

Extending Conceptual Metaphor Theory to Animal Cognition: A Comparison of Emotional Expressions by Humans and by Dogs

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Abstract: Taking orientational metaphor theory as my main theoretical approach, in the present work I try to reinforce the view that dogs share in common a wide range of simple emotions with humans. In order to do so, I have proposed a list of traits that, in my view, are shared by both species. These similitudes, as shall be seen later, are based on the use of facial expressions and gestures that are clearly rooted into our shared, bodily experience, such as, for example, the law of gravity. Through empirical observation of my own dog's emotional responses to a series of stimuli, I have created and distributed a bilingual questionnaire (Spanish and English), that I have distributed among circa 50 informants; their answers have been of vital importance in order to identify and formalise my dog's physical responses to specific emotional states. This dissertation focuses on three very basic emotions: happiness, sadness and fear. Using orientational metaphor theory, I have been able to show not only how the emotional expressions used by both species can be compared, but also that the comparison demonstrates identical conceptual mappings on the basis of which these emotional expressions are construed (e.g. GOOD IS UP/BAD IS DOWN). In sum, in this fact-finding study I have argued that dogs are psychologically closer to humans than what is frequently assumed.

Keywords: orientational metaphor, emotional expressions, gesture, facial expressions, ethology.

1. Introduction

This research is aimed at analysing to what extent it can be assumed that animals (more specifically, dogs) share in common with humans a set of emotional expressions rooted in parallel biological traits and taxonomic relatedness between both species. A lot has been written about this topic and, as it happens, not all scientists agree on the existence of coincidences in the way humans and dogs express their emotions. For example, whereas the French philosopher Descartes (1596-1650) considered animals as “mere machines”, unable to feel emotions of any type, the British naturalist Darwin (1809-1882) was one of the many figures who attributed human emotions to animals, admitting that there was a psychological continuity between these two. Irrespective of the obvious disparities between these two species, there is nothing that we, as human beings, cannot find in animals, even if it is in a simpler and more archaic way (Herreros, 2018, pp. 29-30). In light of the above, it is evident that the subject of animal emotions has always been a matter of interest for many scholars and that this topic has inspired multiple stances in this regard and to a great deal of controversy. Nonetheless, scientific progress has meant a significant step forward and, thanks to recent advances in neuroscience, it is now possible

to affirm that humans and dogs share the same brain structures and hormones (a good example oxytocin, often referred to as “the love hormone”, as it is produced in situations of affection and love for others). What is more, when exposed to an emotional experience, both species go through nearly identical chemical changes (Coren, 2013).

In 2013 the American neuroscientist Gregory Berns published one of the most complete studies on canine emotions. In this volume, Berns makes inferences about the way a dog’s mind works and how dogs feel their emotions. In order to do this research, Berns trained dogs to sit comfortably in an M.R.I (Magnetic Resonance Imaging), in order to see how their brains worked. Throughout this experiment, Berns discovered an interesting activity in a particular area known as *caudate nucleus* (Berns 2013, p. 249). The scan revealed that the function and structure of this region were similar in humans and in dogs. To put it differently, a dog’s brain reacts similarly to that of a human when exposed to the same emotional stimuli. Hence, it can be drawn that dogs feel and experience emotions, in more or less the same way as people do.

At this point, it is essential to determine what kind of emotions dogs are able to experience. Different lists and classifications of emotions have been proposed from a variety of scientific fields (see, for example, Scherer, 2005). Broadly speaking, emotions can be split into two main subcategories: basic emotions and complex emotions (Ekman, 1992). Basic emotions, on the one hand, are those which appear during the natural development of a person or animal, and are considered innate and universal. Ekman (1992) identifies six basic emotions, namely happiness, sadness, fear, anger, surprise, and disgust. On the other hand, complex emotions are those that require cognitive thinking skills, namely reflection and self-evaluation; this is the case of guilt, shame, pride, remorse, etc. Given the cognitive skills required, these emotions are unique to humans (Lewis et al., 2008, p. 104). Consequently, it can be assumed that dogs can experience some basic emotions, but complex emotions are beyond their cognitive capacities. Just as it happens to humans, basic emotions are visible to anyone, in as much as they are physically expressed throughout facial expressions, movements, or gestures.

In order to contribute to the current discussion on the nature of animal emotions, in this paper I propose a comparison between the ways orientational metaphors surface emotional expressions (not only linguistic, but also facial and gestural) by humans and by dogs. In doing so, I will try to determine to what extent two different species of mammals (namely, one talking species and a non-talking species)¹ can be compared to each other using the same theoretical approach, namely orientational metaphor theory.

2. Methodology

From a methodological point of view, this study is based on exhaustive observation of humans and dogs. My focus is on the study of expressions of emotions by both species, hence the vital importance of external observation. It is important to signal that this research has focused on the study of three basic emotions: happiness, sadness and fear.

This research has required the use of ample resources in order to achieve each of the aims targeted by this work. In the first instance, I have compiled a corpus of linguistic emotional expressions (in English and in Spanish), that I have used in order to see how orientational metaphors surface human languages. In order to collect these expressions, I have mainly relied on the examples provided by Kövecses (2000) and Stefanowitsch (2007), to which I have added my own examples. As for the expression of emotions in other modalities (i.e. facial expressions and gesture), for humans I have used images from Ekman and Friesen (1976). Further, cartoon movies have also played an important role in the study of human body language, in as much as cartoon characters tend to exaggerate facial expressions, making the recognition of emotions easier (Forceville, 2005).

As for dogs, I have created my own corpus of pictures and images using my own dog, a one-year-old golden retriever called Koeman, that has been of primary importance for the development of this investigation. Dogs, as well as humans, have different emotional states and personality traits, so that what might seem scary for a particular dog, might not be so for another. In this regard, there is no one who knows a dog better than the dog owner themselves, so that each owner knows perfectly well their dog’s fears, weaknesses, likes, or preferences. Consequently, based on my personal knowledge of my dog’s character, I have conducted a variety of experiments (which have been recorded and pictured), that have allowed me to thoroughly examine the nature

1. The concepts ‘talking species’ and ‘non-talking species’ are very fuzzy (for a full discussion on these concepts, see Luef and Marin, 2018). In this research, I will use talking species in order to refer to humans, in as much as this is the only species that uses articulated speech in order to communicate with each other. It goes without saying that many other species (that I will label here as non-talking species) can also communicate, in spite of their lack of articulated speech.

of emotional expressions in dogs. In addition, I have created an online bilingual questionnaire which has helped me find out more about the gestural traits that people use in order to identify how dogs experience these emotions.² In the case of humans, it is relatively easy to recognize gestures and facial expressions (depending on the emotional state on each occasion), but when it comes to identifying emotional expressions in dogs, this task is much more complex. Thus, in order to back up my findings and knowledge, last December 2019 I enrolled an online course offered by Duke University called “Dog emotions and cognition”, which has provided me with very valuable information about dog behaviour. This course was held by Brian Hare, Professor in Evolutionary Anthropology at Duke University. The primary aim of this course was to provide an insight into dog’s cognition so as to understand the way dogs think and feel.

3. Orientational metaphors

According to Gutiérrez (2008, p. 13), metaphors are “one of the most useful resources that language possesses for the creation, extension and change of the meaning of words.” Metaphors occur in everyday discourse and are used unconsciously and even automatically by speakers. Metaphors are also omnipresent, as they are part of human thinking, as well as of language itself. They are irreplaceable in the sense that they help individuals understand each other and the world around them. As Lakoff and Johnson (1980, p. 3) put it, “metaphor is persuasive in everyday life, not just in language but in thought and action.” Metaphors are also a result of users’ interaction with the outside world. Humans live immersed in a culture, which makes us see reality in a specific manner, so that language (and, more precisely, figurative language) is a clear reflection of culture (Ibarretxe, 2013, p. 315).

There exist different types of conceptual metaphors, such as ontological metaphors, structural metaphors and orientational metaphors (Lakoff and Johnson, 1980). In this paper, however, I will exclusively focus on orientational metaphors, namely, metaphors rooted in spatial orientation or relationships, such as front/back, in/out, up/down, on/off, central/peripheral, high/low, among others.

3.1. Defining orientational metaphors

Oriental metaphors, as the very name suggests, are those based on spatial orientation. These spatial orientations “arise from the fact that we have bodies of the sort we have and that they function as they do in our physical environment” (Johnson and Lakoff, 1980: 14). Oriental metaphors attribute a spatial orientation to particular concepts, for instance: whereas sadness is orientated down, happiness is orientated up. According to Johnson and Lakoff (1980, p. 14), “metaphorical orientations are not arbitrary. They have a basis in our physical and cultural experience”. For example, sadness is orientated down, as in a slouching posture, so that we can assume that the basic physical experience generating this orientational metaphor is primarily a body experience.

It has to be noted that orientational metaphors are not unique to a specific language or culture but, rather, they are available universally. The fact that the same conceptual association is found in different languages is a determinant for considering the conceptual metaphor universal or near-universal. For example, the conceptual mapping SADNESS IS DOWN can be illustrated with examples not only from the English language, but also from many other languages and linguistic families; consequently, it can be assumed that this mapping is a candidate for universal status. Therefore, in order to express sadness, people from different cultures use the same conceptual association between this emotion and downwards motion. As Ma and Liu (2008, p. 266) claim, “the human thinking pattern is the same regardless of your nationality”, in as much as we all share the same human nature.

Nevertheless, despite their universal character, orientational metaphors are subject to cultural specificity (Johnson and Lakoff 1980, p. 14). For example, in most cultures the future is orientated in front of us, but in some others, it is orientated behind us (Lakoff and Johnson, 1980). Aymara culture illustrates this point clearly: as demonstrated by Núñez and Sweetser (2006), speakers of Aymara conceptualize the future as something that is behind us, and the past as something in front of us. This is in clear contrast with most other cultures around the world, where a back orientation for past and a front orientation for future have been generally adopted. As

2. This questionnaire (see Appendix I) consists of six pictures of my dog expressing happiness, fear, and sadness. My 45 informants were asked to identify the emotion conveyed in each picture and to explain what traits had led them to recognise that emotion.

mentioned in the previous section, metaphors are a clear reflection of culture, and cultures are widely diverse, thereby it is to be expected that orientational metaphors differ in terms of spatial relationships giving rise to different space-time mappings. However, given the fact that orientational metaphors are either universal or near-universal, it is to be assumed here that they are less subject to cultural variation than other metaphors and, consequently, the cultural component of orientational metaphors should be less relevant than in other metaphor types. In order to understand the universal character of orientational metaphors, in the next section I will discuss the physical nature of these metaphors. In order to do so, I will relate our orientational understanding of abstract concepts with a series of physical laws of nature, such as, for example, the law of gravity (Wheelwright, 1962, p. 90). Since physical laws are not only universal, but also applicable to every existing species in the world, I will assume here that the physical nature of orientational metaphors offers a perfect starting point for anyone who, as in my case, wants to propose a contrastive study of emotional expressions in humans and in dogs.

3.2. *The physical nature of orientational metaphors*

According to Lavrenova (2019), orientational metaphors normally emerge as a result of interaction between humans and landscape: when someone climbs a mountain, they feel euphoric because of the opening of horizons, which can be used as a source for a new metaphor, so that “the landscape acts as a spatial unfolding of meanings; concepts and their corresponding signs unfold on the earth surface” (p. 104). Simply put, landscape might act as a metaphorical model, since “metaphorical categories are genetically connected not only with the physical experience of self-awareness of the human body but with the movement in space, in the urban or natural landscape” (p. 103).

Without a shadow of doubt, an intimate connection between orientational metaphors and the physical laws of nature could be established, particularly with the law of gravity. The whole universe is governed by forces that interact with each other and with objects around us. For instance, gravity is the force that pushes us down when we jump or the force that keeps us on the ground, in as much as “physically, all men are subject to the law of gravity” which explains why it is more difficult to go up rather than down (Wheelwright, 1962, p. 112). This explains why such images as a star, a flying bird, a mountain, or a growing tree are frequently connected with the idea of reaching a target, and consequently understood as positive (Wheelwright, 1962, p. 112).

It goes without saying that all the bodies and objects on planet Earth are subject to the law of gravity in the same identical way. Thus, as a consequence of gravity, plants and animals have evolved in order to adapt their behaviour to this force. In the case of plants, they are born out of seeds, they sprout and grow tall (normally upwards); nevertheless, when they die, they wither and inevitably fall downwards. The force of gravity not only has a significant impact on objects, but also on the function of living organisms. Thus, when a plant is healthy, this will beat gravity and will grow up and keep upright; on the contrary, when a plant dies off, gravity law makes it fall down progressively. Similarly, when a person or an animal is sad, we feel that gravity becomes stronger, so that our body becomes more and more heavy (as in *SADNESS IS A BURDEN*) and we run out of body energy (as in *SADNESS IS FEELING DOWN*). Based on these images, we can assume that such natural processes are important source of inspiration for such conceptual mapping as *GOOD IS UP* and *BAD IS DOWN*.

4. **Oriental metaphors in emotion expressions by humans and dogs**

4.1. *Linguistic expressions*

Human languages abound in metaphors linking vertical space (UP/DOWN) with emotional valence (GOOD/BAD; Gottwald et al, 2015). These linguistic expressions are so deeply embedded in the speakers' mind that we use them almost automatically. However, it has been noted that the conceptual mappings underlying these linguistic metaphors surface other modalities, such as facial expressions and gesture (Cienki and Müller, 2008). In this section, I will illustrate some of the different ways orientational metaphors pervade these three modalities in emotional expressions by human beings. Unlike any other species in the entire world, humans have developed speaking skills, which makes our species unique. The gift of speaking allows humans to verbally express their emotions, feelings and sensations sophisticatedly, but it cannot be denied that sometimes it is highly difficult to choose the right words or expressions. Hence, figurative expressions, such as metaphors and metonymies, are key elements in our everyday communication, as these linguistic resources enrich the ways speakers convey their inner feelings or sensations.

As has been said above, orientational metaphors are drawn from a physical basis or experience (Kim 1996, p. 39). This can be clearly seen in the following conceptual mappings, most of which can be considered universal or near-universal:

- **GOOD IS UP:** When human beings feel happy, they tend to adopt an erect and upright posture. Generally, positive traits (such as virtue, health and wellbeing) are conceptualised as *being up*, and so is happiness and other positive emotions. The mappings HAPPINESS IS UP and HAPPINESS IS WELLBEING (Kövecses 2004, p. 24) are illustrated by the following linguistic expressions:

ENGLISH	SPANISH
<i>To feel up</i>	
<i>To be in high spirits</i>	<i>Tener la moral alta</i>
<i>To be in seventh heaven</i>	<i>Estar en el séptimo cielo</i>
<i>To be on cloud nine</i>	<i>Estar en la Gloria</i>
<i>To be over the moon</i>	
<i>To be on the top of the world</i>	<i>Estar en la cima</i>
<i>To walk on air</i>	<i>Estar en las nubes</i>

Table 1 HAPPINESS IS UP/WELLBEING in English and Spanish linguistic expressions

- **HAPPINESS IS BECOMING BIGGER:** Happiness could also be understood in terms of becoming bigger. In this case, the physical basis is rooted in our understanding of happiness as a liquid inside our body. Serotonin, dopamine and endorphins are considered the hormones of happiness, so that when an individual reaches a high level of happiness, it might be assumed that these hormones overflow. This gives rise to the following metaphorical expressions:

ENGLISH	SPANISH
<i>To be so happy that you cannot contain it</i>	<i>La felicidad no me cabe en el pecho</i>
<i>To brim over with happiness</i>	<i>Estoy tan feliz que no quepo en mi</i>
<i>To burst out with joy</i>	<i>Estoy que me salgo</i>
<i>To bubble with happiness</i>	<i>Rebosar alegría</i>

Table 2 HAPPINESS IS BECOMING BIGGER in English and Spanish linguistic expressions

- **HAPPINESS IS ENERGY:** Happiness is undoubtedly connected with vitality and motion. When a human being is alive, the heart beats, pumping blood to all parts of the body and allowing for a continuous flow and creation of energy. However, when the heart stops beating, energy ceases to exist. This physical experience leads to the following expressions:

ENGLISH	SPANISH
<i>To be happy as a clam</i>	<i>Estar contento como unas castañuelas</i>
<i>To jump for joy</i>	<i>Saltar de alegría</i>
<i>To be alive and kicking</i>	<i>Estar vivito y coleando</i>
<i>To be like a dog with two tails</i>	

Table 3 HAPPINESS IS ENERGY in English and Spanish linguistic expressions

- **BAD IS DOWN:** As opposed to GOOD, BAD is oriented downwards, which justifies why heaven is up and hell below ground. Similarly, the negative connotations of sadness place this emotion down. The physical basis that could explain this mapping would be the lack of vital energy that a sad or depressed person adopts when experiencing a moment of sadness. Indeed, this emotion makes humans adopt a dropping posture, and it might also boost lying down postures. Some of the linguistic expressions in this regard comprise:

ENGLISH	SPANISH
<i>To be down</i>	<i>Estar hundido</i>
<i>To be in low spirits</i>	<i>Tener el ánimo por los suelos</i>
<i>To be ground down</i>	<i>Estar derrumbado</i>
<i>To be a bit down in the mouth</i>	<i>Estar alicaído</i>
	<i>Estar de capa caída</i>

Table 4 *BAD IS DOWN* in English and Spanish linguistic expressions

- **FEAR IS GOING AWAY / BEING IN THE PERIPHERY:** This mapping is drawn from the typical human reaction to any danger. It comes in the inner nature of any human being to escape in the face of any impending danger or threat. Thus, fear can be understood in terms of flight (Mobbs et al, 2015). Whenever an individual faces high-pressure situations, such as fear or danger, the body automatically activates innate mechanisms that allow him to get away from that situation, since all world's species have been created to guarantee the survival of their own species. However, when it is not feasible to run away, human beings face the evoking threat by confronting it. This is why fear could also be understood in terms of fight (Mobbs et al, 2015). Some linguistic expressions associated with the mapping FEAR IS GOING AWAY include:

ENGLISH	SPANISH
<i>To be a chicken</i>	<i>Ser un gallina</i>
<i>To be like a deer/rabbit caught in the headlights</i>	<i>Salir como un cohete</i>
<i>To be off like a shot</i>	<i>Salir escopeteado</i>

Table 5 *FEAR IS GOING AWAY/BEING IN THE PERIPHERY* in English and Spanish linguistic expressions

In connection with this mapping, not only does fear make individuals run away, or fight but hide behind objects, prompting another mapping: FEAR IS BEING BEHIND. In this instance some expressions could be:

ENGLISH	SPANISH
<i>To bury someone's head</i>	<i>Esconder la cabeza bajo tierra</i>

Table 6 *FEAR IS BEING BEHIND* in English and Spanish linguistic expressions

- **FEAR IS BECOMING SMALLER:** Fear is a distressing emotion which can also lead individuals to shrink, what it can be understood on the basis of becoming smaller. When fear grips individuals, it paralyzes them and turns them into vulnerable beings. The vulnerability and insecurity fostered by this emotion are the roots of the creation of the present conceptual mapping. Here are some examples:

ENGLISH	SPANISH
<i>He shrank with fear</i>	<i>Hacerse un ovillo</i>

Table 7 *FEAR IS BECOMING SMALLER* in English and Spanish linguistic expressions

4.2. Gestures and facial expressions in humans and dogs

Gestures, facial expressions, and body postures reveal as much information about individuals' emotions as words do. Body language makes it possible to understand how humans feel or what it is inside their minds thanks to the richness of non-verbal behaviour, due to the unconscious social clues transmitted in discourses which provide quite relevant information about one's emotional state. Toledo (2015) establishes a comparison between non-verbal behaviour and the internet cookies. According to his study, body language works very much in the same way as cookies: without realizing it, our body is constantly transmitting information about our

feelings, intentions, and even about our personality. Similarly, Balázs (2010, p. 11) claims that facial expressions and gestures are characterized as the aboriginal mother-tongue of the human race. It is crucial to point out that even though the human species have around 200.000 years, the origin of body language dates back to the appearance of the first mammals, around 300 million years ago. It cannot be denied that there is a world of difference, and that non-verbal behaviour is the most primitive form of communication and therefore the most influential in human behaviour.

Body language provides more valuable cues than verbal communication (Mehrabian, 1972). Should a speaker transmit a verbal message which contradicts or differs from one's body language, the listener will be more prone to rely on what his body language conveys rather than the verbal message. This is so because it is extremely difficult for any human to control every spontaneous signals emitted while communicating. In other words, words lie but body language does not. Rebel (2000, p. 19) states the importance of children's movements, since for him children's non-verbal language is less distorted and, therefore, more natural and spontaneous. Children say what they think, either verbally or by means of non-verbal expressions, such as gestures or facial expressions. Taking all this into account, I will now describe some of the different ways *happiness*, *sadness* and *fear* are expressed through gesture and facial expressions in the two species under scrutiny here: humans and dogs.

Happiness: Happiness body language is the way we use our body to show other people that good things are going on inside our mind, usually as a result of good things going on outside our body. The conceptual mapping HAPPINESS IS UP surfaces in numerous human gestures for happiness. To begin with, it is evident that smiling is one of the most significant signals of happiness. What is notable about this gesture is that it entails the lifting of the corners of the mouth, provoking at the same time the elevation of the cheeks.

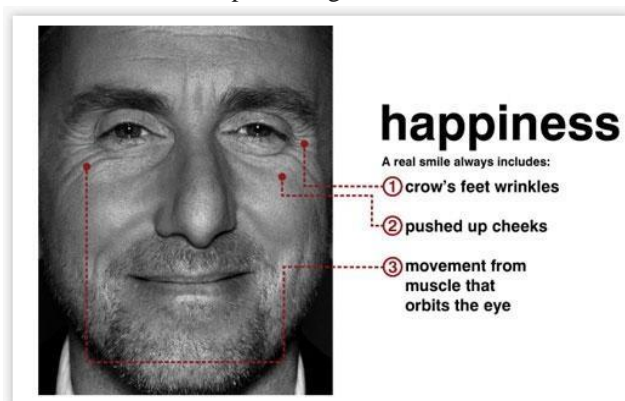


Figure 1 Facial expression of happiness (<http://descriptivefaces.blogspot.com/>)

In connection with the upward position of happiness, the thumb-up gesture, which is normally used not only to show approval, can also express positivity or wellbeing.³ The act of raising the fists, however, is considered a universal upward symbol to express triumph, or pure joy (See Appendix 1, picture 1). This gesture is normally seen in sports competitions; however, this does not mean that it is exclusively limited to the sports field. In fact, it might also be portrayed by someone who has reached any goal or objective. It seems that this gesture is inherent to the human species, and so it is likely to come out almost automatically when experiencing a moment of absolute bliss. It cannot be denied that the raising of arms somehow enlarges the human figure by making it seem taller. Thereby, this fact is intrinsically linked with the conceptual mapping HAPPINESS IS BECOMING BIGGER. Similarly, open mouth and eyes frequently accompany our expression of happiness (the face opens up to the whole world), as in HAPPINESS IS BECOMING BIGGER.

Happiness does not grow from inertia but from movement. Otherwise stated, happiness is energy, activity, motion, vitality, and excitement. Whereas a body without movement is a lifeless body, an active and moving body reflects just the opposite, that is liveliness. Happiness boosts physical activity, and movement which explains the conceptual mapping previously discussed HAPPINESS IS ENERGY.

3. However, it has to be remembered that this gesture is not universal and varies in meaning depending on culture (Waern and Axner, 2018, p. 69).

Dogs are emotional entities with indisputably social skills, which might explain the human-canine bonding. Dogs are able to communicate simple emotions, which they display through different body gestures. The conceptual mapping HAPPINESS IS UP/WELLBEING (see *Table 8*) is frequent: the tail up is one of the most evident indicators of happiness. Similarly, the so-called “play bow” posture (involving the dog’s rear end remaining up while extending the front legs, as if he was half lied down; Appendix, picture 2) is often displayed by happy dogs during their play time as a friendly play invitation. Dogs exuding joy are also likely to jump into their owner’s arms as a sign of joy or they simply leap high in the air. This tendency can also be connected with the conceptual mapping HAPPINESS IS BECOMING BIGGER, as jumping physically lengthens their bodies. On another note, if there is something that characterizes a happy figure is liveliness, so that dogs wagging their tails side-to-side illustrates the conceptual mapping HAPPINESS IS ENERGY. Similarly, dogs usually energetically wallow on the ground when they are excited or jaunty.

HAPPINESS	Spanish	English	Total
HAPPINESS IS UP	11	27	38
-Pushed up cheeks	4	13	17
-Snout pointing up	2	-	2
-Head up	3	7	10
-Upright posture	2	7	9
HAPPINESS IS BECOMING BIGGER/MORE OPEN	24	50	74
-Eyes wide open	6	14	20
-Mouth/jaws open	10	20	30
-Tongue out	8	16	24
HAPPINESS IS WELLBEING	2	6	8
-Relaxed ears	0	2	2
-Relaxed body posture	2	4	6
TOTAL	37	83	120

Table 8 Visual signals of HAPPINESS in dogs (answers to questions n° 1 and 4 in the questionnaire)

Sadness: When it comes to humans expressing sadness, a great number of facial cues and gestures back up the conceptual mapping of SADNESS IS DOWN. It is apparent that sadness is the opposite of happiness, so if the very gesture of thumbs up was positively connoted, thumbs down will be quite the opposite. Thumbs down is a gesture which conveys negative feelings and sensations related to sadness, such as disapproval, discontent, discomfort, distress, among many others. This gesture basically expresses that the subject is not pleased or is saddened by the current situation, statement or environment. Moving to physical expressions, humans going through a gloomy atmosphere tend to grimace, this gesture involves pulling mouth corners down. In addition to this, eyelids drop and cheeks and jaw tend to sink downwards. It is also essential to pay attention to the back since its posture can reveal valuable data as for one’s emotional state. It could be said that sadness somehow brings along a feeling of heaviness over the body which make individuals adopt a hunched or bent posture (as in SADNESS IS LOW ENERGY). Similarly, sad or depressed individuals are likely to bow their heads and to avoid eye contact by keeping their gaze fixed on the ground. All these gestures, explicitly assert the congruence of the downwards position of the conceptual mapping explored in this section.

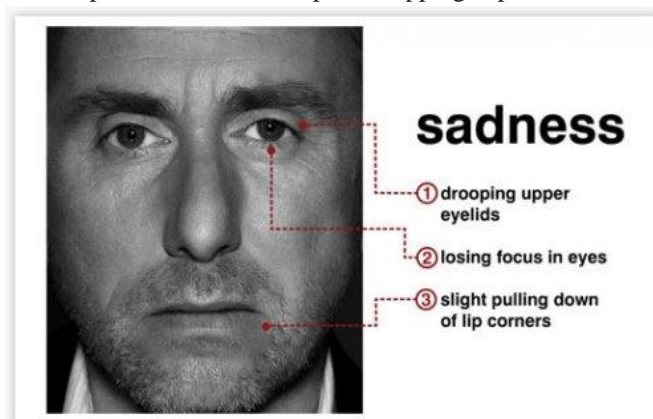


Figure 2 Facial expression of sadness (<http://descriptivefaces.blogspot.com/>)

With regard to sadness in dogs, most of their reactions are identical to those discussed for humans (see *Table 9*). The questionnaire indicates that dogs make use of the *DOWNWARD POSITION* to express sadness. In opposition to happiness, sadness is also characterized by *LACK OF ENERGY*, so that depressed dogs feel lethargic and so they are prone to sitting down by adopting a droopy posture. This posture does not only have an impact on the physical body, but it also affects the position of their eyes and nose. Dogs tend to adopt a melancholic gaze down while pointing their nose down as well (Appendix 1, picture 3). Further, sad dogs are also likely to lie down on the floor, showing no sign of excitement. Additionally, the position of the tail provides valuable information concerning their emotional state. While the tail up is associated with happiness, a tail hanging down is a sign of unhappiness.

SADNESS	Spanish	English	Total
SADNESS IS DOWN	21	32	53
-Eyes looking down	10	10	20
-Droopy eyelid	5	1	6
-Droopy mouth	-	3	3
-Droopy ears	1	1	2
-Nose pointing down	-	1	1
-Head down	3	4	7
-Droopy facial expression	2	7	9
-Droopy posture	-	5	5
SADNESS IS LACK OF ENERGY	8	33	41
-Semi-closed eyes	6	14	20
-Blank stare	2	7	9
-Squinting eyes	-	3	3
-Semi-closed mouth	-	4	4
-Relaxed body posture	-	3	3
-Frown	-	2	2
TOTAL	29	65	94

Table 9 Visual signals of *SADNESS* in dogs (answers to questions n° 3 and 6 in the questionnaire)

Fear: When fear creeps up inside the human body, people respond differently to survive bearing in mind the surrounding circumstances. It is actually the limbic brain that takes over human beings' body when experiencing a fearful time. The brain, in turn, activates three possible responses: to paralyse, to run away or to fight. The first response is very much connected with the conceptual mapping *FEAR IS BECOMING SMALLER*, since at the same time individuals paralyse they tend to shrink as a means of self-defence. In this event, it seems that the body works as an external protective shield. Apparently, children express emotions with extraordinary intensity. In the presence of any pervading sense of menace, it comes naturally to minors, mainly, to cover their faces with their hands so as not to witness the possible threat (as in *FEAR IS NOT SEEING*). Oftentimes, when children are afraid of strange noises they are likely to hide under beds, under the cover, or inside the wardrobe. Analogously, it is also fairly frequent for humans to close their eyes as a means of feeling more secure by hiding in themselves. Thus, these habits support the conceptual mapping *FEAR IS BEING BEHIND*. As stated by Mobbs et al (2015), fear can also be understood in terms of flight, in the sense that whenever there is little chance of fleeing away, human beings tend to quickly escape the threatening situation and to find refuge, as far as possible to the imminent physical threat. This latter behaviour is construed on the conceptual mapping *FEAR IS ESCAPING FROM SIGHT* (or from any of the other senses).

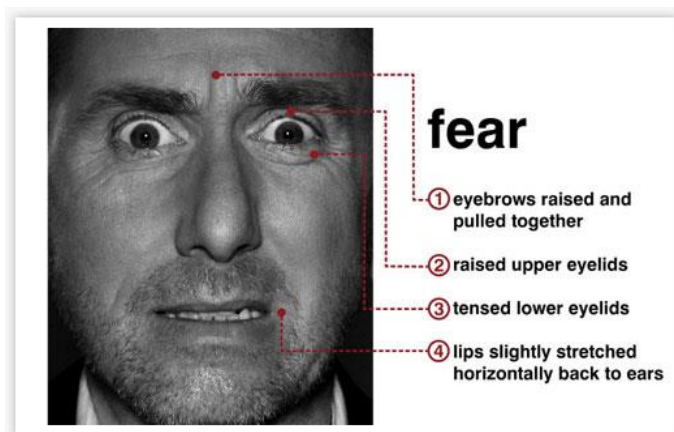


Figure 3 Facial expression of fear (<http://descriptivefaces.blogspot.com/>)

As for dogs, they do have the same natural survival instinct as humans, so that their responses tend to be very much alike. When perceiving potential dangers, dogs usually try to seek a way out to shy away from the spot they find in. Thus, the conceptual mapping FEAR IS BEING IN THE PERIPHERY is very much applicable to dogs’ reactions as well. Once they manage to slip away, the next impulse will be finding a safe place to stay, providing that the physical circumstances allow it. In that case, dogs are prone to hiding behind or under objects within their reach. Running away and finding a shelter is what any living entity will do in the event of any danger. It is also significant to make allusion to the position of their ears, since anxious situations make them turn their ears back. Another pivotal point to be mentioned is the act of dogs hiding their tails between legs as a sign of fear. These occurrences certainly give evidence to support the conceptual mapping FEAR IS BEING BEHIND. Just as it happens with humans, this emotion also leads dogs to cower and cringe by leading their bodies to slouch over making themselves smaller. Thereby, the conceptual mapping FEAR IS BECOMING SMALLER is very much reflected in dogs developing phobic responses (Appendix 1, picture 4).

FEAR	Spanish	English	Total
FEAR IS BECOMING SMALLER	21	32	53
-Ears down	2	1	3
-Head down	10	11	21
-Cowering	-	8	8
-Bended position	7	13	20
-Droopy posture	1	13	14
FEAR IS ESCAPING FROM SIGHT/SENSES	14	33	47
-Eyes gazed down (FEAR IS NOT SEEING)	7	13	20
-Mouth closed (not breathing)	1	2	3
-Hiding	6	18	24
TOTAL	35	65	100

Table 10 Visual signals of FEAR in dogs (answers to questions n° 2 and 5 in the questionnaire)

5. Concluding remarks: How similar are dog’s emotions to ours?

In light of the above analysis, it could be claimed that the grounded orientational metaphor theory permits to affirm that the expression of human and dog emotions can be compared to each other. My research definitely agrees with Charles Darwin’s stance in proving that animals (or, more specifically in my own case, dogs) are emotional entities very much as humans. Due to space restrictions, this paper has especially focused on three basic emotions: happiness, sadness, and fear. Despite the low number of emotions studied, this has sufficed to prove that both species express these emotions in parallel ways, irrespective of the obvious physical dissimilarities among them. Even though humans are considered superior on the basis of their linguistic skills, this does not mean that dogs are not able to experience or to express emotions. In fact, dogs do experience basic emotions, which they substantially express through facial expressions and gesture. In this sense, it has been shown here that the emotional expressions used by dogs are construed on the same conceptual mappings as the emotional expressions used by humans, as these mappings are rooted in our biology and in our bodily experience of the physical world, ruled by the same identical physical principles for both species.

This research has taken orientational metaphors as the methodological framework in order to establish these emotional parallels between both species. In the case of happiness, orientational metaphors link this emotion with UPWARD POSITION; this is illustrated by such linguistic expressions as *to feel up*, *to be in high spirits*, etc. The key point here is that both the verbal and non-verbal language of humans and the non-verbal language of dogs illustrate this mental connection between UPWARD POSITION and HAPPINESS. When it comes to humans, by pointing the thumb upward it could be understood that they feel pleased, and as for dogs, it could be assumed that they are happy when their tail is up. Along this line, I have also proved that the expression of sadness and fear by humans and by dogs is also based on shared conceptual mappings. In sum, in this research study I have contributed to the surge of interest in animal sentience (Duncan 2006) and, consequently, psychologically closer to humans than what is frequently assumed. Furthermore, I have tried to show that it is possible to gain information about what dogs are feeling using linguistic methodologies. Finally, it is my personal wish that these results will contribute to the advance in animal welfare science.

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Appendix

- English questionnaire about dogs' emotions: <https://forms.gle/htYJTZMmjrPvzCN57>
- Spanish questionnaire about dogs' emotions: <https://forms.gle/oqVnu2SszPdZ2L2Z8>

1. Victorious gesture of *happiness*



(Source: <https://theecologist.org/2009/jun/19/vattenfall-shell-win-climate-greenwash-09>)

2. Bow posture expressing *happiness*



3. Body expression of *sadness*



4. Corporal expression of *fear*



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