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CULTURAL IMPLICATIONS OF EXTRATERRESTRIAL CONTACT
AND THE COLONIZATION OF SPACE*

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A non-technical, somewhat speculative paper, the following deals with one individual's perception of the potential implications of ETC [Extra-Terrestrial Contact] during the colonization of space. Building on a series of earlier papers, the argument is advanced that there are potential problems dealing with ETC and space colonization within the immediate future if the general public and the space colony inhabitants are not prepared for ETC. The point is stressed in this paper that an interdisciplinary and multidisciplinary approach should be used when discussing the potentials of ETC and space colonization.

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INTRODUCTION

A non-technical, somewhat speculative paper, the following deals with one individual's perception of the potential implications of ETC [Extra-Terrestrial Contact] during the colonization of space. Building on a series of earlier papers^{1,2,3,4} the argument is advanced that there are potential problems dealing with ETC and space colonization within the immediate future if the general public and the space colony inhabitants are not prepared for the potentials of ETC. Trained as an anthropologist I shall use selected pieces of anthropological data in this paper. Since I have the belief that "good" science fiction is, at times, useful in the classroom situation, I shall incorporate references from selected science fiction works to support my position. It must, however, be made clear that nowhere do I suggest that science fiction can be passed off as "science fact" -- the value of good science fiction is that it simply allows us to make potential projections into a future which may or may not come about.

BACKGROUND

Perhaps the major theme that I am trying to get across when discussing space colonization and the potential of ETC, or perhaps the need to consider them somewhat concurrently, has been well put by Ray Bradbury when he stated "If you don't rehearse over and over, you're going to be surprised in space. And the surprised man, out there, is the dead one. We get ready, then, by trying to surprise ourselves."⁵ The technical planning for space is indeed formidable and I am simply suggesting that we also should address ourselves to the psycho-social or sociocultural implications of going into space (and possibly being contacted).

Scientists

Numerous individuals, including those from the so-called "hard" sciences and the "soft" behavioral and social sciences are gradually increasing their interest in potential issues of ETC and space colonization. What is perhaps even more important is that individuals, at least from my limited perspective, are beginning to talk to other individuals not within their immediate realm: "hard" technological individuals are beginning to talk to "soft" speculative oriented individuals and communication lines appear to be improving over time. It was heartening to note that at the First Science Workshop on Interstellar Communication held at

the NASA/Ames Research Center on 22 and 23 January 1975, the issue was raised as to the potential inclusion and contribution of individuals with expertise on "cultural evolution" for a series of future meetings⁶. On 24 and 25 November 1975 a Workshop on Cultural Evolution was held at the Center for Advanced Study in the Behavioral and Social Sciences at Stanford. At this Stanford meeting the question was again raised: "what should be the future inputs from the social sciences into a SETI [Search For Extra-Terrestrial Intelligence] Program?"⁷ The point that is stressed in this paper, which appears to be building on the work that has gone on before, is that communication among the various disciplines (or individuals of the disciplines) must continue to take place and that an interdisciplinary and multidisciplinary approach must be used when discussing the potentials of ETC and the colonization of space. However, I do not simply mean communication with no content but communication which is a multi-laned avenue where ideas are presented and discarded and modified as the needs arise. Psychological and cultural projections, for example, should be made at the same time that technological projections are made about the colonization of space; and while technological and cultural projections are made into the future, an on-going "terrestrial" education campaign should be in operation at the same time. It was a privilege to be a speaker at a Symposium sponsored by the student programs division of The American Institute of Aeronautics and Astronautics, FFAST (the Forum for the Advancement of Students in Science and Technology), and the Ames Research Center last 24-25 February. At that meeting, as the anthropologist present, I received some interesting insight into various views held by individuals from several disciplines and I truly believe that mankind's venture into space is not an escape from the potential problems on this planet. Indeed, the conclusions for the 1977 NASA volume entitled Space Settlements: A Design Study seem to re-affirm this belief: "Space colonization is desirable because of the hope it offers humanity"⁸ and a similar theme came across in the one-day meeting which seems to have been entitled "Governor Brown's Space Day" held last August 11 in Los Angeles. That meeting, "California in the Space Age - An Era of Possibilities" also pointed out the positive aspects of the venture into space.

Education

The major recommendation of the 1975 summer study on space settlements stressed that "a major systems study of space industrialization and space colonization" be undertaken⁹ and with this I heartily concur, stressing

only again the need for an on-going educational operation. I am fortunate to be on a University campus where just such an awareness of the future and an interest in the future is an integral part of the curriculum: one of the units on the university is involved in beginning a planned three year project entitled "Classes for the future: An approach to basic skills" which is being designed for students in the 4th through 8th grades. Teachers will be trained to eventually work with students so that students will improve basic language skills and decision making processes. Materials from NASA, industry, the social sciences and science fiction materials will be used to review potential (and possibly conflicting) future scenarios.¹⁰ On another scale of education involvement, California State University, Chico, is also involved in the third year of a three year NASA Aerospace Education Services Project. The goal of the AESP project is to create and perhaps increase the awareness of the members of the education community and the general public to the importance of the products and the processes of the overall NASA effort in space. Based in Chico, but working throughout the entire United States, individuals associated with the AESP project work with teachers, students and others in increasing the general distribution of knowledge about space--that is clearly part of the necessary educational component for the industrialization of space.

SPECULATIONS/IMPLICATIONS?

The good science fiction author, in my opinion, because of his or her freedom with the data and the freedom to speculate, has (in essence) been educating the reading public to the implications of ETC more than any other group of individuals to date. By "good" science fiction I do not mean the purveyors of the type of work such as STAR WARS, but more of the type of 2001; by good science fiction I mean the author who speculates about something like The Late Great Future¹¹, or Future City¹², or Other World, Other Gods¹³? The implications of contact with sentient beings "out there" could, in fact, have disastrous effects of life "right here."

Numerous noted individuals have no doubts that there are intelligent worlds other than our own in this galaxy. Perhaps the most famous mathematical expression of this belief comes from the celebrated Drake/Sagan equation for calculating the number [N] of technological civilizations in our galaxy with which communication might be established.¹⁴

$$N = R \cdot f_p \cdot n \cdot f_i \cdot f_c \cdot L$$

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Carl Sagan, perhaps one of the most articulate scientific exponents of the potential of cosmic connections, took part in a 1972 Symposium sponsored by Boston University and NASA. In the volume of that meeting, entitled Life Beyond Earth and the Mind of Man Sagan spoke of the 250 billion stars in our galaxy and the fact that "the most optimistic estimates, in the view of many, about the number of civilizations that might be in the galaxy is on the order of a million"¹⁵ and our potential contact with them is probably coming. Just as Copernicus re-positioned man's place in our solar system, and Darwin provided the focal point for an understanding of man's place on this planet, so could some unknown individual of the very near future re-order Homo sapiens psychological position in the universe. Consider, for example, the works of the gifted author A.C. Clarke (a pioneer of "speculative" satellite communication long before satellites were apparently being planned by non-speculative individuals), and his views on contact: "This proof, which is now only a matter of time, that this young species of ours is low in the scale of cosmic intelligence will be a shattering blow to our pride. Few of our current religions can be expected to survive it, contrary to the optimistic forecasts from certain quarters. The assertion that "God created man in his own image," is ticking like a time bomb in the foundations of Christianity. As the hierarchy of the universe is slowly disclosed to us, we will have to face this chilling fact: If there are any gods whose concern is man, they cannot be very important gods."¹⁶ This possibly over-pessimistic view of Clarke is well-worth considering, for what is it that does in fact make us "human" on the cosmic scale? The question of what makes us human is the key one addressed by anthropologists on the planetary scale, and the same questions have been raised by gifted science fiction authors on the off-planet perspective. Just as good anthropology gets us to think about our fellow beings on the planet, good science fiction gets us to think about beings which aren't bipedal, but certainly have their own civilizations or culture; good science fiction gets us to think about beings which don't appear "human" yet certainly act human enough; and good science fiction gets us to consider beings which do not worship according to a variant of some Judeo-Christian deity yet certainly have some "religions" to guide and aid them.

Contact and Communication

B. Parkinson, writing in the Journal of the British Interplanetary Society in 1975 pointed out that "a society in communication with other intelligent species is in a new environment. It must adapt. We need to know how other societies adapt, and how they may be encouraged to adapt" and he

points out that "ultimately we face a religious questions" when it comes to communicating with that which is out there.¹⁷ Anthropologists, along with some of the other behavioral and social scientists, have been in the forefront of pointing out and interpreting the variety of meaningful ways in which man has developed on this planet and the record is clear that there have been those societies which have not been able to adapt to their new environments as a result of a contact situation. This, I believe, is a similar point that Sagan makes in his 1977 volume entitled The Dragons of Eden: Speculations on the Evolution of Human Intelligence when he writes that "conceivably, some hints or insights helpful in the quest for extraterrestrial intelligence might be derived from an investigation of the evolution of human intelligence"¹⁸ How have species adapted and developed on this planet? And how might we develop off-planet? One can only hope that we can learn from previous Earth examples and think about problems which might result from ETC so we won't be forced into a non-adaptive position. The gifted anthropologist G. Bateson (now a regent of the University of California system) has pointed out that "the unit of survival is organism plus environment. We are learning by bitter experience that the organism which destroys its environment destroys itself."¹⁹ From the anthropological record one need only look at cultures of this planet which were successfully adapted to their environments prior to a new contact situation and how they failed to survive: the Australian aborigines are a classic example of a group who had successfully adapted to their albeit, harsh environment but were gradually pushed further and further back as a result of the penetration of the Western world into their continent. Or look to the peoples of Hawai'i: in 1778 when first solid and substantiated contact occurred the Hawai'ians had an elaborate and well-organized society of several hundred thousand individuals, and in less than a century indigenous Hawai'ian culture was essentially crushed out of existence by the haoles which came to the islands (and so, today, in the islands there is a tremendous resurgence of interest in what it means to be a Hawai'ian in what some feel is an occupied and colonial area). Culture change is not a neutral phenomena and ETC on Earth or in the colonies will change the environment with which we have grown so casual and accustomed to, and speculations about those potential changes should be thought about now, and not when ETC occurs.

Science Fiction and...

The value for looking to "good" science fiction lies in the fact that it

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of all scien said; but, o There is a l luck and cha to hunt up i information there, with Worlds: Then Tomorrow²⁴ Fiction.²⁵

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is a useful and interpretive tool for a variety of discussions. This is one of the reasons that Toffler writes in his celebrated Future Shock that although "science fiction is held in low regard as a branch of literature" we should, perhaps, "view it as a kind of sociology of the future...[for] science fiction has immense value as a mind-stretching force for the creation of the habit of anticipation."²⁰ Good science fiction has the potential to move the reader into areas which do not yet exist...but which could very well be coming in the future. In his 1977 volume The High Frontier: Human Colonies in Space O'Neill points out that he was a reader of science fiction in his childhood but his readings gave him no clue "that the future of mankind lay in open space rather than on a planetary surface."²¹ Perhaps O'Neill was not reading "good" science fiction or perhaps O'Neill, as he himself pointed out, was not acquainted with such works of speculation which might have moved him into off-planetary situations. The basic trouble with utilizing science fiction today in the classroom, aside from the fact that each proponent of using science fiction inevitably falls back on stories or themes which she or he finds favorable to use, is that there is simply so much material available! S.J. Lundwall has written an excellent volume entitled Science Fiction: What Its All About and he stated that "Ninety percent of all science fiction is crud, the sf writer Theodore Sturgeon once said; but, on the other hand, ninety percent of everything is crud!"²²

There is a lot of science fiction around and one has to be guided by luck and chance readings, perhaps even coursework, and the willingness to hunt up information which ties in with science fiction. But the information is there and the background supporting materials are also there, with such volumes as the 1977 volume entitled Many Futures, Many Worlds: Theme and Form in Science Fiction²³ or Science Fiction, Today and Tomorrow²⁴ or even Billion Year Spree: The True History of Science Fiction.²⁵

Let me illustrate the value of science fiction for speculations about ETC with comments from a 1975 novel entitled Fade Out by P. Tilley.²⁶ While the story is lengthy the plot is, perhaps, simplicity itself: an Extra-Terrestrial vehicle lands on the planet and communication systems are thrown into chaos because of electromagnetic activity from the vehicle. Before it is determined that the vehicle does in fact come from off-earth, the Americans think the Russians have jammed all of our defense mechanisms and the Russians, of course, think likewise. Nuclear

holocaust is avoided early in the novel and it soon develops that the ETV lands in an isolated portion of Montana. Eventually one discovers that not only has an ETV landed in Montana, but a similar "craft" has also landed in a remote part of the Soviet Union. Perhaps true to some predictable form, both Governments suppress the landing from the general public and the novel takes off on that theme and with that I end my brief synopsis of the novel. But what would happen if ETC was made on this planet or in the colonies? Would government suppress the information if it were at all possible and to the advantages of the governments in power? Or...would information be disseminated on the 6 PM news about the contact? I, quite frankly, do not know the answer to the potential of this contact situation...and I am not too sure who does. But, it strikes me that someone, somewhere should be working out the scenarios for just such a contact situation, either physically "in person" or through the medium of the electromagnetic spectrum. What would happen if "contact" of some sort suddenly occurred? add what would be the results of such contact? The gifted science fiction author raises such speculative questions which, I firmly believe, should be raised.

Aside from science fiction authors and perhaps B. Parkinson cited earlier, there seems to be a prevailing opinion amongst the hard scientists that if radio communication with ETI's eventually occurs, the results on terrestrials will be either minimal or zero. (Incidentally, not all "hard" scientists agree on the value of searching out with/for radio communication: see, for example, O'Neill's comments in The High Frontier.)²⁷ Consider, for example, a statement from the report dealing with Project Cyclops: A Design Study of a System for Detecting Exterrestrial Intelligent Life (prepared under Stanford/NASA/Ames Research Center 1971 Summer Faculty Fellowship Program in Engineering Systems Design). A section of the volume dealt with the "possible hazards of contact" and invasion, exploitation, subversion, and culture shock were all considered and eventually discarded as problems. I shall not argue with their comments on the first three topics (although certain points in them are arguable) but restrict my opinions to the last one, "culture shock." They write: "Finally, there is the possibility that mere contact with an obviously superior race could be so damaging to our psyches as to produce retrogression rather than cultural advancement even with the best intentions on the part of the alien culture. Although many scientists might accept with equanimity positive proof of superior life on other worlds, is

mankind as a whole thematic to most

Sociologists point out that such cultures has usually been weaker by the strength of such domination. There is no example where domination has allowed expansion by the state, and that "Where such survived and prospered greatly improved medical knowledge

This last part, view in justifying of the world! A there is one thing stated it is to serve as the sole important point and documented of this planet" century, and appropriate interpretation ranked

The fact that the transmission of information Interstellar Communication Project at the Arecibo Observatory possible negative societies have offered was the situation. The right now in our world is being bombarded with information to dominate our lives and commercial interests via the electronic

mankind as a whole prepared for this? The concept is certainly anathematic to most religions.

Sociologists point out that historically contact between two terrestrial cultures has usually, if not always, resulted in the domination of the weaker by the stronger. We would argue that there is no example where such domination of the weaker by the stronger. We would argue that there is no example where such domination has occurred by radio only. The domination has always involved physical contact and usually territorial expansion by the stronger culture."²⁸ The authors of this section went on to state, and from my own perspective I am not too sure of their data, that "Where such aggression has been absent the lesser culture has often survived and prospered. The natives of certain South Sea islands have greatly improved their well-being as a result of improved skills and medical knowledge gained through contact."

This last part, of course, is precisely a "superior" group's point of view in justifying what has happened to an "inferior" or "lesser culture" of the world! And one can argue that it did not happen like that! If there is one thing that anthropologists of the 20th Century have demonstrated it is the position that there is no one single culture which can serve as the sole model of analysis of other cultures. Perhaps the most important point of modern 20th Century Anthropology has been the detailed and documented account of the tremendous range of variation of "cultures of this planet" and this is a distinct move away from various 19th century, and apparently some 20th century views, which offer a monolithic interpretation of CULTURE against which "lesser" cultures can be appropriately ranked!

The fact that the Project Cyclops people see no problem with communication of information was reiterated at the Fourth Science Workshop on Interstellar Communication held on December 3, 4, and 5, 1975, at the Arecibo Observatory in Puerto Rico. The question was raised "about possible negative effects as have been seen in the past when advanced societies have contacted primitive [sic.] societies"²⁹ and the answer offered was that tangible things were always involved in the contact situation. The points which I should like to stress are that first, right now in our normal daily lives we are being constantly bombarded with information over radio and television which DOES attempt to dominate our way of thinking, and here I speak mainly of news items and commercials and all sorts of other things which come into our lives via the electromagnetic spectrum; secondly, while anthropologists may

have demonstrated that it has been material things which have diffused more rapidly in contact situations around the world, the power of the IDEAS behind the material goods cannot be denied in changing people's opinions and points of view. I fail to see how radio contact with ET beings will not change our lives, if we are allowed to be in contact with them. New "life" out there which communicates to us "down here" will certainly alter the environment of us down here and changes will inevitably come about. I am simply stating that such "ideas" should be playing a part in the planning for the colonization of space, with or without profit!

CONCLUSIONS AND CLOSING COMMENTS

Finally, are we alone? R.N. Bracewell has written in his eminently readable volume The Galactic Club: Intelligent Life in Outer Space the following: "Are we alone? Do we have neighbors? Will we make contact? My opinion is that we are not alone--that we are not the only community to have gained a knowledge of the laws of nature and to have begun exercising control over nature."³⁰ The author has his opinions, just as I have my personal opinions and you all have your own opinions based on your individual histories. The point I should like to stress is that it really doesn't matter if intelligent life exists out there: what really counts is our attitude which develops as a result of either the assumption that there is intelligence out there or there isn't intelligence out there! As Wilfred Desan stated it in his article in the volume edited by J.L. Christian, Extra-Terrestrial Intelligence: The First Encounter: "the considerations of the hypothetical is useful, and in some strange way it illuminates the real."³¹

The eminent Anthropologist Margaret Mead took part in a series of lectures in California in 1972 and the 1974 publication of the volume of those lectures was entitled The Next Billion Years: Mankind's Future in a Cosmic Perspective. The conclusions from Mead's lecture, "Our open ended future", are still well-worth using today: "How do we project our concern two generations or more ahead? How do we organize mankind to safeguard its future? How do we make it possible for individuals to identify with a worldwide human system of interdependence?"³² We project and organize and hope for the possibilities of interdependence by being aware of what will happen if we do not project and organize and prepare for the future! Education is an on-going, every-increasing spiraling process: and I firmly believe that projections concerning the cultural implications of extra-terrestrial contact are well worth considering.

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