



Mourning a death foretold: memory and mental time travel in anticipatory grief

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Abstract

Grief is a complex emotional experience or process, which is typically felt in response to the death of a loved one, most typically a family member, child, or partner. Yet the way in which grief manifests is much more complex than this. The things we grieve over are multiple and diverse. We may grieve for a former partner after the breakup of a relationship; parents sometimes report experiencing grief when their grown-up children leave the family home. We can also experience grief for people we have never met. Indeed, it is not just persons that we may grieve for. People report feeling grief over the death of their pets, or about the destruction the natural environment. In all these cases one factor that seems to stand out is *loss*. Despite being about very different things, these various forms of grief all involve a loss of some sort. Yet there is a further aspect of grief, which, on the face of it, does not quite follow this pattern. Grief can also be experienced before a loss has occurred. Grief can be experienced while the person that one is grieving for is still living and before one has (fully) suffered the loss. This phenomenon is known as *anticipatory grief*. The experience of anticipatory grief is a complex phenomenon, which resists easy classification. Nonetheless, we suggest that mental time travel, our ability to mentally project ourselves into the personal past (episodic memory) and personal future (episodic prospection), is a key mechanism that underpins experiences of anticipatory grief. Anticipatory grief can still be understood in terms of loss, but it is a loss that is brought to mind through memory and imagination.

Keywords Episodic memory · Mental time travel · Grief · Emotion · Practical identity

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I will grieve again and again tomorrow
for the memory of a death foretold.
—Kofi Awoonor¹

1 Introduction

Grief is a complex emotional experience or process, which is typically felt in response to the death of a loved one (Goldie, 2012; Cholbi, 2021). Grief has psychological, physical, even cultural and normative aspects (O'Connor, 2022; Goldhill, 2017). It has been described as a shapeshifter (Jay 2021), something that can overwhelm us but that is hard to pin down and describe precisely. When we suffer grief, everything may seem changed – time, the world, our bodies, even ourselves (Hughes, 2022; Pearce & Komaromy, 2022). To overcome grief, we may have to relearn the world (Attig, 2011).

In most cases, the loss for which we grieve is felt in the form of a bereavement when a particular person—a family member, child, or partner—passes away. It is this massive loss that grief is typically thought to be about. Yet the way in which grief manifests is much more complex than this. Sometimes people do not only grieve for loved ones who have died. The things we grieve over are multiple and diverse. We may grieve for a former partner after the breakup of a relationship (Solomon, 2004); parents of children who suffer from severe mental illness may experience grief (Williams-Wengerd & Solheim, 2021); parents suffering from *empty nest syndrome* often report experiencing grief when their grown-up children leave the family home (Schultz & Harris, 2011). We can also experience grief for people we have never met. Many people experienced an outpouring of grief over the death of David Bowie, for example (Moore, 2016). Indeed, it is not just persons that we may grieve for. People report feeling grief for the death of their pets (Archer & Winchester, 1994), about the destruction of nature or the natural environment, or homes or important man-made buildings that are lost to fires or natural disasters (Roberts, 1992; Varga & Gallagher, 2020). There have also been widespread reports of experiences of grief during the Covid-19 pandemic, which were not restricted to mourning the loss of people who died from the disease, but were experienced for other losses, such as loss of livelihoods and jobs, and the loss of one's freedom of movement and opportunities for socialising due to imposed lockdown measures (Richardson et al., 2021).

In all these cases one factor that seems to stand out is *loss*. Despite their very different objects, despite being about very different things, these various forms of grief all involve a loss of some sort. Yet there is a further aspect of grief, which, on the face of it, does not quite follow this pattern. Grief can also be experienced before a death or loss has occurred. Grief can be experienced while the person that one is grieving for is still living and before one has suffered loss (Aldrich, 1974). This phenomenon is known as *anticipatory grief*.

¹ The epigraph is from Awoonor's poem *A Death Foretold*. See his collection *The Promise of Hope: New and Selected Poems, 1964–2013* (2014, 70).

The experience of anticipatory grief is a complex phenomenon, but what we want to propose in this paper is that mental time travel, our ability to mentally project ourselves into the personal past and future, is a key mechanism that underpins experiences of anticipatory grief.² Anticipatory grief can still be understood in terms of loss, but it is loss that is brought to mind through memory and imagination (cf. Plant, 2022).³

The paper unfolds as follows. Drawing on (empirical) literature from a clinical setting, we first provide a characterisation of anticipatory grief (Sect. 2). We then turn to a discussion of how to understand the proper objects of grief. How can we explain the myriad ways in which we can experience grief, where these emotional experiences are directed towards a varied and heterogenous range of objects? To answer this question, we outline and draw on two recent, and related, accounts of the way in which we can understand grief's proper object (Sect. 3). We then turn to a discussion of the roles that memory and mental time travel may play in underpinning experiences of anticipatory grief (Sect. 4).⁴ Our claim will be that memory and mental time travel can make the proper object of grief salient even before this loss has (fully) occurred.

2 Anticipatory grief: a clinical perspective

Writing during the Second World War, when the threat of death was constant, the psychiatrist Erich Lindemann noted 'anticipatory grief' in the reactions of relatives of members of the armed forces. Lindemann noted his surprise to find

Genuine grief reactions in patients who had not experienced a bereavement but who had experienced separation, for instance with the departure of a member of the family into the armed forces. Separation in this case is not due to death but

² We do not mean to imply anything ontologically loaded in speaking of a 'mechanism' here. For many researchers (e.g., Schacter and Addis, 2007; Michaelian, 2016; Addis, 2020), mental time travel is indeed underpinned by a specific mechanism, the episodic construction system, which is thought to critically involve the hippocampus and is part of the default mode network. Nothing we say hangs on this claim. Even if there is no unified mechanism underpinning our capacity to remember the past and imagine the future, our claim is simply that episodic memory and imagination are key processes or capacities in bringing the losses that are involved in anticipatory grief to mind.

³ Of course, grief, in general, may be importantly related to memory and imagination (e.g., Goldie, 2012; Fuchs, 2018; Debus & Richardson, 2022; Cholbi, 2023). Our focus here, however, centres on one particularly puzzling aspect of grief—its anticipatory form. Nonetheless, if the models of grief to which we appeal are on the right track, then an individual whose grieving is subsequent to a death-related loss will be engaged in a similar process of recall and mental time travel. She will be recalling past facts about the deceased, 'predicting' various possible futures without them, etc., in order to come to terms with lost possibilities and/or reconstruct their practical identities. Indeed, the memory and mental time travel model might even help explain delayed grief, in which the experience of grief occurs months or even years after the loss. It is interesting to note that perhaps grief's timing is to some extent inessential to it (it can occur prior to, immediately after, or long after the loss that serves as its object). Understanding grief as involving memory and mental time travel and so ranging over the past, present, and future, helps us account for this temporal fluidity. Future work will explore this issue.

⁴ We use the expression memory and mental time travel throughout to remain neutral on whether there are differences (in kind) between memory and other imaginative outputs of mental time travel (Werning, 2020).

is under the threat of death...The patient is so concerned with her adjustment after the potential death of father or son that she goes through all the phases of grief. (1944/1963, 17)

Due to the constant presence of the threat of death, many relatives of servicemen and women anticipated the deaths of their loved ones and experienced anticipatory grief. Beyond this martial setting, it is in the clinical context, such as in dementia care, or the palliative care setting, that anticipatory grief is often experienced and hence studied: ‘Anticipatory grief occurs before death and is often present in people who face the eventual loss of a loved one or their own death’ (Bilić et al. 2022, 1). In other words, anticipatory grief can be experienced by caregivers who are looking after a patient, often a close family member, in the end-of-life setting, but it can also be experienced for one’s own self and impending death (Varga & Gallagher, 2020; Plant, 2022).⁵

An initial characterization of anticipatory grief suggests that it is ‘any grief occurring prior to a loss, as distinguished from the grief which occurs at or after a loss’ (Aldrich, 1974, 4). In this view, anticipatory grief is precisely one that occurs *before* the loss is actually experienced.

However, a more in-depth analysis reveals that there are in fact multiple losses that are experienced in the end-of-life setting even if the loved one’s death has not in fact transpired. For example, Nielsen et al. (2017) define anticipatory grief as:

[A] grief reaction due to multiple losses during end-of-life caregiving. The caregiver may experience losses when the patient gets seriously ill, when disease causes inevitable changes in daily life, and when the possibilities for the future are limited due to the approaching death. (2048)

In a similar vein, Coelho and Barbosa (2017) performed a systematic review of the empirical works on the anticipatory grief of family caregivers caring for terminally ill patients with cancer, and noted ten themes to describe the nuclear characteristics of anticipatory grief in the palliative care setting: anticipation of death, emotional distress, intrapsychic and interpersonal protection (e.g., repressing feelings), hope and its loss, exclusive focus on the patient care (to alleviate some of the feeling of powerlessness), personal losses (e.g., lack of time due to the increased care demands), relational losses (e.g., loss of intimacy with the patient), ambivalence (e.g., uncertainty about the future, feelings of guilt for seeking help to deal with the burden of care), end-of-life relational tasks (dealing with practical aspects of organizing the affairs of the patient, and practical issues related to the death itself), transition (saying goodbye the patient and letting go).

We will go into further detail on some of these ten themes in later sections. At this point, it is sufficient to note that anticipatory grief is complex, and that it typi-

⁵ For the most part our analysis focuses on anticipatory grief as it is experienced by caregivers looking after someone with a terminal illness. Nonetheless, our discussion could also be applied to cases of anticipatory grief as it is experienced in anticipation of one’s own death, and we distinguish it from existing accounts of this self-focused anticipatory grief below.

cally involves experiencing losses (e.g., personal and relational losses) in the present moment. Indeed,

The limited view of the ‘death event’ as the only loss incurred fails to consider the past, present and future losses that may occur as a result of terminal disease. The physiological, psychological, interpersonal and sociocultural factors evident in the terminal situation serve to highlight the existence of many previously unconsidered variables which may determine the anticipatory grief experience. (Evans, 1994, 159)

From the empirical literature in the clinical setting, we can see that anticipatory grief is a complex phenomenon that is often described as occurring *before* the death of a loved one has occurred, but which may nonetheless involve experiencing past, present, and future losses. Yet, this leaves us with a puzzle. If anticipatory grief occurs before the loss of a loved one, can we understand it in the same way as grief that occurs in a standard temporal unfolding? What are the past, present, and future losses that underpin anticipatory grief, and how are they experienced? To better answer these questions, we need to first look at the objects of grief and explore whether anticipatory grief can be understood in the same way.

3 The objects of grief

It is widely agreed that at least some emotional experiences exhibit intentionality: they are about certain things, or are directed towards certain entities (Ratcliffe, 2019). Experiences of grief are varied, and we can grieve over many different things. How then can we best characterise the objects of grief? Grief seems to be about loss of some sort. But exactly how do we characterise the loss that grief is about. Indeed, how can we give an account of the objects of grief that can also shed light on the nature of anticipatory grief, where grief seems to occur prior to the loss?

To answer these questions, we must first begin with a distinction between the concrete (or particular, or material) objects and the formal objects of emotions and emotional experiences (De Sousa, 1987; Teroni, 2007; Cholbi, 2021; Ratcliffe et al., 2022). Concrete objects are the particular things that an emotion is directed towards. For example, people may fear heights, or wasps, or snakes, or spiders.⁶ These are all different (material) objects of fear. These diverse objects of fear are nonetheless united by their formal object, where the formal object of the emotion is the description of the concrete object under which it is logically intelligible for the emotion to be directed at that particular concrete object (Cholbi, 2021, 50). In the case of fear, the formal object may be understood as something like danger or threat (Teroni, 2007; Ratcliffe et al., 2022). The diverse things that we fear are all things in which we perceive danger or threat.

⁶ There may be further differences here in terms of the particular concrete objects that emotions are about: if I am fearful on a cliff-edge and you are fearful looking down from a skyscraper our experiences have different concrete objects. Thanks to an anonymous reviewer for this clarification.

In the case of grief, the concrete objects can, as we saw, range from people to places, over close family members or complete strangers, to non-human animals and even inanimate objects (Averill, 1968; Ferraro et al., 2011). The intentional objects of grief therefore appear to be manifold. Yet, if we appeal to the notion of grief's formal object, we might get a more unified picture.

There are several candidates for the exact loss that serves as grief's formal object (Cholbi, 2021, 51). One recent proposal that seems to capture the diverse concrete objects that we can grieve over is to think of the formal object of grief as involving a *loss of life possibilities* (Ratcliffe et al., 2022; cf. Varga & Gallagher, 2020). This loss of life possibilities can be understood as a loss of 'significant possibilities that are integral to the structure of one's life, to one's various projects, pastimes, habitual activities, and commitments' (Ratcliffe et al., 2022, 12). Actually, given that it may be best understood as a process that unfolds over time, rather than a state that obtains at a time, Ratcliffe and colleagues think that the traditional formal/concrete object distinction might not easily apply to grief. Nonetheless, it is still true to the experience of grief, they suggest, and hence theoretically useful, if we think of the formal/concrete distinction as a part-whole relation: 'The process [of grief] as a whole engages with a loss of life possibilities, while constituent experiences relate to more specific aspects of this loss, which have varying degrees of concreteness' (Ratcliffe et al., 2022, 15).

This focus on the loss of life possibilities affords an understanding of the temporal unfolding of grief. It allows us to understand grief as a process, which ebbs and flows, and which may eventually diminish over time. The formal object of grief may not attach to a single material object during the process but rather 'different aspects of a wider-ranging loss of possibilities are experienced as such at different times' (Ratcliffe et al., 2022, 3). Importantly, we can understand the loss of life possibilities as mine, yours, or ours, and different losses may hence come into focus at different times. This way of understanding the formal object of grief also allows us to acknowledge the past, present, and future-oriented aspects of grief. If we think of two individuals in a relationship, C and D, '[t]he same unitary loss of life possibilities can thus encompass C's current predicament; what has happened to D; and the past, current, and future relationship between C and D' (Ratcliffe et al., 2022, 14).

One way of thinking about what it means to talk about a loss of life possibilities is in terms of disruptions to one's practical identity. Practical identity is 'a description under which you value yourself, a description under which you find your life to be worth living and your actions to be worth undertaking' (Korsgaard, 1996, 101). We all hold a set of commitments, values, and concerns, which we use to guide the decisions we make and the actions we engage in. Importantly, however, these values and concerns are not simply isolated to the individual, but are often dependent on our relations to others; our practical identities also involve 'roles and relationships, citizenship, memberships in ethnic or religious groups, causes, vocations, professions, and offices' (Korsgaard, 1996, 20). Losing life possibilities involves experiencing and negotiating a disrupted sense of who one is—how one's roles, statuses, commitments, and projects have been changed and have to be renegotiated.

This way of thinking about the formal object of grief as a loss of life possibilities, which involves a disruption to one's practical identity, covers the many different manifestations of grief. Grief occurs, then, whenever we lose someone (or some-

thing) in whom we have invested our practical identities (Cholbi, 2021): ‘we grieve those who come to play crucial roles in our aspirations and commitments’ (Cholbi, 2021, 16). Indeed, ‘[t]he more central another person is to our practical identity the greater cause we have for grieving them upon their deaths’ (Cholbi, 2021, 31). When the individuals in whom we have invested our practical identities die, then this forces upon us a most profound change in our own practical identities. There is an important sense, then, in which ‘grief is fundamentally self-focused’ (Cholbi, 2021, 22). Indeed, the way that grief is self-focused helps explain why people who are grieving often talk about a loss of self, or how they have lost a part of themselves when losing a significant other.⁷

How does the notion of anticipatory grief fit this model? How can we think about anticipatory grief as being about the loss of life possibilities and a fundamental shift in one’s practical identity, when perhaps such losses have not yet (fully) occurred?

According to Cholbi, the phenomenon of anticipatory grief is real, and one that can be aligned with the model of grief as involving a disruption to one’s practical identity (and loss of life possibilities):

Individuals can grieve in the expectation that someone in whom they have invested their practical identity will soon die. Such anticipatory grief may seem odd. However, it merely reflects the human ability to make predictions about the future and form emotional reactions on that basis. (Cholbi, 2021, 140)⁸

We can undergo emotions in the present even if these emotions concern facts or events in the future. We might experience (anticipatory) grief even if the loss of possibilities that the death will entail is one that will occur in the future. Indeed, according to Ratcliffe, anticipatory grief precisely fits this model:

If grief is a temporally extended engagement with a loss of possibilities, then it is clear that people can indeed experience grief in these circumstances [anticipating bereavement]. The anticipated loss of possibilities is also an actual loss of possibilities. In knowing that someone does not have long to live, we recognize that certain possibilities have been extinguished... Even before the death, those possibilities are already experienced as gone. (Ratcliffe, 2023, 188)⁹

The idea that grief involves the loss of life possibilities and a disruption to one’s practical identity can help explain anticipatory grief. We can anticipate and acknowledge past, present, and future losses of life possibilities, and this is what underpins the grief experience. Yet, despite this recognition that grief can occur before the actual death of a person, it is still unclear exactly how this complex emotional experience

⁷ It is important to note, however, and this is something that Cholbi emphasises, that this does not mean that it is selfish to grieve for the loss of another person.

⁸ Note that Cholbi here is focusing on the future oriented aspects of anticipatory grief. However, as we have shown (Sect. 2) and return to discuss later (Sect. 4), anticipatory grief is not wholly a reflection of the fact that we can predict and so have emotions about the future, but may also involve losses in the present.

⁹ See also Ratcliffe and Richardson (2023).

can be about something that hasn't yet happened. How do emotions in the present arise for an event that will occur in the future? Even if we now have a better grasp of the object of grief, what are the concrete losses that are manifest in anticipatory grief, and how is it that they are brought to mind?

What we want to suggest in the next section is that mental time travel (episodic memory and episodic future thinking) is a key mechanism by which we envision these shifts in our practical identities, and bring to mind the loss of life possibilities as and before they actually occur. Most accounts of grief emphasize that its episodes will include sadness, of course, but also other types of emotions and affect (fear, guilt, worry, etc.), as well as bodily changes. Understanding grief as a process, in which many different thoughts, feelings, embodied reactions etc., can manifest at different times allows us to understand that these seemingly disparate component parts can be properly understood as belonging to the grieving process. The anticipatory features of grief map onto this complex structure because some of these aspects, such as specific emotions, are engendered through memory and mental time travel. Remembering the past and imagining the future are key drivers of the experiences that are part of the process of anticipatory grief.

4 Memory and mental time travel in anticipatory grief

When an individual experiences anticipatory grief, this emotional experience must be directed at something. Our emotional experiences are about particular things. How is that an emotional experience such as anticipatory grief can go beyond the here and now? How can we be emotional about something that is located in the future? Given that the object of anticipatory grief is not in the present, precisely because it hasn't yet occurred, we suggest that an important way in which one brings to mind the object of anticipatory grief is through mental time travel.

Mental time travel (MTT) refers to the ability that most healthy adult humans have to mentally project themselves into the personal past and personal future, and is a key mechanism for thinking about past experiences in which we have been involved, as well as thinking about possible future experiences that may happen to us (Tulving, 1985; Suddendorf & Corballis, 2007; Michaelian, 2016). We suggest that it is through memory and mental time travel that the object of grief, the loss of someone (or something) in whom one's practical identity is invested, becomes salient in cases of the anticipatory version of this complex emotional experience. There are many ways that we can think about the future, and indeed we can imagine future scenarios without mental time travel. Yet, memory and MTT seem particularly important here: they are crucially related to the self, and it is our personal past and future that is of relevance in experiences of anticipatory grief; and memory and MTT involve a rich phenomenology that other forms of future thought, including some forms of imagination, lack (see Sect. 4.1).

Of course, no one would be surprised to hear that imagining the future is involved in anticipating loss, but the important point is that not just any imagining will do. In many cases, when we imagine some thing or some event, our imagining is 'epistemically compatible with things not really being the way they are being thought

about, and with one's not believing things to be that way' (Langland-Hassan, 2020, 5). Imagining in this sense is not going to have the right epistemic power to bring the future loss saliently to mind. If one does not believe that the event will happen, or if one takes it that things will not actually turn out as one imagines, one is unlikely to have a genuine emotional experience about that imagined content. Rather, in order to have the kind of emotional experience that is involved in anticipatory grief one needs to imagine the future in a way that is epistemically relevant. We need to take it to be the case that this future event is likely to happen. This is precisely why MTT is an appropriate model of the imagination involved in thinking about a future loss. MTT allows us to simulate and make predictions about the (personal) future (Szpunar et al., 2016; cf. McCarroll, 2023).

Further, it is not just imagining the concrete future that is important, but given the uncertainty and ambiguity involved in cases where anticipatory grief typically arises, it is plausible that imagining counterfactual and hypothetical scenarios is a key driver of the emotional experience involved in anticipatory grief. People in these terrible situations are likely to imagine what *might have been* ('what if we had done such and such...') as well as possible scenarios of what *might* unfold. Again, it is thought that it is MTT that underpins this kind of episodic counterfactual and hypothetical thinking (De Brigard, 2014). Rather than merely thinking about the future, it is the rich, episodic and emotional way in which we engage with (possible) events in our *personal* pasts and futures through MTT that affords the experience of anticipatory grief.¹⁰

Here we outline three ways in which mental time travel facilitates the experience of anticipatory grief: (1) MTT is an important mechanism for simulating the loss typically experienced in grief before the loss has indeed (fully) occurred. In this way, MTT makes the intentional object of grief available to one's mind. (2) MTT has an important connection with emotions. Simulating future experiences can typically enable us to experience emotions towards those future events. (3) MTT is an important mechanism for thinking about and negotiating one's practical identity.¹¹

¹⁰ Varga and Gallagher (2020) offer an account of a similar phenomenon, anticipatory-vicarious grief (AV grief), in a way that is broadly compatible with our account of anticipatory grief. Nonetheless our account differs from theirs in two important ways. First, there is a difference in the target phenomenon. Their focus is on a particular form of anticipatory grief, which 'is typically triggered by pondering the inevitability of our own death' (Varga & Gallagher, 2020, 176). Second, although the mechanism they use to explain this phenomenon is imaginative, it is also different from the one that we propose: the AV grief is imaginatively experienced through the eyes of another agent, such that it concerns the harm that occurs to another individual in response to one's own death. In contrast, we attempt to explain anticipatory grief, which is not specific to one's own mortality; and we posit a specific mechanism for anticipatory grief, MTT, in which personal events are typically simulated from one's own first-person perspective, and as such do not typically involve a vicarious experience. We suggest that subjects can experience grief towards a loved one who is still present but whose death is foretold and imagined.

¹¹ It is interesting to note here that difficulties with memory and MTT might themselves be responsible for some of the suffering characteristic of grief. Many newly bereaved persons struggle to envision what their practical identities could look like without the deceased, while others worry that their memories of the deceased will fade over time. More specifically, individuals with prolonged or complicated grief have real difficulties leaving the past loss behind, tending to recall memories related to their loss, and they also demonstrate difficulties in imagining a new future without loss (Maccallum & Bryant, 2010, 2011). Further, impaired MTT may even result in a diminished ability to grieve. Michael Cholbi first notes that grief

4.1 MTT and the intentional object of anticipatory grief

There are a number of ways in which people can think about the future (Szpunar et al., 2014; Suddendorf, 2017). One such way is through semantic prospection, where one thinks of generic or abstract events based on general regularities (e.g., thinking about how to enhance the profits of a company). When we thinking about the future in this way, we form simulations or representations that are based on more semantic memory, general information or knowledge about the world, and which are typically non-personal events that do not involve many autobiographical details. We can also simulate the future in an episodic way, however, and this is the sense in which researchers typically think of the future related aspect of mental time travel (Tulving, 1985; Addis, 2020). The notion of episodic here refers to the idea that we are simulating or representing specific autobiographical events that may take place in the future (e.g., thinking about meeting a colleague for dinner next week).

Recall that, for Cholbi, anticipatory grief reflects ‘the human ability to make predictions about the future and form emotional reactions on that basis’ (2021, 140). On this brief characterisation, anticipatory grief could be underpinned by either a form of semantic prospection or episodic prospection because both can be used to make predictions about the future and we may even have emotional responses to simulations based on semantic information (Szpunar et al., 2014). Nonetheless, it would seem that it is episodic future thinking that grounds experiences of anticipatory grief. Episodic future thinking allows us to represent events that will unfold in the *personal* future, events that will befall us, or in which we will play a certain role, and it is precisely these types of events that experiences of anticipatory grief are about. We imagine the loss of another person in whom we have invested our practical identities, and we imagine our lives continuing without that other person. Such events are quintessentially personal, and hence likely underpinned in many cases by episodic future thinking.

We acknowledge that there might typically be a number of factors that are actually present in one’s life, and which are not part of the imagined future, that contribute to anticipatory grief. Such factors might be the present loss of intimacy or companionship with a loved one, a loss of freedom, which is linked to the increased burden of caring for a loved one, or even a loss of well-being to the loved one, such as when one sees a decline in the physical or mental health of a loved one. This is expressed in the empirical literature:

Before confronting the real loss of the patient, the family realizes the relational losses resulting from physical and emotional degradation. The feeling of absence starts at the moment that family is forced to play the role of the patient.

occurs not only because of our ties to other people or things that we have lost, but also because of ‘our ties to our own past and future selves’ (Cholbi, 2021, 11). He then makes the case that we see diminished abilities to grieve in psychopaths because they lack a special kind of interpersonal empathy, which crucially involves mental time travel, and which can be understood as not only ‘an ability to relate (emotionally and ethically) to other individuals but also as an ability to relate to past and present iterations of ourselves’ (2023, 413). For Cholbi, impaired MTT in psychopaths helps explain impairments in their ability to grieve. Our thanks to two anonymous reviewers for encouraging us to think about these important points.

Assuming the tasks that the patient used to perform confronts caregivers with the patient's current disability, making them more aware of the proximity of death. Gradually, they recognize that he or she is not the same person and feel the absence, although the patient is still alive. The family especially feels the loss of intimacy and reciprocity in the relationship. Here begins a deep sense of loneliness which is even more intense when the patient stops talking and responding, setting the end of the relationship. (Coelho and Barbosa, 2017, 782)

These losses might be perceived and understood in the present and are not only about some future loss. However, even in these cases MTT arguably plays a role. It is not just that we experience certain things in the present (e.g., a loss of companionship), but that we can compare our *present* situation with our *previous* experiences. A loss in the present wouldn't be experienced *as a loss* without (episodic) memory to show us what we have lost: 'The patient's progressive decline contributes to the creation of an image of degradation that contrasts with the *previous representation* of the now ill person, causing strangeness and insecurity' (Coelho et al., 2020, 695). Our present experience may involve a loss of intimacy or companionship with the loved one, but this is experienced *as a loss* precisely because we can remember past experiences of intimacy or companionship with that person. Our relationship has changed but the change is made manifest through a comparison between past and present.

Of course, at the same time, there is an important future-oriented dimension implicated in anticipatory grief. More accurately, anticipatory grief seems to be best described as spanning past, present, and future (Evans, 1994):

Such grief may in part be about present losses (the loved one's cognitive and emotional capabilities, sense of identity, hopes and plans, etc.) caused by the progressing disease, but it is predominantly about the future loss that the impending death will cause. (Varga & Gallagher, 2020, 177)

We found that the feeling of loss exists even before the patient's death. *Relational losses* include, for example, missing the patient's company and protection, their previous life together, and their un-lived future. This contributes to a sense of being disconnected from the patient, which is perceived as a sign of distance and as a rupture in the relationship. (Coelho et al. 2020, 699)

MTT allows us to juxtapose our past, present, and future experiences and brings the loss of life possibilities to mind. It allows us to episodically remember past instances of intimacy and companionship against which our present losses become salient, and it is episodic future thinking that allows us to imagine the future (complete) loss that this impending death will cause.

Indeed, episodic future thinking allows us to think about such future events in a particular way, one that involves simulating specific scenarios replete with forms of mental imagery and emotional content (see below). Consider one form of episodic future thinking is episodic prediction, which allows us to engage in predictions of the future (Szpunar et al., 2016). One function of such prospective cognition is that it

allows us to predict how we will feel in relation to imagined future events: ‘Episodic foresight allows us to foresee the affective consequences of future events. We care about how the future might make us feel’ (Suddendorf, 2017, 3). In such affective forecasting (Wilson & Gilbert, 2005), we might frequently make false predictions about exactly how we will feel if certain events unfold in the future (Eastwick et al., 2008). We might, for example, think that upcoming future events will make us feel better (or worse) than they actually will.¹² The point, however, is not that episodic foresight need be fully accurate with regard to our affective reactions to future events, but rather that this is the mechanism by which we simulate the emotional consequences of these future events.

Through future oriented mental time travel we simulate the loss of someone important to us and our identities, and these emotionally laden imaginative episodes can provide the grounds for us to experience the complex emotion of anticipatory grief. Episodic prospection allows us to represent the intentional objects of grief before those objects have (fully) materialised, and underpins experiences of anticipatory grief. It is because episodic future thinking is intimately tied to emotions that we can experience actual present emotions to simulated future events.

4.2 MTT and emotions

Episodic future thinking allows us to think about personal events that may unfold in the future, but it allows us to do so in a phenomenologically rich way. Part of this richness is because MTT has an important connection with emotions (Trakas, 2021). Simulating future scenarios can typically enable us to experience emotions towards those future events or experiences: ‘episodic future thinking directly modulates our present emotional states’ (Arcangeli & Dokic, 2018, 150). This may help us with planning and decision-making, by enabling us to better navigate choices with consequences that unfold over time (Boyer, 2008; Cosentino, 2011; McCarroll, 2019), but it can serve other functions. As we saw, future oriented MTT allows us to engage in affective forecasting to predict how we will feel in the future. Due to its intimate connection with affective content and simulating future emotions, MTT is a plausible mechanism for grounding experiences of anticipatory grief.

Part of the power of MTT to elicit emotions may be related to the mental imagery involved in this form of future thinking. The rich experiential and imagistic content that is typical of this form of future thinking has the power to elicit emotions. We see this in certain experiments in which subjects with more vivid visual imagery tend to feel more emotions than participants with less vivid visual imagery (e.g., D’Argembeau & van der Linden 2006). In fact, it has been claimed that one ‘function of imagery is to make thoughts more emotionally evocative through sensory simulation’ (Wicken et al., 2021, 1).¹³

¹² According to Szpunar and colleagues, ‘It has been argued that people base their predictions on episodic simulations of the future and that episodic simulations of the future are often imperfect and hence, result in errors in prediction (e.g., essentialized simulations of parenthood that focus on the rewarding aspects of childrearing)’ (2014, 18417).

¹³ In fact, in their study Wicken and colleagues tested individuals with aphantasia, or the inability to form visual mental imagery, and found that ‘a lack of visual imagery results in a dampened emotional response

Given the important link between mental imagery and emotion, in the same way that we can feel emotional about real events that take place in the world, imagined or simulated past or future events can also cause genuine emotional experiences (Frijda, 1986; Debus, 2007). Nonetheless there are a number of ways in which emotion may be involved in future-oriented MTT. There may be two types of affective reactions to future events (Baumgartner et al., 2008; MacLeod, 2017): anticipatory emotions (e.g., hope, fear, anxiety), which are currently experienced due to something that could happen in the future, and anticipated emotions, in which one imagines experiencing certain emotions in the future once certain future events have occurred (e.g., anticipated joy or regret).

Importantly, the boundaries between these two affective dimensions may be blurry (Baumgartner et al., 2008), and it 'is likely that anticipated and anticipatory feelings are closely connected' (MacLeod, 2017, 79). Even though anticipated emotions are often virtual, in that they capture *predictions* of one's future emotional states, 'mental simulations about future states may lead to actually experiencing the future emotion at present' (Baumgartner et al., 2008, 695). To borrow an example from MacLeod (2017). One may imagine giving an important talk that one is scheduled to give at a major conference in the future, and predict that one will feel nervous during this event (anticipated emotion). Yet, this simulated emotion may also give rise to real emotions experienced in the present, even though the event hasn't yet occurred (anticipatory emotion); it is the future oriented thought that gives rise to the anticipatory emotion. And, indeed, imagination seems to play a key role, such that 'the affect is specifically tied to imagining the event rather than arising for any other reason' (MacLeod, 2017, 79).

Moreover, as MacLeod suggests,

It is not only the thought of feeling a negative emotion in the future that gives such a thought emotional potency; additionally, the imagined consequences arising from the future negative emotion will fuel feelings when thinking about the event. I might feel anxious in advance when thinking about the lecture not only because I predict I will feel anxious during it but also because I imagine that feeling anxious during it will make me forget my words or rush too much and deliver a poor performance. (2017, 79)

In the same way, we may imagine the loss of a loved one, predict our emotional reaction, and then start to feel this emotional response in the present. Because this is a person in whom we have invested our practical identities, our imaginings may focus on many of the negative consequences that the loss of this person will entail and bring to mind the varied objects of grief that the loss of life possibilities may be about.

There is also an important role for uncertainty in experiences of anticipatory emotions. A key factor in anticipatory grief is '[a]nticipation and ambiguity about the

when reading fearful scenarios, providing evidence for the emotional amplification theory of visual imagery' (Wicken et al., 2021).

future' (Chan et al. 2013, 1).¹⁴ In fact, there is an important connection between anticipatory emotions and uncertainty about the future:

Anticipatory emotions are current affective responses to the prospect of future events that have positive or negative consequences...Therefore, uncertainty about what is going to happen constitutes part of the meaning of anticipatory emotions, in the sense that the feeling of uncertainty per se partially causes the emotion... (Baumgartner et al., 2008, 686).

Indeed, we can see this connection between emotion, anticipation, and uncertainty in the empirical literature:

This is also the moment the family perspectives [sic] the future absence of the patient. Some have great difficulty to foresee the future; others anticipate loneliness, sadness, and emptiness in later life. Some of them worry for not knowing what to do, since they were accustomed to share decisions with the patient. They are grieving the loss of a common future, plans that have been established, and the expectation of been cared by the patient in the future. In the case of spouses, they do not imagine to get out of home because of loneliness but also do not think of rebuilding a new family and intend to visit the cemetery every day. (Coelho & Barbosa 2017, 782)

MTT is a key mechanism for anticipating personal future events, especially in relation to the emotions these events may engender, and trying to come to terms with the ambiguity and uncertainty of the future (Suddendorf, 2017). In this sense, we suggest, MTT is a driver of anticipatory grief.

4.3 MTT and practical identity

The experience of grief is importantly related to a rupture in one's practical identity, and this is also true of experiences of anticipatory grief:

Grief involves a crisis in the bereaved individual's relationship with the deceased, a crisis that revolves around their attempt to establish a new practical identity in light of the death of the deceased. A surrogate grieving in anticipation of another's death is in the earliest stages of that effort. (Cholbi, 2021, 143)

What we want to suggest is that MTT is a key mechanism in experiences of (anticipatory) grief in part because it plays a key role in allowing one to think about, monitor, and negotiate (changes in) one's practical identity.

Key to the notion of practical identity is our conception of ourselves as agents (Korsgaard, 1996). Practical identity is constituted by the values, concerns, and cares that one endorses as embodying a life of value. Practical identity is built out of one's guiding principles: it is 'a description under which you value yourself, a description

¹⁴ Other key factors are anger, frustration, and guilt (e.g., Chan et al. 2013).

under which you find your life to be worth living and your actions to be worth undertaking' (Korsgaard, 1996, 101). Central to this notion is how one understands oneself, and memory and future oriented imagination seem to play pivotal roles in this activity of self-understanding because such 'an evaluative stance has as its focus our temporally extended life trajectory' (Christman, 2008, 153). Many of the experiences that we hold as key to our practical identities, the experiences that partly make up our conceptions of ourselves as agents, are held in episodic memory, and our choices are evaluated and considered through future oriented imagination.

Episodic memory plays an important role in determining one's practical identity. In fact, on some views episodic memory is necessary for practical identity: '[t]o identify with the values in question is to understand how it is to live a life guided by them, with attendant affective and experiential aspects of that understanding in play; memories...are necessary to establish this sense of identity' (Christman, 2008, 157). On such a view it is thought that, '[w]ithout memory, I cannot engage in the project of interpretive self-understanding, including the process of reevaluating that self-understanding in light of new experiences, reflections, and interactions' (Christman, 2008, 158). On this view, individuals with anterograde amnesia, or the inability to form new memories of events, simply lack the kind of capacity necessary for practical identity and autonomous agency.

This claim may be too strong. Based on detailed conversations and tests on individuals with episodic amnesia, Carl Craver (2012) powerfully and sensitively makes the case that episodic memory is not as important as many people suggest in playing a role in making selves, persons, and agents. Craver shows that individuals who have lost the capacity to remember the personal past, imagine the personal future, or even to form new memories of the sort that are lost to anterograde amnesia, can still show powerful signs of being selves, persons, or agents. Our claim is compatible with Craver's view, however. We don't need the claim that episodic memory is *necessary* for self-understanding or practical identity, but only that it typically plays an *important* role.¹⁵

Further, it is not just episodic memory that is important for practical identity, it is also the future oriented aspect of MTT. In terms of negotiating our practical identities, and overcoming practical problems, Jan Bransen suggests that we should think about these issues not in terms of questions about what we should do, but rather in terms of who we should be. The idea is that one is attempting to answer the question 'What is the best alternative of myself?'. Answering this question, and working out various alternatives to oneself, is to engage in a process of identity management, and involves monitoring, regulating, and influencing the direction of one's life (Bransen, 2008). Key to this process of identity management, for Bransen, is future oriented imagination, which is typical of episodic future thinking, and a particular type of affective access to imagined future scenarios and potential courses of action and ways

¹⁵ It is also interesting to note, in this context, that one of the people (KC) with episodic amnesia, whom Craver (and colleagues) investigated, demonstrated an impairment in his ability to generate an emotion such as regret, which is temporally complex. Although KC could make decisions consistent with a sensitivity to possible future regret, he showed an 'inability to generate a single instance of regret for himself or for near and distant others' (Craver et al., 2014, 194). It is interesting that the impairment of MTT seemed to involve an impaired expression of emotion with a temporal dimension.

in which one's life may unfold.¹⁶ According to Bransen, to negotiate our practical identities we need to imagine future versions of ourselves, and this will crucially involve episodic future thinking (cf. Mackenzie, 2008).

Through memory and mental time travel, we can monitor (and negotiate) our practical identities. Through MTT we can see the shifts and disruptions that will happen to our practical identity even before they actually occur, and the beginning of this process of transformation in our identity, brought to mind through memory and imagination, may mark the beginning of grief. Using MTT to anticipate the future loss of a loved one and the profound impact it can have on one's practical identity, and comparing this, through episodic memory, to one's past experiences of the relationship, may lead to experiences of anticipatory grief.

5 Conclusion

Anticipatory grief is a complex phenomenon. Unlike grief, it is sometimes defined as a 'pre-loss' experience, but it also typically involves losses that are actually experienced in the present. Anticipatory grief seems to span past, present, and future. Indeed, just like grief, these losses are losses of life possibilities and are experienced because of disruptions to one's sense of practical identity.

We suggest that mental time travel, the capacity to envision events in one's personal past and future, is a key mechanism that underpins this experience. Present losses are experienced as losses precisely because they can be compared to previous pre-loss representations brought to mind in memory; impending future loss can be brought to mind through mental simulation, through which one can experience the emotions associated with the event in the here and now. Memory and MTT helps explain the present losses of anticipatory grief as being underpinned by the same capacity that envisions future losses. Memory and mental time travel enable us to range over the past, present, and future, and bring the complex set of losses associated with the impending death and deterioration of a loved one to mind. Memory and mental time travel allow us to experience anticipatory grief for a death foretold.

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¹⁶ Bransen draws on J. David Velleman's (1996) idea of the notional subject of a first-person point of view, the self who occupies the point of view in imagination, and on Marya Schechtman's (2001) notion of empathic access, a special kind of emotional connection, as playing an important role in the continued identity of past and future selves. For the requirement of constraints on this type of imaginative negotiation of one's practical identity, see Mackenzie (2008).

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