

TEN DECISIONS THAT COULD SHAKE THE WORLD

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Abstract. Contact with extraterrestrial intelligence (ETI) will force policy-makers to make some decisions, and will present opportunities for them to influence events by making others. The choices they make could have a profound impact on the human future. This paper describes ten categories of decisions and briefly discusses their implications. The ten categories are: (1) calling attention to ourselves; (2) information release and access to the signal; (3) managing political reactions; (4) who speaks for the Earth; (5) what should we say; (6) who decides; (7) how do we conduct relations; (8) intensifying the search; (9) expanding human presence and capabilities; (10) adopting an extraterrestrial strategy for the human species.

When we speculate about extraterrestrial civilizations, we reason by analogy with the only technological civilization we know: our own. Our choice of analogies matters, because those analogies can become assumptions.

We should not assume that the present day provides the best analogy. Judging history by the present reflects temporal chauvinism, the assumption that our own time is uniquely important. It is more prudent to take a long view of human history. The most basic lesson of that longer perspective is that concerns about security have been the norm, not the exception.¹

Decision One: Making Ourselves More Detectable

This leads us to the most fundamental policy question in the Search for Extraterrestrial Intelligence (SETI): should we call attention to ourselves? The choices usually discussed are sending a message to an ETI that we detect, or broadcasting in the hope that we will be discovered (Active SETI@).

We are making this decision unconsciously by sending radar, radio and television signals out into the galaxy. The real issue is: should we make ourselves more detectable than we already are? Should we increase the power of the Earth's electromagnetic signature? This is the Prime Question.

Some people involved in this debate dismiss the question. They assume that we already have been detected, or that detection is inevitable. These are unproven assumptions. Extraterrestrial intelligences might see no reason to search for other civilizations if they believe theirs to be unique. They might not be looking for signals in the wavelengths we use; radio, radar, and television technologies might be seen as primitive. Interstellar communication curiosity may be incident to a particular stage of technological advance; it might give way to other kinds of curiosity with further change in technology.² We can not assume the omniscience of alien intelligences.

More importantly from a policy perspective, our present signals may be below the detection threshold of a distant ETI. George Swenson has written that the use of radio waves as a medium for making interstellar contact is discouraging. The Galaxy's enormous distances inevitably require fantastic measures-- stunningly high transmitter power or huge antennas and impractically narrow beams.³ Seth Shostak of the SETI Institute has been quoted as saying that any civilization on the receiving end would need a very large antenna -- about the size of Manhattan -- to pick up our radio and television broadcasts.⁴ Frank Drake has pointed out that our detectability may be declining as socially driven changes in technology reduce the power of our radio and television signals.⁵

The underlying issue is whether we think the effects of contact will be positive or negative. The pros and cons have been discussed for years in the SETI literature, with inconclusive results. Optimists see ETI as they wish aliens would be. Pessimists see ETI as they fear aliens might be.

The bottom line is that we do not know how an ETI might react to contact with us, nor do we know what its capabilities might be. Jared Diamond, calling astronomers' vision of friendly relations the best-case scenario,⁶ warns that those astronomers now preparing again to beam radio signals out to hoped-for extraterrestrials are naive, even dangerous.⁶

In a remote contact scenario, the impact of contact might be mostly cultural. That impact could be positive, negative, or both. Whatever the cultural consequences of such indirect contact might be, we might feel insulated from physical danger by distance.

The potential impact of contact changes profoundly if an extraterrestrial civilization is capable of sending robotic spacecraft or inhabited vehicles across interstellar distances. Many of those engaged in SETI dismiss direct contact scenarios because they regard interstellar flight as impossible or too difficult to be worth doing. This is another unproven assumption. Ian Crawford, articulating a view held by others as well, has written that "No known principle of physics or engineering rules out interstellar spaceflight," and that "A program of interstellar colonization is actually quite likely."⁷

We can not assume that an inhabited universe is inherently safe because of the distances between the stars. Our fate might depend on the ethics of others. Even if there is no threat of violence, the human experience suggests that an expansion of the power of a civilization has almost always involved its using that power to extend its values, practices, and institutions to other societies.⁸

Meanwhile, the operators of radars and radio and television stations are making the decision for us. They are choosing the optimistic side of the argument, without a policy debate.

Our lack of knowledge about the consequences of contact with ETI suggests that we should observe a precautionary principle: don't call attention to ourselves until we learn more about the ETI we detect. In practical terms, this means not increasing the power of Earth's electromagnetic signature beyond its present level.

Decision Two: Information Sharing and Access to the Signal

SETI researchers tend to assume that the facts of a detection would become public knowledge quickly. Yet we know of cases in which information about discoveries has been withheld for months or even years. This behavior might be repeated, particularly if a signal is ambiguous or difficult to interpret.⁹

If a detection is made by persons working for a government agency or under a government contract, officials might try to prevent, delay, or limit the release of information, at least until a policy discussion has taken place. They might wish to act as gatekeepers for information from ETI. We can not assume the inevitability of a leak; some secrets still are kept.

A non-government organization that detected ETI also might not play by the rules followed by most SETI researchers. Such an organization might choose to withhold or limit the release of information to exploit contact. That organization might try to protect its monopoly by claiming legal rights to the information, perhaps seeking to patent its findings as other researchers have patented genes found in nature.

We can not assume that SETI is immune from the ancient motivations of egoism, power, and greed. Decisions that could affect the welfare of the human species might be made by small, non-representative elites.

Members of such elites might send private communications to the other civilization without consulting anyone else. That might mesh with the interests of a manipulative or evangelistic ETI. Human history tells us that conversions often were made most effectively through elites, rather than by more general communication with populations.¹⁰

Similar questions apply at the international level. The detecting nation could choose to prevent, delay, or limit the information released to other nations, particularly if the detecting nation had unique technical capabilities needed for observation and communication. Later revelation of those decisions could provoke distrust, encouraging other nations to act independently in communicating with the detected ETI.

The Declaration of Principles Concerning Activities Following the Detection of Extraterrestrial Intelligence, intended to build a consensus favoring open sharing of information

about detection, is a first step toward a policy in this area. Many SETI researchers have adhered to these principles. However, the Declaration is a non-government document without the force of law or regulation. Public and private institutions can ignore it if they choose to.

This suggests a need for a policy decision requiring public sharing of information about detection, whether that discovery is made by a public or private organization. This implies getting government agencies to adopt something like the Declaration of Principles. It remains to be seen whether such a decision will be made in advance of contact.

Decision 3: Managing Political Reactions

Release of the news that ETI has been detected would provoke a burst of intense public and media interest. Reporters and others would ask officials and politicians not only what they know, but what they plan to do.¹¹

Ivan Almar and Jill Tarter have proposed a scale that could help policy-makers by making an initial judgement on the detection=s potential consequences.¹² Policy-makers would add their own influence by the way they handle the public affairs and political aspects of the event. They could play it up to extract political advantage. They could play it down, trying to minimize its importance. They could describe contact as a positive development that will benefit the nation and humankind. Or they could warn of the potential dangers. Legislators might pass laws that dictate how contact should be handled.

Politicians and officials would need to address the reactions of non-governmental groups, which might react in ways intended to capitalize on or discredit this new factor. Some might argue that the release of certain information should be controlled or even banned to protect their interests. Should people holding public office oppose or support such policies?

The more decipherable information we receive from an ETI, the more we should expect a political reaction against alien cultural influences.¹³ This situation would be ripe for exploitation and distortion. Some groups might try to provoke public anxieties for political advantage, perhaps attributing events on Earth to alien intervention. Extreme religious and ideological groups might demonize the aliens, attacking information from ETI as evil or immoral. Some might try to end contact by interfering with the signal or by attacking the detecting observatory.

Albert Harrison has written that AWe would be foolish and negligent if we did not try to anticipate such reactions and make careful preparations.@¹⁴ Government policies and the enforcement of law and regulation could limit the effects of such extreme behavior.

At the international level, detecting an ETI could have a positive political effect by reinforcing the sense of common identity among humans by contrast with aliens. Political leaders could try to take advantage of this event to promote greater international cooperation. In the case of a remote detection, the unifying effects might fade as separate interests were reasserted.

Detection of an ETI presence in or near the solar system would provoke more intense reactions. A source of intelligent signals found between stars could have the same impact, because it would tell us that interstellar flight B and direct contact B are possible.

A perception of potential threat could motivate nations to work together for the common defense. Here again, the details of the detection would matter; a probe that had ceased functioning millions of years ago would be far less worrisome than an incoming spacecraft. Officials and political leaders could influence reactions by the way they treat such a discovery.

Decision 4: Who Speaks for the Earth?

After a detection, the desire to send communications to the ETI would be nearly overwhelming. Depending on the nature of contact, policy-makers might have the opportunity to make a conscious decision about sending a message.

Should Humankind respond with one voice, or with many? There is no existing law or intergovernmental agreement on this issue. Nations, groups, and individuals are free to act as they wish. Principle 8 of the Declaration of Principles states that no communications should be sent to ETI without prior international consultations. At present, no agreed structure for such consultations exists.

Even if it did, we lack complete consensus on the basic principle. While most people involved in this debate support the idea of a collective response, others argue that anyone with access to a transmitter should have the right to send separate messages. The feasibility of their doing so depends on the scenario of contact. A very distant ETI might be far beyond the range of most transmitters.

Having Humankind speak with many voices may be representative of diversity, but it also may be bad policy. Imagine yourself in the place of an ETI that receives a barrage of messages from the Earth. How could you conduct a rational dialogue with such mixed signals? Who would you believe, those humans who seek an exchange of scientific information, those who desire to convert you to the true faith, or those who announce their intent to exterminate you?

We would want to know who is at the other end of the communications channel -- an entire species speaking with one voice, one of its political sub-units, or a smaller, non-representative group. The ETI would want to know the same things about us.

Using a preferred channel could help to establish greater mutual confidence. Policy-makers could seek consensus on this approach either before or after a detection.

Decision 5: What Should We Say?

If Humankind chooses to send a collective message, what should it say? Is our purpose to

describe ourselves, to seek information from the ETI, to propose some course of action, or all of these? How would we convey our meaning to an alien culture? How would we convey intent? Should we withhold some information because it is unflattering or advertises our vulnerabilities? If some humans transmit such information, would that be treason?

While sending and receiving scientific information might be a logical first step, most non-scientists have other priorities. They want to describe human history, cultures, religions, values, and ways of organizing societies, as well as policy issues our societies currently face. They want to ask ETI about the same subjects.

Drafting a collective message could be slow and laborious. But its long-term implications would be significant in ways reaching beyond a dialogue with another civilization. Building an international consensus on what to say would require nations to identify their shared interests and shared values.

The first message would be crucial. As Ashley Montagu pointed out thirty years ago, the manner in which we first meet an ETI may determine the character of all our subsequent relations.¹⁵ Communication is not the only barrier to non-zero-sum interaction between civilizations. The other barrier is trust.¹⁶

Decision 6: Who Decides What We Should do?

There is no formal intergovernmental process for addressing the issues raised by detection, nor is there any existing international law that directly addresses those issues. The International Academy of Astronautics has proposed that the United Nations Committee on the Peaceful Uses of Outer Space discuss a process for addressing the issue of sending communications to ETI. The U.N., as the most universal intergovernmental organization, would decide whether Humankind should send a message, and what it would say.¹⁷

The U.N. probably will not take action on this issue until after contact. In the absence of consensus on process, nations with the needed technical capabilities might act preemptively in an uncoordinated way, sending different messages to ETI. One or more governments might be able to head this off by quickly proposing a coordinated set of actions, within or outside the U.N. system.

If humankind chooses to send a collective response, the best way to assure acceptance is to make the process as inclusive as possible, both among nations and within them, even if that is laborious and slow. Again, the implications of such a process would reach beyond the immediate issues of contact.

Decision 7: How Do We Manage Relations with an ETI?

If we do begin exchanging messages with an ETI, we will be entering into a long-term relationship. We will need to think beyond our immediate reaction or our first message.

A dialogue with an ETI will demand a continuity of purpose that human societies rarely attain. If the ETI we detect is hundreds or thousands of light years away, we will face long delays between an outgoing message and a reply. In the interim, human cultures and politics could change in ways that affect the dialogue or even bring its continuation into question.

Should Earth=s nations communicate only through an international institution? Does the United Nations provide an adequate framework, or do we need a new organization with a dedicated staff? This is not a minor bureaucratic issue. The communicating institution would be *homo sapiens*= foreign ministry. It is there that human interests would be aggregated and expressed to non-humans.

Decision 8: Intensifying the Search

The more we know about civilizations elsewhere in the universe, the better our policy decisions will be. This implies improving the means of detection and broadening our search strategies. We would need not only better astronomical instruments, but also spacecraft with enhanced abilities to search within our solar system. Those increased capabilities almost certainly would have benefits for science even in the absence of contact.

After the initial detection, we would want to gather as much additional information as possible about the other civilization. Policy makers would want to know the ETI=s proximity, its technological capabilities, and its intentions. Only its proximity would be relatively easy to determine.

We also would want to know if there are additional extraterrestrial civilizations. If interstellar flight is a reality, so is interstellar politics. Is the system multipolar, or is one civilization dominant? Drawing on the lessons of human history, Henry Kissinger has written that empires have no interest in operating within an international system; they aspire to be the international system.¹⁸

Decision 9: Expanding Human Presence and Capabilities

Much of the SETI literature assumes that any ETI we detect will be far more advanced in science and technology and that we therefore will be relatively helpless, particularly if the ETI is capable of interstellar travel.

This disparity may prove to be true, but it remains unproven. Given our present search strategies, we may be most likely to detect a radio-noisy civilization like our own. Such a civilization may not be thousands or millions of years ahead of us. To accept our inferiority in advance and wait for alien cargo is pre-emptive capitulation.¹⁹

Anticipating contact could motivate us to work to reduce the disparity between ourselves and a more advanced technology. The greater our natural and technological resources, the more capable

our future civilization will be and the more seriously it will be taken by others. Making such advances would enable our own future even in the absence of contact.

A long view of the human experience should give us the necessary motivation. In one of the classic big-picture overviews of human history, William McNeill concluded that power either ingests weaker centers of power or stimulates rival centers to strengthen themselves.²⁰

Detection of an ETI could provide an additional motivation for expanding human presence beyond the limits of the Earth. Astronomer T.B.H. Kuiper wrote in 1977 that "In order to meet them (other civilizations) on a more equal level if they do exist, we should begin the colonization of space."²¹ This would be consistent with NASA's present goal of "extending life to there."²² Human expansion also would be consistent with our past. According to historian Felipe Fernandez-Armesto, all history is the history of colonization, because all of us got to where we are from somewhere else.²²

If there is such a thing as interstellar politics, interstellar flight will be the primary factor that makes a species a player. This suggests a long-term goal of developing the means of transport across interstellar distances. Developing that technology would improve both our search capabilities and our credibility.

Decision 10: Adopting an Extraterrestrial Strategy

All this can be put in context by adopting an extraterrestrial strategy for the human species. The initial elements of such an extraterrestrial strategy already exist.²³

The first element of such a strategy is reconnaissance, the collection of information about our extraterrestrial environment. Astronomy and planetary exploration are the means. Within that framework, SETI is gathering intelligence about the civilizations that may populate our galaxy.

We humans will use that intelligence in formulating policies for human activities beyond the Earth. One set of policy decisions might concern sending communications to ETI, and what our messages should say. Another policy decision might be to accelerate the expansion of human presence and influence into the solar system and beyond.

The implications of adopting an extraterrestrial strategy reach far beyond the immediate question of detecting ETI. Until we find other intelligent species, it will be our obligation to assure the survival of intelligence in the universe. Sooner or later, that will require expansion beyond the Earth and eventually beyond the solar system.²⁴ Spreading human presence would reduce the risk of our civilization being wiped out, whether by a self-inflicted wound or a cosmic accident.

As science fiction writer Brian Aldiss put it, "Humankind might consider it not impossible that we should go into the Galaxy with the intention of becoming its consciousness."²⁵ Krafft Ehrlicke offered an even grander vision in 1971: "The foremost significance of an interstellar flight

capability lies in the evolution of the human species as a cosmic force.@²⁶

Conclusion

Possible future contact with an ETI implies a potential discontinuity in human history, a jump in scale. By broadcasting our presence and searching for others, we are inviting such a discontinuity. Rather than waiting for the future to be imposed on us, we could choose to act responsibly by planning, and acting, as best we can.

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