Comparative Thanatology: An Exploration of Non-Human Animals Concept of Death

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Introduction

The interest in comparison of the human mind and nonhuman minds leads researchers to focus on other minds. Researchers care to explore diverse behaviors as possible cues for the mental aspect and mind of different nonhuman animals. Observing behavioral differences in nonhuman animals was found to be a way to shed light on the cognitive and emotional abilities of nonhuman animals. A particular occurrence that has drawn much curiosity recently is the unique behavioral alterations that nonhuman animals display in response to death. These interests lead to many other questions that dive more into the concept of mortality for nonhuman animals, which give rise to comparative thanatology.

This paper aims to answer the question: Do animals other than humans comprehend death? Can they comprehend what it means to be mortal, understand that their life will come to an end, and make distinctions between those who are alive and the dead? Which mental processes are required for this competence? The paper will adopt a critical analysis based style by offering existing literature and the philosophical arguments raised based on the literature. The paper will end with a subjective perspective of my thoughts on these debatable questions and an experiment proposal for real-life testing.

Background

The comparative thanatology literature offers controversial answers to the questions indicated above. The reason is that the difficulty of studying the human mind and attributing behaviors to the concept of mortality, in general, is not that clear. Also, researchers have their perspectives on defining and examining the behaviors in terms of knowing and acting on death. This controversial perspective and the hardness of thanatology research on nonhuman animals will be discussed in more depth later in the philosophical arguments section. In this section, existing literature will address the questions above and give different results that support different answers. I will focus on three examples: supporting the idea, against the idea, and a controversial example in which one perspective seems like support, but the other does not.

One part of the literature is optimistic about the general understanding of death that nonhuman animals display. Different results support the idea that "We can't be the only existing creatures that know about death, understand it, act on it, and show an emotional reaction." Strong evidence comes from the reaction of chimpanzees after the death of their relative "Pansy." As Anderson (2017), displays an overview of the situation, Pansy lives with her lifetime friends, daughter, and her friend's son. After Pansy died, "She received 11 instances of grooming or caressing by other chimpanzees, and zero instances in the 10 minutes after she died."(Anderson, 2017, p.181). It is observed that her lifelong friend took her hand and sat silently there. The male chimpanzee engages in aggressive behavior, like leaping onto the body. The following day,

chimpanzees display closeness to the dead body, like looking at the face or cleaning the dirt on the body. They show accelerated grooming. A substantial difference in their sleeping position and pattern was observed. The three chimpanzees displayed abnormally irritated sleep patterns, shifting their positions frequently and sleeping in previously unoccupied areas. Their caretakers reported them being depressed and quiet while the body is taken away and after it is gone. After the new place was arranged, the females were reluctant to enter, and the males displayed a fearful response, which prevented him from entering the area for two days. It was highly unusual that none built their nest on the platform where Pansy had perished for five nights. The three chimpanzees displayed diminished appetite and activity for a few weeks following the death before returning to normal. Anderson (2017), concluded that chimpanzees' behavior after death is similar to human responses to death. Also, it is supposed that by looking at the depression state and changes in behaviors of living chimpanzees in a bad way, chimpanzees have the knowledge that dead bodies cant recover, namely the concept of "irreversibility," and by the aggressive behaviors toward the body or the silence sitting behind the body indicate the knowledge of dead bodies can't feel or behave namely the concept "non-functionality." By this example, we can see that animals exhibit an idea of that because they know the irreversibility and non-functionality of the dead body. Before the death of Pansy, it was observed that she was sick. In her ill state, three chimpanzees spend time with her, sitting next to her quietly and staring. This can be an indication that they know that Pansy will die, so bodies will one day be gone. We can make this interference by seeing the increased attention of Pansy. But a self-concept of death, so the idea of "I will die too." It can't be comprehended from this behavior. Their decreased activity and appetite for several weeks can support knowing that the body is gone forever. If they categorize absence, their depressive state or overrated reactions (like not entering the area) won't be observed. The depressive mode and grooming their caretakers reported shows that they are showing an emotional reaction with causal inference to death because these behaviors or reaction wasn't their usual way of expression in daily life.

There is also evidence of not supporting the nonhuman animals having enough mental ability or mental representation of death and mortality. A well-known example of this comes from the ants. Brosnan and Vonk (2019), describes that ants quickly drag dead bodies from the nest. Unlike the chimpanzee example, ants don't engage in emotional responses or differences in their reactions following their death. Chemical signals seem to be the only source of power for this system. Dead ants stop generating two essential chemicals, and their absence appears to cause removal actions. They don't display grief or reduced activation after the death. This behavior is argued in Monso and Mascoro (2020), that because of this primary reaction to chemicals and conventional ways of acting, social insects most likely also lack the mental complexity necessary to develop a notion of the dead. Ants seem to convey a straightforward concept of death by relying on chemical reaction cues. Of these behaviors, we can't get any idea of if they know that their body will one day be gone because their responses seem more biological than cognitive, social, or emotional. Since they only "understand" that a body is dead in the absence of chemicals, when the

actual death happens, they won't be able to have an idea that they will also one day die. Removing the corpse can signal that they know when an individual is dead. But in another perspective, the dead bodies are highly at risk for infecting disease. So, the removing behavior may be an adaptational way of survival rather than a complete understanding that the dead body is not alive and can't function anymore. If they have a concept of death, it seems more like a categorization, like by the chemicals they triggered of an absence state rather than an eternal absence. They don't display any emotional regulation like standing next to the corpse, decreased appetite or activity, or any depressive mode related to death. Instead of having the mental ability to differentiate a cognitive process associated with the absence of a relative or an emotional bond, they are biologically hardwired to remove the body. So, the behaviors of ants that have been followed, which predominantly rely on chemical alerts and lack complex emotional reactions or responses to death, point to a more physiological and survival-oriented strategy. The ant's elimination of corpses, in distinction to the chimpanzee example, seems to be motivated by chemical signals, indicating that it may not have the mental complexity necessary to develop an awareness of death as chimpanzees do.

There is another stereotypical behavior that primates display when their infants die: carrying. This behavior is a controversial example because while some researchers depend on this cue for a sign of the concept of death, others argue that this has other additional benefits and may signal actual misinterpretation of a dead body. As reviewed by Gonçalves and Carvalho (2019), different views explained this behavior differently. One suggestion is that the mother might not be aware that the baby has died, engaging in an error-management manner, so the mother doesn't want to let go in case the baby might be alive. This suggestion displays a negative aspect of the concept of death. This shows that the mother doesn't know the concept of death deeply but is just making an error and trial. So there is only a categorization of death, like dead or alive, but not a complex mental representation of what is dead and what immediate signals show a dead body. Also, this reaction seems more adaptive than emotions. This suggestion shows no feeling of "Can't let go because of emotions" but "It will be too costly if the mother leaves a possibly alive child adaptiveness." On the other hand, for others, this behavior makes it possible that carrying the corpse of a baby is a present grieving-coping mechanism. As decribed in Nicolson (1991), maintaining physical contact with the deceased baby serves as an "emotional buffering," easing the mother's distress and assisting her in coming to terms with the loss. These perspectives offer the opposite of the first idea. In this suggestion, the mother is engaging in an emotional response. They try to cope with her distress, which shows a mental ability to handle and manage the burden of the concept of death, indicating a higher cognitive ability. Also, this copying mechanism shows that the mother is aware that the body is gone forever, so she engages in a highly stressful response and clinginess to the dead body because of the awareness that it is gone forever, but she can have the body for some time at least. This engaging in copying mechanism behavior also shows that the mother is aware that the infant is dead, but she doesn't want to accept it, although she acknowledges it. So, the perspective of an example is as important as conceptualizing the answer.

To finalize, I explained and focused on three different examples to show the complexity of reading an abstract concept based on only observable behaviors. As in the first example, sometimes the behaviors offer a clear pattern of the concept of death to our understanding, similar to human behavior. We tend to code the presence of the concept of death as present if the behavior patterns seem straightforward to us, including a causal relation of upcoming emotions and behaviors to death. In the second example, researchers have agreed that it is not a deep mental representation of death in a case of a reaction to biological cues. Researchers come to the same idea quickly because we are attuned to criticizing the concept of death based on our own experiences. The behaviors of ants show a clear, distinct pattern of behaviors to their reaction and our reaction to death. We don't just respond to chemical cues but engage in complex behaviors and emotions because we have a self's and others' mental representation of death concepts and a higher cognitive ability to interpret and react to them. When we came to the last example, researchers seemed to have distinct ideas on one particular behavior. The reason for this is because it is too open to comment. Because humans can engage in behavior like this but also may not. Some humans can refuse to let go of the body, want to stare at it, or spend more time even with the corpus, whereas some people refuse to even look at a dead body in pictures. So again, our tendency to compare our concept of death to other nonhuman animals, like it has to be the same, sometimes gives rise to different interpretations.

Philosophical Arguments

In this section, I want to point out the different perspectives on the nonhuman mind's death concept. The weaknesses and strengths of this aspect. Firstly, I want to state why studying the nonhuman mind is not easy and, secondly, why studying thanatology in nonhuman animals is not easy. I want to point out these arguments because these are the ways we try to understand the thanatology of nonhuman animals. So, without pointing out these methods' weaknesses and strengths, the general arguments of nonhuman thanatology can't be understood.

Discussing and experimenting with the nonhuman mind is challenging for several reasons. Firstly, studying the nonhuman mind is difficult because nonhuman animals do not communicate like humans. So, interpreting some behaviors or mental states without having some insight into communication or explaining themselves sets some barriers to the issue. Secondly, there will always be some human interpretation and bias in the study of animals. Since we are biased to think in a human way and nonhuman animals can’t explain themselves, there will always be subjective comments on each behavior. Thirdly, emotions and thoughts are best expressed in communication in humans. Since nonhuman animals lack this property, it is hard to understand the underlying emotions and thoughts of the behavior. Also as described in Bekoff (2000), the most challenging unsolved issue with animal emotions is the relationship between emotions and cognition, as well as how emotions are experienced or reflected upon by both humans and non-human animals Fourthly, there are many different species, and each has its unique way of seeing and interacting

with the world. The limitation is that we can't study all of them and that we can't have insight into each because animals, including humans, differ in their perception, living conditions, biology, cognitive abilities, and many other concepts and areas. Finally, based on ethical issues, we cannot adopt every method to study any research question we want on nonhuman animals.

With all these depicted above in mind, there is also particular hardness in studying thanatology in nonhuman minds for several reasons. Firstly, as stated by Monso and Mascaro (2020), when we try to explore this topic, we face two forms of anthropocentrism: intellectual and emotional. As summarized in Monso and Mascaro (2020), intellectual anthropocentrism means excessive intellectualization of the concept of death, and emotional anthropocentrism means overemphasis on grief as a response to death. These concepts arise because we tend to judge the nonhuman mind and their behavior reflection with a comparison of the human mind, so we conclude that if they respond like us to death, they know the concept, but if not, they don't. So, the concept of death is very abstract, and the attributions we make to it are linked with human lifestyle, mental representation, and mind.

Intellectual anthropocentrism has its strengths and weaknesses. The strength is that it creates understanding and a common ground by comparing the actions of non-human entities with those of humans. The weakness is that it holds the danger of ignoring diverse, species-specific cognitive processes. I stand on the pessimistic side of the issue, so it is a bias in non-human mind research. So, as described in Monso (2019), a simpler model of defining the concept of death was adopted. Specifically, the conditions for components of understanding death are minimized from 7 categories of non-functionality, irreversibility, universality, personal, mortality, inevitability, causality, and unpredictability to only the first two categories. This concept of minimalizing has its strengths and weaknesses. For weakness, one may argue that if the non-human animal doesn't possess or understand all these 7 seven categories, can we say that they know the concept of death? We define the concept of death by adding all these factors together, so subtracting some of them won't mean oversimplifying? My answer to this question is no. I think like Monso in this issue. We are overly predicting our ability to understand the concept of death and trying to implement the same thing to other species, whereas they are not the same. The strength of this model is that it acknowledges that we are actually "ultra-social animals," so we have a complex and heightened ability to communicate each other's experiences and construct meaning with each other. The word "ultra" differentiates us from other social animals. Our ability to complex mental representation and cognitive skills shouldn't be underestimated. So, diminishing the definition of the concept of non-human animals is not undermining the concept of death. It is just adapting and adjusting to non-human animals with different cognitive abilities..

When we look at emotional anthropocentrism, a strength is that it establishes a foundation for analyzing and interpreting emotions in all species. The weakness is that different animals may exhibit distinct emotional reactions and emotions that are not always consistent with human patterns of emotion. So, we again try to judge the emotional responses of non-human animals to

death to our emotional responses. One strength of this idea is it creates a common ground for analyzing or interpreting emotions. The weakness of this idea is that we shouldn't make common ground on emotions because we don't have a common ground. We are creating bias and limitation of understanding when we try to observe the same duration and frequency of the same emotional responses.

Another issue of thanatology is that, as described in Monso (2019), regarding various cultural groupings, distinct species could comprehend particular tasks that distinguish living individuals and end with death in diverse ways. So, there are cultural variations of the concept of death as in behaviors. Different groups of species display other behaviors and reactions. So, trying to fit it into one objective definition is not true among non-human species because they vary in their cultural beliefs, which interact with their perception and behaviors.

I want to implement the three most common hardness to the examples I gave from the literature to understand better how the strengths and weaknesses of this hardness interfere when we try to make meaning of the concept of death in non-human animals. Firstly, I want to implement intellectual anthropocentrism strengths and weaknesses to the Pansy chimpanzee example. The strength of the paradigm is that we might observe associated actions like grooming and touching the deceased, which are indicative of human grieving. This makes it easier to comprehend how non-human animals respond to death. By this, we concluded that the example shows that chimpanzees can understand death because they have human-like reactions. Nevertheless, intellectual anthropocentrism tends to simplify chimpanzees' thought processes. By assuming that chimpanzees' grieving processes are analogous to those of humans, one may overlook the distinctiveness of chimpanzee cognition and may miss important facets of their comprehension of death. Maybe only showing the same patterns as we do doesn't indicate that they have a mental representation and deeper understanding of death.

On the issue of emotional anthropocentrism, I want to apply this to the second example I have: the ants. Even in seemingly straightforward acts like removing ant corpses, emotional anthropocentrism helps provide an everyday basis for studying emotional responses. Understanding the emotional aspects of non-human animal thanatology can be initiated by searching for human-recognizable emotional indicators, including mourning. One may interpret removing corpses as like a respect and sadness for the dead body. On the other hand, it may cause a misinterpretation of the emotion of grieving when the act is only there for biological reasons.

On the issue of cultural variations, I want to apply it to my last example: carrying infant behavior. The weakness of this would be seeing that every chimpanzee acts in the same way (in case they are not), which means the same thing for every other species. On the other hand, if we don’t focus more on cultural variations, we can have a common ground, at least inside the species.

Lastly, some actions may be made to strengthen the philosophical arguments in investigating non-human thanatology. Research methods should be diverse to minimize human-centric interpretations and enable a thorough knowledge of non-human actions. Examples of such methods include cognitive experiments and observational investigations. Studies that compare mental procedures and emotions across animals are crucial for identifying similarities and differences, preventing overgeneralization, and appreciating the variety of non-human cognition. Including multidisciplinary viewpoints enhances the research and provides a variety of perspectives to reduce biases, especially from disciplines like anthropology and ethology. Because longitudinal studies capture the changing patterns of one's mental and emotional reactions to mortality throughout many life stages, they offer a thorough picture of non-human thanatology. When taken as a whole, these actions bolster the philosophical claims and offer a solid framework for investigating the idea of death in non-human brains.

Conclusions

In summary, when philosophical debates over the nature of death in non-human brains are examined, it is clear that both emotional and intellectual anthropocentrism are important. Although these viewpoints provide insightful analyses of non-human behavior, they have drawbacks, especially when oversimplifying cognitive functions and extrapolating human emotions onto various animals. The recognition of cultural differences in the ways that other animals see death also adds to the endeavor's complexity. A thorough and nuanced understanding of non-human thanatology necessitates finding an equilibrium between these anthropocentric points of view to negotiate the intricacies of the non-human mind with awareness of their distinct cognitive and emotional environments.

In my opinion, non-human animals have a concept of death. In particular, mammals comprehend death in several subcontexts, as explained above. I think this is because non-human animals interact with their deaths, showing an understanding that the individual is gone. They don't engage in communication or play behavior with them, showing that they know the body is not alive. They have a mental representation of absence forever because the chimpanzees, for example, show depressed mood loss of appetite symptoms, which indicate they know that the individual doesn't come back, so they offer a sense of grief. They have emotional regulations because of the depressed mood reported and also their tendency to make the dead body clean. Also, carrying an infant shows some kind of emotional regulation if we look at the scene as a coping mechanism for sad events. They show several cognitive abilities, like not sleeping in that place of death and staring at the dead body, which is their reflection of the mental state of both sadness and fear. Also, when we think of their natural habitat, they are used to seeing deaths and always a risk of being dead. They are giving a survival competence. The way they handle death may differ from us because they may have normalized the concept of death, and death may signal a rival around, so there is an instinct to protect themselves. Their urge to defend themselves for me also shows the knowledge that they can be dead, too. So, the differences in behavior and emotion can arise because of their

natural conditions, their biology, and our hardness to read the communication and emotions of non-human animals, not because they don't know the concept of death. So, seeing human beings as the only creatures that know about death is, for me, too, simplifying the other species. We also learn about death in time, approximately 9-10 years of age. Since we communicate with language and can have the news of death worldwide, we get used to the concept as we perceive it in our worlds. It can be like in non-human animals, too. They may learn the concept of death in time, but with other reflections because when thinking in a social context, too many distance us. Because death is an abstract concept, we attribute our subjective experiences and learning responses following death. The non-human animal behavior patterns may also be their subjective experiences that we can't comprise totally, so I think there is no absence of the concept of death in non-human animals. We don't have enough resources to analyze it from their point of view.

Experimental Protocol

Firstly, I think this concept can only be studied in real life by real-life settings. So, the experiment should occur in their natural habitat to see the natural responses. So, my experiment is based on natural observation in a habitat. Also, I want to focus on chimpanzees because more evidence shows their knowledge of death. Also, I think a longitudinal study should be adopted because the concept of death can be learned in time. Also, because it is a natural observation, there must be more time so that at least some naturally occurring deaths can occur in the group.

The experiment focuses on a tribe of chimpanzees. The tribe has chosen to maintain a more sedentary life and compromise on different age groups for a more valid observation. After finding that kind of tribe, video cameras will be placed in the area, and a drone will be there to observe the behaviors of chimpanzees when they engage in mobility. A device will be put on each individual of the tribe to measure their bodily reactions like blood pressure, inhalation rates, heart pounding, and pulse. After that, the experiment will consist of waiting and observing.

The experiment will compare different things. Firstly, it will compare reactions to different types of deaths, such as an accident, a predator killing a tribe member, and a natural cause of death like illness. The other tribe members' behaviors will be coded as their bodily reactions. The aim of looking at different causes of death is to understand if they have a general concept of death. If one cause of death is causing abnormal reactions, but others are not, it can be concluded as a reaction to a condition rather than death. For example, suppose they show increased bodily and behavioral responses to predator killing but not others. In that case, it can be because of the fear of survival rather than the concept of death.

The characteristics of the chimpanzees are also important. The different age groups are observed because the younger and older ones' reactions to death will be compared to understand if older ones have a broader knowledge of death and if the concept of death is a learning pattern. The closeness to death is also important to compare if all tribe members show similar sequences

of reactions to all members or, for example, if a sibling reacted more to another sibling dying. This may reveal their emotional regulation because if close relatives show more accelerating responses, it can support the bond between them and indicate more positive feelings toward the individual, so they experience more grief.

Also, at some point, the dead body of another animal will be put close to them to observe their reactions if they understand immediately that the body is dead. This can show the effect of the concept of other species death allowing for understanding among species concept of death.

Also, after a while of death of a tribe member, a photo of the individual that died (that taken when it is alive) will be shown to chimpanzees to see their reaction. If they act like the dead body is back, like showing happiness, it may indicate that they categorize the absence rather than knowing the body is gone forever. But suppose they show a depressed mood, loss of appetite, or lack of joy. In that case, it will not only indicate that they know that the dead are forever but also show their emotional regulation pattern of remembering a dead relative.

The study aims to compare the bodily reactions and general behavior patterns in the normal state of life, during the death occurrence, and after the death occurrence to see if the responses are unique to the death and if there is a concept of death or not. Also, the analysis should be done by expert researchers in the area who doesn’t in person observe the chimpanzees and just those who see the video footage and body reaction data. The reason for this is that the observer researchers may have a biased emotional reaction toward the chimpanzees and misinterpret the behaviors because they get used to them and see them as more human-like.

The limitation of this setting is that waiting for these conditions can take time, and not all conditions may be met. The strength of the utilized setting is that it indicates a real-life setting. The setting should be this way because if we have an experimental design in a zoo or a lab, I don't think we can see their natural behavior patterns. After all, they would get used to the new area created for them. So, in this way, the results can be more generalized and thought of as universal because no manipulation occurred, they were in their natural habitat, the different age groups were observed, and the individuals attended at different ages (counting the fact that each member will also grow); the cause of death wasn't manipulated, and most importantly for the control they were engaging in their everyday life patterns so a reliable comparison can be found.

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