p. 3 "Ritual, art, poesy, drama, music, dance, philosophy, science, myth, religion are all as essential to man as his daily bread: man's true life consists not alone in the work activities that directly sustain him, but in the symbolic activities which give significance both to the processes of work and their ultimate products and consummations. –**THE CONDITION OF MAN (1944)**

p. 3 In terms of the currently accepted picture of the relation of man to technics, our age is passing from the primeval state of man, marked by his invention of tools and weapons for the purpose of achieving mastery over the forces of nature, to a radically different condition, in which he will have not only conquered nature, but detached himself as far as possible from the organic habitat.

p. 3 With this new 'megatechnics' the dominant minority will create a uniform, all-enveloping, super-planetary structure, designed for automatic operation. Instead of functioning actively as an autonomous personality, man will become a passive, purposeless, machine-conditioned animal whose proper functions, as technicians now interpret man's role, will either be fed into the machine or strictly limited and controlled for the benefit of de-personalized, collective organizations.

p. 4 I shall suggest that not only was Karl Marx in error in giving the material instruments of production the central place and directive function in human development, but that even the seemingly benign interpretation of Teilhard de Chardin reads back into the whole story of man the narrow technological rationalism of our own age, and projects into the future a final state in which all the possibilities of human development would come to an end. At that 'omega-point' nothing would be left of man's autonomous original nature, except organized intelligence: a universal and omnipotent layer of abstract mind, loveless and lifeless.

p. 5 In any adequate definition of technics, it should be plain that many insects, birds, and mammals had made far more radical innovations in the fabrication of containers, with their intricate nests and bowers, their geometric beehives, their urbanoid anthills and termitaries, their beaver lodges, than man's ancestors had achieved in the making of tools until the emergence of *Homo sapiens*. In short, it technical proficiency alone were sufficient to identify and foster intelligence, man was for long a laggard, compared with many other species. The consequences of this perception should be plain: namely, that there was nothing uniquely human in tool-making until it was modified by linguistic symbols, esthetic designs, and socially transmitted knowledge. At that point, the human brain, not just the

hand, was what made a profound difference; and that brain could not possibly have been just a hand-made product, since it was already well developed in four-footed creatures like rats, which have no free-fingered hands.

p. 5 The definition of man as a tool-using animal, even when corrected to read 'tool-making,' would have seemed strange to Plato, who attributed man's emergence from a primitive state as much to Marsyas and Orpheus, the makers of music, as to fire-stealing Prometheus, or to Hephaestus, the blacksmith-god, the sole manual worker in the Olympic pantheon.

p. 6 What is specially and uniquely human is man's capacity to combine a wide variety of animal propensities into an emergent cultural entity: a human personality.

p. 9 (see next card)

p. 10 The dominant human trait, central to all other traits, is this capacity for conscious, purposeful self-identification, self-transformation, and ultimately for self-understanding.

p. 11 (see next card)

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To consider man, then, as primarily a tool-using animal, is to overlook the main chapters of human history. Opposed to this petrified notion, I shall develop the view that man is pre-eminently a mind-making, self-mastering, and self-designing animal; and the primary locus of all his activities lies first in his own organism, and in the social organization through which it finds fuller expression. Until man had made something of himself he could make little of the world around him.

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There is no clean dividing line between the irrational and the super-rational; and the handling of these ambivalent gifts has always been a major human problem. One of the reasons that the current utilitarian interpretations of technics and science have been so shallow is that they ignore the fact that this aspect of human culture has been as open to both transcendental aspirations and demonic compulsions as any other part of man's existence - and has never been so open and so vulnerable as today.

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p. 11 The irrational factors that have sometimes constructively prompted, yet too often distorted, man's further development became plain at the moment when the formative elements in Paleolithic and Neolithic cultures united in the great cultural implosion that took place around the Fourth Millennium B.C.: what is usually called 'the rise of civilization.' The remarkable fact about his transformation technically is that it was the result, not of mechanical inventions, but of a radically new type of social organization: a product of myth, magic, religion, and the nascent science of astronomy.

p. 11 The study of the Pyramid Age I made in preparation for writing 'The City in History' unexpectedly revealed that a close parallel existed between the first authoritarian civilizations in the Near East and our own, though most of our contemporaries still regard modern technics, not only as the highest point in man's intellectual development, but as an entirely new phenomenon. On the contrary, I found that what economists lately termed the Machine Age or the Power Age, had its origin, not in the so-called Industrial Revolution of the eighteenth century, but at the very outset in the organization of an archetypal machine composed of human parts.

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p. 12 The first is that the organizers of the machine derived their power and authority from a heavenly source. Cosmic order was the basis of this new human order. The exactitude in measurement, the abstract mechanical system, the compulsive regularity of this 'megamachine,' as I shall call it, sprang directly from astronomical observations and scientific calculations. This inflexible, predictable order, incorporated later in the calendar, was transferred to the regimentation of the human components. As against earlier forms of ritualized order, this mechanized order was external to man. By a combination of divine command and ruthless military coercion, a large population was made to endure grinding poverty and forced labor at mind-dulling repetitive tasks in order to insure "Life, Prosperity, and Health" for the divine or semi-divine ruler and his entourage.

p. 12 Conceptually the instruments of mechanization five thousand years ago were already detached from other human functions and purposes than the constant increase of order, power, predictability, and, above all, control. With this proto-scientific ideology went a corresponding regimentation and degradation of once-autonomous human activities: 'mass culture' and 'mass control' made their first appearance. With mordant symbolism, the ultimate products of the megamachine in Egypt were colossal tombs, inhabited by mummified corpses; while later in Assyria, as repeatedly in every other expanding empire, the chief testimony to its technical efficiency was a waste of destroyed villages and cities,

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and poisoned soils: the prototype of similar 'civilized' atrocities today. As for the great Egyptian pyramids, what are they but the precise static equivalents of our own space rockets? Both devices for securing, at an extravagant cost, a passage to Heaven for the favored few.

pp. 12-13 These colossal miscarriages of a dehumanized power-centered culture monotonously soil the pages of history from the rape of Sumer to the blasting of Warsaw and Rotterdam, Tokyo and Hiroshima. Sooner or later, this analysis suggests, we must have the courage to ask ourselves: Is this association of inordinate power and productivity with equally inordinate violence and destruction a purely accidental one?

p. 13 (see next card)

p. 14 ...and that so far from conquering nature or reshaping his environment primitive man's first concern was to utilize his overdeveloped, intensely active nervous system, and to give form to a human self, set apart from his original animal self by the fabrication of symbols—the only tools that could be constructed out of the resources provided by his own body: dreams, images and sounds.

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If we do not take the time to review the past we shall not have sufficient insight to understand the present or command the future: for the past never leaves us, and the future is already here.

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p. 18 Further, although the skulls indicate that the brains had been extracted through the base, we do not know if the rest of the flesh and marrow was eaten; and finally, even if cannibalism were firmly established, we still do not know if such victims were habitually slain for food, or whether this was done under pressure of starvation—something that has happened occasionally, as with the American pioneers at the Donner Pass, among people to whom cannibalism was abhorrent. Or again, was this extraction of marrow and brain like that of some later peoples, part of a sacrificial, magico-religious ceremony? And finally, was the marrow used as infant's food, or to help start a fire—both attested uses for marrow under primitive conditions?

pp. 20-21 Yet from the moment *Homo sapiens*, at least, makes his appearance, we find evidences in his attitude toward death, toward ancestral spirits, toward future existence, toward sun and sky, that betray a consciousness that forces and beings, distant in space and time, unapproachable if not invisible, may nevertheless play a controlling part in man's life. This was a true intuition, although it may have taken hundreds of thousands of years before its full import and rational proof could be grasped by the human mind, which now ranges between invisible particles and equally mysterious retreating galaxies.

p. 21 In all these cases, the rite itself reveals an eminent human susceptibility to strong feeling about matters of ultimate concern, along with a desire to retain and transmit that feeling. This must have cemented family life and group loyalty, and thus have contributed quite as effectively to survival as any improvement in flaking flint tools. Although in many other species the parent will on occasion sacrifice its life to protect its mate or its young, this voluntary symbolic sacrifice of a finger joint is a distinctly human trait. Where such feeling is lacking, as so often in the whole routine of our mechanized, impersonal megolopolitan culture, the human ties become so weak that only stringent external regimentation will hold the group together.

p. 23 (see next card)

p. 40 (see next card)

p. 47 (see next card)

p. 51 If so, it would lead to a greater paradox: that it was the dream that opened man's eyes to new possibilities in his waking life.

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Our chief reason for over-rating the importance of tools and machines is that man's most significant early inventions, in ritual, social organization, morals, and language, left no material remains, while stone tools can be associated with recognizable hominid bones for at least half a million years.

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In short, without man's cumulative capacity to give symbolic form to experience, to reflect upon it and re-fashion it and project it, the physical universe would be as empty of meaning as a handless clock: its ticking would tell nothing. The mindfulness of man makes the difference.

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In an early essay, published in THE WILL-TO-BELIEVE but never sufficiently followed up by him, William James put the case more clearly. "Man's chief difference from the brutes," he pointed out, "lies in the exuberant excess of his subjective propensities - his pre-eminence over them simply and solely in the number and in the fantastic and unnecessary character of his wants physical, moral, aesthetic, and intellectual. Had his whole life not been a quest for the superfluous, he would never have established himself as inexpugnably as he has done in the necessary. And from the consciousness of this he should draw the lesson that his wants are to be trusted; that even when their gratification seems

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furthest off, the uneasiness they occasion is still the best guide of his life, and will lead him to issues entirely beyond his present power of reckoning. Prune down his extravagance, sober him, and you undo him."

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"God," observed Pico, "took man as a creature of indeterminate nature, and, assigning him a place in the middle of the world, addressed him thus: 'Neither a fixed body nor a form that is peculiar to thyself have we given thee, Adam; to the end that according to thy longing and according to thy judgment thou mayest have and possess what abode, what form, and what functions thought shalt desire. The nature of all other things is limited and constrained within the bounds of laws prescribed by us. Thou, constrained by no limits . . . shall ordain for thyself the limits of thy nature . . . As the maker and molder of thyself in whatever shape thou shalt prefer, thou shalt have the power to degenerate into lower forms of life, which are

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brutish. Thou shalt have the power, out of thy soul and judgment, to be reborn into the higher forms, which are divine.'" That choice recurs at every stage in man's development.

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p. 52 Plato in 'The Republic' pointed out that "when the reasoning and humanizing and ruling power is altered . . . there is no conceivable folly or crime—not excepting incest or parricide or the eating of forbidden food—which at such time, when he has parted company with all shame and sense, a man may not be ready to commit . . . Even in good men, there is a lawless wild-beast nature, which peers out in sleep."

p. 53 Until the dream finally helped to create culture it may have served as an impalpable substitute: tricky, delusive, misleading, but mind-stirring.

p. 54 (see next card)

p. 55 This principle lies at the base of all organic development, in defiance of the law of entropy; and it is fundamental both to human culture and purposeful development.

pp. 57-58 Until a firm basis for order was laid down, we can now see, it was almost as necessary to curb man's creativity as his destructiveness: that is perhaps why the whole weight of culture, down to modern times, has centered on its ties with the past, so that even fresh departures would be disguised as a replenishing of old sources. With good reason, archaic societies distrusted innovators and inventors as heartily as Philip II of Spain, who

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What we know now by scientific demonstration, through microscopes, telescopes, and X-rays, early man seems to have stumbled upon through the dream: that a large part of our environment is in fact supersensible and only a small part of existence is open to direct observation. If man had not encountered dragons and hippogriffs in dream, he might never have conceived the atom.

classed them, not without reason, as heretics. Even today that danger is still with us; for ungoverned creativity in science and invention has reinforced unconscious demonic drives that have placed our whole civilization in a state of perilous unbalance: all the more because we have cast away at this critical moment, as an affront to our rationality, man's earliest forms of moral discipline and self-control.

p. 58 p. 58 The 'instructions' received by our military and political leaders for contriving atomic, bacterial, and chemical means of total human extermination have the same psychological status as the messages recorded by the Xosa girl: they are self-induced hallucinations that wantonly defy all the historic precepts of human experience. The fact that these dreams have been put forward under the pseudo-rational garb of advanced theoretic science and justified as a measure for national 'survival' does not disguise their bottomless malignity and irrationality, with its complete divorce from even an animal's instinct for self-preservation. But unlike the pitiable mistake of the Xosa, the colossal kind of error, or 'accident,' that the Pentagon and the Kremlin have already neatly set the fuse for, would be beyond redemption.

p. 60 In the beginning was the word? No: in the beginning, as Goethe saw, was the act: meaningful behavior anticipated meaningful speech, and made it possible. But the only kind

of act that could acquire a fresh meaning was one that was performed in company, shared with other members of the group, constantly repeated and thus perfected by repetition: in other words, the performance of a ritual.

p. 62 What could not yet be said in words or shaped in clay or stone, early man first danced or mimed; if he flapped his arms he was a bird: if the group formed a circle and revolved in measured steps they might be the moon. In short, what André Varagnac happily identified as the "technology of the body," expressed in dance and mimetic movements, was both the earliest form of any kind of technical order and the earliest manifestation of expressive and communicable meaning.

pp. 62-63 Since ritual order has now largely passed into mechanical order, the present revolt of the younger generation against the machine has made a practice of promoting disorder and randomness: but that, too, has turned into a ritual, just as compulsive and as 'meaningless' as the routine it seeks to assault.

pp. 63-64 It is not sheer guesswork, but a highly probably inference, to suggest that it was through the social activities of ritual and language, rather than through command of tools alone, that early man flourished; and that tool-making and tool-using long remained

backward arts, in comparison with ceremonial expression and speech-making. Man's most important tools at the beginning were those he extracted from his own body: formalized sounds and images and movements. And his efforts to share these goods promoted social solidarity.

p. 65 Though the forms of sacrifice have often been described in detail, they have still not been satisfactorily explained; nor has the sense of guilt, with which both sacrifice and ritualistic repetition have been so often associated. Into that dark corner of the human psyche, the light of consciousness has yet to penetrate.

p. 67 (see next card)

p. 71 Human development at every point rests upon the ability to sustain tensions and control their release. At the lowest level this involves the control of the bladder and the bowels; and above that, the deliberate canalization of bodily appetites and genital urges into socially acceptable channels. What I am suggesting here, finally, is that the strict discipline of ritual, and the severe moral schooling of the taboo, were essential to man's self-control and in turn to his cultural creativity in every sphere. Only those who obey the rules are

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But to make ritual prevail, man paid a price: the tendency to overvalue the goods of the past, fearing to disturb them by further innovations, however slight.

So far Schiller was right. Habit itself is, to speak paradoxically, the most habit-forming of drugs; and ritual is habit with group re-enforcement.

capable of playing the game; and up to a point, the strictness of the rules and the difficulty of winning without upsetting them increases the enjoyability of playing.

p. 73 the very qualities in language that offend the logical positivists—its vagueness, its indeterminateness, its ambiguity, its emotional coloring, its reference to unseen objects or unverifiable events, in short its 'subjectivity'—only indicate that from the beginning it was an instrument for embracing the living body of human experience, not just the bleached articulated skeleton of definable ideas. Voluminous oral expression must have preceded continent, intelligible speech by untold years.

p. 121 So while hunting in the grand style required daring muscular exploits and promoted a surgical hardness about inflicting pain and taking life, it was also accompanied by an increase in esthetic sensitiveness and emotional richness—preludes to further symbolic expression. This combination of traits is not unusual. That murderous cruelty and extreme esthetic refinement are not incompatible we know from a long succession of historic examples, stretching from China to Aztec Mexico, from the Rome of Nero to the Florence of the Medicis, not forgetting our own times, with the exhibition of nicely planted flower beds at the entrance to the Nazi extermination camps.

p. 264 When organized as communities, these groups introduced into the daily routine a new ritual of ordered activity, a new regularity of performance, and a measure of accountable and predictable behavior hitherto unattainable.

pp. 277-278 Werner Sombart observed that if he were pressed to give a date for the inauguration of capitalism, he would say that the publication of Leonardo Pisano's 'Liber Abbaci,' the first popular treatise on arithmetic, would be that date, A.D. 1202. Any such single starting point would be challengeable; one might cite a score of equally critical moments. But one of the most important traits of the new capitalism, its concentration on abstract quantities, was indeed furthered by such instruction.

p. 279 During the centuries when capitalism and mechanism were being shaped, their ultimate tendencies were largely concealed; for they were both curbed by the stubborn rivalry and the formidable inertia of many other institutions. As late as the sixteenth century the theologians of the University of Paris denounced the opening of State Banks on the ground that usury (lending money at interest) was a sin in Christian theology; and the humane protection offered by the builds to their own members was still so effective in the eighteenth century that new enterprises, using cheaper methods of production, were forced,

as Adam Smith pointed out, to establish themselves in the countryside, or in nearby unincorporated suburbs, bootlegging their products into the town.

pp. 279-280 In sum, where capitalism prospered, it established three main canons for successful economic enterprise: the calculation of quantity, the observation and regimentation of time ('Time is Money'), and the concentration on abstract pecuniary rewards. Its ultimate values—Power, Profit, Prestige—derive from these sources and all of them can be traced back, under the flimsiest of disguises, to the Pyramid Age. The first produced the universal accountancy of profit and loss; the second ensured productive efficiency in men as well as machines; the third introduced a driving motive into daily life, equivalent on its own base level to the monk's search for an eternal reward in Heaven. The pursuit of money became a passion and an obsession: the end to which all other ends were means.

p. 280 With this shift from the contemplative life of the religious to the active life of merchants, sailors, financiers, industrial enterprisers, these canons took on the form of moral imperatives, if not neurotic compulsions. Yet so well established was the older system of values that even into the nineteenth century the ambition to retire from active business in the

prime of life with a 'competence' still seemed to many merchants more attractive than the piling up of more money by incessant application to business.

p. 285 The importance of spectacles was enormously advanced by the other great invention that came a few centuries later: the printing press and its perfection through the invention of movable type for setting up a printed page. This transformed the slow hand process of manuscript copying, which itself had already become standardized, accurate, and elegantly stylized, into a machine process. That final perfection of this art was the outcome of a series of inventions that swept across the world from China and Korea, through Persia and Turkey, until the final steps in the invention were taken, almost simultaneously, in Haarlem and Mainz, with Gutenberg and Johann Fust putting on the finishing touch of casting movable type. This stands as the first example of applying mass production through molding to a dynamic process, with standardized, interchangeable, replaceable parts. The printing press in its own history typifies the changeover from the mechanization of the worker to the mechanization of the work process itself. (For a fuller discussion, see my 'Art and Technics.')

p. 291 The vague, ambiguous prophecies of Leonardo's contemporary, Nostradamus, may easily be dismissed: but Leonardo himself committed to paper even more remarkable

forebodings of the world that science and mechanization would eventually bring into existence. In his notes on necromancy, he unsparingly criticized people who were then proclaiming the reality of fantastic powers possessed by "invisible beings" for transforming the modern world. Many of these fantasies were nothing but early unconscious projections of natural forces that later took concrete form; and no one described the consequences of such forces more incisively than Leonardo, even in the act of denying their possibility.