



# Film Analysis: Depiction of Free Will in Denis Villeneuve's "Arrival"



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# 1 Introduction

Life before and after the *Arrival* is the same. The alien spacecrafts appear out of nowhere and disappear in the same way. They do not bring any scientific or technologic insight, but a message that relieves those who comprehend it of their fear for the future.

The message is given in the climax of the movie, when a revelation causes the protagonist, as well as the viewer, to reinterpret everything before it. It simultaneously reveals to both, how the protagonist's life will unfold. This aligns the viewer's experience with that of the protagonist, both having gained awareness of an inevitable future, the death of the protagonist's yet unconceived child. This knowledge takes away the ability to impact the outcome, thus stripping both, the viewer and the protagonist, of their free will.

However the gravity of this revelation is very different. For the viewer this merely means loosing the suspense of an open ending where they can decide for themselves which of the tragic choices the protagonist takes. For Louise, the protagonist, the consequences are of a much more fundamental nature, best explained by analyzing the different facets of *Arrival* [1].

The setup of *Arrival* is that of a classical invasion movie. Traditionally this setting is used as a background for fast-paced action and military conflict. Its earliest example, H. G. Wells' *The War of the Worlds* from 1898 [2], already portrays aggressive aliens invading Earth. The idea most likely stems from British imperialism and a time when most western European nations had colonies in Africa. In the work, the purpose of the aliens' invasion of Earth is that of the colonists' invasion of Africa: Harvesting resources and exploiting people.

Besides several movie and TV series adaptations, *The War of the Worlds* also inspired many other works in its genre. Therefore, aliens are commonly portrayed as hostile invaders, for example in titles such as *Invasion of the Body Snatchers* (1956), *They Live* (1988), *Independence Day* (1996), *Mars Attacks* (1996), *Edge of Tomorrow* (2014) or *A Quiet Place* (2018) [3]–[8]. Oftentimes the aggressors are given a hive mind form, stripping them of their individuality and any relatable human features, reducing them to nothing but an antipathic opponent for the protagonists.

*Arrival* plays with this trope of hostile aliens. Louise Banks, a renowned linguist, and Ian Donnelly, an acclaimed physicist, are tasked by the US military with uncovering the intentions behind the aliens' visit to Earth. In order to answer the central question of "Why are they here?", they have to learn how to communicate with the aliens. After making progress and building some common vocabulary with the aliens, they are pressured by the military to prematurely ask the question to the aliens. The answer is ambiguous, due to lack of knowledge about the alien's language. Its ambiguity creates military tension, especially since other alien landing sites, of which there are twelve in total, got similar answers and now plan on attacking the intruders. But instead of presenting the viewer with a feast of action scenes, explosions and the armies of the world fighting off the invaders, *Arrival* lets its protagonist Louise resolve the crisis through communication.

The prologue shows a montage of the short life of Hannah, Louise's daughter. She dies at a very young age, leaving Louise in a state of sorrow. While Louise studies Heptapod, as the alien language is called, she has what appears to be flashbacks to her time with Hannah. When Louise heads back to the spacecraft to try and resolve the ambiguity of the aliens' answer, she is transported inside. One of the aliens explains to her, that through learning the Heptapod language Louise started experiencing time non-linearly. This reveals to Louise and the viewer that all the apparent flashbacks, including the prologue, really were visions of the future.

With the ending of the movie now set, the finale bridges the story points. Through Ian's help Louise has learnt that the aliens want mankind to work together and that each

landing site received one piece of a puzzle. All the pieces put together form the gift the aliens want to give to the people of Earth, their language. Louise, now knowing about her capabilities, manages to find a phone that can make calls out of the lockdown, which is imposed on the military facility that she is in. Through her ability to have visions of the future she knows the number of a seemingly hostile military leader, and also what she has to say, to prevent him from taking military action against the alien spacecrafts.

With the tension resolved, the spacecrafts leave as if it was what they were waiting for. More visions reveal that Ian and Louise end up together. Ian also turns out to be Hannah's father, who, as shown throughout previous visions, ends up separating from Louise. He does so because Louise tells him that she knows about Hannah's early death through visions. Ian disagrees with Louise, blaming her for making the wrong choice to have Hannah, despite knowing how short her life will be.

In the following it is discussed if this accusation of making a wrong choice is justified, by analyzing the depiction of free will in *Arrival*. Chapter 2 lays the groundwork for this by examining how the movie focuses on its characters' emotions throughout the story. Chapter 3 then focuses on communication, *Arrival*'s central theme that weaves together all story elements. In chapter 4 the two previous points are compared with the effects of the Heptapod language to show how the movie portrays free will. It also discusses the aforementioned accusation. Chapter 5 concludes with a brief summary of how *Arrival* uses the deterministic nature of movies for its narrative structure.

## 2 Emotions

*Arrival* is based on the short story *Story of Your Life* by Ted Chiang [9] which is told solely from the point of view of the protagonist, Louise. The movie adaptation follows suit by closely following Louise and featuring her in almost every scene. The camera commonly focuses on Louise, often as a reaction shot, or follows her gaze from a third-person perspective, making the viewer see most things from her perspective. This is especially true for all scenes involving Hannah.

### 2.1 The Absence of Technology

The relationship between Louise and her daughter is “the heart of movie”, as director Denis Villeneuve puts it [10, at 08:16]. It is the counterweight to the Sci-Fi part of the movie and makes the story feel more relatable and quite literally ‘down to earth’. Villeneuve therefore describes *Arrival* as a “dirty Sci-Fi” movie, that tries to realistically depict the events, so that it feels like they could happen “on a bad Tuesday morning”. [10, at 09:03] To follow along with this realism the movie does not use any technology that does not already exist today.<sup>1</sup>

*Arrival* hereby follows in the steps of *Solaris* [11], which was Andrei Tarkovsky counterexample to Stanley Kubrick’s *2001: A Space Odyssey* [12]. Tarkovsky states that Kubrick’s movie relies too heavily on technology and thus lacks compassion and emotions, or as

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<sup>1</sup>Even the programs with which the logograms are analyzed were created and are not mere fabrications by visual artists. See <https://www.christopherwolfram.com/arrival>, accessed 25.03.2020

Tarkovsky phrases it himself: “the technological processes of the future transforms the emotional foundation of a film, as a work of art, into a lifeless schema” [13]. Much like *Close Encounters of the Third Kind* [14], named as an influence by screenwriter Eric Heisserer [15, at 7:42], *Arrival* follows Tarkovsky’s vision and spotlights relatable human lives and emotions. On multiple occasions throughout the movie scenes with potential for dramatic action are skipped entirely or postponed to a later point. This not only allows for buildup of tension, but also enables scenes to focus on characters’ emotions and reactions.

An example is the scene in which Louise first learns of the alien landings. Only reactions of Louise and her class are shown, providing the viewer merely with emotional information on what is happening, but no insight on the ongoing event itself. Another example is the first encounter. After a brief introduction of the aliens it is cut short to Ian and Louise being in the disinfection tent afterwards, recovering and processing their experience.

## 2.2 The Kuleshov Effect

However, the perceived emotions are not always accurate. During most of the movie, the viewer is misled to see Louise as a grieving mother. This is achieved by using the Kuleshov effect. The effect describes how a viewer’s perception of a scene is altered by its context. For example, if a shot of a person with a neutral facial expression is cut to a shot of a person in a coffin and then is cut back to the same person with the same neutral facial expression, the viewer will interpret the person to be sad. If the same is done with a plate of food instead, the person will be interpreted as hungry. [16]

At the end of the prologue a grief-stricken Louise walks away from Hannah’s death bed. The scene fades out and is followed by a match cut to present-day Louise walking in the same direction. By composing these scenes together in this way, the viewer perceives the scenes as being connected. Due to the Kuleshov effect, the viewer thinks of Louise as a sad person that has lived through her daughters death, concluding that the prologue is

the backstory for Louise's character. Accordingly all perception of further scenes with Hannah are equally perceived as flashbacks, making Louise appear to be in mourning rather than having inexplicable visions.

## **2.3 The Appeal of the Unknown**

In reality Louise simply is a calm and timid person, that leads a sheltered, mundane life. Actress Amy Adams describes her character as having “a profound loneliness” [17, at 12:20]. And indeed she is lonely, as she, with a bit of sadness in her voice, reveals to Ian that she never had any real romantic relationships, despite her communication skills. What is perceived as grief, could just be signs of loneliness, as indicated by a scene of Louise sleeping with a body pillow.

Louise's timid character is displayed at the very beginning, when she walks by a big crowd of people gathering around a TV, too modest to see what is going on. During the evacuation of the campus Louise is so unsettled, she gets startled by a car crash. She soothes her mother on the phone, saying she should stay composed like her. But actually Louise is not all that calm and is atypically interested in the alien landings. So much so, that she spends the rest of the day watching the news, even falls asleep to them.

On the next day, stuck in her routine, Louise returns to an otherwise empty university. There she is visited by a colonel, who is searching to recruit a linguist for the army, to aid in communicating with the aliens. With her interest spiked, Louise tries and succeeds in convincing him to pick her over another candidate.

Thus the viewer gets to follow Louise on her journey to meet the unknown. Arriving at the military base, where the camera closely follows Louise through the hallways, she gets prepared for meeting the aliens. The sound of loud breathing when in the hazard suite gives a sense of involvement and proximity to the viewer, as do the closeups of Ian and Louise touching the strangely shaped spaceship for the first time.



## 2.4 The Light

During the encounters with the aliens, light is used as a metaphor for familiarity, while its absence is accordingly used for the opposite, the unknown. The spaceships are thus dark, with an equally dark tunnel leading upwards into their inner sanctuary. In contrast to this darkness, the familiar faces of the human task force are lit up by the lamps built into the hazard suits,<sup>2</sup> which also allows to read the characters facial expressions and thus emotions. At the end of the tunnel is a big, bright white barrier, separating humans and aliens. Its shape parallels that of the big window front in Louise's studio apartment, that is prominently featured in the opening shot and subsequent shots later on. Maybe this familiar shape is what leads Louise to build up enough trust and take off her helmet during the third encounter,<sup>3</sup> resulting in the first actual successful communication.

When the aliens arrive for the first time, the familiarity of the white barrier is shrouded in darkness and fog. The aliens are not fully visible, blurring out into mist, as if their mysterious aura is clouding the light. Only later, after Louise dares to step into a completely dark monolithic elevator and is transported to the other side of the barrier, the full shape of the aliens can be seen. There, beyond the barrier, the fog allows a white blinding ambient light to shine through. It is also there that Louise has her revelation, now understanding the capabilities that the Heptapod language gives her.

This understanding is visualized through the metaphor of light: In a vision Louise is standing in her apartment. The background consists of the wide window front, which is closed off by a curtain. She looks at the shining ceiling lamp, the only source of light in the scene. As the camera simultaneously pans and moves from behind Louise towards her front, Louise turns from being a mere shadow to being illuminated. She is now familiar with the Heptapod language, understanding where the visions come from. Her fear of the future is taken away. But the closed curtain symbolizes that she will not receive any more help from the aliens, she is on her own now.

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<sup>2</sup>Despite such lights being impractical, as all they would achieve is blinding the helmet's wearer.

<sup>3</sup>Coincidence or subtle nod to *Encounters of the Third Kind*

## 3 Communication

In 1977 mankind launched the Voyager Golden Records, an effort to share a broad picture of humans and life on Earth with extraterrestrials. These records might be the most famous nonfictional attempt at communicating with aliens. The compilation of the records' contents was supervised by astrophysicist Carl Sagan, who later went on to write the source material for the 1997 movie *Contact* [18]. In reviews it is often named as a reference for *Arrival*, as they have many parallels: both have a strong female lead, both are calm and intelligent counterexamples to classic action-driven 'hostile aliens' movies and, most notably, both revolve around the theme of communication.

### 3.1 The Problems of Communication

In *Arrival* this theme is reflected upon in several ways. With the protagonist, Louise, being a linguist set to save the world using her academic expertise, many problems that need to be resolved by her are bound to revolve around communication. The core problems of the Sci-Fi narrative can be attributed to three different issues of miscommunication.

The central plot drive is the landing of the aliens and Louise's quest to uncover their intentions. Due to pressure by the army, Louise is forced to ask the central question of "Why are you here?" prematurely. As Louise describes it, the aliens' answer "Offer weapon" is ambiguous, as the shared vocabulary is very limited,. A **misinterpretation** of the aliens intentions by the nations around the globe, leads to a situation where an attack against the aliens seems imminent. The nations, having previously overcome their

language barriers to cooperate and exchange information on the aliens, start to **mistrust** each other because of unclear positions and fear of retaliation by the aliens. The third communication problem stays in the background throughout most of the movie and can best be described by its modern term, ‘**fake news**’, resulting in an attack against the peaceful alien visitors.

### 3.1.1 Misinterpretation

The misinterpretation of the aliens’ message is quite clearly caused by a language barrier. Much like its counterpart, the physical barrier existing between Louise and the visitors, it most likely stems from a fundamental difference between humans and aliens. Not only do the aliens need a different composition of atmosphere to breathe, they also are portrayed to live lives greatly distinct to human lives. While Louise, Ian and the military crew stand on their side with a vastness of technology and protective hazard suits, the Heptapods are just there, without any tools or utilities. The only ‘technology’ that they seem to have, are the big pebble-shaped spaceships they came in, which by comparison with classic depictions of UFOs in other works of science fiction, don’t have a particular technological feel to them either. Instead the spaceships, as well as their navigators, appear mysterious. This was very well intended according to director Villeneuve, who wanted the aliens to have a “strong instinctive presence” much like a whale or an elephant [10, at 5:15].

From the perspective of the aliens, offering a ‘weapon’ could have a clearly defined meaning, since their language apparently is the only tool they possess. It is even foreshadowed that this ‘weapon’ is language, when Ian is introduced and reads the preface of Louise’s book, quoting her that language “is the first weapon drawn in a conflict”.

### 3.1.2 Mistrust

The military has an equally limited perspective. From the get go it is suspicious of the aliens intentions, even fearing the atmosphere in the spaceship, in which humans are able to breath, is a trap to eventually suffocate sent messengers. The army also restricts Louise to only using a predefined list of words, in fear that if given too much knowledge about mankind, the aliens could abuse that information. It is quite possible that this lack of vocabulary led to the ambiguity of the received message “offer weapon”, which the different nations of Earth promptly interpreted to mean many things, ranging from a demand to be offered a weapon by humans, to the starting signal for a global *Battle Royale* [19] among all nations.

With the military’s mistrust fired up across all landing sites, the established international communication via video telephony comes to a halt. The used setup of communication allowed for facial expressions and gestures to aid in overcoming the language barrier. It shows that the military has insight into the importance of using multiple communication channels, and knows not to limit communication to audio or text feeds.

Thus it seems surprising that the nations abruptly stop communication, as, much like the famous idea attributed to Paul Watzlawick, “One cannot not communicate”. A blocked channel clearly states the loss of trust in the other party. Since the army is afraid of a retaliation by the aliens, not communicating with other befriended nations would be disadvantageous. Even in a scenario where the aliens plan to rile up the nations into waging war against each other, a blockage of communication does not pose any advantage<sup>1</sup>. However, it can be argued that on an emotional level such a reaction is very likely, as the uncertainty of this strange, never before existing situation can lead to anything. Especially when the public is panicked and the people making the decisions are forced to react.

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<sup>1</sup>The conclusion of the Cold War: There would not be any winners in a world with the number of currently existing nuclear weapons.

### 3.1.3 ‘Fake News’

Indeed it is shown at several points that the public is panicked about the arrival of the spaceships. The subplot involving Captain Marks, and several minor characters of the military, is strongly related to this. In an attempt to kill the invaders, Marks launches an unauthorized offensive by placing a bomb inside the spaceship. This causes the only violent action scenes of the movie: the explosion of the bomb, killing one of the aliens and endangering Louise and Ian, and the off-screen shooting of the rebelling soldiers.

How Marks and his men got to the point of despair that led them to these actions, can be seen in short scenes scattered across the story. Shown media coverage of the spaceship landings is often speculative and sensational, fueling public hysteria. Presumably shaken up by such reports, Marks’ partner calls him, telling him how she is scared and distressed and he has trouble calming her down. Later on, Marks himself looks very unnerved during the scenes in the alien spaceship and notably wants to quit the session when Louise takes off her hazard suit. But the most striking scene that hints at the later fallout features Marks and another soldier watching a ‘fake news’ broadcast show.

The show parallels *The Alex Jones Show* in many ways, picking up on elements such as the aggressive undertone, an unstoppable rage against the government and strong pro-gun views. The actor of the show host also bares a strong resemblance to the real life host. The video stream is surrounded by advertisements, mostly for guns, another on point caricature, as most such websites operate by using the traffic they generate with ‘fake news’ to make money through advertisements<sup>2</sup>, leading to high income for little effort [20]. The snippet of the show ends with a call to arms against the aliens, over which Marks and his comrade exchange affirmative glances. Instead of merely sharing the show with others, which would already be problematic enough and one of the major issues that helps the vicious circle of ‘fake news’ to continue [21], Marks follows through on the propagated preemptive strike against the aliens.

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<sup>2</sup>Or in case of *The Alex Jones Show*, selling overpriced goods that can’t hold up to their claimed effects.

Comparing the depiction of 1950s society in *The Day the Earth Stood Still* [22] with nowadays society depicted in *Arrival*, their reactions are not actually all that different. In both the invaders are met with fear and in both movies an action of the aliens is misinterpreted by a soldier, causing tension. The key difference however is the reason for the aggression. The 1950s military tries (and fails) to make short work of the aliens mere minutes after they arrived, because a nervous soldier shoots the alien when it made an unexpected move. In *Arrival*, when Captain Marks starts an attack against the aliens, this is not really caused by a misinterpretation of the alien’s actions, but due to a heavily biased world view. The possible reasons for this are manifold, but the movie shows that sensationalism of the media, global connectivity via the internet and the simplicity with which false information can be created and shared, certainly are influences.

This sociopolitical commentary, that was just as true back in 2016 during the movie’s theatrical release, can still be applied to current day time. During the 2019/2020 Corona virus pandemic<sup>3</sup>, ‘fake news’ were still a major problem [23]. Director Denis Villeneuve comments that “civilization is more fragile than ever” and that despite being more connected, it seems that mankind actually communicates less [10, at 15:31]. But unlike in *The Day the Earth Stood Still*, where the aliens leave Earth with a threat, *Arrival* ends on a more optimistic note in relation to intergalactic affairs.

## 3.2 The Resolution

In the beginning Louise is very confused by her visions, in one of them even asking Hannah what day it is. As she becomes more familiar with the Heptapod language, the visions become more frequent. She slowly learns that she can interact with the visions, which is fully revealed to her by a vision of Hannah wanting to know a specific term. After hearing the described term, ‘non-zero sum game’, in the present, she reenters the vision and thus is able to answer Hannah’s question. When she has a vision of an elevator descending from the spaceship, she instinctively acts upon it and approaches the

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<sup>3</sup>An epidemic can somewhat be seen as an invasion, just not by aliens but by viruses.

envisioned location. Inside the spaceship she then learns about the aliens actual reasons to come to Earth.

Now Louise has all required capabilities to overcome all of the three previously discussed communication issues: She overcame the language barrier with the aliens and so can come to a **correct interpretation** of their intentions. By combining her newly acquired skills of the Heptapod language with her knowledge of the Mandarin language, she is able to obtain the number of the General Shang. He is in charge of the Chinese military and has declared war against the aliens. Louise appeals to Shang's emotions, by repeating the last words of his deceased wife back at him, which she simultaneously learns in a vision. Having hereby gained the general's **trust**, Louise manages to change his mind and convinces him of peace and **collaboration**.

The words Louise speaks to Shang are not actually subtitled, but according to Heisserer, who wrote their English counterpart, translate to "In war there are no winners, only widows." [24]. A simple wisdom that resolves all previous tension and aggression, bringing the movie's Sci-Fi story to a conclusion.

## 4 Free Will

“Man can do what he wills but he cannot will what he wills.” This statement attributed to Arthur Schopenhauer is but one of many views that have been expressed on free will. With the Heptapod language enabling its speaker to see the future, *Arrival* also touches on the subject. How can there be free will, if the future is inevitable and determined?

### 4.1 The Mind

The answer given in the original short story, *Story of Your Life*, can be classified as a compatibilist one, dismissing neither free will, nor determinism. Instead it states that these are simply two sides of the same coin: “freedom is not meaningful, but neither is coercion” [9, p. 33]. Since the Heptapods have a different perception of time, they have no concept of causation and consequently no need for free will. When learning the Heptapod language, Louise transforms from having a “sequential consciousness” to a “simultaneous consciousness” and thus loses her free will. Becoming just like the aliens, she does not possess the ability to share her knowledge of the future with anyone.

*Arrival* clearly deviates from its source material on this matter, as Ian and Louise break up precisely because Louise tells Ian about Hannah’s grim future. Screenwriter Eric Heisserer comments, that he did not want the same deterministic setup and wrote Louise to have “a little more control over that space” [25, at 6:10]. He wanted Louise to be able to make choices, which is why she can interact with the visions. But despite Heisserer stating that he believes that Louise “did change some things” [25, at 5:00], all those



changes did not alter anything, as the visions are fixed events guaranteed to happen in the future. They therefore behave like the predictions made by the Oracle of Delphi in classic Greek stories.

If the visions are the predictions, then the Heptapod language must function as the oracle itself. But how is such an oracle supposed to work, let alone how is a language supposed to induce such a way of thinking? Taking a step back will help in finding a perspective.

The human mind and its inner workings have been described in many ways throughout history. The current scientific point of view has uncovered much of the functionality of the human brain, from biochemical processes, to localizing different brain activity functions in certain cerebral areas. But a definite description of how the mind works and how consciousness is created in it, still does not exist.

Many see AI, artificial intelligence, as a possible approach to learning how to create consciousness. The possible connection has long sparked interest in the arts to reflect upon it. Popularity of works such as Spielberg’s *A.I. Artificial Intelligence* (2001) [26] or current day’s TV series *Westworld* (2016-ongoing) [27], reflect a broad interest in the topic. The computer game *The Talos Principle* (2014) [28], which has a strong focus on free will in AIs, draws its inspiration from the story of Talos, an ancient Greek mythological figure. Created by the gods for the sole purpose of protecting an island, Talos was a conscious robot, which shows how old the idea of conscious machines is.

In an interview on his involvement with *Arrival*, Stephen Wolfram compares extraterrestrial communication with communication with AI. “They’re both cases where we’re dealing with an intelligence that doesn’t have the same historical lineage that ours does.” [29]. So looking at ways that AIs think in, can help to understand how a human mind altered by an alien language could think.

Unfortunately the most common current forms of ‘AI’ are simple neural networks. They are still far from having any sort of consciousness and are only capable of ‘learning’ on the basis of training sets. The information received by the training sets is memorized,

‘learnt’, and can be used to later process new information in the light of the previously created processing structure.

This structure is the way in which neural networks ‘think’ and it can be observed via visualization techniques. These have existed since 2015 [30] and are commonplace by now, even popularized with user-friendly interfaces such as `deepart.io` [31]. The graphical results they produce are a strange sight to behold. They usually are a mixture of noise and recognizable elements woven into it, giving them a psychedelic, dreamlike aesthetic.

So if even the ‘thought processes’ of such comparatively simple mechanisms already have such complex patterns, then surely the ways in which a human brain can work, with its approximately 100 billion neurons and millions of years of evolutionary refining, are not all that limited. Still there are historic reasons for the human brains working the way it does. Maybe the passing of time and the principle of causation are just ‘programmed’ into a human brain, much like into any animal, because such thinking posed an evolutionary advantage?

## 4.2 The Heptapod Language

The Sapir-Whorf hypothesis, as it is referred to in the movie, also known as the hypothesis of language relativity, states that the language a human speaks, to at least some extent, shapes how that human thinks. Like *Story of Your Life*, *Arrival* uses this hypothesis to argue that learning a radically new language, like the alien Heptapod, can change the patterns in a human brain so drastically, that a different perception of reality is possible, even while still being confined to the same ‘hardware’, the same neuron-based brain.

Changing the brain’s perception of reality is not the interesting part though, as similar experiences can be experienced through intensive meditation or psychedelics. The main difference is that Louise’s brain, by simply subconsciously processing and learning the Heptapod language, already produces visions of the future. This is supported by the scene in which Louise is so sleep-deprived that the visions mix with the reality of the

present. The weariness causes her to hallucinate and see one of the aliens standing in front of her in the military camp, foreshadowing a later scene where the alien actually does stand right in front of her. When Louise is rested, the visions don't mix with the present, but she still goes into a state of transcendence during them and acts in the envisioned future as if it was happening in the present.

Jessica Coon, a linguist professor who was involved with *Arrival* as a consultant, states: "As linguists, we are very skeptical of this idea that your thought processes could be radically altered or determined by learning another human language." [32, at 13:34]. However, Coon would not strictly rule out the possibility that an alien language vastly different enough from any human language, could use the mind in a completely new way, requiring a radically different way of thinking. She points out though, that for such a language to have any impact on Louise, it would have "to be similar enough or understandable enough that she is able to learn it." [32, at 12:28].

Heptapod attempts to be 'alien' and fundamentally different from existing human languages, both in its appearance, using logograms for whole sentences, and in the way it functions. According to director Villeneuve, the production team created a foundation of basic vocabulary for Heptapod and a guide on "how the words are constructed" [10, at 12:40], so there actually are comprehensible rules for the language. Professor Coon, who was tasked with annotating and trying to translate some of the produced logograms, summarizes that the language "is art" [33]. The logograms circular form fits the recurring theme of circles, which is scattered throughout the whole story.

Overall *Arrival*'s concept of an alien language that drastically alters its speaker's perception of the world is not too far-fetched. However, for this to impact the perception of time as strongly as depicted, needs an assumption that time is not a fixed property of the metaphysical world. The movie makes this assumption, wherefore the concept of the Heptapod language and its influence works coherently in-universe. But what implications does this have for the characters' free wills?

## 4.3 The Choices

The following is an analysis of how and on what basis characters make decisions during the story and whether they act the way they do because of free will or because they are determined to. As what lead Captain Marks to make the decision of placing a bomb inside the spaceship has already extensively been dealt with in the previous chapter, the remaining three major choices to be investigated are:

- The Heptapod's choice to come to Earth.
- Ian's choice to leave Louise.
- Louise's choice to have Hannah.

### 4.3.1 Abbott and Costello

Ian nicknames the two aliens, Abbott and Costello, after the American comedy duo. The names are another example of foreshadowing, as the duo is most famous for their *Who's on first sketch?* routine [34], which revolves all around miscommunication, much like the message received by the aliens, 'Offer Weapon', is misinterpreted by the army.

Not much is known about the alien visitors' intentions until Louise meets Costello alone, Abbott having died from the bomb attack. There they reveal that their mission is to give mankind the gift that is their language. In the movie the reason is given as "In three thousand years - we need humanity help". The final shooting draft of the script contains a different phrasing of this scene, more fitting with the timeless way in which the aliens think, but it was probably cut due to length. There Costello replies with "Three thousand years from this point, humanity helps us. We help humanity now. Returning the favor." [35, p. 102].

The reason the aliens are on Earth, is thus simply because it is necessary for history to play out the way it will. They need to travel to Earth, so that the people of Earth can in return help them 3000 years in the future. Or the other way round, since mankind helps

them, they need to help mankind 3000 years before that. Much like in the short story, the aliens in the movie adaption don't have any sort of free will and no need for it either. They merely act like pawns, enacting the history they know will happen.

A good example of this is the last encounter with Abbott. Louise is encouraged to draw a logogram on the barrier, but since at that point she still has a linear perception of time, she can only draw it starting from one side. Abbott steps in and, without Louise ever stating what she intends to draw, completes the other half of the logogram. A further example is how the aliens move their spaceship in the exact right moment. When Louise suggests going back to the spaceship and apologizing for the attack, it moves at precisely that moment. In the same way the spaceships leave Earth at the very moment the military tension is resolved. Yet another, albeit darker, example of this is Abbott knowing of their death, but having no way of preventing it.

#### **4.3.2 Louise and Hannah**

As previously discussed, before Louise got hired to communicate with aliens, she led a very sheltered and mundane life. By learning the Heptapod language Louise gets over her fear of the future, and “despite knowing the journey and where it leads”, embraces and welcomes “every moment of it”. With Ian and Hannah she will finally be loved and feel alive, things that she is deeply missing in her current life. As the famous quote by Alfred Tennyson goes, “’tis better to have loved and lost than never to have loved at all” and thus for Louise all the happy times to come greatly outweigh Hannah dying.

But even if Louise embraces her future with Hannah, her choice merely ‘coincide’ with the determined future. At no point was there a possibility to decide against having Hannah, so it can not be said that Louise acted upon free will. Still it is due to her will that the future plays out in this predetermined way. Thus she seems to only partly behave like a Heptapod, as she is enacting history the way she wants it to happen.

So, much like in Schopenhauer's quote from the beginning of this chapter, Louise can not will what she wills, but she can still will. And as the outcome is the same, the answer to the question of whether free will exists in *Arrival* or not, is no. But this does not impact the characters, as their 'simulated' free will is all they need.

### 4.3.3 Ian and Louise

Through her visions, Louise knows that Ian eventually breaks up with her. He does so, because Louise tells him of having learnt from another vision, that Hannah will die at a very young age. Since the vision simultaneously is both the source of information, and a guarantee that it will come true, Ian by believing the vision also knows that Louise can not alter this future. Yet he blames Louise for having made the wrong choice. This error in logic is very apparent, so assuming it is not simply a plot hole, then why does Ian react this way?

Louise is an introverted linguist, knowledgeable about communication and other cultures, able to speak several languages including Farsi and Mandarin. Ian on the other hand is portrayed as an outgoing physicist, experienced in sciences, especially maths and theoretical physics. From the first time they met, Louise and Ian are an unlikely couple. Indeed the first words they exchange are over whether science or language is the foundation of society.

When accusing Louise of having made the wrong choice, Ian does not need to regard whether free will exists. The choice that he disagrees with was still made by Louise, it just so happens that she knew beforehand that she was going to make it. And just like the knowledge about living in a deterministic world does not change anything about the responsibility for choices, neither does it change the validity of feelings. And Ian's choice to leave Louise is as fueled by emotions, as are the choice of Captain Marks to attack the spaceships or that of Louise to have Hannah. All these choices might be determined, but they all are deeply human.

## 5 Conclusion

“No other art can fix time except cinema. So film is the mosaic of time.” *Arrival* uses its ability to fix time, as Andrei Tarkovsky describes the process of movie making [36], to tell its emotional story in a way, that almost unifies the protagonist and the viewer. Both simultaneously learn that they already know the ending of the story, robbing them of the possibility to just walk away and shut their eyes from the future.

The cover of this seminar thesis features a visualization of *Arrival*’s “mosaic of time”, a logogram that in a clockwise order contains all flashforwards placed as they occur during the movie. The logogram also starts and ends in the same position, a theme heavily used in the movie. Examples include the name Hannah, the chronological end and beginning of the story being so alike that they are shown in direct succession and the prologue and the epilogue opening with the same shot of Louise’s ominous window.

The story of *Arrival* explores many different topics, such as ‘fake news’, fear of the unknown and free will, but it does so in a natural way with the feelings and emotions of the characters always being valid and relatable. The movie ends with the protagonist embracing the inevitable and not fearing the future anymore. Throughout the movie the protagonist and the viewer are set up the same way. Just like *Arrival* mirrors the arrival depicted in itself, what if the protagonist also mirrors the viewer? The description from the beginning still holds valid:

Life before and after the *Arrival* is the same. The alien spacecrafts appear out of nowhere and disappear in the same way. They do not bring any scientific or technologic insight, but a message that relieves those who comprehend it of their fear for the future.

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