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Version: Published Version

Article:
Caravà, M. and McCarroll, C.J. (2025) Forgiving unbound: emotion, memory, and materiality in extended moral processes. Synthese, 205 (4). 156. ISSN: 0039-7857

https://doi.org/10.1007/s11229-025-04974-z

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Synthese (2025) 205:156
https://doi.org/10.1007/s11229-025-04974-z

ORIGINAL RESEARCH

Forgiving unbound: emotion, memory, and materiality in extended moral processes

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Received: 25 July 2024 / Accepted: 21 February 2025
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Abstract

What does it take to forgive? Forgiveness is often thought to involve an internal, intrapersonal process: it happens within the subject. Drawing on the idea that many of our mental states and processes can extend into the material environment, we argue that this is not always the case: forgiving is often a world-involving, extended process. This means that its mechanisms do not always stop at our brains, our bodies, other people, or the institutions we may appeal to, such as legal systems: they often encompass objects and spaces that evoke memories of past wrongs and the actions we perform upon them. These actions allow us to forget the emotional details of events involving wrongs and to preserve neutral or less emotionally charged memories of such events. By doing so, we can later retrieve memories of past wrongs, reflect on what happened, and morally evaluate the wrongdoer's actions. Importantly, we can do so without experiencing (or by experiencing fewer) negative emotions towards the wrongdoer and the past wrong. This is significant, because, according to emotion-based accounts of forgiveness, thinking about the wrongdoing and the wrongdoer in this emotionally distant way is what underpins forgiveness. Our proposal is empirically-informed but theoretical. Still, we hope that it will serve as an input to design new strategies for forgiveness, which are particularly useful in cases in which the person wronged cannot (or does not want to) interact with the wrongdoer or appeal to existing social and legal institutions.

Keywords Forgiveness · Memory · Forgetting · Emotional reappraisal · Evocative objects and spaces · Extended mind

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Published online: 02 April 2025

1 Introduction

What does it take to forgive someone for their wrongdoings? This question can be interpreted as a normative question—a question about what we ought to do to forgive—or as a descriptive question—a question about what we usually or often do when we forgive. In this article we address both senses of the question, but our main contribution is to the second one. Our main goal is to analyse the psychological mechanisms of forgiving: how it works and what elements it involves. Forgiveness is often thought to involve a dyadic relation between the wrongdoer and the person harmed or wronged (Pettigrove & Enright, 2023), or a triadic relation between the wrongdoer, the forgiver, and the institutions they may appeal to, such as legal systems (Enright et al., 1992). Yet, even though forgiveness involves other people and institutions, it is typically thought to involve an internal, intrapersonal process (Brady et al., 2023): it is something that happens *within* the subject.[1] In contrast with this internalist explanation, we argue that, in many cases, there might be more elements involved in forgiving. Our key claim is this: forgiving is not always a process that stops at our brains, bodies, our interactions with others, and our institutions. Rather, its mechanisms often encompass the material environment we inhabit—objects and physical spaces that evoke memories of past wrongs—and the actions we perform upon it: the mechanisms of this moral process often extend into our material world.[2]

To defend this claim, we first identify the psychological underpinnings of forgiving (§ 2). We show that they have a lot to do with our memories of events in which we suffered wrongs or harms, and argue that forgiving is, at least in part, due to the emotional reappraisal of these events, which is a form of emotion regulation.[3] This operation is enabled by the preservation of gist memories of these events, or gist memories associated with these events, which are obtained by selectively and actively forgetting the emotional details of these memories. Then we argue for our key claim (§ 3). By taking inspiration from extended approaches to memory and emotions broadly understood (Colombetti & Krueger, 2015; Colombetti & Roberts,

[1] This needs to be distinguished from external aspects of forgiveness such as reconciliation (Brady et al., 2023), which, even if not a necessary or sufficient condition for forgiveness, may still be a part of its teleology (Roberts, 1995).

[2] Also people with whom the forgiver interacts in the process of forgiveness and the institutions on which they rely are, to some extent, material in kind. People are made of flesh, and institutions are, at least in part, embedded in physical spaces, such as courtrooms. Still, their relevance for forgiveness does not seem to be *specifically* tied to their material features. This is why we distinguish these two elements from objects and spaces that sustain our memories of past wrongs, which play a relevant role in forgiveness based on how we manipulate them and on their ability to evoke particular memories based on their material structure (Heersmink, 2013, 2016; McCarroll & Kirby, 2023).

[3] Throughout this paper we talk about the negative emotions directed towards the past event of being wronged and also towards the wrongdoer. This means that there is a kind of double intentional structure to forgiveness. It should be noted, however, that it is the wrongdoer (the person) that we forgive. So, we have to modulate the negative emotions towards that person. However, given the interconnected and indeed messy way in which minds work (Goldie, 2012), the emotional aspects directed at the wrong (e.g., psychological pain, a sense of being treated unfairly, or shame) and about the wrongdoer (anger, resentment, etc.) often get entangled. It might be easier to forgive the wrongdoer if we can modulate the emotions related to both the person and the event. We thank an anonymous reviewer for encouraging us to emphasise this point.

2015; Heersmink, 2019; Heersmink & McCarroll, 2019; McCarroll & Kirby, 2023; Sutton, 2010), we show how forgetting and the emotional reappraisal of memories of past wrongs are supported by the material environment with which we interact and explain how these two world-involving processes support our unbounded approach to forgiveness. Lastly, we specify the advantages of our approach and its contribution to the literature on the moral psychology and philosophy of forgiveness, emphasizing how extended approaches to memory and emotions can shed new light on questions that have been typically addressed outside the philosophy of mind and of cognitive science (§ 4).

2 Forgiving: a matter of memories and emotions

We define forgiveness as a present response to a past event involving an "affront, injury, transgression, trespassing or offence committed by one person against the other" (Kolnai, 1978: 219). In line with emotion-based approaches, we consider forgiving as a process that is, at least in part, "a matter of the heart". It is the process through which the forgiver overcomes or at least significantly reduces their highly arousing negative emotions towards the wrongdoer or the wrongdoing (Darwall, 2006; Griswold, 2007; Hieronymi, 2001; Moore, 1989; Richards, 1988).[4] Moreover, we assume that forgiving is guided by certain motivating reasons, which are moral in kind (Calhoun, 1992; Murphy, 2003), and that it entails some mental or emotional effort on the part of the forgiver (McCord Adams, 1991). The negative emotions in question should be overcome or significantly reduced not by chance or luck but according to a process that unfolds in the right way and for the right reasons (McCarroll & Dings, 2023). In this section we consider two strategies of forgiveness that seem to be at odds with each other:[5] the forgetting strategy and the emotional reappraisal strategy (§ 2.1). We show that these strategies are indeed compatible. We can emotionally reappraise past events involving wrongs *thanks to* active forms of forgetting: both emotional reappraisal and forgetting are part of the process of forgiving (§ 2.2).

2.1 Should we forget or preserve our memories of past wrongs?

Consider this vignette, which exemplifies a typical case in which forgiveness has not yet occurred.

Cheater: Amanda discovers that she has been cheated on by her husband for several years. She confronts him and he confesses the series of wrongs. Amanda is

[4] These emotions may include, e.g., resentment, anger, the desire to take revenge (Margalit, 2002; Roberts, 1995), hostility, (Horsbrugh, 1974), blame (Fritz & Miller, 2022), spite (Murphy & Hampton, 1988), and sadness (Blustein, 2014). Since we aim to account for the coarse-grained psychological mechanisms of forgiveness, we do not take a stance on the specific emotion-types involved in forgiving.

[5] For an overview of other approaches to forgiveness, such as, e.g., punishment-forbearance accounts, reconciliation-based accounts, performative accounts, apology accounts, and conversational accounts, see Gubler (2022), Pettigrove and Enright (2023), and Satne and Krisanna (2022).

emotionally destroyed but, after some weeks, she takes courage and divorces him. Several years have now passed. Yet, she still feels embittered and resentful every time she thinks about him and what he has done.

This case has five main features.

(a) Someone was harmed by someone else's actions.
(b) The person who was harmed experienced negative emotions in response to the wrong suffered.
(c) This person still thinks about the wrongdoing. Hence, she has some memory of the wrongdoing.[6]
(d) The person's negative emotional experience is temporally extended. Although the type of felt emotion changes over time, the emotions associated with the wrongdoer and the past wrong continue to be negative.
(e) This emotional experience is sustained by personal memories of the wrongdoing or of related events, e.g., memories of one's past emotions.

The forgetting strategy and the emotional reappraisal strategy focus on **(c)** and **(e)**: the subject's memory of the event involving the wrongdoing, or her memories associated with that event, and the fact that these memories lead her to experience negative emotions towards the wrongdoer or the past wrong. However, they suggest doing opposite things with these memories. According to the forgetting strategy, we should *lose* them (Boleyn-Fitzgerald, 2002; Noreen & MacLeod, 2021; Noreen et al., 2014). According to the emotional reappraisal strategy, we should *preserve* them but modify how we emotionally respond to them (Amaya, 2019; Trope & Liberman, 2010; Worthington & Scherer, 2004).

The general reasoning of the forgetting strategy is as follows. Since recalling the event involving the wrong causes negative emotions, and since forgiveness amounts to overcoming or to significantly reducing these emotions, we should *get rid of the causes* of these emotions. The type of forgetting that proponents of the forgetting strategy have in mind is peculiar though. Forgetting our memories of the event passively−by luck or chance−would not do. For forgetting to count as a legitimate component of the process of forgiving it must be an active process.

The core features by which philosophers and cognitive scientists usually identify active forgetting are intention, control, and motivation. First, forgetting is initiated by the intention to forget certain memories: it is an intentional mental action aimed at particular targets (Anderson & Green, 2001; Bjork et al., 1998; Noreen & MacLeod, 2021). Second, forgetting unfolds through mechanisms under one's conscious control, e.g., thought inhibition, thought substitution, the retrieval suppression of the unwanted memories, and the repeated retrieval of memories other than the unwanted

[6] Since we are concerned only with cases in which forgiving is a response to a past event in which the forgiver was involved, the relevant type of memory is *episodic memory*. This is memory for events in one's personal past, including the experience of one's own emotions (Arcangeli & Dokic, 2018; Debus, 2007; Martin & Deutscher, 1966; McCarroll, 2018, 2020; Trakas, 2021; for a different notion of episodic memory, see Michaelian, 2022). However, we do not exclude that, with some adjustments, our account may apply also to cases in which the relevant notions are collective and vicarious memory.

ones (Anderson, 2005; Noreen & de Fockert, 2017; Richards & Gross, 2000; Wang et al., 2019). Third, forgetting is a motivated process: it is motivated by the desire to sustain a positive or neutral emotional state (Engen & Anderson, 2018) and, in the case of forgiveness, by the intention to forgive the wrongdoer (Blustein, 2014).

These features of active forgetting make it relevant to forgiveness in an important way. Unlike passive forgetting, in which losing memories prevents us from acting on the causes of our distress (Staniloiu & Markowitsch, 2014), active forgetting is a means to act on these causes. This means that in active forgetting we display an important form of mental agency: the ability to control our memory processes. This type of mental agency is morally relevant, since the intention that motivates active forgetting and its outcome are moral in character. We intentionally forget a past event to forgive the wrongdoer, and we have forgiven them when our memories of these events are completely forgotten. This is because forgiveness is temporally extended: as philosophical literature suggests, in ideal cases, forgiveness amounts to not experiencing highly arousing negative emotions towards the wrongdoer or the past wrong in the present and in the future (Darwall, 2006; Moore, 1989; Murphy & Hampton, 1988; Richards, 1988). Forgetting the event involving the wrong is thus necessary because unforgotten memories of that event could come to mind and elicit these emotions again (Blustein, 2014).

The emotional reappraisal strategy goes in the opposite direction. Forgiveness amounts to achieving a state of emotional distance from the past wrong (Amaya, 2019), which allows us to reappraise the emotional meaning of the event involving the wrong and to withdraw or significantly reduce our negative emotions towards the wrongdoing and the wrongdoer (Gross & John, 2003). To achieve this state of emotional distance we should *neutralize* or *weaken the causes* of our negative emotions: our memories. To do so, our memories must be somehow preserved, otherwise our neutralization or weakening endeavours would have no target. Still, they should be preserved and neutralized or weakened in the right way. For instance, preserving them but changing their cognitive content, e.g., by no longer representing the wrongdoer as a wrongdoer (Hieronymi, 2001), would not do: this would turn this mental process into something other than forgiving. Forgiving is a present response to a past wrong. The fact that an event involved a wrong should be present to the forgiver's mind, otherwise her change in emotions would not be a response to a past wrong (Allais, 2008; Calhoun, 1992).

The main way to achieve this state of emotional distance and regulate our emotions is to modify the emotional content of our memories by construing them in a different way. Examples of how we can do so include, but are not limited to, re-narrating the event in social settings (Walker & Skowronski, 2009), representing the event as occurring far in subjective time (Ross & Wilson, 2002), reconstructing the event more abstractly (Trope & Liberman, 2010), and recollecting it from an observer rather than a field perspective (McCarroll & Dings, 2023; McIsaac & Eich, 2004; Vella & Moulds, 2014). As psychologist Simon Nørby suggests in his work on memory-based emotion regulation, these changes in the way we represent past events are "instances of reappraisal (Ochsner & Gross, 2008) and allow […] for experiencing fewer negative emotions" (Nørby, 2019: 967). If the emotion-based understanding of forgiveness is right, then the emotional reappraisal strategy sounds

quite reasonable. These changes in the emotional content of our memories and the way in which we bring them about allow us to achieve a state of emotional distance from the past injustice and at the same time to acknowledge that the wrongdoer acted as such on a particular occasion.

2.2 Forgetting our memories of past wrongs, but only partially

The forgetting strategy and the emotional reappraisal strategy present us with a puzzle about how to explain forgiving: it seems we have reasons to endorse two arguments that reach opposite conclusions. The MEMORY LOSS argument, advanced by the forgetting strategy, and the MEMORY PRESERVATION argument, advanced by the emotional reappraisal strategy. Here are these arguments.

MEMORY LOSS

P1: Forgiveness is the process through which the forgiver overcomes or significantly reduces their negative emotions towards the wrongdoer or the past wrong.
P2: In ideal cases of forgiveness, the subject does not experience highly arousing negative emotions towards the wrongdoer or the past wrong in the present and in the future.
P3: Unforgotten memories of the past wrong, or memories associated with that event, could elicit highly arousing negative emotions towards the wrongdoer or the past wrong.
P4: Forgetting reduces the likelihood of experiencing highly arousing negative emotions towards the wrongdoer or the past wrong to zero because it eliminates the source of the forgiver's negative emotions once for all.
C: To forgive, the subject ought to completely forget their memories of the past wrong, or memories associated with the wrong.

MEMORY PRESERVATION

P1: Forgiveness is the process through which the forgiver overcomes or significantly reduces their negative emotions towards the wrongdoer or the past wrong.
P2: In ideal cases of forgiveness, the subject does not experience highly arousing negative emotions towards the wrongdoer or the past wrong in the present and in the future.
P3: To forgive, the subject ought to recognize that the wrongdoer did something wrong in the past.
P4: To do so, the forgiver must have a memory of the event involving the wrong, or memories associated with the wrong.
C: To forgive, the subject ought to preserve emotionally neutral or less emotionally charged memories of the event involving the wrong, or memories associated with the wrong.

Both arguments say something true. MEMORY PRESERVATION is right in emphasizing that to forgive our wrongdoers we must recognize that they did something wrong

in the past. Moreover, both MEMORY LOSS and MEMORY PRESERVATION are right in emphasizing that in ideal cases of forgiveness we should not experience highly arousing negative emotions towards the wrongdoer or the past wrong in the present and in the future. Nonetheless, we think that MEMORY PRESERVATION is somewhat more convincing and shows that the conclusion that MEMORY LOSS reaches is false. To forgive our wrongdoers, we cannot completely lose our memories of the past wrong, otherwise we could not recognize that the wrongdoer did something wrong and therefore we would not be forgiving. Yet, we think that MEMORY LOSS has something to teach to MEMORY PRESERVATION. MEMORY LOSS argues that forgiving involves total forgetting because this reduces the likelihood of experiencing highly arousing negative emotions towards the wrongdoer and the past wrong to zero. MEMORY PRESERVATION says that forgiving involves the preservation of emotionally neutral or less emotionally charged memories of the event involving the wrong, or memories associated with the wrong. Based on its second premise, MEMORY PRESERVATION should also claim that, ideally, the likelihood of these memories arousing negative emotions must be zero. Determining if a memory will never elicit negative emotions is a difficult empirical matter: one would need to prove that this memory will not elicit negative emotions in any possible condition, e.g., given any possible external or internal memory trigger and memory association. However, empirical and clinical research indicates which memory cases are less likely to elicit negative emotions over extended periods of time. Surprisingly (for MEMORY PRESERVATION), these cases involve active forgetting, notably *active selective forms of forgetting* that target emotional details of past events (Blustein, 2014).

We have evidence that subjects with high anxiety traits or who suffer from anxiety disorders forget the emotional details of negative events to a much lesser extent than healthy subjects (Kircanski et al., 2016; Amir et al., 2001; Catarino et al., 2015). As a consequence, they experience more negative emotions over extended periods of time than healthy subjects (Anderson & Hanslmayr, 2014). This comparison between rates of selective forgetting in anxiety and healthy conditions suggests that we are less likely to experience negative emotions as a response to our memories when selective forgetting is not impaired.

Empirical studies on memory updating further support this idea. Research on memory reconsolidation, i.e., memory updating during the retrieval phase (Alberini & LeDoux, 2013), has shown that forgetting emotional details of negative events during reconsolidation has an important impact on the emotional effects of our memories: it allows us to update their emotional content and at the same time to preserve their structure. By doing so, selective forgetting leaves us with emotionally impoverished memories, i.e., *gist memories*, which can still be retrieved but are less likely to elicit negative emotions due to their lack of emotional details (Nørby, 2018; Winocur & Moscovitch, 2011).

Studies on memory reconsolidation and PTSD (Post-Traumatic Stress Disorder) provide further evidence on the importance of forgetting for memory updating and on its role in reducing negative emotions. For example, it has been observed that PTSD patients lack the ability to reconsolidate negative episodic memories in an adaptive way (Beckers & Kindt, 2017). Considering that in PTSD the recurrent experience of negative emotions correlates with the severely impaired ability to partially forget

negative memories, these studies emphasize the importance of forgetting in overcoming memory-based negative emotions (Nørby, 2015). In cases in which forgetting is not involved, subjects tend to experience many more negative emotions and for longer periods than in cases in which it is. This suggests, again, that one is less likely to experience negative memory-based emotions when selective forgetting is involved.

The type of forgetting tested in these studies is selective and partial. Therefore, this body of empirical evidence does not fully support the conclusion of Memory loss because that argument prescribes total forgetting. Still, it shows that there is some truth in that argument: when forgetting is partial and selective, it helps overcome memory-based negative emotions. This is exactly what the emotion-based account for forgiving is looking for. Moreover, the studies on memory reconsolidation mentioned above show that forgetting plays an important role in achieving what the emotional reappraisal strategy suggests: the gist memories obtained through selective forgetting are exactly what the emotional reappraisal strategy is looking for. The upshot of these observations is a new argument about the psychological mechanisms of forgiving, which combines aspects of the forgetting strategy and of the emotional reappraisal strategy.[7] Here is our argument.

Forgiveness involves gist memories of the wrongdoing and their emotional reappraisal

P1: Forgiveness is a process through which the forgiver overcomes or significantly reduces their negative emotions towards the wrongdoer or the past wrong.
P2: To forgive, the forgiver ought to recognize that the wrongdoer did something wrong in the past.
P3: To do so, the forgiver must have a memory of the event involving the wrong, or memories associated with the wrong.
P4: Ideally, these memories should not elicit highly arousing negative emotions towards the wrongdoer or the wrongdoing in the present and in the future.
P5: For these memories not to elicit such emotions in the present and in the future, one should actively forget their emotional details.
C: To forgive, the subject ought to forget the emotional details of the event involving the wrong (or associated events) and preserve a gist memory of this event.

By "gist memory" we refer to a general representation of a past event stored in a memory trace, which preserves the general meaning of the event without storing precise details (e.g., its emotional details). This interpretation of "gist memory" aligns with theoretical and empirical work on different types of memory representations, according to which memory traces can be placed on a continuum whose poles are gist traces, i.e., memory traces that store semantic or generic features of past events (what happened), and verbatim traces, i.e., memory traces that store rich contextual details of past experiences, including perceptual and emotional details (Moscovitch et al., 2006).

[7] Our argument is in line with other accounts of forgiveness, such as, e.g., Jeffrey Blustein's model (Blustein, 2014) and proposals based on the Construal-Level Theory of Psychological Distance (Trope & Liberman, 2010; McCarroll & Dings, 2023).

Unlike in dual-processing theories, such as, e.g., the Fuzzy Trace Theory (Brainerd & Reyna, 2004), and in line with philosophical approaches to the semanticization of episodic memories (Andonovski, 2020; Aronowitz, 2022), we assume that the level of detail stored in memory traces depends on how many and which details were initially encoded in an individual trace and on how many and which details of this individual trace are lost over time, including due to selective active forms of forgetting. The forgotten details that are relevant for our argument are the emotional details of personally experienced past events involving a suffered wrong (past emotions). This is because retrieving information about the emotions involved in a past negative event (how we felt) is likely to cause negative emotions in response to the past wrong and the wrongdoer, thus preventing the subject to engage in a successful process of forgiveness (Blustein, 2014; Fernández-Miranda et al., Under review). Given this connection between forgetting and modifiying the emotions elicited by memories, our argument is integrative. Active selective forms of forgetting and the emotional reappraisal of the event involving the wrong are part of the same process that allows one to forgive by regulating their emotions. In line with the emotional reappraisal strategy, the preservation of a gist memory of the event involving the wrong is itself a form of emotional reappraisal. This type of emotional reappraisal is not at odds with other ways to reinterpret the event at different stages of the process of forgiving, such as, e.g., creating emotionally neutral narratives or modifying the temporal and imagistic aspects of the remembered event. Rather, preserving a gist memory of the event involving the wrong facilitates these and other forms of emotional reinterpretation.

3 How to forgive by manipulating our material world

In this section, we build on the argument above to show that the elements involved in forgiveness are not always bound to our brains, bodies, our interactions with other people, or the institutions we may appeal to, such as legal systems. Rather, they often involve our material environment and how we engage with it: they often extend into the material world. Proponents of the extended mind hypothesis have outlined several ways in which cognitive and affective states and processes extend beyond the boundaries of our brains and bodies.

Supporters of the functional approach to cognitive and affective extension have typically appealed to the "parity principle" (Clark & Chalmers, 1998; Colombetti & Roberts, 2015). According to this principle, when we engage in some cognitive or affective process, "as long as a part of the world functions as a process which, were it done in the head, we would have no hesitation in recognizing as part of the cognitive process, then that part of the world is…part of the cognitive process" (Clark & Chalmers, 1998: 8). Another way in which one may want to account for cognitive and affective extension is by appealing to coupling and self-looping effects (Clark, 2008). On this approach, commonly known as a "second wave" approach to the extended mind (Sutton, 2010), extended cognitive and affective systems are functionally integrated gainful systems (FIGs), such that they involve coupling, integration, and enable us to engage in some cognitive or affective process that would be closed to us otherwise (Krueger & Szanto, 2016). We suggest

that the processes of forgiving can be explained by relying on both approaches. Our key argument is as follows.

World-involving forgiveness

P1: The psychological mechanisms of forgiveness combine active selective forgetting and the emotional reappraisal of memories of the past wrong.
P2: The mechanisms of active selective forgetting often encompass the material world we inhabit and the actions we perform upon it: they extend into our material world.
P3: The mechanisms of emotional reappraisal often encompass the material world we inhabit and the actions we perform upon it: they extend into our material world.
C: The psychological mechanisms of forgiveness often encompass the material world we inhabit: forgiveness is not always bound to our heads and bodies but often extends into our material world.[8]

We have already defended **P1** in § 2.2. In this section, we defend **P2** (§ 3.1) and **P3** (§ 3.2).

3.1 Manipulating forgetting from the outside

The idea that forgetting can extend into the material world is already present, although implicitly, in the Otto's notebook example proposed by Andy Clark and David Chalmers in their article *The Extended Mind* (Clark & Chalmers, 1998). Otto, who suffers from Alzheimer's disease, encodes and stores semantic memories in a notebook he always carries with himself. When the occasion arises, he retrieves information stored in his notebook and, based on this information, he forms true action-guiding beliefs about facts in the world (e.g., where the Museum of Modern Art (MoMA) is). Clark and Chalmers argue that this is a case of extended mentality. They argue that, since information stored in the notebook plays the same causal-functional role of information stored in a healthy subject's biological memory, and since both sets of information stand in the same kind of relation with the subject's processes of belief formation,[9] then information stored in the notebook counts as memory.

An implication of this argument is that, if information stored in Otto's notebook counts as memory as much as information stored in healthy subjects' brains, and if in biological memory forgetting depends on the unavailability or inaccessibility of information stored in memory traces (Tulving & Pearlstone, 1966), then the unavail-

[8] There are other world-involving accounts of forgiveness. However, our argument is quite different. These accounts focus on socio-linguistic, behavioral, and legal aspects (Enright et al., 1992; Haber, 1991; Zaibert, 2009). Our argument is compatible with these accounts but focuses on another aspect: how elements of our material world (such as objects) are often part of the psychological mechanisms of forgiveness. Therefore, it overcomes the dyadic or triadic conception of forgiveness proposed by extant world-involving accounts, where forgiveness is still conceived as a relation between a forgiver and a wrongdoer or as a relation between a forgiver, a wrongdoer, and social structures.

[9] Both internally and externally stored information is deemed trustworthy, is reliable, and is accessible. Hence, it functions as a good source for the formation of true action-guiding beliefs. For a discussion of these criteria, along with a discussion of critical aspects of Clark and Chalmers' formulation of the extended mind thesis, see, e.g., Facchin and Leonetti (2024), Menary (2007), and Winokur (2024).

ability or inaccessibility of information stored in the notebook could be, at least in part, the reason why Otto may forget previously encoded and stored information. For example, suppose that Otto's notebook gets burned during an accident. This would be a case of permanent forgetting, where previously encoded and stored information is unavailable to him because a memory record no longer exists in his external memory system. Or suppose that Otto does have his notebook with him, opens it at the right page, but cannot read what he wrote because his cousin Kent covered the whole page with a bunch of stickers. The information that Otto needs−say, the address of MoMA−is still there, stored in his external memory. Still, it is temporarily inaccessible, in this case due to the physical interference caused by the stickers. Like in standard cases of retrieval failure, in this case, Otto would temporarily forget information because he cannot access it at a particular moment in time.

These arguments suggest how one might argue that forgetting does not only target internal resources but also particular objects or aspects of our material world, like spaces. However, like Clark and Chalmers' functionalist argument for extended remembering, this argument is purely speculative and is about semantic memory. In what follows, we provide further evidence for **P2** of World-involving forgiveness by building on empirical and empirically-informed research on forgetting in episodic memory.

The first body of empirical evidence comes from research on cue-dependent forgetting: cases in which the absence or presence of external memory cues cause, at least in part, forgetting. First, it has been shown that subjects tend to forget linguistic material because this material is not cued at all (Tulving, 1974). Second, it has been shown that memory cues that are semantically incongruent with the target memory tend to interfere with memory retrieval, causing forgetting through interference mechanisms (Chandler & Gargano, 1995). Building on this evidence from semantic memory, it has been shown that cue-dependent forgetting effects also occur with more ecologically valid stimuli (videos of events), and episodic memory (Sekeres et al., 2016). This suggests that forgetting events of one's personal past depends, at least in part, on external elements. Importantly, Sekeres and colleagues' study shows that the influence of memory cues on forgetting applies to the details of experienced events but not to the central aspects of these events: their gist. Hence, it provides empirical support for one crucial feature of the forms of forgetting involved in forgiveness and for their world-involving features: the absence or presence of certain external cues make us selectively forget details of past events and preserve their gist.

Still, the forms of forgetting involved in forgiveness are not only selective but also active. Above we provided reasons for a world-involving conception of forgetting by appealing to laboratory-based cases of cue-dependent forgetting. One might claim that this is a mistake. This is because in laboratory-based cases we fail to remember the details of past events because we are not affected by memory cues that could have prompted remembering, or we are affected by memory cues that interfere with the retrieval of the target memory. Therefore, one might say that, since being affected is not an activity but a passive state, then cue-dependent forms of forgetting are passive. This argument is not completely unjustified (van Schie et al., 2023; Wang et al., 2015), but it is not completely sound either. Indeed, some forms of cue-dependent forgetting are passive, others are active. Active forms of cue-dependent forgetting are

those described in philosophical work on the situated approach to memory,[10] which is the second body of evidence for **P2** (Caravà, 2021, 2023; Dings & McCarroll, 2022; Sutton, 2009).

The key idea of the situated approach to memory is this: while memory processes certainly rely on internal resources, our material environment also matters for remembering and forgetting. This is because, at the diachronic level, we structure our environment to enhance, facilitate, or shape different memory processes. For instance, think about the widespread practice among expert bartenders of arranging glassware and cocktail furniture (e.g., miniature umbrellas) to remember how to prepare a particular drink or what drink to prepare next (Clark, 2005). Or think about the practice of placing post-its and to-do lists in particular spots of our offices to remember work-related tasks. These are common cases in which, by actively structuring our material environment, we make available certain memory cues that influence remembering in procedural and semantic memory. A similar argument applies to episodic memory. An exemplary case is that of evocative objects − objects that provide long-stable connections to emotion-laden past events, such as a photo of one's graduation party or a souvenir of the Eiffel Tower one bought during one's honeymoon (Heersmink, 2018; Turkle, 2007). These objects are powerful for episodic memory: they serve as external memory cues for remembering particular past events due to a variety of mechanisms, such as multimodal perception and mental associations (McCarroll & Kirby, 2023).

According to the situated approach to memory, the mnemonic power of evocative objects explains, at least in part, why we tend to organize our everyday environments (e.g., houses and workplaces) around objects that evoke positive, cherished, or meaningful memories (Csikszentmihalyi & Rochberg-Halton, 1981; Sherman, 1991). For example, we hang photos of our last holiday in our living rooms to remember that experience and re-live the calm, curiosity, and joy we experienced on that occasion (Zijlema et al., 2019). Or we keep old toys in our bedroom while living away from our family because they cue memories from our childhood and support our narrative identity (Heersmink & McCarroll, 2019). Since evocative objects are powerful cues for memories of our personal past, we tend to actively structure our environment to prioritize our interaction with evocative objects that cue memories that serve our emotional and personal needs (Caravà & Scorolli, 2020; Colombetti & Roberts, 2015). The mnemonic power of evocative objects also explains, at least in part, why we tend not to display negative evocative objects in our everyday environments. For example, usually we do not hang photos of car accidents in our living rooms and we do not keep a box with gifts from an ex-partner who abused us on our desks. These objects tend to cue memories of events that elicit negative emotions and have negative effects on our self-narrative (Dings & Newen, 2023; Fabry, 2023; Rasmussen & Berntsen, 2009). Since they do not serve our emotional and personal needs, we tend

[10] We build on the situated approach to memory, which includes, but is not limited to, extended approaches to memory, for the sake of precision. Although the empirical and argumentative evidence we provide supports extended approaches to memory, it also supports other world-involving approaches, such as, e.g., the enactive and the distributed approach (Caravà, 2023; Sutton, 2024).

to exclude them from our everyday environments (Coninx, 2023; Coninx & Stephan, 2021).

These considerations about evocative objects, episodic memory, and the ways in which we actively structure our material environment support our case about active cue-dependent forms of forgetting.

First, if it is true that we actively structure our environment to encounter certain memory cues and not others, and if it is true that cue-dependent forgetting sometimes depends on external cues that interfere with the retrieval of certain memories, then actively structuring our environment by prioritizing positive evocative objects can promote cue-dependent forms of forgetting based on interferences. These cases of cue-dependent forgetting are active because they involve the manipulation and interaction with the environment over time. We actively prioritize the interaction with certain evocative objects − objects that evoke positive and meaningful memories −, by doing so we make them available as memory cues in environments with which we interact recurrently and, through that, we promote repeated interference effects with other memory cues − feelings − that could contribute to elicit other memories − memories of negative events.

Second, cue-dependent forms of forgetting also depend on the active de-prioritization of certain memory cues, a de-prioritization partially obtained through actions that we perform with negative evocative objects. For example, think about cases in which we do not want to be exposed to objects that remind us of negative events, e.g., a photo of a friend who betrayed us, or a t-shirt we were wearing when we were robbed. In order not to be exposed to these objects, we could − and we often do − perform actions with these objects.[11] For instance, we could put them in our attics, donate them to charity, or throw them away (Petrelli & Whittaker, 2010). These actions matter for our memory cases because they make certain memory cues unavailable in our everyday environments and, as a consequence, they prompt cue-dependent forms of forgetting. Like in the case discussed earlier, these are cases of active cue-dependent forgetting. The absence of memory cues that could prompt the retrieval of a negative memory is not due to luck but to the actions we perform with certain evocative objects at particular times, which contribute to structuring the environment with which we later interact.

These cases of active and selective cue-dependent forgetting are highly likely to occur. Ethnographic studies on memory and evocative objects indicate that we do

[11] We witness this manipulation of the external environment in remembering and forgetting in popular culture. A famous fictional example is the film *Eternal Sunshine of the Spotless Mind*, in which subjects can undergo memory erasure after the loss of a relationship. Importantly, a key aspect of this process is not simply excising the internal memory traces but removing all the evocative objects associated with the past relationship (Driver, 2009). A less famous (but non-fictional) example is *The Museum of Broken Relationships* (https://brokenships.com), where people send objects that may trigger memories of a difficult or terminated relationship. On the museum's webpage, they write: "Recently ended a relationship? Wish to unburden the emotional load by erasing everything that reminds you of that painful experience?". Ultimately, the museum advises us not to completely erase everything, but rather to send the object and our story to them. However, the process of controlling our forgetting is the same. Indeed, the practice is so commonplace that wikiHow has a webpage titled "*How to purposefully forget things*" (https://www.wikihow.com/Purposefully-Forget-Things), step 4 of which is to remove all the "trigger objects" from one's environment.

often manipulate our material environment to forget memories that elicit negative emotions (Petrelli & Whittaker, 2010; Csikszentmihalyi & Rochberg-Halton, 1981; Sherman, 1991). While engaging in these environmental manipulations, some may certainly be motivated by superstitious beliefs, such as those expressed by popular sayings like "out of sight, out of mind" or "the absent is soon forgotten". However, there are scientific motivations for the engagement in such forms of environmental manipulation. Just to mention an exemplary case, think about the manipulation of objects in psychotherapy, which has been shown to contribute to the emotional reprocessing of highly arousing memories (Gallagher, 2018; Malafouris, 2019; Li et al., 2010; Solway et al., 2016). In addition to the evidence on cue-dependent forgetting we have already offered, these observations provide support for our claim about the active and world-involving features of forgetting. There are common real-life cases in which forgetting depends on our material world and on what we do upon it in important ways: its mechanisms partially extend into the material world.

This does not mean that the process of forgetting is fully external. Since we are interested in episodic memories with negative emotional content, and since forgetting details of such memories is difficult (Williams et al., 2022), claiming that we forget the emotional details of these events only based on cue-dependent influences at particular moments would be naïve. But our claim is not about individual cases of retrieval failure (Caravà, 2024), nor is our aim to downplay the role of internal resources in forgetting, such as, e.g., memory traces (De Brigard, 2014; Robins, 2017). Our claim is that forgetting often depends *in part* on extra-neural resources or on the lack thereof *over time*. As it has been suggested elsewhere (Caravà, 2021), active cue-dependent forgetting that occurs over extended periods of time has important effects on memory traces. Not interacting over time with objects that evoke negative past events contributes to de-prioritizing memory traces of these events, while recurrently interacting with objects that evoke positive experienced events contributes to prioritizing memory traces of these events. As a result, retrieving memories of positive or neutral events becomes more likely, while retrieving negative events becomes less likely.[12] This dynamic suggests that remembering the emotional details of events involving wrongs becomes less likely because of a variety of processes, which equally involve internal and external resources.

[12] Since the type of forgetting in question is cue-dependent forgetting, and since this type of forgetting has been shown to affect the details but not the gist of pasts events (Sekeres et al., 2016), this argument meets the gist preservation requirement at the core of the integrative argument in § 2.2. Hence, at a general level, our proposal does not entail potential problems due to non-selective forms of forgetting, such as the inability to recognize the past wrong as such (and the wrongdoer as a wrongdoer) due to the absence of a memory of the wrong. Still, one might say that our argument only provides evidence for the *creation* of a gist memory but not for the *preservation* of this memory. This is a sound objection but is not truly problematic. As we have stated in § 2.2, and as we will further argue in § 3.2, our account of forgiveness is processual. It is not just about forgetting the emotional details of past events but also about *reprocessing* the past event. Since reprocessing involves the intentional retrieval of the gist memory in different practices of memory retrieval, and since intentional retrieval has been shown to prevent total forgetting during consolidation (Born & Wilhelm, 2012), our account does not entail the problem of total forgetting over time. Together with selective forgetting, subsequent reprocessing enhances the preservation of a gist memory, which puts the subject in the right place to think about the event involving the wrong without experiencing highly arousing emotions.

Still, to provide a full justification of our world-involving conception of forgetting in forgiveness, we need to check whether these active selective world-involving forms of forgetting have the core features that philosophers and cognitive scientists use to identify active forms of forgetting. The question to be answered is: are these forms of forgetting intentional, controlled, and motivated?

As for intention, the answer is "yes". Active selective world-involving forms of forgetting are underpinned by actions that are guided by the intention to forget certain memories − memories of events involving suffered wrongs, or memories associated with these events. We perform certain actions with evocative objects not for aesthetic reasons, e.g., to make our living rooms prettier, but because our intention is to not recall certain memories that elicit negative emotions.

As for control, the answer is "yes", but with a caveat. The actions we perform with evocative objects are under our control but only at particular times. They are when we structure our material environment with the intention to forget certain memories but they are not when we interact with these objects every day. This is because the cue-dependent aspects of world-involving forgetting are based on perception. Since in perception we have limited or no control over what we perceive, then we have limited or no control over the recurrent or repeated perceptions that underpin world-involving forgetting. This is not a problem for our account though. The actions we perform with evocative objects are controlled at relevant times. Moreover, the effects of these intentional actions (i.e., the presence or absence of certain memory cues in our environment) can contribute to sustaining controllable mental actions that underpin active forgetting through cueing effects (Caravà, 2021). Since our claim is that the mechanisms of active forgetting *partly* extend into the world, this aspect does not jeopardize our argument but rather supports it.

Lastly, motivation. The world-involving forms of forgetting based on actions on evocative objects are motivated by the desire to overcome negative emotions elicited by memories of certain events. Therefore, they are motivated in the relevant sense emphasized by work on active forgetting and emotion regulation in cognitive science (Engen & Anderson, 2018). However, it is not clear if they are motivated in the sense that philosophers have in mind when they investigate the relationship between forgetting and forgiveness. For them, the motivations of forgetting must be moral: they must involve not only the desire to overcome certain negative emotions but also the intention to forgive (Blustein, 2014). As for our cases of forgetting, the matter is not black and white. There are cases in which the actions we perform with material objects are sustained by the intention to forgive. But there are cases in which world-involving active forgetting is motivated only by the desire to regulate our emotions. Yet, they contribute to forgiveness because they influence the process through which we overcome or significantly reduce highly arousing negative emotions towards wrongdoers and past events involving wrongs. Since we have claimed that forgiving is underpinned by forgetting *and* emotional reappraisal, and since forgetting supports emotional reappraisal, the moral condition does not necessarily need to be fulfilled at the stage of forgetting. The moral motivating reasons for forgiveness can be involved later in the process, when we engage in the emotional reappraisal of past events involving wrongs by retrieving and modifying gist memories.

Hence, even if there are some disanalogies between the internal and world-involving active selective forms of forgetting that underpin forgiveness, these forms of forgetting share enough features. Furthermore, over time, they sustain other forms of active forgetting that are involved in forgiveness. Therefore, **P2** is fully justified: the psychological mechanisms of active selective forgetting involved in forgiveness often encompass the material world we inhabit and the actions we perform with it.

3.2 Manipulating emotions through objects and spaces

We have defended a partially extended conception of the forms of forgetting involved in forgiveness. If our argument is correct, and if it is true that retrieving gist memories obtained through active selective forgetting is itself a form of emotional reappraisal (§ 2.1), then we have shown how we can manipulate our emotions towards wrongdoers and past wrongs by manipulating our material environment. Based on emotion-based accounts, this process leads to forgiveness. Hence, as far the WORLD-INVOLVING FORGIVENESS argument is concerned, by arguing for **P2** we have already argued for **P3**.

Nonetheless, if one endorses the idea that in ideal cases of forgiving one should not experience negative highly arousing emotions towards the wrongdoer or the wrongdoing in the present and in the future, as many philosophers do (Darwall, 2006; Moore, 1989; Murphy & Hampton, 1988; Richards, 1988), and if it is true that selective active forgetting makes the experience of these emotions "just" less likely by producing gist, less emotionally charged memories, then one might say that, in some cases, retrieving gist memories of events involving harms may still elicit these emotions. Therefore, one may claim that the account of forgiveness we have developed so far is not satisfactory because it does not account for ideal cases. Our response to this worry is as follows.

On emotion-based accounts, forgiveness entails overcoming or at least significantly reducing one's negative emotions towards the wrongdoer or the wrongdoing. Hence, at a general level, the fact that one may sometimes experience negative emotions towards the wrongdoer or the event involving the wrong is compatible with our broad definition of forgiveness. Reducing highly arousing negative emotions over time is enough for forgiving. Yet, in line with the philosophical literature on forgiveness, we do endorse the idea that, in ideal cases, forgiveness entails not experiencing these emotions at all in the present and in the future. As we have explained in § 2.2, our account allows for many mechanisms intervening at different stages of the process of forgiving. Therefore, it allows us to explain ideal cases of forgiveness in the following way.

Forgiving is underpinned by selective active forgetting and by the preservation of gist memories. Should negative emotions arise from retrieving gist memories of past wrongs, other processes and actions that will eventually inhibit the experience of negative emotions towards the wrongdoer and the past event in question must intervene. These include, among others: memory-based processes such as representing the event as occurring far in subjective time (Ross & Wilson, 2002), reconstructing the memory of the event more abstractly (Trope & Liberman, 2010), and recollecting it from an observer rather than a field perspective (McCarroll & Dings, 2023; McIsaac & Eich, 2004; Vella & Moulds, 2014); social actions such as re-narrating the event in social

settings (Walker & Skowronski, 2009), interacting with the wrongdoer and accepting her apologies (Roadevin, 2017), and engaging in performative acts of forgiveness that help modify one's emotions (Haber, 1991); the manipulation of our material world.

Consider the case presented in § 2 (**Cheater**). To overcome her negative emotions towards her ex-husband, Amanda may engage in active selective forgetting through the manipulation of her environment, engage in further mental actions aimed at selective forgetting, such as thought inhibition, thought substitution, the retrieval suppression of the unwanted memories, and the repeated retrieval of memories other than the unwanted ones. As a result, she may obtain a gist, less emotionally charged memory of the event in which she discovered that her ex-husband cheated on her. Should retrieving such a memory elicit negative emotions, she may act on these emotions by intentionally engaging in world-involving processes of emotion regulation that lead her to emotionally reappraise the event involving the wrong (Colombetti, 2014; Colombetti & Roberts, 2015; Colombetti & Krueger, 2015; Krueger & Osler, 2019; Maiese, 2016). For instance, she might design her living spaces in ways that sustain the experience of positive emotions and moods over time: she may choose colours that are expressive of positive emotions and moods for the walls of her house, arrange her furniture to avoid abrupt or irritating movements, or choose a calming lighting set (Caravà & Benenti, 2024).

Even if this process of emotion regulation does not initially target her memories of the past event in question, or associated memories, but just her experience of emotions and moods in general, provided that forgiving her ex-husband was at least one of the motivating reasons why she engaged in this long-term process of emotion regulation, and provided that this process allows her not to experience negative emotions towards him by generally helping her sustain positive emotions and moods over time, then this world-involving process of emotion regulation has, admittedly, a relevant influence on the process of forgiveness. Considering that this is a long-term process that positively influences her emotions and moods daily, and considering that when we retrieve memories of past experienced events at particular times our occurrent moods and emotions influence how we experience the emotional content of retrieved memories (Dolcos et al., 2017), then it is reasonable to claim that when Amanda will retrieve gist memories associated with the past wrong she will not experience highly arousing negative emotions towards the wrongdoer and the past wrong.[13] According to emotion-based accounts of forgiveness, and in particular according to the emotional reappraisal account, this emotionally distant way of recalling memories of past wrongs indicates that one has forgiven the wrongdoer.

One might rightly worry that such examples of manipulating the environment to regulate our emotions may involve situated or embedded emotion regulation and not affective extension. That is, they are cases in which our material world and the actions we perform upon it causally contribute to forgiveness but the relevant

[13] To be more specific, we claim that this form of emotion regulation clearly fits in the process of forgiveness because the subject is motivated to forgive (see § 2.1 for the motivation condition) and because, even if the process does not initially have a memory of the past wrong as its target, the effects of this process − reduced negative emotions and increased positive emotions over time − influence the emotional aspects of memory retrieval that are relevant for forgiveness: the subject does not experience highly arousing negative emotions when she remembers the past wrong.

affective states are not partially constituted by aspects of our material environment (Krueger & Szanto, 2016). We have two ways of responding to this worry. The first is simply to say that, even if this is true, and even if one is not sympathetic to the notion of the extended mind, our claim is still interesting and important. The mechanisms of a moral process like forgiving may be importantly world-involving.

Second, there might be other cases in which the emotion regulation involved in forgiveness is indeed extended. Thinking about the affective dispositional state of resentment, which is a key emotion involved in the process of forgiving, Colombetti and Roberts (2015) construct a thought experiment in which a person's diary containing entries outlining the way in which her parents negatively treat her is partly constitutive of her resentment towards them. For Colombetti and Roberts, the diary is part of the supervenience base of the system that realises her dispositional resentment, such that without it "she would not rekindle her resentment that often. In fact, she may even be able to forget her negative relationship with her parents and cultivate more positive memories and feelings toward them" (Colombetti & Roberts, 2015: 1253). Manipulating the material world may therefore count as extended emotion regulation of one's resentment.

A further case of potential affective extension that is relevant to our interests here is emotion regulation through musical engagement (Krueger, 2014; Kersten, 2017). We actively engage with music to "animate behaviour, cultivate and refine affective experiences" (Krueger, 2014: 1), and both playing and listening to music can involve functionally integrated gainful systems (FIGs) (Krueger & Szanto, 2016). The three conditions of FIGs are satisfied. There is *coupling*, such that musical engagements are always mediated by material culture, which afford ongoing manipulation so that listeners can be coupled to their music as often as they want. There is also *integration*, which is shown in the way in which we construct playlists (choosing different artists, genres, etc.) and manipulate the auditory properties of the pieces within different listening contexts (varying volume, etc.). This coupling is truly integrated because it is not just unidirectional but can result in emotional self-stimulation in which our musical manipulations loop back onto us, shaping our ongoing engagement and coaxing emotions out of us, which in turn can be further manipulated. There is also *functional gain*: "when coupled with our musical artifacts, we gain access to self-regulatory and emotional capacities…that would remain otherwise inaccessible" (Krueger & Szanto, 2016: 868).[14] In this way, certain processes of emotion regulation may be importantly world-involving and extended, and if part of the motivating reasons for engaging in them are to forgive a wrongdoer, then such processes would be part of the extended nature of forgiveness.

If our argument in support of world-involving forms of emotion regulation is sound, and if it explains how such forms of emotion regulation work together with active selective strategies of forgetting in the process of forgiving, we now have a good argument that accounts for ideal cases of forgiveness. Moreover, and more importantly, we have a full justification of our main argument: WORLD-INVOLVING

[14] It might not only be musical engagement that is important here. Embodied practices such as dance (Maiese, 2016) and materiality such as place (Sutton, 2024) may be important for extended emotion regulation in cases of forgiveness.

FORGIVENESS. In many cases, the process of forgiveness does not stop at our brains, bodies, our interactions with other people, or the institutions we may appeal to. Rather, through world-involving active selective forms of forgetting, and through world-involving processes of emotion regulation and re-appraisal that are, at least in part, motivated by moral reasons, forgiving often recruits our material world and how we act upon it: forgiveness partially extends into the world.

Before turning to our concluding remarks, we want to address an objection to our account. Perhaps one could argue that forgetting and reduced emotions are neither necessary nor sufficient to forgive. Rather, forgiving is a voluntary, conscious decision to pardon the wrongdoer, regardless of what happened and how one feels about it. On this line of thought, forgetting certain details to prevent emotional arousal may facilitate the decision to forgive, but this core component of forgiving does not require forgetting the emotional details and affectively reappraising the past. This notion of forgiveness might involve religious motivations, for example. In response we would like to highlight the fact that even if one desires to forgive on, say, religious grounds such that one has a duty to forgive, emotions still seem to play a necessary role. Emotions are not just feelings, but are multidimensional constructs that also involve, for example, appraisals and behavioural tendencies (Lempert et al., 2016). Emotions motivate us to act in particular ways (Cosentino et al., 2022; Frijda, 2010). It seems strange to say, then, that one can forgive someone with no corresponding change in emotion. If I am still angry at the wrongdoer, I will behave in ways towards them that reflects this anger and not my act of forgiveness. It seems that modifying one's emotions does more than facilitate the decision to forgive: it helps enact and maintain the difficult process of forgiveness. Moreover, even in these cases where the decision to forgive might stem from, e.g., religious motivations, arguably it is still a world-involving process. Many aspects of religious thought and beliefs might themselves be partly constituted by our material environment (Krueger, 2016). For instance, we may consult a religious text to confirm, strengthen, or even access our belief that forgiveness is required no matter what the circumstances. In this way, one's dispositional devotional beliefs, such as beliefs about the duty to forgive, may be partly constituted by devotional texts or other aspects of the material world.

4 Concluding remarks

We have argued that forgiveness is, at least in part, a matter of memories and emotions. To forgive someone who wronged or hurt us, we need to overcome or to significantly reduce our negative emotions towards them and the past event involving the wrong or the harm. To do so, we need to actively and selectively forget the emotional details of our episodic memories of these events, or the emotional details of associated memories, and preserve gist memories. When retrieved, these memories should allow us to recognize the wrongdoer as a wrongdoer and the past event as an event involving a wrong or harm. However, they should allow us to do so without experiencing highly arousing negative emotions towards the wrongdoer or the past wrong: we need to achieve an enduring state of emotional distance that allows us to emotionally reappraise the event involving a wrong or harm. We can achieve this

state through internal mental processes, e.g., the selective active forms of forgetting and the processes of memory updating and reconstruction identified by cognitive scientists, but also through complementary processes that involve the active manipulation of our material environment, such as actions on evocative objects and on the spaces we inhabit. This suggests that the process of forgiveness extends, in part, to our material world and to what we do upon it.[15]

Our proposal is not at odds with extant philosophical and psychological accounts of forgiveness but rather complements them. Our approach is pluralistic: it allows for many intertwining processes and elements, whose relevance depends on each individual case. However, at a broad thematic level our proposal fits well with approaches to forgiveness that emphasize the role of our active interaction with the world, even if its central focus is quite different. Most of the extant accounts focus on social interaction and conceive of forgiveness as a dyadic process involving the forgiver and the wrongdoer, or as a triadic process involving the forgiver, the wrongdoer, and institutions, such as legal systems (Satne & Krisanna, 2022). Our account allows for these roles of dyadic and triadic interactions. Still, by focusing on the interplay between internal elements – memories and emotions – and external elements and processes – our material memory-laden and emotion-laden world – it suggests an additional externalist way in which we can forgive.

This way of forgiving is particularly important if we consider three sets of cases. First, cases in which relying on internal resources and processes alone does not work and thus we need additional resources and processes in order to forgive. Second, cases in which interacting with the wrongdoer is not possible or viable, for example because we do not know their identity, because they died or are in jail, or because interacting with them would entail unsustainable physical, mental, or financial costs. Third, cases in which the forgiver cannot or is reluctant to rely on existing institutions, for example due to their fear of being stereotyped during their reports of the suffered wrong, or because they fear that their testimony will not be deemed as true or authentic within such institutions (Puddifoot, 2021; Trakas & Puddifoot, 2024). By explaining how we can manipulate our own mental states – memories and emotions – by manipulating our material environment, our proposal suggests new ways in which one may forgive in these difficult but common cases. Our contribution to the psychology and philosophy of forgiveness is empirically-informed but theoreti-

[15] While our account of forgiveness focuses on the relationship between *material* objects and memories, it is distinct from accounts that one may want to develop based on the material engagement theory (Malafouris, 2013). This is for several reasons. First, unlike in the material engagement theory, our account of evocative objects does not imply any particular stance on how these objects represent particular past events. Otherwise said, we are not concerned with particular forms of signification but simply with the emotional relation that the forgiver has with certain objects. Second, as it has been emphasised by Prezioso and Alessandroni (2023), at the core of the material engagement theory of memory there is the conflation between social and material aspects, with particular attention to the acquisition of memory skills. While we are sympathetic with this idea, our world-involving account of forgiveness does not necessarily entail any particular account of how one learns to remember and forget through social interaction. Third, the theory of material engagement often focuses on the phenomenology of our engagement with things at the synchronic level (Brinck & Reddy, 2020). While felt emotions matter in our account, our account focuses on the effects of our past interactions with objects over time, with particular attention to their effects on neural traces and their consequences on memory retrieval and emotion regulation (see § 3.1).

cal. Still, we hope that by showing some of the ways in which the mechanisms of forgiveness extend into the material world, our proposal can serve as the first step to think about new concrete strategies for forgiveness.[16] We reserve this task for future work, together with the task of extending our account to include other important case studies, such as cases of self-forgiveness, and cases of collective forgiveness in response to collective harms. The idea that forgiveness is a process not bound to brain and body has implications for these cases too.

Acknowledgements We thank two anonymous reviewers, the *Mind & Cognition Research Group* at Purdue University, the audience of the Public Seminar at the *Centre for Philosophy of Memory* at the Université Grenoble Alpes, and the audience of the conference *Issues in Philosophy of Memory 4* at the University of Geneva for their comments and objections. Chris McCarroll would like to thank Paloma Muñoz for her help in thinking through these ideas. Marta Caravà is grateful to Gabriela Fernández Miranda for her input on this project, to Adam Waggoner for his written comments on an early draft, and to Margherita Arcangeli, Vickie Sanders, and Sarah Robins for discussions related to this work.

Author contributions The authors contributed equally to this paper. Chris McCarroll pitched the initial idea and then the authors worked further on the conceptualization together. Marta Caravà particularly focused on writing § 1, § 2, § 2.1, § 2.2, § 3, § 3.1, and § 4, and Chris McCarroll particularly focused on writing §3 and § 3.2. The authors then contributed equally to the revision process.

Funding Open Access funding enabled and organized by National Yang Ming Chiao Tung University. Chris McCarroll's work was supported by a Taiwan National Science and Technology Council (NSTC) grant under the ERA-NET NEURON (Network of European Funding for Neuroscience Research) scheme: The Complexity of Pain and Its Normative Implications (COMPAIN) (113-2923-H-A49-002-MY3), as well as a National Science and Technology Council (NSTC) project: Mindshaping Memory (grant number: 112-2410-H-A49 -084 -MY3).

Declarations

Conflict of interest The authors do not have any competing interest to declare.

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[16] We do not imply that forgiveness is a moral duty but just that it is good for one's mental and physical health (Worthington & Scherer, 2004). Hence, the quest for new strategies of forgiveness, including the unconventional ones suggested by extended approaches to memory and emotions, might be important.

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