

The Mourning Behaviors & Funeral Rituals of Animals

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Abstract

This online textbook chapter will provide students with an understanding of the mourning behaviors in animals. It explores the different definitions used to compile the data today and provides examples across a variety of species including non-human primates, crows, elephants, dolphins, and whales. Multiple studies are cited which aim to collect first hand observational data as well as data analyzation from a variety of perspectives around the globe. This chapter is distributed under a Creative Commons License:

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Figures 1 & 2. Human and chimpanzee experiencing grief
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 “*Chimpanzee*” by [Tim Ellis](#) is licensed under [CC BY-NC 2.0](#))

Introduction

Life and death are responsible for the ebbs and flows of life. Everything has a beginning and an ending. “Grief is the price we pay for love” and these feelings are not unique to humans (Cormier 2023). Animals and humans are connected through their capacity for feeling emotions like grief and practicing mourning rituals (see Figures 1 & 2). Mourning behavior among animals consists of a complex set of behavioral attributes, which despite sharing characteristics with human mourning practices, are distinct. It’s important to understand the definitions of grief and mourning in order to connect these complicated emotions to animals. Grief is a complex and intense emotion which can be observed in a variety of non-human species. This emotion is characterized as the “...reaction to the permanent severing of a strong social or family bond” (Morell 2018). Animals may experience curiosity or fear while trying to understand the loss of a fellow member. Studying these rituals and behaviors of both wild and domesticated animals is described as evolutionary thanatology (Bryce 2022). Any noticeable behavioral change can signify an animal is in the initial stages of experiencing grief (Bryce 2022).

When many social animals mourn, they will often exhibit behaviors that do not benefit their survival. Some of these behaviors include lacking sleep, consumption, and socialization. Even fundamental “aspects of their personality may change for a period of time” (Bennet 2021). Dr. Joan Gonzalvo, a researcher of the Ionian Dolphin Project, explains that, like humans, animals must find peace after a loss.

Although animals may partake in behavior that does not benefit their survival, some scientists, including Kaeli Swift—a female avian ecologist—argue that grieving is an adaptive strategy as a means of protecting both the “deceased” and living (Cormier 2023). One adaptive value of mourning is that animals will commence an alarm call to signify a “danger response.” For example, crows will sound alarm calls when a member has died to warn other birds. Additionally, animals may investigate why the animal died to protect themselves in the future (Cormier 2023).

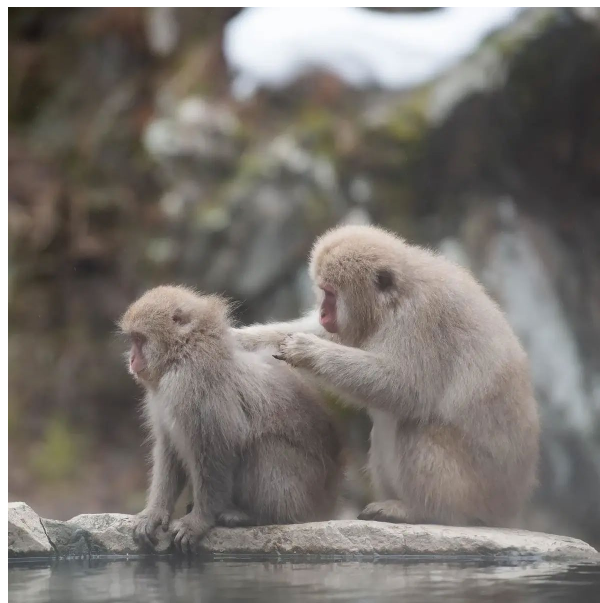


Figure 3. Baboons grooming each other

(“[Two perspectives on animal morality](#)” by [Adam M. Willows](#) is licensed under [CC0 1.0](#))

Furthermore, the connection between humans and non-human animals through grieving practices can be illustrated through hormones and funeral rituals. Evolutionarily, mammals evolved from a common ancestor i.e. humans, elephants, and cetaceans. This means that some of the hormones which influence emotions in humans also exist in non-human mammals. Glucocorticoid is a stress hormone that is released after traumatic events. Oxytocin is known as the “love hormone” and is released in response to feelings of happiness (Yeoman 2018). Oxytocin inhibits stress hormones which can calm people and non-human animals down. Female behavioral ecologist, Anne Engh, conducted an experiment on female baboons which observed the hormone levels following the death of another member. It was concluded that stress hormones i.e. glucocorticoids significantly increased for two months after experiencing loss. Later, experiments revealed that female baboons will groom each other more often to lower stress hormones and calm themselves. Grooming is a sign of friendliness which means the baboons were attempting to explore new social relationships to decrease stress levels (see Figure 3.). This physical behavior releases oxytocin (love hormone) which inhibits the stress hormone. After two months of grooming, their hormone levels returned to normal (Yeoman 2018).

An example of similar funeral rituals can be recognized in elephants. Elephants have been seen burying corpses and engaging in behaviors showcasing concern and distress. Elephant biologist, Sanjeeta Pokharel of Kyoto University (Japan), commented that elephants repeatedly walk in circles around a body, which is indistinguishable to rituals practiced in Hindu culture (Bryce 2022). Additionally, nonhuman primates and cetaceans have been spotted carrying the corpse of a deceased infant, depicting a similar emotional response to a loss (King 2016).

All of these behaviors of burying, touching, carrying, repeating movements, and staying alert are seen across chimpanzees, crows, elephants, and marine mammals. Studying these rituals and behaviors increases people’s sensitivity to animals and can help promote conservation. Sanjeeta Pokharel indicates “what better way to accomplish [conservation], than to believe that our fellow animals feel [emotions], too” (Bryce 2022).

Non-Human Primates: Chimpanzees and Gorillas

Non-human primates have been observed to have similar mourning behaviors to humans. Similarities have also been seen between different species of non-human primates. While there is very little research that has been conducted in this area, gorillas and chimpanzees are known to display distinct mourning and grieving behaviors (see *Fig. 4*).



Figure 4. Sad Chimpanzees. ("Sad Chimps" by Eric Kilby is licensed under [CC BY-SA 2.0](https://creativecommons.org/licenses/by-sa/2.0/))

Often, chimpanzees' attitude towards the dying and the deceased is similar to that of humans. Chimpanzees have been known to take care of fellow chimps who are dying through grooming and cleaning practices. The healthy chimps will not leave the dying member's side and will also often sleep next to those who are unwell (Koerth-Baker 2013). Once a fellow chimp has passed, chimps are known to carry and defend the bodies of the deceased. Scientists have also observed chimps grooming the bodies of the deceased. This can especially be seen in mothers whose offspring have passed (see *Fig. 5*). They are frequently witnessed carrying the body with them while completing daily tasks (Osborne 2019). Observations in the field in Bossou, Guinea have documented at least three instances of mothers carrying and grooming their dead, mummified infants for weeks after their passing (Harrod 2014). A similar behavior has been observed in gorillas. In Rwanda, gorillas have also been seen carrying the bodies of their deceased offspring on their backs (Balter 2010).



Figure 5. Mother chimpanzee holding her child.
(*"Chimpanzee"* by [Böhringer Friedrich](#) is licensed under [CC BY-NC-SA 2.5](#))

Gorillas have also been observed to experience grief similar to humans. A gorilla from the Gorilla Foundation named Koko was found to have an almost human-like response to death. In 2001, she met and befriended comedian Robin Williams. When she was informed of his passing, her response was humane. The Gorilla Foundation stated that Koko “became very somber” and that she sat “with her head bowed and her lip quivering” (Hu 2014) (see *Fig. 6*). Koko is an example of a domesticated gorilla, but this is still evidence of how non-human primates are capable of having a human-like response to death and grief. Chimpanzees have also reacted after viewing the body of a deceased group member. “They were concerned and seemed almost mournful. Fanana would not stare directly at the body for long periods of time, but preferred to turn his back and [lie] there quietly, glancing back on occasion. Others were more fearful and tried to steal a glance from a distance” (Harrod 2014).



Figure 6. Sad gorilla. (*"Pouting ape"* by [m01229](#) is licensed under [CC BY 2.0](#))

From the observations that have been made in non-human primates, it can be said that chimpanzees and gorillas experience grief similar to humans. It is clear that non-human primates have an idea of what death is based on their behavior including the “tugging at the body, opening the eyes and otherwise attempting to elicit a reaction” (Harrod 2014). In addition, chimps are known to ‘whimper and hoo calls of distress with a mourning-like mood” (Harrod 2014). Despite the chimps' usual behavior of grooming and licking the bodies of the injured, once the individual has passed, they will stop cleaning wounds and grooming all together. From these observations, non-human primates do have an understanding of death and will elicit similar mourning behaviors to humans.

Crows

Crows perform a fairly unique funeral ritual that may demonstrate the strategic benefits of a type of behavior that is often characterized as a more emotional response. In contrast to other species in which one member may, for instance, touch or guard the corpse of a conspecific, crow funerals are a highly social affair (Swift and Marzluff 2018). When a crow finds the corpse of one of its own, it will send an “alarm call,” alerting others in the area and drawing them to its location (Swift and Marzluff 2018). Once other crows arrive on the scene they typically start to caw and dive at the corpse, but usually will not touch it (Swift and Marzluff 2018). In some cases they may peck or pull at it, and in some studies conducted during the peak of mating season attempts to mate with deceased conspecifics have been observed, though this particular response is especially rare (Swift and Marzluff 2018). In another contrast to some other species, familial ties or other social bonds do not seem to influence the occurrence of crow funeral rituals. They seem to initiate funeral rituals whenever they come across another of their species even if they are unfamiliar to them (Swift 2015).

While further research into this behavior in crows is needed, recent studies from avian behavioral ecologist Kaeli Swift (see *Fig. 8*) have brought this topic into the public eye and shed some light on why crows may have evolved to engage in these activities. Swift’s name is unavoidable when reviewing recent breakthroughs in crow funeral behaviors. She was awarded a National Science Foundation Graduate Research Fellowship to study animal behavior and cognition in corvids at the University in Washington from 2012 to 2018, with much of her work during that time focusing on funeral rituals in American crows (Swift 2015; Swift and Marzluff 2018; Swift 2023).

Swift has also dedicated much of her career to the field of science communication due to her own struggles with her learning disabilities and her desire to increase the visibility of women in this area (Swift 2023). In addition to sharing her work through academic journals, she has a wide collection of blog posts on her website summarizing the findings of her work in more accessible language and formatting, and has also given talks to everyone from elementary schools and reporters to her own academic peers (Swift 2023). Swift’s observation of crow attempts to mate with the dead were the subject of headlines from a variety of news outlets (Gardner 2018; Yong 2018), despite the fact that necrophilic behavior was observed in a mere 4% of the American crows she studied and only appeared during the height of mating season (Gardner 2018; Swift and Marzluff 2018). In fact, Swift’s research as a whole has had very little to do with necrophilia in crows, and rather she has mainly focused on demonstrating how funeral rituals serve as a sort of “teaching moment” for these animals (Swift 2015; Swift and Marzluff 2018; Swift et al. 2020).

The learning ability of crows is a well-known phenomenon, with corvids in general having comparably large brains for their size, particularly being developed in “areas thought to be analogous to

the mammalian prefrontal cortex” which may promote “an increase in primate-like intelligence” (Emery and Clayton 2004). Crows have been observed to put these big brains into good use as, for example, studies have shown that they will remember the faces of demonstrated threats and even pass this knowledge on between generations (Marzluff et al. 2010).

Through her research, Swift has attempted to see how the funeral rituals of crows and other corvids may be connected to their enhanced memory and learning skills. After observing crow reactions to humans carrying dead members of their species, it has been found that “crows learn the spatial context associated with a dangerous event and that aversion to this area can continue for 72 hours even after the cadaver and/or predator is removed” (Swift 2015). From this demonstrated learning in crows, she has suggested that the evolutionary basis for the funeral behaviors observed in corvids may be as a way of avoiding potential threats (Swift 2015). In Swift (2020) she was able to take a closer look at the actual brain activity within crows, and found that exposure to dead conspecifics produces significant activity within the nidopallium caudolaterale, the region of avian brains thought to be responsible for higher-order decision making. From these findings she suggests that crow funeral rituals are not a simple response to a stimulus but rather a result of complex and variable decision making, explaining the variety of different behaviors observed in crows during these rituals (Swift 2020).

Both in her research as well as in talking with reporters, Swift has often suggested that her findings surrounding learning and brain activity in crows may have implications towards human grieving and funeral practices (Comier 2023; Swift 2015). While Swift’s research may be quite recent, humans connecting crows to our own funeral rituals is by no means a new or unique occurrence. For example, in English we morbidly call a group of crows a “murder” (see *Fig. 7*). Additionally, in many cultures crows and other corvids such as ravens have long been labeled as a harbinger of death or bad luck, likely due to their scavenger behavior and black feathers (Hernik 2020). However, it’s important to recognize that not all portrayals of corvids are entirely gloom and doom. In fact, many cultures throughout history have also depicted these birds as wise or prophetic creatures in their myths and legends (Hernik 2020). In the end, crows and their many connections to loss and mourning remind us that there can be lessons for us to learn in even our tragic and difficult experiences.

Images



Figure 7. A murder of crows perched in a tree ("[Murder Members](#)" by [Kurt Bauschardt](#) is licensed under [CC BY-SA 2.0](#))

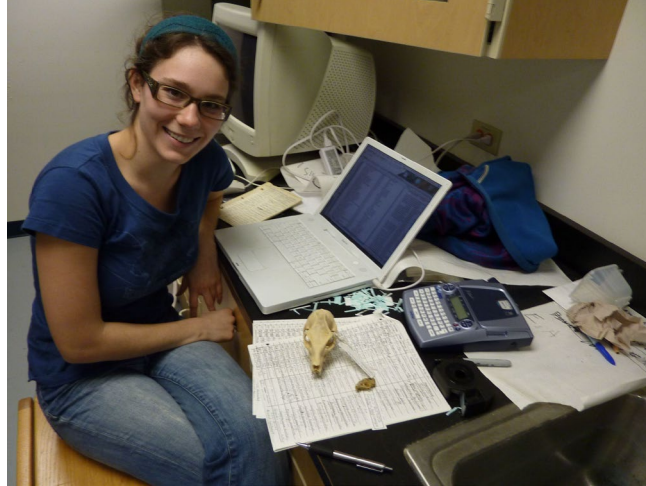


Figure 8. Kaeli Swift doing research in a lab at Willamette University ("[Kaeli Swift Collections 1](#)" by [Willamette Biology](#) is licensed under [CC BY-SA 2.0](#))

Elephants

Elephants have been observed to undergo a significant change in behavior following the loss of a member of their species. A variety of responses encompass this emotional reaction to loss. Elephants are an extremely social species and the bonds they create with one another last throughout their lives (see Figure 9). They have been reported to congregate in groups of upwards of one-thousand members due to this attachment level (Williams 2013). Although the emotional intelligence of elephants is difficult to explore due to a lack of research, the reports surrounding this distressed behavior are increasing in number in recent studies. Conclusions have been drawn based upon a variety of methods, including direct examination of elephants' movements as well as observations of behavior through video surveillance of elephants in the wild.



Figure 9. Family of elephants traveling together to a watering hole ("[Elephant family coming to Okaukuejo watering hole](#)" by [Greg Willis](#) is licensed under [CC BY-SA 3.0](#))

One such study was analyzed by researchers at the Indian Institute of Science, Bengaluru (Singhal 2020). The team of researchers, who are employed through the Centre for Ecological Sciences, have revealed the characteristics they attribute to mourning behaviors associated with loss in elephants. This research is particularly beneficial in the future research of animal mourning practices due to the fact that these studies are centered around the unique sectors of biosciences found in India. Organizations providing financial support for the platform on which the study was analyzed include the Department of Biotechnology (DBT), the Ministry of Human Resource Development (MHRD), and the Wellcome Trust India Alliance. Each of these organizations supports releasing a more diverse set of research and promotes inclusion through educational platforms such as the first hand analysis described below.

A way in which elephants have displayed emotional responses while grieving is by surrounding the deceased member. In fact, elephants are able to detect when a member of the species is ill and will refuse to leave their side through the death of the member. One way in which elephants care for their family members is through physical support (King 2016). When the ailing elephant begins to stumble, other elephants will utilize their trunks to stabilize the weak member. While this potentially places their own safety in jeopardy through being exposed, healthy elephants will continue to support the feeble elephant. On multiple occasions, calves have been held in such a manner that elder members attempted to force the calf to stand. These responses were completed in a cooperative manner by multiple older members to relieve the symptoms the calf was experiencing. This conduct is referred to as epimeletic behavior, meaning the altruistic actions of animals which are used to care for the needs of other members enduring grave challenges (Singhal 2020).

However, these reactions are not limited to the immediate family members of the sick or injured member. While evidence suggests there are different levels of emotional responses in a relationship between a parent and child, members from the local population will collectively grieve for any member (King 2016). Essentially, reactions engaging the emotional state of elephants have been observed across multiple groups. If a member of one family fell ill or died, members from various other families would collect around the body to display their affections (Singhal 2020). They do so through actions like guarding practices.

The Amboseli Trust is a nonprofit organization which aims to protect elephants in Africa. One family monitored by the group included a 36-year-old elephant named Angelina who gave birth to a set of twins, pictured below (see Figure 10). As twin elephants contribute to only 1% of the population, this was a very rare occurrence. Unfortunately, a greater number of offspring also require more resources to be shared. There is not a very high survival rate for twins as the milk needs to be shared by both individuals. In this case, a drought led to an insufficient supply of milk to support both calves. The male calf, who required more nutrition than the female calf due to a higher growth rate, starved to death (Wu and Kuo 2013). Staff at the Amboseli Trust were aware during this period of time that the calf was struggling but elected to not interfere with the natural process. The reasoning behind this is that elephants have a very strong emotional attachment to each other. If humans attempted to remove the sick calf, this could cause harm to the other members of the family. Although the loss of the twin is devastating, it was ultimately the morally correct decision. Allowing the elephants to undergo the natural process of loss and grief is less harmful than the stress sustained through human intervention. There exists a delicate balance between helping and harming species in relation to human involvement that must be evaluated on a case by case basis.



Figure 10. Family of elephants including a set of twin elephants ("[In memory of one of the rare Elephant Twins, who died this week. Amboseli National Park](#)" by [RayinManila](#) is licensed under [CC BY 2.0](#))

Elephants respond to grief by protecting the remains, making physical contact with the corpse, and vocalizations. The data collected by scientists at the Centre for Ecological Sciences, and was recently published in Royal Society Open Science, followed the behavioral patterns in elephants in fifty-eight videos posted on Youtube. Searching through the footage was the best way to acquire such data due to the fact that these emotional responses to the death of a member occur infrequently (O’Kane 2022).

Elephants tend to display a very strong emotional response if placed in the vicinity of skeletal remains (Pierce 2018). When a member of the family dies, especially if this member is a calf, the surviving members tend to gather around the skeleton and stand guard or carry the carcass along with the herd. In four of the videos studied by researchers, a similar behavior was traced in which members would physically carry the remains of the calf with them throughout typical daily tasks (O’Kane 2022). At times, elephants have also displayed signs of aggression when other individuals step too close to the remains. Researchers additionally observed elephants making physical contact with the remains in twenty-one videos while nine recordings showcased the vocalized responses (O’Kane 2022).

Elephants share qualities that most certainly relate to grief. Although more research needs to be conducted in this field, patterns observed in the behavior of elephants following the death of a member showcase the emotional attachment and strain the species is capable of experiencing. These traits appear in multiple forms and distinctly surrounding the time when a member is ill, injured, or deceased. The timing in these behavioral changes is of great interest and can help understand characteristics of grief across multiple species.

Dolphins & Whales

Even far out in the depths of the ocean, marine animals have the capacity to feel these deep emotions after a loss. Giovanni Bearzi, an Italian marine biologist, has identified that there are 20 cetacean species, such as bottlenose dolphins and humpback whales, that have the ability to feel a loss

and mourn a member of their pod based on their social habits and brain size. When an animal responds to a loss of a member of their group, their reaction and habits they partake in are defined as postmortem attentive behaviors. Bearzi noted that the social brain hypothesis gives an explanation for the post-mortem social patterns of animals. This hypothesis states that social animals “evolve extra brain mass...to manage the complexity of social life” (Lee 2019). Because marine mammals have larger brain sizes, they are more likely to mourn their dead.

Additionally, the sex of the animal influences which member of the pod they will attend to. The most common situation of a dolphin or whale in mourning is a mother with her calf. The strong bond between mothers and their offspring indicates the prevalence of a matrilineal dynamic in cetaceans (see Figure 11). Males, although seen less, will attend to other adults instead of offspring (Lee 2019). Marine biologist, Filipe Alves, of the University of Porto in Portugal, explained that because of the close kinship relations in a matrilineal system, it is easier to observe animals grieving (i.e. strong mother/calf bond) (Daley 2018).

Not only do dolphins and whales emotionally feel grief, but they also physically respond to it. For example, dolphins maintain physical contact and watch over their deceased pod members which demonstrates their sympathetic and altruistic tendencies. Maddalena Bearzi, a dolphin researcher and founder of the Ocean Conservation Society, recorded these tendencies as nudging, circling, emitting clicking sounds, and carrying the body (Daley 2018). Dolphins would even carry the carcass after it was decomposed (Morell 2018). Giovanni Bearzi noted that “these [behaviors are all] signs of emotional stress resulting from the breaking of social and familial bonds” (Lee 2019). While out on the open ocean, Bearzi observed that “close-ups of the eyes of grieving [dolphins] convey a feeling of suffering, and while this interpretation may be seen as anthropomorphic, feelings of grieving are not uniquely human” (Daley 2018). From his research, Bearzi summarized that cetaceans respond to a loss in three distinct phases: 1.) Protecting the unresponsive individual, 2.) Recognizing “the finality of death” but not accepting it, and 3.) “Abandoning the body” due to loss of interest or a safety concern (Lee 2019). This pattern of prioritizing attention to one pod member holds true with living dolphins as well. Bearzi and his associates found that sometimes baby dolphins can suddenly become unconscious (though unharmed). Other pod members will carry the baby to the surface so it can breathe and will stay with it out of protection (see Figure 12). This demonstrates dolphins sympathetic and altruistic capabilities since they are putting another member's safety before their own. It’s fascinating how these animals will do things for others even though they have zero benefit for their own survival (Lee 2019). These recorded behaviors show people that non-human animals do have feelings and raw reactions to death. The author of “Wakes in the Waves” puts it best: “the similarity in behavioral and psychological traits across cetaceans, human and other intelligent mammals also invites us to appreciate the interconnectedness of different life forms” (Lee 2019). Although there is still so much more to learn, this groundbreaking research gives us a window into the eyes of marine mammals and hopefully will help with their conservation in the future.

Images



Figure 11. Humpback whale calf rises to surface to take a breath ([“Humpback whale and calf at rainbow beach”](#) by [Texaus1](#) is licensed under [CC BY 2.0](#))



Figure 12. Dolphin calf nudged to the surface to take a breath ([“Baby Dolphin Playing”](#) by [Liz Lawley](#) is licensed under [CC BY-SA 2.0](#))

Summary

Death surrounds every living creature. People carry out funeral practices to respect those who are lost and, as it turns out, non-human animals perform similar actions. Across many unique species, there are some mourning patterns that are nearly identical. For example, members of many species will stay by the dying or deceased animal. Members will often prolong physical contact with the dying or deceased including burying, carrying, nudging, and holding to carry out mourning rituals (Daley 2018). The most prevalent example of animal mourning is a mother and her child due to the strength of their bond (Daley 2018). Additionally, animals will “guard” and watch over the deceased to protect them, even at the cost of their own life. Animals will lose calories, sleep, protection, and social time to complete their grieving process (Bennet 2021). This behavior emphasizes the capacity of animals to engage in sympathetic and altruistic behaviors (Singhal 2020). Evolutionarily, we can see the connection between humans and animals with the fluctuation of stress and love hormone levels post-loss (Yeoman 2018). The discovery of mourning rituals demonstrates the degree to which humans and animals are interconnected. We will both do what is best for the one that has passed without any benefit to ourselves. Additionally, carrying out

these funeral practices are to help the living—non-human animals and people—move on and find peace. The emerging studies surrounding animal funeral rituals and mourning behaviors that we have explored in this chapter has provided a foundation for future research that will hopefully help us better understand animal emotions, as well as improve human empathy towards the environment.

Comprehension Questions for Students

1. *How are the mourning behaviors of elephants observed? Can this system be improved upon?*
2. *What are some of the similarities between how humans and chimpanzees experience grief?*
3. *A murder of crows will use death as a chance to learn about potential danger. In what ways might humans similarly use loss as a learning opportunity?*
4. *Do you feel like the 3 phases of responding to a loss that Bearzi describes are similar to human responses?*
5. *Describe the advantages and disadvantages for grieving species of comparative thanatology and give an example for each.*

graphs/diagrams were unable to be provided due to lack of research in this field. More scientific research in this field needs to be done in order to view & share images related to animal mourning

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