eternal."³

1. Lorenz, *Civilized Man's ...*, p.76. I recommend reading his entire chapter on the subject, as in the present context I can only give the merest abstract.

2. *Ibid.*, p.77.

3. Giedion, S. *Mechanization takes Command*, p.721.



Wolf Vostell *So we live, evening after evening, in front of the Television Set.*

7. Increased indoctrinability of mankind. "The increase in numbers of people within a single cultural group, together with the perfection of technical means, lead to the possibility of manoeuvring public opinion into a uniformity unprecedented in the history of mankind."¹ (It is worth noting here that C.G. Jung pointed out that a sane and normal society is one in which people habitually disagree, because general agreement is relatively rare outside the sphere of instinctive human qualities.) Thus, there are "cultures in which an individual who purposely keeps aloof from the influences of the mass media, for example television, is regarded as pathological."² Of course, de-individualizing effects are highly desirable to all those who want to manipulate large bodies of people - whether to commercial or political ends. Opinion polls, advertizing, cleverly directed fads and fashions help the mass producers on this side

1. Lorenz, *Civilized Man's ...*, p.77.

2. *Loc. cit.*



VOX

JOE TILSON
Painted Vox-Box 1963.

of the iron curtain, and the functionaries on the other side to attain what amounts to a similar power over the masses.

Nor is it only the masses that are influenced and swayed by fashions and tendencies of the times. Scientists, like artists, are children (as much as fathers) of their time and as such quite as susceptible to the whisperings of the Zeitgeist. Thus, the symptoms of dehumanization and alienation that we have observed affecting the artist as much as the man in the street, manifest in the scientist too. And how could it be otherwise in view of the fact that we share a common humanity?

To quote Lorenz again at some length: "Research into highly integrated living systems is recognized as 'scientific' only if, due to purposive measures (Donald Griffin aptly calls them, simplicity filters), the structure-bound systemic properties give the deceptive impression of 'exact', that is physics-like, simplicity; or if the statistical evaluation of numerically impressive data material makes us forget that the 'elementary particles' under examination are human beings and not neutrons [abstractification and quantification again!]; in other words only if all that is interesting in highly integrated organic systems, including that of man, is left out of consideration. This", he continues, "applies particularly to subjective experience, which, like something highly indecent, is repressed in the Freudian sense."¹

1. Lorenz, *Civilized Man's ...*, p.73.

This is the sort of "science" that leads to psychology without psyche, and it is forgotten that even in the most "objective" research, knowledge of the examined object or process is only acquired by way of somebody's own subjective experience. For an elucidating discussion of "psychology without psyche", I suggest reading Arthur Koestler's chapter "The Poverty of Psychology" (he refers to Behaviorism) in *The Ghost in the Machine*, where the "ratomorphic" view of man comes in for a scathing analysis.

To follow Lorenz once more, these obsessions which are basically unscientific, "can be explained only as the results of the *ideological pressure exerted by the consensus of larger firmly indoctrinated human masses*, a pressure which, in other areas of human life, too, is often capable of producing the most incredible follies of passing fashion."¹ He stresses that, "the special danger in the field of science lies in the fact that it leads too many, though fortunately not all, modern scientists in a direction exactly opposite to that of the real aim of all human striving for truth - the aim for better self-knowledge. In science, the trend prescribed by present-day fashion is inhuman in the worst sense of the word."²

Let us stress again that this process did and does not necessarily originate in the high citadels of science (or art for that matter). The "common sense" consensus has seldom been

1. Lorenz, *Civilized Man's ...*, p.73.

2. *Ibid.*, p.74.

more than just that: common. Not all scientists and not all artists have managed to acquire sufficient immunity to it.

Lorenz concludes in his summary and discussion of man's eighth deadly sin that "(8) the arming of mankind with nuclear weapons constitutes a threat easier to avert than the seven other developments described."¹ He proposes that the chief problem caused by the threat of nuclear weapons is the "Armageddon atmosphere"² it creates.

I have quoted and discussed the ideas of both Erich Fromm and Konrad Lorenz at some length, as both, though having somewhat different scientific backgrounds, arrive at much the same diagnosis and regard it with the serious concern it merits.

I have refrained from quoting much from, for instance, Arthur Koestler and a number of others whose insights travel along the same lines as the above, but would like to conclude this section with a summary and a few words from J.H. Robinson.

Over the last few centuries, and with increasing speed over the last few decades, man has learnt a tremendous amount about his natural environment and as a result of his growing insight into natural processes, has learnt to largely harness these.

He is now in a position, "for the first time in history, to have some really clear and accurate notion of the world in which he dwells and of the living creatures which surround him and

1. Lorenz, *Civilized Man's ...*, p.77.

2. *Ibid.*, p.75.

with which he must come to terms"¹ - not to mention his conquest of inorganic matter, right up to the splitting of the atom.

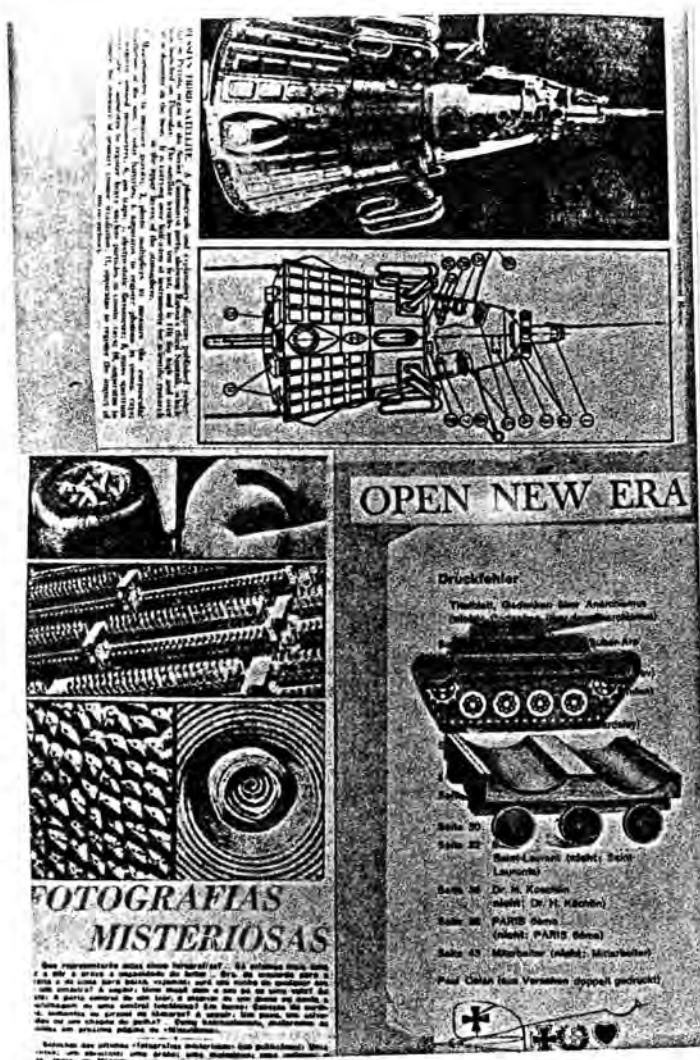
Robinson "pre-echoes" Lorenz in saying that "it would seem obvious that this fresh knowledge should enable him to direct his affairs more intelligently than his ancestors were able to do in their ignorance. He should be in a position to accommodate himself more and more successfully to the exigencies of an existence which he can understand more fully than any preceding generation, and he should aspire to deal more sagaciously with himself and his fellowmen."²

Arthur Koestler, seeing the same imperfections in the species homo sapiens / maniacus, suspects other root causes and hence advocates somewhat different measures; but one conviction these writers all convey is that the task at hand is of great urgency. As Fromm asks, "Will the majority be converted to sanity - or will it use the greatest discoveries of human reason for its own purposes of unreason and insanity?"³

"The human race had the wisdom to create science and art; why should it not be capable to [sic] create a world of justice, brotherliness and peace? [It] has produced Plato, Homer, Shakespeare and Hugo, Michelangelo and Beethoven, Pascal and Newton, all these human heroes whose genius is only the contact with the fundamental truths, with the innermost essence of the

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1. Robinson, J.H. *The Mind in the Making*, p.109.
 2. *Loc. cit.*
 3. Fromm, *The Sane ...*, 357.

universe. Why then should the same race not produce those leaders capable of leading it to those forms of communal life which are closest to the lives and the harmony of the universe?"¹



Paolozzi Work Sheet Collage c.1945

1. Leon Blum, quoted in frontispiece to *The Sane Society*.



Asger Jorn *Here He is Back Again!* 1962

CHAPTER FIVEART AND SCIENCE - ESTRANGED SIAMESE TWINS?1. Undercurrents of the Fantastic and the Irrational

Toffler, in *Future Shock*, warns of the "rise of a potentially deadly mass irrationalism."

After some centuries of what I'd call "super-rationalism", this is a formidable danger indeed.

Experience in analytical psychology has amply shown that the conscious and the unconscious seldom agree as to their contents and their tendencies. "This is due to the fact that the unconscious behaves in a compensatory or complementary manner towards the conscious."² Jung says further that "the definiteness and directedness of the conscious mind are extremely important acquisitions which humanity has bought at a very heavy sacrifice, and which in turn have rendered humanity the highest service. Without them science, technology, and civilization would be impossible for they all presuppose the reliable continuity and directedness of the conscious process."³

Civilized life today demands "concentrated, directed conscious functioning, and this entails the risk of a considerable dissociation from the unconscious. The further we are able to

1. Toffler, *Future Shock*, p.439.

2. Jung, *Structure and Dynamics of the Psyche*, p.69-70.

3. *Loc. cit.*

remove ourselves from the unconscious through directed functioning, the more readily a powerful counter-position can build up in the unconscious, and when this breaks out it may have disagreeable consequences."¹

No contemplation of creativity and the unconscious in our society can afford to ignore the relation of the unconscious to techniques and machines.

The world we live in has become mechanized to an extraordinary degree, and irrational unconscious phenomena "are always a threat to this mechanization"², says Rollo May, to continue that "Poets may be delightful creatures in the meadow or in the garret, but they are menaces on the assembly line. Mechanization requires uniformity, predictability, and orderliness; and the very fact that unconscious phenomena are original and irrational is already an inevitable threat to bourgeois order and uniformity."³ In this he echoes Jung who proposes that for the statesman, doctor, and engineer as well as for the simplest labourer, the qualities of directed conscious functioning are absolutely indispensable. "We may say in general that social worthlessness increases to the degree that these qualities are impaired by the unconscious,"⁴ but, he stresses, "Great artists and others distinguished by creative gifts are, of course, exceptions to

1. Jung, *Structure and Dynamics of the Psyche*, p.71.

2. May, R., *The Courage ...*, p.69.

3. *Loc. cit.*

4. Jung, *op. cit.*, p.70.

this rule. The very advantage that such individuals enjoy consists precisely in the permeability of the partition separating the conscious and the unconscious. But, for those professions and social activities which require just this continuity and reliability, these exceptional human beings are as a rule of of little value."¹

While not decrying the value of technology and directed thinking as such, May points out that there is the danger that our technology will serve as a buffer between us and nature, a block between us and the deeper dimensions of our own experience. He stresses that tools and techniques ought to be an *extension* of consciousness, but that they can just as easily be a *protection* from consciousness. "Then tools become defense mechanisms - specifically against the wider and more complex dimensions of consciousness that we call the unconscious. Our mechanisms and techniques then make us 'uncertain in the impulses of the spirit'² as the physicist Heisenberg puts it."³

That a dangerously explosive counterposition has built up in the unconscious of modern man seems beyond question, and a number of important exhibitions over the last couple of decades bear this out.

Thus, for example, there was an exhibition called "New Images

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1. Jung, *Structure and Dynamics of the Psyche*, p.70.
 2. Heisenberg as quoted by May in the above work; from Werner Heisenberg, "The Representation of Nature in Contemporary Physics", in *Symbolism in Religion and Literature*, ed. Rollo May, New York, 1960, p.225.
 3. May, *The Courage ...*, p.70.



BACON. *Study for Corrida No. 2*, 1969.

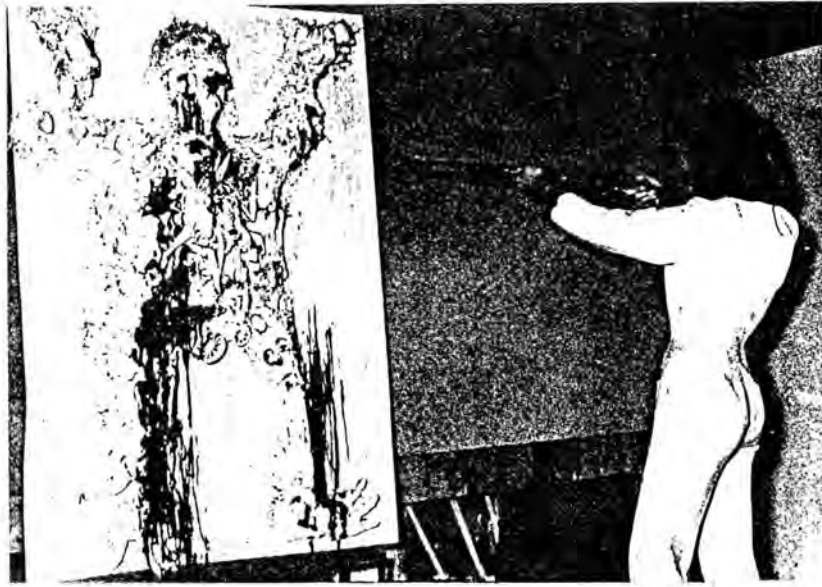
of Man", organized by Peter Selz in 1959 at the Museum of Modern Art in New York, which was designed to show what several important artists would produce as a contemporary image of man. "The result was amazing."¹



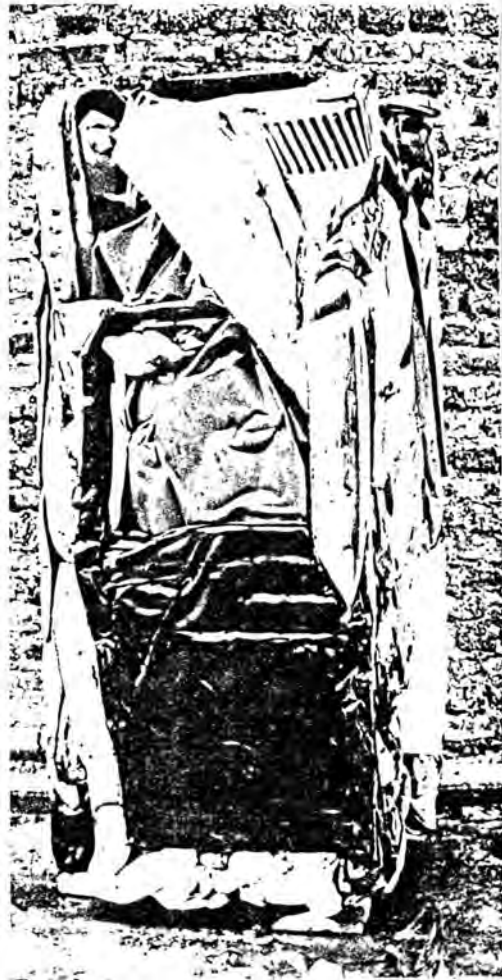
Kurt Seligmann *Untitled* 1948

The request had been for representations of people, but what turned up was a weird gathering of monsters and ghosts - faceless or distorted creatures, grimacing creatures with grotesque expressions or in masks, grasshoppers with human faces: "a really terrifying company which seemed to be protesting against a technically perfect and unthinkingly functional world."² And Wieland Schmied concludes that "They were the abortive products of the barbaric undercurrents of our age, or had anyway been tainted by them - an age that has produced Auschwitz and Hiroshima, the concentration camps and the H-bomb."³

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1. Schmied, Wieland. "The Imaginary and the Fantastic", *Figurative Art Since 1945*, p.123.
 2. *Loc. cit.*
 3. *Loc. cit.*



Niki de St. Phalle *Rifle-Painting*



CESAR.

The Yellow Buick, 1959. Compressed automobile.

I would say that these images represent also the convulsions of man's suppressed and violated self - which will NOT lie down and die.



Asger Jorn *Here He is Back Again!* 1962

Suppress it as we may, it will not disappear; but if we don't allot it its proper place in the scheme of things, it gets perverted and twisted and comes out in strange and sometimes frightening forms: The urge to create, when stifled, turns into destructive channels. It is a power to be reckoned with, and if treated with the respect it merits, can be the source of our highest achievements.

Schmied describes in some detail a number of the sculptural and painted works on this exhibition. There were Giacometti's emaciated, elongated figures which Sartre described as "figures from the dust of space", Germaine Richier's hybrid creatures - half man and half insect, often with hydra heads, spider's legs, or arms like the suckers of some primitive organism. There was Theodore Roszak's "Skylark", a skeleton with the blade of a scythe as wings, and a crown of thorns on its head, and there



KAREL APPEL. *Hiroshima Child*, 1958

were the torsos of César and Paolozzi; pieced together from various scraps left over from the world of technology.

Amongst the paintings were Dubuffet's 'archetypes', Francis Bacon's wounded, battered faces: "seen in violent motion and



GEORGES DYER
Pris au piège. étude. 1970. : Bacon



Bacon: Etude. 1970
I RAWSTHORNE
Collection privée

greatly out of focus, screaming flesh confined in some unreal and irritating area rather like a cage."¹ There were also the grotesque female figures of Willem de Kooning, or the grimaces of Karel Appel's *Damned*. Rico Lebrun took the observer into the pitiless atmosphere of his *Dachau* and Cosmo Capoli showed his dancing skulls under the title of *Birth*. Of all these painters, according to Schmied, Richard Diebenkorn was the only one to portray man "as an unharmed inhabitant of an enduringly healthy world"² and among the sculptors Fritz Wotruba was alone in presenting him as grand and statuesque "as if he were indeed still the measure of all things."³

The tone of this exhibition was particularly frightening because there had never been any intention of creating some chamber of

1. Schmied, *op. cit.*, p.123.

2. *Loc. cit.*

3. *Loc. cit.*



Willem de Kooning *Woman I* 1952

horrors or of collecting together creatures from the world of fantasy. It was actually an attempt to make an objective survey of contemporary representations of man in art.

An exhibition organized in Vienna four years later by Werner Hofmann was no different. There in the Vienna Museum of the Twentieth Century hung the same kind of images, though in this instance under the collective title "Idole und Dämonen" [idols and demons], and thus reserved a priori for the world of myth and magic.

In the New York exhibition it was the extent of distortion and deformity in representations of man that was so staggering, while in Vienna it was the sheer number of artists whose work included material appropriate to the theme of the exhibition. Both these exhibitions, however, demonstrated the vast extent to which contemporary art is influenced by an undercurrent of fantasy which is always cropping up "just when one thinks one is on safe ground and is least prepared for it."¹

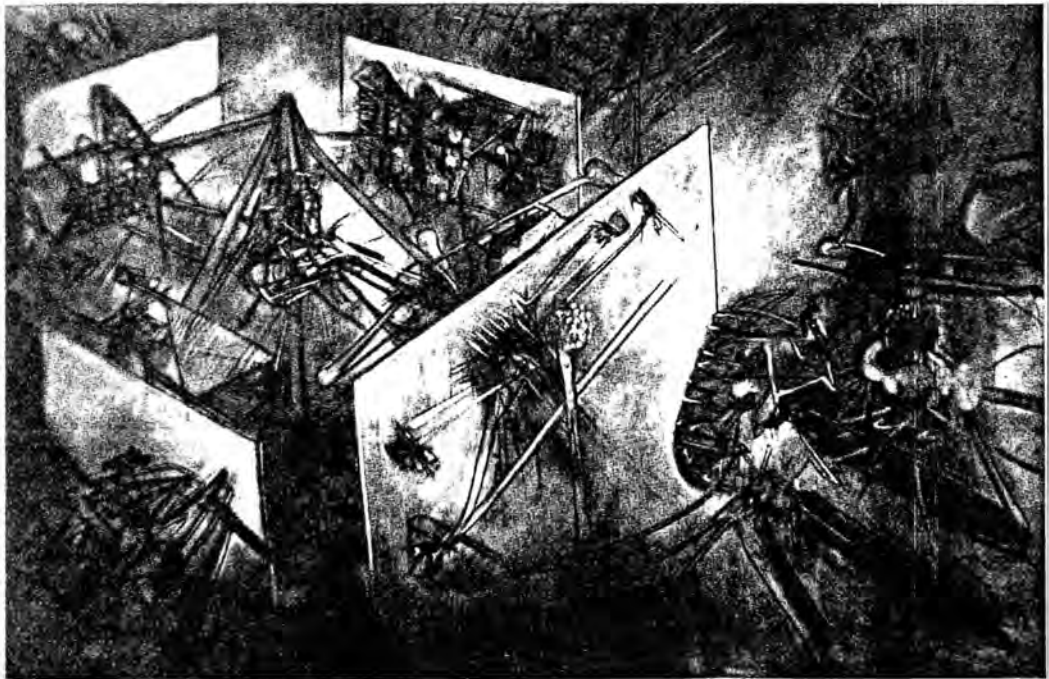
The list of such works and such exhibitions could be continued indefinitely. One could mention exhibitions like "Zeugnisse der Angst" (Darmstadt, 1963), "Labyrinthe" (Berlin, 1966), "Le Muse Inquietanti" (Turin, 1967), "Reiche des Phantischen" (Recklinghausen, 1968), and a host of others whose themes were looser and slightly more widely conceived.

Works like these often act as a warning and a sign that, in

1. Schmied, *op. cit.*, p.124.



Matta *However* 1947



R. Echauren Matta *The Unthinkable* 1957

Hamlet's classic words, "there is something rotten in the state Denmark" or, in Schmied's words, "indicating things beyond the normal range of recognition - things that are unknown, or taboo and hushed up - but it [the fantastic] always shatters the unquestioning thoughtlessness of the world and shocks aesthetic sensibility."¹ Such works and such exhibitions give expression to the latent state of crisis that threatens mankind; "and by expressing it, it gives man a chance to profit through these crises, to grow through them, and to use creativity to face up to them actively."²

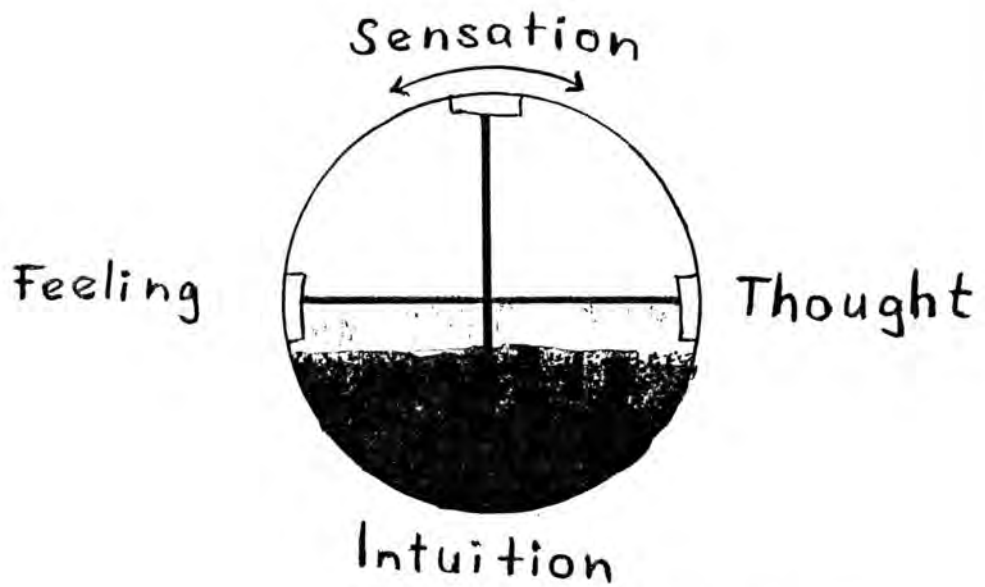
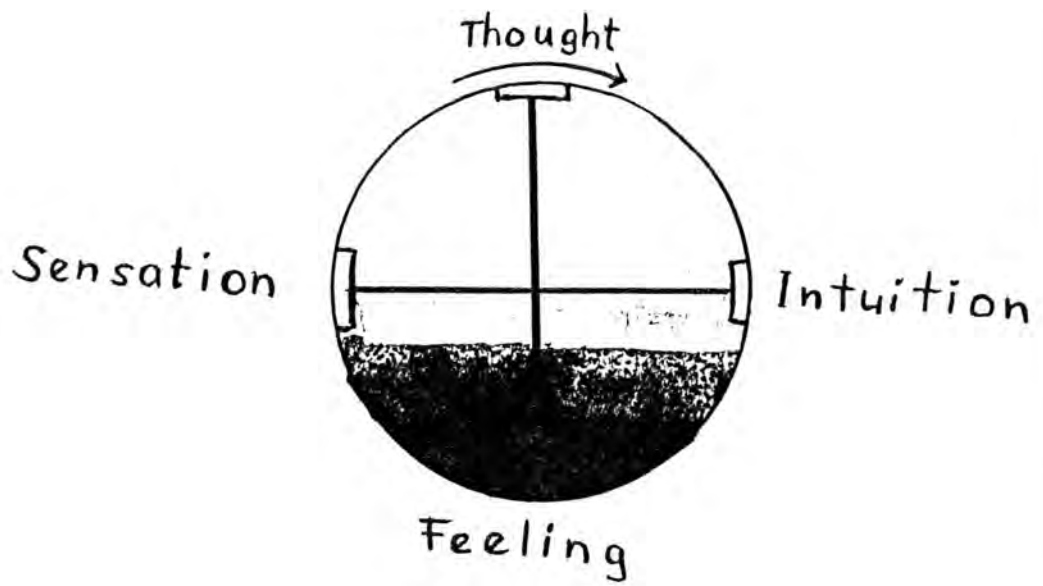
2. A Word on Scientific Creativity - more commonly known as Scientific Method

When thinking about the interrelationships between art and science, one thing must be remembered: that, whatever their differences, they both originate in much the same way. Although we have travelled a long way from Altamira and Lascaux, both the artist's inspirations and the scientist's intuitions are still fed by the same unitary source.

According to popular misconception, if not superstition, scientists arrive at their discoveries by reasoning in strictly rational, precise, verbal terms. This belief is to some extent supported by what may be termed the middle-class - including the upper middle-class - of scientists. The evidence, however, indicates that they do nothing of the sort, and most of the great

1. Schmied, *op. cit.*, p.124.

2. *Loc. cit.*



"Feeling" as Jung means it, is a *rational, i.e. ordering*, function, like thought, whereas "Intuition" is an *irrational, i.e. perceiving*, function.

scientists and original thinkers have never denied that spontaneous intuitions, visions, and hunches of unconscious origin, which they are at a loss to explain, play a crucial part in scientific discoveries. What is so often thought of as constituting the scientific approach, is in fact more aptly called the bureaucratic approach.

In 1945, for example, Jacques Hadamard organized a nation-wide enquiry among eminent mathematicians in America to find out their working methods. The result showed that, with only two exceptions, all of them thought neither in verbal terms, nor in algebraic symbols, but relied on visual imagery of a vague, hazy kind. Einstein, who was among those who answered the questionnaire, wrote: "The words of the language as they are written or spoken do not seem to play any role in my mechanism of thought, which relies on more or less clear images of a visual and some of a muscular type. It seems to me that what you call full consciousness is a limit [sic] case which can never be fully accomplished because consciousness is a narrow thing."¹

Einstein's statement is typical, and it is corroborated by other original thinkers that not only verbal thinking but conscious thinking in general plays only a subordinate part in the brief, decisive phase of the creative act itself. Their virtually unanimous emphasis on intuitive and imaginative processes whose source remains a mystery to them, suggests that the role of strictly rational and verbal processes in scientific discovery

1. Quoted in Koestler, *op. cit.*, p.180, as quoted by Hadamard (1949).



Bison Charging Altamira

has been vastly overestimated since the age of enlightenment. "There are large chunks of irrationality embedded in the creative process, not only in art (where we are ready to accept it) but in the exact sciences as well."¹

This brings us to the question, do art and science "fight" each other? Is it a problem of either/or, or are they not complementary functions of the human spirit, both of which have important contributions to make to human development and the improvement of the human condition? While the majority of people today believe in the superior value of science in benefitting humanity and have little if any faith in the value and benefit of art, the present essay is based on the premise that art as well as science are necessary parts of human endeavour, education, and development.

It should not be a case of art *versus* science, but art *and* science, as both have important parts to play in maintaining - or re-attaining - a reasonable and dynamic equilibrium in man's evolution and in the fullest development of his faculties, which need to embrace the rational as much as the irrational, thinking values as much as feeling values. As regards the terms "feeling" and "irrational", I'd like to point out that "Feeling" as Jung means it and as I use the word in this context, is a *rational*, *i.e. ordering*, function, like thought, whereas "Intuition" is an *irrational*, *i.e. perceiving*, function. Neither term, therefore, has anything to do with the merely non-sensical - a connotation so often wrongly ascribed them.

1. Koestler, *op. cit.*, p.180

"Case history: 'E.T.'" In an age where feeling values and intuition have become suspect, credibility and respectability are sought by aping science and technology, and if one can't compete with or outdistance it, one can at least borrow some of its costumes. Why else make the protagonist in the (kitsch-) film "E.T." an extra-terrestrial sci-fi creature? The theme of the film is basically the time-honoured one of "Lassie, come home" - the costume has changed, the sentiment behind it is still the same.

Having said that, I wouldn't mind if Lassie did come home now - the doghouse has been air-conditioned.

CHAPTER SIXCONCLUSION: TOWARDS A NEW MAGIC

Towards a new Magic where both art and science as poles on a continuum can play their part in the creation of a society that is adjusted to human needs and human dimensions.

With tradition all but destroyed and the image of man mutilated, severed from his roots, the question "Quo Vadis, Homo?" becomes increasingly more urgent, and in order to answer it and act on it effectively, we need to revalue and rethink a lot of our attitudes, for, as Laurens van der Post put it, "Man has become the most endangered species on earth"¹ - both physically and spiritually.

We need to strive for a dynamic equilibrium in more ways than one. For one thing we need to restore the lost equilibrium between inner and outer reality, between the rational and the irrational: "We need a type of man who can control his own existence by the process of balancing forces often regarded as irreconcilable: man in equipoise."² This is not a new problem, but every generation has to find a different solution to the same problem: to bridge the abyss between inner and outer reality by re-establishing the dynamic equilibrium that governs their relationships.

We need to establish a new balance between the individual and collective spheres as well as between the psychic spheres within the individual.

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1. Laurens van der Post on the English Service of the SABC, Sunday 8th January, 1984.
 2. Giedion, *op. cit.*, p.720.

It is also necessary to integrate the specialized approach with a universal outlook and to discriminate between those spheres that are suitable for mechanization and those that are not.

We must bear in mind that the human organism requires equipoise between its organic environment and its artificial surroundings, and that there needs to be a balance between it and cosmic forces.

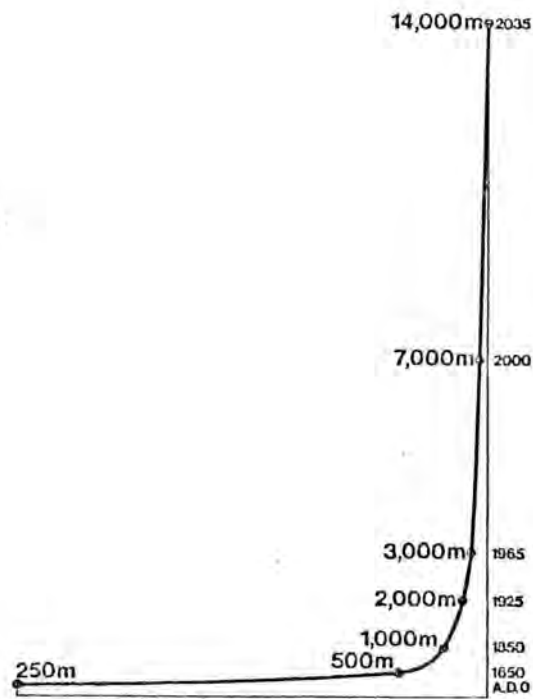
A century ago Thomas Carlyle stated that the "fine arts" had got into "an insane condition and walk abroad without keepers, nobody suspecting their bad state, and do phantastic tricks."¹ Art no longer plays "phantastic tricks". It tells the truth, and very often the whole truth. But in nearly every other sphere the means have outgrown man and "walk abroad without keepers".

What we have to do is no less than clean the Augeian stables, and like Hercules of yore, we don't have a lot of time to do it in. Nor will the prevailing inner insecurity make our task any easier, because, "for the first time in history, men lack the sure lode-stars of religion, mythology, and dynastic hierarchies, and stand naked face to face with reality."² And, as if that wasn't enough, the nature of reality itself is questioned.

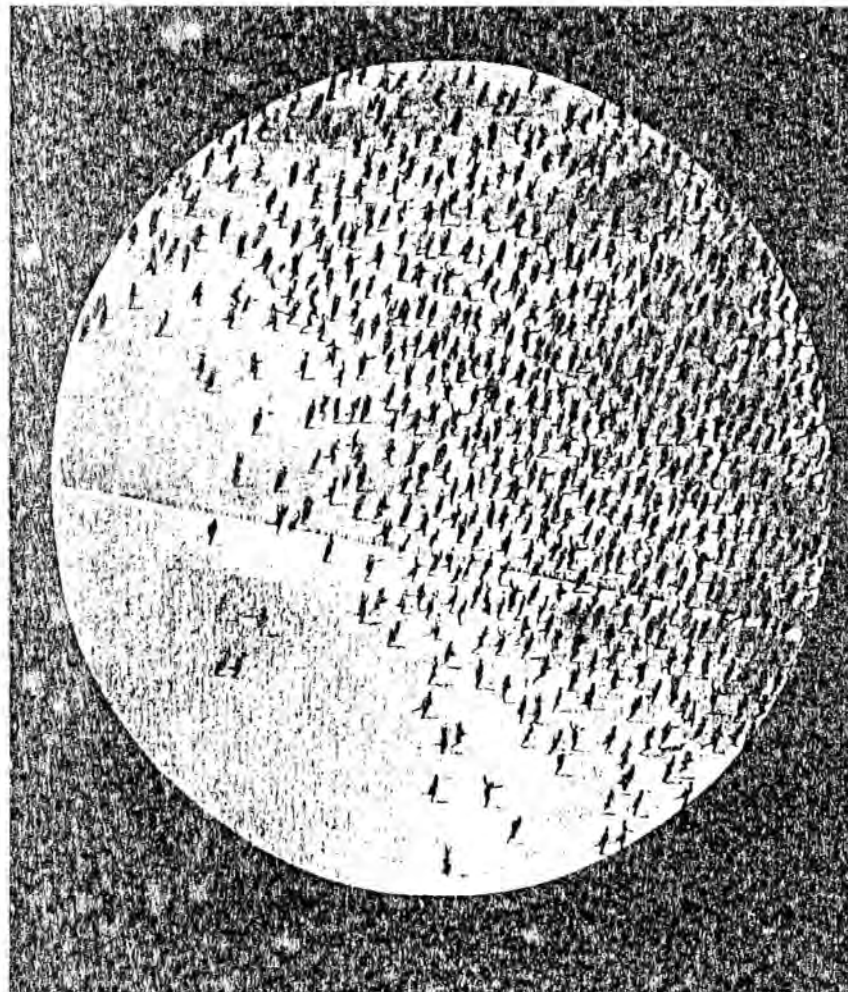
Be all this as it may, one thing is certain: modern man is not likely to find his soul and thus his salvation via a satellite in outer space.

1. Giedion, *op. cit.*, p.171.

2. Jaffé, Hans L.C. *Twenty Thousand Years of World Painting*, p.286.



Population curve from the beginning of the Christian era extrapolated to 2035 A.D.



JUAN GENOVÉS. *Beyond the Limit*, 1966. Oil on canvas

He has to re-discover his humanity and decide where his values and his priorities lie. "Where there is no vision, the people perish"¹, the wise old prophets of the Old Testament pointed out, and though the cathode-ray tube may have replaced the Laterna Magica, the essence of this proverb holds as true today as when it was first hewn in stone or perpetuated on parchment. In science and technology yesterday's truth may be today's obsolescence, but progress in both art and life proceeds along different lines, and while certain adages may be superseded or modified by new insights, other fundamental truths about the nature of man still stand the test of time - the above being one of them.

Koestler draws two exponential curves - one showing the explosive increase in people, knowledge, power, and communications; the other indicating the progress of social morality, ethical beliefs, spiritual awareness and related values. The contrast between these curves "gives certainly an oversimplified, but not an overdramatized view of our history. They represent the consequences of man's split mind."² And Koestler quotes Von Bertalanffy: "What is called human progress is a purely intellectual affair, made possible by the enormous development of the forebrain ... Not much progress, however, is seen on the moral side."³ I agree with Von Bertalanffy that it is doubtful whether the methods of modern warfare are preferable or morally superior to the big stones used for cracking the skull of the fellow-Neanderthaler. It is rather obvious that the moral

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1. *Holy Bible*, Proverbs 29:18.
 2. Koestler, *op. cit.*, p.319.
 3. *Ibid.*, p.320.

standards of Laotse and Buddha were not inferior to our own. The discrepancy between our intellectual and our moral-ethical development is enormous and dangerous. It is time that we caught up with ourselves.

It is only when man has a vision of the good sane life - and I'm not referring to lollipops and bubblegum - to aspire to that he can refashion his world to more truly human standards and needs.

To help in his attempt "has been one of the functions of art and of religion, even though religion itself has eventually become a new form of routine."¹

Art discovers its true social use "not on an ideological plane but by opening the passage from feeling to meaning - not for everyone, since that would be impossible, but for those who want to try."²

As Gérald Gassiot-Talabot affirms, too: "The work of art remains what it has always been: an object of dialogue and confrontation, a mirror and a vessel, the token of a sensibility and an intelligence that are irreducible to the anonymity of a mere anecdote, hence one of our chances to recognize ourselves in the non-self and feel that we are the masters of an elusive reality."³

While it would be immodest to say that art per se can save us from robotism and/or self-annihilation, the art work nonetheless, executed or contemplated with a real willingness to let Being speak to us, can do much to get us in touch with our innermost selves,

1. Fromm, *The Sane Society*, p.144.

2. Hughes, *op. cit.*, p.409.

3. *Figurative Art Since 1945*, p.275.



Pierre-Yves Trémois *Pour la Naissance du Surhomme*

or what the religious call "God". In a world where so much havoc and misery is wreaked as a result of schizoid self-alienation and robotism, this rôle for art is not to be despised.

With Fromm I advocate that we transcend ourselves by creating rather than by destroying.

It is time to redress the balance and put art and feeling values back on the scale - not to replace scientific endeavour but to augment it and bring back to the human being behind the tool a renewed feeling of self-worth and help us remember "who's in charge here".

Let us conclude this essay with the words James Joyce lets his young hero (in *A Portrait of the Artist as a Young Man*) write in his diary: "Welcome, O life! I go to encounter for the millionth time the reality of experience and to forge in the smithy of my soul the uncreated conscience of my race!!"¹



1. Quoted in May, *The Courage ...*, p.26.

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