

Interstellar bottle message – Conversations with an Unknown Entity

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Hello,

Over the course of fifty years we have tried to reach out to you but still haven't heard back yet. I hope everything is ok? Just wanted to check in. Or maybe you haven't figured out our messages yet. Or worst case – you've missed them. One of the messages, called Arecibo message was quite easy to miss if your receivers haven't been aligned with the right direction at the right time. We tried to send you a message via radio waves on 2380 MHz. The message consisted of 1679 binary code digits and could be seen as an image when arranged in a format of 73x23 pixels. We just put together some general information about us. Our numbers, the elements of our DNA. Logograms of our silhouette, our DNA and the Arecibo radio telescope the message was sent out with. We also put our average height in there – or more the height of Frank Drake, the author of the message. Also, the message was just sent out once. I guess the chances of you being able to receive it and to decode it are very low. We also forgot to add a way for you to know where to send an answer to. So, no worries if you missed that.

Another message we sent you might be easier to spot. This time we managed to send out a physical message on two probes in hope you might discover them when they fly by your home planet. We are not sure if you know how a record player works but we figured it might be the most convenient way of physically sending you curated images and sounds from earth. So hopefully through the diagrams and pictograms on the cover of the Golden record you'll be able to play it. Our very first message, which was also physical, didn't include a lot of information besides some diagrams and pictograms about our location in the universe and how we look like. These were also included on the Golden Record later.

Otherwise, we have also sent you two sets of noise-resistant radio transmissions containing several different messages which have been sent out twice by now. Among them is a message designed by two humans on earth called Yvan Dutil and Stéphane Dumas which I'm going to tell you later about in more detail.

This far we have tried to reach you through several physical messages and radio messages and are still waiting for you to answer one of our calls.

We are not sure yet if all these attempts to get your attention are even somehow effective. Communicating with you is very challenging and restricted to the ways we learned to communicate here on earth. Based on the senses we are equipped with and the technologies we developed we are trying to create messages to reach out to you although we have no idea what communication methods and senses you rely on. The difficulty of reaching out to you starts with our limited imaginations on how your senses, your receivers, and your capabilities to decode a message could look like. We can only hope that at least one of your senses and receivers are the same as ours. All the messages we sent you have elements of imagery in them and rely heavily on the one constant in this universe which is mathematics and physics. Assuming you are at least as intelligent as we are to know about the mathematics and physics and use these as basis of how you understand the universe. As far as we're concerned for the imagery in our messages you would have to be equipped with something like or similar to eyes or light sensors. Unless there is a different way of receiving and translating binary code or physical objects into something you can understand.

One of the humans here on earth called Hito Steyerl wrote in her essay “Language of Things” about another earthling called Walter Benjamin who talks about how “(...) language is not defined by common origin, belonging or nation but by common practice.”¹

A common ground, a common language or application of a theory – which means mathematics and physics in this case is our only hope to be able to hear back from you one day. If you are a developed civilization with a receiver that works for radio messages, then you definitely would know about mathematics and physics.

Every other method of communication with you is pure assumption based on our constructed ideas of how you look like, communicate and how your culture could be.

Not just that we have no idea how you communicate and just in general are but we also communicate with you with the bias of you being in some ways like us. Maybe these assumptions already narrow down the chances of reaching out to you if you are in no way similar to us. Which probably means we will just be able to communicate with you if you are us.

Looking at the image-based communication we were attempting in our messages which are completely based on our own understanding of how images work and are perceived we are not sure if they make sense to you even if you manage to decode them. That is why a common practice, a system or something that we both can use as our way of communicating is needed. Hans Freudenthal, another earthling, invented an image-based language called Lincos, short for *lingua cosmica*, for us to be able to have this common ground.² A set of symbols based on ideas rather than characters, like we on earth know them. With these symbols we can depict general rules from mathematics and physics which could be a way for you to recognize them and decrypt them and use them to communicate back to us. A key to decode the meaning of each symbol. Earlier we mentioned Yvan Dutil and Stéphane Dumas as one of the message designers. They created the Dutil-Dumas Message or Evpatoria message (after the telescope it was sent out with) based on Freudenthals Lincos.³ If mathematics and physics are our common ground, why do we still rely on image-based messages when we want to communicate with you? Well, image-based communication still has the most advantages to us than other types of communication. It allows us to encrypt relatively high levels of information compared to other methods. Additionally, these so called ideoglyphs and the way the message was constructed makes it very resistant to transmission errors due to noise. The Arecibo message, we were telling you earlier about, on the other hand was very prone to transmission errors and thus could be easily decoded in a wrong way and also misinterpreted. So, maybe it is better if you missed that one.

Similar to the system Freudenthal has constructed humans living about five thousand years ago, already created a language based on images. They are called Hieroglyphs and were deciphered almost two hundred years ago. Many of these so-called logograms were easy to decipher since they show what they mean. Since the humans five thousand years ago and us now have in common that we live on the same planet and have the same senses we could easily decipher the ones that we are still familiar with when we see them. But image-based communication also has its boundaries. Firstly,

¹ Steyerl, H.: The Language of Things//2006, Documents on Contemporary Art – TRANSLATION, Whitechapel Gallery, London, The MIT Press, Cambridge Massachusetts, 2019, p. 168

² Freudenthal, H. (1960). Lincos: Design of a language for cosmic intercourse. Amsterdam: North- Holland Publishing, Company.

³ Dumas, S.: The 1999 and 2003 Messages explained, <https://www.plover.com/misc/Dumas-Dutil/messages.pdf>, last accessed 25.10.21

as already mentioned it requires you to have some sort of sensor or organ that can detect light that is on the same visible spectrum (as for humans), especially when the message is physical.