

First Contact Protocols

Diplomacy, Danger, and Speaking for All of Humanity

Humans & The Universe -- Lesson 6 of 8



Radio telescope arrays scan the sky for signals -- but what happens if we actually find one?

PART 1: THE DAY AFTER DETECTION

Imagine the following scenario: astronomers detect an unmistakable artificial signal from a star system 12 light-years away. After weeks of verification, the scientific community confirms it -- we are not alone. The signal contains structured mathematical sequences that no natural phenomenon could produce. The discovery is leaked to the press before any official announcement. Within hours, the news spreads to every corner of the planet. Now what? Who speaks for humanity? What do we say? And perhaps most importantly -- what do we **not** say?

This is not purely hypothetical. The International Academy of Astronautics (IAA) has developed a set of **protocols** for exactly this situation. The "Declaration of Principles Concerning Activities Following the Detection of Extraterrestrial Intelligence," first drafted in 1989, outlines how scientists should respond to a confirmed detection. The protocols require independent **verification** before any announcement, immediate notification of the United Nations, and -- critically -- no response should be sent without international **consensus**. But these protocols are voluntary. No government is legally bound by them. And in an age of social media, the idea of controlling information flow seems almost quaint.

PART 2: WHO SPEAKS FOR EARTH?

The question of **representation** is perhaps the most difficult political problem first contact would create. The United Nations represents 193 member states, but it was designed to manage relations between human nations -- not between species. If an alien civilization contacts Earth, should the response come from the UN General Assembly? The Security Council? A committee of scientists? The nation whose telescope made the discovery? The head of state of the most powerful country?

Each option carries risks. A committee of scientists might craft the most **rational** message, but lack political authority. A single nation responding unilaterally could trigger international conflict -- imagine China or the United States claiming to speak for all of humanity. The UN moves slowly, governed by **bureaucracy** and competing national interests. Meanwhile, any individual with a powerful enough radio transmitter could send their own unauthorized message. In Liu Cixin's *The Three-Body Problem*, it is a single disillusioned scientist, Ye Wenjie, who responds to the Trisolaran signal -- an act that changes the fate of both civilizations forever.

"Who authorized you to speak for Earth? Who gave you the right to decide the future of eight billion people? No one. And that's exactly the problem."

-- Fictional UN debate, adapted from first contact literature

PART 3: WHAT SHOULD WE SAY?

The content of a reply is as important as who sends it. Information theorists have identified several categories of data that could be shared, each carrying different levels of risk. Basic mathematics and physics are probably safe -- any technological civilization would already know them. Images of Earth, our biology, and our population are more dangerous, as they reveal our capabilities and **vulnerabilities**. Our location is the most sensitive information of all, though if we are responding to a signal, the sender already knows roughly where we are.

The **paradox** of first contact communication is this: to build trust, you need to share information. But sharing information makes you vulnerable. And you cannot verify the intentions of the other party before committing to the exchange. Game theorists call this a "**prisoner's dilemma**" at cosmic scale -- both sides would benefit from cooperation, but neither can be sure the other won't exploit the relationship. The Dark Forest Theory (Lesson 1) represents the extreme pessimistic outcome: the only rational move is silence, because any response could be fatal.

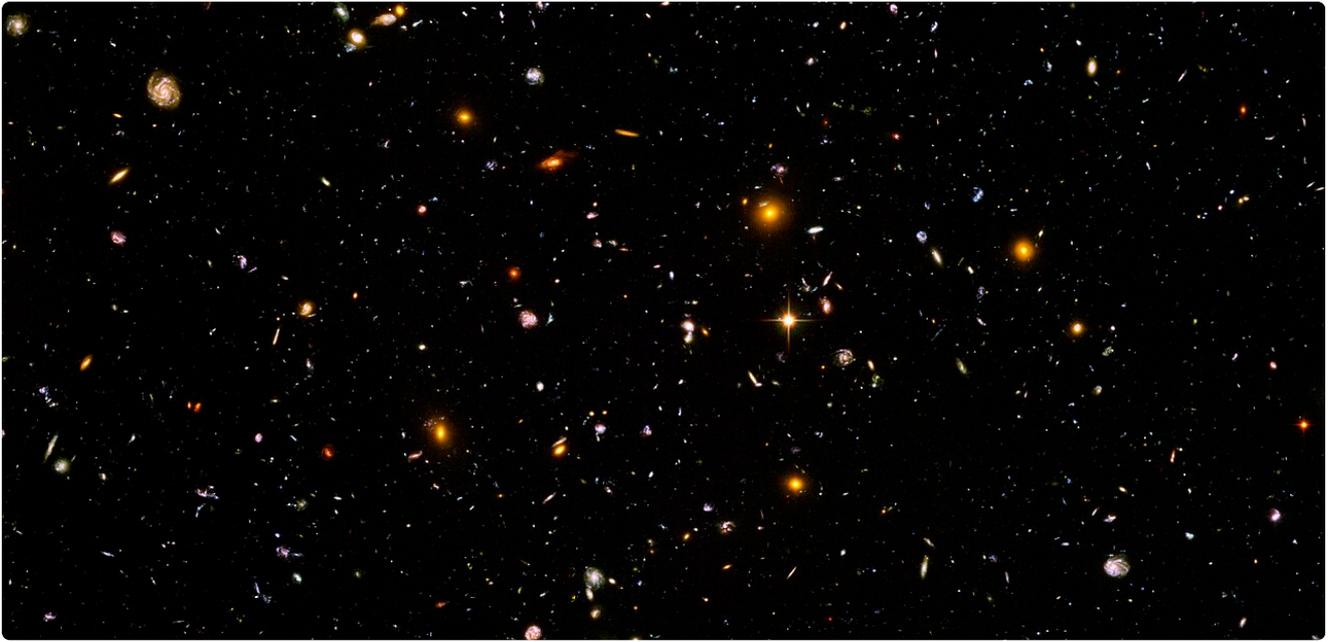


First contact would be the most important diplomatic moment in human history -- with no shared language, no shared culture, and no guarantee of shared values

PART 4: LESSONS FROM HUMAN HISTORY

Human history offers imperfect but instructive **analogies**. When European explorers encountered indigenous peoples in the Americas, Africa, and the Pacific, the result was almost always devastating for the less technologically advanced civilization -- through conquest, disease, or cultural destruction. But not every encounter followed this pattern. Trade between the Roman Empire and Han Dynasty China occurred through **intermediaries** along the Silk Road, without either civilization directly threatening the other. Japan's careful management of contact with European powers during the Edo period (1603-1868) -- limiting trade to a single port -- demonstrates that controlled, gradual engagement can protect a civilization's independence.

The key variable may be the power **differential**. When two civilizations are roughly equal in capability, trade and diplomacy tend to prevail. When one is vastly more powerful, domination is the historical norm. If an alien civilization has mastered interstellar travel while humanity has barely reached the Moon, the power differential would be enormous. Our best strategy might be what game theorists call "**cautious cooperation**" -- respond, but slowly. Share information, but selectively. Build trust, but verify. And always maintain the ability to go silent.



Somewhere in these billions of stars, someone may be listening -- the question is whether we should answer

KEY VOCABULARY

protocols -- official procedures or rules for how to handle a situation

verification -- the process of confirming something is true or accurate

consensus -- general agreement among a group

representation -- the act of speaking or acting on behalf of others

bureaucracy -- a complex system of administration with many rules and procedures

vulnerabilities -- weaknesses that can be exploited

paradox -- a statement or situation that seems contradictory but may be true

prisoner's dilemma -- a game theory scenario where cooperation benefits both sides but trust is risky

analogies -- comparisons between similar situations to explain or clarify

intermediaries -- go-betweens; people or groups that connect two parties

differential -- a difference in level, amount, or degree between two things

cautious cooperation -- engaging with another party carefully, sharing slowly while watching for threats

unilaterally -- done by one side without agreement from others

rational -- based on logic and reason rather than emotion

A. COMPREHENSION

1. What do the IAA protocols require before announcing a detection of extraterrestrial intelligence?
2. Why are the IAA protocols described as potentially inadequate in the modern age?
3. Name three possible candidates for "who speaks for Earth" and explain the risks of each.
4. What is the "prisoner's dilemma" as it applies to first contact communication?
5. What categories of information does the reading identify as having different levels of risk to share?
6. How did Japan manage contact with European powers during the Edo period, and why is it relevant?
7. What does the reading suggest is the most important variable in determining whether contact between civilizations is peaceful or destructive?

B. VOCABULARY IN CONTEXT

Complete each sentence with a word from the vocabulary list:

1. The United States acted _____ when it withdrew from the treaty without consulting its allies.
2. The security team identified several _____ in the network that hackers could exploit.
3. Before publishing the research, the university required independent _____ of the results.
4. The committee could not reach _____ on the new policy, so the vote was postponed.

5. Silk Road merchants acted as _____ between China and Rome, connecting empires that never met directly.
6. Government _____ often slows down decision-making with layers of rules and approvals.
7. The technology _____ between the two civilizations made equal partnership impossible.

C. CRITICAL THINKING

1. If you discovered an alien signal, would you follow the IAA protocols (notify the UN, seek consensus before replying) or would you respond immediately? Explain your reasoning.

2. Ye Wenjie in *The Three-Body Problem* responds to an alien signal without authorization. Was she wrong? Does one person ever have the right to make a decision that affects all of humanity?

3. The reading compares first contact to historical encounters between unequal civilizations. Is this comparison fair? How might alien contact differ from European colonization?

4. Do you think "cautious cooperation" is the right strategy for first contact, or is the Dark Forest approach (absolute silence) more logical? What are the costs of each?

D. PROTOCOL DESIGN: YOUR FIRST CONTACT PLAN

Your task: You are chairing a UN emergency committee. An alien signal has been confirmed. Design a first contact protocol by making decisions in each area below. Be prepared to defend every choice.

1. Announcement

Tell the public immediately? Wait for full analysis? Inform governments first? How do you prevent panic and misinformation?

2. Response Team

Who writes the reply? Scientists only? Diplomats? Artists? Religious leaders? A public vote? How many people should be involved?

3. Message Content

What information do you include? What do you explicitly exclude? Do you present humanity honestly (including our wars and problems) or ideally?

4. Timeline

Reply immediately, within months, or wait years? The signal came from 12 light-years away -- a reply won't arrive for 24+ years. Does that change your urgency?

5. Security

How do you prevent unauthorized responses? What if a private citizen or corporation sends their own message? What are the consequences?

6. Failure Plan

What if the aliens seem hostile? What if they don't respond? What if different nations disagree on whether to reply at all? Plan for conflict.

E. THE GREAT DEBATE: RESPOND OR STAY SILENT?

Context: The signal has been confirmed. The UN Security Council is deadlocked. Three factions have emerged:

Position A: Respond with full transparency.

Send everything -- our science, our art, our history, our location. Hiding information is both impractical (they can detect us anyway) and insulting. Openness is the foundation of trust. If they wanted to destroy us, knowing more about us wouldn't change that. Show them what humanity really is.

Position B: Maintain absolute silence.

The Dark Forest logic is clear: any response is a risk with no guaranteed benefit. We cannot know their intentions. The technology gap may be insurmountable. Our best defense is anonymity. A signal is not an invitation -- it could be a trap, a survey, or an automated probe. Silence costs nothing; a response could cost everything.

Position C: Respond minimally and monitor.

Acknowledge the signal with basic mathematics -- prove intelligence without revealing details. Share no location data, no biology, no culture. Watch their response before deciding the next step. This is diplomacy, not surrender. Test their intentions before committing.

F. ESSAY PROMPT

Choose ONE of the following prompts. Write a well-organized essay of 300-500 words on a separate sheet of paper.

Option A: "No one has the right to speak for all of humanity." Is this true? If so, how should we make decisions that affect the entire species? If not, who should have that authority and why?

Option B: Write a draft of humanity's first reply to an alien signal. You have 200 words maximum. What do you say? What do you leave out? Explain your choices in a paragraph after the message.

Option C: Compare two historical "first contacts" between human civilizations (e.g., Cortes and the Aztecs, European traders and Japan, the Silk Road). What lessons do they offer for a potential first contact with an alien civilization?

Teacher's Notes & Answer Key

First Contact Protocols -- Instructor Guide

LESSON OVERVIEW

Level: Advanced (B2-C1) | **Duration:** 60-90 minutes | **Focus:** Reading, protocol design, diplomacy simulation

Series: Humans & The Universe, Lesson 6 of 8 | **Prerequisite:** Lessons 1-2 recommended (Dark Forest, SETI)

SUGGESTED LESSON FLOW

Warm-up (5 min): "Aliens land tomorrow. What's the first thing humanity should do?" Brainstorm as a class.

Pre-reading (5 min): Key vocabulary: protocols, consensus, representation, prisoner's dilemma, differential.

Reading (15-20 min): Parts 1-4. The Ye Wenjie reference connects to Lessons 1-2 for returning students.

Comprehension (10 min): Section A -- oral or written.

Vocabulary (10 min): Section B fill-in-blanks.

Protocol Design (15-20 min): Section D -- small groups design their protocols. Present and compare.

Debate (10-15 min): Section E -- three positions. Push students to use evidence from the reading.

Essay (homework): Section F -- Option B (draft a reply) is especially engaging.

ANSWER KEY -- SECTION A

1. Independent verification of the signal, notification of the United Nations, and no response without international consensus.
2. They are voluntary (no government is legally bound), and in the age of social media, controlling information flow is nearly impossible -- leaks would spread instantly.
3. Scientists (rational but lack political authority), a single nation (could trigger international conflict), the UN (too slow, governed by bureaucracy and competing interests). Accept any three with reasonable risk analysis.
4. Both sides would benefit from cooperation (sharing knowledge), but neither can be sure the other won't exploit the relationship. Sharing information builds trust but creates vulnerability. Like the classic prisoner's dilemma, the "safe" individual move (silence/betrayal) produces a worse collective outcome than cooperation.
5. Low risk: basic math and physics. Medium risk: images of Earth, biology, population. High risk: our exact location (though a response partly reveals this).

6. Japan limited European contact to a single port (Dejima in Nagasaki), allowing controlled trade without cultural or political domination. It demonstrates that careful, gradual engagement can preserve a civilization's independence.

7. The power differential -- the gap in technological capability between the two civilizations. Equal power tends toward trade and diplomacy; unequal power tends toward domination.

ANSWER KEY -- SECTION B

1. unilaterally
2. vulnerabilities
3. verification
4. consensus
5. intermediaries
6. bureaucracy
7. differential

DISCUSSION EXTENSIONS

Film connection: "Arrival" (2016) -- linguist Louise Banks must communicate with alien visitors. Compare the film's approach to communication with the strategies discussed in the reading.

Link to Lesson 1-2: How does the Dark Forest Theory (L1) conflict with the "cautious cooperation" approach? How does the SETI debate (L2) inform the decision of whether to respond?

Philosophy: The "veil of ignorance" from Lesson 5 -- how would you design first contact protocols if you didn't know whether you were the human or the alien?

Current events: Research the Post-Detection Hub, a real scientific group that prepares for alien contact. What protocols do they recommend?

KEY DISCUSSION LANGUAGE

Authority: "Who has the right to..." / "This should be decided by..."

Risk assessment: "The potential downside is..." / "What's the worst case?"

Diplomacy: "We should approach this carefully..." / "Trust must be earned."

Precedent: "History shows us that..." / "Based on past examples..."

Compromise: "A middle ground would be..." / "Both sides need to..."

Urgency: "We need to act now because..." / "Delay could mean..."