FUTURISM IN MAN: HUMANISM, SOCIAL TECHNOLOGY AND SURVIVAL

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I.

If I were forced to choose several contemporary thinkers who have had considerable impact on my recent life the process would be fairly easy, and would result in these names: Maruyama, Fuller, Clarke, Reiser, and Helmer. In one way or another all these names are associated with attempts to unscramble many real confusions about human life on and off Earth, the ecology of our planet, and the nature of man himself. What is man? Implicit and explicit treatments of this question are in some fashion a part of the concerns of each contributor I have singled out. What is man? Let R. B. Fuller answer;

Man?

A self-balancing, 28-jointed adapter-base biped; an electrochemical reduction-plant, integral with segregated storages of special energy extracts in storage batteries, for subsequent actuation of thousands of hydraulic and pneumatic pumps, with motors attached; 62,000 miles of capillaries; millions of warning signal, railroad and conveyor systems; crushers and cranes (of which the arms are magnificent 23-jointed affairs with self-surfacing and lubricating systems, and a universally distributed telephone system needing no service for 70 years if well managed); the whole, extraordinarily complex mechanism guided with exquisite precision from a turret in which are located telescopic and microscopic self-registering and recording range finders, a spectroscope, et cetera, the turret control being closely allied with an air conditioning intake-and-exhaust, and a main fuel intake.

Within the few cubic inches housing the turret mechanisms, there is room, also, for two sound-wave and sound-direction-finder recording diaphragms, a filing and instant reference system, and an expertly devised analytical laboratory large enough not only to contain minute records of every last and continual event of up to 70 years' experience, or more, but to extend, by computation and abstract fabrication, this experience with relative accuracy into all corners of the observed universe. There is, also, a forecasting and tactical plotting department for the reduction of future possibilities and probabilities to generally successful specific choice.

Common to all such "human" mechanisms -- and without which they are imbecile contraptions -- is their guidance by a phantom captain.

This phantom captain has neither weight nor sensorial tangibility, as has often been scientifically proven by careful weighing operations at the moment of abandonment of the ship by the phantom captain, i.e., at the instant of "death." He may be likened to the variant of polarity dominance in our bipolar electric world which, when balanced and unit, vanishes as abstract unity I or 0. With the phantom captain's departure, the mechanism becomes inoperative and very quickly disintegrates into basic chemical elements.

Is this man? In the past I have read these small selections from R. B. Fuller's Nine Chains to the Moon to my students and received responses largely of horror, amusement, or disbelief. In this day of incredibly rapid social and technological change I rather imagine that a serious reading of Fuller's definition of man in effect fights fire with fire; one may, as I did, emerge from momentary paralysis with a more functional and even more sympathetic viewpoint on the creature of our concern. In the last half of the 20th century, we are beset with many alternative ways of regarding humanity in its homogenous and disparate senses. Perhaps Fuller does us a favor with his mischievous but compellingly respectful dissection of the only creature on this planet allegedly possessed of "real" culture.

Here in the post-industrializing West, particularly in the United States, the comparative affluence produced by industrialism has resulted in so many "successes" that old forms of human homogeneity and diversity are being pressured in many ways by new social patterns. Old white ethnic societies, once at the bottom of the class hierarchy in large cities, persons of

blue-collar and rural ghetto circumstances alike find themselves awash in a national stew composed of many newly proliferating ingredients: youth movements, gay liberation, hippies, women's liberation, blacks, Indians and other minorities, urban ghettos, and many more. Also in evidence as part of this mixture are signs of still more pluralistic expressions heralding what, to some, may be the emergence of a Golden Age, and to others the beginning of Level VII or THX 1138: systems analysts, human components in man-machine interactions, a burgeoning leisure class, corporate radicalism, the rise of the technician, and the coming of the cyborg and genetic control. Reacting characteristically to this confusing explosion of rearranged and new human styles, Loren Eiseley has expressed his own particular anxiety about what man is and might become:

Man, at last, is face to face with himself in natural guise. "What we make natural, we destroy," said Pascal. He knew with superlative insight, man's complete necessity to transcend the worldly image that this word connotes. It is not the outward powers of man the toolmaker that threaten us. It is a growing danger which has already afflicted vast areas of the world -- the danger that we have created an unbearable last idol for our worship. That idol, that uncreate and ruined visage which confronts us daily, is no less than man made natural. Beyond this replica of ourselves, this countenance already grown so distantly inhuman that it terrifies us, still beckons the lonely figure of man's dreams. It is a nature, not of this age, but of the becoming -- the light once glimpsed by a creature just over the threshold from a beast, a despairing cry from the dark shadow of a cross on Golgotha long ago.

Man is not totally compounded of the nature we profess to understand. Man is always partly of the future, and the future he possesses a power to shape. "Natural" is a magician's word -- and like all such entities, it should be used sparingly lest there arise from it, as now, some unglimped, unintended world, some monstrous caricature called into being

by the indiscreet articulation of worn syllables. Perhaps, if we are wise, we will prefer to stand like those forgotten humble creatures who poured little gifts of flints into a grave. Perhaps there may come to us then, in some such moment, a ghostly sense that an invisible doorway has been opened -- a doorway which, widening out, will take man beyond the nature that he knows.²

It is precisely Eiseley's conservatism, contrasted with the eager, flexible, and good-naturedly aggressive approach of Fuller that raises a point which is obvious to us all in some fashion: that the answer to the question What is Man? can partially be found in terms of explicit and implicit constraints on the flexibility and therefore the alternative futures of man. In recent months conceptual differences over the nature of man and his concomitant alternatives were brought to the level of national discussion by the emergence of another book by the behaviorist B. F. Skinner. In his novel, Walden II, Skinner years ago indicated his preference for a form of social technology (or social cybernetics) which would level out the highs and lows in human society and insure law and order and survival. In his new Beyond Freedom & Dignity, Skinner pleads for an official definition of mankind which would recognize the programming effects of culture and environment, and those spurious notions of totally unlimited human alternatives. Following this he suggests that positive reinforcement be employed to generate a man-made social environment that would recognize the necessity to stabilize man's behavior through engineering of the programmatic context itself. The mechanism for this redirection of mankind would be social experimentation:

An experimental analysis shifts the determination of behavior from autonomous man to the environment--an environment responsible both for the evolution of the species and for the repertoire acquired by each member.³

Skinner and Fuller are in agreement as to where we should begin in our attempts to improve the human condition: don't attempt to change man; change his circumstances.

Perhaps we should look to a most common source for some assistance in our search for answers to the question, What is Man? The Unabridged Random House Dictionary of the English Language (1967) refers to man's "high" position vis-a-vis other animals; of his exceptional mentality; of his singularity. This same source identifies things human as having to do with man's interests in human welfare, values and dignity. Humanitarian interests are operational interests, we read, aimed at operationalizing the high thoughts of humanism into practical changes in men's lives. Olaf Helmer in Social Technology is concerned with what he regards as epistemological errors in the social sciences. These strongly affect the capability of these sciences to contribute their efforts toward the employment of humanitarian goals intended to improve man's interests, values, and dignity. With characteristic economy of style Helmer identifies a central misconception of the style and task of the social sciences:

In the first place, the comparison of the social with the physical sciences is a spurious one, based on an epistemological misconception regarding the nature and purpose of scientific activity. Second--and this is the crucial point--there is every reason to believe that, by effecting specific changes in attitudes and procedures, we can substantially narrow the gap between physical technology and sociopolitical progress.

Helmer's blunt statement of the problem follows a short discussion of the essentially pessimistic outlooks on mankind's current condition and future possibilities entertained, he says, by many social scientists and intellectuals. Given what is already known about self-fulfilling social prophecy, we are told, pessimistic and passive outlooks must be tempered by something else. It is to this end that Helmer devotes himself in Social Technology and many other works concerned with the development of intentional epistemologies and methodologies designed to galvanize the social scientists in the interests of man's quest for a desirable future. In the same critical style as Helmer, Professor Magoroh Maruyama, writing in Human Futuristics (the first attempt by anthropologists and others to deal seriously and with a great deal of mutual interaction on concerns of alternative futures), says that:

....scientific "training" often tends to make the student internalize as a moral principle the ready-made methodology of his field of specialization. Such an indoctrinated student would feel guilty about deviating from that particular methodology and may even consider the methodologies of other fields of specialization to be morally inferior. Human futuristics must devise ways to prevent such fixations and to help people unlearn them.

In the context of a brilliant chapter entitled "Toward Human Futuristics" this observation and many others tend to support the idea of freedom and dignity for all human beings to develop common and disparate relationships with all other men. While he proposes no step-by-step means to achieve such a mixture of human similarity and diversity, Maruyama goes a long way toward exposing some straw men that dichotomize cultural components such as young and old, black and white,

male and female, communist and capitalist, hippie and square, post and future, and so on. It is Maruyama's contention that as men we can together share certain broad cultural understandings while pursuing forms of pluralism unimaginably more diverse than those common today or on the post-industrial horizon.

In 1966 Oliver Reiser published Cosmic Humanism, an attempt to bring an operational "Pantheistic" point of view to mankind and the problems he is suffering in the 20th century. Scoring the "paralyzing relativism" that so many clear thinkers of our times feel themselves obliged to accept, Reiser argues for a synthesis of all things into a holistic framework called "cosmic" or "scientific" "humanism." "A faith," he says, "in the intelligibility of social evolution is necessary to a stabilization of the world of the future."⁶ Central to this requirement for clear, intelligent understanding are the social sciences. For Reiser, the goal of his scientific or cosmic humanism is to "apply knowledge for the purpose of controlling social change."⁷ Calling for a return to the notions of orderliness and lawful behavior, and to the idea of human beings engaged in the great adventure of creation, Reiser calls for nothing less than "self-evolution" leading toward more numerous and abundant freedoms for all of mankind. Two constituents of his viewpoint are the following:

A Faith and an Idea--a conviction that man's archetypal concept of man can be put to work intelligently to create the environment essential to this new humanity.

A Program of Action-- unified, super-personal, super-national action, made up of the collective decisions of many individuals, gripped by a universal loyalty, motivated by common purposes, guided by a shared wisdom, directed towards polarized objectives--all of which together will then determine man's planetary future.

In addition, Reiser declares that the "twin foundation stones" of his scientific humanism are to be found in two closely related principles -- the value of the individual and the responsibility of the individual:

Not one of us is without power to contribute to the making of the future.

Not one of us is free from responsibility for making the future.⁹

Thus Reiser joins R. B. Fuller, Weston LaBarre, Marshall McLuhan, Teilhard de Chardin, Margorah Maruyama, Elise Boulding, and a growing number of others generally interested in planetary man and planetary society as prerequisites to the enhanced general welfare, freedom, and dignity of mankind.

II.

In this paper I propose to accept as starting assumptions the ideas of Helmer and others concerning the epistemological difficulties of the social sciences and the need to develop viable social technologies. Specifically, I will explore three types of "humanism" which I believe will be necessary to maximization of both the pluralistic and the local community alternatives awaiting mankind. Under the definition that "humanism" refers to anything and everything falling within the interests of any man or human group, I will examine three types of anticipatory, operational "humanism":

Type I: Locally defined humanism, which is essentially identified with highly developed pluralist groups and which stresses, among other alternative goals, the maximization of survival on the local level. This is the most common and operational of humanist types.

Type II: Cosmocentric humanism, which may also stress survival, but in the more flexible and inclusive scope of meanings provided by the universe itself and all the events, creatures, matter, intellect, and energy within it. This form of humanism is difficult to operationalize because it is largely rhetorical -- even verbally ritualistic.

Type III: Knowing humanism, of an active, exploratory, process - and information-oriented type. It cuts across both local and cosmo-centric levels, acting to informatively link many types of culture, energy, and other components into evolving information loops. The loops may be tapped voluntarily by any type of culture; no information is secret; all process skills are open to examination; no epistemological lock-in characterizes either style or content. Distinguished from contemporary science by its flexibility, openness, full respect for different world views, and aggressive provision of two-way terminals with different cultures.

The context for this exploration will be that of long-term human travel in space involving colonization of other planets and possible encounters with other intelligent beings. If this approach is considered far-fetched, note that permanently removing a few representatives of mankind from the earth is already the expressed goal of a new institute;¹⁰ and that a removal of the setting of the argument over humanism, freedom and dignity to points away from Earth may serve to add something to the "either/or" arguments that have surrounded the theses of Skinner and others.

III.

A good deal has been written about the day when men will leave the earth in space vessels to embark upon long and difficult trips to distant celestial points. Almost all the more futuristic of these speculations have touched upon the tremendous lengths of time such travels probably will consume. The

distances among even the closest planets of the Solar System preclude rapid transit for a very long time, if one may judge from projected development periods for certain sophisticated interplanetary and interstellar propulsion systems.

It follows that, for considerable periods of time, men will be grouped together in confining physical and psychosocial conditions as they conduct trips among planets, their natural satellites, and artificial manned outposts in orbit. With the first unmanned space ship designed for travel outside the solar system now being constructed in the United States, the moment for consideration of human "living space" on manned versions of such vehicles is at hand.

Let us first concern ourselves with some of the general problems, both physical and psychosocial, which may beset early groups of humans traveling long distances within the solar system. For virtually any discussion of human groups it is useful to keep in mind the conditions of the physical environment in which they exist. For space travelers, the environment outside the ship will be fraught with a variety of dangers, including temperature extremes, radiation, varying levels of gravity, illumination extremes, atmospheric extremes, and many factors related to vast distances.

Within the human living space of groups engaged in long-distance space flights will lurk other hazards, among them frictional psychological interactions, imbalances in the crew's social system, upsets in the ecological interactions between

the human group and elements of complicated life-support systems, and many psychosocial effects associated with the long distances involved in space flight. The entire interacting complex of problems awaiting long-distance space travelers is summarized by Peter Ritner in his book Society of Space:

In Space, where there is no water or oxygen or anything else the human physiology requires, man has only his brain with which to design substitutes or store up supplies. Instead of ignoring a routine autonomic activity like breathing, as man can do on Earth, in Space he must think about it all the time, and devise intricate apparatuses which allow him to breathe. But he must breathe is no longer a casual matter; it is a critical weakness in his fortifications. On Earth a man breathes air. In Space a man will breathe a gas, artificially evolved, stocked in guarded containers, its composition calculated by biophysicists down to the third or fourth decimal place.

In addition to providing man with none of the essentials of his physical being, Space seems to regard life with a supererogatory indifference that may only be classified as malice. If a pilot ventures to near a strange star he may be shriveled up by a blast of a new kind of radiation. A tiny puncture the size of a pinhole in a space suit will detonate the helpless operator inside like an exploded can of overheated whipped cream. One brush with a number of kinds of cosmic particles, one largess meteor punching through the main power plant, one over-long exposure to temperatures above 100 degrees Centigrade or below -10 degrees, one rupture in the plumbing that recycles wastes or recovers water or generates electricity and oxygen, one indiscretion with a major circuit, one error or blind spot or incompetency and the spell is broken, human daring and deserts are utterly lost.¹¹

What makes travel in space itself so much a consideration for planners of crew composition and interaction as opposed, let us say, to the manning and control of an atomic

submarine is essentially the incomparably greater inaccessibility of the space craft once it is launched toward its target. It is easy to envision a rescue ship caring for a disabled submarine or even evacuating it in the event of misfortunes of many kinds, but similar aid cannot be mustered for the long-distance space craft once it is underway. All one can reasonably hope for is a second or third vessel traveling with the stricken ship, allowing for crew transfer after disaster has occurred. But even these measures, while they offer the opportunity to continue life, leave one with all the problems we have discussed, and perhaps a few more. If three ships are traveling a long way together, and crew of one transfers to the others, life is continued but problems probably will mount.

The reasons for this situation are many, but the fundamental problems are tied to the factor of distance. Although many bombard us with the reminder that our solar system is astronomically quite diminutive when compared in size with other systems, or with the distances among them, a round-trip to Mars will nevertheless require at least eighteen months for space ships constructed within the next ten to fifteen years. The "void", as many writers label it, is just that: a trip to the Moon, our nearest celestial goal, is a six-day round trip. It is a very short space journey indeed, but allows time and distance enough for disasters of many kinds.

The paramount demand upon any group of humans sent into space lies in the performance of given tasks in the "best" possible survival fashion--a Type I requirement. To properly

manage the control and monitoring functions allocated them by the designers and planners of space craft, operators must be aware of certain minimum standards below which their collective output may fall only at the peril of everyone. The concern of life space designers must be to insure the continuous survival success of the crew. It follows that crew members necessarily will be human engineered to a degree, whether more or less depending upon the sophistication of their equipment, the dangers of their mission, the flight distance, and the type of society which is sponsoring them.

What might a "made up", locally defined humanist culture of Type I conceivably face in reasonably long-term space travel, and what might some of their responses to stress be? The following are some very brief scenarios for implementing locally defined humanist influences when humans are grouped for trips into the solar system, or for long orbits around Earth.

Control of bereavement situations. In the event of the injury or death of one or more crew members or passengers, certain "automatic" behavior patterns are employed to preserve the efficiency of crew operations. Emotional abreaction or expressions of grief and horror are as brief and complete as possible to prevent recurring memories of the deceased from interfering with individual performance. The use of strict, well-defined rituals, carefully set up before the voyage begins, accomplishes this. Such normally revolting acts as euthanasia, abortion, burial in space, and other eventualities are anticipated and made ready for while the crew is still in training. The use of a death ritual is necessary for the swift reaffirmation of group solidarity and morale, so that survival functions may continue uninterrupted.

Maintenance of leadership. The head of an expedition and his aides demand the complete subordination of all other locally defined humanist philosophies represented by different crew members. All crew members are indoctrinated under the same Type I humanist auspices prior to take-off. The captain of the vessel becomes - artificially and naturally - endowed with a powerful charisma. Humanist authority and ritual materially assist this situation, particularly in times of stress or when training responses begin to fail and strong leadership becomes a necessity. Drugs and other means provide leadership with backup supports.

Sanctification of the mission. Assuming that the voyage in question is to Mars, it will last at least six months each way and probably six months on or near the planet. That is obviously ample time for members of a scientific passenger group to begin questioning moral objectives and conclude that it is somehow "wrong" for such a journey to take place. With the composition of such crews likely to be sprinkled with many brilliant young men and women trained in the natural sciences, such a possibility is not without some justification. They will not, presumably, be as occupied as the crew with the control and maintenance of the vessel while in flight. Therefore, overriding spiritual affirmation of local circumstances is present for such relatively uninvolved and mentally mobile people--they are involuntarily hibernated for most of the trip and are not allowed access to "privileged" information, such as that concerned with political developments on Earth.

General use of ritual. Ritual opposes anomie. It encourages integration of purpose, emotionally (we feeling) as well as rationally. Locally defined humanism provides a very potent and continuous force in attempts to shape behavior and to help insure continued in-group feeling as well as identification with the objectives of the space flight mission. Appropriate observances are introduced as, for example, regular sermons and services conducted and participated in by the crew members and passengers alike. A "physician-chaplain" is at the head of the "congregations" or they could be led by the captain. Spontaneous humanist leadership - or leadership of any kind, for that matter - is not allowed to spring up from outside the controlling elite.

The provision of an on-board "physician-chaplain" appeals to everyone, the necessity of his functions as healer, and his charisma as a spiritual leader are quite imposing when combined. On-board ritual and feeling are supplemented, where possible, by selectively used broadcasts from Earth of familiar persons conducting more elaborate reintegration functions.

Further rationale. From what has been stated above it is seen that local humanism can provide definite contributions to the maintenance of a society in space. It does this by ritually channeling the attitudes of the crew into expressed values that serve to aid the mission rather than hinder it, and by helping them envision the nature of their obligations to the group and to the vehicle. It provides a restraining power against unwanted tendencies and serves to underwrite with reverence and respect the inviolable local mores fundamental to the success of the voyage. To achieve greater efficacy, it is completely reasonable that some or all of those social controls peculiar to the vessel are couched in quasi-religious terminology. Locally defined humanism, when functioning as a psychologic "prop", helps to provide for stability in otherwise more or less chaotic situations.

But it is not intended to suggest that local humanist influence is the sole solution to the detrimental effects of stress situations in space. Specific training is the best answer, along with the cohesion of the primary group. It helps, however, to bind together a tottering society on the verge of collapsing below the minimum standards of performance necessary for survival. Even though "religious" overtones to required functions may be recognized as labored and superimposed - in varying degree by more or less perceptive members - the nearly universal social conditioning to react with respect toward religious sentiment and symbols augments establishment and maintenance of basic, indispensable social controls. Without these, groups remote in space could not survive.

IV.

Now that some of the social aspects of travel within inner elements of the solar system have been briefly examined, I should like to consider the much more profound conditions of outer-planet travel and colonization.

The technical problems associated with such journeys are enormous. In addition to dilemmas common to more modest solar flight, it has been estimated that to achieve a respectable speed for interstellar travel a mass the size of the Moon would have to be expended as rocket exhaust. Even then, because of limitations imposed by the theory of relativity, the space ship would require over four years to travel to the nearest star. Due to the lengths of time envisioned for such journeys, the physical and cultural survival of passenger and crew complements may take on additional and fundamental meaning. To wit: the group that begins a given journey, should it survive physically, may not be the generation that finishes, depending upon the distance to the point in question. The scientist Arthur C. Clarke estimates that the speed of light will not be attained for centuries in the future. He does envision, however, space ships traveling at fractions of this velocity much sooner. If we assume that a manned vehicle completes the above mentioned journey to the nearest star system at one-hundredth the speed of light or one thousand, eight hundred and sixty miles per second, we have contemplated a trip lasting about fifty years - one way. As Clarke states the problem:

Since several decades of traveling through space would be an ordeal even to the most enthusiastic astronauts, one cannot help wondering if medical science might come to the rescue with some form of suspended animation - another theoretical possibility still outside the range of present achievement. If this became practicable, it might

extend the range of space flight almost indefinitely - assuming that travelers could be found willing to return to earth perhaps generations after their departure, when everyone that they had ever known was dead and society itself might have changed out of all recognition.¹²

Continuing Clarke's line of thought is another writer, Carsbie Adams:

The idea of generation travel is so immense in its philosophical scope as to befuddle the twentieth-century imagination: the dedication to a purpose that neither the parents nor their children or grandchildren could ever hope to realize directly would be amazingly difficult to instill. To live for one's children seems natural; to live only that one's remote descendants can land and live on an alien planet is at best difficult to imagine. After several generations had been born, had matured, and had expired, the relationship of the spaceship and its occupants to the home planet would become quite vague.

Alone in the cosmos, these people could know of the earth of their grandparents only through books and by word of mouth. Elaborate sociological systems would have to be worked out, together with an extremely refined version of space psychology and perhaps even a specialized religion. We can be sure that some psychological props would be necessary. The predicament of these space travelers would be a vastly intensified version of life on earth.¹³

We must assume, however, that medical aids such as the one Clarke suggests for interstellar flight will not involve most members of the crew; someone must remain active to provide maintenance and control functions.

Another aspect of stellar flight concerns the effects on the passage of time aboard ship as the speed of light is approached. After reaching about ninety-six percent of the speed of light, a space crew would supposedly note the passage of only one "ship year" since the start of, let us say, two-gravity acceleration. But, due to the effects of the Special Theory of Relativity (already demonstrated experimentally in certain cases) an observer on Earth would ascertain that the same ship had been accelerating at two gravities for five and one-half years instead of one. Even considering the effects of "time dilation", as the compressive effect is termed, the social structure of a human group moving at nearly the speed of light would have ample time for alteration - assuming the landing point were distant enough.

So there will be plenty of time for sociocultural changes to occur on the home planet, within the space crew, and upon the planets where colonies have been established. It seems prudent to consider implementing some strong Type I bond to help keep these distant nomads culturally as alike as possible, in order that communications and trade be sustained. (The trade in mind here is that primarily of ideas and specific technological skill.) It could be that a Type I humanism with the tenacity of Judaism will be needed, or it could be that a kind of enlarged humanism or "cosmocentrism" (Type II) will supplement anthroposocial creeds. But it is certain that some cohesive force which can conjure ample collective sentiment to assume the brotherhood of widely separated peoples will have to be worked out by the time the first colonists embark. It seems apparent that if we are to deal with forms of homo sapiens altered culturally and genetically through conditions peculiar to their stellar habitats, we will need the pallia-

tives of a cosmocentric or Type II humanism, but Type II humanism is essentially fragile because of the over-riding survival imperatives of the Type I variety. Therefore, some other kind of humanism, non-local and non-universal, but in and of both, is required. The major service of a Type III humanism would be to keep many kinds of alternatives open to many kinds of ordinary and extraordinary human groups.

A wag has referred to the little old lady who felt that spacecraft were an invention of the devil, and that man should continue to travel by jetliner "as God intended". It is this sort of bias - a rather quaint example, it is admitted - that may cause extreme difficulty in dealing with the impact of the rocket upon our own civilization. When and if we should reach the stars* and find other civilizations, however, uncomprehending and stunned reactions may be replaced by two culturally induced reactions: fear, followed quickly by aggression. Again, Clarke states the problem aptly:

[One suspects that some people] are afraid that the crossing of space, and above all contact with intelligent but non-human races, may destroy the foundations of their religious faith. They may be right, but in any event their attitude is one which does not bear logical examination - for a faith which cannot survive collision with the truth is not worth many regrets. Whether or not man is alone in the universe is one of the supreme questions of philosophy. It is difficult to imagine that anyone could fail to be interested in knowing the answer.¹⁴

Obviously many are not interested, and some of these are in the highest positions in Western civilization. But we must display far more of the qualities of compassion and tolerance with altered forms of humanity and with other races than

*Or they should reach us.

is common in everyday racial interactions on this world today. The world of tomorrow may only be one of many, and the destructive forces of today are probably puny alongside what is to come. When and if we meet our betters or our peers in space, we should have developed down to the lowest echelons of humanity an innate operational respect for and tolerance of the differing ways of all others. Otherwise, we may follow the same paths into aggression that fear and suspicion have always compelled us toward. And if we are wont to do battle, it is well to consider the possibility of defeat; our ships may appear as painted war canoes to a modern navy.

Something else is needed besides a self-destructive Type I reaction or a non-operational philosophy of the Type II kind. To quote Ritner:

In this era, we want to say, the community of man first came to view knowing not as a means but as a way; not as a weapon but as a destiny; not as the province of specialists but as the central stabilizing energy of the Society of Space.¹⁵

This is a statement of implicit support for Type III humanism, it seems to me.

If we can come face-to-face with members of another race, quite possibly an esthetically repulsive race, what might such a contact be like? In an effort toward the cause of Type II cosmocentrism, Ritner makes this intriguing appeal:

...what if the Scorpion's (this is Ritner's symbolic alien) notions of interstellar diplomacy include the closest sort of bodily contact - a kind of quasi-sexual byplay between Man-explorer and Scorpion-receptionist, not of course, with the

object of procreating anything, but in order to exchange body warmth as a token of good faith and affection. At this even the crustiest spider lover in Arizona would balk. But where will humanity be then? The Scorpion is man's brother! And we loathe him. Man must steel himself not to loathe the Scorpion. That is the teaching of Space.¹⁶

If we feel we are not a long way from embracing celestial bugs, let us consider the difficulties man now has embracing his fellows, who may differ from him but little.

The best case Ritner makes for the development of cosmic humanism based on love may suggest a kinky kind of togetherness on a universal scale, but it does not seem unattractive as rhetoric:

Let man understand at last that the Mind can do nothing without the aid of the Passionate Soul. That any entity possesses the audacity to organize and metabolize in this dungeon of the Universe should be enough for us. We can love any such entity, and this love will enlarge our own audacity, and life will conquer.¹⁷

A Type III process - and information-oriented humanism is necessary, it seems to me, for the practical working out of each lofty aims -- in space or on Earth.

That there are people within our society afraid to contemplate the prospect of man afoot in the cosmos is demonstrated by our slow progress in that field. Carsbie Adams notes that Western man's concept of a jealous god ruling the universe is the source of most philosophic misgivings about the genesis of space flight:

...here is the crux of the ultimate dilemma: Man is terrified by the prospect of a deity who is jealous of his command of the universe, but not so much because of the element of apparent omnipotence (which could also be kindly) but because he, man, will himself not rest until he attains all within his awareness. But there was never any doubt, once man ate of the forbidden tree of knowledge, that there would someday be a day of reckoning. Maybe the odds, when they are known, will prove to be hopeless. We will not know until we are finally face to face with the infinite. In the depths of our being, we must feel that we have a chance or we would not try.¹⁸

The on-board social problems of space flights to inner planets of the solar system are apparently great enough, but colonization of the inner planets, and the later stellar journeys and colonizations, will require investigation of powerful elements to control human groups in time of stress and, for all time, to aid them in maintaining their essentially human characteristics - assuming this is always desired.

It is suggested that consideration be given the use of very rigid, very heavily ritualized humanist mystiques to aid in controlling and cohesing groups during flights through space or under adverse planetary conditions. But it also seems necessary to include a mandatory and preferably automatic humanist reaction toward other space-faring human groups and extraterrestrial races, to come into play upon initial contact. This planning should, it appears, include opportunities for "dress rehearsals" of such eventualities to aid in familiarity, timeliness, and quality of reaction. The problem here is the obvious antipolarity of the two humanist systems: ritually structured humanism in a context of fierce, almost tribal

rigidity and formalism necessary to physical survival in space - and the flexible, cosmocentric sophistication of the man who is rhetorically one with the Universe. Against the backdrop of the stars, however, lie more than small ships; whole planets such as Earth must somehow develop the art of survival with as little recourse as possible to the primitive mechanism of aggression. It is to this end that a Type III humanism must work -- to provide information, as well as process skills, allowing for expansion of the closed, tribal group and for an enhancement in the operational capability of (rhetorical) cosmic humanism.

V.

Let us leave space and return to Earth. What of the continued problem of clashes in close quarters among different varieties of humanism operating at Type I and Type II levels? If it is rather easy to understand why the challenges of space to man's future might lead to Skinnerian solutions, should Earth be excluded as another universe sector where behaviorist styles of Type I humanism might function? Is there no room among the earth-bound cultures of man for this variety of pluralism? If not, how easy is it to operationalize Type II humanism and make it work?

Very difficult, I would guess, among many liberal professionals and other mature ideologues who do not choose to label their own Type II proclivities ideologic, but only "correct". Not, I would suppose, among fem lib zealots, youthful radicals, and some ethnic politicians whose very reasons for purpose and popularity are often linked to anomic gaps and lags in the over-

all mechanisms of social harmony. In short, Type II humanism is currently paid lip service in some Earthly quarters but still must bow to locally defined humanist influence. This might have been an imperfect but essentially workable situation before large-scale technological development, but how does it work in 1971 or 1999? Is it necessary for men to travel deep into space with the intention of removing themselves from this dilemma? Will we leave Spaceship Earth because there may be no cultural room for many varieties of highly developed technological societies? Must some inevitably leave the planet in order to save it - and themselves? While I cannot answer these questions suitably for myself and others, I do hope that we have made it easier to consider the recent pronouncements of B. F. Skinner as less than depredations and more the early expression of a Type III approach (with definite Type I undertones) to alternative human futures. But perhaps this is what Spaceship Earth needs at this point in the early 1970s: more human alternatives operationally spelled out, and more willingness from informed people to consider these alternatives with intellectual and emotional openness and honesty.

We have purposely provided some "far out" examples of humanist activities and we have purposely reduced the definition of humanism to refer to local, cosmic, or information-and-process assumptions that are not handed from supernatural sources, but are, as Kurt Vonnegut says, "just" made up. But the little word "just" contains, I believe, a great potential for mankind if we can but realize it. A mixture of reason in the arguments over proposed behavioral modification of man would help a great deal, I believe, to remove us from the witch hunt to the responsible search for workable viewpoints on man.

Skinner is not Hitler, and we should realize that. Cosmic humanism is at present little but high-sounding rhetoric, and we should know by now how difficult it is to operationalize rhetoric. I believe Skinner has made a marvellous contribution toward the sophistication of an argument debated too long in emotional, stereotypic and allegorical styles. Let someone come forth to help us clarify the full range of alternatives for social control and freedom available to man in far space and the near space of the mind; in the region of the stars and on Spaceship Earth.

I believe that formal education systems, with the help of competent analysis by many kinds of specialists, generalists, and citizens, can begin to operationalize our capabilities to provide both Type I and Type II kinds of information to young people and their elders but within the open information-and-process context of a Type III approach. Under the right conditions, we may find ways to augment that process by encouraging more, not fewer, controversial scholars such as B. F. Skinner. Their contributions may never be sufficient, but they are necessary if we are to raise the level of our debate over freedom and dignity beyond the twin totems of scare scenarios, such as 1984, and the fragile, conservative, and appallingly non-operational rhetoric of today's official humanists. Type III humanism is precisely the open provision of information, and therefore alternatives, to all. It solves nothing, itself, with regard to concerns of Type I and Type II humanists, but it offers continuously sophisticating alternatives that are generated by the continuously displayed feedback of information arranged according to many world views. Sparked by some men, augmented by computers and displays, it is the guts of the Noosphere, the world village, the cosmic sensorium, or

the world university. It is science expanded, the universities made competent, the media made honest. It accommodates East and West, male and female, black and white, Earthly and extra-terrestrial. It is the cosmic brain of Reiser's, but without a single cortex. It is the newest extension of our ecology, and, I submit, contra Eiseley, it is natural.

FOOTNOTES

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