

# Embodiment in Metaphor

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## **EMBODIMENT IN METAPHOR**

### **Is metaphor grounded in embodied experience?**

Master's thesis

Mentor: Janja Čulig Suknaić, PhD

2022

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## 1. INTRODUCTION

Each word in any language carries different meanings – primary, secondary, literal, figurative. The primary meaning of a word is the meaning the word was originally coined to express and it is the first meaning or mental image the human brain jumps to when they hear that word. Primary meaning can then be expanded into different secondary meanings that are context-bound because there has to be a certain context present when a secondary meaning is used in order for that meaning to be understood successfully. Literal meaning is connected to primary meaning while figurative meaning is connected to secondary meaning. But while figurative expressions and metaphors are used to express a meaning that is not literal, that meaning can be directly connected to the primary meaning of a certain word through metaphorical extension. Figurative expressions are used in certain contexts and people who use them have to be familiar enough with the language they are speaking to use them correctly and confidently.

This paper focuses on metaphors and the human body, that is to say, how humans use their physical experience in order to metaphorically express certain concepts. This process is called embodiment, and this paper argues that embodiment is a common method of expressing metaphorical concepts in the English language. Therefore, the main focus of this paper will be to analyze metaphors for the words *head* and *heart* in order to ascertain the presence of embodiment in metaphorical expressions related to those two lexemes. They were chosen because, through metaphorical extension, they are related to human logic and emotions and – for that reason – there will possibly be a large number of metaphors to analyze. Based on the data collected through a corpus analysis in the Corpus of Contemporary American English, an analysis of the findings will be conducted in order to reach a conclusion that will either confirm or deny the initial hypothesis. This paper starts with a theoretical framework for the research, followed by methodology, data analysis and results.

## 2. THEORETICAL FRAMEWORK

### 2.1. METAPHOR

Merriam-Webster defines *metaphor* as follows: “a figure of speech in which a word or phrase literally denoting one kind of object or idea is used in place of another to suggest a likeness or analogy between them.”

The concept of metaphor has changed through time, from Aristotle to the modern understanding of what metaphor is. Aristotle defined metaphor as “(...) giving the thing a name that belongs to something else; the transference being either from genus to species, or from species to genus, or from species to species, or on grounds of analogy.” (Aristotle; (Aristotle, 1920: 21). This is the initial definition of metaphor that coincides with the basic understanding of what metaphor is – a transference of meaning. For Aristotle, metaphor was something that was to be used only in poetry or rhetoric, to create more of an impact while speaking. It was also something that could not be learned, it was inherent and the people who understood metaphor and could create metaphorical expressions were geniuses. (paraph. Aristotle, 1920: 21-22). That would mean that metaphor was not seen as a universal human experience and was used exclusively as a stylistic tool in order to bring impact to expressions.

Today, however, the concept of metaphor is much broader. Lakoff and Johnson write that “(...) metaphor is pervasive in everyday life, not just in language but in thought and action.” (Lakoff and Johnson, 1980: 3). They define metaphor as something that is intrinsic in all parts of human life. It is present in the ways humans think and perceive the world, so it is not just a feature of language used in poetry and speeches for embellishment, it is used in everyday language to express actions, thoughts and emotions. Žic Fuchs writes as well, that metaphors are most often present in everyday language, that is, that they are the basis of everyday speech and communication (Žic Fuchs, 1991: 27).<sup>1</sup>

Kovecses writes that “We can separate the issue of metaphor in the body from the issue of metaphor in the brain in an arbitrary way only. It is the brain that runs the body, and if metaphor is in the body it must also be in the brain.” (Kovecses, 2005: 23). She further writes that “(...) when we understand abstract concepts metaphorically, two groups of neurons in the brain are activated at the same time; when one group of neurons (the source) fires, another group of neurons (the target) fires as well.” (Kovecses, 2005: 23).

Because the human body and brain are connected, the concept of metaphor is also connected to both the human body and the human mind (i.e. the brain). When one thinks of a metaphorical concept, our brain reacts by connecting the concepts that are expressed through metaphor. Through that process, humans are able to analyze those concepts and understand them. Since people experience the world through their physical bodies, encountering and analyzing metaphors connects both the bodies and the brain.

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<sup>1</sup> Translated by L.G. „(...) metafore su najprisutnije u običnom, svakodnevnom jeziku, to jest, podloga su u prvom redu svakodnevnom govoru i komunikaciji (...)“

All this to say, the way people understand metaphor today is much more complex than the initial understanding of metaphor as just a poetic tool. It can be said that people use metaphor often, to express many things throughout their everyday life in order to communicate different concepts and ideas. Through metaphor, a single word can have multiple meanings and it can be understood in different ways. Metaphors can be used to express how one is feeling, what they are thinking about. It can also be used to express everyday occurrences and things one might notice and want to speak about. It can be said that the use of metaphor is very common and that people often might use it without even thinking of the expression they used as metaphorical. One can state that metaphors are an intrinsic part of everyday communication and a very common linguistic tool for people.

## 2.2 COGNITIVE LINGUISTICS

Varela, Thompson and Rosch write about cognitive science as the following: “In its widest sense the term cognitive science is used to indicate that the study of mind is in itself a worthy scientific pursuit.” (Varela, Thompson, Rosch, 1993; 4) Meaning that cognitive science studies the human mind and the way it functions, how it connects to reality, how it develops and how it can develop further. Encyclopedia Britannica further defines cognitive science as “(...) the interdisciplinary scientific investigation of the mind and intelligence”. That means that cognitive science encompasses multiple scientific disciplines (e.g. psychology, linguistics, computer science etc.) in order to conduct research into the mind and the way it processes information.

Lakoff writes that cognitive science

*“(...) seeks detailed answers to such questions as: What is reason? How do we make sense of our experience? What is a conceptual system and how is it organized? Do all people use the same conceptual system? If so, what is that system? If not, exactly what is there that is common to the way all human beings think?” (Lakoff, 1987; xi).*

These questions are the basis for all research conducted in the field of cognitive science. It can be said that the aim of cognitive science is to find the answers to the questions connected to human beings, human thought and human understanding of the world – what are the

similarities and differences between each individual and how they perceive the world. Lakoff also describes the difference between the traditional answer and the new answer to those questions.

*“The traditional account claims that the capacity for meaningful thought and for reason is abstract and not necessarily embodied in any organism. (...) Meaningful concepts and abstract reason may happen to be embodied in human beings (...) -but they exist abstractly (...). In the new view, meaning is a matter of what is meaningful to thinking, functioning beings. The nature of the thinking organism and the way it functions in its environment are of central concern to the study of reason.” (Lakoff, 1987; xi).*

It can be said that, according to Lakoff, the two answers are opposite to each other. The traditional way of thinking stipulates that all abstract concepts exist outside of human thought or cognition. On the other hand, the new view posits that the way humans think and process the world around them is crucial for understanding abstract concepts and for their further study. It could be said that the way research is conducted in cognitive science aligns more with the new view of thinking about concepts and how they relate to the human experience.

For this particular paper, it can be said that cognitive linguistics – which is one of the branches of cognitive science – is relevant. Meaning that research conducted in cognitive linguistics provides a base for the research conducted in this paper.

Žic Fuchs writes that „Cognitive linguistics isn’t a uniform theory, it consists of a broad theoretical framework which (...) encompasses a broad number of different theories.“<sup>2</sup> (Žic Fuchs, 2009; 56). That would mean that there are multiple ways that linguists approach the topic of cognitive linguistics and how they think of it in a theoretical sense also varies. But, at the same time, Žic Fuchs notes that „(...) all the differences we find in the framework of cognitive linguistics are connected by the same foundations“<sup>3</sup> (Žic Fuchs, 2009; 26). At the same time, that means that there is a framework that connects all the different theories that

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<sup>2</sup> Kognitivna lingvistika nije zaokružena, uniformna teorije, već je riječ o širokom teorijskom okviru koji (...) objedinjuje veći broj različitih pristupa i teorijskih izvedenica). (translation by L.G)

<sup>3</sup> (...) sve različitosti na koje danas nailazimo u okviru kognitivne lingvistike spajaju zajednički temelji. (translation by L.G.)



can be found in the field of cognitive linguistics. That framework enabled linguists to develop those theories and to further research the effect that human cognition has on language – how our mind influences our language production.

### 2.2.1 COGNITIVE LINGUISTICS AND METAPHOR

Lakoff and Johnson write that in cognitive linguistic research, metaphor provides a mental access to a target domain by form of a partial mapping from a source domain (Lakoff and Johnson 1980). They define structural, orientational and ontological metaphors. In structural metaphors „(...) one concept is metaphorically structured in terms of another“ (Lakoff and Johnson 1980; 14). Orientational metaphors „(...) have to do with spatial orientation.“ (Lakoff and Johnson 1980; 14). Ontological metaphors are metaphors in which an abstract concept is understood through something concrete (paraph. Lakoff and Johnson 1980; 25). These three types of metaphors involve metaphoric mapping from one concept to another – from a source domain to a target domain. It can be said that this is done in order to better understand or explain certain concepts, especially when they are abstract.

To reiterate, Lakoff and Johnson write about metaphorical concepts “as ways of partially structuring one experience in terms of another.” (Lakoff and Johnson, 1980; 77). That statement can pose the question of how one structures those experiences? Are there some experiences that cannot be structured that way? What can be the source domain and what can be the target domain? What is the main idea behind the structuring of those experiences? These questions are connected to the reason behind metaphorical concepts and their structures and how they come to be. It can be said that the human body is a good vessel for the structuring of metaphorical concepts because the human body provides a good target domain for those concepts. Seeing as how humans experience the world through their body, it can be stated that it is, for that reason, a good starting point for explaining abstract concepts or occurrences.

Taking the word *head* into consideration, Kraska-Szlenk writes that “A typical case of conceptualization based on metaphoric mapping is involved when a material object is called ‘head’ due to its visual resemblance to that particular body part (...). The upper parts of plants’ stems are referred to as heads (...)” (Kraska-Szlenk, 2019; 138). The metaphoric mapping described could be said to belong to structural metaphors, because it is connected to the outward appearance of, e.g. the human head and upper parts of plants, because of the fact that plants which have a large, bulbous top and stand upright mimic humans' posture and the top

part resembles the human head. It can also be said that the word *head* is used in many other instances to describe things that are not body parts, because of their close resemblance to the aforementioned body part.

Lakoff writes „The ANS activity that corresponds to anger is an increase in skin temperature and an increase in heart rate (experienced as internal pressure).“ (Lakoff, 1987; 39). Meaning that emotions are connected to the physical body, and physical traits can be used to express the abstract concepts like emotions – e.g. using the changes in heart rate to express anger. This can be interpreted as meaning that, even though ontological metaphors connect abstract and concrete concepts, there is a correlation between that connection that is not purely arbitrary. It can be stated that the connection between the abstract and concrete has to have a certain logical pattern behind it. In Lakoff's example, the connection is the fact that people truly do experience bodily changes when angry, so it can be said that it is logical to connect the abstract emotion to those bodily changes.

Taking the aforementioned examples into consideration, the metaphorical mapping of certain data and experiences can be conducted on the basis of physical similarities between two domains or on the basis of their connection to the human body and the body's reaction to specific experiences and information. In the examples above, the first is based on physical similarities (e.g. *human head vs head of a flower stem*) and the second is based on internal reactions inside the human body (e.g. *anger influences the heart*).

### 2.3. POLYSEMY AND EMBODIMENT

So how can one word have so many meanings? Why is that possible and why does language have that feature? Barbara Lewandowska-Tomaszczyk writes that “one of the most fundamental phenomena observed in language is the existence of a diversity of related meanings expressed by the same word-form.” (Lewandowska-Tomaszczyk, 2007: 139) Such is the case of polysemy. Polysemy is a semantic relation in a language through which one word has multiple meanings created through metaphorical extension. That metaphorical extension is, in some cases, created through a process called embodiment.

One can think of the human body as the direct connection our brain has to the world, so it can be said that a lot of the daily information the brain receives is stored and pondered over in relation to the body. The way people perceive that information is called construal. Croft and Cruse write that the way “(...) an experience is framed is a matter of construal: it

depends on how the speaker conceptualizes the experience to be communicated, for the understanding of the hearer.” (Croft, Cruse, 2004: 19). This means that the way the speaker conveys information to the hearer is based on the speaker’s experience and the way that the hearer understands said information is based on the hearer’s experience. If their experiences differ, the message will be understood differently.

Everybody interprets the world differently, and one situation might have different interpretations and different people might comprehend it differently. Polysemy, embodiment and construal are all interconnected and vital to the way human language is used and interpreted. Through construal, we perceive the world. It could be said that, through embodiment, we perceive the world by way of our bodies. And through polysemy, we use language to express what we have perceived in a way other people will understand. Another important trait of polysemy is language economy, i.e. it helps convey certain information and describe certain objects and events in the world with less energy and effort because there is no need to come up with new and different words and expressions for things and instead use already familiar words, expressions and concepts. The principle of creating words and expressions through metaphorical extension, i.e. creating polysemy, is a common occurrence in many languages in the world, but each language has different ways to express certain things and while something might be created through metaphorical extension in one language, it does not have to be so in another language.<sup>4</sup> But many languages do have similar metaphorical extensions for some things.<sup>5</sup>

Gibbs defines embodiment as follows: “Embodiment in the field of cognitive science refers to understanding the role of an agent’s own body in its everyday, situated cognition” (Gibbs, 2005: 1). This definition means that the way humans think and process information is directly connected to their bodies, and through that, language is also connected to the way the human body processes and functions in the world. Goschler writes that “Embodiment means that parts of our conceptual system and therefore some aspects of our language are structured by the features of our bodies and the functioning of our bodies in everyday life.” (Goschler, 2005: 35). According to her, the human bodily experience shapes the way humans use language, and human language structures reflect that bodily experience. Everyday life and movements influence the way humans think about certain concepts and express them.

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<sup>4</sup> One such example is the expression used to describe the opening on the top of a needle (the part through which string is placed in order to sew) – in English, it is “the eye of a needle” and in French it is “the hole of a needle”

<sup>5</sup> In English, chairs and tables have ‘legs’ and in French they have ‘feet’

Goschler further expands her definition of embodiment by differentiating between two different types of embodiment and body metaphors. This particular categorization differentiates between the body being used as the source domain to describe things, or as the target domain where other domains are used to describe the body. If the body is used as a source domain, certain parts of the body are used to describe other things, and if it is a target domain, other source domains (e.g. technology, plants, etc.) are used to describe the body (paraph. Goschler, 2005: 36).

Embodiment is a metaphorical process through which people use their bodies to express and perceive the world. Using their bodily experience helps people express certain things linguistically, and it can be said that other people will understand what they are trying to express because of their own bodily experiences. To paraphrase Johnson (1949), the body and the mind are connected, because humans are “rational animals” – both possessing a physical presence and logical thinking. The reality we perceive is shaped by our physical experience.

Raymond and Gibbs write about “(...) three levels of embodiment: the neural level, the phenomenological conscious experience, and the cognitive unconscious.” (Raymond, Gibbs, 2005; 39).

*“Neural embodiment concerns the structures that characterize concepts and cognitive operations at the neurophysiological level. (...) The cognitive unconscious consists of all the mental operations that structure and make possible conscious experience, including the understanding and use of language. The cognitive unconscious makes use of and guides the perceptual and motor aspects of our bodies, especially those that enter into basic-level and spatial-relation concepts. (...) The phenomenological level is conscious, or accessible to consciousness. It consists of everything we can be aware of, especially our own mental states, our bodies, our environment, and our physical and social interactions.”* (Raymond, Gibbs, 2005; 39-40).

The three levels that are defined in the above quote define the different parts of the human mind that influence the way people think and process different experiences. The neural level is based only on the physical experience – what the human brain perceives and what data reaches it. The cognitive unconscious is in charge of processing all the data that the human brain does not directly perceive, meaning that the data processed in the unconscious in

perceived as automatic and people do not need to actively think about the process. The final, phenomenological level is the level in which the human mind is aware of the data being processed and creates different connections to better understand and interpret any possible new information it receives.

It can be said that all three levels are interconnected. The unconscious and conscious level enable the mind to process the information received from the neurophysiological processes in the human brain. In order to fully understand the information people receive, all three levels have to actively function together.

In *'Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought'*, Lakoff and Johnson write:

*“Conscious thought is the tip of an enormous iceberg. It is the rule of thumb among cognitive scientists that unconscious thought is 95 percent of all thought (...). Moreover, the 95 percent below the surface of conscious awareness shapes and structures all conscious thought. If the cognitive unconscious were not there doing this shaping, there could be no conscious thought.”*

(Lakoff and Johnson, 1999; 12)

What Lakoff and Johnson are possibly trying to say in their work is that conscious thought is dependent on the cognitive unconscious. Meaning that all conscious thoughts an individual might have were influenced by the way said individual's cognitive unconscious was shaping those thoughts. So, it can possibly be said that, considering the fact that each person's unconscious is purely individual, the way they process data and how their conscious thought organizes that data is also individual. So one event can be differently processed by the cognitive unconscious, thus that same event can be differently interpreted at the conscious level by multiple individuals.

It could be stated that the way human beings experience everything is shaped by the way the brain receives data and the way that data is processed by our cognitive unconscious. All of those factors are individual to each person, but it could also be said that some things can be considered universal. Embodiment might possibly be one of those things. While there are different ways to express embodiment in different languages (as previously mentioned,

differences between French and English etc.), it could still be said that human beings seek to connect the outside world to their bodies and their personal experience.

Gibbs writes that “[perception] does not take place in the brain of the perceiver, but rather is an act of the whole animal, the act of perceptually guided exploration of the environment.” (Gibbs Jr., 2005; 43). This would mean that it is not just the human brain that is in charge of perceiving the environment around it, but it is the whole body that does so. All the senses, movements and actions that encompass a human being are a part of the perception of an individual’s surroundings and the world that individual moves in. All of that is connected to the brain, as it is in charge of regulating all bodily actions, but the whole of the body is used in order to perceive one’s surroundings. The brain is just in charge of processing those surroundings and creating an image that the individual then perceives and thinks of consciously.

To sum up, it can be said that everything an individual experiences throughout their life is an amalgamation of their physical experience and how their mind processes and relates to that experience. Embodiment is just one of the theories that try to further explain how those experiences are perceived and linguistically expressed. Seeing as how all humans use their body to move around the world and communicate with their surroundings (linguistically or non-linguistically), it could be said that embodiment provides another way to explain how people relate their physical experience to language and linguistic expression

### 3. METHODOLOGY

The research in this paper is based on the data collected from the Corpus of Contemporary American English. Two words were chosen – *head* and *heart*. Following that, a sample of 100 examples for each lexeme was chosen to be analyzed.

These particular words were chosen because of their connection to the concepts of human logic and human emotion. There were multiple different examples found that express similar concepts, so categories were created for each of those concepts. As well as metaphorical concepts, there were also expressions which use the words in their non-figurative meaning. Those examples will be shown as well, to help more closely define each word in their non-figurative sense.

In the analysis of the word *heart*, its base, non-metaphorical meaning appears in 20% of the examples analyzed, and different metaphorical meanings have been in found 80% of

the examples. On the other hand, in the analysis of the work *head*, 37% of the examples have a non-metaphorical meaning, meaning that metaphorical meanings were found in 63% of the examples.

## 4. ANALYSIS AND RESULTS

### 4.1 THE HEART

Sweetser notes that “the heart comes to symbolize (...) emotions – such as courage or passion” (Sweetser, 1990: 28), meaning that the heart is seen as the physical vessel for human emotions, and it can be said that the expressions connecting the heart to emotions are very common in language, so it can be concluded that there will be a number of metaphors connecting the heart to emotions.

#### 4.1.1 HEART AS AN ORGAN

Merriam-Webster defines heart as “a hollow muscular organ of vertebrate animals that by its rhythmic contraction acts as a force pump maintaining the circulation of the blood”. The heart is an organ inside the body that is in charge of supplying the body with blood. It is an organ that all vertebrate animals need in order to life, e.g. without a functioning heart, one will die.

[1] We have all seen monitors showing the rhythm of a beating heart on TV.

[2] They just don't break long enough for their heart rate to slow down.

[3] Your first month premium is \$300 and you will now be able to get a heart transplant at \$300,000 that we will gladly pay for.

Examples 1-3 show the use of heart in its literal form, as an organ that is necessary for survival. A heart beats, can accelerate due to outside circumstances, which influences its rate, and it cannot function properly, which could lead to a heart transplant. All of these examples show the use of the word heart in, what can be said, is a medical context, which is purely based on the biological facts that can be studied in living creatures.

#### 4.1.2 HEART AS THE CENTER

It can be said that one of the metaphorical meanings of the word *heart* is “the center of something”. Because the heart is seen as the emotional center of all human beings, and humans express and talk about their emotions mostly by using the heart as a metaphor for them, through extension it can also be considered as the center of other things.

[4] (...) to see it come to life is enthralling, and it's there in the heart of your home

[5] Conservatives, on the other hand, see bigotry and violence as the heart of Islam.

[6] Here's the heart of Krugman's argument

[7] At the heart of every language, there exists Latin.

The examples listed above show the use of *heart* as the center of a home (example 4), a religion (example 5), an argument (example 6), and a language (example 7). It can be said that examples 4-6 can be related to emotions. Example 4 relates to the home, and a home is an integral structure in human society – it is the center of a nuclear family. Example 5 is related to personal views and beliefs that influence people and the way they perceive things – in this case, people who dislike Islam, see their religion as aggressive. Example 6 is related to a discussion, an argument, and it can be said that all arguments or discussions often involve emotions. The only example that does not seemingly involve emotions is example 7 – it relates to the fact that, in the case of this example, all languages stem from Latin. So, through this analysis, it can be concluded that, when this sort of metaphorical extension for the word *heart* is used to express something related to humans, the use of the metaphor is rooted in emotion. When this metaphor is used for inanimate things, it simply means *the center* of that inanimate thing.

#### 4.1.3 HEART AS A VESSEL FOR SOMETHING

The next metaphorical use of the word *heart* is “heart as a vessel”. This metaphor involves thinking of the heart as a container that can be filled or emptied. Again, it can be noted that the use of this metaphor involves emotion and is related to the heart as the center of human emotion.

[8] No matter what happened, I was going to pour my heart into this.

[9] I see a wonderful little boy who has filled my heart with so much love.

[10] That pain has definitely opened my heart this weekend.

[11] (...) being picked last for kickball -- were stored in the filing cabinet of your heart.



In all the examples above, the heart is considered to be a container. Example 8 describes someone who will empty the vessel that is their heart in order to achieve a goal. Example 9 describes the heart as a vessel that is being filled with love for another person. Example 10 depicts someone opening their heart, the vessel, in order for it to be filled. Finally, example 11 describes the heart as containing filing cabinets – which are vessels for files – that are filled with memories, both good and bad.

Through the analysis of this metaphor for the word *heart*, it can be said that this particular metaphor is connected to emotions and memories that a person carries and, through extension, those memories are seen as being stored in the heart.

#### 4.1.4 HEART AS THE REFLECTION OF A PERSON

Another metaphor for the word *heart* that was noted is “heart as the reflection of a person”, meaning that the heart is the core of who one is as a being – their main characteristics, achievements and goals become the definition of who they are, and all of that is perceived through their heart.

[12] Showing that we are concerned for the child's welfare is important to show our heart to the adversaries.

[13] I'm a musician at heart and can relate to it all.

[14] A child at heart who turned to writing and roleplaying games.

The examples listed show how *heart* can be used to depict someone. Example 12 describes “showing one’s heart”, meaning to be open and show what you truly want, what your goals and aspirations. Example 13 and 14 are similar, in the sense that they both describe a certain trait of a person and how that trait defines them – a musician, someone who dedicated their life to music and fills their life with music; and a child, someone who still aims to retain their childlike personality and wishes to prolong their childhood.

It can be said that this is a metaphor connected to emotions as well. Through perceiving the heart as the reflection of a person, one can say that one perceives the emotions said person shows in their daily life and the emotional connections that person has to other people or certain things.

#### 4.1.5 HEART AS A TARGET

The next metaphor for *heart* is “the heart is a target”, meaning that the heart is perceived as something that can be caught, captured or wounded.

[15] His delivery hit me right in the heart, and in the gut and everywhere else. –

[16] Wow. Mary, you have captured my heart.

[17] (...) to truly pierce and penetrate your heart of hearts,

The examples listed show how *heart* can be considered a target. Examples 15 and 17 describe the heart being affected by something another person said or the heart being influenced by something, which can cause an emotional reaction. Example 16 describes someone being infatuated with another person.

Again, it can be said that this metaphor can be connected to human emotion. Seeing the heart as the target would mean that the emotions one feels are a target - either in a negative or positive way. It means that the goal is to produce an emotional reaction of some sort.

#### 4.1.6 HEART AS POWER AND STRENGTH

The next metaphor for *heart* is “heart as power and strength”. This particular metaphor connects the heart to strength, meaning that the heart can reflect how one deals with a certain situation, do they endure the situation or do they buckle under pressure.

[18] But Florida didn't lose heart,

[19] Be strong and have strength of heart.

Example 18 depicts the people who live in Florida, they are facing a difficult situation and they are fighting to persevere. Example 19 describes someone talking to another person and encouraging them to be strong and endure the situation they found themselves in.

This metaphor is also based on emotions, being emotionally strong and having the power to face certain situations in order to persevere.

#### 4.1.7 HEART AS AN ANCHOR

The next metaphor is “heart as an anchor”. This metaphor is connected to the heart being seen as a weight that feels heavy when certain situations arise

[20] And I'm gonna add, my heart sank when I saw there were almost 150 responses

[21] (...) the " What Ifs " are weighing down on my heart.

Examples 20 and 21 show how people feel and react when bad news and thoughts go through their minds. They describe their heart as “sinking” or feeling “weighed down” with

anticipation of what the news will bring, or which bad thoughts are going to be proven correct.

This metaphor is also rooted in emotion. When people get bad news or have something bad happen to them, they react emotionally, and it can be said that that reaction is expressed through this particular metaphor – the feeling of one’s heart being weighed down by an anchor or a weight and feeling pressure.

#### 4.1.8 HEART AS A SPIRITUAL CONCEPT

The final, and perhaps the vaguest of all the listed metaphors, is “heart as a spiritual concept”. This particular category is connected to religion and spirituality and sees the heart as the center of one’s spirituality.

[22] The yogi speaks of the opening of the heart chakra

[23] The Heart of Jesus is the revelation of God's love to mankind (...)

Both the examples listed above are related to religions. The religions are different and are based in different sets of beliefs, but that the center of those beliefs is the heart. Example 22 refers to Hinduism and their beliefs, and example 23 refers to Christianity.

It can be said that one’s beliefs are also related to the heart in the sense that religion is based on human emotion and the striving for a life after the one people are living. There are many religions and many beliefs, but at the center of all spirituality is the heart and the emotions it is connected with

#### 4.1.9 UNSPECIFIED

Through the corpus analysis, some examples were found that would not fit into any of the categories that were found in the analysis. It can be said that the metaphorical expressions in these particular examples are common in the English language, but cannot be categorized because they might be seen as belonging to multiple categories or to no category at all.

[24] I need to let my heart heal and I have to do it with tequila

[25] As always, thanks for writing from your heart and striking a chord with us.

[26] I guess your heart will have to lead the way.

Example 24 is related to the concept of heartbreak, i.e. being hurt by someone. This particular example can be connected to the literal meaning of the word ‘heart’ because it has been scientifically proven that being hurt emotionally or enduring stress can be detrimental to one’s

heart (source: Mayo Clinic). Example 25 can be connected to two of the previously noted categories – “heart as a vessel” and “heart as the reflection of a person”. The reason for that is that, by writing, the person “pours out” their emotions from their heart, but they also write from their experiences and their viewpoints, so the writing reflects who they are as well. The final example, example 26 could possibly be placed in the category of “heart as the reflection of a person”, but it cannot be said that that placement is completely certain. It might be placed there because of the interpretation that, if one “lets their heart lead the way”, where they go would be a reflection of who they are as a person, but that is not definite.

This category consists of examples whose interpretation could be considered vaguer, or would need a more in-depth analysis, as opposed to the examples that have a set category.

#### 4.1.10 FINAL RESULTS

Through the analysis of the word *heart*, it was found that there are seven distinct metaphorical categories that can be differentiated. The most prominent of those categories, with the most examples, is “heart as the center of something”, with 26 out of 100 analyzed examples. The next most common category is “heart as a vessel”, with 10 examples, followed by “heart as a target” and “heart as the reflection of a person”, both with nine examples. In the category “heart as spirituality”, seven examples can be found. The least examples found were in the categories “heart as strength and power” and “heart as an anchor” which have two examples each. In the unspecified category, one can find 15 different examples.

It can be said that, out of the categories that were found in this research, the concept of embodiment is present in four of those categories – “heart as the center of something”, “heart as a vessel”, “heart as a target” and “heart as an anchor”. Those particular categories are connected to the human bodily experience, meaning that they have come to be through connecting the experiences from the outside world and inner, emotional experiences humans go through. It can be said that the other categories are based more on the emotional, internal aspects of the human experience, so they cannot be categorized as embodiment.

## 4.2. HEAD

### 4.2.1 HEAD AS AN ORGAN, A VERB AND AN ADJECTIVE

The Cambridge Dictionary gives the following definitions for the word *head*:

- a. noun; “the part of the body above the neck where the eyes, nose, mouth, ears, and brain are”
- b. verb, “to go in a particular direction”

c. adjective; “main or most important”

So, the word *head* is part of multiple word classes, so it can be said that that in particular the reason there are so many examples of the use of the word in its base form.

The head is one of the most important parts of a body, because it contains the brain, which is the organ that controls the entire body. It can be said that, without one’s head, one cannot live.

[1] Nobody is holding a gun to HP's head making them do this to avoid insolvency

[2] By the time we got ready to head out, the dark had turned to gray fog,

[3] Ones own head lines should really be captivating and even appeal to ones own subscriber

The examples provided show the use of the word *head* in the context of “head as a body part” (example 1), “head as a verb” (example 2) and “head as an adjective” (example 3). It can also be said that some of the examples in this analysis that were classified under this category could have a possible metaphorical meaning, but taking into consideration that all the examples are so closely related to the literal meaning of the word *head*, there is no need for metaphorical interpretations of those examples.

#### 4.2.2 HEAD AS THE LEADER OF AN ORGANISATION, A GROUP OF PEOPLE, A FAMILY ETC.

The word *head* can be used to metaphorically refer to the main person in an organization, a certain group or the matriarch or patriarch of a family.

[4] I recently set up a meeting with the head of our tech department.

[5] For the husband is the head of the wife, even as Christ is the head of the church

[6] There he chanced to meet Spencer F. Baird, head of the Fish Commission

[7] The head of UK intelligence, Jonathan Evans, says the turmoil that followed the Arab Spring

In the examples listed, the word *head* is used to refer to the leaders of different groups. In example 4, it is the person in charge of a department in a specific company, in example 6, the person mentioned was the leader of the US Fish Commission (Jordan, 1923), and in example

7, it refers to the leader of UK intelligence. These three examples refer to people in power, who have control over and dictate what multiple other people are doing. On the other hand, example 5 refers to family, a small unit where one person, in this case the husband, is seen as the one in charge of the people in his family. In this example specifically, it is related to religion, and it refers to the husband being in charge of his wife.

The word *head* in this specific metaphor refers to being a leader, someone other people look up to or defer to. It could be said that, as the head is the part of the body that holds the brain, which governs all other body parts, this metaphorical extension makes sense.

#### 4.2.3 HEAD AS A LOCATION

The next metaphor that was found is “head as a location”, meaning that the word *head* refers to a specific part of a path or a trail.

[8] (If we ever move closer to the head of the lakeshore bike path, however, I might just start.)

[9] Although they could see the trail head, the couple was unable to find a path back in darkness to this starting point.

In the examples listed, one can perhaps conclude that “head as a location” describes the main starting point of a path, the place where one begins the journey and where one possibly returns (either in the case that they got lost, or they finished what they set off to do and are coming back).

This metaphor uses the word *head* to distinguish a starting point, a specific main point in a journey somewhere. Through metaphorical extension, one could say that the use of the word *head* in this context can be connected to the fact that the head is the main part of a human body, and because of that, it could be considered “the starting point” of every human being – the brain, the main features of a person, all of those are located on the head and it is something that people first notice when speaking to one another. Because of that, the extension into paths and trails being “the heads”, the starting points of a journey, makes sense.

#### 4.2.4. HEAD AS A VEGETABLE OR AN OBJECT

The next metaphor is “head as a vegetable or an object”. This is a metaphor based on similarity between the vegetables and objects and the way the head looks.

[10] (...) do you think that you could steam the whole head of cauliflower?

[11] Have you recently purchased a head of lettuce, a bunch of celery or a bag of leeks?

[12] Then, when I got it working, the sprinkler head (...)

When one describes cauliflower or lettuce, one uses the expression ‘head of [said vegetable]’ because of metaphorical extension. The vegetables in their raw, natural form, resemble the shape of a human head, which is why people use *head* to refer to them. This is evident in examples 10 and 11.

In the case of objects, like example 12, *sprinkler head* refers to the part of the sprinkler system that ejects water. It can also be said that it resembles a head, but perhaps another metaphorical extension can be made. Sprinklers pour out water, and people ‘pour out’ ideas out of their heads. So the interpretation of this particular metaphorical extension can be related to the corporeal form of the sprinkler and its possible connection to the shape of the human head, but also the concept of connecting water and ideas.

#### 4.2.5 HEAD AS THE ROOT OF AN IDEA, A THOUGHT, A CONCEPT

The next metaphor for the word *head* is “head as the root of an idea, a thought, a concept”. People think with their brains, which are located in the head, which is why it can be said that usually people use the word *head* when talking about thinking instead of using the word *brain*. It can also be said that this is a very simple metaphorical extension in the context of how closely the source and target domain are connected, because this specific metaphor is related to both the head and something inside the head.

[13] So, off the top of your head, what are 5 of your most iconic people, places and things?

[14] It [is amazing] to me how many people keep [their] head in the sand.

[15] Hard to wrap your head around someone's suicide and relate.

The expressions in the examples listed above are common English phrases used to denote thinking. The expression in example 13 is “off the top of one’s head”. The Cambridge Dictionary defines this expression as “from the knowledge you have in your memory”. In example 14, the expression “head in the sand” can be found. Merriam-Webster defines this expression as “unwilling to recognize or acknowledge a problem or situation”. The final expression, in example 15, is “to wrap one’s head around something”. English Logica defines this expression as “[to] understand or accept something that is challenging or confusing”.

Other examples found, but not listed here” were “hit the nail on the head” and “go over one’s head”. These examples are also related to thinking and ideas, but their meanings are opposite. Cambridge dictionary defines the former as “to describe exactly what is causing a situation or problem”, and the latter as “too difficult or strange for you to understand”.

All of the expressions listed in the examples are connected to the head being the center of thought, of ideas and of concepts that one thinks about or refuses to think about. For that reason, it could be said that these metaphorical extensions are logical in the sense that they connect head to thought, and thought happens inside the head, in the brain.

#### 4.2.6 HEAD REFERRING TO BEING FIRST IN SOMETHING

The next metaphor for the word *head* is “head referring to being first in something”. Same as with the use of head to denote a leader, it can also be used to denote someone or something that is first or leading in something – a competition, a line.

[16] It seems like Lacoste just had a head start

[17] Noone gives the opposition in a competition over the same thing a head start

[18] I sold 5k books on my own, Baen will jump you to the head of the line.

Examples 16 and 17, listed above, describe someone who or something that has had “a head start”, meaning that they are, from the very start, in front of the competition. There was something that pushed them forward and provided what was needed for them to become the front-runners.

Example 18 depicts someone being pushed to “the head of the line”, meaning that they got to become the first in said line, skipping over other people.

It can possibly also be said that the term ‘head line’ comes from this metaphorical extension – it is the main title of a blog, a newspaper, a magazine etc.

This metaphor is, again, connected to the head being the “top” part of the body, the most important part and, through that, it can be said that the head is “the main body part”, the one that is in front of all other body parts. Through that, it can be posited that this metaphorical extension was created.



#### 4.2.7 HEAD AS A TOOL IN BATTLE OR A STRUGGLE

The final metaphor for the word *head* is “head as a tool in a battle or a struggle”. This metaphor is possibly used because, once again, people use *head* to denote thinking, and arguments and fights often involve creating strategies, for which one must think.

[19] (...) than by a human that wouldn't have the courage to go head to head.

[20] (...) and information from the Department of Education to take this subject matter head on again.

Similarly to the concept of using head to denote thinking about something, the expressions used to denote head as a fight or argument are also common in the English language. In example 19, the expression used is “head to head”, which Merriam-Webster defines as “in a direct confrontation or encounter usually between individuals”. The expression used in example 20 is “to take something head on”, which the Longman dictionary defines as follows: “if someone deals with a problem head-on, they do not try to avoid it, but deal with it in a direct and determined way”.

The examples listed have one thing in common, the word *head* is used to denote facing someone or something in a direct way. It could be said that this metaphor is used because *head* is not only used to denote thinking, the head is also the part of the body which is used to communicate with others, and it can possibly be said that, in this particular metaphor, communication is an important part of its interpretation – in order to face things directly, communication is needed.

#### 4.2.8 UNSPECIFIED

Along with very precise examples that are easy to categorize, there were also examples found that did not fit into a category, or could be interpreted as belonging to multiple categories.

[21] This guy has his head in the clouds.

[22] If she's not head over heels in love

[23] (...) the implications of this argument are pernicious and need to be vigorously confronted whenever they rear their head in public

The examples listed are examples of set idioms in the English language, but – unlike some of the idioms that were found in this analysis – they are difficult to place. These idioms are commonly used. The Collins Dictionary defines the expression in example 21, “having one’s head in the clouds”, as “[being criticized] because they are ignoring or are unaware of the problems associated with a situation”. So this example can possibly be placed in the category “head as the root of an idea, a thought, a concept”, but it is not definite. Example 22 means that the person being spoken about is very much in love. This particular example connects the word *head* to emotions, and it can be said that other examples in this analysis connect the word *head* to logic and thinking, so it cannot be said that this example belongs in any of the categories found during the analysis. The definition of the expression “rear one’s head” in example 23, according to the Collins Dictionary is “if something (...) rears its head (...), it becomes visible or noticeable.” It can be argued that this particular example could perhaps be classified along with examples of the base meaning of the word *head*, which would be correct if this example was referring to a person. But, seeing as how it refers to something incorporeal (i.e. “implications”), it has a metaphorical meaning. It might then be classified under the category “head as the root of an idea, a thought, a concept”, but that categorization might also be seen as too vague. So that is why this particular example has no set category. All of the unspecified examples found in the analysis are related to the word *head* being used in a metaphorical sense, but they cannot be classified in the above categories because it cannot be stated that they fit into those categories.

#### 4.2.9 FINAL RESULTS

Through the analysis of the word *head*, it was found that there are seven distinct metaphorical categories that can be differentiated. The most prominent of those categories, with the most examples, is “head as the leader of an organization, a group of people, a family”, with 18 out of 100 analyzed examples. The next most common category is “head as the root of an idea, a thought, a concept”, with 14 examples, followed by “head as a tool in a battle or a struggle” with nine and “head referring to being first in something” with five examples. In the category “head as a vegetable or an object”, four examples can be found. The least examples found were in the category “head as a location” which has three examples. In the unspecified category, one can find 15 different examples.

It can be said that, out of the categories that were found in this research, the concept of embodiment is present in three of those categories – “head as the leader of an organization, a group of people, a family”, “head as a vegetable or an object” and “head as a location”. One

can perhaps also include “head as a tool in a battle or a struggle”, but further research should be conducted on that. As with the categories for the word heart, these particular categories are connected to the human bodily experience, meaning that they have come to be through connecting the experiences from the outside world and inner experiences humans go through, connected to human thoughts and logic, as well as connected to the fact that the human head has a certain shape. It can be said that the other categories are based more on the internal aspects of the human experience, so they cannot be categorized as embodiment.

## 5. DISCUSSION AND CONCLUSION

Throughout this paper, an analysis on the presence on embodiment in the words *head* and *heart* was conducted. Through a corpus analysis, it has been concluded that embodiment is a present form of metaphor in these particular examples, meaning that examples of embodiment were found during this analysis.

While it has been noted that not all metaphors that were found during this analysis were embodied metaphors, it can be said that the initial hypothesis of this paper has been proven correct – embodiment is present in metaphors expressions connected to the words *head* and *heart*.

One thing that was noted is that the metaphorical expressions for the word *heart* are mostly related to emotions and the ways human process emotions, while metaphorical expressions for the word *head* involve not only thinking and logic, but are connected to spatial relations and physical traits. It was also noted that, in both samples, the number of metaphorical expressions was bigger than the number of examples using the literal meanings of the words.

Some of the difficulties that were encountered while writing this paper are the problem with putting certain expressions into different categories – what category to place an example in, is the example too vague to be placed into a category, etc. That is why the ‘Unspecified’ category was created, because the examples were either too vague or too narrow to place into categories, and would need further research and deeper categorization to pinpoint where they could perhaps be placed. One must take into consideration the fact that some of the examples are fixed expressions in the English language, so cultural meanings and backgrounds need to also be taken into consideration – why is the expression used, in what context, how it can be understood, and so on. Social implications need to also play a part in the analysis in order to reach a satisfactory conclusion and result.

By further analyzing the ‘Unspecified’ categories for both *head* and *heart*, new insights into metaphorical expressions and embodiment might be found. As previously stated, it should be a broad research encompassing social and linguistic analyses in order to achieve the most accurate possible results.

To conclude, embodiment is present in metaphorical expressions for the words *head* and *heart*. However, the sample used for the analysis in this paper was not particularly large, with only 100 chosen examples for each of the words, meaning that more conclusive and definite results and classifications can be achieved with a bigger sample of examples that would be analyzed.

## ABSTRACT:

The aim of this thesis is to see, through a corpus analysis of the Corpus of Contemporary American English, if embodied metaphors are present for the words *head* and *heart*. It can be argued that, considering that humans think of the heart as their emotional center and the head as the center for logic and thinking, some of the metaphorical expressions that contain those two words would be examples of embodiment in metaphor. Through the corpus analysis, a sample of 100 examples was chosen for each of the words. The examples were of both the literal meaning of the words and different metaphorical expressions. The final results of the analysis show examples of embodiment in multiple categories that were found.

Keywords: metaphor, cognitive linguistics, embodiment, emotion, logic

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