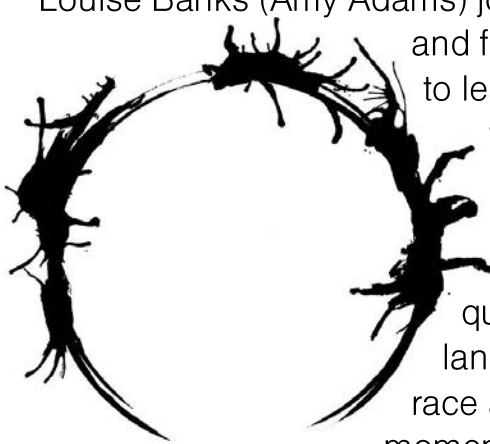


VIEWERS' DISCUSSION GUIDE TO

A R R I V A L

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INTRODUCTION



In *Arrival*, aliens have landed on Earth, in 12 different locations. Professor of linguistics Louise Banks (Amy Adams) joins a US army team in Montana to analyze the language and find out what the aliens are saying. Her job as a linguist is to learn the alien language and enable communication with them. But, there's a catch. The alien language is circular and not like ours. Through regular meetings with two of the aliens, she starts to compile a record of the aliens' "language" - a series of drawn symbols. The important question is - are they friend or foe? Other nations with alien landings are starting to view them as a threat, making it a race against time as war with the aliens could erupt at any moment.

While the film is fictitious and meant for popular consumption, it contains a number of significant linguistic concepts and educational opportunities. The film especially focuses on the following ideas from the field of linguistics:

- (a) The nature of linguistic fieldwork; how do we determine what words mean in a foreign language that we've never seen or heard before?
- (b) Linguistic relativity, or the idea that the language you speak has impacts on the way you view the world around you
- (c) Translation errors; sometimes simple linguistic misunderstandings grow to create significant conflicts

Following this introduction, a viewing guide is available for each of the major arcs of the film, as well as one for the film's trailer. In each guide, I provide a summary of any key linguistic keywords and content, followed by an at length discussion of that arc's concepts (including the veracity of the claims in the film), fun facts, a note on how that part of the film was produced, viewer discussion questions, and post-viewing activities.

Arrival was written by Eric Heisserer and directed by Denis Villeneuve



HOW CAN THIS GUIDE BE USED?



Film Screenings

Audiences at film screenings are often interested in the content behind the film. A more linguistically minded audience, or one looking for a different take on a popular film, would be interested in this guide as a learning tool and a lens for viewing.



Classrooms

Teachers who would like to bring some of the concepts from linguistics into their classrooms may want to use this guide as a means of doing so. If time is an issue, the trailer viewing guide may be of particular interest. This can also be used during units which use critical interpretation of a film/trailer as a means for analysis of rhetorical strategies.



Personal Interest

This guide can also be excellent for those curious individuals who just want to learn more about the facts behind their favorite film. Groups of friends can engage with the activities together to learn more about *Arrival*.

KEY TERMS

What is linguistics?

Linguistics is the scientific study of language. Different parts of linguistics can study language from its smallest parts, sounds (phonetics and phonology), up to units of meaning (morphology), grammatical structure (syntax), and the meaning and intention of entire sentences (semantics and pragmatics). Some linguists also study social factors which influence our language use (sociolinguistics), how language functions in the brain (psycholinguistics and neurolinguistics), how language evolves (historical linguistics), and how we can best teach/learn language (applied linguistics).

What is a linguist?

A linguist is anyone who *does* linguistics. However, linguists can work and contribute in many fields, including education, translation, law, politics/policy, and computer science. In *Arrival*, linguist Louise Banks is a university professor.

What is linguistic relativity?

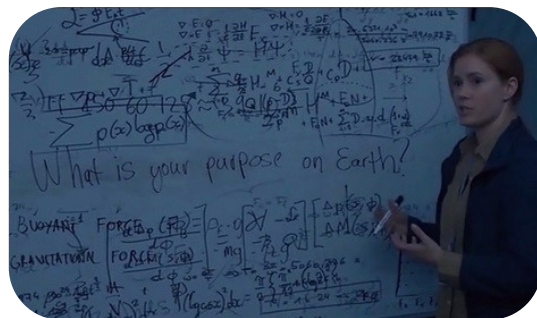
Linguistic relativity suggests that a language's structure has effects on the worldview or cognition of its speakers. The strong version of this hypothesis—which says that language can determine thought—is largely rejected by modern linguists. However, the weak version—which argues that language merely influences thought—has found some empirical support.





Arrival Viewing Guide

Arc 1: Exposition (0:00—36:34)



This portion of the film introduces our protagonists and begins the exposition of the plot. We are introduced to some of the contract work a linguist might undertake, as well as some of the difficulties of translation.

KEY CONCEPTS

Linguistic Fieldwork When you envision fieldwork, you may be thinking of researchers and experts going to remote locations to study geology, languages, or archaeological sites. For some linguists, that's exactly what it looks like. They may travel to a different part of the world to study and document the structure of a language that we don't know much about. That's what Dr. Louise Banks does in *Arrival*. However, linguists can also do fieldwork in other venues. Data can be collected from your next door neighbor, or from people in a nearby town (sociolinguists may spend their entire careers collecting data from a single city). Linguists can collect and interrogate data inside their own offices. Is this fieldwork?

Translation Translation is the process of taking words or text from one language and converting them into words in a different language with similar meaning. This sounds simple enough, until we consider that some languages have words which don't translate exactly. For example, the Spanish word "sobremesa" describes the moment after a good meal when all of the food has been eaten but there's still a great conversation flowing. Notice how it took me twenty words to describe what just a single word in Spanish means? This can be one of the difficulties of translation.

DID YOU KNOW? FILMING ON LOCATION



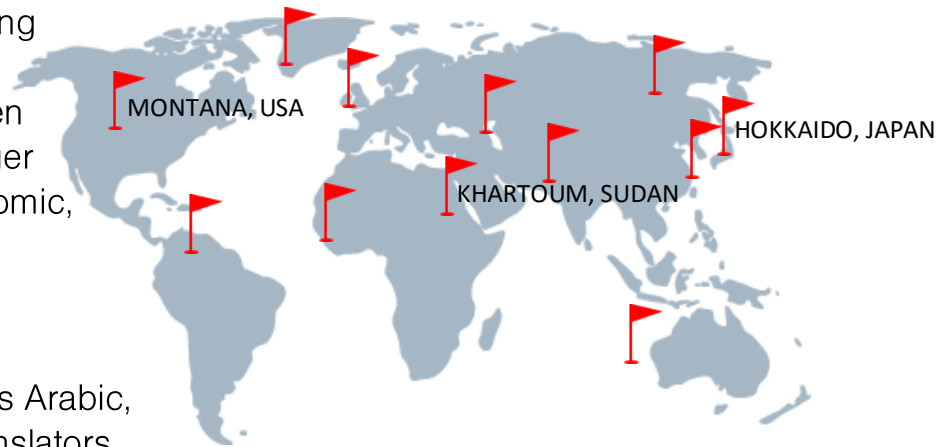
Most of *Arrival* was filmed in Québec, Canada. Dr. Banks' university was filmed in Montreal, while the location of the alien ship was located in Bas-Saint-Laurent, not Montana. In Québec, which is a province, many people speak a variety of French called Québécois. These speakers can understand people from other French-speaking parts of the world, but the subtle differences in words and sounds make Québécois a distinct *dialect* (a variety of a language).

LANGUAGE DIVERSITY: THE MANY LANGUAGES OF ARRIVAL

In the film, the heptapods land their ships in 12 different locations on Earth. Because of this, you'll notice some of the film's characters speaking different languages. There are over 7,000 languages on Earth, by most estimates. Let's explore what languages people speak where the heptapods landed!

HOKKAIDO, JAPAN

While Japan has no official language, the people predominantly speak Japanese. However, there are numerous local languages and dialects with a rich history on the islands. Hokkaido, Japan's northernmost island, is home to the Ainu language, which as of 2012 only had two remaining speakers. Languages can die out or become endangered when the people who speak it no longer do. This can be for social, economic, or political reasons.



KHARTOUM, SUDAN

The official language of Sudan is Arabic, and that's what you hear the translators speaking in *Arrival*. However, there are many other languages spoken in Sudan which belong to three main *language families*. A language family describes a group of languages that are related because they come from a common ancestral language. Just how species of animals can be genetically related, so can languages! In Sudan, two related members of the Afro-Asiatic language family are Bedawiye and Tigre.

MONTANA, USA

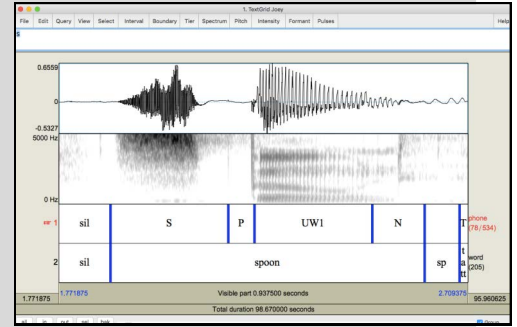
Sometimes, we like to think that a US state like Montana is home to only one language: English. However, just like anywhere else, there's a wealth of language diversity there! To begin with, the earliest languages in Montana belonged to the Native Americans who lived on the land. Some of these still exist today, including Siouxan languages (like Crow, Stoney, and Assiniboine), Salish, and Ojibwe.

GAVISTI A DESIRE FOR MORE COWS

In one of the earliest scenes of the movie, Dr. Banks asks Col. Weber to have another linguist translate the Sanskrit word for war. While the other linguist says it means "an argument," Dr. Banks translates it as "a desire for more cows." This highlights the importance of understanding the culture a language relates to. Cows were presumably an important resource in the Sanskrit culture of the day.

A LINGUIST'S TOOLKIT: PRAAT

When Dr. Banks first enters the base tent where she'll be working, we see the screens of the military's cryptographers and linguists. On many of their computers, there's a software window which looks similar to the one depicted here. This is Praat, a free software linguists use to analyze the sounds, or *phonetics* of a language or dialect.



DISCUSSION QUESTIONS

1. When Dr. Banks is initially approached by Col. Weber, the following exchange happens:

BANKS: "It's impossible to translate from an audio file"

WEBER: "You didn't need that with the Farsi translations"

BANKS: "I didn't need it because I already knew the language"

Consider the challenges of learning a language you don't speak, or haven't even heard before. How would you go about beginning to translate it?

2. When Dr. Banks first meets Dr. Ian Donnelly, he recites to her the preface to her book: "Language is the foundation of civilization. It is the glue that holds a people together. It is the first weapon drawn in a conflict." Consider this quote. Do you agree? Could civilization exist without language? What other tools does civilization require in order to exist, besides language?

POST-VIEWING ACTIVITY

Do you speak a language besides English? Do your friends? If not, go online and find information about one of the world's most spoken languages (Mandarin Chinese, Spanish, English, Hindi, Arabic, Portuguese, Bengali, Russian, Japanese, and Lahnda). Then, find out that language's translation of the following English words:

One	Ten	Goodbye
Two	One Hundred	Morning
Three	One Thousand	Afternoon
Four	Hello	Green

What do you notice about that language's words? Is it similar to English? Is it different? Are some words the same, while others aren't? Consider these questions and ask if you think the languages are related in some way. Then find what language family English and your language are in and see if you were correct.



Arrival Viewing Guide

Arc 2: Fieldwork (36:34—1:06:52)



Here we begin to see Dr. Banks' process of translating the alien language. She uses trial and error to begin to decode what their words mean. We also begin to understand the heptapod's *orthography*, or system of writing.

KEY CONCEPTS

Orthography This term refers to a language's system of writing. The conventions of our languages can include spelling, capitalization, hyphenation, word breaks, etc. In English orthography, I would write "banana," whereas in Chinese I would write 香蕉. In *Arrival*, the heptapods use a non-linear orthography, which is unlike any language humans use on Earth.

Sapir-Whorf Hypothesis Named after anthropologist Edward Sapir and linguist Benjamin Lee Whorf, this hypothesis suggests that the speakers of a language have their worldview and perceptions directly affected by it. The strong version of this hypothesis says that language determines thought and determines our cognition. This has been rejected by modern linguists, and has a dark history. Dr. Whorf studied the Hopi tribe, a Native American group in northeastern Arizona. He noted that the concept of time was not part of the grammar of Hopi (in English it is: consider "I did," "I do," "I will do," "I have done," etc.). He used this information to suggest that the Hopi are incapable of even thinking about time. This is obviously not true, and led to racist ideas about the Hopi. On the other hand, the weak version of the hypothesis suggests that language just influences thought, and this does have some proof and acceptance by linguists.



DID YOU KNOW? ETYMOLOGY OF HEPTAPOD

All of our words can be traced back to some historical origin. In the film *Arrival*, they use the word "heptapod" to refer to the aliens. This comes from the Greek "hepta," meaning seven, and "pod" meaning foot. Lots of our English words have origins in Greek, Latin, French, and old Germanic languages. So, if I told you that "podiatrist" means a doctor who works on feet, what do you think "iatros" meant in Greek?

LINGUISTS TALK ABOUT *ARRIVAL*

While making *Arrival*, the production team, script writers, director Denis Villeneuve, and set designers met with three linguists at McGill University to make sure everything was accurate. Dr. Jessica Coon, Dr. Morgan Sonderegger, and Dr. Lisa Travis have made comments about the movie in the past!

DR. JESSICA COON

Canada Research Chair in Syntax and Indigenous Languages

“A lot of the work was with the set design crew, so they came to my office, they took pictures, they said ‘oh, this is what a linguist’s bag looks like!’ and they took pictures.”

“They FedEx’d me a bunch of alien logograms and said ‘imagine it’s really your job to decipher these.’ Get to work!”

DR. MORGAN SONDEREGGER

Principal Investigator at the Montreal Language Modeling Lab

“I spent a little time at the studio they set up showing sound files, and how you would analyze them. So mostly files of animal calls to try to simulate something that wasn’t human speech.”

“A lot of the model that are used in phonetics for sort of [...] reasoning out [...] how the sound is being produced are quite simple often. They’re often just something like a [perturbation in a tube]. So because these are very general properties, and as long as the aliens are using some sort of way of producing sound that we’re familiar with, [...] we might be able to say something about it.”

DR. LISA TRAVIS

Author of Inner Aspect: The Articulation of VP

“If you see the film, you’ll see that the office looks very much like mine. In particular the mess, I think.”

A LINGUISTIC MYTH: KANGAROO

While trying to convince Col. Weber to let her continue her work with the heptapods, Dr. Banks tells a story about the origin of the word “kangaroo.” The story says that the original explorers of Australia met some aboriginal people (the Kuku Ymitthir), and asked them their word for the two-legged animal that hopped across the outback. The aborigines replied “Ganguru.” Popular legend has it that this was actually the Kuku Ymitthir word for “I don’t understand.” But this isn’t true! “Ganguru” is their word for Kangaroo, after all.

DISCUSSION QUESTIONS

1. When Col. Weber is confused why the process of learning the alien language will take so much time, Dr. Banks draws an example question (“What is your purpose on Earth?”) on her white board, and explains everything you would need to know to understand the question. In this case, you would need to understand the nature of a question itself, the idea of a general “you” which is separate from a specific “you,” the idea of purpose or motivation, etc. Come up with a few sentences, and then discuss what you would need to know in order to understand the sentences.
2. The heptapod language is *semisiographic*, meaning that the symbols don’t correspond to sounds. Each symbol conveys meaning. This is unlike most human languages, including English. However, you probably use one or more semisiographic systems in your day-to-day life. This may include, emojis, musical notation, mathematics, or more. In the semisiographic system(s) you use, what do the symbols mean? Can they have multiple meanings, or just one? Do different groups of people (younger vs. older, different nationalities, social groups, etc.) use the symbols in different ways?

POST-VIEWING ACTIVITY

Let’s do some linguistic fieldwork of our own. Between you and one or more other people, gather a few objects. These can be a pencil, book, phone, or anything else you have handy. Then, make up words for these objects! Also make up words for “use,” “drop,” “break,” “throw” or “toss,” etc., as well as the personal pronouns “I” and “you.” You and your partner, without using any English, will have to find out each other’s translations for the following sentences:

“I drop [object]”

“I use [object]”

“You break [object]”

“I throw [object]”

What challenges did you encounter? Did you and your partner get any of your words confused?



Arrival Viewing Guide

Arc 3: Offer Weapon (1:06:52 to the end)

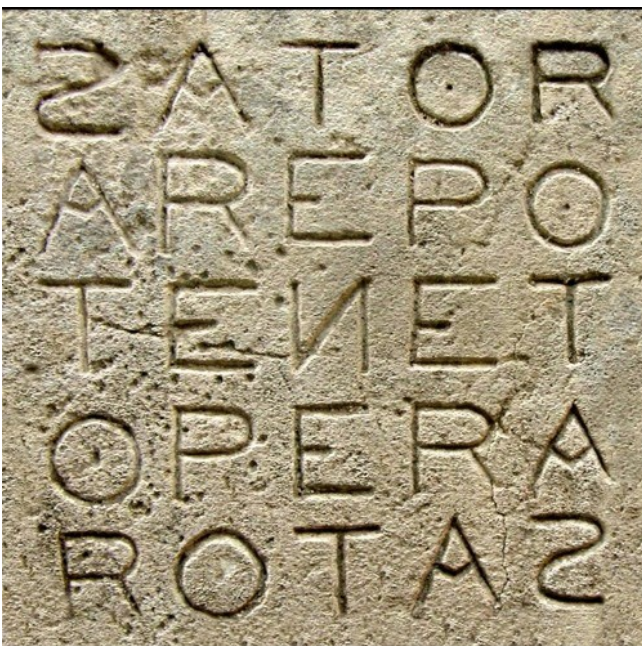


In the third arc of the film, we get a great sense of the power that language can have, and the potential danger of linguistic misunderstandings. Where one person might interpret “offer weapon” or “use weapon,” the speaker might have meant “give tool.”

KEY CONCEPTS

Language and Culture The relationship between language and culture is complex. The two are completely intertwined. When you learn a new language, it doesn't only involve learning that language's sounds, words, and grammar. You also must learn the culture! For example, in English we have many different greetings ranging from the extremely formal “good day” to the extremely informal “sup” or “howdy.” In Spanish, they have a similar spectrum from “buenas tardes” to “¡aupa!” Knowing the appropriate time and place to use these is important, and part of the culture.

Language is also tied to culture because it can be used to identify you to certain groups of people. This is usually the work of *sociolinguists*, who study relationships between language and social characteristics. If you say “y'all,” what does that indicate about your cultural background? What about if you say “that's groovy” to mean “that's cool?” The language we use can say things about us.



DID YOU KNOW? PALINDROMES

In *Arrival*, Dr. Banks remarks that her daughter's name Hannah is unique because it's a *palindrome*. A palindrome is a word, number, or phrase which reads the same backwards or forwards, like “racecar.” Some palindromes can be quite long, like “detartrated” or the Finnish word “saippuakivikauppias” (meaning soapstone vendor). David Stephens wrote in an entire book that is palindromic, titled *Satire: Veritas*. It can be read back to front exactly the same as front to back.

LANGUAGE AND TIME

A major theme of *Arrival* is how language can change the way you perceive and understand time. While time is referred to in different ways across the world's languages, the film takes this concept to an extreme. Sadly, learning a new language won't allow you to see the future, or travel through time. But it may affect the specific of what time means to you, and how it flows! Let's explore how.

THE ARROW OF TIME

The "arrow of time" refers to a sort of mental arrow which defines how time flows in a particular culture's understanding. English, for example, tends to associate the past with "behind" and the future with "ahead." The arrow of time therefore moves from back to front.



This is evidenced by English phrases like "looking back at the good old day" or "years ahead." However, this is completely culturally determined. The Aymara language and people associate time with both terminology and gesture, such that the past is in front of us, because it is observed or seen, and the future is behind us because it is unobserved and cannot be seen.



Similarly, in Chinese, the past comes from the front, where the word for the day after tomorrow means "behind day."

TIME AS A RESOURCE

We can also examine linguistic and cultural differences through different languages' use of metaphor. Different cultural metaphors provide a picture of how different items are "seen" or "treated" in a culture. Following the example of time, we can see how it is codified in metaphor as a tangible resource. In English, for example, we find the following phrases:

"You're *wasting* my time"

"That flat tire *cost* me an hour"

"This gadget will *save* you hours"

"You're *running out* of time"

"I don't *have* the time to *give* you"

"I've *invested* a lot of time in this"

"How do you *spend* your time?"

"You don't *use* your time well"

Evidently, speakers of English can use time in a sentence just as they would money or another commodity. Not all languages treat time in this way, and in fact this metaphor would not make sense at all to a speaker of a language without it.

LANGUAGE IS A LITTLE BIT UNIVERSAL

There has long been debate on whether or not all of the world's languages have certain aspects that they literally all have in common. While this debate is ongoing, one thing we do know for certain is that certain sounds can only be produced in certain ways. When you speak, you use your tongue, teeth, lips, and other parts of the mouth and throat to produce sounds. While aliens may not have all the same parts, they would likely use similar tools to produce their sounds as well. In many of the scenes of *Arrival* you can hear the aliens making a deep, hissing noise, akin to the English “f” or “sh” sounds. These are called *fricatives*, and are produced when air is forced to pass through a narrow channel. Feel how when you say “ffffff,” air must pass between your teeth and lips. Even though we may know nothing about alien biology, we can say with confidence that when the heptapods produce that fricative, somewhere in their bodies there's a narrow channel!

DISCUSSION QUESTIONS

1. Early in this portion of the film, Dr. Banks remarks that “language, like culture, is messy.” Discuss how both language and culture don't always have clearly defined lines and definitions. Have you ever been confused by what someone said? Or perhaps there are certain cultural norms where you live which aren't the same in other places.
2. The major plot point which drives the climax of the films is China and the USA's interpretation of a heptapod word as “weapon,” when the actual meaning is closer to “tool” or “gift.” Recall a misunderstanding that you've experienced because of what someone said. What was the misunderstanding, and how did it get out of hand? Could different language have been used to solve it?
3. In one of the final scenes, Dr. Banks communicates with General Shang over the phone, and delivers a line which makes him change his mind about the heptapods. The line was spoken in Mandarin Chinese, but translated into English it means “in war there are no winners, only widows.” Director Denis Villeneuve intentionally left this line without subtitles. How did the lack of subtitle affect the power of the line? Did not being able to understand the language change something about how you perceived that scene?