Keynesian Fordism as global social compact
For the first time in world history, there was a concrete institutionalization of the idea of world government. Whereas the League of Nations was guided by an essentially nineteenth-century spirit of a congress of nations, the United Nations was openly guided by American political ideas . . . There was nothing revolutionary about the kind of world system Britain created through its empire. There was something revolutionary about the world market system that flowed out of Britain in the eighteenth century . . . Britain’s true imperial greatness was economic, not political. The United Nations, however, was and remains a political idea. The American Revolution had proven that nations could be constructed through the conscious and deliberate actions of men . . . What Roosevelt had the audacity to conceive and implement was the extension of this process of government-building to the world as a whole.
The essence of the New Deal was the notion that big government must spend liberally in order to achieve security and progress. Thus postwar security would require liberal outlays by the United States in order to overcome the chaos created by the war. Aid to . . . poor nations would have the same effect as social welfare programs within the United States—it would give them the security to overcome chaos and prevent them from turning into violent revolutionaries. Meanwhile, they would be drawn inextricably into the revived world market system. By being brought into the general system, they would become responsible, just as American unions had during the war. Helping Britain and the remainder of Western Europe would rekindle economic growth, which would stimulate transatlantic trade and, thus, help the American economy in the long run. America had spent enormous sums running up huge deficits in order to sustain the war effort. The result had been astounding and unexpected economic growth. Postwar spending would produce the same effect on a worldwide scale.
A REPORT
TO THE
NATIONAL SECURITY COUNCIL
by
THE SECRETARY
on
UNITED STATES CONCLUSIONS AND PROGRESS FOR NATIONAL DEFENSE

DECLASSIFIED by authority of
April 14, 1993
WASHINGTON

TOP SECRET
“It seems politically impossible for a capitalist democracy to organize expenditure on the scale necessary to make the grand experiment which would prove my case - except in war conditions.”

J.M Keynes, 1940
“With Keynes, capitalist science takes a remarkable leap forward: it recognizes the working class as an autonomous moment within capital. With his theory of effective demand, Keynes introduces into political economy the political notion of a balance of power between classes in struggle. Obviously the ideological (but also necessary) aim of Keynes’ argument is towards shoring up the system: for Keynes the problem is how to establish a balance of effective demand, in a context where the various balances of power making up effective demand are conceived as unchanging. But this political objective – which would require working class autonomy to be forever constrained within a given existing power structure – is precisely the paradox of Keynesianism: it is forced to recognize that the working class is the driving motor of development, and that therefore Keynes’s statically defined notions of equilibrium can in fact never be attained in static terms. Any attempt to define an equation of static equilibrium is, and will remain, a laborious search for equilibrium within what has to be a developing situation. In effect – as Keynes appears to recognize – the system functions not because the working class is always inside capital, but because it is also capable of stepping outside it; because there is the continual threat that it will in fact do so. The problem for science, and the aims of politics, must be to contain and absorb this threat, this refusal, and absorb it at ever new levels. How, and what next? Capital must ensure that the dynamic factors of growth are controlled, in such a way that the balance of power remains the same.”

*Keynes and the Capitalist Theory of the State post-1929*
"Unlike the traditional natural sciences that find their
ontology in the material world, the ontology of OR was
the operation: the performance of a heterogeneous
assemblage of humans and nonhumans, of planes, sub-
marines, radar sets and radar operators, pilots, depth
charges, etc. As a science concerned with the business
of fighting wars, OR was indifferent to the traditional
distinctions between people and things that define the
boundaries between the classic academic disciplines.
The Anti-Submarine Warfare OR Group constructed a
unitary mathematical model from which issued, in one
direction, suggestions for improving the material
technologies of radar and, in the other, suggestions for
the human conduct of anti-submarine warfare. This
lumping together of the human and the nonhuman and
the unprincipled working of both sides of the boundary
in the name of overall performativity is what I want to
point to in naming OR a cyborg science.”

A. Pickering, “Cyborg History and the WWII Regime”
“The patterns established during the war and subsequently perpetuated became routine, and the web of the military-industrial-educational complex tightened around science. More than ever, science would be military oriented and dominated by the largest corporate firms and elite universities. And these institutions, supported by public subsidy, would retain the prerogatives of of private ownership and control over their affairs, even though these now included the bulk of American scientific research and development. The scientists themselves, like the businessmen with whom they routinely collaborated, had gained a license to carry on their publicly supported technical activities, to indulge their scientific curiosity and enthusiasms, to pursue their professional careers and commercial dealings, relatively unfettered by serious public oversight.”

A July 24, 1941, memorandum to the President and Department of State outlined the Council's view of the national interest. To prevent alterations in the United States economy, the Council had "gone on to discover what 'elbow room' the American economy needed in order to survive without major readjustments." This living space had to have the basic raw materials needed for the nation's industry as well as the "fewest possible stresses making for its own disintegration, such as unwieldy export surpluses or severe shortages of consumer goods." The extensive studies and discussions of the Council groups determined that, as a minimum, most of the non-German world, the "Grand Area," was needed. In its final form, it consisted of the Western hemisphere, the United Kingdom, the remainder of the British Commonwealth and Empire, the Dutch East Indies, China, and Japan itself."


Key conflicts: Greek civil war (47), Korea (50-53), Cuban missile crisis (62), Vietnam (61-75)
“Memorandum E-B34 stated: 'In the event of an American-British victory, much would have to be done toward reshaping the world, particularly Europe. In this the Grand Area organization should prove useful. During an interim period of readjustment and reconstruction, the Grand Area might be an important stabilizing factor in the world's economy. Very likely the institutions developed for the integration of the Grand Area would yield useful experience in meeting European problems, and perhaps it would be possible simply to interweave the economies of European countries into that of the Grand Area.'

“At the end of recommendation E-B34, the Economic and Financial Group outlined the key topics for future study on integrating the Grand Area. Leading the list were financial measures – the creation of international financial institutions to stabilize currencies, and of international banking institutions to aid in investment and development of backward areas.”

– Shoup & Minter, Imperial Brain Trust
WWII regime

“We must see this war as the prelude to a greater job – the restructuring of the culture of the world.”
Margaret Mead, *And Keep Your Powder Dry* (1942)
“We must see this war as the prelude to a greater job – the restructuring of the culture of the world.”
Margaret Mead, *And Keep Your Powder Dry* (1942)
Claudine told me that there were two primary objectives of my work. First, I was to justify huge international loans that would funnel money back to MAIN and other U.S. companies (such as Bechtel, Halliburton, Stone & Webster, and Brown & Root) through massive engineering and construction projects. Second, I would work to bankrupt the countries that received those loans (after they had paid MAIN and the other U.S. contractors, of course) so that they would be forever beholden to their creditors, and so they would present easy targets when we needed favors, including military bases, UN votes, or access to oil and other natural resources.

My job, she said, was to forecast the effects of investing billions of dollars in a country. Specifically, I would produce studies that projected economic growth twenty to twenty-five years into the future and that evaluated the impacts of a variety of projects. For example, if a decision was made to lend a country $1 billion to persuade its leaders not to align with the Soviet Union, I would compare the benefits of investing that money in power plants with the benefits of investing in a new national railroad network or a telecommunications system. Or I might be told that the country was being offered the opportunity to receive a modern electric utility system, and it would be up to me to demonstrate that such a system would result in sufficient economic growth to justify the loan. The critical factor, in every case, was gross national product. The project that resulted in the highest average annual growth of GNP won. If only one project was under consideration, I would need to demonstrate that developing it would bring superior benefits to the GNP.
“[Shannon’s] labyrinth is about half as big as a desk top and is fitted with aluminum partitions which can be shifted around among 40 different slots. Theseus himself has only a mouse-shaped wooden body, three small wheels and whiskers of copper wire. Inside him is nothing but a bar-magnet. His brains are outside him, under the floor of the labyrinth.”

- Time magazine

A Mathematical Theory of Communication
Claude Shannon, Bell Labs
(1948)
McCulloch-Pitts Neurons
Cybernetics could not become a general model, susceptible of application to any number of problems or fields, until the feedback principle was applied to the human mind and body, bringing the inventors into the loop of their own invention. This was accomplished as early as 1943 by the neurophysiologist Warren McCulloch and the logician Walter Pitts, who developed an intricate system for notating the hypothetical paths of electrochemical signals through networks of neurons. The work of McCulloch and Pitts was based on the assumption that each neuron either “fired” or did not fire according to the type and quantity of signals received. Specific pathways through a neural net could then be shown to correspond to the propositions of symbolic logic, as expressed in binary code. This ingenious system of notation seemed to confirm the intuition of the control engineers that human behavior was governed by feedback in the flesh.
"A self-modifying communications network or ‘learning net’ would be any system characterized by a relevant degree of organization, communication and control, regardless of the particular processes by which its messages are transmitted and its functions carried out - whether by words between individuals in a social organization, or by nerve cells and hormones in a living body, or by electric signals in an electronic device."

Karl Deutsch (1963)

“A man’s organism as a whole can be conceived as an instrument of communication, equipped with sense organs, the receivers; with effector organs, the senders; with internal transmitters, the humoral and nervous pathways; and with a center, the brain.”

Bateson & Ruesch, 1959
goal attainment

Polity
political subsystem, and
in particular,
the government of
the society

integrative function

Culture
institutions of public
education, religion and
mass communications of
the society

adaptation

Economy
innovation, progress,
technoscientific relations
to the environment of
the society

pattern maintenance

Family
child-rearing, labor-force
restoring, kin-group
preserving elements of
the society

McCulloch-Pitts
Neurons
Inside the Welfare/Warfare State

towards a regulation of the liberal order?
John Gerard Ruggie described the structure of the post-WWII economic compromise as “embedded liberalism”: an attempt to reconcile the benefits of international free trade with domestic policies for full employment and social welfare.

The idea came from Karl Polanyi, who claimed that in all known societies prior to nineteenth-century England, exchanges of goods were embedded in an institutional mix, indeed in a human ecology: there was no separation between specifically economic calculations and a broader set of social reciprocities regulating the care and reproduction of land (i.e., the natural environment), labor (the human body/mind) and money itself (the instituted medium of exchange).

Polanyi showed that the development of English economic liberalism had effectively disembodied the economy from society, transforming land, labor and money into what he called “fictitious commodities.” The essence of the postwar international regime could therefore be portrayed by Ruggie as an attempt to “re-embed” the worldwide economy of liberalism within territorial systems of checks and balances, regulated at the level of the nation-state.
Inside the Welfare/Warfare State

“Fordism is the regime of intensive accumulation in which the capitalist class seeks overall management of the production of wage-labor by the close articulation of relations of production with the commodity relations in which the wage-earners purchase their means of consumption. The characteristic labor process of Fordism is *semi-automatic assembly-line production*. This type of labor process was established in the United States from the 1920s onwards, especially for mass consumer goods in long production runs, and was subsequently extended upstream to the production of standardized intermediate components for the manufacture of these means of consumption. Fordism further developed the mechanization of labor, increased the intensity of work, radicalized the separation between manual and mental labor, rigorously subjected workers to the law of accumulation and turned scientific progress against them as a power serving the uniform expansion of value.”
“Fordism adapted to the restriction of the working day [won through union struggle] by sharply increasing the intensity of labor and systematically compressing wasted time. The result was the disappearance of any time for recuperation at the workplace itself. The increased exhaustion of labor-power in the labor process had to be entirely repaired outside the workplace, respecting the new time constraint of a strict separation between working and non-working hours. Since this was overlaid by the further constraint of separation and increased distance between workplace and residence, transport time was considerably prolonged, with the result that the time time constraint imposed by labor did not fall despite the limitation of working hours. Individual commodity consumption is the form of consumption that permits the most effective recuperation from physical and nervous fatigue in a compact space of time within the day, and at a single place, the home.”

Inside the Welfare/Warfare State

“The structure of the consumption norm thus coincides with its conditioning by capitalist relations of production. It is governed by two commodities: the standardized housing that is the privileged site of individual consumption; and the automobile as the means of transport compatible with the separation of home and workplace. While remaining commodities for private use, these are durable goods whose acquisition goes far beyond the purchasing power of current wages. The formation of the working-class norm of consumption therefore presupposed a vast socialization of finance, and correlative a very strict control over workers' resources and expenditures. It was important for the process of individual consumption to be organized and stable, while remaining compatible with the apparently individual and free relationships of commodity exchange. This was achieved by the generalization in the working class of the social structure that was the condition for its cultural integration to the nation, i.e. the small family household. But it still remained essential to limit the consequences of capitalist insecurity on employment and on the formation of individual wages, so as not to break the continuity of the consumption process, and in order to enable the workers to meet the financial commitments contracted with the acquisition of consumer goods. This implied legislative arrangements, a homogenization and socialization of wages, and the establishment of social insurance funds.”
Inside the Welfare/Warfare State

“The two basic commodities of the mass consumption process created complementarities which effected a gigantic expansion of commodities, supported by a systematic diversification of use-values. But for this logic of consumption to be compatible with a labor process oriented toward relative surplus-value, the total of use-values had to be adapted to capitalist mass production. This meant the creation of a functional aesthetic ('design'), which acquired fundamental social importance. This aesthetic had firstly to respect the constraints of engineering, and consequently conceive use-values as an assembly of standardized components capable of long production runs. It also had to introduce planned obsolescence, and establish a functional link between use-values to create the need for their complementarity. Finally, this functional aesthetic doubled the real relationship between individuals and objects with an imaginary relationship. Not content to create a space of objects of daily life, as supports of a capitalist commodity universe, it provided an image of this space by advertising techniques. The image was presented as an objectification of consumption status which individuals could perceive outside of themselves. Individuals were not interpellated as subjects by one another, in accordance with their social position: they were interpellated by an external power, broadcasting a composite image of the 'consumer.' Consumption habits were thus calculated and controlled socially.”
“Subjection to a uniform but ever-increasing pace of work, combined with the curtailment of resting time, immensely increases fatigue and creates new forms of nervous exhaustion from which it is impossible to recover from one day to the next. Symptoms of this modern form of destruction of human capacities have multiplied during the course of the 1960s, especially in the most mechanized industries: a high level of absenteeism, and particularly an irregular level that defies any attempt at prediction; an increase in temporary disabilities precipitated by the accumulation of nervous exhaustion; a rise in accidents on the assembly line; an increase in defective products and consequently in time for quality control.”
1: Mechanization of the World Picture

(Top) Woman as seen and felt by a twelfth-century craftsman (Saint-Lazare d'Astun, France). (Center) Woman as mapped by a Renaissance painter, using cartesian coordinates before Descartes. (Bottom) Woman as translated into fashionable computer language as a pseudo-photograph. (See also Plate 29.)
4: Speed

Increase of speed in construction, production, transportation, and communication has from the outset been one of the definite marks of the power system. Speed in locomotion was first accelerated by the domestication of the horse, an animal in royal military use from the Second Millennium on. But apart from horse racing, popular interest in speed as a mode of recreation is a modern development, manifested in the seventeenth century in the sail wagon, shown here (left), and in the early nineteenth-century chute-the-chute. With the motor car, speed—here shown (right)—in the early form of the steam omnibus—was, like so many royal prerogatives, 'democratized.'

Though the speed achieved in horseback or skiing or motorizing brings a certain playful exhilaration, partly derived from tension and danger, partly from a sense of bodily release, speed more widely serves as an ostentatious symbol of power and prestige: part of a more general effort to escape organic limits. Whatever its contribution to social status or recreation, speed in transport and communication has practical political and economic uses: it not merely confirms the authority of the ruling elite but makes it possible for them to exert more effective control over distant territories, tributaries, and markets. From the eighteenth century on, power and speed became the chief criteria of technological progress, along with quantitative productivity. This raising of the tempo of change, allowing less time for the assimilation of new experience, for feedback and rectification, accounts for many of the worst misdeeds of industrialization, in its destroying valuable parts of the historic heritage and doing permanent damage to the environment. The salutary truth of the old proverb ‘Haste Makes Waste’ was over-ridden by the new principle: ‘Haste and Waste Make Money.’

While motor cars are still built with brakes, reverse gears, and steering wheels, as well as accelerators, the power complex today is preoccupied only with acceleration; and cannot concede that it may be necessary, for the preservation of life, to reduce the tempo, to alter the direction, or to bring a profit-making but dangerous process to a halt. In a biotechnic economy, in contrast, speed would be a function, not of power or pecuniary advantage, but of social purpose; and in the interest of health, welfare, or creativity this would, on many occasions, call for deceleration, or even complete stoppage, to ensure the enhancement of more important human values.

5: Remote Control

Central to the power complex from the beginning was remote control. As long as the main components of the megamachine were human beings, this required doglike obedience from every human unit in the chain of command. Such one-way hierarchic order was secured by severe punishment for the slightest disobedience. The transition from this cumbersome and laborious method was facilitated by the introduction of a national educational system, first in autocratic Prussia in the eighteenth century: afterward in France under Napoleon. National military conscription, imposed first by the ‘democratic’ French Revolution, completed this process.

The translation of these sometimes inefficient and recalcitrant human automatons into purely mechanical and electronic units made instantaneous remote control practicable: this was the largest possible gift to centralized authority, not only in government and military affairs, but in the widened operations of the great industrial corporations and financial conglomerations that now increasingly operate on a continental or global basis. The control room of the Houston Space Center, here shown, demonstrates this system at its superhuman best—though without the active cooperation of still semi-autonomous astronauts its space missions would have been repeatedly bungled or aborted.

Even before the computer and television were in operation, Hitler’s direct interference in military battles on the Russian front, by direct contact with even lower field officers, demonstrated one of the inherent disadvantages of remote control: misguided interference. But the basic weakness of remote control is that it is not, and cannot possibly become, a two-way system open to feedback and revision, without the aid of intermediary units. While electronic processing of information makes instant decision possible at headquarters, the absence of responsible local units with sufficient authority to form independent judgements, to correct misinformation, and to add unprogrammable data, enlarges the probability of human error. This calls for the rebuilding of decentralized, semi-autonomous if not independent, groups and agencies as an imperative safety device, as well as an essential condition for responsible human participation.
6: Comuterdom

As an instrument for organizing large quantities of information, or performing extremely complex symbolic operations beyond human capabilities within a normal lifespan, the computer is an invaluable adjunct to the brain, though not a substitute for it. Since the computer is limited to handling only so much experience as can be abstracted in symbolic or numerical form, it is incapable of dealing directly, as organisms must, with the steady influx of concrete, unprogrammable experience. With respect to such experience, the computer is necessarily always out of date. The computer's lack of other human dimensions is of course no handicap to it as a labor-saving device, whether in astronomy or bookkeeping; but such creativity as the computer may simulate is always in the first place a contribution of the minds that formulate the program.

The utter absence of innate subjective potentialities in the computer makes the contemporary art exhibition shown here (top), in all its pervasive blankness and artful nullity, an ideal representation of its missing dimensions. Those who are so fascinated by the computer's lifelike feats—it plays chess! it writes "poetry"!—that they would turn it into the voice of omniscience, betray how little understanding they have of either themselves, their mechanical-electronic agents, or the potentialities of life. A city of even three hundred thousand people, ten per cent of whom have access to regional or national libraries with as few as a million volumes, would actually have a total capacity for storing, transforming, integrating, and not least applying both symbolic information and concrete experience that no computer will ever rival.

7: Pentagons of Power

Power, like a desolating pestilence, Pollutes where'er it touches; and obedience, Bane of all genius, virtue, freedom, truth, Makes slaves of men, and, of the human frame, A mechanized automaton.

Percy Bysshe Shelley

Though the power system can be adequately represented by abstractions, the concrete form of the Pentagon in Washington serves even better than its Soviet counterpart, the Kremlin, as a symbol of the absurdity of totalitarian absolutism: all the more because this particular megastucture combines a pathetically outmoded Renascence plan with the current wasteful and inefficient facilities for mass transportation by private car.

Not the least mark of Pentagonal authority is its imperviousness to information coming from outside sources and expressing human desires and purposes that have no status in the power complex. This in itself helps explain, perhaps, the increasingly desperate human reactions that the system is now provoking throughout the world. Never before has such a vast number of human beings, virtually the entire population of the planet, lived at the mercy of such a minuscule minority, whose specialized knowledge seems only to increase the magnitude of their incompetence in the very areas of their professional specialization.
10: Autocratic Technocracy

As was demonstrated in Volume One of 'The Myth of the Machine,' part of the immense productivity of the Pyramid Age was devoted to pyramid building itself, including the extensive mortuary cities that were necessary to ensure the performance of the required rituals. But this ancient power complex likewise produced masterpieces of architecture and engineering: dams, irrigation works, canals, reservoirs, temples, palaces, and cities, the latter often built in Mesopotamia on man-made mounds, high above flood level. As in our own age, these genuine benefits must be balanced off against the use of the same engineering skill in destroying cities, ruining soils, exterminating innocent civilian 'enemies,' and mercilessly exploiting the mass of workers whose forced labor, disciplined to machine-like precision, made these feats possible.

Historically, autocracy and technocracy are Siamese twins; and there are many present indications that their nature has not changed. But what archetypal fantasy erupting from the unconscious caused a contemporary technocrat to conceive his ideal collective habitation in the imitative form of a pyramid, big enough to entomb the population of a whole town? There are many contemporary variants of such dehumanized megastructures, apart from Buckminster Fuller's other project of a city under a geodesic dome: plans for underwater cities, underground cities, elevated linear cities, cities a mile high, all compete for attention as the City (read Anti-City) of the Future. Whatever their superficial difference, all these projects are essentially tombs: they reflect the same impulse to suppress human variety and autonomy, and to make every need and impulse conform to the system of collective control imposed by the autocratic designer. Small wonder that signs of revolt against the megalomachine have broken out, ominously like those which ended the Pyramid Age in Egypt.

11: Space Rockets as Power Symbols

The moon rocket is the climactic expression of the power system: the maximum utilization of the resources of science and technics for the achievement of a relatively minuscule result: the hasty exploration of a barren satellite. Space exploration by manned rockets enlarges and intensifies all the main components of the power system: increased energy, accelerated motion, automation, cybernation, instant communication, remote control. Though it has been promoted mainly under military pressure, the most vital result of moon visitation so far turns out to be an unsought and unplanned one—a full view of the beautiful planet we live on, an inviting home for man and for all forms of life. This distant view on television evoked for the first time an active, loving response from many people who had hitherto supposed that modern technics would soon replace Mother Earth with a more perfect, scientifically organized, electronically controlled habitat, and who took for granted that this would be an improvement. Note that the moon rocket is itself necessarily a megastructure: so it naturally calls forth such vulgar imitations as the accompanying bureaucratic obelisk (office building) of similar dimensions, shown here (left). Both forms exhibit the essentially archaic and regressive nature of the science-fiction mind.
14–15: Encapsulated Man

Behold the astronaut, fully equipped for duty: a scaly creature, more like an oversized ant than a primate—certainly not a naked god. To survive on the moon he must be encased in an even more heavily insulated garment, and become a kind of faceless ambulatory mummy. While he is hurtling through space the astronaut's physical existence is purely a function of mass and motion, narrowed down to the pinpoint of acute sentient intelligence demanded by the necessity for coordinating his reactions with the mechanical and electronic apparatus upon which his survival depends. Here is the archetypal proto-model of Post-Historic Man, whose existence from birth to death would be conditioned by the megalomachine, and made to conform, as in a space capsule, to the minimal functional requirements by an equally minimal environment—all under remote control.

Dr. Bruno Bettelheim reports the behavior of a nine-year-old autistic patient, a boy called Joey, who conceived that he was run by machines. "So controlling was this belief that Joey carried with him an elaborate life-support system made up of radio tubes, light bulbs, and a 'breathing machine.' At meals he ran imaginary wires from a wall socket to himself, so his food could be digested. His bed was rigged up with batteries, a loud-speaker, and other improvised equipment to keep him alive while he slept."

But is this just the autistic fantasy of a pathetic little boy? Is it not rather the state that the mass of mankind is fast approaching in actual life, without realizing how pathological it is to be cut off from their own resources for living, and to feel no tie with the outer world unless they are connected with the Power Complex and constantly receive information, direction, stimulation, and sedation from a central external source, via radio, discs, and television, with the minimal opportunity for reciprocal face-to-face contact? The stringent limitations of the space capsule have already been extended to other areas. Technocratic designers proudly exhibit furniture planned solely to fit rooms as painfully constricted as a rocket chamber. Even more ingenious minds, equally subservient to the Power Complex, have already conceived a hospital bed in which every function from the taking of temperature to intravenous feeding will be automatically performed within the limits of the bed. Solitary confinement thus becomes the last word in 'tender loving care.'

Except for meeting emergencies, as with an iron lung or a space rocket, such mechanical attachment and encapsulation presents a definitely pathological syndrome. Increasingly, the astronaut's space suit will be, figuratively speaking, the only garment that machine-processed and machine-conditioned man will wear in comfort; for only in that suit will he, like little Joey, feel alive. This is a return to the womb, without the embryo's prospect of a natal delivery. As if to emphasize this point, the actual position of the astronaut here shown, under working conditions, is on his back, the normal position of the foetus.