

# Transient Particulars

## Abstract

We spend much of our adult lives thinking and reminiscing about particular events of the past, which, by their very nature, can never be repeated. What is involved in a capacity to think thoughts of this kind? In this paper, I propose that such thoughts are essentially connected with a capacity to communicate about past events, and specifically in the special way in which events of the past are valued and shared in our relationships with one another. I motivate this proposal by way of the claim that such thoughts are *practically useless*: there are no practical, forward-looking tasks that require information which is specific to particular past events. Thus I suggest that thoughts of this specific kind have a home only in the cognitive economy of a creature who finds past events to be of interest for their own sake, and that this interest in the past is a peculiar feature of human social life.

Yes, she thought, laying down her brush in extreme fatigue, I have had my vision.

—Virginia Woolf, *To The Lighthouse*

The world we live in is in many ways quite repetitive. Natural events, like sunsets and seasons, pass and return again; social life is built around regular rhythms like the religious calendar or working week. In order to get by in the world we need to attune ourselves to its cycles and keep track of their progress so we can act in the right way at the right time. So one way in which a thinker can be said to be aware of the passage of time is insofar as they are able to locate their present moment within the cycles and rhythms that matter in their life—to know what time of year it is, what day of the week, how soon dinner is, and so on.

As well as this, though, it seems that we often entertain thoughts which are not just about the recurrent or cyclical aspects of our world, but are about the particular events that constitute instances of those cycles. One can think not only that the sun has just set and so it will soon be dark; one can also think about the very sunset one has witnessed—a particular episode which, being past, is distinct from any sunset that is yet to come, however much they might resemble one another in qualitative detail. Such thoughts, then, are connected with an appreciation for the past as a distinct domain from the future, populated by events which will never come again.

In this paper I am concerned with our capacity to refer to, and think about, particular past events: events that, having happened, can never be repeated. I am interested, in the one hand, in the ground or basis of this capacity; and, on the other hand, in the role these thoughts play in our psychological life. On the assumption of some link between representational content and psychological role, these questions are connected.

Thinking about a particular event requires, in the first instance, exploiting some kind of potentially reference-fixing mechanism, such as an information-preserving causal link, which determines that it is this rather than that event one is thinking about. More than this, though, having a particular event in mind means not just employing information that as a matter of fact derives from that event, but having a thought with a certain singular *form*. As I explain in section §1, this form distinguishes a properly singular thought from a merely existential thought that could in principle be made true by many distinct events (though it may actually be made true by just one.) When this distinction is clearly drawn, it becomes hard to see why a creature would need to employ singular rather than existential thoughts about events to orient itself in the temporal world; and this generates a puzzle about what role this kind of thought might play at all in a creature's mental life.

I develop this puzzle, first, in section §2, in the context of a biofunctional approach to content fixation. I argue that this approach gives us no reason to explain various animal timing behaviours in terms of singular representations of events. In section §3 I expand this into a more general argument for the conclusion that singular thoughts about events are *practically useless*: there is no practical task that

is such as to require information specifically about one particular event rather than another. Thus, the proper role for this kind of thought cannot reside solely in its potential to guide action.

In section §4 I consider an approach, exemplified in Christoph Hoerl and Teresa McCormack's work, on which the role for singular thoughts about events is to be found in the way they slot into a thinker's background conception of time. While there may be something right in this, there is a lingering obscurity about what having the relevant conception amounts to. In section §5 I then outline an alternative, on which the distinctive role of singular thoughts about past events is to enable a particular kind of social-communicative activity: relating to one another socially by sharing affective and evaluative reactions to past events that we have experienced.<sup>1</sup>

## 1 REFERENCE AND SINGULAR FORM

What is involved in a thinker's grasp of thoughts which relate specifically to particular past events? We can break this down into two questions, which we might call a 'mechanism question' and a 'form question'. The mechanism question is about what determines that this rather than that event is the target of a given episode of singular thinking. There are many events about which a thinker could, in principle, be thinking at a given time. So, when a thinker is thinking about some event, if there is to be a determinate fact of the matter about which event they are thinking about, there must be some story which explains why it is that rather than some other event.

For present purposes I will assume—in line with the theories of reference that

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<sup>1</sup>The idea that representations of the past, and episodically memory specifically, have a distinctively communicative function, has been recently defended by Gergely Csibra and Johannes Mahr (Mahr and Csibra 2018, 2020). However, my focus here is somewhat different from theirs. Mahr and Csibra are concerned specifically with the evolutionary function of episodic memory, and their account thus commits them to speculative historical claims about the conditions under which the relevant capacity actually evolved. My interest, by contrast, is in the role of singular thoughts about the past in the broader sense of how it might somehow make a difference to a creature's life to enjoy this type of thought. This difference may or may not correspond to a historical selective advantage which actually explains the emergence and persistence of the capacity.

have been dominant since the work of (Kripke 1980) and others—that successful reference does not require a thinker to have an accurate and uniquely identifying conception of the object, but rather reference may be determined by an appropriate information-bearing link, such as a causal link, between an object of thought and an act of thinking. One particularly important such connection is, plausibly, memory for events; specifically, what is typically distinguished, following the work of Endel Tulving (Tulving 1983) as *episodic* memory—memory involving the conscious recall of particular past episodes, as distinguished from semantic memory, the retention and retrieval of general factual information. Intuitively, in human life, the primary and most basic way in which we can get in a position to think about a particular episode that has occurred is if we can remember it.

The characterisation of episodic memory, and distinction from semantic memory, is a matter of controversy. In later work Tulving came to understand episodic memory as involving ‘autonoetic consciousness’—a kind of self-conscious or metarepresentational awareness of one’s memories as being of experiences that one previously had, and of oneself as the persisting subject of both the past remembered experience and the present act of memory (Wheeler, Stuss and Tulving 1997). At the other end of the spectrum, a more deflationary characterisation of episodic (or ‘episodic-like’) memory, used more frequently in the study of memory in animals (e.g. (Clayton and Dickinson 1998)) is in terms of the subject’s ability to retrieve ‘what–where–when’ (WWW) information about the type, spatial location and temporal context of a past episode.<sup>2</sup>

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<sup>2</sup>A further issue, which was flagged by an anonymous referee, is that a currently influential ‘simulationist’ account of episodic memory denies that episodic memories need to be appropriately causally related to the events they are memories of (Michaelian 2016, 2021). If this is right, then it casts into doubt whether episodic memory can serve as a reference-securing mechanism in the way envisaged here. It may be that some defenders of simulationism would be happy to conclude that it cannot, and take the view that reference to specific past events is always mediated descriptively, or via a symbolic code like the clock and calendar. Alternatively, simulationism might be read as denying only that episodic memory involves a specific *kind* of ‘appropriate’ causal connection—such as a ‘memory trace’ that faithfully preserves information encoded at an earlier time for later retrieval—but allow that episodic memories carry information about past events in virtue of a more diffuse chain of causal relations involved in the retrieval process—such as ones going via the subject’s general beliefs, or verbal communication with other people (Werning 2020). As far as I am aware, the relation between episodic memory and singular reference has not been the main focus of much of the literature on simulationism, and these questions are unfinished business for the view. For

Given that my focus is on singular thoughts about events, we can zoom out from these concerns and instead ask: What more, beyond whatever causal-informational connection is embodied in episodic memory, is required for a subject's memories to put them in a position to think singular thoughts about those events from which their memories derive? The causal-informational connection alone, while it may be a necessary reference-securing mechanism, is hardly sufficient. As Kenneth Taylor puts it: 'The world is awash in information, flowing every which way. But only in very special corners of the universe does the flow of information give rise to reference and to singular thought. Successful singular reference is the work of a distinctive kind of thing—representations, linguistic and mental, that enjoy antecedent referential purport.' (Taylor 2010, pp. 80–81) The question for the present discussion is what is involved in a creature's having the general capacity for representations that have 'referential purport' with respect to particular events.

We can in fact discern two components to this question. The first is what it takes for an informational link to some event to give rise to anything that counts as a *representation* at all. The second is what it takes for the representation to be a *singular* representation of that very event. The contrast in the latter case is not with a singular representation of some other event, but rather with a representation that is triggered by that same event, but is not singular in form. For this reason, we can call this the 'form question'.<sup>3</sup>

What would it be for a memory-based representation of an event to fail to be singular? One possibility is suggested by an influential distinction John Campbell makes between 'temporal orientation with respect to phase' and 'temporal orientation with respect to particular time':

Consider an animal that hibernates. Through the part of the year for which it is awake, it regulates its activity depending on the season. Such an animal clearly has

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this reason, I will set simulationism aside in what follows, and assume that the processes involved in episodic memory do constitute a potentially reference-supporting, causal-informational link to particular remembered events.

<sup>3</sup>The term 'form' should not be read as suggesting that having a singular form is necessarily a matter of having a certain internal syntactic structure, or anything of that sort. Saying a thought has a singular form is just to say that it is of a type such that its truth- or accuracy-conditions essentially concern a particular individual. See n. 5 below for further clarifications of the relevant notion of singularity.

a use for temporal orientation. It can recognise that it is now late spring, perhaps by keeping track of how long it has been since winter, and realise that it will soon be summer. But it may not have the conception of the seasons as particular times; it may be incapable of differentiating between the autumn of one year and the autumn of another. It simply has no use for the conception of a particular autumn, as opposed to the general idea of the season. So while this animal is capable of orientation with respect to phases, it is not capable of orientation with respect to particular times. (Campbell 1994, p. 38)

One way of understanding the distinction Campbell is drawing here, I suggest, is that the hibernating animal's representations of the time of year do not essentially concern one particular year rather than another. When autumn comes around again, its representation to the effect *Autumn is here* is of exactly the same type and content as the representation it deployed to the same effect last autumn. There is no *representational* sensitivity to the fact these are two distinct autumns: the only way in which the creature is 'sensitive' to the difference between the two autumns is just that its respective representations of their occurrence, and the actions consequent on those representations, occur at different points in time—and this much is guaranteed simply by the passage of time, whether or not it is represented as such.

In other words, the accuracy conditions of this creature's representation of the changing seasons are existential, not singular, with respect to events. The representations to the effect *Autumn is here*, or *Winter is coming up*, are true, respectively, just in case some event of the type *Autumn* is temporally present, or an event of the type *Winter* is in the near future.<sup>4</sup> Hence, a representation with the very same content can be made true first by one autumn, then by another, without this difference in what makes them true being registered by the creature. A creature who has thoughts only of this kind therefore does not in any way recognise that its thoughts are made true by different events on different occasions. Yet this is not plausibly for

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<sup>4</sup>This is not to say that such a representation need have an existential *content*, if by this is meant one with internal quantificational structure. Arguably, attributing a thinker thoughts with this kind of structure implies it is able to carry out the full range of inferences licensed by a quantificational form; and, perhaps, a grasp of what it would be for a singular witness for the quantified for thought to be true (e.g. Evans 1982). The relevant sense in which the hibernating creature's thoughts about events are existential rather than singular is at the level of their accuracy conditions, which are satisfied as long as some event or other satisfies the predicative component of the representation. See n. 5 below.

want of causal-informational links between its representations and significant environmental events that might serve as reference-determining mechanisms—after all, its representations are all triggered by particular events happening at some particular point in time. The point is that those representations do not, in Taylor’s terms, enjoy ‘antecedent referential purport’, and thus do not essentially concern the events of one year rather than another.<sup>5</sup>

What does it take for a creature to enjoy thoughts that are singular in form, and thus (purport to) be about one particular event rather than another? That is, what are the difference-making factors, given some potentially reference-fixing mechanism, which would determine whether a creature’s representations of events, produced via that mechanism, have singular, rather than merely existential, accuracy conditions?<sup>6</sup>

There is of course no generally agreed-upon answer to this question. A minimal assumption, though, is that an account of what it is for a representation to be of this or that form ought to connect with some kind of story about the role that type of representation plays in the life of a thinker that enjoys it. This assumption is compatible with a range of different opinions about what having a given form immediately consists in. Even if one holds, for instance, that for a representation to be singular is just for it to involve an occurrence of a singular term in the thinker’s

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<sup>5</sup>From this characterisation, it should be clear that the relevant notion of singularity applies at the level of truth- or accuracy-conditions: a singular event representation, unlike an existential one, has accuracy conditions that can be satisfied only by some particular actual event, and not by some qualitatively identical but numerically distinct, or merely possible, event. This is a relatively broad notion of singular thought: it is neutral, for instance, on whether singular thoughts require thinkers to be ‘acquainted’ with their objects. It also does not obviously imply that singular thoughts are object-dependent, in the sense that an attempted singular thought will fail to be a thought at all, rather than being merely false, if it fails to refer to anything. See Crane 2011 for recent discussion of some of these issues.

<sup>6</sup>This way of putting the question assumes that the mechanisms in question can be individuated purely causally or informationally, without already building in the notion of reference. This assumption arguably breaks down in certain cases: for example, in the case of proper names, where the relevant reference-fixing mechanism essentially involves linguistic communication, and specifically communication involving semantic reference to the bearer of the name. However in the present case it seems legitimate: the intelligibility of Campbell’s hibernating creature—and, as illustrated in Section §2 below, numerous actually observed episodic-like memory abilities in animals—shows we can make sense of the idea of an informational mechanism that could potentially, in the presence of other factors, support singular reference to particular past events, but does not in fact do so.

language of thought, there remains a question in virtue of what a given mental particular functions as a singular term. And this plausibly has something to do the role that representations involving terms of the same type play in the thinker's psychological life. So, closely connected to the form question is the question what kind of role might characterise thoughts of this form.

In the case of representations of particular persisting objects, many different accounts—from P. F. Strawson and Gareth Evans's neo-Kantian take on the foundations of conceptual thought (Evans 1982; Strawson 1959, 2006) to Pylyshyn's theory of FINST indexes in the visual system (Pylyshyn 2007)—closely connect the referential purport of singular representations with the function of keeping of track of objects over time. By contrast, there is no readily available parallel story to be told about representations of events, fleeting and ephemeral as their objects are. And it is at least not obvious why it might matter to the cognitive life of a creature needing to find its way about in the world to have representations which specifically concern events it has encountered but, as a matter of necessity, will never encounter again.

The next section will develop this line of thought specifically in relation to animal timing capacities that appear to be guided by some form of representation of events. The basic intuition to be unpacked is that these abilities do not require representations that are singular and so specific to a unique temporal context. And this lays the ground for a more general puzzle about what role such thoughts might play in a thinker's life.

## 2 TEMPORAL REPRESENTATION AND TIMING BEHAVIOUR

Here are some relevant examples of animal behaviour that appear to evince some kind of representation of events in time:

1. Foraging bees learned to time their visit to a particular location so as to coincide with the provision of a food source at a certain regular time of day. When the feeding time was changed, the bees adjusted the time of their visit accordingly. This may be thought to show that the bees can represent times



in the daily cycle, and represent food as arriving at those times. (Gallistel 1993)

2. Scrub jays observed the caching of two types of food, worms and peanuts, in two different locations. In a training phase, the scrub jays observed that, after 72 hours, the worms had decayed and were no longer edible, but the nuts were still edible. They were then shown the same foods being cached, and allowed to search for the food at either location after a variable amount of time. If less than 72 hours had elapsed, the scrub jays returned preferentially to the site where the worms were cached (their preferred food source). If longer than 72 hours had passed, they searched preferentially for the peanuts. This was taken to show that the birds were representing the time elapsed since the caching event. (Clayton and Dickinson 1998)
3. Rats were presented with a sequence of five different odours. They were then presented with two of the odours again, and rewarded for choosing the one which occurred earlier in the initial presentation. The order in which the odours were presented was varied with each trial. After training, the rats reliably selected the earlier presented odour for each novel sequence. Analysis of neural activity in the rats' hippocampuses showed that success was predicted by the signal strength (i.e. relative dissimilarity) of firing patterns that changed gradually over the course of the trial, suggesting that 'a gradually changing temporal context played an important part in the rats' memories of the order of odors.' (Manns, Howard and Eichenbaum 2007, p. 537) In other words, the firing pattern was hypothesised to code for the respective temporal locations of the odours, and the rats were able to retrieve this information to guide selection. (See Eichenbaum 2014 for a review of related results.)

One might take these cases to show the animals in question to be representing and retrieving information about the type, context and temporal location of various particular events—feedings, cachings, odour presentations, and so on. They register these various occurrences, and then appear to use information about their

manner and time in selecting appropriate actions. So it might seem just obvious that the information being called upon here must concern those very events from which the animals' action-guiding information derives—after all, every event is a particular event.

The above discussion of Campbell's hibernating creature shows that this conclusion would be premature. Campbell's creature has something like what in more recent literature has been termed a 'temporal map' of the regular events of its environment: a stable, re-usable representation encoding information about the relative temporal order and durations of important ecological events.<sup>7</sup> These representations are generic, or tenseless, insofar as they concern what generally happens rather than any particular instance. These might combine with temporally indexical, or tensed, representations, that locate the animal's present moment within the map and thereby enable its activities to take place in a timely manner: if winter is coming up, now is a good time to start storing up food. But, as per the discussion above, these indexical representations need only concern the fact that certain types of events have occurred or are occurring; they need not be specific to the particular events of the context in which they are employed.<sup>8</sup>

Similarly, the bees in 1 might have a temporal map representing the time of day at which feeding generally occurs, and combine this with temporally indexical representations of the current time of day to time their feeding behaviour; the scrub jays in 2 might have a similar type representation encoding how long after a caching event a location remains a suitable source for a given type of food, and combine this with the temporally indexical information that a certain type of caching event occurred a certain amount of time ago to plan its search behaviour; and the rats in

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<sup>7</sup>For recent work on temporal maps, see (Arceidiano and Miller 2002; Balsam and Gallistel 2008).

<sup>8</sup>Someone might be puzzled by this characterisation: do temporally indexical representations not pick out a certain particular time as present, just as spatially indexical representations pick out a particular place as 'here'? (Cf. Perry's (Perry 1986) notion of an 'unarticulated constituent'.) This line of thought turns on the Fregean assumption that the content of an act of thinking is always a complete, timeless proposition with an unchanging truth-value. This assumption, however, is not required, and indeed by the present argument forces us to attribute to the animal a shift in representational content from one context to the next where there is no corresponding shift in what the creature makes of that content. Someone looking for a regimented way to represent a creature's temporally indexical thoughts without making this assumption might instead look to the resources of A. N. Prior's tense logic (Prior 1967, 2003).

3 might solve the task by having a temporal map representing a sequence of odours, which gets updated after each novel odour presentation. This strategy only requires the animals to represent generic, tenseless information about the orders and relative durations of regular events; and tensed, existential representations about what types of events are occurring or have recently occurred. There need be no role here for genuinely singular representations of events.<sup>9</sup>

To say that this representational strategy is available to the animals in the above examples does not, of course, establish that they are actually employing it. It could be that the animals employ representations which are in fact singular, even though an existential representation would do the job equally well.<sup>10</sup> The immediate point so far, then, is just the negative one that above animal timing behaviours do not provide straightforward evidence for singular representations of events.

Nevertheless, the availability of this strategy brings into play a wider question about the role of singular event representations, connected with our discussion of the form question above. A critical question that emerged from that discussion was what kind of psychological role might characterise genuinely singular thoughts about events, as opposed to existential thoughts that are merely triggered by those events. And the considerations just sketched cast doubt on the idea that this role could consist just in co-ordinating a creature's actions over time.

This point is particularly pressing on approaches that tie representational content closely to biological function. These approaches have been extremely influential in the philosophy of biology and cognitive science. Ruth Millikan summarises basic the commitments of this approach: 'It is the devices [i.e. systems or processes] that *use* representations which determine these to be representations, and, at the same time...determine their content.' (Millikan 1989, pp. 283–284)

Spelling this out in a little more detail, the capacity of an organism, or a subsys-

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<sup>9</sup>There are various subtle differences between these representational strategies. The temporal map in 1 is of a periodic cycle, and so the bees' tensed representation of where it is in the cycle does not need to be triggered by anything in particular; whereas the scrub jays' representation of the beginning of the decaying process is keyed to its perception of the relevant caching event. Meanwhile with the rats in 3, the temporal map is of something which varies between trials—the sequence of odours—and so gets *updated*, or re-learned, each time the rat is exposed to a novel sequence.

<sup>10</sup>Thanks to a reviewer for clearly impressing this point on me.

tem of an organism, to have representational states with a certain kind of content, is grounded jointly in i) the internal architecture of the biological systems or processes that realise those states, and ii) the role those systems or processes play in enabling the organism (or subsystem of the organism) to succeed at specific tasks which are the *proper function* of those systems or processes.<sup>11</sup> The characterisation of the role is typically purely causal; the states in question may be entirely sub-personal, nonconscious and nonconceptual. In this case, the relevant biological processes comprise an array of timers and oscillators realised somewhere in the animal's nervous system,<sup>12</sup> and the relevant practical success is the correct timing of the animal's behaviour. (Gallistel 1993)'s influential representational account of animal learning is a paradigmatic example of exactly this approach as applied to the case of temporal representation.

It should be clear that this approach cannot ground the attribution of a singular rather than existential representation on the basis of the abilities described above, and indeed gives us reason to go for the latter. On this approach, recall, representational content is called upon to explain a specific kind of practical success: success that amounts to the proper functioning of some capacity of the organism or subsystem. This is typically unpacked in terms of the capacity's being a product of natural selection, although other kinds of aetiology might be admitted.<sup>13</sup> Regardless of the details, what representation is called on to explain is never just one-off success, but a historical pattern of success. We might put this pithily by saying that content is determined not just by use, but by *re-use*. So it is the fact that the animals are repeatedly representing a certain recurrent, existential condition—that, say, an event of a certain kind occurred at a certain temporal distance from the

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<sup>11</sup>There are various philosophical developments of this approach, of which the most influential is Millikan 1989; see also (Godfrey-Smith 1996; Papineau 1987; Shea 2018).

<sup>12</sup>Cf. (Wearden 2001) for a review of different models of the mechanisms that underpin animal timing.

<sup>13</sup>E.g. (Shea 2018) gives a more general notion of a *task function*: a behavioural or environmental outcome which is *robust*, i.e. which the organism can reliably produce across a range of different starting conditions, and which is the result of a *stabilisation process*, i.e. a process whereby robust achievement of the outcome is causally explained in part by earlier successful production of the outcome, either by the organism or by its conspecifics. The main examples of stabilisation processes are natural selection, organismic survival, and learning.

present—that does the relevant explanatory work.

To emphasise the point, compare this with the representation of persisting objects, such as food items or conspecifics. There may be good biological reasons why a certain capacity is more correctly described in terms of its reliably producing a certain goal interaction with a particular individual as such than as producing a goal interaction with some individual meeting a certain descriptive condition. It might, for instance, be biologically important for an immature animal to be able to recognise its own mother, rather than just any conspecific with mother-like characteristic. And the thought here would be that this object-specific task requires the animal to keep track of the relevant individual over time, rather than simply responding to anything with a certain qualitative profile. These considerations thus trade on a metaphysical fact about the individuals in question: that they are continuant objects that persist over time, and can pop up as the very same individual in different temporal contexts. What makes it the case, on this line of thought, that an organism is representing a particular individual rather than a type is that its representational capacities are in some way sensitive to the individual's persistence over time.

By contrast, given the ephemeral, one-off nature of events, there is no role for anything akin to reidentification or recognition of the same event across diverse contexts in the organisation of the animal's behaviour. Conversely, there is equally no need for an animal to *distinguish* similar but distinct events from one context to the next. In tasks like 1–3 above, the animal is presented with a different set of particular events each trial, but what it does with them is in all relevant respects the same—indeed, the fact it treats them the same is what convinces us there is representation going on at all. There is hence no biofunctional reason to hold that these tasks involve representations that are specific to the particular events of each trial, with a different singular content from each trial to the next.

Outside the context of a biofunctional approach, however, the relation between representational form and biological function can be looser. It might be maintained, for instance, that singularity is a primitive and basic feature of representations, one which need not be exploited by or reflected in the use made of represent-

ations with a given specific content.

A version of this view can be found in the work of Tyler Burge (Burge 2010, 2022). Burge's view, as I understand it, is that it is in the nature of perception to generate *de re* or singular representations of particular objects and events; what makes something a perceptual state is the operation of constancy processes whose function is to recover relatively invariant information about distal causes from a changing proximal stimulus. So, it might be argued on this basis that episodic memory representations, insofar as they are integrated with perceptual constancy processes, inherit the singular form of perception, even if the way they are used as memories does not trade on their singularity as such.

On this kind of view, a thinker might enjoy representations of events which are in fact specific to some particular event, yet without in any further way registering or exploiting this specificity. Even if this possibility is admitted, though, it is still pertinent to ask, given that a thinker is enjoying singular thoughts about events, how the singularity of these thoughts might make itself felt in the creature's psychological life.

My interest in this paper in singular thoughts about events is for their relevance for an orientation to the passage of time that is sensitive, at some level, to the uniqueness and irrevocability of events. The challenge we are facing is to articulate why it might matter to creature to have thoughts that are representationally sensitive to events' numerical identities, and hence specific to a given temporal context; in contrast to existential representations of events, which are re-usable from one context to the next. From this perspective, views that take the singularity of representations to be primitive and independent of their use simply shift the burden of this question elsewhere. Instead of concerning the basis for the sheer having of representations with singular form, the relevant question for these views is how the singularity of these representations—and the consequent shift in content each time it encounters a new instance of a familiar type of situation—might in some further way register in the creature's cognitive life.

Thus, depending on one's view of the relation between representational form and psychological role, the relevant question is either: what kind of psycholo-

gical role might ground the singularity of representations particular events; or else: given that a thinker enjoys singular representations of particular events, what role for these representations would enable the thinker to make something of their singularity? This role does not have to correspond to an evolutionary function. The challenge is, more minimally, simply to identify some way in which the singularity of thoughts about past events might make a difference to a creature's psychological life, in contrast with merely generic and existential representations of events. The next section will offer a more general argument that the significance of these representations must go beyond whatever role they might play in guiding a creature's actions.

### 3 PRACTICAL USELESSNESS

The previous section argued that animal timing behaviours in 1–3, although they may plausibly be regarded as drawing on some form of temporal representation, do not require the singular representation of particular events. This section will aim to generalise this point to the claim that there is no action-guiding role for singular thoughts about past events which would not be equally served by existential thoughts.

A representation is practically useful insofar as it is potentially relevant to the selection, planning or execution of present and future actions. Now, information about what has happened can be relevant to action in this sense in two main ways: it can be *evidentially* relevant insofar as it exemplifies regularities that are projectible, and so bear on expectations about what will happen in relevantly similar future circumstances; or information can be *causally* relevant insofar as past events have effects which make a predictable difference to the scene of present and future actions. But in neither of these cases is there a distinguished role for singular, as opposed to existential, information about past events as such.

Take evidential relevance. One powerful reason for thinking that episodic memories, as opposed to general information about regularities, can be practically useful is that an event may have evidential significance which is not apparent

to the agent at the time, but becomes so only later. In these cases, it will be useful for an agent to have the ability to mentally ‘revisit’ an earlier event, and re-assess its significance in the light of later developments. Alexandria Boyle (Boyle 2019) has argued this is exactly the cognitive benefit conferred by episodic memory; as she puts it, episodic memories can be ‘epistemically generative,’ in the sense of making available worldly knowledge which the agent need not have actually had at the time of the remembered event. They are able to do this because the content of episodic memories typically outruns whatever general information might be extracted from them; episodic memory is for events themselves, rather than for whatever generalities they exemplify. As Boyle puts it, episodic memories bring ‘rich, contextual representations of past events before the mind, replete with perceptual, spatial, temporal, and first-personal detail’ (p. 244). If episodic memories are retained representations of past events, this might seem to provide a distinctive use for genuinely singular information about those events.

Boyle makes a convincing case that epistemic generativity is an important aspect of the psychological role of episodic memory. From the perspective of the present discussion, though, the relevant question is whether episodic memories need to have singular contents in order to be generative in this way. When this question is brought into focus, it is clear that singularity and generativity are separable features. What enables generativity of episodic memories is not their singular content as such, but the fact that they comprise contextually rich, perceptually formatted representations. There is no reason why this epistemic function could not be served by a representation that was existential in form, encoding the information that some event with a certain qualitative profile occurred in some temporal context. A representation of this existential form would have exactly the same epistemic power to ground inferences to general knowledge of the world as a singular one.<sup>14</sup>

To underline the point, consider that perception is an epistemically generative

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<sup>14</sup>Of course, an existential representation can, plausibly, only be generative of existential or general knowledge: arguably, only a singular representation could ground singular knowledge (leaving aside issues around descriptive names and so on.) But this peculiar kind of generativity is not to the point: the role we are considering for representations of past events is their role in grounding general knowledge of the world that might be relevant in the future.



state if anything is. Yet a number theorists of perception hold that the contents of perception are always existential, and never singular, in form: that is, two perceptual experiences which represent two distinct objects as having the same properties do not differ in their content (Davies 1992; McGinn 1996). Assuming that this position is at least coherent, this shows that epistemic generativity and singularity can come apart.

It is perhaps more tempting to suppose that tracing the causal relevance of past events to the present might provide a use for genuinely singular representations of those events. This suggestion has been explored by Christoph Hoerl and Teresa McCormack in a number of papers on the development of temporal cognition. Thus, they suggest, ‘episodic recall [i.e. recall of particular past events as such] requires the ability to conceive of remembered events as belonging to a sequence of events’ (Hoerl and McCormack 2005, p. 280)—a sequence encompassing both the remembered past event and the present state of things.

This ability, Hoerl and McCormack emphasise, goes beyond simply drawing an inference about the typical effects of a past event—like that if it has rained, it is probably wet outside—because it involves a sensitivity to the way in which the causal relevance of a past event to the present is also dependent on what happened subsequently. In particular, they suggest, the cognitive ability in question involves an appreciation for the fact that some past events may *fail* to be causally relevant to the present, because ‘events that came later in the sequence might have changed or obliterated the effects of earlier events.’ (p. 280)

Here is an example of a task which tests just this reasoning ability:

4. In (McCormack and Hoerl 2005), child test subjects (age 3–5) were shown a scenario in which two dolls press in turn two respective buttons, each of which makes a different object appear in a window when pressed. Only one object can be in the window at a time, so that which object is currently displayed depends on which of the two buttons was pressed most recently. The dolls always acted in the same order but did not always press the same buttons. The children were familiarised with all of this in a preparatory phase, with the experimenter emphasising that one of the two dolls always acts first.

In one test condition, the subjects watched the dolls each press their buttons, one after the other, without seeing the window, and were then asked to say which object was in the window. In a second condition, the children were told that the dolls were pressing the buttons but were not able to observe them, and were then shown the two dolls subsequently standing next to the buttons they had respectively pressed, and then asked the same question. As in the visible condition, they were then asked which object was in the window. All children did reasonably well in the visible condition; by contrast, the 3–4 year olds performed poorly in the hidden condition, while the 5 year olds did significantly better.<sup>15</sup>

The idea here is that, whereas in the visible condition the children were able simply to update their beliefs about what item was in the window sequentially, in the hidden condition they were not able to do this, but rather had to reason backwards in time to consider the order in which the buttons were pressed.

This kind of reasoning does seem to be an importantly different use from the deployment of WWW-information in examples 1–3. But does it introduce any role for genuinely singular representation? The answer is surely not. In 4 above, test subjects have to make an inference about the present state of the world on the basis of information about what happened and in what order. But the numerical identities of the particular events play no role in this inference: one could employ exactly the same reasoning process to solve the task in a parallel, numerically distinct situation; or in solving the problem purely hypothetically. There is no readily apparent way in which solving the task requires having any particular events before one's mind, or being in any way cognitively sensitive to their particular identities.

The task in 4 involves reasoning about a limited sequence of a stereotyped, repeatable kind. But it can also be valuable to trace the effects in the present of highly unusual, unprecedented events. If a village is destroyed in a fire, for example, the information about how it was destroyed can be of continuing practical and inferential relevance beyond simply the negative information that the village is not there

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<sup>15</sup>Other experimental studies aiming to probe similar causal reasoning abilities, with broadly similar results in terms of the age of onset of these abilities, are (McColgan and McCormack 2008; Povinelli et al. 1999).

any more. For instance, if one is searching for an important record or artefact, and then learns that it was located in the village at the time of the fire, this information can serve as a reason to abandon the search, since it was very likely destroyed in the fire. And this practical conclusion is defeasible by further causal information: if one later learns that some important items salvaged from the fire were transported to a particular safe location, this might be a good place to resume one's search.

This kind of causal reasoning exhibits a similar pattern to that in task 4: information about past causal chains in which certain outcomes were brought about or prevented serves as input to defeasible chains of empirical reasoning about the present state of things. The difference is just that we are not dealing with an event in a repeated sequence, but one that is *de facto* unique.

However, we should not let the *de facto* uniqueness of the event mislead us into thinking that this kind of reasoning necessarily involves a singular representation of it. There is a difference between a singular thought about a particular thing, and an existential thought about a type of thing of which there is in fact only one relevant actual instance. Yet as far as reasoning about causal consequences go, all that is relevant is the existential fact that an event of a certain, perhaps highly unusual, kind occurred. So again there is no role here for singular representation as such.

Of course, sometimes when we think about unique events in our lives, such as traumatic or momentous events, we are interested in them in a way that goes beyond making predictions or explanations associated with the causal profile of events of that type. In working through the consequences of a trauma it can be important to think about the meaning that very episode has in the context of one's life as a whole, and to communicate thoughts and feelings which have the feature of making reference that very event. But these activities take us away from an interest in events for the sake of their causal relevance, towards a more intrinsic interest in the events of the past for their own sake. This interest will be the topic of section §5.

If the argument of this section is cogent, there is no action-guiding function for singular thoughts about events which could not equally be served by existential thoughts. This does not, of course, entail that singular thoughts could not play

an action-guiding role in a creature that has them. But from the point of view of a creature concerned just with the usual practical goals of feeding itself, avoiding danger, mating, and getting home again, it makes no difference whether its thoughts about events are singular or existential in form. The singularity of singular thoughts has no practical function as such.

#### 4 CONCEPTIONS OF TIME

A natural move at this point would be to connect the impractical character of singular thoughts about the past with a certain reflective, or theoretical, attitude to the world, characteristic of conceptual thought. On this approach, the role of such thoughts is not constituted by their relevance to action but rather by how they fit into the subject's web of beliefs about the world. More specifically, this would be a matter of having a certain understanding of the temporal domain as a unified, overarching framework, and of particular events as individuated by their locations in that framework. This approach recalls claims, associated with the work of P. F. Strawson and Gareth Evans, that enjoying singular thoughts about particular objects involves having some conception of an overarching and objective spatial order within which those objects are located.

This approach to temporal representation finds its clearest recent expression in Hoerl and McCormack's work. As they see it, the distinctive feature of typical human temporal cognition is that 'mature thinkers can not only represent locations within...repeating events cycles/sequences in the right order, they can also think of any given occurrence of an event within a particular cycle or sequence as having a unique temporal location.' (Hoerl and McCormack 2017, p. 307) So, in relation to the present discussion, the relevant suggestion would be that the role of singular thoughts about events in time is to be captured in terms of the thinker's ability to think of their referents as having unique locations within a single, overarching temporal framework. Hoerl and McCormack stress that this achievement is distinct from, and likely prior to, the use of the clock and calendar to assign events a unique date and time. They explain: 'this way of thinking about time [as a single

framework] is likely to be a developmental prerequisite to being able to begin to learn [the clock and calendar] system, and may be intact long before children master it (which they only do relatively late in development).’ (pp. 300-301)

The difficulty here is that it is just not clear in what sense people’s facility with the clock and calendar is underpinned by a stable theory or conception of the temporal domain. The confusion often prompted by seasonal clock changes, for instance, suggests that it takes some effort to grasp the idea of a temporal location as independent of its conventional date and time (much as the difficulty of translating between alternative numeral systems shows how hard it is to separate our ideas of the numbers themselves from their numeral representation.) More generally—as Augustine observed—people’s general beliefs about time are notoriously elusive and obscure. As soon as one tries reflectively to articulate general principles about time in any kind of systematic way, one quickly becomes inclined to say things that seem inconsistent: that only one moment is present, but in another way every moment is present; that time is always moving forward into the future, but in another way receding into the past; that the past is real, but in another way unreal; and so on. These observations should make us sceptical that there is any such thing as ‘our’ theory of time.

A routine response would be to say that, although people might get confused when it comes to explicitly articulating general principles of the temporal domain, people nevertheless have a stable *implicit* conception of time as a unified framework of particular locations; and that this implicit conception is what underpins singular reference. But this of course only raises the question what mental capacities or activities this conception is implicit in. For Strawson and Evans, possession of an objective spatial framework is closely tied to the epistemic-cum-practical project of finding one’s way about in the world, and in particular with the possibility of re-identifying a particular item as the same again. By contrast, the upshot of the previous discussion was that it is not clear what practical projects would require a thinker to single out particular events or temporal locations, in contrast to keeping track of what kinds of occurrences have happened and are happening by means of

existential representations.<sup>16</sup>

The suspicion I am raising is that the appeal to implicit conceptions, as distinguished from symbolic representations or explicit beliefs about time, does not do much to characterise a psychological role for singular thoughts about past events unless something more can be said about how the conception is put to work. However, there is clearly more to be said on the matter, and it would be rash to dismiss all talk of implicit conceptions of time as empty and unhelpful.

In the remaining section I take a different approach. I propose that singular thoughts about the past do in fact have quite a distinctive and tangible role to play in our psychology: namely, in our social life together, and our ability to connect to one another on the basis of our shared history. Although this role is *prima facie* distinguishable from having a background theory of time, it is at least consistent with the idea that some kind of background conception is implicated in these thoughts. The proposal is thus not necessarily in conflict with idea that having singular thoughts about events requires an implicit conception of their temporal locations, and might perhaps be taken as complementary to it.

## 5 VALUING THE PAST

We are looking for some story about how it might make a difference to a creature's cognitive life to have genuinely singular, rather than merely existential, thoughts about particular events. The general shape of an answer I now wish to outline is that an important and distinctive role for this kind of thought can be found in activities that are not about preparing the agent better for the future, but whose essential point is backward-looking. And for these we should look, not to planning or general knowledge of the world, but to interpersonal relations and communication.

A salient example of such a backward-looking use is the whole complex of human attitudes and activities associated with wrongdoing: blame, remorse, apology,

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<sup>16</sup>Hoerl and McCormack's own suggestion, faintly reminiscing is that having the relevant conception of time is closely connected with the kinds of causal reasoning abilities in task 4 discussed above: cognitively ordering events in time means having some implicit conception of their locations in an overarching temporal order. But, as I argued, it is actually not clear that this kind of causal reasoning requires anything more than existential representations of types of events.

forgiveness and punishment are all facets of human life that essentially address themselves to something past. One feels resentment about a past wrong, not just because of what it implies causally or evidentially looking forward, but because of the very thing that was done. An adequate apology needs to address itself not just to the undesirable consequences of what happened, but to the deed itself. Implicit in these attitudes is an acknowledgement that the thing, having happened, is irretrievable and irrevocable; apology, penance and punishment are remedial, not in the sense of aiming to counteract or obliterate the effects of a past misdeed, but rather by trying to find a way to go on in spite of the inevitable fact that what is done cannot be undone. In this sense, the whole pattern of use of representations of the past connected with our moral accountability practices embodies an implicit sensitivity to the identity conditions of particular events: the fact that such events are individuated in terms of unique, fixed temporal locations, and thus cannot be changed or revisited.

This general pattern of concern for the past is, however, not restricted to cases of wrongdoing. Consider the following exchange, drawn from the literature on autobiographical memory development, a dialogue between 8-year old Rebecca and her mother about a recent bike trip:

Mother: And we were all goin' on a bike and you did not wanna go on a bike and so you were just going to jog but you got so tired.

Rebecca: NOT TIRED! (very loud voice)

Mother: (Laughing) You didn't get tired. OK. You didn't get tired.

Rebecca: (giggles)

Mother: but you wanted to sit on the bike seat I was peddling. What do you remember about that?

Rebecca: Wanting you to go really really slow. My legs were hurting.

Mother: (laughs) Why were your legs hurting?

Rebecca: Cuz I was like this (spreads legs wide to show how she was riding on the mother's handlebars) all the time.

Mother: Cuz your legs were spread apart like that.

Rebecca: Yeah, but if you went slowly I could relax.

Mother: Uh huh

Rebecca: And you went too fast

Mother: But you had fun, though, didn't you?

Rebecca: It was great!

Mother: What was that, a half mile or something?

Rebecca: I was afraid I might, uh, you might go flying off the edge (both laughing), edge of the bridge and, umm, I just wanted to jog.

Mother: And you were afraid of riding on the bike with me across the bridge, huh?  
Rebecca: Uh huh uh huh uh huh <sup>17</sup>

This dialogue exchange is a typical example of a ‘joint reminiscing’ interaction, common between children and their caregivers as well as between adult humans, in which two or more parties share their memories about something they have done or experienced together.<sup>18</sup>

Unlike with cases of wrongdoing, this is an example of a largely positively valenced, though somewhat ambivalent, attitude towards a past event. Yet I suggest it shares the same basic structure. In both cases, something that has happened is taken to be of interest and meriting attention, not in virtue of the regularities it exhibits or its causal significance for the present, but simply in virtue of what actually happened, and what it was like for the people involved. In these cases, as in the case of wrongdoing, the past becomes an object of interest and evaluation for its own sake. Moreover, the form this interest takes has a distinctively social and communicative dimension to it: taking a past event to be of interest for its own sake is connected here with the desire to *share* reactions to and evaluations of that event. It is the possibility of sharing and acknowledging one another’s reactions that makes conversations like the one above emotionally meaningful rather than a pointless exercise in reeling off trivial facts.

How is a desire to communicate about the past connected with singularity as such? Why would this interest not be satisfied by expressing merely existential thoughts? The point is that communicative exchanges like the one above involves a particular kind of co-ordination in thought, or meeting of minds. It is not just that the participants have memories which in fact derive from the same event. For their contributions to make sense to one another, it must also be epistemically open to both participants that both have the very same event in mind—some particular event is the shared focus of the conversation, and it is common knowledge between them which event this is. Each might express their knowledge of the subject-matter

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<sup>17</sup>This particular exchange is reported in the review paper (Fivush 2019, pp. 489–490). The author presents it as generally representative of many such exchanges collected over the course of a long research project.

<sup>18</sup>For some philosophical discussions of joint reminiscing, see (De Brigard 2018; Hoerl and McCormack 2005; Seemann 2019).



in something like the following way: ‘We are both talking about *that bike ride*.’<sup>19</sup>

In other words, it is not just that, from an external theorists’ perspective, we need to appeal to the fact that both participants’ memories actually derive from the same event in order to explain the situation, while nevertheless allowing that the participants’ representations might not be specific to that event. Rather, *from the point of view of each participant*, they are both talking about the same thing, namely that very bike ride. From each participant’s perspective, a semantic interpretation of the other’s behaviour in terms of merely existential information would fail to secure the understanding of (co-)reference that underpins the exchange. Participation in the communicative situation trades essentially on both participants recognising the numerical identity of the referent of their respective thoughts.<sup>20</sup>

This connection between singular reference, communication, and an interest in the past for its own sake might usefully be compared with simpler forms of joint attention, where the participants share their reactions to some salient perceptible object in their immediate environment. Michael Tomasello (Tomasello 2019) describes these kinds of interaction thus:

Human infants often point simply to share interest and attention to some exciting situation...For example, if an infant and his mother encounter an interesting animal across the park, from around twelve months of age the infant will typically point excitedly toward it, looking to the mother to share his excitement...From an adult point of view, we may think about what infants are doing here as a kind of gossiping. When adults gossip their main goal is simply to share information and attitudes with another person so as to build their common ground, both conceptually and emotionally. (pp. 99–100)

Again, in these cases, the specific interest taken in environmental objects is bound

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<sup>19</sup>This locution involves what semanticists call a ‘complex demonstrative’: a demonstrative pronoun combined with a predicative phrase. However, I am not committed to any particular theses about the semantic analysis of these expressions, and in particular whether they are deictic or quantificational (Borg 2000; King 2001). Similarly, I am not claiming that only a complex demonstrative is apt to serve the communicative function of establishing co-reference to a past event—there are many cases in which, say, a definite description, or an ordinary past-tensed verb phrase, is sufficient to establish the relevant joint focus. One lesson of a broadly Gricean approach to communication is that the same linguistic formula may serve a variety of communicative purposes in different contexts.

<sup>20</sup>This point is epistemic, not logical. There is nothing strictly inconsistent about the suggestion that both participants’ understanding of the situation is just that there is some event about which they are both thinking. The point is that this is only a reasonable assumption to make if it is epistemically open to each which event it is they each have mind.

up with the possibility of mutually acknowledged joint reference to them: the desire to share one's reactions to a funny-looking animal is one that can be satisfied only insofar as one's communicative acts are interpreted as referring specifically to that very animal. A merely existential representation of the presence of some animal or other would not be able to secure the special meeting of minds characteristic of joint attention.

In both joint attention and joint reminiscing, then, the possibility of linguistic, or proto-linguistic, reference to particular objects is significant insofar as it enables a particular kind of social and emotional relationship with the other, arising out of a common ground of shared interest in a mutual environment. This is certainly one, if not the only, use we make of representations that are understood as referring to external, mind-independent objects: to share those representations with others, and thereby to build up a common world. Yet in the case of representations of persisting objects, we can also see these representations as serving the independent, not essentially social, function of recognising a particular individual as the same over time, and more generally of placing such individuals within an objective spatial order. By contrast, the above failure to find some parallel function for representations of particular events suggests that the social function of communicating about past events really is the only one that genuinely trades on the identity of any particular event, and so requires a singular representation of that event as such. If this is right, then it is our communicative relations with one another, and the manner in which that we share a past together, that fundamentally sensitises us to the uniqueness and unrepeatability of past events.

This is not to say that all singular thoughts about past events have to be shared. Of course people frequently engage in private reminiscing, entertaining thoughts about events they have experienced yet without giving voice to those thoughts. Yet—although I do not have space to defend this claim fully—I suggest that such acts of solo reminiscing are derivative of or parasitic on the communicative case. It is the possibility of sharing thoughts about the past with others, trading on co-reference to particular events, that makes the difference between a singular and merely existential thought about the past visible from the thinker's own point of

view. For the this reason, the interest in the past for its own sake—characteristic of both both joint and solo reminiscing—presupposes an idea of the past as shared, or at least shareable, with others. If singular form is tied closely to psychological role, we can thus say that it is the possibility of sharing thoughts about the past that gives our memories and memory-based thoughts their singular purport.

## 6 CONCLUDING REMARKS

The basic assumptions of this paper were that an ability to think singular thoughts about particular past events comprises two components: first, the enjoyment of information, such as memory information, which derives from those events; and, secondly, having a general capacity for representations of events which are singular in form.

The question I have been pressing is what a thinker might be able to do with representations that are of this form, in contrast with existential representations that are triggered by, though not essentially about, those same events. And I have proposed that one—and indeed the only forthcoming—answer to this question is that this type of thought enables a specific kind of communication about past events, connected with an interest in the past for its own sake.

As I have acknowledged, this leaves open the question whether it is possible that a thinker might nevertheless enjoy singular thoughts about the past in the absence of this communicative use for them. Whether one accepts this possibility will depend on one's attitude to general questions about the relation between content and use that I do not want to prejudge here. The point to emphasise, however, is that without a communicative use, such thoughts might as well be existential for all the difference it would make for the thinker. In this way it is communication about the past, and the attendant interest in the past for its own sake, that sensitises a thinker to the particularity and unrepeatability of events.

This is not necessarily a claim about the evolutionary aetiology of the capacity for singular thoughts about the past, or of whatever neural machinery underpins it. Communicating about events we have experienced does, of course, serve an

important function of social solidarity and bonding, and this function may be advantageous in facilitating cooperation and preventing conflict in various contexts. Yet this function could seemingly be implemented equally effectively by communicating about, say, one's general likes and dislikes, or stable or recurrent aspects of the environment, rather than the past as such. Nevertheless, it seems to be a near-universal fact of human life that we are inveterately interested in talking about events we have witnessed or been through together, and are emotionally bound together by our shared past experiences. My claim has been that it is only given this interest that we have any use for thoughts which relate in a singular manner to past events. The explanation of why we should have this interest, given its practical uselessness, remains a puzzle.

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