

A CRITICAL EXAMINATION OF FACTORS THAT MIGHT ENCOURAGE SECRECY

ALLEN TOUGH

Ontario Institute for Studies in Education, Univ. of Toronto, Toronto, Ontario M5S 1V6 CANADA

Abstract—If a signal is detected someday from extraterrestrial intelligence, several factors might encourage complete and immediate secrecy. As a result, all data might be restricted to the receiving facility or nation instead of being shared promptly with SETI scientists around the world. Seven factors seem particularly like to encourage secrecy: (1) the belief that people may panic; (2) the fear of a negative impact on religion, science, and culture; (3) embarrassment; (4) the individual and national competitive urge; (5) avoiding a harmful premature reply; (6) a national trade or military advantage; and (7) the fear of a Trojan Horse. Three steps might alleviate the particularly difficult factors (numbers 4, 5, 6): an international treaty for immediate sharing of possible signals with SETI scientists in several other countries; implementation and frequent use of an actual network of scientists for such sharing; and further study of the possible need for partial restriction of data about the location and channel of a suspected signal.

1. INTRODUCTION

Search efforts to detect a beacon, signal, or message from an intelligent extraterrestrial source are already underway, or soon will be, in about six countries[1]. If one of these efforts is successful someday, several factors may strongly encourage complete and immediate secrecy. As a result, there is some risk that the location, channel, and content of the signal (and even the fact of its existence) may be withheld from all SETI scientists and bioastronomers except those at the receiving facility. (SETI is the search for extraterrestrial intelligence.) The data might be classified or impounded by the national government or security agencies in the receiving country, for instance, instead of being shared promptly with scientists around the world.

The urge for secrecy can be a major obstacle in formulating and implementing an international protocol for activities following detection of a SETI signal, beacon, or message. At the present stage, therefore, it is useful to focus additional attention and thought on the various fears, pressures, urges, beliefs and other factors that might encourage secrecy. By facing and examining them carefully, one can understand and assess them better. It then becomes possible to plan more effective and creative strategies to be followed before and immediately after the detection of a signal.

Seven factors seem particularly likely to exert a strong pressure toward immediately keeping secret any signal that might come from extraterrestrial intelligence. Each of these seven factors in turn will be spelled out and then examined critically.

2. PANIC

If a national government is afraid that people will panic at the news of an extraterrestrial

signal, it might try to keep that news a secret, at least for a few weeks or months. Secrecy would be imposed in order to avoid panic and riots in the streets, mass refusal to work, and personal emotional upheaval. Information would probably be kept secret from all but a few scientists (with a high-level security clearance) because of the fear of leaks to the press and the public.

2.1 Critical Examination of Panic

When these reasons for secrecy are examined critically, they turn out to be unconvincing and unnecessary. First, present knowledge in the social sciences indicates that widespread public panic is highly unlikely. Additional research could be conducted, however, to test the likely reactions of people around the world. If this research discovers any potential problems, steps could be planned to reduce them.

Second, millions of people already believe in extraterrestrials, yet continue working at their jobs, raising their children, and generally carrying on a normal life. Supermarket tabloids often announce extraterrestrial contact with large headlines, but no one panics. A recent Gallup Poll in the United States found that about half of all adults believe that intelligent life exists elsewhere in the Universe. Various movies and television series in the past few years have prepared people for positive contact with extraterrestrials.

Third, public panic might well occur if the message announced an eminent attack or widespread abductions. A hostile message is unlikely, though[2]. In addition, because the deciphering of any message is not likely to occur until long after the signal is first detected, there is no need for secrecy in the early stages.

Fourth, if partial information or even a strong hint leaks out, then the amount of fear, panic,

and disruption in a society is often reduced if reporters and the general public are given complete and immediate answers to all questions for which answers are available. Kendrick Frazier has pointed out that "the worst thing that can happen in a situation where a major news event with enormous possibilities for disruption of people's values and beliefs occurs is for there to be no reliable continuing source of accurate and complete information[3]." He urges the full and quick release of all scientific details to the world scientific community so that scientists everywhere can evaluate the technical data right away. Their assessments can help the news media avoid distorted and hysterical stories and rumors.

3. IMPACT ON CULTURE

The government of a nation in which a signal is received might also worry about the longer-term effects on the culture and economy of that nation and of the whole world. Consequently it might try to maintain complete and immediate secrecy about the signal. It might believe and fear that religion, philosophy, and science would otherwise be ruined, outmoded, or at least demoralized. Current technology, such as transportation and space exploration, could be superseded; many jobs and the economy could be disrupted. In general, a culture can suffer from contact with a stronger and more advanced culture.

3.1 Critical Examination of the Impact on Culture

These outcomes could occur only if a detailed encyclopedic message is received and deciphered. Even then, they are highly unlikely.

Religions have flourished over the centuries despite a variety of fundamental scientific discoveries. Quoting Frazier again:

Institutions, especially those with a good record for endurance, have a certain amount of stretch built into them; thus it may be an underestimation of their resiliency to expect them automatically to crumble at the first hello from elsewhere in the galaxy. Many theologians and humanists who exalt the special status and uniqueness of humankind on earth see no contradiction in holding to that view while also acknowledging the virtual certainty of there being more intelligent beings elsewhere[4].

A historical survey found that several religions have already incorporated or even emphasized the idea of extraterrestrial life[5]. Although some preachers may denounce an extraterrestrial signal as the work of the devil or the Anti-Christ (and even urge that scientists have nothing further to do with it), others will surely embrace it as further evidence of God's infinite greatness. Indeed, both religion and philosophy may be beneficially stimulated by an extraterrestrial message.

If certain fields of science and certain technologies become outmoded, that will simply be a sign that the information received is powerful and useful. Sciences, technology, and the economy have successfully withstood many other fundamental changes over the decades and have often (perhaps after a period of disruption) ended up further ahead.

Will contact with an advanced alien culture inevitable harm our human culture? *The Extraterrestrial Encyclopedia* points out that contact between two terrestrial cultures has always involved physical contact. This situation is quite different from contact through radio signals in which a round-trip exchange of information would require many years. Also, terrestrial contact has usually involved territorial expansion by the stronger culture. "If contact occurred without aggression, the lesser culture has often survived and even prospered[6]."

4. EMBARRASSMENT

The project director who detects an apparent beacon, signal, or message may be tempted to keep it secret in order to avoid embarrassment and ridicule. The signal could turn out to be a hoax, a coded message from a human satellite, or some other mundane phenomenon. Also, the form, pattern, channel, or location of a genuine signal may be quite unexpected, inexplicable, even bizarre. As a result, the project director may feel baffled, insecure, upset - and reluctant to share the data with even one other observing facility.

4.1 Critical Examination of Embarrassment

Immediate dissemination to the international SETI community of all anomalous data and suspected signals, no matter how strange or weird their characteristics, is probably the best solution to this problem. Immediate efforts to detect the same data at several other sites are crucial; otherwise the signal may stop before

being confirmed elsewhere. SETI scientists must simply accept the fact that both unexplained and false signals have already been detected and will probably be detected many more times before one is confirmed as intelligent and extraterrestrial. Embarrassment might be reduced by using the term "anomalous data" instead of "suspected signal" and by keeping the data within the world-wide SETI community until confirmed or semi-confirmed.

5. COMPETITION

The competitive desire to win, to be first, to be the best, can often be seen at the national level as well as the individual level. This is the fourth factor that might encourage secrecy. The competitive urge often produces a narrow geographical perspective and a shortened time perspective.

5.1 Critical Examination of Competition

If the team that detects the first genuine signal thinks only in the very short term, the competitive urge might propel them to reveal their discovery immediately. A medium-term perspective, though, may propel the team or their national government toward secrecy. Thus they would enhance their chances of being the first to discover additional signals (carried within the original signal or nearby, for example, or located through its instructions), the first to decode or interpret the signal, and (see next section) the first to send a reply. Any one of these three achievements could produce more fame and impact than merely detecting a puzzling beacon.

Examining the situation from a long-term global perspective, however, is more appropriate. One hopes that the SETI community adopts this perspective: a very long-term perspective on all of humanity and its future is crucial for our survival and continued flourishing[7]. Extraterrestrial contact will be an extraordinarily significant event in humankind's history and should be treated as part of human history, not just one nation's history. The signal or message will be aimed at all humankind, not at one nation or group. On the practical level, the effort to locate and decipher the various dimensions of the signal will likely be more thorough, creative and successful if a variety of teams and nations are looking for imbedded and nearby signals and their possible interpretations.

6. THE FIRST REPLY

As soon as the location, channel, and other technical characteristics of the signal are revealed, several countries and organizations may be tempted to send the first reply, even before the message is deciphered. Such a reply might present one particular political ideology, religious doctrine, military stance, or world view.

Extremely serious consequences could result. Michael Michaud has emphasized that the tone and content of our first message will be "crucial" and he has urged "extreme caution in diplomacy[8]." A tone that is too aggressive or too weak could invite attack. Donald Goldsmith has pointed out that if a civilization receives jumbled, contradictory, or incoherent replies from us, they may not bother to answer. If so, "there is a high price that a civilization such as ours will pay for not concentrating on a single, high-power message[9]."

To avoid inappropriate replies, therefore, the recipient country may classify the channel and location of the signal as "top secret" instead of sharing this information with relevant scientists in other countries.

6.1 Critical Examination of the First Reply

Two solutions to this situation come to mind; combining both of them may be our optimum strategy.

One solution is to prepare a global response now, probably through one of the existing organizations of scientists or a special committee. Such a message could then be one of the first to be sent, even before the incoming message is deciphered. (There might even be three official global messages prepared separately under the auspices of IAF, IAU, and the U.N.) Our message might state the auspices under which it was prepared and approved. It might point out that a diversity of messages could possibly be sent by particular nations and special interest groups.

Another possible solution is to establish a sharing network now among SETI projects (and maybe also a few facilities capable of switching quickly to SETI). These locations would be in (and controlled by) at least three or four diverse nations, ideally one on each continent or one in each political bloc (including one non-aligned nation). They would routinely and immediately share complete data whenever an anomaly is detected that the receiving facility cannot explain. Technical data about channel,

direction, and frequency would be restricted to essential personnel at these facilities, however, and would not be revealed to anyone else. Right from the beginning, these data would be classified "top secret" within the various countries in the network.

Both of these solutions could be adopted simultaneously, of course; they are not in conflict. Perhaps other people will soon propose better solutions to avoid the danger of premature, chauvinistic, hostile, and bizarre replies emanating from Earth.

I have not yet mentioned the ideal solution. If human civilization were marked by a high degree of trust and cooperation, the best solution would be a firm international agreement that no reply be sent until the incoming message is deciphered and global agreement is reached about the reply. Unfortunately, in today's world, few nations would trust all other nations and organizations to abide by this agreement.

7. MILITARY ADVANTAGE

The military forces in the receiving nation, or its security and intelligence agencies, may realize that detailed extraterrestrial information could enable them to develop improved weapons, tactics, aircraft, or space travel. The national government may realize that extraterrestrial information could lead to technological innovations or other products of high commercial value in world trade. These potential gains for the host nation's armed forces and international trade balance might exert a strong pressure to enforce complete secrecy as soon as a signal is detected.

Ronald Bracewell has declared that it would be naive to think that aliens could count on delivering their message freely to the inhabitants of Earth. He believes that any agency able to do so would keep the message secret regardless of its content. Bracewell cites with approval George Wald's statement that contact with another civilization would produce "the most highly classified and exploited military information in the history of the earth[10]."

Most national governments, through their security and intelligence agencies, habitually monitor a wide variety of communications. These agencies rarely reveal their monitoring activities and methods, let alone the messages themselves. When puzzled or worried, governments and the military are sometimes rather quick to classify information and deny its existence. This widespread behavior around the

world might spill over at some stage to affect signals from ETI. Most of the nations that are likely to have major SETI programs during the next few years also have intelligence or security agencies that are regarded as vigorous, extensive, and effective. In addition, many SETI projects are already located in security-conscious installations in which other projects are heavily classified because of their military implications.

7.1 Critical Examination of Military Advantage

Because there is a genuine possibility of short-term military and commercial advantage from extraterrestrial information, this sixth factor may be particularly powerful. It may be very tempting to impound and classify all the data in the recipient nation, revealing no hint about the signal to any other nation (nor to anyone without a high-level security clearance in the recipient nation). Two steps - two parts of a two-part solution - might help to avoid or counteract this temptation.

One part of the solution is a fully ratified international agreement that considers all data concerning any suspected extraterrestrial signal to be scientific data that is the common property of all humankind. It would be shared promptly with all nations. (The possible exception of channel and location was discussed in the previous section.) The immediate worldwide awareness of Ian Shelton's discovery of a supernova is a good model: within a day or two, astronomers in many nations were exploring the phenomenon in various ways. Global security would be enhanced if everyone followed such an agreement because it would reduce the chances of international destabilization (from the military superiority of one nation). Allan Goodman has pointed out the need for developing a technical cooperation agreement followed eventually by an international treaty. He recommends efforts "to assure that a discovery of significance to an entire planet - and which may require the brains of many nations to appreciate and interpret - should be shielded from the pressures of secrecy and national rivalries. A code of conduct can provide such a shield[11]."

The other part of the two-part solution is the immediate implementation of procedures for rapid dissemination of all anomalous data to the worldwide SETI or bioastronomy community. Every time a potential beacon or signal is detected that cannot quickly be explained by the project staff, full details should immediately be

sent (by telephone, by telex, by computer network, or in code over a secure line) to SETI projects in several other nations. At the same time, or within a few hours, full information could also be sent to cooperative observatories and telescopes that are usually willing to switch from their normal projects to SETI observations whenever they hear of a suspected signal. False alarms or even deliberate simulations will test the dissemination system and lead to improvements. If a genuine signal is detected eventually, all relevant information will be disseminated to SETI scientists around the world long before any military or security agency becomes aware of its significance.

In order to foster careful confirmation and a generally scientific approach whenever a potential signal is detected, one leader within the field of astronomy has emphasized that "rapid and open dissemination of observations among the scientific community will result in a constructive, critical discussion and spur attempts by other scientists to make confirming observations...Every search program should included a plan for rapid dissemination of all relevant technical information about suspected signals to the scientific community...The advantage of the process outlined above is that it mimics the standard approach which has served the field of astronomy since the time of Galileo[12]."

8. A TROJAN HORSE

A sober encyclopedia describes subversion as a major and plausible hazard that is frequently voiced. "An alien race - under the guise of teaching and helping us join the cosmic community - might actually trick us into building devices that allow 'Them' to conquer 'Us'...The extraterrestrial 'Trojan Horse' might arrive on radio waves. For example, the alien race could transmit the details of a computer-controlled biochemistry experiment that would secretly create their own life-forms here[13]." A government that took such a danger seriously would be tempted to keep the entire message secret, at least until deciphered.

8.1 Critical Examination of a Trojan Horse

If the deciphered message turns out to include instructions for building or creating something, we could presumably figure out any necessary

security measures at that time. Consequently, secrecy is not required at earlier stages.

9. CONCLUSIONS

Several factors could encourage immediate secrecy when a signal is detected that might come from an intelligent extraterrestrial source. These factors include (1) the belief that people might panic, (2) the fear of a negative impact on religion, science, and other aspects of culture, (3) the project director's fear of embarrassment, (4) the individual and national competitive urge, (5) avoiding a premature and harmful reply, (6) a national military and trade advantage, and (7) the fear of a Trojan Horse. The key to most of these factors is what the relevant people in national governments and in their security and intelligence agencies believe or fear to be true and likely, regardless of how valid their beliefs and fears are.

As far as we can predict now, the first three factors in the list and the last factor are relatively easy to deal with; they are unlikely to provide any sort of insurmountable obstacle. The fifth and sixth factors, however, and to some extent the fourth factor, seem more difficult to handle. People involved in SETI and bioastronomy should probably consider the following approach to handling these three factors: (a) an international treaty for immediate sharing of anomalous data with SETI scientists in several other countries, (b) implementation and frequent use of an actual network of scientists for sharing such data across the boundaries between nations and between political blocs, and (c) further thought about whether it is advisable to restrict technical data about the signal's location and channel to a small number of SETI facilities in five or six countries.

REFERENCES

1. T. R. McDonough, *The Search for Extraterrestrial Intelligence: Listening for Life in the Cosmos*. Wiley, New York (1987).
2. A. Tough, What Role Will Extraterrestrial Play in Humanity's Future? *Journal of the British Interplanetary Society* 39, 491-498 (1986).
3. K. Frazier, First Contact: The News Event and the Human Response. In J. L. Christian (Ed.), *Extraterrestrial Intelligence*:

- the First Encounter*. Prometheus, Buffalo, p. 78 (1976).
4. Frazier, p. 75.
 5. M. F. Crowe, *The Extra-Terrestrial Life Debate, 1750-1900: The Idea of a Plurality of Worlds from Kant to Lowell*. Cambridge University Press, Cambridge, p. 557 (1986).
 6. J. A. Angelo Jr., *The Extraterrestrial Encyclopedia: Our Search for Life in Outer Space*. Facts on File Publications, New York, p. 24 (1985).
 7. A. Tough, Fundamental Priorities. *Futures* 18, 536-542 (1986).
 8. M. A. G. Michaud, Interstellar Negotiation. *Foreign Service Journal* 49, 10-14, 29-30 (December 1972).
 9. D. Goldsmith, "Who Will Speak for Earth? Possible Structures for Shaping a Response to a Signal Detected from an Extraterrestrial Civilization." Paper IAA-86-478 presented at the congress of the International Astronautical Federation, Innsbruck (October 1986) (included in this special issue).
 10. R. N. Bracewell, *The Galactic Club: Intelligent life in outer space*. Freeman, San Francisco, p. 75 (1975).
 11. A. E. Goodman, "Diplomacy and the Search for Extraterrestrial Intelligence." Paper presented at the congress of the International Astronautical Federation, Innsbruck (October 1986).
 12. P. B. Boyce, "Signal Verification in the Real World: When is a Signal Not a Signal?" Paper presented at the congress of the International Astronautical Federation, Innsbruck (October 1986).
 13. Angelo, p. 24.