

## Possible Extraterrestrial Strategy for Earth

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### SUMMARY

The arguments are reviewed which hold that our Galaxy is nearly saturated with extraterrestrial life forms, that our existence requires in hindsight that they were and are benevolent toward us, and that our lack of detection of them or communications from them implies that an embargo is established against us to prevent any premature knowledge of them. An inconsistency is detected, in that any sudden lifting of the embargo in a manner obvious to the public would cause societal chaos and possibly touch off a nuclear exchange, while any communications received via radio telescope would likely be either quickly confiscated by government agencies and not revealed to the public, or heavily censored. The inconsistency is that the advanced civilization should be expected to have planned some other strategy, if it is actually benevolent, experienced and intelligent.

It follows that any embargo not involving alien force must be a leaky one designed to allow a gradual disclosure of the alien message and its gradual acceptance on the part of the general public over a very long time-scale. A possible strategy for their accomplishing this is proposed.

### 1 INTRODUCTION

Numerous studies of the past two decades have affirmed the likelihood that many advanced extraterrestrial races or civilizations abound within our own Galaxy (1, 2, 3, 4) not to mention the neighbouring galaxies and the rest of the Universe. Through use of Drake's equation (5) the number of planets within our own Galaxy so inhabited,  $N$ , is usually placed in the vicinity of  $10^6$ , give or take a couple of orders of magnitude (1). The extraterrestrials would presumably be advanced over us technologically by anywhere from just a few thousand years to hundreds of million years.

It has also been deduced with considerable agreement amongst different investigators that the time for any one such race to colonize all the hospitable planets in the Galaxy is only of the order of 100 Myr or less (6, 7, 8) upon their travelling at speeds of the order of 1 per cent of the speed of light, and assuming they would spend a few thousand years consolidating each new planet before setting out for the next. Even if the only motivation for migration were to escape the fate of the parent star leaving the main sequence, as many as  $0.1 N$  extraterrestrial races are expected to have done this by now (9). Thus, the chance that our 'corner' of the Galaxy somehow escaped the attention of advanced extraterrestrial races can be considered very remote, assuming they exist.

At the same time it has of course been realized that no extraterrestrial presence or communication has been detected through radio-telescope searches or other astronomical means (10). This fact has often led to the conclusion that mankind is unique within the Galaxy as a thinking being

capable of pondering its own existence and technologically able to explore its own Solar System and beyond. That conclusion has been bolstered by studies which indicate the huge improbability that life could have been started; i.e. that the necessary amino acids could ever have arranged themselves in just the right way at the right time so as to make an aggregate of enzymes capable of self-replication (10, 11, 12). This reasoning says, then, that life on Earth, and mankind, is just a statistical fluke which by all odds should not have happened, and could thus be unique.

However, the above two arguments on uniqueness are usually rejected on the grounds that the first life on Earth is known to have started after only a few hundred million years following Earth's formation. Since it did not wait a few thousand million years to start, there is no indication that the initiation of life is a rare event relative to the lifetimes of planetary systems. This fact has forced the counter-conclusion that some kind of precursor replicating molecular form far simpler than anything now imagined can evolve out of the amino acids to start the life process, or else that life somehow gets seeded on young planets by advanced extraterrestrial intelligences. The latter possibility, of course, would require the past existence of the extraterrestrials being debated, and would thus imply their present existence.

Further reasoning against the uniqueness theory draws upon the Copernican-type argument that all previous beliefs of mankind occupying a central and supreme position in the Universe have proven false. These beliefs ranged from having the Earth be flat with 'us' on top, and then having planets, Sun and stars all rotate about the Earth, to having the Milky Way Galaxy be the only galaxy, or a central galaxy, rather than a fairly typical galaxy within a cluster of galaxies within a supercluster. Additional indirect support for the hypothesis of multiple extraterrestrial races within our Galaxy comes from recent observations of proto-planetary nebulae surrounding some young stars (13), strongly supporting the idea of the ubiquity of stellar planetary systems.

These arguments have caused much debate on 'Where are they?' (10) and 'Why haven't we seen them?' Rather than defaulting in the face of these questions, attention has now shifted towards hypotheses about the extraterrestrials which might explain our apparent failure to have been contacted or exploited.

The earliest hypothesis along these lines had the Earth as a sort of zoo being maintained by extraterrestrials rather like a wildlife refuge (14). The question of why advanced extraterrestrials would be sufficiently benevolent or concerned to behave at all like this was tackled by Newman & Sagan (15) who suggested that there may be universal impediments against cosmic imperialism, and perhaps a *Codex Galactica* to educate the younger societies on how to behave. Sagan & Newman (16) further argued that advanced civilizations with long histories must have learned how to be benign and how to treat an adolescent society delicately.

Harrison (17) collected and extended these ideas by proposing that a 'biogalactic' law naturally exists wherein intelligent life forms which are

destructively aggressive tend to wipe themselves out in the solar system of their birth and do not go on to colonize a galaxy. He concluded that the reason we have not yet noticed any advanced civilization in the Galaxy may be that the selection process places an embargo on direct contact with any civilization still planet-bound. The embargo would be such that 'civilizations must not be encouraged or aided to quit their planets prematurely. They must prove their fitness to mingle with alien creatures, and there is no better way of demonstrating unfitness than self-destruction'.

Papagiannis (18) argued somewhat differently that

The limits of growth . . . will become the constraint that will affect the natural selection of these civilizations. Those that manage to overcome their innate tendencies toward continuous material growth and replace them with non-natural goals will be the only ones to survive this crisis. As a result the entire galaxy in a cosmically short time period will become populated by stable, highly ethical and spiritual civilizations.

Either argument characterizes the advanced extraterrestrials as benevolent or highly ethical, in order to explain our existence today, unexploited. However, there are many further variations on these themes, and consequences of them, which merit much discussion. These include the extent of the proposed benevolence, and the manner in which such extraterrestrials might communicate with us if they considered us near the stage to merit such contact. The purpose of this paper is to explore some of these considerations in search of a logical extraterrestrial strategy.

## 2 THE DEGREE OF EXTRATERRESTRIAL BENEVOLENCE

A wide range of extraterrestrial benevolence should be expected, considering the huge number of advanced civilizations thought to exist, the probable large differences in their forms and cultures, the hugely varying degrees of evolution which are implied, and the seemingly great difficulty or expense for any collection of such races to police a galaxy so as to stamp out any aggressive behaviour noted. Further, just what constitutes 'aggressiveness' would often not be easy to judge; two warring factions from the same planet may not quite wipe each other out, with one perhaps surviving and rebuilding on a neighbouring planet in the same system. Would the surviving faction have learned enough from its experiences to be judged non-aggressive and merit no punitive action by technologically superior civilizations? Many other scenarios could be envisaged.

Thus, some small fraction of the races in the Galaxy could well be considered hostile by us but be held in check by one or several more benevolent civilizations who for some reason have an interest in either the planet Earth or its inhabitants. One such reason might be that *homo sapiens* closely resemble their own life form, or the form they had at our stage of evolution. Another might be that they or their ancestors once utilized Earth and other planets of our Solar System in some way, before humankind was far enough along to come under the hypothesized embargo ruling. Or perhaps they were helped in this manner early in their own history when they were first developing a space-faring technology, and so feel obliged to return the favour to another race. One cannot, of course,

expect to be able to guess what the motivations for overseeing Earth might be for a civilization as much or much more technologically advanced over us than we are now over the people of 500 years ago, for example.

### 3 SOME PREVIOUSLY SUGGESTED METHODS OF EXTRATERRESTRIAL COMMUNICATION


As pointed out by Bracewell (19), were the extraterrestrials to communicate with us via radio waves from space, or via a probe sent to broadcast while circling the Earth, strenuous attempts would no doubt be made by the governmental agency concerned with national security of the country detecting the communications to keep them top secret. It would be quite naive to reason otherwise. The secrecy would be in hopes of obtaining some military or economic advantage over other nations from the decoded information, especially over other nations deemed unfriendly. Even if the detection of the incoming communications by a non-government research group were announced over the news media, the government could easily disclaim it as an erroneous report or a hoax the next day, and immediately clamp a tight security cloak over the operation. If that failed, heavy government censorship and withholding of information would still be expected. Bracewell reasoned that the extraterrestrials would anticipate such action, and would somehow manage to get the communications across to the peoples of all nations nevertheless. In my opinion, however, this would entail some quite different extraterrestrial mode of operation in order for them to avoid extensive or forceful interference in human affairs which would violate the hypothesized embargo.

It could also be said that the alien use of a different method would be consistent with our failure so far to detect any such communications from project SETI (search for extraterrestrial intelligence) or other listening projects in the past 10 or 15 years. Zuckerman (9), for example, implies that in a galaxy nearly saturated with extraterrestrials our failure to observe some of their communications must mean that they have some better method than electromagnetic waves. However, by the previous arguments it is doubtful that we would learn of it if communications *had been* received. Further, if a project like SETI were imagined to succeed, its 'success' could prove to be a disaster for reasons to be discussed next.


Another possible course of extraterrestrial action would be for them simply to appear or alight simultaneously in a show of force within the capital cities of many of the world's leading governments, and work out the communications later. However, even if the aliens possessed this capability the possibility must be quickly rejected on the grounds of leading to unethical consequences which an advanced extraterrestrial race should easily foresee. (From Section 1 we are assuming the extraterrestrial race is benevolent and highly ethical.) A reaction of mass hysteria of the same type as occurred in 1938 when Orson Welles' programme *The Invasion from Mars* was broadcast over the radio in the USA would probably *not* occur today, thanks to all the science-fiction movies and extraterrestrial video programmes of the past two decades. However, panic would very

likely ensue over Western-bloc fears that the East was receiving special treatment from the extraterrestrials, and *vice versa*, and that the other side was about to launch its nuclear weapons. Surely ethically advanced extraterrestrials would avoid such a scenario if there were any other way, especially since their landing craft would, here or there, undoubtedly be fired upon, possibly requiring retaliatory action.

Even a gradual public awareness of an extraterrestrial existence and eventual appearance would, over a several-month period even, still be such a shocking revelation that it could cause economic chaos and topple governments. The religious consequences alone could be huge, since large masses of people would likely begin to question the basis of their own beliefs if an extraterrestrial presence were confirmed. That is, any religion based upon worship or adoration of a human figure may no longer seem valid or universal upon learning of the definite existence of extraterrestrials having a history of many thousands or millions of years, and upon learning possibly of the alien religious or spiritual leanings, if any. Hence benevolent extraterrestrials are expected to avoid this abrupt course of action.

 By the method of elimination, one is then led to the likelihood that any extraterrestrial communications with Earth would progress over a very long time period, such as two or three generations, and in a manner designed to reach people whose value systems can accept the message they are likely to deliver. At the same time the communications would have to be delivered in a manner that would ensure that governments not find out about it, or not take repressive action, for the reasons given previously. This would seem to require that scientists as a whole would also not learn about the communications; otherwise governments would take notice. Such a manner of communication conceivably would not violate the hypothesized embargo of Earth, since there would be no interference with governmental actions or scientific endeavours. Although it is not clear that any such manner of communication exists, a possibility is proposed below.

#### 4 AN EXTRATERRESTRIAL COMMUNICATION PLAN COMPATIBLE WITH THE EMBARGO

 One possibility, given that the extraterrestrial race had somehow studied human society for a considerable time period without our knowledge, and understood human psychology well, is as follows. The extraterrestrial communications could be emplaced in a manner easily accessible to the general public but in a form not acceptable or believable to scientists. Government agencies, upon advice from scientists, would then take no actions, and the embargo would more or less remain intact. Awareness of what was taking place would then proceed very gradually - no faster than humankind in general was inherently prepared to accept the extraterrestrial messages. In this way the extraterrestrial intelligence need make no hasty decision on precisely when or if humankind was prepared to receive their communications, or whether governments could be trusted to forward the communications faithfully to the people in general. There would be no forceful extraterrestrial intervention in human affairs, so that governments would still be free to initiate a nuclear holocaust if they so

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desired, thus quickly answering the question of whether or not mankind is ethically prepared to enter a new 'cosmic' age.

A scenario for this type of extraterrestrial strategy might involve their communicating with just one or a very few recipients scattered about the globe. A recipient would be supplied with a comprehensive message over an extended time period, so that he or she could fully understand it, and would also be allowed to gather extensive evidence on the reality of the events so as to be able to gain some measure of public acceptance of the messages. However, in order that scientists in general should not be alerted, only the recipient would be allowed to partake in the communication sessions and to witness the extraterrestrials themselves. The messages might, moreover, contain vague descriptions of extraterrestrial technological achievements that would read like magic or science fiction. They might even contain a few absurdities purposely added; these, along with the absence of any detailed instructions on how to effect any technological breakthroughs, would help ensure that any scientists who happened to learn about the communications would regard them as hoaxes or fiction. The evidence would also be rejected by scientists because of the demand that tentative acceptance of the reality of an event requires that it either be reproducible or repeatable at will, or have been observed by trusted investigators. Meantime, the messages would get published, translated into various languages, and distributed throughout the world amongst other great literature. A large number of publishing companies already handle similar literature.

Following the reasoning of Papagiannis (18), the messages could be expected to contain some spiritual, or at least ethical, aspects which might further deter scientific inquiry. If all this were not enough to prevent any premature scientific acceptance, the existence of similar communications which turned out to be hoaxes might occur naturally and serve to confuse the situation greatly. This would provide a further motivation for scientists to feel no obligation to study the situation.

The problem of how that fraction of the general public which comes across the relevant literature could distinguish it, as a likely extraterrestrial message, from the frauds and cults could be part of the extraterrestrial solution rather than a problem. That is, overcoming this difficulty would ensure a large time-scale for the acceptance of the extraterrestrial communications, thereby minimizing any public panic and religious upheavals, and would require judicious use of logic in trying to decide if the message could be essentially true. These attributes, including independent thinking on the part of as many people as possible, and the deduction that our level of technology must be far below that of the aliens, may be prerequisites desired by the extraterrestrials before fully lifting the embargo. A further prerequisite might be that we have reached a level of understanding wherein we would treat them not as gods but respectfully as fellow creatures with a multi-millennium headstart over us.

The embargo against Earth would thus be a leaky one, designed to hold against scientists and governments in general while very gradually giving way to the general public.

## 5 DISCUSSION

The above possibility, and its prerequisites, would seem to demand that the extraterrestrials have maintained a steady world-wide surveillance over a very long period of time, as well as have the capability to set up rendezvous with the message recipient. For this to be accomplished without our obvious knowledge might require technology so advanced that it would be classified as magic, or occult. However, Sagan (20) has emphasized that magical acts would have to be expected if the extraterrestrials really *are* advanced by thousands of years or more over us. In fact, absence of any descriptions of magical capabilities within the recipient's message could be taken to mean that it was just a hoax and that the hoaxer was not very imaginative. Thus it might be very difficult to distinguish a true extraterrestrial message from various fictional writings. One would have to sift the recipient's validating evidence very carefully, trying to judge it on its own merits and not by how reasonable or unreasonable the magic-like descriptions within the communications might seem by present standards.

The same technologically advanced surveillance methods might be needed for the aliens to be able to judge the rate at which their message was being noticed and accepted by the people.

A common example of present knowledge that would seem like magic to a person of 500 or even 100 years ago is television and its invisible signal propagation through space. An example of present scientific uncertainty which might portend a 'magical' breakthrough within 30-50 years lies in the results of certain high-energy particle-collision experiments performed in the past year on the CERN accelerator. The best theory to explain the observed events appears to require the existence of 'supermatter' involving six or seven new spatial dimensions (21, 22, 23, 24).

Since the apparent embargo implies considerable extraterrestrial concern in the human race, it is of interest to estimate if the numbers support this possibility. Given  $N$  advanced extraterrestrial races in the Galaxy, we suppose that only a fraction  $r$  maintain an interest in emerging civilizations of which Earth may be one. If the frequency at which such emerging civilizations appear within the Galaxy is  $f$ , and the period of emergence is  $T$ , then the number,  $n$ , of extraterrestrial civilizations available to observe each newly emerging one over its period of emergence is

$$n = rN/(fT).$$

A conservative value for  $N$  is  $10^5$ , and for  $r$  is 0.1 per cent. The estimate for  $f$  is one per 10 years (1, 25), and is independent of the longevity assumed for the typical alien race. An estimate of  $T$  is 100 yr, as for example between 1950 and 2050 for us. These figures give

$$n = 10$$

which suggests that ample extraterrestrial civilizations exist, if highly mobile, to carry out surveillance and maintain the leaky embargo upon the emerging race. Actually, the fraction  $r$  may adjust itself until  $n$  has some optimum value. That is, for optimum  $r$ , the senior fraction  $1-r$  may

conclude that the handling of emerging civilizations is proceeding satisfactorily, so that they may continue to engage in other pursuits.

This proposed extraterrestrial strategy of dealing with Earth overcomes the inconsistency of a benign intelligence being the cause of chaotic societal consequences following any rapid confirmation of its presence, or of not realizing that its messages beamed via electromagnetic waves might be confiscated by governments and held top secret in the interest of national security. It also possesses the realistic aspect that the receipt of communications on Earth would be under extraterrestrial control.

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