

Tense and the Psychology of Relief

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Abstract:

At the centre of Arthur Prior's 'Thank goodness' argument for the A-theory of time is a particular form of relief. Time must objectively pass, Prior argues, or else the relief felt when a painful experience has ended is not intelligible. In this paper, I offer a detailed analysis of the type of relief at issue in this argument, which I call temporal relief, and distinguish it from another form of relief, which I refer to as counterfactual relief. I also argue that existing discussions of the 'Thank goodness' argument – including Prior's own – fail to give a satisfactory account of temporal relief, and that it needs to be seen as an emotion linked to the ability to engage in fairly sophisticated forms of planning. I also suggest that this has an impact on Prior's claim that the idea of points in time plays no fundamental role in the semantic analysis of tenses.

Keywords: Arthur Prior, A-theory, B-theory, Tense, Relief, Motivation, Planning

Tense and the Psychology of Relief

A. N. Prior's 'Thank goodness' argument argues for a particular picture of the metaphysical nature of time, based on considerations about our experience of time and about the semantics of tensed statements.¹ One general and important question one can raise about Prior's argument is whether a 'transcendental' argument of this type – which moves from certain truths about our psychology to a metaphysical conclusion about the mind-independent world – ever has a chance of succeeding. Much of the existing critical discussion of Prior's argument is (at least implicitly) informed by variants on this question.² I will largely set it aside for the purposes of this paper. Rather, my aim is to draw attention to some features of Prior's argument, or issues raised by it, that have received less attention so far. Especially, I want to bring out a certain complexity in the kind of relief at issue in Prior's argument that has not always been fully recognized – arguably not even by Prior himself. I will start by spending a little time setting out the basic structure of the 'Thank goodness' argument.

1. The 'Thank goodness' argument

More than one version of the 'Thank goodness' argument can be found in Prior's

¹ I am using a broad construal of the notion of 'experience' here, on which it does not just encompass perceptual experiences, say of movement and change, but also other ways in which time can have an influence on our conscious mental life, say through the workings of memory.

² See Chen (2011) for an excellent discussion, inspired by Stroud (2000), of some of the general questions regarding transcendental arguments, and of how they bear on responses to or endorsements of Prior's argument by theorists such as Smart (1980), Mellor (1981, 1998), Ludlow (1999), Oaklander (2003), and Zimmerman (2008).

writings,³ but the most frequently cited version of the argument is that found in the article that bears the title ‘Thank Goodness That’s Over’. Prior writes:

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, p. 17)

The broader context of Prior’s remarks here is a contrast between two pictures of the metaphysical nature of time. On the first picture, we are to think of time as fundamentally consisting in a linear series of positions that stand in relations of precedence to each other, but all have the same metaphysical status. This is the picture of time that, since Prior, has become known as the B-theory. Prior himself refers to it as a picture of time as a “tapestry with everything stuck there for good and all” (Prior, 1996b, p. 47). According to the alternative picture that has become known as the A-

³ See, e.g., Prior, 1996b, p. 50; and Prior, 2003, p. 42, where he also points out that a precursor of the argument can already be found in Broad, 1933/38, Vol. II, Part I, pp. 266-7. Broad uses the somewhat improbable example of a person exclaiming “Thank God (on the theistic hypothesis) that’s over now!” after a dentist has finished drilling their tooth. A number of recent papers use the example of relief felt after a root canal. As far as I can tell, this specific version of the example originates with a talk John Campbell gave at the 1994 meeting of the European Society for Philosophy and Psychology in Paris (see Higginbotham, 1995).

theory, the B-theory either leaves out the very thing that makes time distinctive, or is indeed completely wrong about the nature of time. That is because it leaves out the idea that time *passes*, and with it the idea that the distinction between the past, the present and the future marks a difference in mind-independent reality.⁴ Or so the thought goes. There are different versions of the A-theory, but in what follows I will concentrate specifically on the contrast between the B-theory and the particular version of the A-theory held by Prior, which is presentism.⁵ According to presentism, there is a metaphysical difference between the past, the present and the future because only what is present is real. As Prior puts it, “the present simply *is* the real considered in relation to two particular species of unreality, namely the past and the future” (Prior, 1972, p. 320).⁶

How is the debate between the A-theory and the B-theory connected with what Prior says in the passage quoted above? In short, the key idea behind Prior’s ‘Thank goodness’ argument is that the way we think and talk about events in time cannot be accounted for if we adopt the picture of time as a linear series of positions that the B-

⁴ How exactly these two aspects of the A-theory are meant to be connected with one another is in fact rather difficult to make out, on at least some versions of the A-theory (see Fine, 2005, pp. 286ff.). I will ignore this issue in what follows.

⁵ Although it has become common to view Prior as a presentist, and although I, too, will do so for the purposes of this paper, this actually ignores some important nuances in the development of his ideas. Fairly unambiguous statements of presentism – most notably the one quoted just below – can be found in Prior’s late writings. How committed he was to presentism in his earlier work is not always so clear. See Jakobsen, 2011, for an interesting discussion of the development of the paper that became Prior, 1972; cf. also Fine, 1977, p. 116.

⁶ This is the version of the A-theory that I described as claiming that the B-theory is completely wrong about the nature of time. On other versions of the A-theory, what is real may encompass more than what is present. On different forms of A-theories, see, e.g., Moore, 1997, and Fine, 2005.

theorist has in mind, but can only be accounted for by adopting the A-theorist's picture of time. The thought, in other words, is that there is a correspondence between the A-theory and one way of construing the semantics of tense, and between the B-theory and another way of construing the semantics of tense,⁷ and that only the former way of construing the semantics of tense gets it right about the meaning of our ordinary thought and talk.

If we view time as fundamentally consisting of a linear series of positions, as the B-theorist does, it is natural to view tenses as having referential import and conveying information about such temporal positions and their relations to each other. This type of view, which takes the idea of such temporal positions as basic in the semantic analysis of tenses, is sometimes referred to as an extensional approach to tense. Prior, by contrast, adopts what is sometimes referred to as a modal approach to tense.⁸ More specifically, he adopts a version of this approach that treats tenses as primitive. According to this view, the idea of temporal positions plays no fundamental role in the semantic analysis of tenses.⁹ Rather, tenses are seen as adverbial modifiers,

⁷ In line with what I said in the opening paragraph of this paper, I will not take issue with this aspect of Prior's view in this paper, which does not mean that I deem it unproblematic.

⁸ I adopt the extensional vs. modal terminology from Récanati, 2007.

⁹ In what follows, I will understand the distinction to be as clear-cut as it is presented here. In the contemporary literature on tenses, however, it has become quite a lot less clear-cut. For instance, there are variants of the modal approach (explicitly invoking Prior as their inspiration) that incorporate a referential element in the approach (Blackburn, 1994). Perhaps more perniciously, Prior himself is sometimes represented as having put forward a modal approach on which tense operators shift the 'time of evaluation' to a different position in time. It should be clear from the quotation I give below that this would give the idea of different positions in time an irreducible and fundamental role in the semantic of tense of a kind that Prior would deny (see also Evans, 1985). Views that blur the

which can be expressed by a sentential operator akin to the sentential operators of ordinary propositional logic or ordinary modal logic. For Prior, temporal positions – he calls them ‘instants’ – are in fact mere logical constructions out of propositions, and “all talk which appears to be about them, and about the ‘time series’ they are supposed to constitute, is just disguised talk about what is and has been and will be the case” (Prior 2003, p. 124).¹⁰

So, in a nutshell, Prior’s ‘Thank goodness’ argument can be seen to proceed in three steps. (i) We need to adopt a modal approach to tenses to get it right about the meaning of ordinary tensed statements such as ‘Thank goodness that’s over’, uttered after a painful experience has ended. (ii) On such a modal approach, ‘positions in time’ are not amongst the things tensed statements are fundamentally about. Rather than being primitive to our understanding of tenses, the idea of such ‘positions in time’ is in fact derivative of an antecedent understanding of tenses in terms of the distinction between being past, being present and being future. Thus, (iii) it is only by adopting the picture of time as the A-theorist has it that we get it right about the meaning of ordinary tensed statements. In what follows, my main focus will be on (i), and on how Prior uses the specific example of relief to argue for (i).

distinction between extensional and modal approaches in this way would also be unsuitable for framing the dialectic of the ‘Thank goodness’ argument, as Prior sees it.

¹⁰ See also Prior, 2003, p. 232: “I find myself quite unable to take ‘instants’ seriously as individual entities; I cannot *understand* ‘instants,’ and the earlier-later relation that is supposed to hold between them, except as logical constructions out of tensed facts. Tense logic is for me, if I may use the phrase, *metaphysically fundamental*, and not just an artificially torn-off fragment of the first-order theory of the earlier-later relation.”

2. The ‘date-analysis’ and different types of relief

Prior’s argument in the quotation I gave at the beginning of the previous section hinges on two claims, which I will look at in more detail in this section and the next. The first claim is that no tenseless expression plus a date can substitute for ‘that’s over’ without the utterance ‘Thank goodness that’s over’ losing its expressive power. The function of the utterance as an expression of relief is bound to the use of tense. Suppose what I am grateful for when I say ‘Thank goodness it’s over’ is a painful root canal I underwent just before midday on Friday, June 15, 1954. Then the proposition ‘The date when my root canal is concluded is midday on Friday, June 15, 1954’ will explain why I ought to feel relieved at midday on Friday, June 15, 1954. But no actual feeling of relief will be forthcoming just in virtue of my entertaining this proposition, even when it is in fact midday on Friday, June 15, 1954. First of all, as Prior explains, “half the time I [...] have forgotten what the date *is*, and have to look it up or ask somebody when I need it for writing cheques, etc.” (Prior 1959, p. 17). But even when I am not engulfed by this seemingly “perpetual dateless haze” (ibid.), it will be the additional fact that I connect the above proposition with the further proposition ‘It is (now) midday on Friday, June 15, 1954, the date when my root canal is concluded’ which explains why I feel relieved, and *that* proposition *is* tensed. Thus, an explanation of the relief I feel must make *essential* reference to the tense of the proposition ‘That’s over’.

Part of what Prior’s remarks bring out here is that it is a particular type of relief he has in mind in his argument, which we might call *temporal relief*. For it is in fact not impossible to construct a story in which it might be reasonable for someone to say ‘Thank goodness the date of the conclusion of that thing is such-and-such.’ The launch of the National Health Service in 1948 brought a health care system to the

United Kingdom that was initially entirely ‘free at the point of use’. However, on June 1, 1952 a flat rate of £1 was introduced for dental treatments (alongside prescription charges of one shilling). Here we have a case in which we can imagine someone having at least some reason for saying, for instance, ‘Thank goodness the date of the conclusion of my root canal is May 31, 1952’. Note also, however, that their having a reason for making this remark does not depend in any way upon the time at which it is made. They might make it before they have to go to the dentist (maybe expressing relief that they managed to get an appointment for May 31), during the operation (consoling themselves with the thought that there is at least one thing they can be glad about), or afterwards (suppose they were unaware of the upcoming change in regulations and heard about it for the first time the week after the root canal). We could call the type of relief at issue here *counterfactual relief*, in so far as the object of the relief is the fact that the root canal falls on a date prior to June 1, as compared with the counterfactual possibility that it could have fallen on a date after June 1.

The relief at issue in Prior’s argument, by contrast, is of a different type. Note, first of all, that we can feel counterfactual relief even in a case where what has actually occurred is entirely positive. In the particular example I have given in the previous paragraph, the root canal itself is still painful. But I could have given other examples in which there is nothing at all unpleasant about what actually occurs, the relief being occasioned simply by the realization that something much less pleasant could have occurred.¹¹ The kind of temporal relief Prior has in mind, by contrast,

¹¹ Perhaps unsurprisingly, given the need to design experiments that will pass ethical approval, the literature on relief in experimental psychology is primarily concerned with counterfactual relief. And in so far as relief has been studied as an ‘achievement emotion’ in the context of educational psychology (see, e.g., Pekrun et al., 2007), counterfactual and temporal relief have not been systematically

turns specifically on the fact that a painful or otherwise unpleasant episode has actually taken place, but has now ended. A certain type of counterfactual relief may of course sometimes come into play in this type of situation too. Taking again the example of undergoing a root canal, one thing I may also be relieved about, once it has taken place, is that it did not go on for longer than it did. Here, I am relieved in the relevant way only once the root canal has taken place because I didn't know before how long it would go on for. However, it is clearly not the case that relief necessarily turns on a lack of knowledge in this way. I can feel relief that the root canal is over also in a situation where I knew all along exactly how long it would go on for.¹² So temporal relief of this latter kind seems to be a *sui generis* phenomenon, which cannot be reduced to counterfactual relief of a certain type. When I express temporal relief about my root canal, it will simply be because the root canal was painful, but is now in the past. Thus, we have to find an explanation of why a subject should have reason to feel relieved only *once* a certain episode has happened, where this is not just due to other factors, such as her having acquired new knowledge about the nature of that episode. And, basically, Prior's point is that into any explanation of this kind the fact that the subject entertains tensed attitudes has to enter as a matter of necessity.

distinguished. Psychologists have only recently started to explore the idea that there may be different types of relief. See especially Sweeney & Vohs, 2012, who speak of 'task-completion relief' and 'near-miss relief' to describe much the same as what I am calling temporal relief and counterfactual relief, respectively.

¹² See also MacBeath 1994, p. 308. As MacBeath points out in the context, the version of the 'Thank goodness' argument in Prior, 2003, p. 42, uses the example of feeling relief after an exam has ended.

3. The token-reflexive analysis and ‘spurious egocentricity’

Let me now turn to the second claim that Prior makes in the passage quoted at the beginning of section 1, which is that the import of saying ‘Thank goodness that’s over’ cannot be captured by replacing it with ‘Thank goodness the conclusion of that thing is contemporaneous with this utterance.’ We have seen that no reformulation of the original utterance in which the tensed verb is replaced by a tenseless expression plus a date can capture the temporal relief the subject feels. Yet, one can accept this part of Prior’s argument and still maintain that the fundamental function of tense is to convey information about times, as the extensional approach to tense has it. In this case, one needs to argue that the expressive function of saying ‘Thank goodness that’s over’ is tied to a specific *way* in which this utterance conveys information about a particular time or set of times. On one such interpretation that has become very influential, what marks off tensed expressions from tenseless ones is the fact that they are ‘egocentric’ (Russell 1940), or ‘token-reflexive’ (Reichenbach 1947). They do denote particular times, but in a special way, since the rule that connects the expression with what it denotes takes the time at which the expression is uttered as an argument.

This token-reflexive interpretation of tense, however, is also attacked by Prior. He aims to show that “the apparent egocentricity or token-reflexiveness of this class of expression is deceptive” (Prior, 2003, p. 27). If, instead of saying ‘That’s over’ we said ‘The conclusion of that thing is contemporaneous with this utterance,’ we would express a truth, but not because the second statement gives the meaning of the first. Rather, as Prior sees it, the second statement is trivially implied by the first one since it is a general condition on the truth of any utterance whatsoever that what it states

must be the case when the utterance is made (see *ibid.*, pp. 33f.). André Gallois (1994, pp. 53f.) puts a similar point as follows:

First there is a fact that ensures that a token of a tensed statement is used to state a truth. Second, there is the fact that that token is used to state. Suppose that I say that I am writing a paper when I am writing one. What I say is true if and only if my uttering the sentence ‘I am writing a paper’ occurs simultaneously with my writing a paper. However, when I say that I am writing a paper I am not stating the fact that an utterance of mine occurs at the same time that I am writing a paper. The fact that I am stating when I say that I am now writing a paper could have obtained even if I had now remained silent about writing a paper.

Note in particular that it is not just a condition on the truth of present-tensed utterances that what they say must be the case when they are uttered; rather, this condition applies equally to past- and future-tensed utterances. Thus, for Prior, the contemporaneity of utterance and fact stated is not what makes a present-tensed utterance present-tensed. Rather, what he would argue is that what makes an utterance present-tensed is that it states how things are, rather than how they were or will be, where these are semantic categories that are not further reducible.¹³

If Prior’s reasoning here is not immediately clear, we can perhaps clarify it by drawing out a potential connection between his idea that the token-reflexivity of tensed expressions is ‘spurious’ and a certain way in which he might have responded to some more recent B-theoretical suggestions as to how we should construe the

¹³ See also Récanati, 2007, p. 70, and Fine, 2005, p. 297, for discussion of related arguments.

'Thank goodness' example. D. H. Mellor originally proposed that B-theorists could accommodate Prior's example by drawing a distinction between a particular mental occurrence, a 'feeling of relief', which is a brute causal outcome of the cessation of earlier distress, and the subject's higher-order awareness of that mental occurrence (cf. Mellor 1981, p. 52). It is this higher-order awareness we need to look at, Mellor suggests, not just the feeling it is an awareness of, if we want to explain the difference between 'Thank goodness that's over' and, say, 'Thank goodness the conclusion of that thing is Friday, June 15, 1954'. As he puts it, "[w]hat a token of 'Thank goodness' really does is express a feeling of relief: not necessarily relief from or about anything, just relief" (Mellor 1981, p. 50). In as far such a feeling of relief occurs only after a period of distress has ended, and 'Thank goodness that's over' reflects our higher-order awareness of this feeling of relief, we therefore also have reason to utter the latter only after the relevant period of distress has ended. In that sense, saying 'Thank goodness that's over' is quite different from saying something like 'Thank goodness the conclusion of that thing is Friday, June 15, 1954,' which reflects an awareness of a mental state we can be in irrespectively of whether the relevant thing lies in the past, present or future.

Arguably, this way of responding to Prior's argument (which Mellor has since abandoned) gets it wrong both about the nature of relief and about the challenge Prior sets the B-theorist. In Cockburn's (1998, p. 87) words, it "conflict[s] violently with central strands of our normal thinking about the emotions", because, whilst emotions may in certain respects be immune to the force of reason, we nevertheless also think of them as things that can be misplaced or appropriate, overblown or proportionate, rather than simply being a brute causal effect like a hangover. Connectedly, Mellor's response also gets it wrong about the challenge Prior sets the B-theorist, because Prior

does not deny that there is a sense in which a subject can only count as, say, expressing relief when in fact she is relieved. Arguably, though, this is simply the general sense in which an expression of one's mental state can only count as such if it involves the subject's awareness, at the time, of the mental state expressed. Thus, to point out the temporal coincidence of the feeling of relief and one's awareness of it is, as Prior would say, spurious, as it doesn't answer his question 'Why would anyone thank goodness for that?' – i.e., why it is specifically *relief* I am expressing.

As already indicated above, Mellor himself has since abandoned the particular way of responding to Prior's argument that I have just sketched, and he now endorses an alternative type of response originally due to Murray MacBeath. As I wish to show, though, this alternative response, too, may be seen to run into similar problems as Mellor's initial attempt. Here is how Mellor characterizes the alternative response:

[W]hat makes me glad that my pain is over is not that it *is* over, but that I *believe* it is over. With pain, of course, the two go together, because we generally believe that we are in pain when and only when we are in pain. [...] Similarly [...] with my belief that my pain is past. We generally have these past-beliefs only when they are true, i.e. only after we have been in pain. [...] And as in this case, so in all cases. The immediate cause of our being glad of any *A*-fact (or *B*-fact, come to that) is not the fact itself but our belief in it.

(Mellor, 1998, p. 43)

The key idea here is that, if relief is prompted by *belief*, we can explain why we only feel relief after a painful episode has ended by appealing to the fact that it is only then that we will have the specific beliefs that prompt relief, namely past tensed beliefs

about the relevant painful episode. Nothing in this explanation requires that there must also be irreducibly tensed facts, i.e. that the distinction between past, present and future marks a difference in mind-independent reality, as envisaged by the A-theorist.

Again, though, we can ask whether this response actually answers Prior's challenge, or simply highlights a point that Prior would regard as spurious. For he might object that, since 'Thank goodness that's over' entails 'that's over', I obviously have reason to say the former only when I believe the latter. But this, he might say, tells me nothing about why it is specifically relief that is occasioned by that belief.

To bring out in more detail what exactly the problem here is, it might be useful to notice an issue that has remained unresolved between Mellor and MacBeath. Mellor (1998, p. 42) in fact agrees that it is still only in a very limited sense that his account provides an explanation of why the relief occurs. But he argues that this should not be seen as a defect of the account, but rather reflects the fact that the connection between believing that a painful episode is over and feeling relieved is only a contingent one. What shows this, he claims, is the possibility of masochism, i.e. the possibility of there being people who do not feel relief once an episode of pain has ended, but something else, such as disappointment.

To this, MacBeath replies that Mellor misconstrues the relevance the example of the masochist has for an account of the nature of relief. For whilst the masochist will not feel relief in the same situations that the non-masochist does, there are nevertheless other situations in which the masochist will feel relief (e.g., when a period of painlessness has ended), and it is plausible to think that there must be a more general type of explanation available that covers both the case of the masochist and that of the non-masochist. MacBeath suggests that the explanation in question is that relief will ensue whenever a subject believes that an episode of a type of

experience they *disvalue* has ended – an episode of pain, for instance, in the case of the non-masochist, and an episode of painlessness in the case of the masochist.

Suppose we grant MacBeath's argument that an account of the nature of relief must also allow for cases of relief occurring in masochists.¹⁴ It is still fair to ask how much of a genuine advance his account actually represents over Mellor's, when it comes to answering Prior's question 'Why should anyone thank goodness for that?'. MacBeath says at one point that "[i]f relief is tied to the ending of a disvalued, rather than a painful experience or state of affairs, the connection can plausibly be regarded as a necessary one" (MacBeath, 1994, pp. 306f.). But this looks more like stipulating that there is such a necessary connection, rather than making intelligible why it obtains – that is, why there is this emotion of relief that follows the ending of disvalued experiences.¹⁵ Moreover, as I will try to show in more detail in the second half of this paper, there are actually good reasons for thinking that it is simply *false* that the end of a disvalued experience is necessarily followed by relief.

¹⁴ I am setting aside here the possibility that there is an intrinsic connection between being in a state of pain and disvaluing the state one is in, which MacBeath seems committed to deny.

¹⁵ Again, it is important here to keep in mind the difference from counterfactual relief. It may perhaps be more plausible to think that there is a necessary connection between disvaluing certain experiences and being relieved about not undergoing them. But the sort of relief for which this is plausibly true is arguably just counterfactual relief. The key feature of temporal relief that is left unexplained by the general idea of a necessary connection between disvaluing certain experiences and being relieved about not undergoing them is its temporal asymmetry – that is, why it is only after the disvalued experience that I am relieved, and not also before. I am grateful to Giuliano Torrenco for prompting me to clarify this.

4. Relief and Priorian tense-logic

I have argued that responses to Prior's 'Thank Goodness' argument such as Mellor's and MacBeath's ultimately fail because they cannot make intelligible the particular type of relief at issue in Prior's example, which I have called temporal relief. Does Prior's own account fare any better in this respect? In this section, I want to argue that it does not. That is to say, Prior's own modal approach to tense, at least taken on its own, does not in fact seem to get us any closer to making temporal relief intelligible. Indeed, I want to suggest that providing a semantic analysis of 'Thank Goodness that's over' along Priorian lines can help making particularly vivid what the challenge comes to that, in my view, neither Mellor or MacBeath nor Prior himself manage to tackle properly.

The idea that the token-reflexive nature of tense is 'spurious' manifests itself in Prior's own analysis of tense in a particular formal feature. Within this analysis, present-tensed sentences occupy a very special position. As I have already indicated, Prior's modal approach treats tenses as adverbial modifiers, but strictly speaking this only applies to the past and future tense. The past and future tense modify a "vacuous special case" (Prior 2003, p. 32) which carries the same sense when it is contrasted with 'It is not the case that...' as when it is contrasted with 'It was the case that...' or 'It will be the case that...' (cf. *ibid.*, p. 33). Thus, in Prior's tense logic there is no present-tense operator and any tense operators there are get treated as sentential operators "out of the same box as" (Prior 1967, p. 15) the sentential operators of ordinary propositional logic or ordinary modal logic. In the Polish notation used by Prior, sentences in the past, present, and future tenses are symbolized as 'P(X)', 'X', and 'F(X)' respectively. There is no present tense (now) operator, 'N(X)', because for

the purposes of his tense logic the plain ‘X’ “will do” (Prior 2003, p. 171).¹⁶ As he puts it elsewhere:

The *formal* importance of this conception of presentness ($'x \text{ present} = x'$) is that it underlies, and is required by, the systematic definition of complex tenses in terms of simpler ones. [...] The building up of [such] complexes [...] requires that tensing be an operation of which the subjects are themselves tensed sentences, and when we have got inside all other tensing to the ‘kernel’ of the complex, *its* tense will have to be the present. (Prior 1967, pp. 14f.)

As Prior’s words make clear, one advantage of a formal analysis of the type he envisages is meant to lie in its capacity to show how sentences in tenses other than the simple present can be revealed to be formed by adverbial modification out of a semantically more primitive present-tensed statement. In doing so, however, he also

¹⁶ Where does this leave terms like ‘present’ or ‘now’? Initially Prior suggested that these terms are strictly speaking, redundant expressions (Prior, 2003, ch. III), drawing a parallel to deflationist theories of truth as advanced by Ramsey and Ayer. To say that something is the case now, according to this view, is to say nothing more than that it just is the case. However, he subsequently (2003, ch. XIV) took back the claim that ‘now’ is always redundant after Hans Kamp (1971, p. 229) had pointed out that ‘now’ does occur non-vacuously when it is within the scope of another temporal modifier. Thus, while ‘now’ does indeed occur vacuously in statements with simple tense, this does not render the expression itself redundant. Precisely because “[t]he essential point about the idiomatic ‘now’ is that however oblique the context in which it occurs, the time it indicates is the time of utterance of the whole sentence” (Prior 2003, p. 174) it occurs non-vacuously within the scope of other temporal operators.

thinks the analysis provides a metaphysically perspicuous picture of the entities those sentences are about. As he explains:

When a sentence is formed out of another sentence by means of an adverb or conjunction, it is not *about* those other sentences, but about whatever they are themselves about. For example, the compound sentence, “Either I will wear my cap or I will wear my beret” is not about the sentences “I will wear my cap” and “I will wear my beret”; like them, it is about me and my headgear. [...] Similarly, the sentence “It will be the case that I am having my tooth out” is not about the sentence “I am having my tooth out”; it is about me. [...] Nor is it about some abstract entity named by the clause “that I am having my tooth out”. It is about me and my tooth, and about nothing else whatever. (Prior, 2003, p. 15)

Some work is required, however, to apply Prior’s approach to his own ‘Thank goodness’ example. On the face of it, ‘That’s over’ is a present-tensed sentence. So it should be an instance of the ‘kernel’ that is left over when all tensed operators are dropped. Two things complicate matters, though. First, note that the ostensible grammatical subject of ‘That’s over’ is an event – the past root canal, referred to demonstratively.¹⁷ Yet, that looks like just the kind of thing Prior would regard as an ‘abstract entity’ and, as we have just seen, he thinks that a complete analysis will

¹⁷ Depending on one’s theory of demonstratives, there is a further question here as to whether Prior could actually construe ‘that’ as a genuine demonstrative expression in this case, rather than, say, an expression going proxy for a definite description (see Ludlow, 1999, on related matters). This point isn’t of any immediate significance to the present discussion, though.

reveal that sentences ostensibly about such entities are actually about concrete things, “and about nothing else whatever”.¹⁸ Secondly, the grammatical predicate ‘over’ in the sentence ‘That’s over’ is a predicate of a particular kind, which has implications for the interpretation of the tense of the sentence. Michael Woods has made the following distinction:

[W]e may distinguish what can be true of an object only while it exists from those things which, though they may be true of an item at some times and not at others, may be true also at times when the item does not exist (Woods 1976, p. 256).¹⁹

Within this taxonomy, the predicate ‘over’ falls into the category mentioned second, though it occupies a somewhat peculiar position within this category, because it can also be seen as the opposite of the type of predicate mentioned first, as it *never* applies while the item in question exists.

As Woods argues, we can only draw these distinctions if we allow the predicate itself to introduce a tensed specification, and in the example of ‘That’s over’

¹⁸ See also Prior, 1996b, p. 45: “The truth that I once fell out of a boat is not a truth about a falling-out-of-a-boat, but a truth about me, and about a boat. [...] I am a real object, and I did really fall, but my falling is not an additional real object, but only a ‘logical construction’. To call it a logical construction is not to call it a piece of language – a fall is not a piece of language – but it is to say that pieces of language which seem to be about a fall are really about something else, namely the man who falls.”

¹⁹ The classification is in fact three-fold, and the quotation continues: “Having singled out the class of predicates first mentioned, it is natural to go on to distinguish further, among those predicates which are true of an object only during periods of its existence, those which, if they are true of an object at all, are true of it throughout its existence” (ibid.)

the tense in question is clearly the past tense. In order for ‘My root canal is over’ to be true, for instance, it must be the case that I had a root canal. In fact, what I want to suggest is that in order to capture what ‘My root canal is over’ expresses within an operator-based framework, and to factor out the past-tense contribution introduced by the semantics of the predicate ‘over’, we need to paraphrase the original sentence as the conjunction of two sentences in the present and the past tense, respectively:²⁰

- (1) I don’t have a root canal.
- (2) I had a root canal.

Neither of the two sentences on its own suffices to capture the meaning of the original sentence, because the first does not rule out that I never had a root canal, whereas the second does not rule out that my root canal is still going on.²¹ Thus, we have to contrast ‘My root canal is over’ not only with ‘My root canal is not over’, but also with ‘My root canal never occurred’.

Once we have translated ‘My root canal is over’ into (1) and (2), though, an operator-based analysis becomes quite straightforward. Note that we can account for the meaning of (1) by seeing it as involving a negation operator ‘It is not the case that’ applied to the proposition ‘I have my root canal’. And it looks like (2) can similarly easily construed as involving a past-tense operator ‘It was the case that’ applied to the

²⁰ In section 7, below, I shall suggest a different way of determining the ‘real tense’ of the statement by using the present perfect tense, but there is no straightforward way of accounting for perfect tenses, especially the present perfect, by using sentential operators.

²¹ For the notion of ‘ruling out’ which is relevant here cf. also Evans 1985, p. 350. In ordinary English, use of the past tense is usually restricted to talking about events that have ceased. However, this is not a strict rule (cf. Comrie 1985, 41ff.).

same proposition.²² It may thus take some work to unpack what is meant by saying ‘My root canal is over’ in such a way that we can see how an operator-based analysis may be applied to it, but once we have done so, applying such an analysis becomes quite a straightforward matter.

Once we have got to this point, however, I think the appropriate question to ask is whether we have in fact made any progress on Prior’s original question ‘Why should anyone thank goodness for that?’ On the analysis I have just offered, what the subject in Prior’s example is thankful for can be captured in (1) and (2). But how exactly are (1) or (2), or their conjunction, supposed to explain the relief I feel? It is of course easy to see why one might feel relief at the thought expressed in (1). But, arguably, that sort of relief, taken on its own, is just counterfactual relief – it is the relief that one is not undergoing a root canal whereas one might have done so. And we have seen that Prior’s argument turns specifically on the idea that there is a further, *sui generis* type of relief, which I have called temporal relief. But why should adding the thought expressed by (2) to the one expressed by (1) issue in this additional type of relief? If I am relieved that I am not undergoing a root canal, how can the realization that, nevertheless, I did undergo one add to my relief, rather than adding, say, a note of sadness, bitterness, or self-pity? It is not clear that Prior has an

²² Matters are of course not really so easy, but the complications don’t matter to the argument in this paper. For instance, following Partee (1984), it is now generally accepted that a past-tense sentence like ‘I didn’t turn the stove off’ makes implicit reference to a particular occasion. As Blackburn (2006) brings out, Prior was aware of a version of this issue, and appreciated the problem it raises for a theory like his, on which points in time are not treated as basic. See Blackburn (2006, section 7) for an excellent account of Prior’s attempt to solve this problem by developing a hybrid logic, and of a deep dilemma that this attempted solution left him with as regards his metaphysical position.

answer to this question, or that his construal of the semantics of ‘Thank goodness that’s over’ helps us to see any better what the answer might be.

In so far as philosophers have thought that Prior is in a better position to answer his question ‘Why should anyone thank goodness for that?’ than his B-theorist rivals, the underlying thought typically seems to have been this. There is at least some pressure on the B-theorist to explain why we ought not to feel relieved already before or during the root canal. In other words, the thought has been that the only type of relief that the B-theory can make rationally intelligible is in fact counterfactual relief. Since, on the B-theory, reality consists simply of a sequence of events and the distinction between past, present and future does not mark a difference in reality, it seems the only thing we could have reason to be relieved about, on the B-theory, is that this sequence (tenselessly) contains certain events rather than others that it could have contained. But if I already know about the relevant events, this is a form of relief that I should have reason to feel already before they happen. According to the A-theory, by contrast, the distinction between past, present and future does mark a difference in reality. As such, the passing of time can bring into existence a new object of relief where previously there was no such object to be relieved at. Or so the thought goes.

What I want to urge, in effect, is that it is actually far from clear that this line of thought confers any advantage on the A-theory over the B-theory when it comes to answering the question ‘Why should anyone thank goodness for that?’. It is of course true that Prior’s view provides us with something that I can only be relieved at now because, on his view, it is only real now. But consider what this thing is: It is my now

having some supposedly monadic property of ‘having-earlier-been in pain’.²³ But having such a property in our metaphysics that can serve as the object of the relief does not make it any more obvious why it is that having that property ought to make me feel relieved – what it is about that property that makes the feeling of relief appropriate. So it looks like Prior in fact makes no progress beyond the impasse that we have noted between Mellor and MacBeath, of having to choose between two equally unsatisfactory answers to the question ‘Why should anyone thank goodness for that?’ Like them, he must either say that it is simply a brute empirical fact that, in some people, having been in pain gives rise to relief, or he must say that there is a necessary connection between the two, without being able to say anything about why this necessary connection obtains.

5. Another look at relief

The recurring theme of the first half of this paper was Prior’s question ‘Why should anyone thank goodness for that?’ I have suggested that even Prior himself ultimately struggles to provide us with a satisfactory answer to this question – i.e. an answer that can make intelligible the specific type of temporal relief ‘Thank goodness that’s over’ is supposed to express. One moral one might draw at this point is that perhaps Prior’s question is misguided to start off with, and that there simply is no explanation for the occurrence of temporal relief of the type he envisages. As we have seen, this is in effect Mellor’s position, implicit in both versions of his response to Prior. Something

²³ The hyphenation here is meant to echo Prior’s own remark that “the internal punctuation of “having been green in August” is “having-in-August been green”, not “having been green-in-August”. [...] A leaf that was green in August is one sort of formerly-green leaf [...] but a formerly-green leaf is not one sort of green leaf” (Prior, 1959, p. 15).

like it is also the position taken by Maclaurin and Dyke (2002). They in fact implicitly acknowledge the point that I have tried to make in section 3, in so far as they endorse MacBeath's response to Prior, but then go on to admit that this response does not itself explain why certain beliefs occasion a feeling of relief in us. Rather, they claim, that explanation ultimately has to be sought in evolutionary considerations (see also Horwich, 1987; and Suhler & Callender, 2012).

In fact, Maclaurin and Dyke can be seen to question the presuppositions of Prior's question 'Why should anyone thank goodness for that?' in two different respects.²⁴ First, there is of course a general sense in which evolutionary accounts of a given trait are only explanatory to a degree. The trait that they account for need not have emerged, and if its emergence by and large conferred an evolutionary advantage on our ancestors, this is compatible with there being occasions on which it is not advantageous or even disadvantageous. For instance, Maclaurin & Dyke's explanation of the evolutionary origin of the temporal asymmetry in our fear responses is that, "[w]e care about future pain in a way that we don't care about past pain because we can avoid future pain" (Maclaurin & Dyke, 2002, p. 285). Yet, this evolutionary story allows for there to be instances in which we know full well that a certain future pain can't be avoided, and we nevertheless react with fear.²⁵ Secondly, and more radically, the specific type of evolutionary account Maclaurin and Dyke

²⁴ See also Suhler & Callender, 2012, p. 6, who write that, in discussions of asymmetries in our attitudes towards the past and the future, it is often assumed that such asymmetries can be "rendered 'appropriate', 'not mysterious' and sometimes even 'rational' [and that] the explanation of the asymmetry will in some way vindicate the asymmetry, that believing, feeling or preferring that tensed way is what we ought to do. But why must this be the case?"

²⁵ Thus, Maclaurin & Dyke are in a position to acknowledge Prior's point, noted in section 3, that temporal asymmetries in our emotional attitudes are not always explained by an epistemic asymmetry.

give, which turns crucially on the idea that certain temporal asymmetries in our attitudes are adaptive because we can affect what happens in the future, but not what happened in the past, ultimately only explains why we have certain attitudes towards the future, such as fear, that we don't have towards the past. As they themselves admit, their account cannot similarly explain the existence of past-directed emotions such as relief.²⁶ Rather, they can only speculate that these may be evolutionary by-products of other adaptations that do confer selective advantage (see *ibid.*, p. 287).

In what follows, I want to suggest that there is something right in Maclaurin and Dyke's general evolutionary approach, but also that there is nevertheless still a point to Prior's question 'Why should anyone thank goodness for that?' which they, too, miss. One way of approaching the issue is by returning to a point I already alluded to briefly in my discussion of MacBeath's position, when I said that it is simply not true that the end of a disvalued experience is necessarily followed by relief.

On what grounds am I claiming that relief does not necessarily follow a disvalued experience? Remember that the particular type of relief at issue here is temporal relief, and not (just) counterfactual relief at the thought that things could have turned out even worse than they did in certain respects. In so far as we can make sense of such a distinct category of temporal relief, I think that it is actually quite obvious, on reflection, that we would not necessarily expect such relief to follow wholly negative and traumatising experiences. After such experiences have ended, a person may feel counterfactual relief of the type just mentioned, in so far as they can envisage that the relevant experiences might still be going on or even worse events

²⁶ The same goes for Suhler & Callender (2012). See also Cockburn, 1998, pp. 85f.

that could have occurred, but they may well, at the same time, continue to look back at the events that actually occurred with a sense of devastation, rather than relief.²⁷

If this observation is along the right lines, I think it can also be used to show that in other cases, in which we do expect temporal relief to follow the cessation of a disvalued experience, we do so because we do seem to see a certain kind of intelligibility in the occurrence of the relief. In particular, we think that it has that intelligibility in those cases because we can make sense of the idea of assigning value to the occurrence of painful or otherwise unpleasant episodes in one's own life. Such episodes can have value, because they ultimately enable the attainment of a greater good. If we cannot assign such value to them, their cessation may not bring us relief.²⁸

What I am saying here implies, I think, that temporal relief is an emotion that belongs to the psychological repertoire of relatively sophisticated agents. Temporal relief of the type envisaged by Prior seems very difficult to make sense of in a creature whose only goal is to avoid unpleasant experiences. But we can make sense of it (and see the point of Prior's question 'Why would anyone thank goodness for that?') in the context, for instance, of a capacity for fairly sophisticated forms of planning, which require intentionally putting oneself through a painful or otherwise

²⁷ Thus, I want to allow that there can be mixed emotions in such a case. What I am claiming is that there would not necessarily be relief associated specifically with *looking back on* the experiences in question. There might, of course, at the same time be relief about not undergoing those experiences in the present. But that, arguably, is just a species of counterfactual relief.

²⁸ Why do I say 'may not' here? It should be borne in mind that I agree with Maclaurin and Dyke that there has to be an evolutionary element in the explanation of the phenomenon of temporal relief. This implies, I think, that it might also occur in cases in which its doing so is not intelligible in the way indicated here. But I would claim that the cases in which it is adaptive are cases in which it possesses this type of intelligibility.

unpleasant experience in pursuit of a greater goal.²⁹ This is, of course, not to rule out that is sometimes also possible for a person come to think of a disvalued experience they have not intentionally put themselves through that it in fact made an overall positive contribution to their life; and this, too, may prompt temporal relief. What counts in both of these cases is what we could call the ability to take an instrumental attitude towards certain episodes of undergoing painful or otherwise unpleasant experiences – it is in the context of an ability of this kind, I want to suggest, that temporal relief becomes intelligible in a way that gives Prior’s question ‘Why would anyone thank goodness for that?’ a point.

A likely objection to arise at this point is that I have in fact simply swapped one horn of a dilemma for another. I have tried to argue against the idea that Prior’s question ‘Why should anyone thank goodness for that?’ is misguided because it assumes temporal relief to possess a type of intelligibility that it does not in fact possess. Yet it might be argued that my own attempt to find some intelligibility in the relief at issue in Prior’s example, of a kind missing in the accounts I discussed in the two preceding sections, effectively involves giving up on the idea that we are dealing with a distinct, *sui generis*, type of relief and construes it instead as a species of counterfactual relief. On my construal, it might be said, what I am relieved about when my root canal is over is the fact that, but for the root canal, a greater goal, such as long-term dental health, could not be achieved. This would indeed make the relief intelligible, but only at the price of no longer explaining why I can only feel it after

²⁹ Note that in one of the other versions of the ‘Thank goodness’ argument that can be found in Prior, the relevant event is an exam that is now over. For an overview of some of the empirical literature on planning, and developmental differences between more primitive and more sophisticated planning abilities, see McCormack & Atance, 2011.

the root canal, as the fact I am relieved at is arguably one that I can register at any time.

Whilst I think this objection is ultimately misguided, I also think it picks up on something true. Temporal relief, I want to suggest, is only intelligible against the background of counterfactual relief of the type just mentioned – this connection with counterfactual relief, in fact, gives it its *rational* intelligibility. But temporal relief does not collapse into this type of counterfactual relief, because of what we might call its distinctive motivational profile. I will explain this idea in more detail in the next section.

6. Relief, rational intelligibility and motivation

There has been a tendency in some of the literature on Prior's 'Thank goodness' argument to compare Prior's example to some of the examples used in the literature on indexical belief, such as Perry's (1979) example of the contrast between believing that the department meeting starts at noon and believing that it starts now. While there are clearly important connections to be drawn here, there is also a danger inherent in this approach, which I think becomes evident from my discussion in sections 3 and 4 above. Basically, the key question that a comparison of Prior's example with other examples such as Perry's will not answer is why it is relief that it is appropriate after my root canal has ended, rather than some other belief-involving attitude. Or so I will argue in this section.

In fact, the example of indexical belief, as discussed by Perry, is a rather special case, which we might bring out by considering three distinct senses in which it is appropriate for me to believe 'The meeting starts now' if the departmental meeting starts at noon and it is now noon. First of all, we can say that my believing 'The

meeting starts now' under these circumstances is appropriate because belief is governed by the norm of truth, and the fact that the meeting starts now makes my belief true. Secondly, we can also say that my believing 'The meeting starts now' under these circumstances is appropriate because of what we could call belief's own normative role. That is to say, because the meeting starts now, I ought to believe that it does (at least in the basic sense that a sufficient reason for me to have that belief is that I have reasons for taking it to be true). Thirdly, we can say that my believing 'The meeting starts now' under these circumstances is appropriate because of what we could call belief's explanatory role. That is to say, because the meeting starts now, my believing that it does will issue in actions that are appropriate, given the rest of my desires and goals.

We might say that Perry's example is one in which one and the same factor comes in three times over in explaining aspects of the appropriateness of the mental state I am in. Qua attitude governed by the norm of truth, my belief is appropriate given that the meeting starts now. Qua attitude with the normative role of belief, my belief is appropriate because it is the right attitude to hold, given that the meeting starts now. And qua attitude with the explanatory role of belief my belief is appropriate, because it will issue in the appropriate actions, given that the meeting starts now. In each case, of course, there is scope for debate as to which metaphysical construal of what it is for the meeting to start now – A-theoretical or B-theoretical – will get it right about the relevant sense of appropriateness. However, my point at the moment is that one possible diagnosis as to why Mellor, MacBeath and Prior all ultimately run into the problem I have sketched in sections 3 and 4 is that the debate between them in fact doesn't get beyond considering a feature that relief has in common with belief, namely that it is also governed by the norm of truth. As such,

they leave out the very thing that makes relief distinctive, namely its distinctive normative and explanatory role.

Relief, like belief, is governed by the norm of truth. If I think ‘Thank goodness my root canal is over’ and in fact the root canal hasn’t finished yet, no relief is appropriate. Yet, the truth of the fact that the root canal is over is not sufficient to explain what makes it appropriate for me to be relieved. In the case of relief, unlike the case of belief, the answer to the question as to what makes my attitude appropriate qua attitude governed by the norm of truth does not also settle the question as to what makes it appropriate qua the particular attitude it is. Part of this is in fact already entailed by what I said in the preceding section, where I argued that, in order for it to be intelligible why I feel relief at the cessation of my root canal – rather than, say, continuing to look back on it with bitterness and self-pity – some further, counterfactual considerations have to come into play: for instance the thought that, but for the root canal, my long-term dental health would be in peril. Thus, in the case of relief, part of what, above, I called its normative role is tied to the availability of counterfactual thoughts of this type. It is them that explain why I ought to feel relieved when a certain episode is over, even though it was painful or otherwise distressing.

There is, however, also another form of intelligibility we seek in emotions, which has to do with their explanatory role, and more specifically with their role in motivation. And I think it is this aspect of temporal relief we need to look at in order to explain why it does not simply collapse into a form of counterfactual relief (which was the worry I raised in section 5).

Again, it might help here to start by pointing out a danger inherent in assimilating the relief at issue in Prior’s example too much to the example of

indexical belief. For doing so might lead us to suppose that the explanatory role of the relief I feel after my root canal must somehow be similar to the explanatory role that, say, the belief “The departmental meeting starts now” has in Perry’s example – which is to explain actions carried out at the time I hold this belief. If we do so, we will probably end up being at a loss to find what that explanatory role might come to in the case of relief, as there does not seem to be anything specific relief motivates me to do when I feel it. Psychologists make this point by saying that relief whilst being a positive emotion, is actually a ‘deactivating emotion’ (see Pekrun et al., 2007).

If temporal relief of the type at issue in Prior’s example has an explanatory or motivational role, then, it is not because it motivates us to do certain things while it is felt. Rather, to explain how such relief motivates, we have to look at our ability to already anticipate it before we actually feel it. This also ties in with what I said in the previous section, when I said that temporal relief needs to be seen as an emotion linked to the ability to engage in fairly sophisticated forms of planning, which include intentionally putting oneself through painful or otherwise unpleasant experiences in pursuit of a greater goal. Obviously, given my interest in long-term dental health, putting myself through the root canal is the rational thing for me to do anyway. However, a purely rational motivation of this type may not be enough for me to actually go through with the root canal – especially, it may not be sufficient to get me to act *now*. In such a case, having the emotion of temporal relief in my psychological repertoire as something I can already anticipate, and the anticipation of which provides me with a distinctive, further, motivation to act, will put me at an advantage.

In general, then, the suggestion is that, for individuals capable of forms of planning that involve putting themselves through painful or otherwise unpleasant experiences in pursuit of a greater goal, being able to anticipate a positive emotion

triggered by them putting the relevant experiences behind themselves, will make it more likely that they will actually carry out their plans. We can therefore see why an emotion of such a type – i.e., temporal relief – might have evolved. In this way, we get an account of temporal relief that distinguishes between the way it motivates and the way purely rational considerations motivate, but that does not thereby sever all links between temporal relief and rationality, and that can also show the selective advantage that temporal relief confers on those who feel it. Thus, adopting an evolutionary approach towards temporal relief is compatible with granting it a kind of intelligibility.³⁰

In order for temporal relief to have the motivational role and structure I just sketched, however, it must involve a particular way of thinking over time. My anticipation of the relief I will feel can have a distinctive motivational role to play, different from the way purely rational considerations motivate, only because it goes beyond merely expecting that I will feel relieved. Rather, there is a stronger sense in which I can already anticipate the future relief itself. As we could also say, what motivates me to put myself through the root canal is that I can already anticipate looking back at it, although it is of course also crucial to my anticipation having the

³⁰ Note that Suhler and Callender (2012), alongside discussing the temporally asymmetric emotions of fear and relief, also discuss the phenomenon of temporal discounting. As they put it (*ibid.*, p. 1), “our preferences display at least two markedly temporally asymmetric features. As a first approximation, and all else being equal, (1) we prefer distant future pain (proximal future pleasure) to proximal future pain (distant future pleasure), and (2) we prefer past pain (future pleasure) to future pain (past pleasure). Call the first the discounting asymmetry and the second the temporal value asymmetry.”

Crudely put, my proposal here is that the motivational function of temporal relief is to counter-act the effects of temporal discounting in cases where we can assign value to putting ourselves through proximal pain, because doing so will lead to a greater benefit overall.

motivating force it does that my anticipating looking back at the root canal does not itself prompt a positive emotion in the way what I am thus anticipating does. I will finish with a suggestion as to how we might make sense of the particular types of thoughts, and the type of thinking over time, that this requires.

7. An alternative analysis of tense

It may appear that the discussion in the preceding two sections has taken us rather a long way away from the types of concerns about the semantics of tense and the metaphysics of time introduced at the beginning of this paper. In this final section, I will therefore try to spell out a way in which the account of temporal relief I have just offered might perhaps be seen to be of some relevance to those concerns. In particular, I will suggest that we can give a plausible account of the kind of temporal thought involved in temporal relief in terms of a particular type of extensional approach to tense, as developed by Hans Reichenbach (1947).

Reichenbach's central idea is to distinguish between three different temporal positions relevant for the analysis of tensed statements: the point of speech (or speech time), the point of reference (or reference time), and the point of the event (or event time).³¹ They are related to each other in the following way:

The tenses determine time with reference to the time point of the act of speech, i.e. of the token uttered. [...] Let us call the time point of the token the point of speech. Then the three indications, 'before the point of speech', 'simultaneous with the point of speech', and 'after the point of speech',

³¹ The brackets give the terminology used in current Neo-Reichenbachian theories. Talk of 'events' here must be understood as standing for talk of events or situations.

furnish only three tenses; since the number of verb tenses is obviously greater, we need a more complex interpretation. From a sentence like ‘Peter had gone’ we see that the time order expressed in the tense does not concern one event, but two events, whose positions are determined with respect to the point of speech. We shall call these time points the point of the event and the point of reference. In the example the point of the event is the time when Peter went; the point of reference is a time between this point and the point of speech (Reichenbach 1947, pp. 287f.).

For Reichenbach the point of reference constitutes a necessary ingredient in all tenses, i.e., not just those tenses in which each of the three points has to be assigned a different time, but also those in which two of them (as, for instance, in the case of the past or the future tense) or all three (as in the case of the present tense) coincide. The basis for his argument to this effect is the distinction between the simple past and the present perfect. In both of these, the point of the event lies before the point of speech, and thus they cannot be distinguished on the basis of the relation between the point of the event and the point of speech alone. Rather, what distinguishes the simple past from the present perfect, according to Reichenbach, is the location of the point of reference, which in the former case coincides with the point of the event, and in the latter with the point of speech.³² Thus, we cannot arrive at a distinction between past tense and present perfect purely by considering the relation between the point of

³² This argument is not unproblematic. However, there are other ways of arguing for the existence of a reference time in simple tenses based, for instance, on embedding phenomena. See esp. Hornstein 1990, ch. 3.

speech and the point of the event; an appeal to the point of reference is necessary to make such a distinction available.

In short, we might say that Reichenbach takes tense to be a perspectival phenomenon. The temporal location of the situation a tensed sentence purports to be about, the point of the event, is given in terms of its relation to a vantage point, the point of reference, the temporal location of which is itself given in terms of its relation to another point, the point of speech. There is no direct link between the point of the event and the point of speech, they are related only via the point of reference. The three elements of the Reichenbachian analysis are thus connected via two principles: (I) the point of reference anchors the point of the event, and (II) the point of speech anchors the point of reference. The first of these principles can be expressed by saying that tense necessarily involves a point of reference mediating the determination of the point of the event. The second might be expressed by saying that tensed sentences are token-reflexive: the interpretation of the point of reference and the point of the event has to proceed via an identification of the point of speech.

I want to suggest that it is this perspectival structure of tense, as envisaged by Reichenbach, that can explain how temporal thought can have the properties it must have in order for temporal relief to be possible. In the preceding section, I argued that for temporal relief to be able to play its distinctive motivational role, what I am relieved about after my root canal, say, must already be available for me to think about before or during the root canal itself, but in such a way that it does not already prompt relief. In effect, the problem Prior pressed on the B-theorist was that the B-theorist seemed to be forced to say that what I am relieved about is either something timeless, in which case thinking about it should prompt relief at any time (see section 2, above), or that my relief is somehow dependent on my making the utterance ‘Thank

goodness that's over', which gets the direction of explanation between my relief and that utterance as an expression of relief wrong (see section 3, above). With the Reichenbachian framework, and with the idea of a point of reference, however, a third alternative becomes available. According to this alternative, we can distinguish between thinking of having a certain perspective on the world, and actually *occupying* that perspective. This is what makes it possible for us to anticipate the relief we will feel after the root canal has ended (thus explaining the motivational role of temporal relief), but only to feel such relief once it has actually taken place. I will now try to explain this idea by offering a Reichenbachian analysis of 'Thank goodness that's over'. Take the following sentence:

(3) My root canal is over

This sentence is a sentence ostensibly in the present tense, which on Reichenbach's analysis means that the point of speech, the point of reference and the point of the event are the same. Yet, as we have already seen, the predicate 'over' introduces some complications when it comes to analysing what we might call the 'real tense' of sentences in which it occurs. We might put the point here by saying that (3) depends for its truth on a prior event, as the predicate 'over' describes the situation which obtains *after* the event denoted by the noun phrase. This makes it difficult to give a straightforward analysis of the sentence as it stands in Reichenbachian terminology, since the predicate 'over' lexically introduces a point in time relevant for the analysis that is not already conveyed by the tense structure itself.

We might therefore try to simplify matters by considering instead a sentence which, according to this reading of 'is over', is entailed by Prior's sentence:

(4) I have had my root canal

This reformulation has the advantage that the Reichenbachian analysis will bring out all the aspects relevant for the interpretation of (3) directly as aspects of the tense involved. The point of reference coincides with the point of speech, and the point of the event is the time of the event referred to by the phrase ‘my root canal’. However, this reformulation also brings with it an important *disadvantage*, in so far as it introduces an ambiguity into the corresponding compound sentence

(5) I am relieved that I have had my root canal

Under one interpretation, (5) can simply be seen as an expression of counterfactual relief. Under that interpretation, the relief it expresses springs only from my general concern about my dental well-being and has nothing to do with the temporal relation between my uttering it and the root canal. This sense of relief I might already feel prior to the root canal, in so far as I am pleased about the fact that the impending root canal will save my tooth. Note, though, that if my sole concern is with my general state of health in this sense, my relief does not have to express itself in a sentence in the perfect tense. ‘I am relieved that I had my root canal’ is equally viable as an expression of relief in this sense. Thus, under this first interpretation of (5), the particular tensed form the sentence takes, and in particular the question as to where the point of reference is located, does not contribute to the explanation of its expressive function.

Under another interpretation, however, (5) can be seen as an expression specifically of temporal relief. Crucially, however, this interpretation also makes specific demands on the Reichenbachian structure of the tense involved. The location of both the point of speech and the point of reference are of the essence when it comes to explaining why the sentence can count as an expression of relief in this sense.

As I said previously, in order for temporal relief to play its motivational role, there must be a sense in which what I am relieved at, say, after my root canal has ended must already be available for me to think about in anticipation before the root canal, but without thereby prompting relief (see also Higginbotham 1995, p. 229). Such anticipation, I now want to suggest, involves employing the future perfect. Thus, on my way to the dentist, I might anticipate the relief I will feel once the root canal is over by thinking of some time in the future:

(6) I will have had my root canal.

Note that what I am anticipating here is not just that there will be a time after the root canal. I am anticipating, more specifically, the perspective I will have on the root canal at that time. I anticipate looking back on the root canal, and I do this by using a tense in which the point of reference lies after the point of the event.

If the location of the point of reference is crucial to the way I think about the root canal in anticipation of my relief, however, it is arguably also crucial to the way I think about it when I am relieved that I have had it. That the point of reference lies after the point of the event is the key feature that (6) shares with (4), and it is this which explains the sense in which thinking (6) can provide for a way of anticipating a specific type of relief the thought expressed by (4) can prompt that I can only feel

once the root canal is over – i.e. temporal relief. Conversely, what can explain how the thought expressed by (4), but not that expressed by (6) can actually prompt such temporal relief is the location of the point of speech. The location of the point of speech is of course what distinguishes (6) and (4). As we might say, whereas (6) anticipates the perspective I will have when I look back at the root canal, because the point of speech precedes the point of reference, (4) involves me actually occupying that perspective, because point of speech and point of reference coincide.³³ That is why only (4) captures what I feel temporal relief at in such a way that it can itself figure in an expression of my relief.

Thus we see that it would be impossible to explain how an utterance of (5), in which (4) is embedded, can express the type of relief Prior talks about, if it wasn't for the fact that the embedded sentence involves a point of reference which coincides with the point of speech, and which lies after the point of the event. All elements of the Reichenbachian analysis of it as a sentence in the present perfect are crucial to explaining its expressive function specifically as an expression of temporal relief.

This analysis of the type of tensed thoughts involved in temporal relief clearly makes liberal use of the idea of points in time, in a way that is opposed to Prior's modal approach to tense. There are two aspects of it, in particular, which mean that it cannot simply be reconstructed with the materials of a modal approach in a way that would make the idea of such points in time non-fundamental, allowing instead for a

³³ In English, the most adequate tense for conveying this perspective is the present perfect. However, things are not as clear-cut as one would wish, since the English present perfect allows for the state reported to continue in the present which our case would have to rule out. Comrie (1985, p. 54) reports that Luganda, one of the Bantu languages, has a 'no longer' tense in which this aspect is incorporated in the grammatical form.

presentist view. First, as I said, Reichenbach's analysis treats tense as a perspectival phenomenon in the sense that each tense introduces a vantage point in the form of the point of reference. But this vantage point need not coincide with the present. We therefore need a framework within such vantage points can be located and this framework, it seems, cannot itself consist in mere constructions out of propositions about what is presently the case. Rather it has to be provided by the linear series of positions in time as the B-theorist conceives of them. Secondly, note that the account I have given of temporal relief, and of its motivational role, ultimately gives explanatory priority to how things are over a period of time over how they are at a time. What I have suggested is that we can only explain how temporal relief motivates, and therefore what advantage it confers on those who have it, by bringing in the subject's ability to anticipate it. Thus, Prior's question 'Why would anyone thank goodness for that?' cannot be answered simply by looking at what is the case at the time when the relief is in fact felt, but it nevertheless has an answer. This again, I believe, puts the account I have offered at odds with Prior's presentism.³⁴

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References

- Blackburn, P. (1994). Tense, temporal reference and tense logic. *Journal of Semantics* 11, pp. 83-101.
- Blackburn, P. (2006). Arthur Prior and hybrid logic. *Synthese* 150, 329-372.
- Broad, C. D. (1933/38). *An examination of McTaggart's philosophy*. 2 Vols. Cambridge: Cambridge University Press.
- Chen, C. K. (2011). Subjectivity and the metaphysics of time. In: J. Bridges, N. Kolodny & W. Wong (eds.). *The possibility of philosophical understanding: the philosophy of Barry Stroud*. Oxford: Oxford University Press.
- Cockburn, D. (1998). Tense and emotion. In: R. LePoidevin (ed.). *Questions of time and tense*. Oxford: Oxford University Press, pp. 77–92.
- Comrie, B. (1985). *Tense*. Cambridge: Cambridge University Press.
- Evans, G. (1985). Does tense logic rest upon a mistake? In: *Collected papers*. Ed. by Antonia Phillips. Oxford: Oxford University Press, pp. 343-63.
- Fine, K. (1977). Postscript: Prior on the construction of possible worlds and instants. In: A. N. Prior & K. Fine: *Worlds, times and selves*. London: Duckworth.
- Fine, K. (2005). Tense and reality. In: *Modality and tense: Philosophical papers*. Oxford: Oxford University Press, pp. 261-320.
- Gallois, A. (1994). Asymmetry in attitudes and the nature of time. *Philosophical Studies* 76, pp. 51-69.
- Higginbotham, J. (1995). Tensed thoughts. *Mind and Language* 10, 226-249.
- Hornstein, N. (1990). *As time goes by: Tense and universal grammar*. Cambridge, Mass.: MIT Press.
- Horwich, P. (1987). *Asymmetries in time*. Cambridge, MA: MIT Press.

- Jakobsen, D. (2011). A. N. Prior's notion of the present. In: A. Vatakis et al.(eds.). *Multidisciplinary Aspects of Time and Time Perception. Lecture Notes in Computer Science 6789*, pp. 36-45.
- Kamp, H. (1971). Formal properties of 'now'. *Theoria* 37, 227-273.
- Ludlow, P. (1999). *Semantics, tense, and time*. Oxford: Oxford University Press.
- MacBeath, M. (1994). Mellor's emeritus headache. In: L. N. Oaklander & Q. Smith (eds.). *The new theory of time*. Yale University Press.
- McCormack, T. & Atance, C. (2011). Planning in young children: A review and synthesis. *Developmental Review* 31, pp. 1-31.
- Maclaurin, J. & Dyke, H. (2002). 'Thank goodness that's over': The evolutionary story. *Ratio* 15, pp. 276-292.
- Mellor, D.H. (1981). *Real time*. Cambridge: Cambridge University Press.
- Mellor, D.H. (1998). *Real time II*. London: Routledge.
- Moore, A. W. (1997). *Points of view*. Oxford: Clarendon Press.
- Oaklander, L. N. (2003). Two versions of the new B-theory of language. In A. Jokić & Q. Smith (eds.) *Time, tense, and reference*. Cambridge, MA: MIT Press.
- Partee, B. H. (1984). Nominal and temporal anaphora. *Linguistics and Philosophy* 7, pp. 243-286.
- Pekrun, R., Frenzel, A. C., Goetz, T., & Perry, R. P. (2007). The control-value theory of achievement emotions: An integrative approach to emotions in education. In P. A. Schutz, & R. Pekrun (Eds.) *Emotion in education*. Amsterdam: Academic Press, pp. 13-36.
- Perry, J. (1979). The problem of the essential indexical. *Nous* 13, pp. 3-21.
- Prior, A. N. (1959). Thank goodness that's over. *Philosophy* 34, 12-17.
- Prior, A. N. (1967). *Past, present and future*. Oxford: Clarendon Press.

- Prior, A. N. (1972). The notion of the present. In: J. T. Fraser, F. C. Haber & G. H. Müller (eds.): *The study of time: Proceedings of the first conference of the international society for the study of time*. Berlin: Springer.
- Prior, A. N. (1996a). A statement of temporal realism. In: B.J. Copeland (ed.): *Logic and reality: Essays on the legacy of Arthur Prior*. Oxford: Clarendon Press.
- Prior, A. N. (1996b). Some free thinking about time. In: B.J. Copeland (ed.): *Logic and reality: Essays on the legacy of Arthur Prior*. Oxford: Clarendon Press.
- Prior, A. N. (2003). *Papers on time and tense. New edition*. Ed. by P. Hasle, P. Øhrstrøm, T. Braüner, & J. Copeland. Oxford: Oxford University Press.
- Récanati, F. (2007). *Perspectival thought: A plea for (moderate) relativism*. Oxford: Oxford University Press.
- Reichenbach, H. (1947). *Elements of symbolic logic*. New York: Macmillan.
- Russell, B. (1940). *An inquiry into meaning and truth*. London: George Allen and Unwin.
- Smart, J. J. C. (1980). Time and becoming. In: P. Van Inwagen (ed.). *Time and cause*. Boston: Reidel.
- Stroud, B. (2000). *The quest for reality: Subjectivism and the metaphysics of colour*. Oxford: Oxford University Press.
- Suhler, C. & Callender, C. (2012). Thank goodness that argument is over: Explaining the temporal value asymmetry. *Philosophers' Imprint* 12, no. 15.
- Sweeney, K. & Vohs, K. D. (2012). On near misses and completed tasks: The nature of relief. *Psychological Science* 23, pp. 464–468.
- Woods, M. (1976). Existence and tense. In: G. Evans & J. McDowell (eds.). *Truth and meaning: Essays in semantics*. Oxford: Oxford University Press.

Zimmerman, D. W. (2008). The privileged present: Defending an 'A-theory' of time.

In: T. Sider, J. Hawthorne & D. W. Zimmerman (eds.). *Contemporary Debates*

in Metaphysics. Oxford: Blackwell.