Darmok and Jalad on the Internet:

The Importance of Metaphors in Natural Languages and Natural Language Processing

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### Shaka, when the walls fell

“Darmok”[[1]](#footnote-1) is the second episode of the fifth season of *Star Trek: The Next Generation* (1987-1994), in which the Enterprise is unable to establish meaningful communication with an alien vessel. As it turns out, the Tamarians have been previously contacted by the Federation, but to no avail; even though the universal translator could have translated their words, those words were pointing to unknown cultural metaphors, history, and mythology. In “Darmok,” the Tamarian captain Dathon transports himself and Captain Picard to an unknown planet. Picard soon discovers there is a hostile creature in the area. Picard ultimately recognizes Dathon's words of “Darmok and Jalad at Tanagra”[[2]](#footnote-2) as an allegory of two people fighting together against a common enemy. Before Dathon succumbs to his wounds from the creature, Picard recounts the *Epic of Gilgamesh*, paralleling the story of Darmok and Jalad. After fighting with the hostile creature, Picard is transported back to Enterprise, and he uses his newfound knowledge to communicate with the Tamarians, employing metaphors.

Data had claimed that “communication was not possible” with the Tamarians and noticed that they seemed to be stating proper names of individuals and locations, which does not mean anything without the context—for example, “Rai and Jiri at Lungha,” "Unzak and Vhila as children,” or “Zima at Anzo,” “Zima and Bakor,” and “Shaka, when the walls fell,” along with “Darmok and Jalad at Tanagra.”[[3]](#footnote-3) Troi finds that the Tamarians communicate through narrative imagery, referencing individuals and places in their mythological and historical accounts. She compares such utterances to, for example, “Juliet, on her balcony,”[[4]](#footnote-4) which would signify an image of romance.

In the end, Dathon sacrifices himself in order to establish communication. It is no wonder that ideas and concepts used in this episode might be of great interest not only to film scholars, but also linguists and philosophers, pinpointing two ideas: 1) different communication codes in various cultures and 2) seemingly inherent metaphorical imagery. Regarding the first point, “Darmok” (1991) illustrates notions from cognitive linguistics that fully emerged only a couple of years earlier with the advent of cognitive linguistics. Before Lakoff and Johnson's influential book *Metaphors We Live By* (1980) and Lakoff's *Women, Fire, and Dangerous Things* (1987), linguistics did not focus on researching different conceptualizations in different cultures; mainstream general linguistics was mostly oriented on grammatical features: phonology, morphology, and syntax. The emergence of cognitive linguistics started the inquiry into different ways of communicating, instead of putting the Indo-European languages and cultures at the center of linguistic and philosophical research. *Star Trek* unexpectedly was following the most recent ideas in applying surprising differences in various human societies to a possible galactic scale. It is no wonder that “Darmok” has been used by linguistics[[5]](#footnote-5) and philosophy[[6]](#footnote-6) teachers to aid in students' understanding about how languages work and evolve and how different types of communications might arise in the universe.

Second, cognitive linguistics started focusing on metaphorical imagery as a way to better observe different conceptual metaphors seen in language in our everyday lives, that serve not only to communicate, but also to reflect and shape the way we think and act. At the same time, cultural studies continued to analyze the heritage of various societies, joining forces with linguistics as a way of describing how humans behave as individuals and as a group. “Darmok*”* provides us with an example of an unknown alien culture that might reflect a certain human society as well, highlighting different modes of communication that may seem alien to us.

*Star Trek* successfully applies new scientific research in many of the topics included in various episodes. For example, *The Next Generation*’s episode “The Measure of a Man” (season 2, episode 9) illustrates the advent of ethical problems in artificial intelligence.[[7]](#footnote-7) In the same way, “Darmok” uses the latest research in linguistics, philosophy, and cultural studies to provide a new look on phenomena previously thought to be firmly established and explained, proving that their foundations might still be shaken.

Historical context

Correspondence between *Star Trek* writers Joe Menosky and Michael Piller shows that their emphasis on language barriers focused on “very different modes or styles of consciousness.”[[8]](#footnote-8) Menosky mentions the monograph *The Origin of Consciousness in the Breakdown of the Bicameral Mind* (1976), written by the Princeton psychologist, psychohistorian, and consciousness theorist Julian Jaynes.[[9]](#footnote-9) The book addresses the nature of consciousness and the human ability of introspection. Jaynes’s conclusion is that consciousness is a learned phenomenon based on culture and language rather than biology. Menosky states, citing Jaynes’s ideas, that “ego” or self-consciousness occurred about 5,000 years ago during the rise of the Egyptian civilization, and it might seem inconceivable to us today that such a civilization might have existed without anybody thinking “I am going to do X" or “I feel Y.”[[10]](#footnote-10) This seems to be the original motivation for the story of “Darmok.” Even though such a statement is certainly far-fetched from a historical linguistics point of view,[[11]](#footnote-11) the main idea still stands: we still do not know much about the development of consciousness, nor how it might evolve in another species. However, we are aware of different kinds of conceptualization and their necessary links to background cultural practices.

Menosky also connects this notion to the context of a myth, in which the hero acts in ways that sometimes seem irrational but eventually lead to the goal. Menosky interprets this as a “mythic” style of consciousness, in which an alien individual will shift between “dominant styles of self-consciousness.”[[12]](#footnote-12) Such a mythic context will be elaborated through the use of metaphorical imagery, similar to the one present in human cultures (for example, “Hercules in Hades”). In order to better understand how a different kind of consciousness might arise, we must first inspect the very notion of conceptualization of our everyday experience.

### Cultural metaphors

The turning point in linguistics towards cognitive-oriented stances came in 1987 with George Lakoff's book *Women, Fire and Dangerous Things: What Categories Reveal about the Mind*.[[13]](#footnote-13) Lakoff is a prominent linguist; his main goal in this book is to pinpoint the centrality of the metaphor. For Lakoff, thought is imaginative. Concepts that are not directly grounded in experience employ metaphor, metonymy, and mental imagery, all of which go beyond literal mirroring.[[14]](#footnote-14)

For Lakoff, an idealized cognitive model is a phenomenon of mental space in which knowledge represented inside as a conceptualization of experience does not have to be congruent with reality.[[15]](#footnote-15) For example, our notion of a week is idealized, because seven-day weeks do not exist objectively in nature, and not all cultures have the same kinds of weeks. Another basic characteristic of cognition is metonymy, in which a thing or a concept is referred to using an expression closely associated with such a thing or a concept. For example, in the phrase “The White House isn't saying anything,”[[16]](#footnote-16) “The White House” stands for an institution located at that place. Lakoff states that a cognitive model may allow salient examples to stand metonymically for a whole category.[[17]](#footnote-17) For example, if you remember one bad earthquake, you will generalize your knowledge to other earthquake examples, or if you have just one vegan friend, you might want to deduce dietary choices of other vegans from that single, well-known example. We can see Tamarian narratives appearing as metonymic salient generalizations and applied to future or past events as the most prominent members of such a category.

However, to do that, we must first employ the notion of a prototype. The seminal work of American psychologist Eleanor Rosch on prototypes distanced the new theory of categorization from the standard Aristotelian sense, in which categories were considered fixed and somewhat universal.[[18]](#footnote-18) Here, for each conceptual category, there is a graded degree of belonging to a category; some members are more central than the others. Of course, this is culturally specific. For example, for the category of fruit, a prototypical fruit in Europe would be an apple, and a less prototypical one a passionfruit, a papaya, or even a banana. If we consider the category of birds, penguins or emus are edge cases, while sparrows and pigeons seem more central, i.e., as the prototype of a category. In the Tamarian case, the whole category of narratives and events might be brought down under a common denominator of the mythological friendship of Darmok and Jalad at Tanagra. The instantiations such as “Picard and Dathon at El-Adrel”[[19]](#footnote-19) are members of the same categories of narratives for which the central prototype is the story of Darmok.

There are various ways in which we could see some universal (i.e., humanuniversal in this case) metaphors—for example, concepts like MORE IS UP or ANGER understood in terms of HEAT or PRESSURE,[[20]](#footnote-20) cf. “blow a fuse,” “hot under the collar,” “hit the roof,” or “blow off some steam” in English and other languages. Such conceptual metaphors[[21]](#footnote-21) transfer knowledge from source domain to the target domain. If we have knowledge about HEAT OF FLUID IN A CONTAINER, which is our source domain, then we can transfer a rich system of entailment to the target domain of ANGER, cf. “bursting with anger,” “anger is building up,” or “all steamed up.”[[22]](#footnote-22) In the Tamarian universe, the knowledge of source domains in mythological and historical accounts helps them to use the same expression while talking about other past, present, or future events. In such cases, historical events designated by expressions such as “Rapunki, when he joined the Seven”[[23]](#footnote-23) would act as source domains, where similarly derived metaphors or idioms could be used for target domains, i.e., other similar events.

Tamarian communication therefore can be seen from both metonymic and metaphorical stances. First, we can observe them as members of the same category, in which the standard utterances are used as prototypes of the category. “Darmok and Jalad at Tanagra” is a prototype of a category, while “Picard and Dathon at El-Adrel” is a non-central member.[[24]](#footnote-24) However, a non-central member can become a prototype of its own category—for example, a category of utterances or events depicting joined forces, unable to communicate, but fighting against a common enemy. Second, we could see similar derivatives as source-target mapping from different domains, i.e., conceptual metaphors. The usage of such utterances would be a certain mapping from idealized conceptualizations to their pragmatic applications.

Since metaphors and metonymy are a standard way of communicating in human cultures, it is interesting to observe how different conceptual metaphors might be either universal or culture specific. This again illustrates the possibility that a different alien race might have a different set of conceptual metaphors and categorization present in their language, reflecting a different state of conceptualization and consciousness.

### Mental and linguistic imagery

In perception, memory, language, emotions, and action-execution, mental imagery plays a significant part.[[25]](#footnote-25) Of course, mental imagery is not necessarily visual, since there are people suffering from aphantasia, unable to visualize mental images.[[26]](#footnote-26) The narrative aspect or different perceptual phenomena could be a part of mental imagery as well. This seems to be the case with the Tamarian culture. If one is using metaphorical utterances established ages ago, one has no connected mental imagery formed from experience, since a contemporary Tamarian would not remember how exactly Darmok and Jalad acted at Tanagra. The overall image would be a composition of narrative accounts and one’s conceptualizations of such prototypical events, similar to how “Juliet, on her balcony”[[27]](#footnote-27) would have a different balcony, a different Juliet, or a different manifestation of passion for various speakers in various cultures.

It is interesting to see how a simple story could be the source of various metaphorical, prototypical utterances. The same way we could get “Juliet, on her balcony”[[28]](#footnote-28) as an image of romance, we could get “Juliet, with her potion” as a way of pretending to be something else—in this case, dead. It is interesting to note that on their first meeting, Romeo and Juliet used metaphorical communications, especially metaphors of saint and sins, because religious metaphors of saints, shrines, prayers, and pilgrims were fashionable in poetry of the time.[[29]](#footnote-29) When Romeo says “my lips, two blushing pilgrims, ready stand,”[[30]](#footnote-30) he is employing a metaphor to appear innocent and not blasphemous. And “it is the east, and Juliet is the sun”[[31]](#footnote-31) shows a typical example of mapping from the source domain (qualities and properties of the SUN) to the target domain (WOMAN). The Tamarian mode of communication could be compared to such expressions, but with different intentions. Our language is not always describing reality as it is, and the Tamarian mode of communication is just an extreme version of our own cultural tendencies to use metaphors in our daily lives. Therefore, mental and language concepts are a gradual category itself, where regular language use without metaphors or metonymies is at the lower part of the spectrum, while a fully metaphorical and metonymic language is at the upper part of the spectrum. In modern linguistics, most of human communication would fall somewhere in between. Metaphorical imagery has been shown to be commonplace in human languages and cultures, and so it is reasonable to expect different extremes in possible alien civilizations, including an encounter with the Tamarians.

Memes and languages

The word “meme”appeared in the book *The Selfish Gene*, written by the evolutionary biologist Richard Dawkins, and refers to any cultural entity that could be compared to a gene which acts as a replicator. [[32]](#footnote-32) A meme can be a self-replicating unit of transmission, because cultural transmission is analogous to genetic transmission, since it can give rise to a form of evolution.[[33]](#footnote-33) Such cultural transmission is not unique to humans; for example, there are bird songs transmitted between the birds in various territories. For human beings, examples are tunes, ideas, catchphrases, clothing fashions, and ways of making pots or building arches.[[34]](#footnote-34)

An omnipresent example of such a replicator is the internet meme, which is an idea, image, behavior, or style spread via the internet through portals and social media platforms, usually for humorous purposes. Some classic examples include Condescending Wonka, LOLCats, Squinting Fry, Success Kid, Grumpy Cat, and many others. Shifman considers intertextuality as a fundamental attribute of internet memes, because memes often relate to each other in complex, creative, and surprising ways.[[35]](#footnote-35)

In “Deja Q” (*The Next Generation*, season 3, episode 13),[[36]](#footnote-36) Q explains how he has been stripped of his powers, while Picard reacts with annoyance and puts his palm over his face. Various “facepalm” memes started, representing a combination of humor and disbelief, dismay, embarrassment, and similar emotions, and such an image was accepted as a new emoji in 2016.[[37]](#footnote-37) Madeline Vasaly has noticed that a Twitter user has compared the pop-culture reference communication of the Tamarians to meme usage on the internet; [[38]](#footnote-38) for example, just saying “Picard facepalm” or “kanyesmile.gif” gives the knowledgeable internet user the specific emotion conveyed when he first saw the picture or video, or heard a certain story, in the same way an image of “Kiteo, his eyes closed”[[39]](#footnote-39) could be a Tamarian (pop) cultural reference, known to almost everybody.

According to Vasaly, linguist and writer James Harbeck has stated that it is difficult to consider a civilization that would build spaceships if the language was made only of “lexicosemantic icebergs.”[[40]](#footnote-40) He suggests that it would be more plausible to see the references used in “Darmok”as a certain ceremonial register—for example, a type of language used in diplomacy. If you do not know the story about Shaka, it will not mean anything to you, in the same way that memes will not if you do not possess the adequate background. Vasaly also provides us with Gretchen McCulloch's account that the usage of idioms and phrases have a certain “Darmokian flavor” to it.[[41]](#footnote-41) McCulloch, a linguist studying the language of the internet, observes how different language styles develop in the modern era, including the connection with internet memes. The mentioned Darmokian statements are present outside the internet as well. McCulloch asserts that one could, in a conversation, say “a bird in the hand,” and the speaker used to such a phrase would immediately know the desired effect.

Building upon this idea in another context that seems even more Darmokian, consider language learning. If a certain learner of English as a foreign language would encounter an idiom or a metaphor previously unknown to her, she would be as stupefied as the crew of Enterprise when first hearing completely metaphorical discourse. For example, “a bird in the hand” would, to an unfamiliar learner, seem like a descriptive utterance; “it is raining cats and dogs” might seem like an environmental disaster; and “he kicked the bucket” could seem like an expression of anger or clumsiness. To an English speaker reading this text, it is certainly intuitive what phrases like “it's a piece of cake” or “it's no picnic” mean, but if you encountered *pagar o pato*, “pay the duck” in Portuguese, or *att glida in på en räkmacka*, “to slide in on a shrimp sandwich” in Swedish, you probably would not know how to respond. (The first refers to taking blame for something you did not do, while the second refers to somebody who didn't have to work to get to their current position.)

Such phrases illustrate how we use pictorial imagery on a daily basis, without abstract concepts of such metaphorical imagery and its conceptualization to explain them, and even without always being aware of its symbolic background. Cultural memes or even internet memes can be seen as culturally anchored imagery, where the context is well known and dispersed inside a group. This reflects the situation in Darmok, in which images of Darmok and Jalad automatically convey the desired message, because the pragmatic conditions of the background knowledge support its understanding.

Kiteo, his pants on fire

According to Vasaly, McCulloch mentions that China Miéville’s 2011 novel *Embassytown* features a people named Ariekei, who make extensive use of similes.[[42]](#footnote-42) Their language does not allow for lying, however. Hence, all similes must be based on real events, leading to the practice of recruiting people to stage the so-called literal similes when someone decides they need another idiom, phrase, or expression.

Applying this notion to the Tamarian language, if all of the communication is built upon past, prototypical experiences, then it would be difficult to imagine the origin and evolution of such a language. We would need to presume a certain kind of evolution from a descriptive to a fully metaphorical language over time, which is not difficult to picture, since human beings first learn from their direct experience, forming constative utterances without idioms or metaphors. In this case, the evolution of an alien language would actually follow the process of learning or acquiring human language, but it would go beyond the regular human stage of a mostly descriptive language with few metaphors to become a full-metaphorical system.

There is a second issue at stake here connected to the Ariekei. If a Tamarian wishes to lie, then he would have to use wrong imagery for a statement. For example, instead of saying that your soldiers lured the enemy in close rank by stating “Uzani, his army with fists closed,” you could lie about the tactics, saying they spread out their forces and using “Uzani, his army with fists open.”[[43]](#footnote-43) Instead of signifying anger, pain, or conflict with “Zinda, his face black, his eyes red,” you could downplay the severity by using “Kiazi's children, their faces wet.”[[44]](#footnote-44) What if you do not possess the adequate imagery for your story? You could either use an inappropriate prototype to describe a certain event (“Darmok and Jalad at Tanagra”), or you could invent a new one (“Picard and Dathon at El-Adrel”),[[45]](#footnote-45) hoping it would spread like a meme inside the culture.

It might seem counterintuitive to lie not about the facts, but instead about the connections with the imagery or context; however, a similar typological phenomenon is present in natural languages. The notion of evidentiality refers to a grammaticalized evidence for a given statement.[[46]](#footnote-46) Unlike epistemic modality, which can be omitted (cf. *probably, allegedly, certainly*), evidentials are a part of grammar—for example, certain affixes. In Tuyuca, such use is obligatory. Compare these examples:[[47]](#footnote-47)

1. díiga apé-wi

soccer play.PERFECT-EVIDENTIAL (visual)

He played soccer [I saw it].

1. díiga apé-ti

soccer play.PERFECT-EVIDENTIAL (non-visual)

He played soccer [I heard it, but did not see it].

1. díiga apé-yi

soccer play.PERFECT-EVIDENTIAL (apparent)

He played soccer [I saw proof for that, for example, footprints on the grass].

1. díiga apé-yigɨ

soccer play.PERFECT-EVIDENTIAL (reported)

He played soccer [someone told me].

1. díiga apé-hĩyi

soccer play.PERFECT-EVIDENTIAL (reported)

He played soccer [I presume based on my knowledge of his practices].

In such languages, you could lie on two grounds. First, you could say a true statement and provide a wrong evidential. For example, “Juliet is on her balcony”[[48]](#footnote-48) could be a true statement, but your evidential might be incorrect; instead of you hearing it from somebody else, you could say you saw it. Second, it could be vice versa; you could have a false statement, but a correct evidential. For example, “Juliet is in the forest” and a correct evidential of “I heard it,” but she is not in the forest at the moment.

How would a Tamarian lie? It would be similar to providing a wrong evidential. For example, if your army did fight with the enemy in a certain way, that would still be a true fact, but your choice of imagery to describe it would function as a certain reported evidential. For example, if you win, you could use a metaphorical image stating that you indeed have won, but you could also exaggerate your victory by using that one in particular. You still had won, but the nuance would be different. Or, if you had lost, you might mitigate the situation by choosing a “stronger” image, depending on the amount of imagery available in the Tamarian language.

Providing the source of proof for utterances seems comparable to Tamarian language, in which a speaker must provide a narrative source for each statement (or at least most of them). That way, we could see the Tamarian language as a new kind of conceptualization and grammar, in which the source of a pragmatic utterance has to be grounded in myth, i.e., cultural heritage.

Metaphors we live by

In *Metaphors We Live By*, Lakoff and Johnson argue that human thought processes are largely metaphorical, and metaphors as linguistic expressions are possible precisely because there are metaphors in a person's conceptual system.[[49]](#footnote-49) For example, metaphors like TIME IS MONEY are common in a vast majority of languages. In English, we say “*wasting* my time,” “this will *save* you hours,” or “I don't have *enough* time to *spare*,” and “living on *borrowed* time,” which does not have to be the case in every culture.[[50]](#footnote-50) Lakoff and Johnson state that each culture has some fundamental metaphorical concepts.[[51]](#footnote-51) For example, MORE IS UP, GOOD IS UP, or THE FUTURE IS UP. Every culture has its own basic conceptual metaphors that then fuel more specific applications in language.

A curious example of the Aymara people of the Andes illustrates how conceptual metaphors can differ. For most of the readers of this book, the future is going to be in front and the past behind us. You are looking forward to something, and sometimes there is no going back. Time flows in a certain forward manner, and our expressions illustrate such an inherent notion of our cultures. However, for the Aymara, the future is behind them since it remains hidden.[[52]](#footnote-52) Visual evidence is important to the Aymara, which, of course, leads to an evidential language as well. Núñez and Sweetser compare such cases to different conceptual metaphors: FUTURE IS BEHIND EGO and FUTURE IS IN FRONT OF EGO.[[53]](#footnote-53)

The Tamarian language might possess conceptual metaphors like DARMOK AND JALAD ARE COOPERATION, where various instances could be seen as source-target mapping. For example, “Darmok and Jalad at Tanagra”[[54]](#footnote-54) would refer to fighting a common enemy, while “Darmok and Jalad on the ocean”[[55]](#footnote-55) would refer to their subsequent friendship. “The river Temarc” could be a certain conceptual metaphor like TEMARC IS FURY, whereas the modification “river Temarc in winter”[[56]](#footnote-56) would build upon such a metaphor by downplaying its influence, in the same way ANGER IS HEAT could be lessened to examples like “bottled up anger” or “blue in the face.”[[57]](#footnote-57) TEMBA IS A GIFT GIVER would realize examples like “Temba, his arms wide,” but also “Temba, at rest,”[[58]](#footnote-58) describing refusal.

If human cognition and conceptualization have a metaphorical base, it is by all means, as we have seen, not universal. However, stating that there is a culturally universal metaphorical base of conceptual metaphors provides again a case for comparison with the Tamarian language. Namely, since each culture has its own fundus of metaphors, the Tamarian culture could again be seen as an extreme version of such a gradual account of conceptualization.

Mamihlapinatapai

Metaphors and idiomatic phrases are often problematic in translation studies, because not all languages possess the same metaphors or idiomatic phrases. Often the job of a translator is to find an equivalence in the target language. For example, a famous adynaton (a hyperbole insinuating a complete impossibility) would be stated as “when pigs fly,” “when hell freezes over,” or “a snowball's chance in hell” in English; then *quand les poules auront des dents*, “when hens grow teeth,” *la semaine des quatre jeudis*, “the week of four Thursdays,” and *à la St. Glinglin*, “on the feast day of St. Glinglin (a non-existent saint),” in French; and in Croatian, *na sveto Nigdarjevo*, similar to St. Glinglin in French, meaning “Never's Day.” The Romans had ad Calendas Graecas, because Calendae was the first day in the month, for which the Greeks had no name. A translator would not use a literal translation *quando i maiali voleranno*, “when pigs fly,” in Italian as the target language, but would have to find an equivalent—in this case, *quando gli asini voleranno*, involving flying donkeys.

Let us suspend our belief about the possibility of a universal translator and consider the *Star Trek* universe. According to Shapiro, the concept of a universal translator removes everything alien from alien languages,[[59]](#footnote-59) and because the Tamarian language refers only to their historical and cultural archetypes, Picard can only establish dialogue by invoking human analogues, such as Gilgamesh. The universal translator was able to translate the Tamarian speech, but it failed to translate the peculiarities, because it was doing a literal translation. The problem the universal translator faced with the Tamarian language is an extreme version of classic translation problems, in which finding just the right phrase sometimes feels like an impossible task. One of the most famous phrases linguistically is the word *mamihlapinatapai*, derived from the Yaghan language of Tierra del Fuego. Considered one of the hardest words to translate, it means “looking at each other hoping that either will offer to do something which both parties desire but are unwilling to do.”[[60]](#footnote-60) Such a succinct word could be expressed as a certain metaphor, as well, because the problem of translation would still persist, whether it was a single word, an idiom, or a narrative imagery referring to a similar event in the culturally known past.

The problem the universal translator faces while analyzing the Tamarian language for the first time would be equal to the troubles of a translator from, say, Yaghan to English, who had no knowledge of idioms or metaphors in the source language, besides the meaning of separate parts. Consider symbols we use daily. An alien would not know what to do with a symbol of a heart, because it does not much resemble the human heart (and certainly not an alien one). Something that seems so natural to us as speakers of different languages might seem illogical and unknown to other cultures. If there were a connection of the symbol with the extralinguistic reality, it might be lost over time. For example, in Ancient Egyptian,[[61]](#footnote-61) various symbols had literal meaning at first, but in other uses became phonemes. The sign usually transliterated as “a” or “ꜥ” looks like a human arm, and could refer to an arm or a limb, but it could also be devoid of its original meaning and refer to a specific sound. The same way we do not see a head of an ox in the letter A (rotated), letters, symbols, idioms, and even more complex imagery may lose its original meaning and become a part of a language structure.

The same problem faced by advanced translation systems such as the universal translator are issues for today’s natural language processing as well. Metaphors are often a significant challenge in language processing and automated translation. Such bottlenecks have been found to be translated incorrectly, resulting in semantically infelicitous sentences.[[62]](#footnote-62) For many years, computational models regarding metaphor analysis and translation revolved around hand-coded knowledge and rules[[63]](#footnote-63)—for example, a provided list of idioms or phrases in various languages. Neidlein, Wiesenbach, and Markert have shown that there is a significant doubt whether state-of-the-art models can actually learn general properties of metaphors, as the models do not seem to perform well on non-conventionalized metaphorical meanings.[[64]](#footnote-64)

It seems that modern systems can learn to handle metaphorical statements to a certain degree, but they are far from perfect. Without having either lists of metaphors or in-depth knowledge about the language structure and metaphorical collocations, automated translation would fail the same way the universal translator did while encountering the Tamarian language for the first time. Even deep learning today is not very powerful without sufficient training datasets[[65]](#footnote-65) or specific known word contexts and embeddings.[[66]](#footnote-66) If we have trouble translating known languages, then it is no wonder a different alien conceptualization, and hence an entirely different language, would pose a problem as well.

Don't cross the bridge until you come to it

Mieder defines a proverb as a “short, generally known sentence of the folk which contains wisdom, truth, morals, and traditional views in a metaphorical, fixed, and memorizable form and which is handed down from generation to generation.”[[67]](#footnote-67) The ordinary use of proverbs can be compared to the Tamarian use of historical imagery, because of proverbs’ metaphorical nature. Consider the famous saying often used as a proverb: “it ain't over till the fat lady sings.” The fat lady might have a name or not, or Tamarians might say something like “Fat lady [or a certain name]*,* she sings.” Such a saying refers to being careful about making an early judgment while a certain event is still in progress. Rössner states that we even know when the expression was first coined.[[68]](#footnote-68) It was on March 10, 1976, in the *Dallas Morning News*, during an event in which the journalist's favorite team was losing. The sportswriter referred to his conception of Wagnerian opera, in which, near the end, an overweight Brünnhilde would sing for almost twenty minutes, leading the way to the finale of the whole *Ring Cycle*. Thus the proverb was born. In short, proverbs can be seen as desemanticized metaphors used to embody different domains of the social realm of life.[[69]](#footnote-69)

The Wolayta people of southern Ethiopia use a language called Wolaytta, belonging to the Afro-Asiatic language group. The Wolayta people use a substantial number of proverbs in their language. Alemayehu states that proverbs have aesthetic function (used to decorate the language), didactic (used to introduce and transmit knowledge), normative (used to regulate societal norms), and reflective (used in regarding the nature of life).[[70]](#footnote-70) Didactic function is the most common and serves as an instrument for transmitting cultural information. In a certain way, we could see these proverbs as Dawkins's memes or as Tamarian phrases. “Rai and Jiri at Lungha”[[71]](#footnote-71) as a standard greeting in Tamarian might serve an aesthetic purpose; the “Darmok and Jalad”sayings might have both didactic and reflective uses; and sayings such as “the river Temarc in winter”[[72]](#footnote-72)might be seen as corrective or normative statements. From this point of view, the Tamarian language would be seen as a proverb-rich language, similar to Wolaytta, illustrating how different cultures employ proverbial images in different ways.

What we’ve got here is… failure to communicate[[73]](#footnote-73)

If a person refers to an event as like “Napoleon at Waterloo” and another person as “Custer at Little Bighorn,” they would be talking about a similar concept of a defeat and might not be aware of that. What both a person and a universal translator always need is the knowledge of cultural practices. Such a notion is nothing new in “Darmok;” it was just put to the extreme range of our gradual notion of conceptualization. In the late 1990s, it was common to identify people as “such a Samantha” or describe them as “a Carrie,” related to the TV show *Sex and the City*: metaphors that might (or might not) mean nothing in centuries.

*Star Trek: Lower Decks* (2020- ) depicts that, by 2381, a Tamarian named Kayshon has enlisted in Starfleet, and the universal translator is able to translate the Tamarian language to a certain degree. This was reasonable to expect, since after realizing the structure of a language and collecting the necessary data, the same process would apply as it does for human natural language processing. Even DARMOK AND JALAD AT TANAGRA, referring to problems of communication, is now a certain conceptual metaphor, one that might be lost in centuries to come and currently means nothing to a number of people who have not watched the episode. Perhaps this text will at least decrease that number a bit. Sokath, their eyes uncovered.

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4. Ibid. [↑](#footnote-ref-4)
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6. While teaching *Philosophical Issues in Cosmology and Astrobiology* at the University of Zagreb (2015–2018, with Tomislav Janović, Assistant Professor), I have also used “Darmok” to illustrate the issues in trying to communicate with possible alien races, comparable to cases of the Pioneer plaque from Pioneer 10 and 11, the golden records from Voyager 1 and 2, the Arecibo messages, and the construal of a “cosmic language” lincos. [↑](#footnote-ref-6)
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9. Julian Jaynes, *The Origin of Consciousness in the Breakdown of the Bicameral Mind* (New York: Houghton Mifflin/Mariner Books, 1976). [↑](#footnote-ref-9)
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11. In Afro-Asiatic languages, there are explicit cases of pronouns and sentences describing ego-utterances since the Ancient Egyptian phase of the Egyptian language. The Egyptian language itself, in its Ancient, Middle, or Late phase, had three sets of pronouns: independent (emphasizing), dependent (object, accusative), and suffix (personal pronouns denoting possessions or persons in verbal conjugation). The first-personusage is well documented in stories, epics, and various utterances pointing to a developed ego-stance. [↑](#footnote-ref-11)
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14. Ibid., 68. [↑](#footnote-ref-14)
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16. Ibid., 77. [↑](#footnote-ref-16)
17. Ibid., 90. [↑](#footnote-ref-17)
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19. *Star Trek: The Next Generation*, “Darmok.” [↑](#footnote-ref-19)
20. Lakoff, *Women, Fire and Dangerous Things*, 336. [↑](#footnote-ref-20)
21. Ibid., 384. [↑](#footnote-ref-21)
22. Ibid., 384-385. [↑](#footnote-ref-22)
23. *Star Trek: The Next Generation*, “Darmok.” [↑](#footnote-ref-23)
24. Ibid. [↑](#footnote-ref-24)
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