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Citation for final published version:

Millar, Becky 2024. Can animals grieve? ERGO

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Can Animals Grieve?

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Abstract

Empirical research provides striking examples of non-human animal responses to death, which look very much like manifestations of grief. However, recent philosophical work appears to challenge the idea that animals can grieve. Grief, in contrast to more rudimentary emotional experiences, has been taken to require potentially human-exclusive abilities like a fine-grained sense of particularity, an ability to project toward the distal future and the past, and an understanding of death or loss. This paper argues that these features do not rule out animal grief and are present in many animal loss responses. It argues that the principal kind of “understanding” involved in grief is not intellectual but is instead of a practical variety available to animals, and outlines ways that the disruption to an animal’s life following a loss can hinge upon a specific individual and involve a degree of temporal organisation.

1. Introduction

Research into non-human animals (hereafter simply “animals”) has found behaviours that look very much like manifestations of grief.¹ Many species seem to experience prolonged distress at the loss of a companion or relative and engage in distinctive death-related behaviours. However, various philosophical accounts of the nature of grief seem to be at odds with this apparent evidence, suggesting that such animals cannot truly be grieving, but rather experiencing something more rudimentary, such as sadness or separation anxiety. Grief over the death of another is often taken to require high-level abilities, such as grasping the fact or the finality of a loved one’s death and a fine-grained sense of particularity and temporality. It might further be held that core features of grief’s phenomenology are restricted to the human case.

In this paper, I argue that certain animals can, and do, grieve. To achieve this, I consider the core features of grief that appear especially challenging for the animal case: (1) understanding of loss; and (2) the particularity and temporality of grief—the fact that it is directed towards a specific individual who has died and with whom a temporally-extended life was shared. I argue that these features apply to certain cases of animal loss responses after all, and that given their centrality to grief’s process and phenomenology, their

¹ Here I focus upon bereavement grief, and use the term “grief” to refer specifically to grief over the loss of an individual. This is not to say that there are not important structural or phenomenological similarities between bereavement grief and other loss experiences such as the loss of significant objects, opportunities, or capacities (e.g., see Richardson, Ratcliffe, Millar, & Byrne 2021).

presence provides good evidence for animal grief. The argument will proceed as follows. §2 discusses extant empirical and theoretical work on this issue, before outlining the two philosophical challenges for animal grief. §3 looks in greater detail at the role of understanding in grief, taking grief itself to *be*—in part—a process of comprehension. Importantly, this process is not intellectual and does not automatically preclude animals, but there are nevertheless important constraints upon what counts as the right kind of process. §4, addresses the worries about particularity and temporality, looking at ways that disruption to an animal’s life can hinge upon the loss of a specific individual, and to a lesser degree, involve temporal organisation. §5 concludes by discussing implications of the preceding argument for our understanding of grief.

2. Animal Loss and the Philosophical Challenges

The empirical literature provides striking examples of animal responses to the deaths of conspecifics and companions, which some researchers consider clear evidence of animal *grief* (e.g., King 2013; Milligan 2018). Many animals express protracted distress over such deaths, with research into primate communities, for example, uncovering human-like reactions to loss. The primatologist Jane Goodall reports such reactions, noting that young chimpanzees exhibit acute grief responses when they lose their mother, and may even die of this grief (e.g., Goodall 1971; 1990). While we might expect death reactions somewhat akin to ours among primates, less likely candidates for such responses have also been noted. For instance, in research discussing the greylag goose, Lorenz (1963, as cited in Parkes & Prigerson 2010: 50) goes as far as to say that the responses of these geese to the loss of a mate are “roughly identical with those accompanying human grief”. In her book on this subject, the anthropologist Barbara King (2013) sets out diverse descriptions of animal loss responses, ranging from cats, dogs and rabbits crying and searching for their companions, to horses gathering around the grave of one of their herd, to chimpanzees, whales and dolphins carrying the bodies of their deceased offspring. She takes such responses to demonstrate capacities to love and grieve.

Some animals have also been described as engaging in mourning ritual-like behaviours, which might be taken to be indicative of grief, although this conceptualisation is controversial. For example, elephants have been observed taking great interest in the bones of their dead. They have been known to cover the bodies of their dead with dirt and branches, smell and touch the bones of their dead, and visit them numerous times (Bradshaw 2009: 10-13), and studies empirically confirm that they show more interest in elephant bones than those of other species (McComb, Baker, & Moss 2006). There is anecdotal evidence of magpies, ravens and crows also engaging in such activities (Bekoff 2009). Such research remains inconclusive, however, with some taking these animal behaviours to be based upon gathering information about salient danger in the environment, rather than being indicative of mourning (for discussion see Porter et al., 2019). Nevertheless, even if animals don’t engage in mourning activities, there is evidence of some species interacting with their dead in a socially meaningful manner. For instance, researchers have observed chimpanzees (van Leeuwen, Cronin, & Haun 2017) and baboons (Carter, Baniel, Cowlshaw, & Huchard 2020) cleaning the wounds and mouths of their deceased infants and conspecifics, sometimes removing

debris using tools such as stems of grass. Carter and colleagues note that they have not witnessed any such mouth cleaning activities directed at live baboons, but only at the dead. Van Leeuwen and colleagues (2017) take mouth cleaning of deceased chimpanzees to be suggestive of long-lasting social bonds that continue to exert an influence when conspecifics die. Chimpanzees, they argue, may treat their deceased conspecifics “as social beings instead of inanimate objects—especially when this group member is a close associate” (2-3).

While there has been limited sustained philosophical work on this topic, some have endorsed the idea that animals can grieve. Nussbaum (2001) discusses primatologist Jane Goodall’s observations of apparent acute grief among chimpanzees and endorses the idea that such animals can have rich emotional lives and can, in some sense, grieve. Although Nussbaum takes emotions to be cognitive-evaluative², she denies that such cognitive evaluations are out of reach for animals; many animals are, she claims, capable of “intentionality, selective attention, and appraisal” (91). Milligan (2018) takes animal grief to be clearly empirically vindicated (also citing, for example, Goodall’s [1971] work with chimpanzees as evidence). Because he takes animal grief to be scientifically supported, he uses it as a basis for arguing for animal *love*, which he takes to be the more contentious phenomenon.

However, it is not merely an empirical question whether animals can grieve. While many find it unproblematic to attribute certain emotions like sadness or fear to animals, grief is more challenging. Grief appears not to be a simple and singular emotion, like fear of a tiger or joy at a tasty meal, but to instead be some kind of complex process that unfolds and evolves over an extended period (Klass, Silverman, & Nickman 1996; Goldie 2011; Ratcliffe 2017; Cholbi 2022). This process can involve many different emotions—sadness, fear, anger, hope, and so on—as well as involving large temporal gaps during which a subject does not actively experience grief. The diversity of grief between subjects and even within the same subject over time presents a challenge for pinning down essential features of grief. Nevertheless, various philosophical accounts have converged upon several pronounced and characteristic aspects of human grief. Although not all of these accounts explicitly address the question of whether animals can grieve, the picture of grief’s nature that emerges from them seems, on the face of it, ill-suited to accommodate animals. It is held that grief involves beliefs about, or comprehension of, the loss (Gustafson 1989; Price 2010; Brinkmann 2018; 2020), that grief is *particular* in that it is directed toward a *specific* individual, relationship, or death (Marušić 2018; Westlund 2018; Ratcliffe 2019; Cholbi 2019; Brinkmann 2020), and that grief has a rich temporal structure in terms of both memories and the recognition of losses stretching into the future (Goldie 2011; Ratcliffe 2022). Although there may be other features that philosophers attribute to human grief that present a challenge for the animal case, these features seem both especially

² Whether emotions in general are best understood as evaluative appraisals, physiological “feelings”, or some alternative or hybrid of the two is beyond the scope of this paper.

plausible and especially *challenging* for the claim that animals can grieve. Let us look more closely at these challenges.

2.1 Understanding Loss

The first of potential problem for animal grief is that grief is generally taken to require some kind of understanding of loss or death; without some kind of recognition that something has been lost, it doesn't seem right to label the emotional experience as grief. For instance, various approaches to grief emphasize the role of *beliefs* regarding the death of the other. Gustafson (1989) characterizes grief as involving a belief that the loved one has died, which comes into conflict with an irrational desire that the loved one not be dead. Price similarly construes grief as involving a conflict between belief that the loved has died and an emotional evaluation (2010). The emphasis on *beliefs* about the death may appear to exclude animals insofar as it requires an understanding of death, which may be thought to be beyond their capacities.³ Other accounts further require a deep understanding of mortality and finitude, rather than just an understanding that another has died (e.g., Brinkmann, 2018; 2020). According to Brinkmann, grief is a "foundational emotion" in that it "places the human subject in a unique relationship to the existential themes of love and death that we do not see in other species" (2020: 30; cf. 2018: 195), requiring an understanding of mortality which is conceptual and reflexive (2018: 202).⁴ While animals like dogs "can feel a kind of deep need, lack, or privation when their owner disappears", this doesn't count as grief because they lack "an understanding of the inevitability of death as such" (202). Thus, he argues, animals' grief-like reactions are better understood as examples of mere separation anxiety (2020: 55; cf. 2018), which is assumed to be significantly different from the existentially-charged emotion of grief.

Conceptual understanding of death is generally broken down into different sub-components within the psychological literature. Susana Monsó (2022: § 3.1; see also Slaughter 2005) extracts seven such sub-components from work within developmental psychology: non-functionality (i.e., their mental and physical functions have ceased); irreversibility; universality; personal mortality; inevitability; causality (there are internal or external causes of death); and unpredictability (death's exact timing is unpredictable). However, not all of these subcomponents are required, or at least required fully, in order to successfully employ some sort of concept of death. Monsó (2022) and Monsó & Osuna-Mascaró (2021) argue that animals can have at least a minimal conceptual understanding of death, in terms of grasping the non-functionality and irreversibility of the deceased's condition. They note that animals in the wild engage with death far more often than humans do; it is a normal part of their lives that their conspecifics are killed or die from various causes. While humans often think of the concept of death in abstract terms, for animals, death is instead

³ For general positive discussion of different approaches to understanding animal beliefs, see Lesson, Tinklenberg, and Andrews (2020), and for arguments against animals having beliefs on the basis that they don't have language see Davidson (1982).

⁴ See also Becker's influential account, upon which Brinkmann draws, according to which humans are uniquely placed to confront their own deaths: "The knowledge of death is reflective and conceptual, and animals are spared it" (1997: 27).

often “something very tangible and very present” (Monsó 2022: 118). Thus, one could hold that an understanding of death is needed for grief, but that this does not exclude animals.⁵

However, Brinkmann’s claims about grief requiring a deep understanding of mortality are focused around the subcomponents of *personal mortality*, *inevitability* and *universality*, which seem less easily accessible to animals.⁶ While there is not scope here to offer an in-depth rebuttal of such an account of grief, I hope to cast doubt on it throughout this paper by offering an alternative conception that captures grief’s most central phenomenological features without necessitating this kind of understanding of personal mortality and finitude (see §3 and §4). As we will see, only a weaker kind of comprehension that an individual has been lost is required. However, as a starting point, there are good initial reasons to be sceptical that this kind of understanding of death is *necessary* for grief, rather than just a salient aspect of *some* grief experiences. For one thing, such a requirement plausibly precludes not only animals, but various cases of human grief too. Young children, for example, are unlikely to be capable of such an understanding; it may take up to around age 10 to develop a mature understanding of death (Kenyon, 2001), but many would want to allow for the possibility of childhood grief. It might further be questioned whether even all adults truly have this kind of understanding of mortality and the “inevitability of death as such”, as Brinkmann holds. For instance, research has uncovered evidence for an early and automatic death denial neural mechanism, which involves the attribution of death to others rather than to oneself, shielding us from existential fear (Dor-Ziderman, Lutz, & Goldstein 2019). Death is, according to such research, often taken to be something that only befalls other people. This is not suggestive of a deep understanding of death’s inevitability and reflexive nature. It may, therefore, be that a deep understanding of death and its inevitability is better treated as a salient aspect of how many (adult, human) grievers engage with loss, rather than something that is necessary for grief.

2.2 Grief’s Particularity and Temporality

Grief’s *particularity* and its *temporal organisation* may be thought to present further challenges for animal grief. Although accounts of bereavement grief’s object vary, in all cases, the specific individual who died is important. Grief is directed towards a *particular* individual or *their* death (Marušić 2018), one’s relationship with *them* (Cholbi 2019), or a range of lost life possibilities involving that person (Ratcliffe 2017; 2020; 2022; Ratcliffe, Richardson, & Millar 2022). The loss might also be considered particular in the sense that those we grieve, and with whom our lives were entwined, are not generally *replaceable* to us; the person’s value

⁵ Monsó and Osuna-Mascaró (2021: 2262-2263) argue that whether animals grieve and whether they have a concept of death are orthogonal issues because animals may understand death but not grieve, and may grieve but not understand death. The latter claim here is controversial, as indicated by the philosophical accounts of grief under discussion that emphasize knowledge of death.

⁶ Even here it is not clear that these subcomponents are completely out of reach for animals. For instance, as Monsó points out, “[E]ven if it is beyond animals’ cognitive prowess to ever grasp the inevitability of their own death, it seems plausible that an animal who has witnessed and processed that several others have died due to a certain cause will reach the conclusion, when faced with that very threat, that her own life is at risk” (2022: 133).

to us is not reducible to the sum of their attributes.⁷ Such individuals have “non-fungible import”, to use Helm’s terminology (2010). Thus, as Westlund observes of grief, in the case of a genuine loss, “[e]ven if the lost object can be replaced with another similar object, the *particular* object that was lost is never to return” (2018: 22). Frankfurt relatedly says in a discussion of love that the significance of the beloved to someone “is not generic, but ineluctably particular” and thus substituting the beloved is “not an acceptable and perhaps not even an intelligible option” (1999: 166). Some argue that animals lack an ability to grieve and love particular individuals in this sense, or at least that this capacity is greatly diminished as compared to humans. For instance, Nussbaum, despite endorsing the idea that animals have rich emotional lives, argues that animals cannot instantiate some forms of love, which involve a “a fine sense of particularity” and a “temporal sense of aim” (2001: 146). Brinkmann (2020) likewise argues that grief and love are directed at individuals with a particular *numerical* identity—“the individual as an indivisible, unique whole” (57)—rather than at the sum of their attributes. He argues that animals do not possess this sense of numerical particularity, and therefore cannot grieve or possess the deep form of love available to humans.

Relatedly, it might be held that the life disruption central to grief hinges upon the loss of someone *specific*—and a life shared with this person—in a way that precludes animals. Ratcliffe argues that one’s temporally organized life structure can come to depend upon a significant other person, and it is this life structure that is disrupted when that person dies (2019; 2020; 2022).⁸ Although there might be some sense in which animals can grieve, Ratcliffe takes his focus to be:

[S]omething distinctively human: a dynamic life structure consisting of cohesively organized values, commitments, projects, and pastimes. This often involves pursuing significant possibilities that stretch many years into the future, which relate in intricate ways to past activities, achievements, and failures. The kinds of experiences that I have described are rendered possible by this structure, its fragility, and the extent to which it can come to depend on our relationships with particular individuals. (2022: 100)

If what is disrupted in grief is a complex and temporally-organised “life-structure” tied to a specific individual, then perhaps animals are precluded from grieving. The next section addresses the worry that grief involves a kind of understanding that animals may lack, and §4 returns to these concerns about particularity, temporality, and the disruption to animals’ lives not being of the right form to count as grief.

⁷ Moller claims that at times remarriage and other such adjustments can amount to an *instrumental* replacement of the deceased in terms of the roles that they played—“as companions, friends, sex partners and intimates” (2007: 310). Regardless of whether one agrees with Moller about this, there seems to be another, important sense in which loved ones are not replaceable; it is the loss of a *specific* person who is woven into one’s world that causes the pain and disruption of grief.

⁸ According to Ratcliffe, grief’s particularity is a trait that distinguishes it from depression (2019: 544).

3. Grief's Process of Comprehension

Plausibly grief requires some sort of recognition or comprehension of loss in order to be appropriately directed at its object. An animal might be anxious, for example, due to environmental changes following a death, but it seems wrong to call this emotional experience “grief” unless the animal, in some sense, recognizes these changes as involving *loss*. Moreover, to draw an apt comparison with human bereavement grief, it seems that the relevant loss experience must involve understanding that a *particular individual* has been lost (as will be discussed in detail in §4).

However, there are different ways to construe the role played by, and temporal structure of, this comprehension. One approach is to take grief's process to be *triggered* by an understanding of the loss. For instance, Solomon construes grief as “suffering brought about by the recognition of loss” (2004: 80). It might be held that there is no way for a grief process to gain traction without such a prior understanding of loss, and that this is the kind of understanding that is central to grief. Such a view may get support from the fact that generally people are, from the outset of their loss, willing to endorse the proposition that their loved one has died. Such approaches give rise to various troubling puzzles beyond the scope of this article about whether grief is a rational or appropriate response to its object, since grief diminishes over time, but the object of grief remains the same (i.e., the death or the loss) (e.g., Moller 2007; 2017; Marušić 2018).

However, as has been argued in detail elsewhere (Ratcliffe et al.: 2022), such an account of the role of understanding in grief is mistaken:

contrary to what is sometimes assumed, grief is not a response to a distinct and prior recognition of loss, and so it would be a mistake to ask whether it is an appropriate or rational response to something already understood. Instead, what it is to grieve is—in part—to undergo a gradual process of recognition and comprehension. This is exemplified by numerous first-person accounts of grief-experiences, all of which convey an initial disconnection between endorsing the proposition that “D is dead” and really coming to *believe it* by integrating it into the structure of one's life.

With this approach, grief is *itself*, in part, a process of comprehension. That this is the most central role for understanding in grief, rather than the common initial “acceptance” of the death, can be first highlighted by noting that endorsing the proposition “D is dead” at the outset of a bereavement is often a shallow kind of understanding, having not yet been meaningfully integrated into one's world. As Ratcliffe (2017) outlines, statements such as “D is dead” may thus feel hollow and meaningless for the bereaved: “Without an associated alteration of the habitual world, propositional acceptance is experienced as incomplete and conflicted” (166). It is only through a much longer process that one can truly understand the loss, by integrating it into one's world. It is this longer process that is essential to grief's nature rather than any endorsement of a proposition regarding the death, and thus the relevant kind of understanding is not—or at least does not *need* to be—of a propositional form.

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With such an account, grief is a process of “relearning the world”, as Attig puts it (2011). One’s existing way of understanding and relating to the world is shattered and must be gradually adapted over time. Nussbaum relatedly talks about a process of, “cognitive frustration and reweaving one’s cognitive fabric in consequence” (2001: 80), as one is continuously confronted with aspects of the loss. The process central to grief is not one of gradually coming to endorse various propositions regarding the loved one’s death (which would presumably remain a challenge for most animals). Rather, as is stressed by Attig (2011) and Ratcliffe (2017), the process of relearning is not to be construed in intellectual terms. Attig emphasizes that it is principally a matter of learning *how* to live and act in the world again, rather than a matter of learning *that* certain facts are the case (e.g., 2011: xxxix). As Ratcliffe puts it, this process “consists principally of a practical adjustment, a change in habitual patterns of activity, experience, and thought” (2017: 163). With Ratcliffe’s account, this process is also partly constitutive of a recognition of the loss of this person, “where recognition cannot be cleanly separated from reaction and response” (162). The gradual temporally-unfurling process of grief involves recognition of various implications of an individual’s absence, even if, at any given moment, full recognition may be out of reach (for both humans and animals).⁹

One might agree with the role of practical adjustment here, but object that propositional understanding is *also* necessary for grief. However, note that there are plausible cases in which one does *not* initially endorse the prior proposition but still undergoes a process of grief, such as where one is initially in denial about the death. While uncommon, some may initially refuse to accept that their loved one has died, only coming to endorse the proposition later. Also consider the case of young children. As noted in 2.1, a child may lack some of aspects of a robust understanding of death. For instance, they might not realize their parent is not returning, that is, they may lack the *irreversibility* subcomponent of the concept. In one case (Campbell & Silverman 1996, as reported in Silverman 2000), a woman had died, and her young children were told of her death:

Yet at the funeral, the children repeatedly ran up to the coffin and kissed her, looking back as they ran away. Each time they did so, they seemed very disappointed. It finally became clear that they were trying to see if, like Snow White, their mother would wake up with a kiss. After an adult tried to explain that their mother’s death was not the same as what had happened to Snow White, they were forlorn and retreated quietly as they tried to understand this new information. (52)

Although one could stipulate that these children do not experience grief until they endorse the relevant proposition, this is an arbitrary move reliant upon an excessively narrow conception of grief. It would remove one of the most significant chapters from their grief story. If the grieving process can only begin

⁹ “Recognition” here also need not be construed as necessitating explicit and propositional types of knowing. It might also include “embodied” forms of recognition, where our felt emotions disclose salient information about the world. For a helpful discussion of forms of “felt” recognition, see discussion in Furtak (2018). As he notes, “We apprehend and make sense of the world not only through overtly formulated statements, but also through tacit responses that orient our attention toward situations” (88).

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after one propositionally *accepts* one's loss, then the painful learning and readjustment that these children go through as they *grow in the realization of their loss*, just would not *count* as grieving, even though it seems like paradigmatic bereavement.¹⁰

Such children provide an especially clear example of how one might only gradually grasp what has been lost, and indicate that an initial acknowledgement of the propositional statement "D is dead" is not a necessary condition for grief. It is only over a longer period that the children can come to comprehend their loss. However, something similar applies to adults too: even though they typically do explicitly endorse the idea that their loved one will not return, this isn't immediately integrated into their experiential world. It might also be added that what seems to be relevant here is some kind of gradual process of comprehending that the loved one has been *lost*, regardless of whether the griever is able to conceptualize this loss in terms of *death* specifically.¹¹ Although, very often coming to comprehend such a loss will, as a matter of fact, involve engaging with various different aspects of the concept of death.

There is then no *prima facie* reason to exclude animals from the kind of practical understanding central to grief, even if animals lack the propositional awareness that humans often experience against this backdrop. When we lose those who played an important role in our lives, all sorts of expectations relating to the presence of the deceased are thwarted (e.g., see Millar 2021). Many animals will likewise have such habitual expectations, allowing them to fluently engage with their environments, which will be confounded by the death of a conspecific. It is precisely this kind of "cognitive frustration" (Nussbaum 2001: 80) and consequent adjustment that grief's central process of comprehension or recognition consists in. That animals for a time retain habitual expectations relating to their dead can be seen by observing how animals often search insistently for their deceased companions (see King 2013 for many such examples; and, for discussion, Parkes & Prigerson 2010: 49-52), much as humans do in the early stages of their grief (Parkes 1970; 1996). Colin Parkes in his work on this topic describes people moving around restlessly towards the likely locations of their loved one, and scanning the environment for the deceased--behaviours that are equally attributable to animals. King describes a cat whose sister had died earlier in the month:

Willa ... wanders from room to decorated room, pausing first at the ottoman in front of the fireplace. With a glance at the soft, warm cushion, she lets out a wail. Moving on to the master bedroom, she jumps to the head of the bed and pushes her face and body into the cozy cave-space behind the pillows. She looks, and looks; another wail escapes her. It's sudden and terrible, not a noise one would expect from a cat. (2013: 11)

¹⁰ Cases of *anticipatory* grief, such as in terminal illness, provide another complicating factor. In these instances, the process of navigating loss begins prior to the death and the comprehension of future losses may be gradual and partial.

¹¹ This also helps to capture grief over other forms of personal loss, such as cases where someone is in a persistent vegetative state or goes missing. These loss experiences might not be conceptualized in terms of death, but are still cases of grieving a person.

Moreover, in animals, as in humans, the process of adjusting to loss takes time. According to a recent study (Uccheddu et al. 2022), nearly 90% of dogs exhibit negative behavioural changes after losing another dog from their household, as reported by their owners, and this appears to occur as a function of the quality of the relationship between the dogs. And, for a quarter of those for whom such changes were reported, the changes were said to linger for over six months.¹² The process of adjustment also appears to involve adjusting socially and finding new sources of social contact, much as humans must do. Goodall (1990) talks about how the chimpanzee Pom, after her infant died, became lethargic and emaciated, but eventually developed a closer bond with her own mother. In other research, it was found that baboons who lost a relative engaged in increased grooming activities following the death, which the researchers suggest may facilitate the eventual return to base levels of glucocorticoid after a period of elevated stress hormones (Engh et al. 2006), again suggesting that animals rely upon one another—much like humans do—in their process of adaptation.

3.1 Grief's Tensions and Constraints upon Comprehension

Although grief's process of comprehension can be understood in largely practical terms, far removed from the reflexive knowledge of mortality highlighted by Brinkmann (2018; 2020), there must still be constraints upon what counts as the right kind of process. It is not sufficient for animals to simply *respond* to loss- or death-related stimuli, as such behaviours could be genetically determined and lacking in flexibility. To count as aspects of a process of *comprehension*, which as noted appears to be a central feature of what grief *is*, animal responses to death need to be flexible and indicative of an ability to skilfully engage with the world.

Extant work on animal understanding is helpful here. For instance, as Monsó (2022: 120, drawing upon Glock 2000; see also Monsó & Osuna-Mascaró 2021) outlines, ants can *discriminate* their dead from the living since they systematically remove dead conspecifics from their nests. However, this differs from the *classificatory* abilities involved in conceptual understanding of death because the ants' responses only exhibit minimal behavioural flexibility and are wedded to the detection of oleic acid, which ants emit following death.¹³ Ants will remove any object sprayed with oleic acid, not just their dead. There is then only a very limited sense in which an ant could behave otherwise and so it does not make sense to talk of them making a mistake in this behaviour. These kinds of largely inflexible death-related behaviours, prompted by a singular sensory cue, ought not to be considered evidence of a process of comprehension and adjustment to loss. Grief's process of comprehension has, as Monsó (2022: 120) relatedly puts it with

¹² The behavioural changes reported included attention seeking, playing less, reduced activity levels and sleeping more, fearfulness, eating less, and increased vocalisations.

¹³ While genetically determined responses, such as reflexes, can to some extent still be subject to behavioural shaping, this is only to a minimal degree. Plausibly, the skilful and flexible behaviours involved in comprehension require the possibility of receiving the information via multiple informational channels, rather than being prompted by a single sensory stimulus.

respect to animal concepts of death, a “normative dimension”.¹⁴ If grief involves comprehension, the behaviours and cognitive states involved must be sufficiently flexible that it is possible for them “go wrong” in that they are at odds with the reality of the situation.

In humans, grief often does involve mental states and behaviours conflicting with one’s new reality, which is manifest in various tensions evident in grief’s phenomenology. This can involve an interplay between experiences of the presence and absence of the deceased, between worlds past and present, and between acceptance and denial (Fuchs 2018; Ratcliffe 2020; 2021; 2022; Read 2018). Bereavement may also result in anomalous or non-veridical perceptual experiences, such as tendencies to misperceive unrelated aspects of the environment as being relevant to the deceased or perceiving unusual opportunities for action that continue to implicate the deceased (Millar 2022; Ratcliffe 2022). That grief can also involve this kind of breakdown of ordinary perceptual experience and interaction with the world highlights a normative dimension to post-bereavement experiences and behaviours. Often thoughts, activities, and perceptual experiences drift from accurately reflecting the new reality back towards habitual ways of engaging with a world where the deceased is still alive.

In contrast to ants’ chemically-triggered responses, many creatures engage in intelligent, skilful, and flexible behaviours as they navigate loss and death. There are cases of animal loss responses that, at least on the face of it, involve grief-like tensions. Consider the tendency of mothers across various species (including monkeys, chimpanzees, dolphins, and whales) to carry the carcasses of their deceased offspring, sometimes for weeks at a time. In 2021, Edinburgh Zoo reported that Lianne, one of their chimpanzees, had given birth to a stillborn baby that it was refusing to let go (Edinburgh Zoo 2021). This caused the zoo to erect signs warning the public of the distressing sight of the mother carrying a deceased infant within the chimpanzee enclosure. Previously news of the orca Tahlequah carrying the corpse of her calf for more than two weeks captured the public’s attention (see e.g., Wallington 2020 in *The Guardian*). Such behaviours are common among various species.¹⁵ While there are different interpretations of the infant corpse carrying phenomenon, importantly, the mothers do not treat the corpse in the same way they treat infants that are merely immobile but still alive. This may suggest that the phenomenon is not merely a matter of the animals not realising their infant is deceased. Thus, one possibility is that this is a manifestation of the conflicts between (a) aspects of the loss that are not yet comprehended or integrated

¹⁴ This holds regardless of whether we take this comprehension to be *conceptual* —a debate that hinges to a large degree on how conceptual understanding is construed, and which will not be discussed in any detail here. Some notions of conceptual understanding are based upon explicit deliberative judgement, and may require that the thoughts have a propositional, predicative structure (e.g., Margolis & Laurence 2007). Others employ a more expansive notion. For example, some take conceptual understanding to be something that already underlies successful interpersonal and perceptual engagement with the world, and that does not necessitate explicit reasoning, judgment, or a sentence-like structure (e.g., Noë 2015). Regardless of whether one deems the relevant animal engagement with the world to involve *concepts*, what matters for the current purposes is that it is skilful and involves *some* kind of understanding.

¹⁵ For example, a recent study into infant corpse-carrying by baboons is in (Carter et al. 2020); see general discussion in Monsó (2022).

into the animal's world, and (b) repeated confrontations with the reality of the death. Much as in the human case, it makes sense to think of certain experiences and behaviours as being at odds with the animal's new reality. There can be a breakdown of a creature's usual fluent engagement with world, and experiences and behaviours based upon residual habitual expectations conflict with other ways in which the reality of the loss is gradually integrated into the animal's world.¹⁶

It seems, then, that there is a case to be made for animals undergoing a tension-riddled process of comprehension and adaptation, involving a normative dimension, as is central to human grief. However, one might still hold that the disruption navigated and adapted to by animals is not of the right form for grief.

4. The Wrong Kind of Disruption?

Even if an animal's habitual expectations and attendant abilities to seamlessly engage with the world are thwarted following a death, it might be held that the experienced disruption is not tied adequately to the loss of a *specific individual* to count as grief. It might just be down to a change of routine and various consequent thwarted habitual expectations that go along with such a change. In bereavement, the process of comprehension relates to navigating losses that are clustered around the individual who died and disruption to a temporally-structured shared life with this individual. Although, as we have seen, grief over bereavement doesn't appear to require that one can cognize *death* or *mortality* (although, as noted, this may not be entirely out of reach for some animals), it does seem that—at minimum—this type of grief must be directed towards the loss of someone specific. Its "personal" nature appears to be one of the traits of bereavement grief that marks it out from other broader experiences of loss. Here I argue that animal loss experiences can be directed at a specific individual (contra Brinkmann 2020), and, to a lesser degree, exhibit temporal structure, highlighting another close analogy with paradigmatic human grief.

4.1 Particularity

Consider first that animals across many species respond differentially to their own kin, and can recognize and appropriately interact with specific individuals, as is exemplified by mate fidelity and other long-term associations between animals. For instance, emperor and king penguins can locate their chicks and mates among thousands of others within a colony (Aubin & Jouventin 1998; Aubin, Jouventin, & Hildebrand 2000).

¹⁶ One especially harrowing account of infant carrying, which illustrates such a tension between aspects of the loss that are not yet accepted or integrated and confrontation with the death, is offered by De Marco, Cozzolino, & Thierry (2018). In this account, over a period of 25 days a Tonkean macaque female moved between caretaking behaviours, such as grooming and carrying, and cannibalism behaviours in relation to her deceased infant. In this case, a gradual comprehension of the reality of the loss and its irreversibility was tangibly forced upon the animal, as the infant's body disintegrated over time. There is then a behavioural tension between caretaking and various—to our eyes, much more disturbing—death-related behaviours. I am grateful to Susana Monsó for alerting me to this fascinating case.

Domestic dogs can recognize their offspring after a two-year separation (Hepper 1994), while northern fur seal mothers and offspring have been shown to recognize one another's calls after a four-year separation (Insley 2000). Even individuals that are not especially central to an animal's life can, in some cases, be recognized after extended periods. Male hooded warblers—a North American migratory bird—are able to recognize their neighbours from the previous breeding season after an eight-month gap, during which they migrate (Godard 1991). Animal reactions to death seem often to be tied to their own kin also. For instance, in one study, it was found that female baboons who had lost a close relative had increased levels of stress hormones (which are associated with bereavement in humans), as compared to baboons that had not (Engh et al. 2006). This response held even though the unrelated baboons also witnessed the predatory attacks that caused the death, so the stress reaction does not appear to be down to a fear of predation, but rather the loss of a specific individual. Such evidence suggests that animal cognitive states and behaviours can be directed towards particular individuals.

The specificity of animal interactions with one another is also reflected in the role that particular individuals can play in regulating one's emotions and bodily processes—something that is applicable to humans and other animals alike. Hofer (1984) compares infant separation responses to adult responses to bereavement, finding marked similarities, and suggesting that others play an important regulatory role in our lives, underlying both attachment and experiences of loss. In infancy, babies' caregivers are involved in almost every aspect of their autonomous nervous systems, through feeding them, touching, and engaging with them in ways that regulate their temperature, sleep, arousal, and heart rates (Atzil, Gao, Fradkin, & Barrett 2018; Hofer 1984). The same holds for animals, with studies in rats (Hofer 1995) and monkeys (Reite, Kaufman, Pauley, & Stynes 1974) finding that when the young are separated from their mothers, they engage in "searching" behaviours, elevated levels of self-grooming and high-intensity vocalisations, and their heart rates slow and temperatures decrease. Infant-mother interactions display particularity, even for the neonatal infant. For instance, babies show distinctive responses to the smell of their own mother's breast milk odour in contrast to a control breast milk odour (Sullivan & Toubas 1998).

What though of the argument that those we love and grieve are *irreplaceable* to us in that their value goes beyond their desirable attributes? While the abilities to recognize and respond appropriately to particular individuals seems to be *necessary* for taking this kind of evaluative stance towards another, these capacities do not seem to be *sufficient*. It might be held that this kind of valuing of one another is inapplicable to animals. Brinkmann argues for such a conclusion as follows:

It may be assumed that animals cannot love in this way. If a dog's new owner is the identical twin of their old one, and looks (and smells) exactly the same in every way, the dog will presumably not notice the difference. (2020: 57)

The dog's affection for the qualitatively identical imposter is taken to indicate a lack of the sense of numerical identity required for genuine love and grief, apparently valuing their owner only as a collection of attributes rather than an irreplaceable whole.

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It is difficult to see why this thought experiment would establish the conclusion that animals cannot value others as individuals. It could be read as a case where the dog is simply being fooled by a deception. That dogs could be deceived in this way appears not to have any clear implications for their capacity to love a particular individual, or for that individual to be irreplaceable to them. If a human's partner were deceptively replaced by someone genuinely qualitatively identical, presumably they would also feel the same affection for the imposter. Thus, if valuing others as irreplaceable individuals requires the valuer to be unable to be fooled by a qualitative duplicate, then this doesn't appear to distinguish animals from humans.

Moreover, although it is hard to establish definitively whether animals can value one another as irreplaceable individuals, it does seem clear that key abilities that underlie such an evaluative stance are available to certain animals. Brinkmann (2018: 203) tells us that it is a sense of "object permanence", as discussed in developmental psychology, that "grounds our attachments to particulars, including other human beings as individuals". He takes this sense of object permanence to amount to "[t]he knowledge of objects being numerically identical through space and time" (203), and the assumption seems to be that this is something that is lacking in animals: "Dogs do not possess the human sense of numerical particularity" (2020: 57). However, empirical work provides evidence that many animals, including dogs, *do* have a sense of object permanence (for example, see Miller, Gipson, Vaughan, Rayburn-Reeves, & Zentall 2009), which accords with the evidence already surveyed highlighting animals' impressive abilities to recognize and respond appropriately to specific other animals. Thus, it doesn't appear that looking to notions of object permanence will rule out animal capacities to value and grieve particular individuals.

In any case, it is not clear why should we take valuing someone as an irreplaceable and unique individual to be more cognitively demanding than valuing them as a cluster of desirable qualities. Philosophical work building upon the attachment literature holds that the kind of rudimentary attachment that babies have to their caregivers—which is presumably not out of reach for animals—hinges upon the caregiver having *non-fungible* status to the infant (Wonderly 2016; 2017). The infant needs *this* attachment figure, even though many other individuals are capable of tending to their basic needs; no replacement will do. If we construe this as a kind of value that the infant invests in their specific caregiver, this seems not to be out of reach for animals, particularly given the attachment-related roles animals they often play in one another's bodily regulation, for example. According to Wonderly, the kind of particularity central to attachment, where "that individual plays a very special role in one's life that literally no one else can", is constitutive of certain kinds of love (2017: 244), and we might expect it to play a significant role in grief also. This casts further doubt on the alleged distinction between human and animal abilities to grieve individuals.

As it stands, we seem to lack good evidence for the claim that animals don't grieve one another as irreplaceable individuals, and—especially given the analogies between human and animal responses to bereavement—the onus of proof seems to rest on those who wish to argue for such a conclusion. For social animals, we ought to expect other creatures to play a significant role in their lives, their habitual expectations, and in mutual bodily regulation, such that navigating the loss of this specific creature would be disruptive and challenging.

4.2 Animal Life-Structures

Grief's disruption, in the human case, reflects the temporal structure of one's life. This might pose a deeper problem for animal grief. As noted, Ratcliffe (2022: 100) takes this dynamic "life-structure" to consist in "cohesively organized values, commitments, projects, and pastimes", which involves a sense of temporality that may be exclusive to humans. Nussbaum (2001) relatedly takes animals to have diminished forms of many emotions due to their more limited capacity for temporal thinking (144 – 151), despite endorsing the possibility animals can have rich emotions and grieve. Goldie too emphasizes grief's temporal dimension, arguing that central to grief is an "ironic" gap between one's autobiographical memories of the past and the way these memories come to be coloured by one's current knowledge of the loss (2011). While the details of these accounts differ, they all highlight something important about grief's temporality. It is certainly true that, in humans, grief's disruption often involves memories, expectations and hopes that project into the more distant past and future. One might have looked forward to future holidays, sharing a home, and an eventual retirement together, and be preoccupied with a lifetime of memories of the deceased. These complex abilities may be unavailable for animals, and it might be held that animals therefore lack a dynamic life-structure with temporal organisation and cohesively organized projects, cares, possibilities, and so forth.

However, first, as Nussbaum notes, we "should not posit a sharp discontinuity between human beings and other species" in their capacities for temporal thinking and generalising (2001: 145), particularly when considering more intelligent species such as dogs and chimpanzees. Abilities to project towards future states of affairs may be a difference of degree, rather than one of kind. Within the philosophy of biology, some researchers have proposed that temporal depth of varying degrees is reflected in the abilities of all organisms. The extent to which organisms can project towards the future can, with such a view, be seen as a metric of representational complexity that exists on a continuum, allowing the organism to adapt to yet-to-be-encountered environments and sensory states (Sims 2021). Clearly the more minimal anticipatory abilities of simple organisms are far removed from the kind of temporally organized life structure that is of interest here, but along this continuum more intelligent species also have more complex temporal abilities. For example, research on corvids and non-human primates suggests they can engage in mental "time travel" (see Roberts 2007 for discussion). They can anticipate and plan for future needs not currently experienced. Bonobos and orangutans can select and keep the correct tool needed to obtain a food reward as long as 14 hours into the future, for example (Mulcahy & Call 2006) and scrub jays—a type of corvid—will store seeds in advance of being hungry, and can engage in flexible strategies for avoiding this food being pilfered by conspecifics. In studies where experimenters pilfered scrub jays' stored food repeatedly, the birds almost entirely stopped caching food on future opportunities, suggesting that the jays anticipated the consequences of caching (Clayton, Dally, Gilbert, & Dickinson 2005). Jays with experience of themselves pilfering food are also more sensitive to future possibilities of others stealing their food. Where birds are watched by conspecifics while storing food, pilferer jays are more likely than non-pilferers to re-cache the food elsewhere once they are no longer being observed (Emery & Clayton 2001). Such research suggests it

is not quite right to take all animals to be stuck in the present; some can engage in impressive future-oriented and socially-sensitive behaviours.

To the extent that animals are social and can collaboratively work together and spend time together, we should also expect that their abilities to engage in future-oriented mental time-travel extends to planning around one another. If animals can engage behaviours integrating others in temporally-oriented ways, this suggests such animals have something akin to an organized life-structure, involving future-oriented pastimes, possibilities, and cares, even if this structure does not exhibit the same degree of temporal depth that is typical of the human case. Following a death, we should expect an animal's life-structure to be disrupted to the extent that the deceased was integrated into it. And although animals may lack rich autobiographical memories, the past is still central to many of their current behaviours and expectations, allowing them to learn from experience and skilfully engage with the world.

As a further point, grief's temporality will also vary even among humans, making it questionable whether generalisations can be drawn about grief's temporal dimensions. Abilities to engage in both episodic forms of memory and abilities to project towards a personal future are developed at an early age but become increasingly complex throughout later childhood, adolescence, and beyond (e.g., Wang, Capous, Koh, & Hou 2014; Prabhakar, Coughlin, & Ghetti 2016), and episodic memory abilities are known to decrease in older age (Grady 2012). There may also be other reasons for diversity within the temporal aspects of grief. It's not clear, for example, that the kind of coherent, narratively-structured autobiographical memories highlighted by Goldie (2011) are necessary for grief. As Ratcliffe (2017) highlights, on the contrary, grief often involves discontinuity and a *lack* of narrative coherence, particularly in cases of pathological grief, which can involve a struggle to integrate the loss into autobiographical memory (159; see also Neimeyer 2006). Grief's future-oriented aspects may be limited for various reasons also. For instance, where one member of an extremely elderly couple dies, the surviving member may lack a sense of lost possibilities stretching many years into the future due to their own limited life expectancy, and yet they may still experience profound grief.

Thus, while the temporal aspects of grief's disruption are generally more limited in animals, there does not seem to be grounds to preclude animal grief on this basis without further argument. Some animals appear to have a life-structure involving temporal organisation, such that plans, projects, and pastimes would be disrupted by specific, significant losses. Moreover, the temporal elements of grief can vary widely even among humans.

5. Deflating Grief

In closing, it is worth acknowledging that the account I have set out somewhat deflates the concept of grief. Grief isn't taken to require narrative skills, propositional awareness of loss, or that one grapples with mortality or finitude. Nor does it require the kinds of meaning-making or mourning practices that are typical of the human case. Human grief is often tied to various explicit beliefs, reasons, and concerns that may bypass other species. For instance, according to Cholbi (2019) we invest our *practical identities*—"that

description under which we value ourselves and take ourselves to have reasons to act as we do" (500)—in those with whom we share significant relationships. When such a person dies, we suffer in part due to a "crisis in practical identity", and are forced to subject these aspects of who we are "to normative articulation, scrutiny, ratification, or revision" (501). To the extent that one's practical identity—and its revision in light of a bereavement—involves explicit self-conceptualisation, this is plausibly a feature of paradigmatic grief that is exclusive to humans. Various ethical concerns about grief's apparently morally "obligatory" nature (Solomon 2004: 78), and its appropriate style or duration will presumably also be inapplicable to animals.

By treating various salient aspects of paradigmatic human grief as contingent rather than necessary, one might worry then about the extent to which a distinction between grief and "mere" separation anxiety collapses.¹⁷ To this, I respond that if separation anxiety is taken to involve world-shattering disruption and a gradual process of comprehension and adaptation focused around the loss of a specific individual, then I see no reason to draw a sharp distinction between the two. This would already capture the core phenomenological features of grief, making separation anxiety a richer and more profoundly disruptive experience than might be assumed. This lack of sharp distinction points towards the beginnings of a unifying account of grief and separation anxiety.

To further allay worries about this somewhat deflated account of grief, it is worth recalling that the proposed account does still place certain important constraints upon which animals can be said to grieve, so grief does not become trivially applicable to all loss responses. First, the grieving animal must be able to engage in flexible behaviours in response to loss, which allows for a process of comprehension rather than mere stimulus-dependent responses. Second, the extent to which their loss responses look like paradigmatic human grief will also hinge upon the temporal complexity of their capacities and the extent to which their life structure can integrate another animal.

This paper has argued that the role of comprehension, particularity, and temporality in grief do not rule out animal grief. On the contrary, once grief's central process of comprehension is understood in non-intellectual terms, and it is acknowledged that animals' lives can integrate specific others, this highlights that central features of grief are present in many animal responses to loss. There may, of course, be other reasons to reject the notion of animal grief, beyond those I have considered here. However, given the centrality of these features to grief's process and phenomenology, their applicability to various animal loss responses provides important evidence of animal grief. Moreover, as Nussbaum puts it,

¹⁷ Such as how Brinkmann (2018; 2020) counts all putative animal grief as separation anxiety.

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There's always room for skepticism about these attributions of intelligence and emotions to animals. But at this point, it is useful to remind ourselves that our attribution of emotion to other human beings itself involves projection that goes beyond the evidence. (Nussbaum 2001: 124)

Acknowledgments

I thank Susana Monsó, Matthew Ratcliffe, Louise Richardson, Emily Hughes, Matt Sims, two anonymous reviewers, and audiences at the Universities of Geneva, Manchester, London, and York for useful feedback and discussions. I am also grateful to the Arts and Humanities Research Council for supporting this research (grant ref. AH/T000066/1).

Forthcoming in *Ergo* - please refer to published version when citing

Bibliography

Attig, Thomas (2011). *How We Grieve: Relearning the World*. Oxford University Press.

Atzil, Shir, Wei Gao, Isaac Fradkin, and Lisa F. Barrett (2018). Growing a Social Brain. *Nature Human Behavior*, 2(9), 624–636.

Aubin, Thierry, and Pierre Jouventin (1998). Cocktail-Party Effect in King Penguin Colonies. *Proceedings of the Royal Society B: Biological Sciences*, 265, 1665–1673.

Aubin, Thierry, Pierre Jouventin, and Christophe Hildebrand (2000). Penguins Use the Two-Voice System to Recognize Each Other. *Proceedings of the Royal Society B: Biological Sciences*, 267, 1081–1087.

Bekoff, Marc (2009). Animal Emotions, Wild Justice and Why They Matter: Grieving Magpies, a Pissy Baboon, and Empathic Elephants. *Emotion, Space and Society*, 2(2), 82–85.

Bradshaw, Gay A. (2009). *Elephants On The Edge: What Animals Teach Us About Humanity*. Yale UP.

Brinkmann, Svend (2018). The Grieving Animal: Grief as a Foundational Emotion. *Theory & Psychology*, 28(2), 193–207.

Brinkmann, Svend (2020). *Grief: The Price of Love*. Polity Press.

Campbell, Scott, and Phyllis R. Silverman (1996). *Widower: When Men are Left Alone*. Baywood Publishing Company.

Carter, Alecia J., Alice Baniel, Guy Cowlshaw, and Elise Huchard (2020). Baboon Thanatology: Responses of Filial and Non-Filial Group Members to Infants' Corpses. *Royal Society Open Science*, 7(3):192206, 1–17.

Cholbi, Michael (2019). Regret, Resilience, and the Nature of Grief. *Journal of Moral Philosophy*, 16(4), 486–508.

Cholbi, Michael (2022). *Grief: A Philosophical Guide*. Princeton University Press.

Clayton, Nicola S., Joanna Dally, James Gilbert, and Anthony Dickinson (2005). Food Caching by Western Scrub-Jays (*Aphelocoma Californica*) is Sensitive to the Conditions at Recovery. *Journal of Experimental Psychology Animal Behavior Processes*, 31, 115–124.

Davidson, Donald (1982). Rational Animals. *Dialectica*, 36(4), 317–327.

Forthcoming in *Ergo* - please refer to published version when citing

- De Marco, Arianna, Roberto Cozzolino, and Bernard Thierry (2018). Prolonged Transport and Cannibalism of Mummified Infant Remains by a Tonkean Macaque Mother. *Primates*, 59, 55–59.
- Dor-Ziderman, Yair, Antoine Lutz, and Abraham Goldstein (2019). Prediction-Based Neural Mechanisms for Shielding the Self from Existential Threat. *NeuroImage*, 202, 1–11.
- Edinburgh Zoo (2021). An Update from the Budongo Trail at Edinburgh Zoo. Retrieved from: <https://www.edinburghzoo.org.uk/news/article/19816/an-update-from-budongo-trail-at-edinburgh-zoo/>.
- Emery, Nathan, & Nicky S. Clayton (2001). Effects of Experience and Social Context on Prospective Caching Strategies by Scrub Jays. *Nature*, 414, 443–446.
- Engh, Anne L., Jacinta C. Beehner, Thore J. Bergman, Patricia L. Whitten, Rebekah R. Hoffmeier, Robert M. Seyfarth, and Dorothy L. Cheney (2006). Behavioural and Hormonal Responses to Predation in Female Chacma Baboons (*Papio Hamadryas Ursinus*). *Proceedings of the Royal Society B: Biological Sciences*, 273(1587), 707–712.
- Frankfurt, Harry G. (1999). On Caring. In H. G. Frankfurt, *Necessity, Volition, and Love* (155–180). Cambridge University Press.
- Fuchs, Thomas (2018). Presence in Absence. The Ambiguous Phenomenology of Grief. *Phenomenology and the Cognitive Sciences*, 17(1), 43–63.
- Furtak, Rick A. (2018). *Knowing Emotions: Truthfulness and Recognition in Affective Experience*. Oxford University Press.
- Godard, R. N. (1991). Long-Term Memory of Individual Neighbours in a Migratory Songbird. *Nature*, 350, 228–229.
- Goldie, Peter (2011). Grief: A Narrative Account. *Ratio*, 24, 119–137.
- Goodall, Jane (1971). *In the Shadow of Man*. Houghton-Mifflin.
- Goodall, Jane (1990). *Through a Window. My Thirty Years with the Chimpanzees of Gombe*. Houghton Mifflin.
- Grady, Cheryl (2012). The Cognitive Neuroscience of Ageing. *Nature Reviews Neuroscience*, 13, 491–505.
- Gustafson, Donald (1989). Grief. *Noûs*, 23(4), 457–479.

Forthcoming in *Ergo* - please refer to published version when citing

- Helm, Bennett W. (2010). *Love, Friendship, and the Self: Intimacy, Identification, and the Social Nature of Persons*. Oxford University Press.
- Hepper, Peter G. (1994). Long-Term Retention of Kinship Recognition Established During Infancy in the Domestic Dog. *Behavioural Processes*, 33, 3–14.
- Hofer, Myron A. (1984). Relationships as Regulators: A Psychobiologic Perspective on Bereavement. *Psychosomatic Medicine*, 46(3), 183–198.
- Hofer, Myron A. (1995). Hidden Regulators in Attachment and Loss. In Susan Goldberg, Roy Muir, and John Kerr (Eds.), *Attachment Theory: Social, Developmental and Clinical Perspectives* (203– 230). The Analytic Press.
- Insley, Stephen J. (2000). Long-Term Vocal Recognition. *Nature*, 406, 404–405.
- Kenyon, Brenda L. (2001). Current Research in Children’s Conceptions of Death: A Critical Review. *OMEGA - Journal of Death and Dying*, 43(1), 63–91.
- King, Barbara J. (2013). *How Animals Grieve*. The University of Chicago Press.
- Klass, Dennis, Phyllis R. Silverman, Steven Nickman (Eds.) (1996). *Continuing Bonds: New Understandings of Grief*. Routledge.
- Lesson, Sarah Beth, Brandon Tinklenberg, and Kristin Andrews (2020). Belief and Representation in Nonhuman Animals. In Sarah Robins, John Symons, and Paco Calvo (Eds.), *The Routledge Handbook of Philosophy and Psychology* (370–383). Routledge.
- Lorenz, Konrad (1963). *On Aggression*. McEwan.
- Margolis, Eric, and Stephen Laurence (2007). The Ontology of Concepts—Abstract Objects or Mental Representations? *Noûs*, 41, 561–593.
- Marušić, Berislav (2018). Do Reasons Expire? An Essay on Grief. *Philosophers’ Imprint*, 18(25), 1–21.
- McComb, Karen, Lucy Baker, and Cynthia Moss (2006). African Elephants Show High Levels of Interest in the Skulls and Ivory of Their Own Species. *Biology Letters*, 2(1), 26–8.
- Millar, Becky (2021). Grief’s Impact on Sensorimotor Expectations: An Account of Non-Veridical Bereavement Experiences. *Phenomenology and the Cognitive Sciences*, 22(2), 439–460.

Forthcoming in *Ergo* - please refer to published version when citing

- Miller, Holly C., Cassie D. Gipson, Aubrey Vaughan, Rebecca Rayburn-Reeves, and Thomas R. Zentall (2009). Object Permanence in Dogs: Invisible Displacement in a Rotation Task. *Psychonomic Bulletin & Review*, 16, 150–155.
- Milligan, Tony (2018). Love and Animals. In Christopher Grau and Aaron Smuts (Eds.), *The Oxford Handbook of Philosophy of Love*. Oxford University Press.
- Moller, Dan (2007). Love and Death. *Journal of Philosophy*, 104, 301-316.
- Moller, Dan (2017). Love and the Rationality of Grief. In Christopher Grau and Aaron Smuts (Eds.), *The Oxford Handbook of Philosophy of Love*. Oxford University Press.
- Monsó, Susana (2022). How to Tell If Animals Can Understand Death. *Erkenntnis*, 87(1), 117–136.
- Monsó, Susana, and Antonio J. Osuna-Mascaró (2021). Death Is Common, so Is Understanding It: The Concept of Death in Other Species. *Synthese*, 199, 2251–2275.
- Mulcahy, Nicholas J., and Josep Call (2006). Apes Save Tools for Future Use. *Science*, 312, 1038-1040.
- Neimeyer, Robert A. (2006). Complicated Grief and the Reconstruction of Meaning: Conceptual and Empirical Contributions to a Cognitive-Constructivist Model. *Clinical Psychology: Science and Practice*, 13, 141–45.
- Noë, Alva (2015). Concept Pluralism, Direct Perception, and the Fragility of Presence. In Thomas Metzinger and Jennifer M. Windt (Eds.), *OpenMIND: 27(T)* (1–15). MIND Group.
- Nussbaum, Martha (2001). *Upheavals of Thought: The Intelligence of Emotions*. Cambridge University Press.
- Parkes, Colin M. (1970). 'Seeking' and 'Finding' a Lost Object: Evidence from Recent Studies of the Reaction to Bereavement. *Social Science & Medicine*, 4(2), 187–201.
- Parkes, Colin M. (1996). *Bereavement: Studies of Grief in Adult Life*. London: Penguin Books.
- Parkes, Colin M., and Holly Prigerson (2010). *Bereavement: Studies of Grief in Adult Life* (4th ed.). London: Routledge.
- Porter, Amy, Winnie Eckardt, Veronica Vecellio, Katerina Guschanski, Peter Philip Niehoff, Urbain Ngobobo-As-Ibungu, Radar Nishuli Pekeyake, Tara Stoinski, and Damien Caillaud (2019). Behavioral Responses around Conspecific Corpses in Adult Eastern Gorillas (*Gorilla Beringei Spp.*). *PeerJ*, 7(e6655), 1–23.

Forthcoming in *Ergo* - please refer to published version when citing

- Prabhakar, Janani, Christine Coughlin, and Simona Ghetti (2016). The Neurocognitive Development of Episodic Prospection and Its Implications for Academic Achievement. *Mind, Brain, and Education*, 10(3), 196–206.
- Price, Carolyn (2010). The Rationality of Grief. *Inquiry*, 53(1), 20–40.
- Ratcliffe, Matthew (2017). Grief and the Unity of Emotion. *Midwest Studies in Philosophy*, 41(1), 154–174.
- Ratcliffe, Matthew (2019). The Phenomenological Clarification of Grief and its Relevance for Psychiatry. In Giovanni Stanghellini, Matthew Broome, Andrea Raballo, Anthony Vincent Fernandez, Paolo Fusar-Poli, and René Rosfort (Eds.), *The Oxford Handbook of Phenomenological Psychopathology* (537–551). Oxford University Press.
- Ratcliffe, Matthew (2020). Towards a Phenomenology of Grief: Insights from Merleau-Ponty. *European Journal of Philosophy*, 28(3), 657–669.
- Ratcliffe, Matthew (2021). Sensed Presence without Sensory Qualities: A Phenomenological Study of Bereavement Hallucinations. *Phenomenology and the Cognitive Sciences*, 601–616.
- Ratcliffe, Matthew (2022). *Grief Worlds: A Study of Emotional Experience*. Cambridge, MA: MIT Press.
- Read, Rupert (2018). Can There Be a Logic of Grief? Why Wittgenstein and Merleau-Ponty Say ‘Yes’. In Oskari Kuusela, Mihai Ometiță, & Timur Uçan (Eds.), *Wittgenstein and Phenomenology* (176–196). Routledge.
- Reite, Martin, Charles I. Kaufman, Donald J. Pauley, and A. J. Stynes (1974). Depression in Infant Monkeys: Physiological Correlates. *Psychosomatic Medicine*, 36(4), 363–367.
- Richardson, Louise, Matthew Ratcliffe, Becky Millar, and Eleanor Byrne (2021). The Covid-19 Pandemic and the Bounds of Grief. *Think*, 20(57), 89–101.
- Roberts, William A. (2007). Mental Time Travel: Animals Anticipate the Future. *Current Biology*, 17(11), R418–R420.
- Silverman, Phyllis R. (2000). *Never Too Young to Know: Death in Children's Lives*. Oxford University Press.
- Sims, Matthew (2021). A Continuum of Intentionality: Linking the Biogenic and Anthropogenic Approaches to Cognition. *Biology & Philosophy*, 36(51), 1–31.
- Slaughter, Virginia (2005). Young Children’s Understanding of Death. *Australian Psychologist*, 40(3), 179–186.

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- Solomon, Robert C. (2004). *In Defense of Sentimentality*. Oxford University Press.
- Sullivan, Regina M., and Paul Toubas (1998). Clinical Usefulness of Maternal Odor in Newborns: Soothing and Feeding Preparatory Responses. *Biology of the Neonate*, 74(6), 402–408.
- Uccheddu, Stefania, Lucia Ronconi, Mariangela Albertini, Stanley Coren, Gonçalo Da Graça Pereira, Lorian De Cataldo, Anouck Haverbeke, Daniel S. Mills, Ludovica Pierantoni, Stefanie Riemer, Ines Testoni, and Federica Pirrone (2022). Domestic Dogs (*Canis Familiaris*) Grieve over the Loss of a Conspecific. *Scientific Reports*, 12(1920), 1–9.
- Van Leeuwen, Edwin J. C., Katherine A. Cronin, and Daniel B. M. Haun (2017). Tool Use for Corpse Cleaning in Chimpanzees. *Scientific Reports*, 7(44091), 1–4.
- Wallington, Natalie (2020). Tahlequah the Orca - Famous for Carrying Her Dead Calf for 17 Days - Gives Birth Again. *The Guardian*. Retrieved from:
<https://www.theguardian.com/environment/2020/sep/07/tahlequah-the-orca-famous-for-carrying-her-dead-calf-for-17-days-gives-birth-again>
- Wang, Qi, Diana Capous, Jessie B. K. Koh, and Yubo Hou (2014). Past and Future Episodic Thinking in Middle Childhood. *Journal of Cognition and Development*, 15, 625–643.
- Westlund, Andrea C. (2018). Untold Sorrow. In Anna Gotlib (Ed.), *The Moral Psychology of Sadness* (21–41). Rowman & Littlefield.
- Wonderly, Monique L. (2016). On Being Attached. *Philosophical Studies*, 173, 223–242.
- Wonderly, Monique L. (2017). Love and Attachment. *American Philosophical Quarterly*, 54(3), 235–250.