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Take Me to Your Leader

First, we need to make sure that they understand what a question is. The nature of a request for information along with a response. Then, we need to clarify the difference between a specific “you” and a collective “you,” because we don’t wanna know why Joe Alien is here, we want to know why they all landed. And ‘purpose’ requires an understanding of intent. We need to find out: do they make conscious choices? Or is their motivation so instinctive that they don’t understand a “why” question at all? And biggest of all, we need to have enough vocabulary with them that we understand their answer. (*Arrival*, 42:30)

In the film *Arrival* (2016), Dr. Louise Banks (Amy Adams) explains to her superiors why they cannot simply ask the aliens who have just landed on Earth: “what is your purpose here?” As her explanation exposes, language is not so simple; beyond grammatical and syntactical rules, our understanding of language relies heavily on our cultural values and perceptions of the world. The concept of translating from one language to another word by word is not only reliant on a deep understanding of the vocabulary and structural elements of both languages, but the confidence that the abstract idea an individual word refers to in one language is the same idea that its corresponding word in the other language also signifies. These are the nuances that *Arrival* tackles: how one would go about learning and communicating in an alien language, but beyond that, whether it would even be possible given the vast difference in world views that a species from another planet, and presumably another galaxy, would have from ours. The film also explores the different approaches that countries take towards communicating with the aliens, and what happens when the researchers across the globe are prevented from sharing their findings with one another. This clash of cultures, the dispute over the “proper” way to communicate with an other, is the subplot of *Arrival*, the subtle moral of the movie being that effective

communication is the key to peace, or at least the key to avoiding unnecessary violence (such as war with an extraterrestrial species). It is through the hypothetical discussion of how we would communicate with an extraterrestrial species that *Arrival* exposes the difficulties in translating a language unlike any we are familiar with, the disparities in meaning behind words in different cultures, the issues that arise when we fail to communicate openly with one another, and the need for trust as a key part of effective translation and communication.

Arrival's departure from other works of science fiction, specifically its portrayal of the alien as a diplomat rather than an aggressor, is key to conveying its message of the importance of communication. Missing are the high-octane, suspenseful, and often violent scenes of other big alien blockbusters. The exploratory themes of the plot are reflected in the, somewhat surprising, quietness and calmness of the film itself. There are more acute differences as well, between *Arrival* and its peers. *Arrival*'s aliens, called *heptapods*, are not the little green men of days past. Their figures are abstracted greatly, partially hidden in the fog behind the screen where they reside throughout the film. Their vocalizations do not reference human language (as many alien species are often assigned human-like but primitivized language); in fact, the deep rumbling tones they emit don't directly correlate to their written language. As Ian Donnelly, Dr. Banks's partner explains, "there's no correlation between what a heptapod says and what a heptapod writes. Also unlike all written human languages, their writing is semasiographic. It conveys meaning. It doesn't represent sound" (0:53:52). Unlike any human language, their writing is circular ("...their written language has no forward or backward direction. Linguists call this nonlinear orthography" (0:54:45)), reflecting their perception of time (which is non-linear). This presents some difficulty for the characters in deciphering the heptapod's messages, but also marks another contrast with other sci-fi works in which the alien language is often (as with the

auditory component) reminiscent of some human script, either primitivized or simply distorted. One of the most subtle differences in *Arrival*'s aliens is their pacifism and their willingness to remain on Earth and accomplish their mission, even after violent actions are taken against them by humans. The entire experience is incredibly non-confrontational and this is reflected in the slower pacing of the film, highlighted even more by the film's soundtrack which is heavily reliant on slow-building classical music rather than fast-paced action music. Alissa Wilkinson, in her analysis of the movie, describes, "the strains of Max Richter's "On the Nature of Daylight" play over the opening shots of *Arrival*, which is the first clue for what's about to unfold: that particular track is ubiquitous in the movies and is, by my reckoning, the saddest song in the world" (Wilkinson). All of these differences from other science-fiction works are what allows *Arrival* to deliver such a deep message about humanity; it is hard for the moral (that we need to communicate openly with one another to maintain peace) to get lost when there are so little action and violence to hide behind.

Deciphering a new language can be near impossible, especially when, as in *Arrival*, the written language is so vastly different than anything we are familiar with, or relies on a different world view than the one we use. In *Arrival*, the heptapod's language is inky and mysterious, with various marks protruding from a main circle. The non-linear nature of their language reflects the way in which they view time; Ted Chiang, the author of the short story that *Arrival* is based on, explains that in the world he has created, "Humans had developed a sequential mode of awareness, while heptapods had developed a simultaneous mode of awareness ... We experienced events in an order, and perceived their relationship as cause and effect. They experienced all events at once, and perceived a purpose underlying them all" (Jackson). This worldview is reflected in the circular nature of their language and poses a challenge for the

human researches in translating their messages: although they may understand certain words, when in the context of other symbols, it takes an additional step of trying to order the words into the correct message. At the peak of the film, the researchers are handed a vast array of these circular messages, which at first glance looks more like a Jackson Pollock painting than a text (figure 1). The task of deciphering this plethora of information poses many issues, one main one being whether to look at it as a whole or as a dump of many different pieces of language, a novel versus an anthology. At this point, the researchers already have some understanding of the language, or at least a vocabulary sheet to work with. But say they didn't; how would one, just looking at this image, be able to determine whether what's there is language at all? This is the same question brought up by the Voynich Manuscript (figure 2), a real, ancient, book that no one has yet been able to decipher. Though many have tried, the language is so dissimilar to any we understand, that some even questioned whether it is a "language" at all. However, when analyzing the relative frequencies of shorter and longer words, the ratio stays in line with Zipf's Law. Zipf's Law is a mathematical rule that says, "the shorter a word is, the more frequently it occurs in speech, and vice versa – the longer the word, the more infrequently it appears" (Ballesteros, 135). When the data is processed, the value found for the Voynich Manuscript is -1, which is concurrent with other languages, showing that whatever is written in that book is not complete nonsense, but in fact a language we simply cannot decipher. The same test can be applied to auditory data, as was done with dolphins, resulting in a value of -0.95, confirming that they have optimized their language as we have: following the idea of "economy of use," in which the things we use the most (in this case words) are more manageable (shorter) than those which we use less often (more specific/technical words are longer and more complicated). Although Zipf's Law does not tell us the content of a text or recording, it can confirm that an

intelligent message is present, at least according to our standards of intelligence (optimization of language). To further determine whether a message from space is from an intelligent species, versus a random phenomenon, one can examine the level of entropy, or disorder, within a chunk of information. Both a completely random jumble of letters and a long stream of the same letter fail to communicate information to the receiver. However, meeting somewhere in the middle allows information to be transmitted. We can test the rules on the languages we use, but in addition, should a message ever be received on Earth, we could use tools such as these to determine whether the signal contains language, or was rather just some form of radiation or noise from an object in space.

Another important problem with translation is, even if we are capable of simply translating from one language to another, truly understanding the meaning of the content can still be difficult. This problem occurs in *Arrival*; when it comes time to ask the “big question” (what is your purpose on Earth?), the heptapods respond: *Offer weapon* (1:06:54). Although her superiors immediately take this as a threat, Dr. Banks isn’t so quick to jump to conclusions. She explains that maybe they don’t understand the difference between a “weapon” and a “tool,” and that clarification is needed. This ambiguity is reflective of different perspectives of the universe and different cultural attitudes. Even if the heptapods did *mean* to say “weapon,” it could still have a different connotation to them than it does to us. Beyond the confusion caused by synonyms or similar words (weapon/tool), word to word translation (which is essentially used in *Arrival*), reveals another problem: what about ideas that can’t be expressed through language, or at least in our language? For translation purposes, we always try to find a match from A to B, but sometimes there is no match. German, for example, has many words to describe feelings that can’t be translated directly in to one English word, rather only a phrase that describes the

sensation (for example: schadenfreude, relishing in the pains or difficulties of others). Emotions can be hard not only to communicate in one's own language, but even harder to accurately represent in another. And even that presumes we feel the same things. Maybe an extraterrestrial species doesn't feel the same types of emotions we do, maybe they don't have emotions at all. In talking about the possibility of translating animal speech into English (or another human language), David Bellos says, "When and if we can ever translate nonhuman noises into human speech, species-related ineffabilities will evaporate like the morning haze" (Bellos, 156). The way we view and interact with the world influences the way we talk about it, so if this were vastly different from another, translation of just the words could possibly not be enough to actually understand the meaning behind the content.

The searching for and sending out of interstellar messages is something that a wide variety of projects and organizations in real life have been devoted to. Plaques etched with diagrams of the human body, our solar system, and the antenna of the craft (for scale), were attached to the *Pioneer 10* and *11* space crafts (figure 3), and later, *Voyagers 1* and *2* as well, launched by NASA to travel to the edges of our solar system. These messages were specially designed to convey as much information as possible on a small surface area, but of course, we can only send what we know and in our methods of communication. Interestingly, even these images, devoid of written language and therefore disconnected from any specific nationality or culture, were still subjects of controversy with "the angriest opinions [coming] from certain religious groups, regarding the nakedness of the couple! There were even claims of "scientific pornography" and the remittance of "obscenities to the stars" (Ballesteros, 143). Within *Arrival*, this same issue of differing views on how we should approach the problem of communication is explored. As gathered through wire-tapping, the researchers in Montana, where Dr. Banks is

located, learn that the Chinese have been using the game mahjong to communicate with their aliens. Dr. Banks explains why this approach is problematic: “Well, let’s say that I taught them chess instead of English. Every conversation would be a game. Every idea expressed through opposition, victory, defeat. You see the problem? If all I ever gave you was a hammer . . .” and Colonel Weber finishes her sentence for her, “everything’s a nail” (1:04:40). Her point is that if the method of communication is a competition, then every conversation ends with a winner and a loser; the two parties cannot work together or build towards anything, and in addition, complex ideas cannot be discussed, only simple statements (true or false, right or wrong, yes or no) can. This scene also reflects another aspect of translation which is trust. From the fact that the U.S. researchers had to spy on the Chinese, we can see the tension between countries, even though they are working on the same problem. In fact, when Dr. Banks first arrives to the base, she is told that progress has been slow because “not everyone shares our policy of being open with the aliens” (0:41:41). Once the ominous message, “offer weapon,” has been received, even the countries that had once been working together in *Arrival* quickly go dark, no longer willing to share any information with others. This is a big moment in the secondary-plot of *Arrival*, the more moralistic plot, that shows we need to work together should we ever want to achieve our goals or maintain peace.

Beyond trusting other countries enough to share one’s findings with them, simply relying on one’s own translator requires an extreme amount of confidence, whether for a machine or person. For the sake of plot, most science-fiction works glaze over the issue of communication difficulties, often relying on what Walter E. Meyers, in his book *Aliens and Linguists*, describes as an “automatic translator,” usually some type of fantastical machine that easily translates from one idiom to another. How these machines were built or coded is never mentioned, and all the

characters are comfortable with the machine, accepting whatever message it spits out as accurate. If it is a person, one must assume the translator/interpreter has no ulterior motive; that is, that they would not change a message when going from one language to another to sway the outcome of an interaction. This assumption, Bellos explains, is the reason why both parties involved in diplomatic meetings often bring their own interpreters. Each individual of importance would have their own interpreter who is affiliated with them, and therefore presumably would do no false translating as to cause their superior harm. Even *Arrival* eventually succumbs to using Meyer's "automatic translator"; during the scene in which the researchers receive the "offer weapon" message, we see a computer shuffling through different combinations of symbols to optimize the question "what is your purpose on Earth?" for the heptapods' understanding (figure 4). Although the data the machine uses was built on the research done by the human scientists, once they begin using the machine, they are trusting that the algorithm is correct, that the screen is in fact displaying the message they want it to. On the other end, they also have to trust that the translations of the messages given by the heptapods is correct. This comes back to Dr. Bank's critique of the General Shang's approach to communication; if every conversation is a game, with a winner and a loser, how do we know that the translated message was even interpreted properly? It is important that it is translated correctly, because the actions that General Shang, and/or other countries, then takes are directly related to what the heptapods said.

As *Arrival* shows, language is no small hurdle. This is true not only between humans and a completely foreign species, but also between different groups of humans on Earth. To communicate effectively we need not only have a good understanding of another language's structure and nuances, but an awareness of cultural differences and varying worldviews, and the willingness to be open with one another. *Arrival* was released in 2016, mere days after the U.S.

presidential election. The film issues a strong warning about the importance of not jumping to conclusions when translating, and the need to be aware of how one's message may be interpreted by those on the receiving end. President Trump's use of Twitter, posting volatile messages, sometimes even calling out specific countries or individuals, is an example of exactly what *Arrival* warns against. This type of communication is neither productive nor diplomatic and exacerbates international tensions. What viewers can take away from the film is a greater awareness of their own use of language, the ability to analyze the various ways their speech could be interpreted. In addition, it may promote the idea of learning new languages, delving into linguistics as a field, or exploring what messages we are sending out into the universe. Should we ever encounter an extraterrestrial species, *Arrival* gives us a case-study of how to go about interpreting what they may share with us, and the difficulties that we may face in doing so.

Appendix

Figure 1
Arrival, 1:15:10, Hulu



Figure 2
Voynich Manuscript detail, Ballesteros, page 135

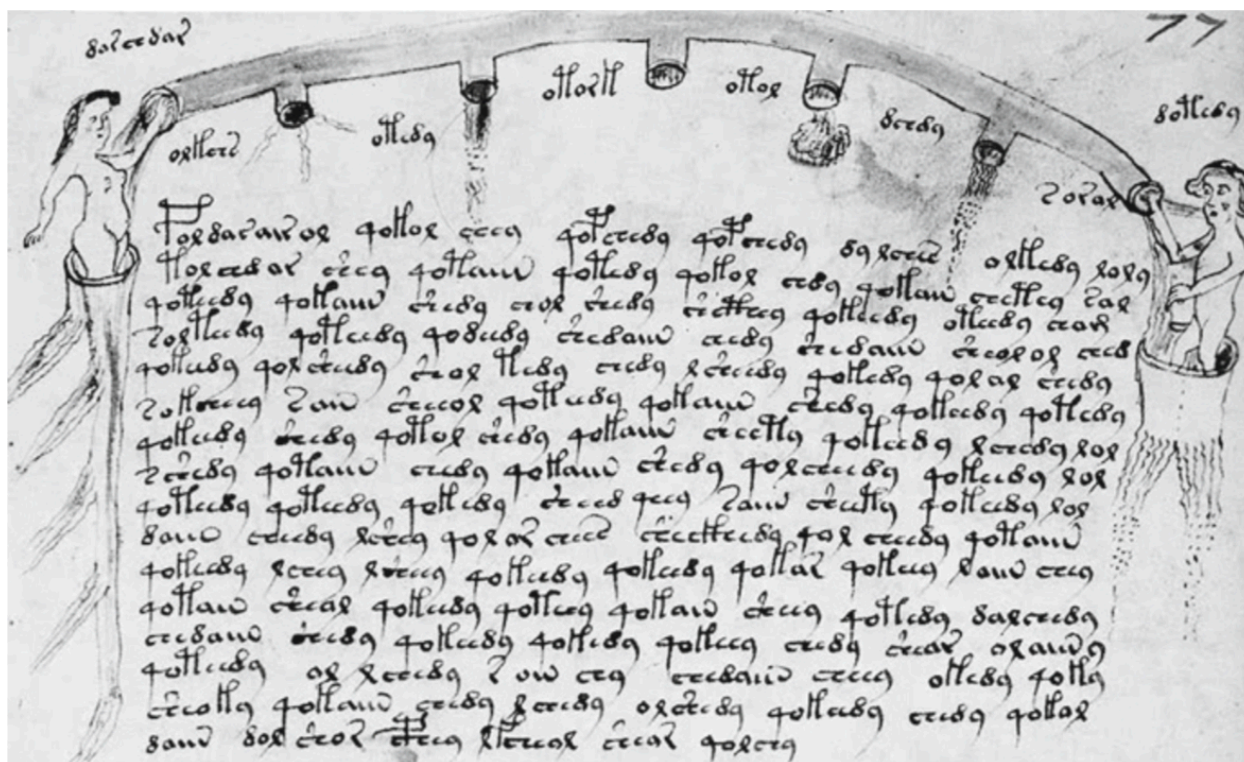


Figure 3
Plaque on Pioneer 10 and 11, Ballesteros, page 141

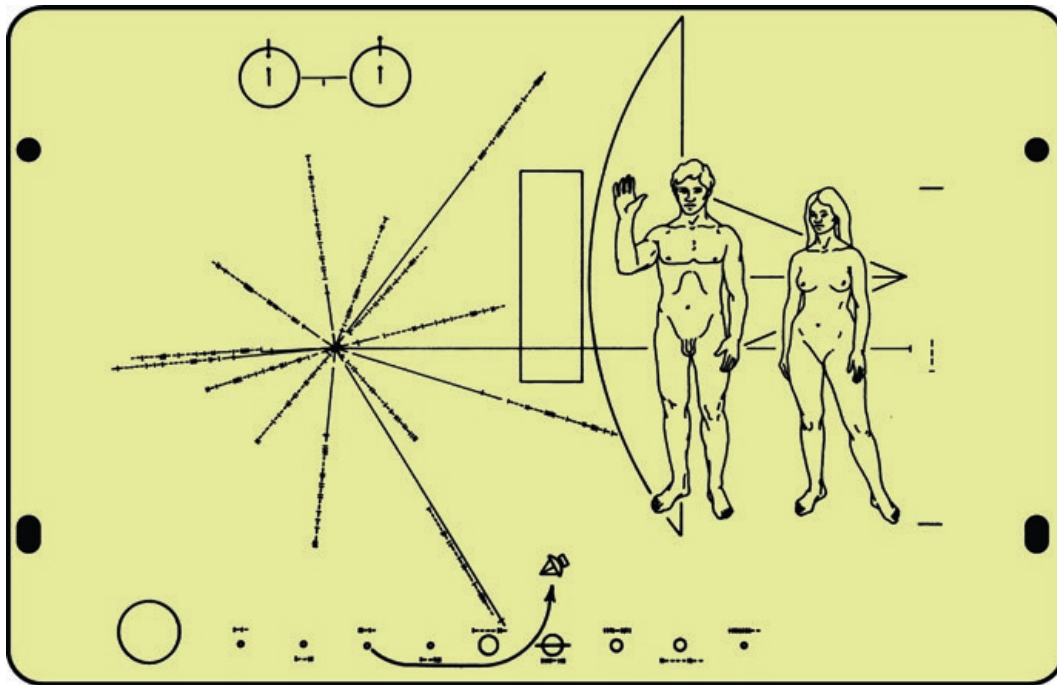


Figure 4
Arrival, 1:05:57, Amazon



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