To appear, with minor revisions, in K. M. Jaszczolt (ed.)
Understanding Human Time. Oxford: Oxford University Press.

Tense and Emotion

Simon Prosser

2.1 Introduction

If the B-theory of time is true, then why do we say 'thank goodness', and feel relief, when a traumatic event is over, and in the past, but experience feelings of apprehension when it is in the future? I shall suggest at least the outline of an answer. In doing so, I shall describe the special kinds of egocentric mental states that one must be in, in order for certain kinds of emotional reactions to an event to be rational, or appropriate. This will also add to a certain picture of the kinds of egocentric mental states that are 'essential' in order for one to be able to interact with the world around one, and which characterise the first-person perspective.

Arthur Prior (1959), who put originally forward the 'thank goodness' challenge, held that only a 'tensed' metaphysics, in which there are mind-independent, objective facts about which times and events are past, present or future, could explain how such a difference in attitudes could be justified. For many years this was regarded as an important challenge to the 'tenseless', or 'B-theory' metaphysics, according to which, although there is a real time series, and hence an objective ordering of times and events, there are no times on the series that are objectively past, present or future, and there is no such thing as the *passage* of time. For the B-theorist, time is in many ways similar to space; the world is extended in time, much as it is extended in space. Just as objects in different locations in space coexist on an equal footing, so, according to the B-theory, do events located at different times. Changes take place *in* time, but consist only in there being different states of affairs located at different times.[1]

According to Prior's preferred metaphysics, usually known these days as the 'A-theory' or 'tensed' theory, and often regarded as the 'common sense' view of time, the time series itself changes as time passes. On this view, when I dread a forthcoming dental appointment, I have reason to do so because it is simply a fact about the world – a fact about reality as a whole – that the appointment is in the future (*the* future – not just *my* future). And, similarly, after the appointment, I have reason to feel relief and say 'thank goodness that's over' because time has passed and reality has now changed, and the dental

[1] For a classic defence of the B-theory, and discussion of A-theoretic alternatives, see Mellor 1981, 1998.

appointment has gone from being in the future to being in the past. It is this change in reality itself that justifies the change in my attitude to the event. Different realities justify different attitudes.

The challenge for the B-theorist, by contrast, is to explain why it can be appropriate to take different attitudes at different times to the very same event, given that, according to the B-theory, nothing about the time series itself ever changes. One would, it seems, be taking conflicting attitudes toward the very same reality. As a number of B-theorists have noted, on closer inspection, it is not entirely clear that the A-theorist is really better off, for it is not immediately clear *why* a traumatic event being in the objective past or future should explain the appropriateness of taking different attitudes to that event, let alone why one should take the specific attitudes of dread followed by relief.[2] Nevertheless, whatever problems may face the A-theory, the challenge to the B-theory remains; an explanation is needed before the theory can be regarded as fully satisfactory.

More recent discussions by B-theorists have assumed that the phenomenon to which Prior drew attention was just an example of the more general phenomenon of the *essential indexical* (Perry 1979), according to which the thoughts that we express using indexical terms like 'I' 'here' and 'now' play essential psychological roles in bringing about actions (for these purposes, an indexical term is any linguistic expression whose semantic value varies systematically with context). For example, I may believe all day that SP is in danger, but it is only when I come to believe that *I* am in danger (where my token of 'I' refers to SP) that I take evasive action. Or, I may believe that St Andrews would be a good place to dig for gold, but it is only when I come to believe that *here* would be a good place to dig for gold that I start digging. Finally, to borrow a temporal example from Perry, I may believe all day that the meeting is at 3pm, but it is only when I come to think of 3pm as *now* that I rush to the meeting. On the face of it, the thought that the meeting starts at 3pm, and the thought that the meeting starts *now* (where that thought occurs at 3pm), both represent the meeting as happening at the same time; but it is only when the time of the meeting is thought of in a special way, as *now*, that the thought leads to action. The similarity, in this respect, between 'I', 'here' and 'now' has suggested to many B-theorists that Prior's example tells us nothing specifically about time. I agree, but there is more to say.

More recently, however, scepticism has been expressed by some philosophers about the doctrine of the essential indexical (in particular see Millikan 1990, Cappelen and Dever 2013, Magidor 2015). According to them, the fact that the change in my behaviour occurs only when I go from thinking of the time of the meeting as '3pm' to thinking of it as 'now' shows only that this is a case of the familiar phenomenon of referential opacity. A similar change in my behaviour may be brought about by a change from thinking of a person as 'Norma Jeane Mortenson' to thinking of them as 'Marilyn Monroe'. Much of

[2] See for example Garrett 1988.

the focus of this discussion has been on actions, though Cappelen and Dever give broader arguments to the effect that there is nothing special or fundamental about the first-person perspective (which is commonly associated with the use of terms like 'I', 'here' and 'now'). I disagree with this broader claim. I have argued in previous work that although it is true that indexicality per se has no special role, there are associated *egocentric mental states* that do indeed have an essential role in action (Prosser 2015).

In this chapter, I shall focus on emotions rather than actions, though I shall note some obvious connections between them. Emotions have received very little attention in the debate over essential indexicals. By using Prior's 'thank goodness' case as my central example, I shall explain why certain emotional reactions to an event are appropriate only when the event is thought of as being past, present or future, where these terms are understood in a manner compatible with the B-theory. Thinking in terms of past, present or future is part of the broader phenomenon of adopting the *first-person perspective*, and adopting this perspective is essential to a variety of emotional reactions; these reactions are not appropriate when the same states of affairs are thought of tenselessly or, as we might equivalently say, from the third-person point of view. My aim is therefore to do two things at once: firstly, I shall add to the proper understanding of Prior's 'thank goodness' puzzle from a B-theoretic point of view, and secondly, I shall provide a new kind of response to scepticism about the essential psychological role of the first-person perspective.

2.2 Indexical pronouns and egocentric predicates

I should start by saying something about what I take to be the relation between the indexical pronoun 'now' and predicates like 'past', 'present' and 'future'. In my view, the philosophical discussion of the first-person perspective has focused rather too much on words like 'I', 'here' and 'now', and has not paid sufficient attention to expressions like 'near', 'far', and 'to the left', as well as 'past', 'present' and 'future', all of which I shall refer to as *egocentric predicative terms*, or *egocentric predicates* for short. It is easy to find examples showing that thoughts expressible using egocentric predicates play the same 'essential' role for action as those expressible using 'I', 'here' or 'now' (and, as we shall see, the same applies to certain emotional reactions). Perhaps it is sometimes assumed that when one thinks that there is danger nearby, what one really thinks is that there is danger near to *me*, and that it is the unstated indexical 'me' that is essential for action. But one cannot make the same claim in the temporal case; an event that is in the past cannot literally be understood just as standing in some relation to me, for I may have also existed before the event, and therefore stand (or stood) in many different temporal relations to it. At any rate, the B-theorist must say this, since the B-theorist must regard a persisting person as

a temporally extended entity.[4] I shall suggest, in what follows, that there is in fact a crucial role for the relevant temporal 'stage' of a person; but not as the referent of 'I'.

The focus on indexical pronouns ('I', 'here', 'now') has, I think, created an impression that the 'essential indexical' phenomenon is a matter of thinking of a person, place, or time, in a special way, perhaps under some kind of special indexical mode of presentation (whatever that would mean). I think this is a mistake, and has led to much confusion. In my view, the explanation for the apparently special role of these indexical terms lies not in the indexicality itself, but in the fact that a use of any such term implies that the speaker believes, or perhaps presupposes, that they stand in a certain relation to the reference. Under normal circumstances, a speaker, S, who uses 'here', when speaking about location *l*, believes that *l* is the place in which the token of 'here' was uttered. But, arguably, S also takes *L* to be the place at which S is located (albeit perhaps only implicitly, as explained below). Similarly, when S uses 'now' when speaking about a time, *t*, S believes that *t* is the time at which the token of 'now' was uttered. But, arguably, S also believes, at the time of utterance, that *t* is *present*. This seems hard to deny – no one could coherently refer to a time *t* as 'now' while believing that *t* was past or future. I think that something similar is true for 'I', though I shall not go into the details of this here.[5]

Egocentric predicates are used precisely to describe, or think about, relations in which one stands to places, times, or persons. So, I am suggesting that whenever a speaker makes a sincere assertion using an egocentric indexical such as 'I', 'here' or 'now', the speaker also has a corresponding belief involving an egocentric predicate. In what follows I shall explain, for the temporal case, exactly why temporal egocentric predicates, which I take to include 'past', 'present' and 'future', have a special role, connected with the first-person perspective, that is essential for emotional reactions to events (and also, arguably, for actions).[6] If this explanation is correct, then no further explanation in terms of special modes of presentation associated with indexical pronouns is needed.

2.3 Truth conditions for thoughts about the past

[4] I do think, in fact, that we often think of ourselves as though we were wholly located at one time, and that we 'move' through time, as time 'passes'. This probably explains the degree to which it can seem to make sense to say that an event was in my future, but is now in my past. But this does not make literal sense, given that one exists at more than one time by virtue of persisting.

[5] The different types of belief associated with, and indicated by, the use of an indexical term are referred to as *indicated linguistic beliefs* and *indicated egocentric beliefs* in Prosser 2015: 214-215, where more detail is given. The corresponding set of relations in the personal case is a far less obvious one, and we have no reason to have words to describe such relations. See Prosser 2015:216-217 for details of these *ι-relations*. Very briefly, ι-relations are certain relations in which one stands to oneself but not to other people – most plausibly, relations that involve a combination of monitoring and control.

[6] In Prosser 2015 I showed, via a regress argument, that mental states involving egocentric predicates are essential for actions. But, despite the title of the article ('Why are Indexicals Essential?'), there is a sense in which the regress argument does not fully explain *why* they are essential. In what follows I try to fill this gap.

When one thinks 'thank goodness that's over!', what, according to the B-theorist, does one thank goodness for? That is to say, what are the truth conditions for 'x is over'? Although there are some subtle differences between 'x is over' and 'x is past', I shall gloss over these, for I do not think they affect the key claims that I wish to make.[7] Now, traditional versions of the B theory divide into two camps concerning the truth conditions for 'x is past'. The *date* theory holds that words like 'past', 'present', and 'future', when applied to a time *t*, concern the temporal relation between *t* and the *time* of utterance (which should be identical to *t* for an utterance of 'present', but not for 'past' or 'future'). The *token-reflexive* theory holds instead that the relevant relation is between *t* and the uttered *token* of 'past', 'present', or 'future'.[8]

If one of those theories provided the whole story, then one would thank goodness for the relation between the traumatic event and either a date or an utterance token. But, as Prior pointed out, neither is plausible:

> One says, e.g. "Thank goodness that's over!", and not only is this, when said, quite clear without any date appended, but it says something which it is impossible that any use of a tenseless copula with a date should convey. It certainly doesn't mean the same as, e.g. "Thank goodness the date of the conclusion of that thing is Friday, June 15, 1954", even if it be said then. (Nor, for that matter, does it mean "Thank goodness the conclusion of that thing is contemporaneous with this utterance". Why should anyone thank goodness for that?) (Prior 1959: 17)

Here is a way to see Prior's point: According to the B-theory, the fact that the traumatic event stands in a certain temporal relation to the utterance, or to the time of utterance, is an eternal fact. It does not change, and is just as much a fact before the traumatic event as it is afterwards. So it is unclear why someone should have any reason to feel relief about it, and if there were any such reason, then one would have just as good a reason to feel relief before the event as after it. Yet this is not the case.

Of course, before the event, one might not be aware that such an utterance ever occurs. But if, before the traumatic event, an oracle were to tell one, with perfect reliability, that an utterance of 'thank goodness that's over' would occur after the event, it is hard to see how one's feelings would be rendered any different. One would look upon the forthcoming event with just the same feeling of trepidation. Moreover, if there is a reason to feel relief at a given time, then that reason exists regardless of whether any utterance occurs at all.

---

[7] For discussion of the differences, however, see Hoerl 2015.

[8] See Dyke 2002 for defence of the token-reflexive theory relative to the date theory. See Le Poidevin 1998 for a much more nuanced discussion than I have given of the different versions of both A-theoretic and B-theoretic truth conditions.

Neither would it help to think of the utterance *demonstratively*, as 'that utterance'. Suppose that one were equipped with a crystal ball that enabled one to witness future events. The events would not *look* as though they were in the future – it is hard to imagine how such a thing could look. As D. H. Mellor (1998: 16) once pointed out, every perceived event appears to us to be happening in the present. Nevertheless, if one could witness the utterance of 'thank goodness that's over' through one's crystal ball, then one could refer to it demonstratively, and one might come to believe that 'that utterance occurs after the conclusion of the traumatic event'. Somewhat less fancifully, one might see a film of a past utterance, perhaps running long enough to see both the traumatic event and the utterance. Again, one could refer to the utterance demonstratively. In either case, Prior's point remains unchanged; one would still have no reason to feel relief.

A hint at what is wrong can be found by reflecting on the fact that the proposed truth conditions can be thought about equally easily by anyone, even though not everyone has equal reason to feel relief. If I have a traumatic dental appointment tomorrow, then there is reason for me to feel trepidation now, and there will be reason for me to feel relief afterwards. But, unless you have a truly exceptional concern for my wellbeing, your knowledge of my dental appointment gives you no reason for you to feel as I do. Yet you are just as capable as I am of understanding the temporal relations between the relevant events and the relevant times or utterances. What we need is an explanation of how there can be a reason for *me* to feel a certain way, that is not also a reason for *you* to feel that way.

2.4 Half of the Answer: The Evolutionary Story

Here is an obvious reason for me, but not you, to dread the forthcoming traumatic event, and feel relief when it is over: The event affects me, but not you. Our emotions evolved, presumably, to influence our behaviour in such a way as to raise our chances of survival. Feelings of dread or fear, for example, can influence one to act in such a way as to prevent a harmful event from occurring at all. If I foresee a possible future in which I am attacked by the predator that I see before me, and I fear this, then I move away, to avoid the attack. It must be me, not you, who feels the fear, in order for me, rather than you, to be motivated to act in the relevant way.[10]

This insight can help us with the temporal case. According to the *stage theory* of persistence (Sider 1996, 2001, Hawley 2001), a persisting person consists of a series of temporal 'stages' – momentary time-slices, each of which we could think of as being a kind of very short-lived person (the theory also applies to persisting physical objects in much the same way). If we think of the person-stages before and after the traumatic event

[10] There are of course cases in which it is adaptive for one's emotions to motivate actions that protect someone else. Nevertheless, it is the one who acts who must feel the emotion.

as distinct persons, then Prior's puzzle comes down to this: how can there be a reason for the earlier person-stage, but not the later person-stage, to fear the traumatic event? And how can there be a reason for the later person-stage, but not the earlier person-stage, to feel relief?

When the question is posed in this way, an explanation, corresponding to the one described above for the interpersonal case, suggests itself. There are different reasons for emotions for the earlier and later person-stages, because they stand in different relations to the traumatic event. In particular, the earlier person stage is causally upstream from the possible traumatic event, and therefore can potentially influence or prevent it, whereas the later person-stage cannot.[11] James Maclaurin and Heather Dyke (2002) have suggested a solution very much along these lines, albeit not explicitly described in terms of the stage theory. They suggest that it is adaptive, in evolutionary terms, for a creature to have different emotional reactions to an actual or possible event depending on the temporal relation between the creature and the event at the time of the emotion. They give further details, for example suggesting that there is a similar evolutionary explanation of our differing emotional attitudes to events in the near future and the more distant future. The rough idea is that a possible event located in the distant future is one that is hard to influence now, and there will be plenty of time to influence it later. So, even if the event will be traumatic if it occurs, there is reason to feel only a relatively mild trepidation now. Stronger emotions, at this point, would just waste time and energy. When the event is to occur soon, however, then there is reason to act straight away if it is to be prevented, and that is why it is adaptive to feel stronger emotions about an event in the nearer future.[12]

No doubt there is room for debate over the details, but I think the broad kind of account that Maclaurin and Dyke suggest is prima facie plausible, and I shall assume that some account of this kind is correct. But this still leaves us with two questions: what are the truth conditions for thoughts and utterances about the past, present and future, and why is it that only the relevant person-stage is disposed to feel the relevant emotions when thinking thoughts with these truth conditions? The first question is easy to answer; the second is more subtle. I shall deal with the first in the remainder of this section, before moving to the second in the next section.

---

[11] This, I take it, is the objective situation that grounds the adaptiveness of our past and future attitudes. But, as Bordini and Torrengo (forthcoming) point out, one's psychological grasp of what it is for an event to be in the future may be essentially bound up with the notion that a time that is future is one that is going to be present, at which point one will find oneself existing simultaneously with it. As Bordini and Torrengo suggest, this may relate to the psychological sense (albeit not the objective reality) of time passing. See also Prosser 2016, section 7.1, on the connection between an event being thought of as future, and it being thought of as 'approaching' (or of oneself as approaching the event).

[12] See Maclaurin and Dyke (2002), and also Suhler and Callender 2012, for further details of arguments of this kind. See also Sullivan 2018, however, for dissent on the rationality of 'time bias' in general. I shall assume in what follows that evolutionary considerations do at least explain why we *have* temporally biased attitudes, even if there are arguments that it is not in one's self-interest to do so (which is not to say that I accept all of Sullivan's arguments).

The first question can, I think, be answered just by considering the states of affairs that have to occur in order for it to be appropriate for a given person-stage to experience a given emotion. Consider a person, S, who has a person stage, S_t, existing at time *t*, and an event, *e*, occurring at some specific time, to which it is appropriate for S_t to be disposed to produce emotional reaction E. According to the kind of account suggested by Maclaurin and Dyke, what ultimately makes it appropriate for S_t to produce reaction E is that S_t stands in some specific temporal relation, R, to the event *e*. For example, if R is the 'past' relation, and *e* is a traumatic event, then S_t stands in the relation R to *e* that makes relief appropriate. So the state of affairs for which S_t appropriately thinks 'thank goodness *e* is over', and feels relief, is the state of affairs that *e* is earlier than S_t. Consequently this relational state of affairs, which we can write as '$R(S_t, e)$', is the truth condition for the thought that produces the emotional reaction in S_t.

I am not necessarily suggesting that $R(S_t, e)$ is the truth condition for S_t's use of the *word* 'past', however. When I utter the word 'past', as part of a complete sentence, and you understand me, perhaps the understanding of the utterance that we have in common is captured by the token-reflexive truth conditions (i.e. that 'x is past' is true if, and only if, the token of 'past' is produced at a later time than *x*). I shall remain neutral on this, for it is possible that the person-stage that produces an utterance will serve to capture the truth conditions just as well as the token utterance thus produced.[13] If we are to correctly understand the significance of *thoughts* about the past, present, and future, however, then I do think it is necessary to accept that the states of affairs being thought about, at least in basic cases in which one simply thinks that a particular event is in the past, present, or future, concern the relation between the event and the person-stage that is entertaining the thought.

So far, so good, but we have not yet fully solved the problem raised by Prior's challenge. The state of affairs $R(S_t, e)$ is, after all, just as eternal and unchanging as those concerning the relations between *e* and the time of utterance, or the token utterance. Why should anyone thank goodness for $R(S_t, e)$? There is no reason for anyone other than S_t to thank goodness that S_t is located later in time than *e*. Even S's earlier temporal stages have no reason to thank goodness for that. So why should the situation be any different for S_t? Normally, the identity of the thinker of a thought does not make any difference to the psychological importance of the thought. I have suggested, above, that the problem cannot be happily solved by suggesting that, in addition to thinking that $R(S_t, e)$, S_t also thinks 'I am S_t'. I am not identical with my stages – I exist, or existed, at many different times. It should also be added that it seems implausible that thoughts of this level of

[13] This is a technical issue about which, I admit, more needs to be said that I can say at present. It relates to the question of what it takes for participants in a conversation to presuppose a common 'now'. On the face of it, insofar as a token utterance must be produced by a speaker at a time, and hence by a person-stage, the token and the person-stage that produced it should give rise to extensionally equivalent truth conditions. There might, however, be trickier cases, such as the much-discussed answering machine messages saying things like 'I am not here now' (Predelli 1998).

sophistication should be necessary for the feeling of relief to be appropriate. There could be creatures who did not have 'I' thoughts (that is, thoughts involving an 'I' concept), let alone thoughts about person-stages, but were nevertheless capable of understanding that a traumatic event was in the past, and felt relief as a result?[14]

2.5 Egocentric Mental States

The puzzle we face is to explain how it is possible that, for some state of affairs, A, when one specific person-stage, S_t, thinks about A, S_t has reason to react with certain emotions, yet no one else who thinks about A has any such reason. In order for this to be possible, there must be some way of thinking of A that produces the relevant emotional reaction, and only S_t can think of A in that way. I have suggested that the state of affairs in question is $R(S_t, e)$, i.e. person-stage S_t stands in relation R to event e, where R is a temporal relation such as *earlier* or *later* (perhaps to some specific degree).[15]

The answer is found in a phenomenon that I have elsewhere called *first-person redundancy* (Prosser 2015). This is an epistemological phenomenon, though it is closely related to the more frequently discussed fact that a subject, S, can think about S's relations to places and times *monadically*, that is to say, by using monadic predicates such as *near*, *far*, *to the left*, and also (according to the proposals above) *past*, *present*, and *future*, when dealing with what is in fact a 2-place relation.[16] No claim about contents being monadic

[14] Similar points have been made by many others. See for example Recanati's (2007) distinction between the implicit and explicit de se, and Millikan's (1990) discussion of people who do not use indexicals. There is another reason for my reluctance to accept a reduction of all egocentricity to the occurrence of thoughts involving 'I'. It is that this would still leave us with the problem of explaining what is special about 'I' thoughts. I don't know of any satisfactory way to explain this; yet, if the account that I propose below is correct, then everything has already been explained.

[15] For the purposes of this chapter it will do no harm to think of R as simply a temporal relation. But in fact I think the relation that is relevant to the subject's psychology is a more subtle one. Consider two creatures, one of whom has internal processes and outward behaviour that all occur twice as quickly as the other. I think that to the former creature, there is a sense in which the same events would seem twice as far into the past or future as to the other. This suggests a sense in which the degree of subjective pastness or futurity of an event is a matter of how it relates to the thinker's capacities for actions, including mental actions, and that subjective pastness and futurity are causal-functional relations. See Prosser 2016: chapter 4 for a full development of this line of thought.

[16] The fact that we can use *n*-place predicates in dealing with use *n+1*-place relations was first discussed at length by John Perry (1986). In such cases, there are what Perry calls *unarticulated constituents* in the content of speech (and perhaps thought). Many others have made claims about the apparently monadic form of some of our mental representations, most commonly in relation to spatial experience, though sometimes for other cases (see for example John Campbell's (1994) notion of *causal indexicality*). First-person redundancy is also closely related to what François Recanati (2007) has called the *implicit de se*. It should be stressed, however, that first-person redundancy is an epistemic property, not a semantic-syntactic one. It also should not be conflated with the notion of *identification-freedom*, which Recanati 2007 associates with the implicit de se, and to which he appeals in his explanation of *immunity to error through misidentification* (IEM). A judgment is identification-free if the epistemic grounding of the judgment does not rely upon the truth of an identity statement (such as 'I am NN'), which may or may not be explicitly

plays any part in what follows, however. First-person redundancy is an epistemic phenomenon, and is compatible with the relevant predicates being 2-place.

First-person redundancy occurs in certain cases in which a subject, S, judges that a relation obtains between S and something else (such as a place or time), and trades on the fact that S is one of the relata in the relation to take a kind of epistemic shortcut. Normally, in order to judge that an *n*-place predicate applies to some state of affairs, one needs *n* pieces of information. By a 'piece of information', I mean a parameter of some kind – typically something that can be represented by a number, or an order series of numbers (as one might use a triplet of numbers to represent spatial location or direction). In many cases, this requires attending to *n* objects in order to acquire information from them. So, for example, to judge that A is taller than B, one normally needs two parameters, representing the heights of A and B. Sometimes, however, when S is one of the relata in the relation, S is able to judge that the relation holds by acquiring only one parameter, or attending to only one object. Consider, for example, some of the multiple ways in which it is possible to judge the spatial distance between oneself and an object. In order for someone else to judge that S is at distance *d* from object *O*, they would need two parameters, corresponding to the locations of S and *O*. But suppose, for example, that S were equipped with a lens with adjustable focus, such as a camera lens with a focus scale. By twisting the focussing ring until the object was in focus, S could read off the distance to the object just by looking at the resulting angle of the focussing ring (as shown by the scale). S would therefore be able to judge the distance from S to *O* by obtaining just that single parameter. As a matter of fact, this loosely corresponds to the phenomenon of *visual accommodation*, one of several ways in which the human visual system can judge depth. One's brain can – within a limited range of a few metres, and with limited accuracy – judge the distance to a perceived object just by registering the amount by which the eyes must be focussed to bring the object into focus.[17]

There are several other phenomena, such as *stereopsis* and *convergence*, as well as contextual information about perceived textures and so on, that combine to provide information to the brain about distances of perceived objects. As a result, when one looks at an object one can judge how far away it is – the distance between oneself and the object – without needing to compare the location of the object with one's own location. One does not even need to perceive oneself to make such a judgment. Whereas, with the camera lens, one would have to make the judgment that one was located in the same place as the lens – a judgment that someone else could have made – in the case where one makes the judgment using one's own visual system, no such identity step is needed (one *is* the measuring apparatus, so to speak). This is the phenomenon of first-person

entertained. I do not agree that the implicit de se itself explains IEM in quite the way suggested in Recanati 2007, though I do agree that there are some important connections.

[17] For details of the relevant research, see Heinemann, Tulving and Nachmias 1959; Leibowitz and Moore 1966; Künnapas 1968; Wallach and Floor 1971.

redundancy – so called, because attention to oneself, or even any representation of oneself, would be epistemically redundant in the epistemic grounds for the judgment (the judgment would have just the same justification without it).[18]

Our judgments about the past and future can also exhibit first-person redundancy. Consider the ordinary ways in which one can judge the time interval between the births of Plato and Aristotle. In order to discover this, one would need to know two things: the different dates on which Plato and Aristotle were born. But when one is one of the relata in a temporal relation, one can trade on this fact to take the kind of shortcut described above. Suppose one wished to know the size of the time interval between some past event and the temporal stage of oneself that is making the judgment. A loose analogy with the camera lens would be a stopwatch – one could start the stopwatch at the time of the event, and then learn the size of the time interval between the event and the person-stage making the judgment just by reading the figure from the stopwatch. As with the camera lens, this would require making the judgment that the perceived state of the stopwatch was simultaneous with the relevant person-stage, and someone else could make that judgment. But there are ways of making the judgment that involve no such intermediate step. One can, for example, think about a remembered event, and make a direct judgment about how long ago the event occurred, without having to compare temporal locations. One cannot always do this. Sometimes, when one remembers an event, especially if the event is in the distant past, one can only figure out how long ago it occurred by thinking about what else was happening at around the same time, figuring out the date, and so on. But over shorter timescales one can make the judgment more directly. One can, for example, hear a sound, and for a certain period of time one can consult one's memory of the sound, and one simply has a sense of how long ago it occurred. One does not do this by comparing the time at which the event occurred with the time at which the judging person-stage exists. One need only pay attention to the felt sense of how long ago the event occurred.[19]

Something comparable can perhaps be said about some of our judgments about the future. One cannot perceive the future (barring crystal balls and the like, which, as noted above, would not present the future *as* future anyway). But one can anticipate certain future events, including the unfolding of one's own actions. When one does so, one has a sense of their degree of futurity. The 'feeling' of having dental surgery starting in ten minutes is quite different from the feeling of it starting in ten seconds. But one need not

[18] While I have coined the phrase 'first-person redundancy' to emphasise the epistemological, rather than semantic, phenomenon, I am certainly not the first person to have noticed the fact that one can make such judgments without perceiving or attending to oneself. But the full epistemological significance of this phenomenon does seem to have generally been missed.

[19] Just as with the case of visual judgments of distance from oneself, there has been much empirical research on the mechanisms that allow one to make these temporal judgments. And, as with vision, it seems likely that there may be a variety of different mechanisms at work in different contexts. See Grondin 2010, especially pp. 567-70, for a useful brief survey, and see Grondin 2020: 1-71 for a more in-depth introduction.

represent a future event, and its degree of futurity, by explicit representing both the event and one's own current temporal stage. One need only think about the event, and its felt degree of futurity.

In all cases, I shall speak of such judgments, where one less parameter is needed because the subject is trading on being one of the relata in a relational state of affairs, as being made *first-person redundantly*. Only the relevant person-stage – the one who stands in the relation in question – can judge, first-person redundantly, that the relation obtains. So, although anyone might be in a position to judge that $R(S_t, e)$, it is only S_t who can do so first-person redundantly. Only S_t can stand in that particular epistemic relation to the state of affairs $R(S_t, e)$. So, with regard to the temporal case of interest, there is a way for S_t to judge that a certain event is past, present, or future, that is only available to S_t.

Ways of judging are associated with ways of thinking. Consider the standard, Frege-inspired way to distinguish different thoughts for a given subject at a given time. Thoughts T_1 and T_2 are distinct, for a subject S, if, and only if, it would be rational for S to accept T_1 while denying, or remaining agnostic about, T_2 (or vice versa). It will be helpful to revisit the reason for this. We can think of a subject as being rational if, and only if, the subject's view of the world is coherent. A rational subject should not hold the world to be a way that it is logically impossible for a world to be. So, to use a standard example, no world could be one in which Hesperus is bright and Hesperus is not bright ('Hesperus' is an ancient name for the planet Venus). So, a rational subject should not hold that this is the case. Given that 'Phosphorus' is also a name for the planet Venus, there is no logically possible world in which Hesperus is bright and Phosphorus is not bright. It does not, however, follow that it would be irrational for a subject to hold that Hesperus is bright and Phosphorus is not bright. This is because the epistemic conditions under which the subject would judge that Hesperus is bright may differ from the epistemic conditions under which the subject would judge that Phosphorus is bright, and there may be possible worlds in which those epistemic conditions would lead to judgments about different objects. Suppose – again following the standard example – that the subject judges that something is 'Hesperus' when it is the brightest object in the evening sky (the 'evening star'), and judges that something is 'Phosphorus' when it is the brightest object in the morning sky (the 'morning star'). In the actual world, the brightest object in the evening sky *is* the brightest object in the morning sky – it is just the same object seen at a different time. But there are possible worlds in which *different* objects would be seen in the evening and morning skies. So, the subject who believes that Hesperus is bright and Phosphorus is not bright is implicitly taking the actual world to be of this latter kind. It is a way that the world *could* have been. So, the subject is mistaken, but not irrational. This is what we normally have in mind when we say that 'Hesperus is bright' and 'Phosphorus is bright' express different thoughts.

So, wherever there are different ways for a subject to judge that a given state of affairs obtains, there may be different corresponding thoughts. Consider, now, what this tells us

about cases of first-person redundancy. Where there is first-person redundancy, there is a type of epistemic access to a specific state of affairs that is only available to one specific person-stage (though other person-stages may have the same type of access to states of affairs involving a different person-stage, but the same relation). This differs from many other types of epistemic access to states of affairs. If I can judge that Hesperus is bright by virtue of judging that the evening star is bright, for example, then so can you. The latter kind of case involves epistemic access to a state of affairs from the *third-person perspective* – a perspective that can be shared by many different person-stages. But where there is first-person redundancy, the subject's epistemic access to the state of affairs is from the *first-person perspective*, and no one else can share that same perspective on the very same state of affairs.

It follows that, at time *t*, a subject, S, may have epistemic access to the relational state of affairs R(S_t, *e*) from both the first-person perspective and also from the third-person perspective. Given the difference in epistemic access, it should be conceivable, from the subject's point of view, that the state of affairs thought about in one way obtains, but the state of affairs thought about in the other way does not. This suggests a difference in thought. So there is a particular species of 'egocentric' thought about states of affairs of the form R(S_t, *e*) that is available only to S_t.

2.6 The Inferential Isolation of the Egocentric

So far, we have seen that when someone thinks of an event, *e*, as past, present, or future, they can do so egocentrically, and their thought is thus distinct from any thought that they could entertain non-egocentrically, such as the thought that *e is earlier than* S_t. It is important to notice that this difference in thoughts is not like the difference between ordinary third-person thoughts, such as the difference between thoughts about Hesperus and Phosphorus. If this were the only difference between tensed and untensed thoughts then there would be nothing to say against Cappelen and Dever's (2013) claim that such differences amount to nothing more than standard cases of substitutivity failure, showing nothing special about the first-person perspective, or about tense.

The difference between egocentric and non-egocentric ways of thinking runs deeper. Egocentric thoughts are *inferentially isolated* from non-egocentric thoughts. Suppose S believes that Hesperus is bright, but does not infer from this that Phosphorus is bright, even though, unbeknown to S, Hesperus is Phosphorus. If S judges that something is Hesperus just when it is encountered as the evening star, and judges that something is Phosphorus just when it is encountered as the morning star, this leaves open the possibility that Hesperus is not Phosphorus, and so the inference does not go through. But suppose S's knowledge were supplemented by further pieces of non-egocentric knowledge. Eventually, the inferential gap would be closed, as it would become apparent

that the brightest object seen in the evening sky was also visible, and was the brightest object, in the morning sky. So this further third-person knowledge would eventually put S in a position to know that the conditions of application for 'Phosphorus' were satisfied by the bright object in the *evening* sky. Arguably, there are no epistemic gaps between non-egocentric thoughts that cannot be closed in this way.

But it is never possible to infer an egocentric thought from non-egocentric thoughts. One person's inference is the same as another's – the identity of the person making the inference makes no difference to what can be inferred from what. But only S_t can think about $R(S_t, e)$ egocentrically, for only S_t can be in a position to make the judgment first-person redundantly. For any true non-egocentric thought, T, adding non-egocentric knowledge can always put one in an epistemic condition in which it would be appropriate for one to judge that T was true. But adding non-egocentric knowledge cannot, in itself, bring about the conditions in which it would be appropriate to judge an egocentric thought to be true.[20] So egocentric thoughts form a special class, inferentially isolated from non-egocentric thoughts. This alone already shows that there is something special about the first-person perspective.

2.7 Self-Location

Let us take stock. I suggested that in order for the B-theorist to address Prior's challenge, it must be explained how S_t's thinking that the traumatic event is over, or past, can put S_t in a position where it is appropriate for S_t to feel relief, yet no other person, and no other person-stage of S, can be in that same situation, and have the same reason. We have now seen that, as a consequence of the phenomenon of first-person redundancy, although others can think of the state of affairs $R(S_t, e)$, there is a particular way of thinking of $R(S_t, e)$ that is only available to S_t. Moreover, this kind of 'egocentric' thought is inferentially isolated from non-egocentric thoughts.

The fact that one has to *be* S_t in order judge $R(S_t, e)$ first-person redundantly shows that this kind of thinking is *self-locating*. If S_t thinks of *e* egocentrically as *past*, and does so correctly, then it follows that S_t stands in the 'later than' relation to *e*. If *e* is a traumatic event, it follows that it is appropriate for S_t to feel relief that *e* is over. So, combined with the kind of evolutionary considerations to which attention was drawn by Maclaurin and Dyke (2002), we have the full answer to Prior's challenge.

John Perry (1977) first used the phrase 'self-locating' when writing about indexicals. Setting aside unusual contexts such as Predelli's (1998) answering machine, Kaplanian 'monsters' (Kaplan 1989), and so on, one can only correctly speak about a certain person

[20] Someone could infer from other, non-egocentric knowledge, that the conditions were in place for S_t to judge, first-person redundantly, that $R(S_t, e)$. But to know this *about* a S_t's thought is not the same as being able to *think* that thought.

as 'I' if one *is* that person, one can only correctly speak about a certain place as 'here' if one is *at* that location, and one can only correctly speak about a certain time as 'now' if one is 'at' that time (which, in this paper, I have taken as equivalent to being identical with the relevant person-stage existing at that time). But I think the phrase 'self-location' is better understood in terms of first-person redundancy. The fact that one can only use indexical linguistic expressions in the relevant contexts does nothing to explain how one has to *think* in order for one's thoughts to have the relevant self-locating feature. It doesn't explain the epistemology. Knowing the truth-conditions for indexical linguistic expressions does not help; it always results in Prior's challenge ("why should anyone thank goodness for *that*?')

2.8 Godlike Actions, Godlike Emotions

I shall close with a brief discussion of the scope of the claims that I am making. I have claimed that thoughts belonging to a certain class – egocentric thoughts, characterised by the feature of first-person redundancy – are necessary in order for certain kinds of emotional reactions to past, present or future events to be appropriate. While I have not emphasised the point here, I also claim that such thoughts are necessary for action.[21] Perhaps this latter claim is immediately quite plausible, given that actions are often motivated by emotions. But is egocentricity of this kind necessary for emotional reactions in *all* kinds of beings, or just those that have certain contingent features possessed by humans? If these claims apply in all cases, then they may be of deeper philosophical interest, in terms of our understanding of the very nature of emotional reactions (and actions).

The idea that the above claims apply only to humans, or to creatures similar to humans, might be motivated by the claim that there could be God-like beings who took a view of space and time as a whole, and reacted to the world, and acted upon it, without having to think of themselves as located within it (even if they were in fact so located). They would not think of places as *here*, of times as *now*, or of events as being *past*, *present*, or *future*. A Godlike action would be one in which the Godlike agent simply thought of a state of affairs at a given place and time (e.g. 'rain in St Andrews on 2nd April 2022'), and in doing so was able to bring about that state of affairs without any need for egocentric thought. We can even imagine the state of affairs being brought about by the spatiotemporally-located movements of the agent, so long as we thought of the details of the execution of the action as being delegated to non-conscious systems that controlled the movements of the body.

[21] Again, for full arguments see Prosser 2015.

Opponents of the claim that the first-person perspective is universally 'essential' are likely to want to defend the possibility of Godlike actions and emotions. But I think the temporal case raises immediate problems for both.[22] Consider, first, Godlike actions. A Godlike being could only decide the overall state of the world over a period of time. They could not *interact* with the world (perhaps their *bodies* might do so, if they acted on the world via their bodies, but they would be oblivious to this). The very notion of person-level interaction requires that one choose how to act in ways that depend on the state of the world at the time of action. Consider, for example, a conversation between two people, consisting of their taking turns at producing utterances over a period of time. What one says at any given time depends on what has been said before. Suppose it is now the turn of the Godlike creature to speak. It seems they must have a representation of the conversation *up to that point*, and then decide what to say next. But this requires that the world be represented in a way that acknowledges that the sequences of utterances *have happened*, and *cannot now be changed*, and that the only thing to be decided is what to say *next*. But in that case, an egocentric, tensed representation has been presupposed.

Godlike emotions strike me as even more problematic. What would it take for there to be a being who experienced emotions at the appropriate times, yet did not think about those times as being *past*, *present*, or *future*? Perhaps someone might claim that this could happen, because there could be a being who was simply wired up to automatically experience the right emotion at the right time. They would not think of the dental appointment as *future*, but would nevertheless automatically feel dread when it was in fact so; and they would not think of it as *past* afterwards, yet would automatically feel relief at that time.

It is unclear what the purpose of such emotions would be, in a god-like being. But there is a deeper problem: The proposal treats emotions as nothing but *feelings* that occur at particular times, as though they were no different from toothaches. But emotions are not like that; they are intentional states, directed at states of affairs. One doesn't just dread, or feel relief: one dreads *the dental appointment*, and one thanks goodness *that the dental appointment is over*. I take this to be a necessary feature of genuine emotions. Consequently, one cannot feel relief that the dental appointment is over without thinking of it as *over*. It seems to me that scepticism about the role of the first-person perspective, with its focus mainly on actions, has neglected this crucial fact about our emotional reactions to the past, present, and future.[23]

---

[22] See also Prosser 2015: 221-223 for some other objections.

[23] It has sometimes been suggested that it is an essential part of an emotion that its content contains an *evaluation* of the object of the emotion. The object of dread may be represented as *dangerous*, for example. See Tye 2008 for a theory along these lines. Evaluations tend to involve relations to the subject. If I judge that something is dangerous, for example, then the state of affairs with which I am really concerned is that the object presents danger to *me* (it might not be dangerous to someone else – someone stronger, or faster, for example). This might suggest an intriguing possibility that emotional states themselves are egocentric, and essentially involve first-person redundancy. I shall leave this as a speculation; the claim of this paper is only that egocentric thoughts about the past, present, or future are an essential *enabling condition* for

2.9 Conclusions

I have argued that the emotional reactions produced by thoughts about the past, present, and future come about in part because of their evolutionary utility, as suggested by Maclaurin and Dyke. But in order to answer Prior's 'thank goodness' challenge, we must also explain how there can be a state of affairs for which it makes sense for a person, at a time, to 'thank goodness', yet it would not be appropriate for another person, or the same person at a different time, to have the same reaction. I have argued that this can be explained in terms of the egocentricity of 'tensed' thoughts about the past, present, and future. Crucially, egocentricity is understood here in terms of the epistemic property of *first-person redundancy*. This explains why tensed thoughts – that is, temporally egocentric thoughts – are inferentially isolated from non-egocentric (untensed) thoughts. It also explains the sense in which such thoughts are *self-locating*: it is only possible for a specific person-stage to correctly think of a time or event as *past*, and doing so entails that the person-stage stands in the relation to the event that makes the relevant emotional reaction the appropriate one for that person-stage (and no other) to have.[24]

References

Bordini, Davide, and Torrengo, Giuliano, forthcoming. Frightening Times. *European Journal of Philosophy*.

Cappelen, Herman, and Dever, Josh 2013. *The Inessential Indexical: On the Philosophical Insignificance of Perspective and the First Person*. Oxford: Oxford University Press.

Campbell, John 1994. *Past, Space and Self*. Cambridge, MA/London: MIT Press/A Bradford Book.

Dyke, Heather 2002. Tokens, Dates and Tenseless Truth Conditions. *Synthese*, 131: 329–51.

Garrett, Brian. 1988. 'Thank Goodness That's Over' Revisited. *The Philosophical Quarterly*, 38: 201-205.

Grondin, Simon 2010. Timing and Time Perception: A Review of Recent Behavioral and Neuroscience Findings and Theoretical Directions. *Attention, Perception, & Psychophysics*, 72: 561–82.

emotional reactions (rather than the stronger but far more speculative claim that egocentricity is partially *constitutive* of the emotional reactions themselves).

[24] I am grateful to Kasia Jaszczolt and an anonymous referee for helpful comments on a written draft of this chapter, and for feedback from audiences in St Andrews, Leeds, Edinburgh and Cambridge. No new data were created during the research.

Grondin, Simon 2020. *The Perception of Time: Your Questions Answered*. London: Routledge.

Hawley, Katherine 2001. *How Things Persist*. Oxford: Oxford University Press.

Heinemann, Eric G., Tulving, Endel and Nachmias, Jacob 1959. The Effect of Oculomotor Adjustments on Apparent Size. *America Journal of Psychology*, 72: 32-45.

Hoerl, Christoph. 2015. Tense and the Psychology of Relief. *Topoi*, 34: 217–31. Special issue on 'Time and Time Experience', ed. Giuliano Torrengo and Roberto Ciuni.

Kaplan, David. 1989: Demonstratives: An Essay on the Semantics, Logic, Metaphysics, and Epistemology of Demonstratives and other Indexicals. In J. Almog, J. Perry and H. Wettstein (eds), *Themes from Kaplan*. Oxford: Oxford University Press.

Künnapas, Teodor M. 1968. Distance Perception as a Function of Available Visual Cues. *Journal of Experimental Psychology* 77: 523-529.

Leibowitz, H. W. and Moore, D. 1966. Role of Changes in Accommodation and Convergence in the Perception of Size. *Journal of the Optical Society of America*, 56: 1120-1122.

Le Poidevin, Robin. 1998. The Past, Present and Future of the Debate about Tense. In R. Le Poidevin (ed.), *Questions of Time and Tense*. Oxford: Oxford University Press: 13–42.

Magidor, Ofra 2015. The Myth of the *De Se*. *Philosophical Perspectives*, 29: 249–283.

Maclaurin, James., and Dyke, Heather. 2002. 'Thank Goodness That's Over': The Evolutionary Story. *Ratio*, 15: 276–292.

Mellor, D. H. 1981. *Real Time*. Cambridge: Cambridge University Press.

Mellor, D. H. 1998. *Real Time II*. London: Routledge.

Millikan, Ruth Garrett 1990. The Myth of the Essential Indexical. *Noûs*, 24: 723–734.

Perry, John 1977. Frege on Demonstratives. *The Philosophical Review*, 86: 474-497.

Perry, John. 1979. The Problem of the Essential Indexical. *Noûs*, 13: 3–21.

Perry, John. 1986. Thought Without Representation. *Proceedings of the Aristotelian Society Supplementary Volume*, 60: 137–52.

Predelli, Stefano. 1998. 'I Am Not Here Now'. *Analysis*, 58: 107-115.

Prior, A. N. 1959. Thank Goodness That's Over. *Philosophy*, 34: 12–17.

Prosser, Simon 2015. Why are Indexicals Essential? *Proceedings of the Aristotelian Society*, 115: 211-233.

Recanati, François, 2007. *Perspectival Thought*. Oxford: Oxford University Press.

Sider, Theodor 1996. All the World's a Stage. *Australasian Journal of Philosophy*, 74: 433–53.

Sider, Theodor 2001. *Four-Dimensionalism: An Ontology of Persistence and Time*. Oxford: Oxford University Press.

Suhler, Christopher and Callender, Craig 2012. Thank Goodness That Argument is Over: Explaining the Temporal Value Asymmetry. *Philosophers' Imprint*, 12. Online at <www.philosophersimprint.org/012015/>.

Sullivan, Meghan. 2018. *Time Biases: A Theory of Rational Planning and Personal Persistence*. Oxford: Oxford University Press.

Tye, Michael 2008. The Experience of Emotion: An Intentionalist Theory. *Revue Internationale de Philosophie* 243: 25-50.

Wallach, Hans and Floor, Lucretia 1971. The Use of Size Matching to Demonstrate the Effectiveness of Accommodation and Convergence as Cues for Distance. *Perception & Psychophysics*, 10: 423-428.