

Time and Tillich

Re-Examining Salvation Through the Lens of Relativity



Emily Qureshi-Hurst

Pembroke College, University of Oxford

Doctor of Philosophy

O sweet spontaneous
earth how often have
the
doting

fingers of
prurient philosophers pinched
and
poked

thee
,has the naughty thumb
of science prodded
thy

beauty how
often have religions taken
thee upon their scraggy knees
squeezing and

buffeting thee that thou mightest conceive
gods
(but
true

to the incomparable
couch of death thy
rhythmic
lover

thou answerest

them only with

spring)

- e.e. cummings

ACKNOWLEDGEMENTS

I am incredibly grateful for the support of my supervisor Professor Alister McGrath. Without his expert supervision, continuous support, and valuable advice, this thesis would not exist.

I owe great thanks to my colleagues and friends George Klaeren and Christopher Bennett for their time and patience in proof reading, their insightful comments, and for their support throughout the D.Phil – you kept me sane. Thank you also to James Read for feedback on the philosophy of physics material, a fruitful collaboration, and support with the additional roles and responsibilities that orbit doctoral study. I am very grateful to Shaun Henson and Andrew Pinsent for their feedback on earlier material during my transfer and confirmation of status, and to my examiners Brendan Harris and Mark Harris for their insightful comments during and after my viva. I also thank Bethany Sollereder, whose support both professionally and through her friendship has been greatly appreciated. I am thankful also to Anna Pearson for introducing me to the weird and wonderful world of time in Quantum Mechanics which influenced my thoughts on the arguments I present here (although sadly did not make it into the thesis itself). Thanks are also owed to Robert Russell and Wesley Wildman whose valued advice has helped to shape the formation of some important arguments. Special thanks go to my dear grandparents Elizabeth and Jeremy Hurst who inspired me to pursue an intellectual life and have encouraged me unreservedly as I took steps towards that goal. Unbounded gratitude is also owed to my wonderful friends, my lovely mum, and the rest of my family.

My dear fiancé Jack, your patience, love, and support during these years has helped me more than you can ever know. Without you, this would not have been possible.

CONTENTS

ABSTRACT	5
INTRODUCTION	10
PART 1: METAPHYSICS AND PHYSICS	20
1. Metaphysical Arguments for a B-Theory of Time	21
2. The Special Theory of Relativity	36
3. Special Relativity and the A versus B Debate	45
4. Can General Relativity Save the A-theory?	59
PART 2: PAUL TILLICH	73
5. An Introduction to Paul Tillich and <i>Systematic Theology</i>	74
6. Paul Tillich's Existential Soteriology	91
7. Time and History in <i>Systematic Theology</i>	103
PART 3: AN ARGUMENT FOR MIND-DEPENDENT SALVATION	116
8. Mind-Dependent Becoming: Explaining Temporal Experience on a B-theory of Time	117
9. Mind-Dependent Salvific Becoming: A New Reading	131
CONCLUSION	152
BIBLIOGRAPHY	160

Short Abstract

Time is often neglected in conversations between science and religion. As this thesis engages time and theology within the theological framework provided by Paul Tillich's *Systematic Theology*, it is a step towards addressing this oversight. In this work I use Tillich's method of correlation as my overarching structure, a theological methodology which is explicitly designed to encourage the continuous evolution of theology in dialogue with pressing questions from the culture in which that theology is to be received. My approach is fundamentally one of constructive engagement, meaning I am not concerned with proving or disproving any theological, philosophical, or scientific claims; rather, this thesis engages time and theology with the aim of fostering a constructive dialogue. The method of correlation involves locating specific cultural concerns, the so-called philosophical question, and providing a theological response, termed the theological answer. To this end, this thesis begins with the physics and metaphysics of time, especially Einstein's Relativity Theories, and argues that these give good reason to accept a B-theory of time in which time does not pass and reality is comprised of a block universe. The philosophical question that arises is this: how can change be understood within this static temporal metaphysic? This question is highly important for any doctrine of salvation that requires a transformation in time. I then explore *Systematic Theology*, with a particular focus on Tillich's treatment of salvation, time, and history, as these are the foundations of my theological answer. Finally, the thesis argues that given a B-theory of time, a salvation-transformation is best understood as a form of qualitative, phenomenological change, rather than a robust ontological change. I use concepts from the philosophy of temporal experience to make this argument, ultimately concluding that the individual's transformation from fallen to saved is one of mind-dependent becoming.

Long Abstract

Time is phenomenologically inescapable, encircling all other experiences. It fundamentally shapes our lives and is indissolubly connected with even the most basic questions about the relationship between God and creation. That it is under-represented in science and religion discourse is regrettable, and in this work, I address this oversight. Something so ubiquitous as time deserves attention, even if it is notoriously nebulous and difficult to pin down. The issue on which I focus is the relationship between time and salvation, as these are deeply interconnected. I identify the specific problems posed for salvation by Einstein's Relativity Theories, and the B-theory of time which they seem to support, and reconstruct Paul Tillich's doctrine of salvation in light of this.

This work is motivated in part out by a desire to identify and address general problems for any form of salvation that requires a transformation in time. Though Tillich is my theological dialogue partner, the problems identified are relevant to salvation in a much broader sense. This project is also motivated by Tillich's own words. Tillich encourages his readers to use the theological system presented in *ST* as a point of departure; a starting point from which one can advance along the unending road toward deeper understanding. This project sought to do just that.

The overarching structure of this work reflects Tillich's method of correlation – philosophical questions are identified and are then correlated with answers of theological affirmation. I begin the thesis by setting the metaphysical scene, presenting McTaggart's famous argument for the unreality of time and the influential 'A-series' and 'B-series' introduced therein. I argue that the A-series contains deep structural problems that render it unconvincing. I reject William Lane Craig's claim that belief in the passage of time is properly basic, framing McTaggart's argument as a logical defeater of that belief.

I then turn to the best empirical evidence for the B-series, and the B-theory of time which has been built upon it, namely Einstein's Special Theory of Relativity (SR). I trace the history of the physics of time from Newton to Einstein, drawing attention to the particular features of SR that undermine core claims of the A-theory. The relativity of simultaneity and time dilation, I argue, dissolve the notion of a global now that is so integral to the A-theory's success. Two rival interpretations of SR are considered, namely the B-theoretic spacetime interpretation of Einstein and Minkowski and the A-theoretic neo-Lorentzian interpretation of William Lane Craig. Craig's neo-Lorentzianism is found wanting on both scientific and theological grounds. This empirical evidence is, I argue, a rebutting defeater against belief in the A-theory.

Before concluding Part I's argument for the empirical preferability of the B-theory, I turn to General Relativity (GR). Though GR tends to play less of a leading role in temporal metaphysics, GR is the more fundamental theory. Therefore, if GR is compatible with the A-theory then the B-theorist faces a problem. Richard Swinburne, among others in the literature, argue that Friedman-Lemaître-Robertson-Walker solutions of GR save the A-theory by introducing extra structure that is sufficient to ground an objective present moment. This structure, cosmic time, is held as a standard of absolute of time against which local times can be measured. Swinburne claims that this reintroduces the possibility of absolute simultaneity and a global now, thus vindicating the A-theory. I argue that Swinburne's argument, and the caesium clock thought-experiment intended to demonstrate its operational coherence, induces a dilemma neither horn of which is acceptable. The first horn commits one to the claim that cosmic time is sharply distinct from local time and is thus phenomenologically inaccessible. The second horn holds that cosmic time is phenomenologically accessible, but as such operates over the same domain as local time.

If one grasps the first horn and argues that cosmic time is a *parameter* which measures the universe as a whole, rather than being a *dimension* within the spacetime manifold, then it is rendered phenomenologically inaccessible. Yet for precisely this reason it is unable to ground temporal experience. The primary reason for seeking support for the A-theory in relativity is the A-theoretic nature of our temporal experience, therefore a phenomenologically inaccessible cosmic time does not fulfil the function it was introduced to explain. Hence it is explanatorily redundant. If Swinburne grasps the second horn to avoid the problem of inaccessibility, however, he is hoist by his own petard.

On the second horn, cosmic time is relegated to a second local time, an unparsimonious multiplication of the temporal dimension we already see described in SR. Any violation of the Principle of Simplicity by Swinburne is incompatible with his commitment to it throughout his life's work, and thus we can assume it would be unacceptable to him. Moreover, it has been empirically demonstrated that local time has frame-relative properties, and as such is in tension with the A-theory. As such, I conclude Part I with the claim that GR gives no further reason to be an A-theorist than metaphysics or SR provide, and, as both these areas have given good reasons to reject the A-theory I conclude that the A-theory is unsatisfactory. From the end of Part I onwards, I accept the B-theory and the block universe it describes as the best metaphysical model of time on offer, though I acknowledge that the B-theory has not been proved (nor need it be).

In Part II I turn to Paul Tillich's *Systematic Theology*. I choose Tillich as the subject of this thesis because a) consideration of his doctrine of salvation as an ontological transformation alongside the nature of time generates a rich wealth of philosophical discussion which is yet to receive scholarly attention, b) his psychological formulation of fallenness and salvation opens up scope for mind-dependent salvation toward which this thesis is directed, c) his method of correlation not only permits but encourages such a reinterpretation of his work. I give an account of his method of correlation at the outset, as this methodology is fundamental to both Tillich's work and this thesis. I then explore the core themes of *ST*, going through the work volume by volume. This is necessary as Tillich emphasises that each aspect of a theological system is related fundamentally to the whole. This point is frequently

reiterated through the term ‘theological circle’ – commitment to the Christian message as a matter of faith enters one into a (non-vicious) circle in which the beliefs are mutually self-consistent. Therefore, examining one feature of the system illuminates all the others. Similarly, to properly understand one aspect, in this case the doctrine of salvation, one must understand the larger whole of which it is part.

Following a general overview of *ST*, I am able to delve deeper into Tillich’s doctrine of salvation presented in *Existence and the Christ*. I argue that though Tillich defines salvation as the transformation from Old Being to New Being, and thus his soteriology seems committed to an ontological transformation, the psychological dimensions of this process are the more significant. His existentialist framing of fallenness leads to an existential understanding of salvation – existence, and the failure to actualise potential, fear of meaninglessness, and the threat of non-being, causes deep anxiety. This is Old Being. Christ represents the soteriological potential latent in humanity by uniting that which finite existence draws asunder. He is God and human, he is the fullest realisation of human potential, he took on the conditions of existence and overcame them. In so doing, he represented and embodied New Being.

Tillich repeatedly emphasises the psychological healing power of Christ the redeemer whose soteriological significance sits in the context of putatively universal human experiences of estrangement and anxiety. Christ brings atonement by embodying the unity of essential humanity with actual human existence. I argue that the significance of this for personal salvation is in the psychological consequences of New Being, namely an alleviation of anxiety, alienation, guilt, fear of meaninglessness, and the threat of non-being. A saved individual is reconciled to God, and this is detectable through, and experienced as, the aforementioned psychological dimensions of New Being. At this point the individual enters into a new relation with God, and the existentialist concerns that dominated their previous mode of existence melt away.

The final chapter in Part II explores Tillich’s treatment of time and history in *ST*. The former receives far less attention than the latter, and as such some speculative reconstruction of how Tillich’s claims might fit within the temporal metaphysics of Part I is necessary at this point. I argue that Tillich’s understanding of the historical process, particularly the subjective interpretation of historical events and the qualitatively new meaning this generates, is especially interesting. This generation of the qualitatively new re-emerges in Part III’s argument for mind-dependent salvation.

I argue that Tillich’s theology is compatible with a B-theory, though Tillich does not commit himself to any specific temporal metaphysic. Indeed, his presentation of time in *ST* is metaphysically muddled. At the very least, his theological system is compatible with a B-theory. Though Tillich does not specifically endorse a B-theory this is no great blow, as the method of correlation encourages readers to correlate new insights from philosophy (including insights from science) with theological doctrine. All that is necessary is to show that my reinterpretation does not directly contradict any core theological claim made in *ST*. Here, and throughout the thesis, I make every effort to bring theology and science together constructively rather than destructively.

Constructive communication between science and theology on the matters of time and salvation is the primary goal of Part III. Part III contains my original contribution to this neglected debate – the argument for mind-dependent salvific becoming which I understand as a process of qualitative change. Before presenting this argument, it is necessary to present B-theoretic explanations of temporal passage. An obvious explanatory gap in the B-theory is its *prima facie* inability to account for our temporal experience. We experience time as though it is described by an A-theory – there seems to be a privileged now, time seems to pass, and there is a clear psychological distinction between the past (which we remember) and the future (which we anticipate).

In Chapter 8 I present and assess two rival explanations of passage phenomenology, Veridicalism, defended by Natalja Deng, and Illusionism, defended by Adolf Grünbaum. I argue that Illusionism is the better explanation as it takes our experience of passage seriously, whereas Veridicalism either fails to do this or collapses back into the Illusionism it seeks to replace. Grünbaum's Illusionism contains the concept *mind-dependent becoming*, which forms the foundation of my final argument. Chapter 8, and the B-theoretic explanations of temporal passage it contains, provide undercutting defeaters for belief in the A-theory – they undermine one's reasons to believe in it (i.e. our pervasive and persuasive temporal experience). This concludes my case for the coherence and explanatory power of the B-theory. With all the important elements in hand, I proceed to the climactic argument of the thesis.

My final argument is as follows: given a tenseless theory of time, Tillich's doctrine of salvation as the transformation from Old Being to New Being is best interpreted as denoting mind-dependent salvific becoming, which is a qualitative change. This hangs on a reading of Tillich's soteriology which emphasises the psychological, existential dimensions of fallenness and salvation over and above the ontological dimensions. My argument had two stages. The first, employing an argument from Carl Hoefer, showed that free choice can be compatible with a B-theoretic ontology. The second draws on the work of Adolf Grünbaum to argue that the precise mechanism of salvific change is best conceived as mind-dependent becoming. I then argue that in order for Tillich's work to be coherent in light of relativity and the block universe, the type of becoming salvation requires must be a qualitative, not a robust, change.

Through Carl Hoefer's argument for 'freedom from the inside out,' I explain how individuals are *free* to respond to the grasping power of the Spirit and attain salvation. Hoefer argues that free action is generated by individuals and not determined by prior regions of the block universe. The standard block universe view appears hostile to the kind of counterfactual choice required for libertarian freedom. Hoefer, however, uses John Dupré's concept of *downward causation* to explain how free action can be causally efficacious in the block universe. Downward causation holds that higher-level processing, namely our choices and intentions, are the primary explainers for the effects produced on the 'lower' ontological levels, namely our actions. Thus, human agents are free to make soteriologically meaningful choices within the block universe.

After showing that freedom can exist in the block universe, I provide my argument for mind-dependent salvific becoming. Using Grünbaum's concept of mind-dependent becoming, I argue that a salvation-transformation should be understood as a subjective, qualitative, phenomenological change. This claim sits somewhat comfortably in the historical tradition of Christian theology, insofar as salvific change comes from *within* and is of the *mind/soul*, but I offer an alternative route to arriving at this long-held conclusion.

Though this change is qualitative and not robust, that does not mean that salvation is unreal or unconnected to God. The block universe prohibits robust, ontological, change, as persons exist as four-dimensional worms extended in Minkowski spacetime. Therefore, an individual possesses all their properties at once, though these are spread out at different points on their world line. When human consciousness is contemporaneous with certain points in which they are fallen, their psychological existence will be coloured by the existentialist consequences of fallenness Tillich identifies. As their consciousness crawls 'upwards along the life line of [their] body', to borrow a phrase from Hermann Weyl, they experience qualitative changes between the properties 'fallen' and 'saved', with all the psychological corollaries of these.

Importantly, this does not mean that salvation itself is illusory, though the argument uses concepts from Illusionism. The individual is objectively saved, and this occurs through receptivity to the grasping power of the spirit. On this important matter Tillich's claims have been preserved. Yet that this *change* is *objective* or *ontological* is illusory. This is an inevitable consequence of life in the block universe in

which all moments of your life are laid out eternally in four-dimensional Minkowski spacetime. No moment is ontologically privileged. Through experiencing your life-events successively, you experience qualitative change. I apply this to salvation. Though this may be a weaker form of soteriological change than some may like, it is the best possible model given the B-theory of time. The B-theory poses a genuine threat to any doctrine of salvation that requires a change in time, insofar as it is hostile to robust change. If the B-theory is true, then I argue this is the most coherent explanation for a temporal salvation-transformation available. Moreover, it is a compelling reinterpretation of Paul Tillich's doctrine of salvation in light of relativity and a B-theory of time.

INTRODUCTION

Time is perhaps the most inescapable feature of our lives as embodied human agents. It frames our understanding of continuous personal identity; it structures our hopes for the future and memories of the past; it is the measure by which we plan our lives. Human beings encounter the world in an inescapably temporal way. So much so that imagining a life, a psychological existence, that does not occur within the bounds of time is almost impossible. Yet regarding the most fundamental temporal questions there is little agreement among both the scientific and philosophical communities. Though the nature of temporal reality has been an object of philosophical inquiry since the Ancient Greeks, it continues to be hotly debated in both metaphysics and physics. As Huw Price rightly notes, the metaphysics of time ‘is unusual even by philosophical standards for the durability of some of its main concerns.’ (Price 1996, 12).

In the dialogue between science and religion, the concept of time has taken somewhat of a backseat. Yet I argue that to answer the most pressing theological questions, the nature of time must enter the equation. Not only does time fundamentally shape the lives of human beings, but the relation of God to temporal reality is, implicitly or explicitly, embedded in almost every theological question. If the finite universe is fundamentally temporal, then the nature of time is an issue that permeates all questions regarding creation and its relation to a Creator. Though the relationship between the nature of time and Christian theology has a long history, it has been dominated by the question of whether God is temporal or atemporal.¹ Another key issue that has been given due consideration is the relation of God to time and space through the lens of the incarnation.² My concern here is bringing together time and soteriology.³ Time is fundamentally linked to change, and on the tenseless theory of time I argue for here, our intuitive understanding of change must be radically reconsidered. Indeed, tenseless temporal metaphysics raises significant questions for any formulation of salvation that requires a change in time.

In the chapters that follow, I argue that the Special and General Theories of Relativity give us compelling reason to believe that time is tenseless. In dissolving the coherence of absolute simultaneity, and with it an absolute present moment against which observers can measure their experience of time, the ontological reality of tense and passage loses persuasive force.⁴ Without these, the notion of change and any theological doctrine that requires it must be rigorously examined. I have chosen Paul Tillich as a dialogue partner, as his formulation of soteriology requires the sort of change the tenseless understanding of time calls into question. Moreover, Tillich’s particular understanding of ontological change associated with New Being lends itself to reinterpretation which remains consistent with a tenseless theory of time, offering a viable solution to the philosophical problem I raise in this thesis. Where some classical conceptions of salvation are defeated by the orthodox interpretation of SR, at least insofar as they require an objective transformation in time, Tillich’s understanding of salvation has a good chance of weathering the storm.

One possible response to the problem of change in the block universe that more traditional doctrines of atonement may mount involves appealing to the notion of temporal parts. This could run, using the

¹ For arguments in favour of divine temporality, see (Swinburne 1993) (Craig 2001a) (DeWeese 2004) On the side of divine atemporality, see (Leftow 1991) (Leftow 2018)

² For example, (Torrance 1969) (Holland 2012).

³ Relatively little has been written on this, with the exception of Robert Russell, Hud Hudson, Antje Jackelén, and myself: (Russell 2012) (Hudson 2014) (Byrne 2009) (Qureshi-Hurst and Pearson 2020) (Qureshi-Hurst 2020)

⁴ It will not be possible in what follows to do justice to the ongoing debate regarding the nature of time, however I will indicate points at which further reading will supplement the discussion and hope the reader will be sympathetic in my (at times) brief treatment of these complex issues.

example of salvation as deification, as follows: person P is deified if P possesses temporal parts which have the qualities of being immortal, impassible, united to God etc. (and these temporal parts are located in a *later than* relation with P's earlier, non-deified temporal parts). Nevertheless, even if other, more traditional soteriologies are able to overcome this problem in this way, the arguments in this thesis provide a useful way of understanding how subjects *experience* salvation as a *change* in time. Therefore, my reconstruction of the Tillichian system presented here may also be read as a useful supplement to a more traditional soteriology by including a mechanism for how soteriological *change* is experienced in an apparently *changeless* universe.

In the pages to come, I argue that in order for Tillich's work to be coherent in light of relativistic physics, the type of becoming required by salvation must mind-dependent. Using concepts from the philosophy of temporal experience, I argue that given a B-theory, Tillich's doctrine of salvation is best understood as describing a phenomenological, rather than ontological, change. This transformation from fallenness to salvation is a form of 'mind-dependent becoming', a term coined by Adolf Grünbaum to explain our experience of passage on the B-theory. I construct an explanation of a salvation-transformation using Grünbaum's explanation of temporal experience in the block universe. Neither temporal experience nor a salvation-transformation occurs through an objective or robust change, insofar as such change requires an A-theory to ground it, yet the events involved do occur objectively. The reality of an individual's salvation is not challenged on my view, but the robustness of the soteriological *change* is.

C.D. Broad introduced a concept that is key to my argument, namely qualitative change. (Broad 1938, 317). Qualitative change involves a temporally extended subject possessing different properties at different points on their world line – all these points co-exist so the change is neither objective nor ontological, but as an individual consciously experiences it as change it is phenomenologically meaningful. This involves a being possessing temporal parts with different properties, as discussed above, but with the inclusion of an *experience of change* between these parts. I argue that qualitative change can sufficiently account for a soteriological transformation occurring in time. Although salvation in *ST* is presented as a form of *ontological* change (i.e., the transition from Old Being to New Being) I argue that given relativity and a B-theory of time, Tillich's doctrine of salvation is best understood as a form of *phenomenological* and *qualitative* change. In summation, the transition from fallenness to salvation is experienced through mind-dependent becoming.

General Considerations, Aims, Disclaimers

The aim of this thesis is both ambitious and simple: to reinterpret Paul Tillich's doctrine of salvation in light of what metaphysics and physics indicate about the nature of time. In short, I ask how *time* shapes our understanding of *salvation*. The form of salvation under consideration here is personal salvation with an emphasis on realised eschatology – in other words, the type of salvation that happens to an individual person in their spatiotemporal lifetime. An understanding of time's fundamental structure is deeply relevant when considering this form of salvation, as both time and salvation appear to require change. If the prevailing metaphysical or physical theory of time seems to render change at the very least implausible, then soteriology is called to enter into a dialogue with physics and metaphysics. I do not intend to offer an interpretation of Tillich that steps outside the boundaries he set in *Systematic Theology (ST)* or present a formulation of his soteriology that contradicts the core of his wider theological system. Rather, I offer a reinterpretation of Tillich in light of developments in our understanding of time that is both new and true to the spirit of the old.

Tillich is a somewhat unorthodox theologian. For this reason, many elements of more traditional Christian conceptions of salvation and eschatology will be notably absent from this thesis. The present work is a focused treatment of a specific problem in dialogue with a single theologian – I ask what Tillich's doctrine of salvation as a transformation in time might look like if the B-theory is true. For this reason, I am unable to consider other Christian doctrines of salvation or eschatology, despite how prominent these have been (and continue to be) on the theological landscape. Nevertheless, a cursory

glance at Pauline eschatology helps illuminate to what extent aspects of Christian theology are (or are not) vulnerable to the kind of problem I raise here.

Eschatologies that focus on future transformations occurring at the *end of time* are not vulnerable to problems with change *in time*. For example, the Pauline scheme sees the future eschaton as the decisive act of divine salvation, at which point the dead are to be raised together and judged. Crucially in Paul, the resurrection of Jesus is the token (in historical time) that this decisive salvific event will come to pass (in the eschatological future). This futurist tradition has occupied the centre stage in much of Christian thought, appearing, for example, in the Nicene and Apostles' Creeds. If one sees salvation largely in terms of a future transformation of spatiotemporal creation, at which point it becomes an entirely new creation, then the temporal structure of this creation is at best tangentially relevant, since its salvation consists in a total transformation in the eschatological future. On this understanding of eschatology, the block universe is not unduly problematic. Clearly, not all variants of soteriology are problematised by questions about temporal metaphysics.

Another significant discussion has been taking place in science-and-theology on the infamous question of 'freeze or fry' in Big Bang cosmology. According to contemporary cosmology, the universe is destined either to expand and cool into an uninhabitable soup of high-entropy radiation or collapse back in on itself in another infinitely hot, dense, and lethal Big Bang. (Russell 2007, 565-566). Either option means the end of the world and the destruction of its contents, presenting a serious challenge to any Christian eschatology which involves the bodily resurrection of Jesus and the transformation of the universe into the new creation. Robert Russell, John Polkinghorne, and David Wilkinson have all responded with arguments that the resurrection of Jesus should be understood as the starting point for an eschatological model of transformation of this cosmos into a new creation. (Polkinghorne 2002) (Russell 2008) (Russell 2012) (Wilkinson 2010). Insofar as such discourse between physics and eschatology does not require a change in time, it is partly disconnected from my focus here.⁵

Nevertheless, the problem I raise and address is an important one. To the extent that eschatology is realised, and salvation is understood as a process that at the very least begins in an individual's life, the issues I identify must be addressed. This is acknowledged by Russell in a chapter surveying the literature on the relationship between cosmology and eschatology. He writes:

[20th century] Eschatologies such as [Barth's, Tillich's, Pannenberg's, and Moltmann's] view the new creation not as a replacement of the present creation—i.e., not as a second *ex nihilo*—nor as the mere working out of the natural processes of the world. Instead eschatology involves the complete transformation of the world by a radically new act of God beginning at Easter and continuing into the future. For [some contemporary] scholars ... the transformation of the world happens not only synchronically at the end of time but also diachronically throughout the entire course of world history. (Russell 2007, 564-565).

Russell is right in noting the significance of the parts of the soteriological process that occur diachronically within the course of world history, and it is to these issues that this thesis is devoted. Paul himself writes in 2 Corinthians 5:17 that 'Therefore if anyone is in Christ, he is a new creation. The old has passed away; behold the new has come.' As far back as the Pauline literature, the part of the soteriological process in which an individual changes in their lifetime, i.e., *becomes* a new creation, has been understood as important.

How can an individual *become* a new creation in a block universe that does not include temporal becoming? This thesis is intended as a thought experiment examining this question, and in it I consider

⁵ I am very grateful to my examiners for bringing these points to my attention, and for helping me clarify the scope of this work (i.e. to what extent the problem I identify affects various areas of Christian thought).

what temporal metaphysics means for individual salvation. Whilst science-and-salvation discourse has been taking place in the science and religion literature, the issue of personal soteriological transformation is under-studied. My hope for this thesis is that it opens up new avenues of discussion concerning these fascinating matters.⁶

The viability of the B-theory will be argued for at some length, as this provides the metaphysical context in which personal salvation is considered. Following this, I must note at the outset that when I argue for a B-theory of time, I will at times use language that suggests its truth. This is important for legitimizing the project – the problem raised by a B-theory of time is worth considering, as there is a good chance that a B-theory is correct – but the cautious reader need not balk at the boldness of this approach. Though I find the B-theory the most compelling temporal metaphysic for both scientific and philosophical reasons, this thesis can equally be read as a thought experiment which seeks to reinterpret Tillich in a B-theoretic framework. Essentially, if the B-theory is true, then these are some theological implications for Tillich's soteriology. The thesis takes what Robert Russell calls the 'if x, then y' approach.⁷

By following a thought-experiment style approach to this thesis, the A-theory will be set aside relatively early on. This may be frustrating to readers who wish to read a parallel analysis of salvation in the context of the A-theory. On this point I say the following: the A-theory is the intuitive, common-sense, phenomenologically compelling description of temporal reality. We experience time as though it passes; as though the past is gone, the future is yet to exist, and the present is uniquely real. On this experience hangs the most compelling argument in favour of the A-theory. In this sense, most soteriology can be read as an examination of salvation in the context of an A-theory. In effect, the A-theory has intuitive resonance with salvation traditionally conceived, therefore comparatively little needs to be done in order to imagine salvation in an A-theoretic context.

An A-theory easily accommodates change by providing an objective distinction between two moments in time. If an entity possesses two properties at two objectively distinct moments in time, then as time passes from one moment to another, that entity can straightforwardly be said to have undergone a change. I am interested in the theory of time which seems to prohibit such change. Space restrictions prohibit saying much more on this topic, but it must be noted at this early point that if the A-theory were true then relatively little of the doctrine of salvation, presented by Paul Tillich or otherwise, requires re-examination.

I must also emphasise that I will almost entirely focus on literature from the twentieth century onwards. There is simply too much to do justice to the wealth of Christian history and theological reflections on time. Unless it is directly relevant, I will not be considering anything pre-20th century. My focus is on our understanding of the metaphysics and physics of time following Einstein's relativity theories. Any philosophy or theology that pre-dates relativity is not directly relevant.

Method and Structure

The structure of this work is intended to echo Tillich distinctive methodology. Insofar as the thesis is a reinterpretation of Tillich's doctrine of salvation, it makes sense to structure it in a way akin to Tillich's structuring of *ST*. In *ST*, Tillich uses his so-called 'method of correlation' which presents theological reflections as a direct response to the prevailing cultural and philosophical questions of the day. For Tillich, these questions were existential in nature, and woven throughout his resultant theological reflections are existentialist themes and concerns. As Langdon Gilkey explains, Tillich is consistently concerned with analysing the structures of being (philosophy) and uncovering their meaning for our being and non-being (theology). (Gilkey 1985, 344). I have chosen to consider questions raised by the

⁶ In fact, Russell expresses hopes for this kind of work in the concluding section of his chapter on Cosmology and Eschatology (Russell 2007, 574-575).

⁷ Russell used this phrase to describe such an approach in an email correspondence and I find it a very helpful way of characterising the approach of this thesis.

physics and metaphysics of time – What is time? How does our perception of time map onto time’s ontological structure? Is change real? – and reinterpret Tillich’s theology in light of answers to those questions. These philosophical questions generate innovative theological answers regarding the nature of salvation as an ontological transformation given in *ST*. This structure, therefore, fits both with the aim of my project and the theological system with which it engages.

Both this methodology and my thesis are unequivocally interdisciplinary. The method of correlation encourages dialogue between philosophy and theology, suggesting that theological insights are found when the theologian addresses questions raised by philosophy. Arguments from physics, philosophy, and theology are presented here, and I use conceptual tools from each in my final reconstruction of Tillich’s doctrine of salvation. For this reason, I delineate the dissertation into distinct parts that are self-contained treatments of the disparate disciplines under consideration. The reader will find a breadth of content in the pages to come, as well as a range of styles of academic discourse. This is necessary for a holistic treatment of time and salvation. As Mary Midgely astutely remarks, reality is highly complex. Only by having multiple descriptions drawing upon the insights of a multiplicity of disciplines can such a complex reality be adequately represented. (Midgley 2003, chapter 4).

The tripartite structure clearly sets out the scientific and religious elements which I bring into dialogue. Part I and Part II are scientific (including philosophical interpretations of the science) and theological respectively; Part III is the philosophical synthesis. Such a structure fits with Tillich’s understanding of science-and-religion interaction: ‘the point of contact between scientific research and theology lies in the philosophical element of both.’ (Tillich 1951, 21). It is here that the synthesis between scientific conceptions of time and Tillich’s doctrine of salvation is to be found.

In accordance with Tillich’s method of correlation, I raise metaphysical questions about the nature of time and our relation to it. These are then used, in dialogue with Tillich, to shape theological answers. Specifically, I reinterpret Tillich’s doctrine of salvation, understood as the transformation from Old Being to New Being, in a way consistent with the physics and metaphysics of time. Though my focus is on Tillich, the problems I raise for salvation transcend the boundaries of *ST*. A doctoral thesis must be focused, and Tillich is the perfect scholar with whom I can develop the notion of mind-dependent salvation. This thesis should not, however, be read as the final word on the relationship between time and soteriology, or as a claim that only Tillich should be worried about problems posed by the metaphysics of time. Any doctrine of salvation which requires a transformation in time will be vulnerable to the problems presented here. The block universe, supported by compelling metaphysical interpretations of relativity, seems hostile to the type of change salvation requires. Using the method of correlation, I identify these problems and present an innovative solution the relevance of which extends beyond the remit of Tillichian scholarship.

In Part I, I show that our best physical and metaphysical theories are consonant with a B-theory of time in which all temporal points co-exist, and temporal passage is not ontologically substantiated in the mind-independent world. Chapter 1 contains a survey of the literature on the metaphysics of time using the conceptual framework provided by J.M.E. McTaggart’s hugely influential 1908 paper. (McTaggart 1908). McTaggart introduces the A-series and B-series, which have been developed into the A-theory and B-theory. I consider William Lane Craig’s argument that belief in the passage of time (hence the A-theory) is *properly basic*, viz. foundational and warranted by the pervasiveness of experience. I reject this by pointing out several defeaters which serve as powerful reasons to abandon the belief. In Chapter 1, I argue that the A-theory contains profound structural flaws that render it an inadequate metaphysical framework. This defeater of the A-theory lends indirect support to the alternative B-theory.

In Chapter 2, I introduce Albert Einstein’s Special Theory of Relativity (SR). It is important to devote an entire chapter to explaining SR as it is the strongest empirical and theoretical support for the B-theory on offer. Chapter 3 considers two leading interpretations of SR, the spacetime interpretation championed by Albert Einstein and Hermann Minkowski and the neo-Lorentzian interpretation

defended by William Lane Craig. These are B-theoretic and A-theoretic interpretations respectively. I assess these alternatives, concluding that the B-theoretic spacetime interpretation is favourable given both physical and metaphysical considerations. In Chapter 4, I consider Einstein's General Theory of Relativity (GR) as this has sometimes been used to undermine SR's support for the B-theory. Solutions of GR which posit the existence of 'cosmic time', some argue, provide sufficient structure within which to ground core features of the A-theory like an objective present moment and the reality of passage. I assess Richard Swinburne's argument to this effect, concluding that it fails to dismantle relativity's support for the B-theory and the block universe. Therefore, I maintain that the relativity theories add to the cumulative case for the B-theory. Once the existential questions raised by metaphysics and physics have been set out, I turn to theology.

Part II sets out the theology of Paul Tillich as presented in his three-volume work *ST*, particularly his doctrine of salvation as an ontological transformation and his perspective on the nature of time and its relation to eternity. Tillich's extensive bibliography is largely set aside so as not to distract from an in-depth focus on *ST*. Chapter 5 lays out each volume of *ST*, providing a detailed setting of the theological scene. Here, I also present various interpretations of the method of correlation, arguing that it is primarily a pragmatic way of doing theology in a variety of cultural contexts. In Chapter 6, I explore Tillich's doctrine of salvation, including his existentialist framing of fallenness and the idea of salvation as a transformation from Old Being to New Being. Here we explore Tillich's claim that human existence constitutes estrangement from our essence, the ultimate truth of our being, and his argument that we strive toward the union of essence and existence, the alleviation of the intense angst we experience as a result of our fallen state. Importantly, Tillich's emphasis is always on the *psychological consequences* of both fallenness and salvation for the individual. Tillich argues that Jesus Christ's soteriological function is as the bringer of New Being, that which radically overthrows the Old Being in which we are trapped. Fallenness is Old Being, characterised by finite existence, actuality, and alienation; New Being is found in essence, potentiality, and reconciliation. Salvation is the transformation from Old Being to New Being.

Chapter 7 discusses Tillich's treatment of time and history. He devotes a significant amount of attention to history, particularly his existentialist and subjective understanding of history as that which carries group identity across time. The subjective reinterpretation of historical events detailed here is integral to the final analysis in Chapter 9. Time, however, receives less consideration in *ST*. In Chapter 7 I reconstruct areas of Tillich's theological system to show that his thought is at the very least compatible with the B-theory of time advocated in Part I. This paves the way for Part III in which I re-examine Tillich's doctrine of salvation in light of relativity and a B-theory of time.

Part III synthesises Part I and Part II, preserving the core of Tillich's doctrine of salvation (Part II) whilst reinterpreting it to align with the physics and metaphysics of time (Part I). In Chapter 8 I survey leading explanations of our experience of temporal passage on the B-theory. Our perception of the passage of time, on this view, does not have its roots in time's ontological structure. Our experience is dynamic, whereas spacetime is not. On this view, temporal becoming is merely phenomenological, viz. mind-dependent. This is the final defeater of the A-theoretic belief in the reality of temporal passage – B-theoretic explanations of seemingly A-like experience undercut the most powerful reason the A-theorist has for subscribing to the A-theory in the first place. Chapter 8 completes my argument for the internal coherence and explanatory power of the B-theory.

The final task of the thesis, then, is to reinterpret Tillich's doctrine of salvation in a B-theoretic framework. In Chapter 9 I use key concepts from the philosophy of temporal experience to reconstruct Tillich's soteriological transformation from Old Being to New Being as a phenomenological, qualitative change, as opposed to an ontological change. I call the individual's transformation from fallenness to salvation 'mind-dependent salvific becoming', as it is a form of 'mind-dependent becoming' defined by Adolf Grünbaum when explaining our experience of passage on the B-theory. Salvation as mind-

dependent becoming can be extrapolated and applied to soteriologies other than Tillich's – indeed, I believe it should be. Though this task falls outside the scope of this thesis, I hope to have begun this important conversation here.

In summary, this thesis argues that the block universe presents a significant problem for the kind of ontological change required for personal salvation, in and insofar as that salvation requires an *objective transformation in time*. As the relativity theories imply that the block universe is the best temporal metaphysic on offer, the doctrine of salvation faces a significant but surmountable problem. In this thesis I offer a solution to this problem by reformulating Tillich's doctrine of personal salvation as a qualitative change which manifests in an individual's life in the form of mind-dependent becoming. This need not stand in opposition to more traditional soteriologies – indeed, readers may find it helpful to consider my argument as supplementing, rather than replacing, other accounts of the Christian doctrine of salvation.

Justification

A highly significant matter must be addressed in these earliest pages of the thesis. This is the issue of whether my proposed reinterpretation of Tillich's doctrine of salvation through the lens of time is both consistent with, and true to the spirit of, the theological system advanced in *ST*. Essentially, can my re-reading be justified? If answered in the negative, this entire project is in jeopardy. To show that my reinterpretation remains true to *ST*, we must look to the introduction to the first volume. Here Tillich outlines his method of correlation, states his aims and motivations, and sets the parameters for theological enquiry and its relation to the wider cultural context in which such enquiry must always occur. There are two passages which give two seemingly different answers to the justification question:

A theological system is supposed to satisfy two basic needs: the statement of the truth of the Christian message and the interpretation of that truth for every new generation. Theology moves back and forth between these two poles, the eternal truth of its foundation and the temporal situation in which the eternal truth must be received ...

“Situation” as a pole of all theological work, does not refer to the psychological or sociological state in which individuals or groups live. It refers to the scientific and artistic, the economic, political, and ethical forms in which they express their interpretation of existence. (Tillich 1951, 4).

Embodied, finite, quotidian human life is played out in the realm of culture. Human beings find themselves indissolubly embedded in a specific cultural situation, and that cultural situation informs their concerns and structures the narratives in which they find meaning and purpose. It is, therefore, of paramount importance that theology can enter into dialogue with culture. Here Tillich explains the way eternal theological truth can, with both integrity and justification, be reinterpreted in each temporal situation. In constructing his system, Tillich aims to do just that. Such a reinterpretation must fit with the ways various cultures interpret their own existence – be this scientifically, politically, artistically – but crucially, these reinterpretations must remain consistent with the eternal truth Tillich sees in the Christian message.

Christian theology can, and should, be reinterpreted in light of the prevailing wisdom of the culture into which it is to be received. By no means, however, should this be understood as a trivialising of biblical truths or a ‘free pass’ to mould the Christian message to one's political agenda.⁸ The primacy of Scripture and the core of the Christian message need never be lost. But the *emphases* of the message

⁸ This is of particular significance given Tillich's antagonistic interactions with the Nazi regime, and his being forced to leave Germany for speaking out against the Nazi party. Tillich wholeheartedly rejects any use of Christianity to advance a political agenda which does not fit with the core of the Christian message, and any reinterpretation of Tillich's work must remain acutely aware of this important fact.

can legitimately be adapted to answer the pressing questions of the time. Moreover, certain beliefs can be up for reconsideration in light of truths that contemporary culture has revealed. The specific example Tillich gives is fundamentalism, which holds on to literal interpretations of the Bible in the face of scientific evidence that contradicts it. As Tillich writes, fundamentalism ‘rejects’ the task of ‘creative self-interpretation in a special period ... and, in doing so, [misses] the meaning of theology.’ (Tillich 1951, 4).

One’s situation is a part of one’s theological backdrop, and our situation includes a commitment to science. This passage is a cornerstone when laying the foundations of my justification for reinterpreting Tillich in the context of temporal considerations. To receive the eternal truth, culturally appropriate reinterpretation is not only justified, but necessary. When presenting his theological system, Tillich is doing with the Christian message what I wish to do with his work – reinterpreting it in light of other interpretations of existence that appear in one’s cultural milieu. In twentieth and twenty first century Western society, science is held as the epistemological gold standard. Its epistemic primacy makes it a highly important correlative partner for religion.

Donald E. Arthur interprets the method of correlation as indicative of the fact that Tillich’s approach to the science-religion relationship is one of dialogue.⁹ Arthur identifies two different dimensions of cognitive encounter with reality in *ST* which correspond to science and religion: science is primarily concerned with facts or finite relations; religion is primarily concerned with the meaning of being. (Arthur 2001, 262). Here, ontology models epistemology. As science and theology operate over distinct ontological domains, they generate distinct epistemologies and the truth claims therein cannot contradict each other *ipso facto*. They can, however, be held in constructive dialogue with science illuminating existential questions to which theology responds.

Nevertheless, the reader should be wary of taking this as conclusive. Not ten pages after the passage quoted above, in a discussion of boundaries, Tillich sets out the criterion of preliminary and ultimate concerns. The theological circle, namely the system of thought in which one actively chooses to be in ‘a situation of faith’, is driven by accepting the Christian message as one’s *ultimate concern*. (Tillich 1951, 13). These are to be understood in contrast to preliminary concerns. Preliminary concerns appear within the social and cultural contexts in which human lives play out; they are worldly. Ultimate concern, by contrast, is the abstract translation of the great commandment of which Tillich quotes the Markan formulation: “The Lord, Our God, the Lord is one; and you shall love the Lord your God with all your heart, and with all your soul, and with all your mind, and with all your strength.” (Mark 12:29). Insofar as ultimate concern is *ultimate* it is unconditional and infinite; insofar as it is *concern* it points to the existential character of religious experience and religious life. Ultimate concern is what drives theology, and through theological work this ultimate concern is given content. The crucial statement for our present purposes is:

Theology should never leave the situation of ultimate concern and try and play a role within the arena of preliminary concerns. Theology cannot and should not give judgements about the aesthetic value of an artistic creation, about the scientific value of a physical theory or a historical conjecture, about the best methods of medical healing or social reconstruction, about the solution of political or international conflicts. The theologian *as* theologian is no expert in any matters of preliminary concern. And, conversely, those who are experts in these matters should not *as such* claim to be experts in theology. The first formal principle of theology, guarding the boundary line between ultimate concern and preliminary concerns, protects theology as well as the cultural realms on the other side of the line. (Tillich 1951, 15).

⁹ The term ‘dialogue’ here is used specifically in reference to Ian Barbour’s fourfold typology of ways of relating science and religion. (Barbour 2002).

It seems here that Tillich wants to construct clear boundaries between theological enquiry, driven by ultimate concern, and culture, driven by preliminary concerns. On this reading, the theologian should not engage with concerns of culture, and the historian, scientist or politician should avoid matters of theology. A few pages later, Tillich goes so far as to say that ‘nothing is an object of theology which does not concern us ultimately, theology is unconcerned about scientific procedures and results and vice versa.’ (Tillich 1951, 21). *Prima facie*, the entire enterprise of science and religion seems dubious, let alone a reinterpretation of Tillich’s own system in the light of the philosophical interpretation of a scientific theory.

Fortunately, Tillich offers a way forward which affords legitimacy to my reinterpetive project. Whilst this passage appears to contradict the previous quotation, the two can be read as consistent given the final of the three possible relations of primary concerns to ultimate concern Tillich suggests. These relations are: mutual indifference, elevating a primary concern to the level of ultimacy, and allowing a preliminary concern to be a vehicle for ultimacy without claiming ultimacy for itself. (Tillich 1951, 15-16).

Mutual indifference, Tillich argues, is predominant in ordinary life. Finite existence and concern with ultimate meaning are held in sharp distinction; they are seen as side by side and flitted between like equal but alternative options to which we give our attention. Tillich argues that this fails to recognise the true ultimacy of religious concern. The second relation, elevating a primary concern to the level of ultimacy, is idolatry in its purest form. The tangential and preliminary concerns of our quotidian existence become central and ultimate. Both these relations between primary concerns and ultimate concerns fail to take the Christian message seriously and are therefore insufficient. For Tillich, the third relation, namely allowing a preliminary concern to be a vehicle for ultimacy without claiming ultimacy for itself, is preferable. When related in this way:

That which is finite concern is not elevated to infinite significance, nor is it put beside the infinite, but in and through it the infinite becomes real. Nothing is excluded from this function. In and through every preliminary concern the ultimate concern can actualise itself. Whenever this happens, the preliminary concern becomes a possible object of theology. But theology deals with it only in so far as it is a medium, a vehicle, pointing beyond itself. (Tillich 1951, 16).

It is only when conducting my project in this way that time can be used to reinterpret Tillich’s doctrine of salvation *in a way that remains consistent with his entire theological system*. The temporal analysis of Part I becomes a lens through which salvation can be re-examined only and insofar as it remains at the level of a preliminary concern and never claims ultimacy. Instead, time must be used as a vehicle which points beyond itself to the correct reinterpretation of salvation for our culture (as set out in the Tillich’s passage about the two requirements of a theological system). If the thesis remains cognizant of this fact, then it retains legitimacy.

The wary reader must be reminded that all theological reflection is to some extent a translation and all doctrines reformulations. To put things painfully generally, Christians believe that the truth of the Christian message is found in the person and works of Jesus of Nazareth whom they believe to be the Christ. These events, locked in the spatio-temporal era of first century Jerusalem, are not directly accessible to anyone who did not live through them. These events happened in a different time, a different place, and importantly occurred in a different language. All theology carried out in English will bear the marks of the English language, imprinted fundamentally by the culture in which it is spoken. The question at hand is not whether theology *should* be translated and reformulated, as it must be, instead the question is to what extent this reformulation is acceptable. Each theologian will have a different answer to this. In raising this, I am not trying to convince sceptics that this is a right and proper way of understanding Christianity trans-historically and for all people. My intention is only to justify

the *consistency* of the conclusions of this thesis with the spirit of Paul Tillich's theology, as I am confident is the case.

In the preface to the third volume of *ST*, Tillich writes that 'a system should be not only a point of arrival but a point of departure as well. It should be like a station at which preliminary truth is crystallized on the endless road toward truth.' (Tillich 1964, vii). *ST* is Tillich's point of arrival, the culmination of his life's work as a systematic theologian. Tillich humbly acknowledges that he has not provided all the answers, nor could he hope to. Rather, he encourages others to engage with his work as a point of departure for developing their own thought. Tillich's existentialist reformulation of the Christian message was for the twentieth century, and since then developments in physics and metaphysics have opened up a wealth of new ideas with which *ST* can fruitfully interact. To use his metaphor, I take Tillich's theological system as an expression of preliminary truth. It is my point of departure from which I hope to advance toward the next station in the endless road toward truth.

PART I:

METAPHYSICS AND PHYSICS

1

METAPHYSICAL ARGUMENTS FOR A B-THEORY OF TIME

In this chapter, I introduce the central debates in temporal metaphysics which are crucial for the thesis' later arguments. I set out the most important binary for the subsequent discussion, namely the A-series/B-series distinction, and justify why these terms are suitable to denote broader classes of temporal theories. I then assess arguments from some leading A-theorists and B-theorists. I argue in favour the B-theory, meaning the B-series is a the most fundamental explanation of the ontology of time. This metaphysical model is sometimes referred to as the 'block universe' due to its four-dimensional manifold structure (following advances in the Special Theory of Relativity). I do not attempt to *prove* the B-theory – this is not currently possible nor necessary for my purposes. Rather, I offer what I believe to be a powerful case for its internal coherence and explanatory power. This establishes a robust metaphysical foundation upon which Albert Einstein's Relativity Theories and Paul Tillich's *Systematic Theology* can be brought into dialogue. Therefore, this chapter provides metaphysical scene-setting in the form of a review of the relevant literature and introduces important tools for the tasks undertaken later in this work. The philosophy of time has a long and detailed history, one I cannot hope to comprehensively cover. Instead, this chapter should be read as laying the philosophical foundations upon which the later analysis will be built.

Some Clarifications

The contemporary philosophy of time can be delineated into four primary debates. These are: the relationalist/substantialist, dynamic/static, tensed/tenseless, and presentist/eternalist debates. The first concerns how time is structured, particularly whether spacetime is a fundamental entity that exists in distinction from the objects within it.¹⁰ The substantialist answers yes, affirming the object-independent existence of spacetime. The relationalist, on the other hand, understands spacetime to be reducible to the relations between objects and events, and that 'claims apparently about spacetime itself are ultimately to be understood as claims about material entities and the possible patterns of spatiotemporal relations that they can instantiate.' (Pooley 2013a, 522). Essentially, if no material bodies or events existed, then spacetime, too, would not exist. This debate will not feature in the subsequent discussion as it is at most tangentially relevant to my primary concerns.¹¹ The last three debates are tightly interwoven, and aspects of them are frequently considered together. Though they have been separated for introductory purposes, ultimately, I will use broadly defined temporal theories and will only focus on the nuances of each set of debates where appropriate.

The second debate concerns time's motion, with its central concern being whether time objectively passes. The proponent of dynamic time will answer in the affirmative, whereas the proponent of static time will view time as analogous to space – all temporal moments eternally co-exist, and any perceived passage is illusory. The third debate concerns the status of tensed facts. Proponents of tensed time believe in the reality of tensed facts and claim that these are grounded by the passage of time and the reality of tense. Proponents of tenseless time deny the existence of tensed facts, claiming that they are

¹⁰ For a comprehensive and up to date discussion of the substantialist/relationalist debate, see (Pooley 2013). An equivalent debate exists with regard to space, see (Dasgupta 2015).

¹¹ For further reading, see: (Huggett 2015) (Maudlin 2012, chapters 1&2) (Rynasiewicz 1996) (Rynasiewicz 2000) (Maudlin 1993) (Teller 1991) (Earman 1989) (Barbour 1982).

not required to explain why language contains tense and tensed truths.¹² This debate relies on the fourth debate for its ontological underpinnings.

The fourth debate also concerns time's structure, but with particular reference to the temporally determined ontological status of objects and events. The presentist believes that all and only existing things are present, i.e. that the entire set of existing objects and events is comprised exclusively of objects and events which possess the objective property of being *present*. The eternalist, on the other hand, believes all objects and events to co-exist, with no special ontological priority given to any moment. Eternalism understands time as analogous to space in that, as no ontologically privileged position is afforded to the property *here*, neither is there any such privilege for the property *now*. This debate will enter into our discussion, though under the broader guise of the A-theory/B-theory debate first introduced by McTaggart.

Introducing the A-series and B-series

Though the philosophy of time can be traced back as far as the Ancient Greeks,¹³ the contemporary debate took its current form after J.M.E. McTaggart 1908 paper *The Unreality of Time*. This seminal work continues to shape the contemporary debate over a century later. McTaggart's argument is comprised of two parts. Part one seeks to establish that change is essential to time. Part two, McTaggart's paradox, shows that the tensed temporal series (on which change occurs) is contradictory. From these he concludes that time is unreal. I argue that his paradox successfully demonstrates that the A-series is self-contradictory, but not that time is unreal. Though McTaggart also introduced the C-series in his 1908 paper, only the A and B-theories have had a significant legacy, and so my discussion here will be limited to these two metaphysical giants.¹⁴

McTaggart begins by distinguishing between two systems of ordering positions in time: by their possession of the properties *past*, *present*, and *future*, and in accordance with the two-place relations *earlier than* and *later than*. He names the former A-properties, whose extensions are constantly changing. As time passes, events possess the properties of being future, then present, then past. The A-series holds that A-properties provide the most fundamental description of temporal reality.

The B-series, on the other hand, holds that temporal ordering relations (so-called B-relations) are the most fundamental constituents of time. All events in the B-series co-exist and are defined by their relations with other events. On the B-series no event is 'more real' or 'metaphysically privileged', as no ontological priority is given to the present. Tenseless B-relations describe the fixed ordering of events in a temporal sequence. The Battle of Hastings, for example, will always be *earlier than* World War II. On the B-series, describing time with recourse to relations and not objective tensed properties is sufficient to account for its fundamental structure. The distinction between A-properties and B-relations sits at the heart of contemporary debates in the philosophy of time. Subsequent scholarship has reified these temporal series into fully-fledged metaphysical theories, namely the A-theory and B-theory.

Any A-theory of time, namely a theory of time that maintains that time is most fundamentally described by the A-series, must have the property of admitting tensed facts. There are several different temporal theories that include A-series time, each of which has a different combination of properties. There are two principle A-theories, and a third which has received far less scholarly attention. The first,

¹² A detailed survey of this position can be found in (Craig 2000)

¹³ i.e. Parmenides' commitment to static temporal ontology and Heraclitus' ontology of flux. (Palmer 2016) (Graham 2007) (Russell 2004, 46-60).

¹⁴ There are recent attempts to revive the C-theory, however, and the interested reader could turn to Matt Farr for further reading: (Farr 2020a).

presentism, claims that the only things that exist are the events that occur on the present's knife-edge.¹⁵ Existence entails being present, and only and all that exists are presently occurring things and events. This claim can be reformulated as the claim that all objects that exist are simultaneous with each other and with the present.¹⁶

The second leading A-theory, the growing block, echoes presentism's claims about an objective present moment which functions as the axis of becoming. It differs, however, in that it does not restrict existence claims to the present but allows the accumulation of real past events in a 'block' which grows as ever more moments and events come into existence and move from being present into the past. (Broad 1923, 66). The past and the present constitute the exhaustive set of all that is real, and the future remains merely potential with events not becoming actualised until one (or the only, on a deterministic view) potential future becomes the actual present.¹⁷

The final A-theory, the moving spotlight, is committed to the eternalist 'block universe' metaphysics seen below in the B-theory whereby all temporally related events eternally co-exist, but with the additional property of a moving present. On this view, a so-called 'moving spotlight' picks out a metaphysically privileged point which defines an objective *now*. This model accommodates both tensed facts and a block universe. (Skow 2009, 666). The moving spotlight has only a handful of supporters,¹⁸ as it has deep structural problems.¹⁹ As such it will not feature in this thesis.

In the following chapters, the term 'A-theory' shall be used as a blanket term to describe any theory in which time has the following properties: tensed truths are both real and fundamental; time is dynamic in the sense that it flows, with successive moments possessing the objective properties of *future*, *present*, then *past*; there is an objective and universal present moment, at which point potential future events become real. The change in degree of the pastness of events is not merely a function of our changing perspective on reality, it reflects the way time truly is. (Pooley 2013a, 322). The present is universal and objective and sharply divides the future from the past.

There is less variation within the B-theory as the central claims, namely a denial of the existence of tensed facts and an objective present moment, commits one to a 'block universe' in which all moments, objects, and events coexist. The block universe is static in that time does not objectively flow, and no particular time is ontologically privileged. The finer details of this universe will generally be filled in by the prevailing physical theory,²⁰ but a B-theorist must be committed to the claim that a complete account of temporal reality can be given, as Oliver Pooley writes, with 'an exhaustive catalogue of which events occur, and how they are temporally related.' (Pooley 2013a, 324). This means that our experience of passage must be to some extent illusory.

¹⁵ The term knife-edge is appropriate to describe the present both because it is sharp, has very little extension, and divides the future from the past.

¹⁶ For more on presentism, see: (Bigelow 1996) (Zimmerman 1998) (Hinchliff 2000) (Percival 2002) (Crisp 2003) (Zimmerman 2004, part 1) (Bourne 2006) (Fine 2006) (Zimmerman 2008) (Tamm and Olivier 2019) (Emery 2020) (Tallant and Ingram 2020) (Baron and Braddon-Mitchell 2020).

¹⁷ For more on the growing block, see: (Broad 1923) (Tooley 1997) (Correia and Rosenkranz 2003) (Braddon-Mitchell 2004) (Forest 2004) (Merricks 2006) (Forbes 2015) (Deng 2017) (Miller 2018) (Correia and Rosenkranz 2018) (Perović 2019)

¹⁸ i.e. (Cameron 2015) (Skow 2009) (Skow 2015).

¹⁹ Oliver Pooley argues that the moving spotlight view, in particular Skow's formulation of it, falls foul of the 'Two Times' problem, in which two times are posited to explain the special features of the temporal theory to which one adheres: time and 'supertime'. This is a serious violation of the principle of ontological parsimony, which will be discussed in chapter 4 of this work. Moreover, one of these two times is A-theoretic and the other B-theoretic. Such a position is metaphysically muddled, and as such is unsatisfactory. (Pooley 2013, 332)

Huw Price similarly argues that the moving spotlight is fatally flawed. (Price 2011, 277-280).

²⁰ For example, whether spacetime is Galilean or Lorentzian.

The B-series may be illustrated with the analogy of a spatial landscape.²¹ A complete description of that landscape can be given by stating all the components of the landscape and how they are related to each other. For example, there is no Objective East, though an oak tree may be east of a lake. Neither is metaphysically privileged – they are equally real and related to each other in a fixed way. This captures the B-series’ claims about the fundamentality of temporal ordering relations. Our experience of passage on the B-series can also be explained using this spatial analogy. If you look out of a train window moving through the scene, the landscape seems as though it is flowing past you. This is not an ontological property of the space; it is a phenomenological property of your perception. There is no sense in which the various spatial points you currently observe are any more real than those you observed previously. The perceived dynamism is a result of your movement through the space as opposed to the space itself exhibiting flux. Though B-theorists largely accept that we have *prima facie* experience of temporal passage, many of them argue that this perception has no ontological content. Philosophers continue to disagree about which temporal series is more fundamental.²² To map the contours of this debate, we begin with McTaggart’s argument for the unreality of time.²³

McTaggart’s Argument for the Unreality of Time

a) Change as Essential to Time

McTaggart argues that change is essential to time. In so doing, he assumes that time *qua* time is equivalent to temporal passage. (Oaklander 1996, 205). He goes beyond the claim that time is demarcated by the processes of change that occur within it to the stronger claim that without the change time does not exist. (McTaggart 1908, 459). If everything in the universe, from quarks to galactic super-clusters, froze, McTaggart claims this would constitute the cessation of time. This inextricable link between time and change is the hinge on which his conclusion of the unreality of time hangs.²⁴

McTaggart argues that change can only occur on an A-series.²⁵ He notes that events themselves do not change – events only change with regards to A-properties, namely first being future, then present, then past. (McTaggart 1908, 460). The only conceivable B-series change, he argues, is if ‘an event ceased to be an event, while another event began to be an event. But this is impossible ... an event can never cease to be an event. It can never get out of any time series in which it once is.’ (McTaggart 1908, 459). B-series events co-exist, with no ontological priority given to any event (i.e. no event is objectively *now*). Earlier and later than relations obtain tenselessly and eternally. The assassination of Abraham Lincoln will always have happened in a theatre on 4th April 1865 and will always be in a *before than* relation with the moon landing. Thus, McTaggart argues, genuine change is impossible on the B-series. As the B-series cannot accommodate the type of change McTaggart believes is necessary for the existence of time, he concludes that time is only real if the A-series is real. This is first stage of McTaggart’s argument.

²¹ This analogy cannot be pushed too far, B-theorists and A-theorists alike reject attempts to over-spatialise time due to the fact that time has a unique and intrinsic asymmetry. Time is relevantly similar to space for the analogy to have illustrative value, namely that neither picks out a metaphysically privileged point (*now*; *here*).

²² See, for example, (Emery and Markosian and Sullivan 2020) (Roark 2011), and essays in (Craig 2011).

²³ Though the A-theory/B-theory debate can be separated from the debate about presentism, eternalism and the growing block, I will be considering them together. Accepting the A-theory commits one to either a presentist or growing block metaphysic which grounds the truth of tensed claims. Accepting a B-theory also forces one’s hand on the side of eternalism. They are linked closely enough to warrant their consideration together here.

²⁴ Such an argument can be found in Aristotle’s *Physics*. (Bardon 2013) (Roark 2011) (Maudlin 2015)

²⁵ Many B-theorists have rejected McTaggart’s claim that change is incompatible with the B-series – *events* might not change, but *objects* do. This notion, often called qualitative change, will emerge in chapter 9.

b) The Self-Contradictory A-series

The second part of the argument is known as ‘McTaggart’s Paradox’, as he appeals to the changing nature of tensed A-properties to show that the A-series is self-contradictory. If he is right, then it cannot be real. He begins by pointing out that all events are in the future, become present and then become past. However, as past, present, and future are incompatible determinations, no event can possess more than one A-property at any one time. (McTaggart 1908, 468) (Dyke 2002, 140-141). From this he concludes that tense is paradoxical.

The obvious response is to point out that language is appropriately equipped to denote tense, and that these properties are only incompatible when held simultaneously. There is no obvious contradiction in saying that some event *N* is present, *has been* future and *will be* past. Michael Dummett acknowledges this obvious response, writing that ‘one has a strong natural impression that McTaggart’s argument is a sophism based on a blindness to the obvious properties of token-reflexive expressions.’ (Dummett 1960, 499). By token-reflexive, he means that truth values of tensed expressions depend on the circumstances of their utterance.

McTaggart argues that this move advances us no further, however, as it, too, contains a contradiction. (McTaggart 1908, 468). By explaining away the incompatibility of the three A-properties by saying some event *e* is present, *has been* future, and *will be* past, one must construct a second A-series in which to root these further tensed claims and which grounds their truth-value. The same problem then arises when trying to account for the truth claims of the second order A-series, in that a further A-series must be constructed to give the truth-value of the second A-series’ tensed claims. This process of constructing higher order temporal series’ must repeat *ad infinitum*, as there is no point at which one can ascend the hierarchy to a resolution of the contradiction.

One can draw out this contradiction in the following way: *past*, *present*, and *future* are predicates of the first level. (McTaggart 1908, 468). To avoid the contradiction, one must reformulate ‘was future’ as ‘future in the past’; this generates nine predicates of the second level. These second level predicates then incur the same contradiction as the first level predicates, and third level predicates must be invoked to remove it. This is illustrated in the figure below:²⁶

predicates of the second level:

$$\left\{ \begin{array}{l} \text{past} \\ \text{present} \\ \text{future} \end{array} \right\} \text{ in the } \left\{ \begin{array}{l} \text{past} \\ \text{present} \\ \text{future} \end{array} \right\}$$

predicates of the third level:

$$\left\{ \begin{array}{l} \text{past} \\ \text{present} \\ \text{future} \end{array} \right\} \text{ in the } \left\{ \begin{array}{l} \text{past} \\ \text{present} \\ \text{future} \end{array} \right\} \text{ in the } \left\{ \begin{array}{l} \text{past} \\ \text{present} \\ \text{future} \end{array} \right\}$$

This process repeats *ad infinitum*, creating an unresolved infinite regress, and so, the argument goes, the A-series is inherently contradictory.

Despite a general consensus amongst B-theorists that McTaggart’s argument is, as Adrian Bardon writes, ‘both simple and devastating’, (Bardon 2013, 81) there is an ongoing debate amongst some other metaphysicians as to whether the regress McTaggart identified is a vicious one.²⁷ On the one hand, there is a contradiction at each level of the regress; on the other, there is a way out of this contradiction at

²⁶ Figure reproduced from one given in (Dummett 1960, 468).

²⁷ See (Smith 1986) (Mellor 1998, chapter 7) (Oaklander 1987).

each level by ascending one level. In my view, the fact that the contradiction is never resolved is a compelling reason to deem the regress vicious. An unresolved contradiction is metaphysically problematic, as there is no stopping point in the regress at which point an event can unproblematically possess an objective temporal property. As the A-series requires events to objectively and unproblematically possess the temporal properties *past*, *present*, and *future*, I argue that an unresolved contradiction in the ascription of these properties renders McTaggart's regress vicious. Although the debate on the status of McTaggart's paradox continues, at the very least the principle of parsimony gives us compelling reason to prefer the B-series as it does not contain such a regress, vicious or otherwise.

If the arguments of the preceding paragraphs are accepted, namely the A-series is both essential to time and contradictory, then the unreality of time follows. A refutation of McTaggart's conclusion must reject one or both of these parts.²⁸ I argue that the contradiction in the A-series is genuine, but that this does not require us to accept the unreality of time. Rather, time can be preserved by the tenseless B-theory. It is tense and passage, not time itself, that are unreal.

c) Against the Unreality of Time

William Lane Craig rejects McTaggart's conclusion that time and temporal passage are unreal by rejecting part two of the argument, namely that the A-series leads to a contradiction and so cannot be real. His argument uses Alvin Plantinga's notion of a properly basic belief.²⁹ Plantinga is a founder and firm advocate of Reformed Epistemology, which involves commitment to the claim that religious beliefs are foundational (or, 'basic') and do not require evidential or inferential justification to be warranted.³⁰ Such 'basic beliefs' serve as the foundations for other beliefs, they do not require robust evidence in their support, and are typically self-evident or apparent to the senses.³¹ Plantinga appeals to Calvin's *sensus divinitatis* as the sensory faculty through which we develop basic beliefs about the existence and nature of God. (Plantinga 1967) (Plantinga 1983) (Plantinga 2000) (Plantinga and Wolterstorff 1983).³² This process is analogous to the way we develop basic beliefs about the existence of other minds or an external mind-independent world, i.e. through our sensory faculties and rational judgements about what these faculties convey.

Craig develops ideas from Reformed Epistemology to argue that our experience of temporal passage is a properly basic belief. (Craig 2000, 133). We do not consciously adopt basic beliefs, rather we automatically accept them as a result of immediate experience. Properly basic beliefs function like mathematical axioms in that they form the irreducible basis for more complex noetic structures. These

²⁸ As Heather Dyke writes, 'today, almost no one agrees with [McTaggart's] conclusion.' A-theorists tend to reject part two and B-theorists reject part one – both positions preserve the reality of time, although they disagree about which description of temporal reality is more fundamental. (Dyke 2002, 137).

²⁹ Craig develops several critiques of McTaggart's paradox which cannot all be considered here, but all depend on his interpretation of McTaggart's paradox as only problematic for a hybrid of A and B time (such as the moving spotlight). This interpretation has remained controversial. (Craig 2000, chapter 6) (Craig 1998). For commentary on the latter, see: (Oaklander 1999).

³⁰ Plantinga's epistemology emerged out of a critique of classical foundationalism. Classical foundationalism, espoused by Descartes and others, claims that beliefs are either 'basic' or 'non-basic'. Basic beliefs require no further justification and non-basic beliefs are justified insofar as they are grounded on basic beliefs. These are analytically self-evident, incorrigible, or immediate to the senses, i.e., 'all bachelors are unmarried' with regard to the first, 'I am myself' with regard to the second, and 'I am perceiving blueness' with regards to the third. Plantinga critiqued classical foundationalism on the basis that it classifies many beliefs that we typically take ourselves to hold with justification as irrational, and that it is self referentially incoherent. His proposal widened the class of rational beliefs by developing further grounds upon which one might call a belief *properly basic*. Religious beliefs are included in this broadened category.

³¹ i.e., of the kind provided by Natural Theology.

³² For a critical engagement with these ideas, see (Swinburne 2001).

noetic structures are then rational if they are free of epistemic defect. (Plantinga 2000, chapter 4). Foundational beliefs are not accepted on the basis of other beliefs but can be taken as epistemically sound.

Craig argues that the objectivity of tense and the reality of temporal becoming are properly basic beliefs. Essentially, our experience of events as ‘irreducibly present’ is so overwhelmingly compelling that arguments against it inevitably fail.³³ He calls belief in temporal passage an ‘intrinsic defeater-defeater’, by which he means ‘a belief which enjoys such warrant for us that it simply overwhelms the defeaters brought against it without *rebutting* them or *undercutting* them.’ (Craig 2000, 165. *Emphasis added*). Here Craig identifies two types of defeater, each of which would remove one’s justification for holding a belief.

A rebutting defeater is a piece of evidence that is inconsistent with some relevant belief. For example, imagine I believe that there is a man in a field 100 yards from me; on closer inspection, I realise that what I was seeing was actually a scarecrow. My belief that I saw a man has been defeated by incompatible evidence that rebuts it. An undercutting defeater, on the other hand, is not incompatible with your belief, instead it undercuts your reasons for believing it in the first place. Plantinga gives an example in which you go into a factory and see a line of red widgets, believing these widgets to be red until an employee tells you that they are being irradiated by red and infrared light (a process which reveals hairline cracks). You do not learn that these widgets are *not* red, rather your reasons for believing they are red, namely your perceptual experience of redness, are undercut. Craig responds to McTaggart by claiming that our basic belief in the passage of time is so robust that it cannot be rebutted or undercut by any defeaters, i.e. it is a defeater-defeater. The contradiction inherent in the A-series, then, is no more than ‘an engaging and recalcitrant brain teaser whose conclusion nobody really takes seriously.’ (Craig 2000, 165).

One feature that distinguishes Reformed Epistemology from the Classical Foundationalism it sought to reject, however, is that one *should* be able to change one’s mind about a basic belief when presented with a defeater. (Plantinga 2000, chapter 6 and chapter 11). All sane individuals hold the basic belief that the external world exists.³⁴ Consider those in the matrix, however, who held the same belief about the reality of the world they inhabited. Their belief appeared to be warranted, as it was seemingly supported by experience and was not presented with any defeaters. Until, that is, they realised that their experiential reality was actually a simulation. Before this realisation, their belief in the reality of their world appeared to be basic; when presented with a defeater (viz. waking up and realising that they were plugged into a simulation machine), they rejected the belief. It was not, after all, properly basic.

Craig argues that experience of the passage of time is so compelling that it overwhelms any defeater, and therefore belief in the A-theory is still warranted. He is compelled to conclude that the contradiction McTaggart unearthed is in the use of tensed expressions which describe time rather than with time itself. Time passes, and any contradiction in our ability to describe this is a problem with language that carries no ontological weight. Craig rejects McTaggart’s move from our inability to describe events in time without contradiction to the unreality of time itself, claiming that it is the persuasiveness of our experience, not the logic of McTaggart’s argument, that should be trusted.

Unfortunately, this response cuts no ice. It is ludicrous to claim that any belief could *never* be defeated. Even the beliefs we hold to be utterly foundational to our sense of self and our place in the world should, at least in principle, be open to defeat if the appropriate evidence came along. There is an important difference between a belief being basic, and therefore not *requiring* propositional evidence to be

³³ Tim Maudlin makes a similar point when he argues that temporal passage is a ‘fundamental, irreducible fact.’ On Maudlin’s view, as time is ontologically primitive it is not liable to further analysis. Attempts to describe it are therefore unnecessary, and no regress is generated. (Maudlin 2007, 107).

³⁴ Despite what some philosophers may have you believe!

justified, and the much stronger claim that some beliefs are based on experience so powerful that they *cannot* be defeated even in the face of overwhelming evidence.

Let us briefly return to those in the matrix. Their experience powerfully conveyed the reality of their world, in the same way that our experience powerfully indicates the reality of our external world. Absent defeaters, belief in the external world is basic. Yet when the right sort of evidence came along, those in the matrix had their belief defeated – it turned out not to be basic after all. It would have been absurd for them to hold onto the belief in the reality of their simulated world. We should be open to the possibility of defeat regarding even our most foundational beliefs, even if we hope and trust that that defeat will never come. In other words, though basic beliefs do not require evidence to be warranted, they should both be free of contradiction and not stand in opposition to available evidence. They are rational only in the absence of defeaters. So, the question is: is McTaggart's argument a defeater?

Basic beliefs should not generate contradictions. If basic beliefs are the foundations on which noetic structures are built, then logical soundness is crucial. Though basic beliefs are not required to be accepted on the basis of any other belief, their internal logic must stand up to scrutiny. I argue that our experience of temporal passage is not strong enough to override the unresolved contradiction McTaggart unearthed in the A-series, and that the argument is therefore a *logical defeater*.

Moreover, perception and experience are notoriously fallible, and McTaggart's argument cannot be dismissed on the basis of an experience which may, in fact, be illusory. In Chapter 8 I present the various available explanations of temporal experience which do not require the truth of the A-theory. The success of any of these will undermine experience as a compelling reason to subscribe to the A-theory. Such arguments would be *undercutting defeaters*, insofar as they provide alternate explanations for temporal experience that do not require the reality of the A-theory. They undercut the phenomenological reasons for belief in the reality of temporal passage.

As Plantinga argues, 'defeaters depend on and are relative to the rest of your noetic structure, the rest of what you know and believe. Whether a belief A is a defeater for a belief B doesn't depend merely on my current experience; it also depends on what other beliefs I have, how firmly I hold them, and the like.' (Plantinga 2000, 360). In Chapters 2, 3, and 4, I argue that the relativity theories provide evidence that is compelling enough to warrant a rejection of the A-theoretic belief in temporal passage. This depends on other beliefs, particularly the following: 1) evidence is important in justification of beliefs about empirical matters (such as the nature of time), 2) our scientific theories are reliable ways of forming beliefs about the world, and 3) that these beliefs are warranted enough to constitute knowledge. I argue that if the two are in conflict, then belief in the reliability of science should be held more firmly than belief in our raw sensory experience. Therefore, if relativity undermines our phenomenological experience of temporal passage, then this should be taken seriously.³⁵ In short, relativity provides a *rebutting defeater* insofar as it provides robust evidence against the A-theory.

In the rest of this thesis, I present a cumulative argument that Craig is incorrect in believing the A-theory to be a properly basic belief. I reject Craig's claim that belief in the A-theory is immune to defeaters, and in the chapters to come I present several defeaters which taken together are fatal. McTaggart's argument reveals a defect in the internal coherence of the A-theory, serving as a logical defeater (Chapter 1); the relativity theories constitute a rebutting defeater insofar as they provide evidence against the A-theory (Chapters 2, 3 & 4); B-theoretic explanations of passage provide an undercutting defeater in that they provide an alternative explanation of temporal experience that does not require the reality of passage (Chapter 8). The primary aims of the rest of the thesis are to provide a compelling argument for the internal coherence and explanatory power of the B-theory – this can also

³⁵ One can consider this position as analogous to the fact that humanity once held the belief that we were the centre of the cosmos. Heliocentrism and the scientific evidence in its favour defeated this belief. We allowed it to do so because of our commitment to empirical evidence and the scientific method.

be read as the presentation of defeaters which render belief in the A-theory unwarranted. Whilst the reader may feel that the A-theory has been discarded early on, each piece of evidence I present in favour of the B-theory can be also be read as a defeater for the A-theory. To the B-theory we now turn.

Beyond McTaggart: Seeking Temporal Realism in the B-Theory

a) D.H. Mellor

Philosophers have also argued for the A-theory on the grounds that it is necessary to make sense of language.³⁶ Ordinary language is tensed, and for sentences to have a truth value, the argument goes, tense must be an objective feature of reality. ‘Lincoln’s assassination is in the past’ is true only if there is some objective past which acts as truthmaker and renders the sentence true. D.H. Mellor undercuts this by offering a B-theoretic explanation of tensed language. He agrees with part two of McTaggart’s argument (the A-series is contradictory) but rejects part one (the A-series is essential to time). Mellor’s argument is widely regarded as representing the B-theorists best hope for a tenseless analysis of tensed language.

Mellor gives an account of how tensed sentences can have truth values despite time being fundamentally tenseless.³⁷ For Mellor’s argument to succeed, he must establish how tenseless truthmakers (i.e. features of the world that make sentences true on the correspondence theory of truth) are sufficient to determine the truth values of tensed sentences. In other words, if B-facts are sufficient to make tensed sentences true, then the A-theory is superfluous to requirements and the truth of the B-theory is consistent with our ordinary language usage.³⁸ As Mellor writes, ‘if B-facts do this job [of truthmaker], A-facts do not; and if they do not, then they do not exist, since this is what they exist to do.’ (Mellor 1998, xi). This argument is an *undercutting defeater* insofar as it undermines the credibility of a central claim of the A-theory that the reality of tense is required to account for the truth conditions of tensed sentences.

Mellor’s argument for a tenseless analysis of tensed truths hinges on the difference between *types* of words and sentences and *tokens* of them. A *type* in this context is a non-specific sentence of which there can be many distinct instantiations, relevantly similar to how ‘cat’ is a species of animal distinct from any individual cat. A *token* of a word or sentence is a specific instantiation, as my pet Lolly is a specific instantiation of the species ‘cat’. Mellor gives the example of a sentence in his book – the sentence being the type, and each printed copy of it in each separate book being a token. Tokens can be events or things as well as sentences and are anchored to definite locations in time and space. If they have definite dates, then they should all have fixed truth values. The truth and falsity of tensed sentences, on this account, are properties of the *tokens* rather than the *types*, and depend directly on how their B-series positions relate to that of the event that they are about. For example, the claim ‘Abraham Lincoln was assassinated this week’ is true iff it is uttered the week of Lincoln’s assassination, and false if uttered during any other week. (Mellor 1981, 42). On this token-reflexive account, a tensed sentence’s relation to tenseless dates and instants is all that is required to ground its truth-value.³⁹

Mellor explains the formula used by tense logicians to study complex tenses systematically by writing them in a standardised way. Complex tenses denote A-series positions but can be reiterated *ad infinitum* with each reiteration potentially altering the truth value. The four-step formula for writing complex tenses is as follows: i) prefixing a present tense *core* sentence with a sequence of tense operators

³⁶ For example, (Craig 1996).

³⁷ Mellor goes into greater detail about what he means by tense in (Mellor 1986).

³⁸ By truth, Mellor means whether a particular statement is a correct representation of the way the world actually is. By fact, Mellor means a language and agent independent state of affairs. i.e. it is a fact that the sun is 8 light minutes away from Earth, and ‘the sun is 8 light minutes from Earth’ is a true sentence expressing this fact. In this context, Mellor is arguing that B-facts are sufficient to account for the truth conditions of A-sentences (rendering the A-theory superfluous to requirements).

³⁹ See also (Dyke 2002).

indicating A-series positions; ii) shift the present moment to the A-series position indicated by the first tense operator in the sequence; iii) repeat with each successive operator; iv) determine whether the core sentence would be true if the present date did have the date the process indicates. The complex sentence is true if so, and false if not. (Mellor 1981, 45).

For example, to say ‘Abraham Lincoln was assassinated two weeks ago’ one adapts the core sentence ‘Abraham Lincoln is assassinated this week’ to ‘two weeks ago, Abraham Lincoln is assassinated this week.’ Iff this sentence is uttered two weeks after Lincoln’s assassination, then it is true. Any complex iteration of tense written in this way can be given tenseless truth conditions, thus dispensing with the need for tensed facts. Mellor calls this the Trojan Horse of tense logic, since once it is admitted ‘all the topless towers of tense logic can rapidly be toppled to the tenseless ground.’ (Mellor 1981, 44). Without the need for tensed facts, the A-theory which requires the A-series to be fundamental loses yet more persuasive force. Not only has McTaggart shown it to be structurally incoherent, but if this argument holds out then the existence of tensed facts is metaphysically superfluous to account for the existence of tensed truths. If successful, then one need not posit the objectivity of tense to account for the truth values of tensed language. Before moving on we must consider some key objections.

b) William Lane Craig’s Response

These ideas have received extensive treatment in the literature, and it is not possible to discuss everything that has been published. In the rest of this chapter I consider critiques of Mellor’s B-theory mounted by William Lane Craig. Craig has written sharply and prolifically on the philosophy of time and his views can be taken as exemplifying the A-theorist’s best response to arguments such as Mellor’s. Craig mounts a three-pronged attack on Mellor’s argument: 1) tenseless truth conditions cannot explain logical equivalence, 2) Mellor’s B-Theory cannot account for the truth conditions of un-tokened (i.e. unuttered) sentences, and 3) Mellor’s B-theory conflates the truth conditions of tensed sentences with the truth makers of tensed sentences. (Craig 2000, 77). I will defend Mellor’s argument, and therefore the B-theory, by responding to each of these criticisms in turn.

1) The New B-theory violates logical implication relations in its truth conditions of tensed sentence tokens.

Craig argues that simultaneous tokens of a tensed sentence turn out to express different facts, despite being distinct instantiations of the same sentence.⁴⁰ Craig illustrates with the following example: let *R* be one token of ‘it is now 1980’ and *S* be another, simultaneous, token of ‘it is now 1980’. ‘It is now 1980’ = *R*, and ‘it is now 1980’ = *S*. Though these are logically equivalent statements, Craig claims that on Mellor’s account they express different facts:

The New B-Theory holds that ontology admits no tense; there are no tensed facts. Accordingly, it provides an analysis of tensed sentences which purports to clarify in terms of their tenseless truth conditions what are the tenseless facts which the tensed sentences state and which make them true. Tensed sentences state no other facts than these. But on the token-reflexive analysis, *R* and *S* state different facts. (Craig 2000, 78).

Mellor’s truth-bearers are sentence tokens, rather than propositions or sentence types. Truth conditions express the conditions under which a sentence is either true or false. In making tokens the truth-bearers and giving them token-reflexive truth conditions, the truth conditions no longer express the conditions under which the *sentence* is true. Rather, they only account for the truth conditions of each *token*. Craig argues therefore, that the token-reflexive analysis fails to provide adequate truth-conditions for tensed

⁴⁰ For an interesting exchange on this type of critique, see: (Priest 1986) (Mellor 1986). For a more recent endorsement of the B-theory in spite of such criticisms, see (Beer 2010).

sentences. Furthermore, insofar as it does not accommodate logical equivalence relations between sentences such as *R* and *S*, Mellor's account, 'makes a nonsense of logic.' (Craig 1996, 14).

But isn't this the point of the token-reflective analysis? Mellor intended to demonstrate that non-analytic sentences are true or false according to the relation between the B-series position of their utterance and the B-series position of their subject matter. On this analysis, it must be the token which bears the truth value. Sentences such as 'Socrates is alive' is true when uttered between c.470 – 399 BC and false if uttered at any other time. *R* and *S* are two distinct expressions of the same sentence type, which means they could in principle have different truth values. Though Craig argues that *R* and *S* are two logically equivalent sentences that appear to express different facts, this is not the case. They have the same truth value when expressed in the same context, and in this instance, they express the same fact (i.e. the tenseless fact 'the year is 1980'), but not if expressed in relevantly different contexts. They are logically equivalent in all relevant ways.

Craig's objection is insubstantial. He claims that 'the token-reflexive theory has an internal logical incoherence, in that sentences stating the conditions under which two logically equivalent sentences are true are not themselves logically equivalent.' (Craig 2000, 79). He argues:

R entails *S*.

S entails *S* occurs in 1980.

Therefore, *R* entails *S* occurs in 1980.

Craig rejects this conclusion, pointing out that entailment concerns propositional content, not existence. The existence of *S* should not be entailed by the existence of *R*; it is perfectly reasonable that only *R* should be uttered, and that *S* is not. The claim '*R* entails *S*' is intended to express that the propositional content of *R* entails the propositional content of *S*, not that the existence of *S* is entailed by the existence of *R*. Craig identifies two options here: 1) one must conclude that the truth of *R* does not entail the truth of *S* (since tokens are contingent entities and some worlds in which *R* exists do not include *S*). He argues that this is unfavourable as it does not accommodate logical equivalence relations and so makes a nonsense of logic. 2) one must conclude that the existence or occurrence of *R* does imply the existence of *S*, which would lead to the ontological proliferation of an infinite number of sentence tokens of 'It is now 1980' (since all are entailed by *R*). (Craig 2000, 79) (Craig 1996, 14-15).

Here Craig's critique fails. Tokens are actual instantiations of sentence types, and only exist when they are uttered at a distinct time and place. It is only when they are uttered that they have a truth value; therefore, if *S* and *R* exist, then *S*'s propositional content is entailed by *R*, which is logically unproblematic. Also, *S* does exist, as Craig's example indicates. If *S* does not exist, then it holds no relations with *R* and its existence is not entailed. *S*'s existence is independent of the truth of *R*, and only once *S* is instantiated at a particular B-series point can it enter into logical relations with *R*. Craig once again fails to take the difference between types and tokens seriously – it is simply not the case, on Mellor's account, that sentence types have truth values. Any problems identified with the truth values of sentence types are red herrings.

The apparent 'ontological proliferation of an infinite number of sentence tokens of 'it is now 1980'' are not real tokens. They are equivalent to possible worlds, of which there *are* an infinite number. On utterance, they have fixed truth-conditions which are rooted in the B-relation between the token and its subject matter and can enter into relations with other tokens. There is no vicious regress generated by the mere possibility of an infinite number of tokens of the sentence 'it is now 1980'. The truth of *R* entails the truth of *S* only when *S* is uttered and becomes an actual token, at which point it does exist (unproblematically). The tokens are logically equivalent in that they express the same sentence and would be true or false by satisfying the same set of truth conditions. There is no incoherence in the idea of an infinite number of *possible* tokens, and the existence of actual token *R* does not generate an infinite

number of actual tokens through entailment as Craig claimed. Craig himself acknowledges that non-existent tokens could not possess a truth value in his second critique of Mellor. (Craig 2000, 84). For these reasons, Craig's first critique of Mellor's B-theory fails.⁴¹

- 2) The New B-theory can give no coherent account of the truth conditions of tensed sentences which are not tokened.

Craig argues that Mellor gives no account of the truth conditions of untokened sentences, specifically the sentence 'there are no tokens.' (Craig 1996, 18). In the Cretaceous Period, for example, there would have been no tokens to express this proposition and function as truth bearer. Then, the Earth was exactly as the sentence describes, viz. there were no tokens, but the token-reflexive analysis provides no way to satisfy the truth conditions of that proposition.⁴² Quentin Smith also critiques the token-reflexive account on these grounds, writing that 'if a normal A-sentence is used on some occasion to express something true, what the A-sentence expressed on that occasion would have been true then even if it had not been expressed.' (Smith 1993, 83). This point hinges on the claim that truth is independent of language used to express it.

Craig and Smith argue that Mellor's token-reflexive account cannot make sense of the fact that the token 'there are no tokens' is false now, but true in the Cretaceous Period. This period is far in our geological past, and was a period in which philosophy, language and logic did not appear. Therefore, no tokens would have been uttered for which truth conditions could be given, and there is no way to say 'there are no tokens' was true for the Cretaceous Period.⁴³

Heather Dyke responds to this criticism by distinguishing between two dimensions of truth – the ontological dimension and the semantic dimension. Tokens are intended to express something about the way the world really is, this is their ontological function. In other words, tokens are made true by their relation to certain facts – i.e. the token 'I am writing this sentence' is true now because it is simultaneous the fact that I *am* writing it. This also reveals tokens' semantic function, namely that a sentence token's truth value depends upon the meaning of its semantic constituents in whichever context they are produced. The success of the token-reflexive analysis depends upon its ability to show that we do not need an A-theory to account for the existence of tensed truths. The connection between truth and reality gives the impression (expressed by Craig and Smith in their above critique) that truth is independent of the production of tokens. (Dyke 2002, 149).

Dyke argues that Craig and Smith's claim that the token-reflexive account cannot account for the truth conditions of the sentence 'there are no tokens' is misleading in two ways. First, she argues that it fails to disambiguate between sentence types and sentence tokens; it is sentence-tokens, not sentence-types, that have truth values. The token 'there are no tokens' can never be true, so from a semantic point of view it is not unduly problematic. Secondly, Dyke argues that this critique equivocates between the semantic and the ontological dimensions of truth. There certainly *are* times when it is true that there are no sentence-tokens, but there are no tokens of this sentence-type that can be true. (Dyke 2002, 150-151).

In the Cretaceous Period, no token existed to express the fact that there were no tokens. This is a semantic point. Ontologically, however, the world was such that there were no tokens. Thus, it is the case that if such a token was uttered then it would have a truth value reflective of the connection between

⁴¹ Laurie Paul considers critiques of this ilk (specifically the version presented by Quentin Smith) and reformulates the tenseless theory of time by abandoning the reliance upon tokens, relying instead on the evaluation of sentence types with respect to a context rather than upon actual or possible utterances of tokens of the types. (Paul 1997) (Smith 1994).

⁴² B-theorist Jeremy Butterfield acknowledges this problem. (Butterfield 1985, 70-74).

⁴³ Mellor acknowledges this problem. In *Real Time II* he offers a new argument which claims that 'e is present' is made true at time *t* by *e*'s being located at time *t*. (Mellor 1998, chapter 3).

the world and the utterance.⁴⁴ The token-reflexive account captures this ontological fact whilst acknowledging the semantic point that there were no tokens to express this truth at the time. By rejecting the claim that *sentence types* have truth values, and by disambiguating between the ontological and the semantic dimensions of truth, Dyke defuses this critique.

Furthermore, Craig's own presentism faces a related and very serious problem. Presentism holds that only present objects and events exist. (Mozersky 2011, 122). Craig also subscribes to a correspondence theory of truth whereby the truth of a sentence is determined by its correspondence with facts in the world. Holding these two propositions together, Craig's ontological and epistemological positions forbid him to speak meaningfully about *anything* that does not currently exist. Though the B-theory cannot adequately account for the truth of the sentence 'there are no tokens' in the Cretaceous Period, Craig cannot even claim 'there was a Cretaceous Period'. He has no coherent way of outlining truth conditions for sentences that refer to the past, as presentism denies that there is a past that exists with which truth-claims can correspond.

This objection to presentism is often referred to as the 'grounding objection' or the 'truthmaker problem.'⁴⁵ As Joshua Mozersky explains, the point of this objection 'is to rule out true propositions that 'hang free' of reality: bare truths are unacceptable.' (Mozersky 2011, 127). To ground true propositions, one needs existing truth makers. As presentism rejects the existence of any non-present things and events, Craig's position invites a far greater wealth of problems regarding the truth claims of sentences referring to anything non-present, as the present is all that exists.⁴⁶ These epistemic concerns are far more serious for presentism than those that Craig identifies in Mellor's B-theory. As Simon Keller remarks, though this truthmaker objection 'does not stand as a refutation of presentism, it does show that presentism comes at a price. Whether or not presentism is plausible depends upon whether or not that price is worth paying.' (Keller 2004, 85). This price is the inability to ground truth claims about non-present matters, and it is too high. Though neither side has offered a knock-down argument here, Craig certainly fails to offer a compelling alternative to Mellor on the matter of truthmaking.

3) The New B-Theory conflates the truth conditions of tensed sentences with the truth makers of tensed sentences.

Craig attacks the implicit assumption that 'the provision of tenseless truth-conditions is somehow relevant to tenseless facts.' (Craig 2000, 87). i.e., if tensed facts are not required to ground the truth-claims of tensed sentences then they are ontologically gratuitous. Craig claims that Mellor's assumption that 'what is stated as a sentence's truth conditions is *what makes the sentence true*' (Craig 2000, 87). conflates truth-conditions with truth-makers. A truth-condition, Craig argues, is a semantic exercise, whereas a truth maker concerns ontology. Craig gives the example of mathematical and logical truths, which are necessarily true, claiming that all necessary facts are mutually entailing. As such, 'one can give adequate truth conditions for any necessary truth by means of another, for example "a square is quadrilateral iff a triangle is trilateral."' (Craig 2000, 88). Despite this, we would not wish to claim that what makes a square quadrilateral is the fact that a triangle is trilateral.

Craig gives counter-examples in which the truth-conditions of sentences are independent of the ontological facts that make these sentences true or false. The first is modal logic, in which a statement is necessarily true iff it is true in all worlds, and possibly true iff it is true in some possible worlds. These state the rules of use for the proposition under consideration, but without ontological truth-makers we cannot know if the proposition is true or false. Possible world semantics alone cannot tell us what

⁴⁴ It would, of course, be false, as the utterance of the token would make the sentence 'there are no tokens' false.

⁴⁵ For further discussion, see: (Markosian 2004) (Keller 2004) (Crisp 2007).

⁴⁶ Another option is so-called 'hard presentism' which bites the bullet and denies that there can be any truths about the past. (Dawson 2020).

makes statements true or false. The second example Craig gives is the semantics of counterfactual propositions. In possible world semantics for counterfactuals, a ‘would’ counterfactual is true in some world x iff in all antecedent-permitting worlds which are most like x , the consequent is also true. A ‘might’ counterfactual is true in x iff the consequent is true in at least one of the antecedent-permitting worlds most like x . (Craig 2000, 89). Though these conditions supply the rules of use for counterfactual propositions, they do not bear on the actual truth of a proposition. It is on these grounds that Craig challenges the B-theorist’s ‘implicit assumption’ that the truth-conditions of a statement are what make the statement true.

This ultimately fails to collapse the B-theorist’s token-reflexive account of the truth-conditions of tensed sentences, as it is only tangentially relevant to the actual case of the truth-conditions of tokens offered by Mellor and others. Mellor’s account claims that for a tensed sentence to be true, it must hold a certain B-relation to a tenseless fact. These are the truth conditions. But the B-theorist has all they need contained in these truth conditions. The truth maker is the *tenseless fact*. To completely separate truth-conditions and truth-makers is to make an artificial bifurcation which is useful only in so far as it illustrates the different components of what makes sentences true. Though they are two different parts, they are parts of a greater whole, namely the set of what makes a particular sentence true.

Craig attacks a straw man when he claims that Mellor’s account does not supply truth-makers for statements. The truth-conditions provide the semantic rules for what makes a sentence true and the ontological truth-maker function is fulfilled by tenseless facts. The truth-conditions for the sentence ‘it is 1980’ are the utterance’s relation to the circumstances of utterance, i.e., that it is uttered in 1980. Once a token of the sentence is uttered, what makes it true is the corresponding tenseless fact that the date is 1980, and the relation of the utterance to that fact. Both truth-conditions and truth-makers are supplied by the B-theorist, and therefore Craig’s final critique fails to extinguish Mellor’s B-theory.

Concluding Remarks

In this chapter I have begun to build my case for the explanatory power and internal coherence of the B-theory of time. I introduced McTaggart’s A-series/B-series distinction and his successful argument that there is an irresolvable contradiction inherent to the A-series. One need not go as far as McTaggart, however, in denying the reality of time altogether. The B-theory is, I argue, a reasonable and accurate account of the ontology of time and has stood firm against critiques mounted by A-theorists such as William Lane Craig. The semantic and metaphysical analysis provided in this chapter has shown that the A-theory contains fundamental structural flaws that render it contradictory. This logical defeater of the A-theory is the first in a series of defeaters that I present in this thesis. Together they comprise the cumulative case that belief in the A-theory is unjustified and the B-theory is a reasonable alternative.

Nevertheless, direct and compelling support for the B-theory is found in physics. The scientific method has allowed humans to reliably and accurately probe the natural world in search of knowledge. Since the inception of modern science, empirical investigation and mathematical formalism have been the most reliable tools for investigating the natural world, a point emphasised by leading philosopher of physics Tim Maudlin: ‘Metaphysics is ontology. Ontology is the most generic study of what exists. Evidence for what exists, at least in the physical world, is provided solely by empirical research. Hence the proper object of most metaphysics is the careful analysis of our best scientific theories.’ (Maudlin 2007, 104).

The preceding chapter has focused on theoretical reflections on the nature of time. Whilst a cohesive understanding of time is deeply enriched by these philosophical considerations, it would be incomplete without giving due weight to empirical approaches. It is by probing the natural world that we acquire truths about its fine structure, and the scientific method is a reliable and highly accurate means of doing so. Whilst philosophical reflections help to distil what is at stake in this debate, empirical science sharpens the arguments by providing a methodology by which a theory of time can be

substantiated in nature. The relativity theories serve as a defeater of the A-theory *and* as good evidence for the B-theory. To make this case, we must turn to insights from science.

2

THE SPECIAL THEORY OF RELATIVITY

The previous chapter introduced some key debates in the metaphysics of time, showed that the temporal A-series contains deep structural problems, and argued that language does require tensed facts. More must be done, however, to independently establish the credibility of the B-theory's underlying ontological claims. This, I argue, is offered by Einstein's Special and General Theories of Relativity (SR; GR). In this chapter I present SR, giving an account of both its origin and its core features. Philosophical argumentation will be notably absent here, this leaves space to introduce the theory on its own terms. In Chapter 3 I argue that SR supports the B-theory of time, though readers may anticipate the moves to come through reading about relativistic effects on our measurements of time and space. In Chapter 4 we will turn to GR, but before the B-theory can be argued for, SR must be properly understood.

Albert Einstein's *Annus Mirabilis*

In 1905 Einstein had what has come to be known as his *annus mirabilis* (wonder year) in which he published four papers in *Annalen Der Physik*, each of which sparked a revolution in physics. The first explained the photoelectric effect by proposing that electromagnetic radiation was granular – comprised of light quanta (photons) rather than waves. (Einstein 1905b).⁴⁷ This paper catalysed the quantum revolution. The second was on Brownian motion and is generally held to have proved the existence of atoms. (Einstein 1905d). The third paper is the subject of this chapter, *On the Electrodynamics of Moving Bodies*; it introduced the Special Theory of Relativity (SR) which revolutionised the scientific conception of space and time. (Einstein 1905c). The fourth was a follow-up from the third and contained the most famous equation in physics: $E=mc^2$, which shows the equivalence of mass and energy. (Einstein 1905a). In 1905, Einstein reconceptualised the very paradigms within which 19th century physics had been understood. In order to ascertain the magnitude of this paradigm shift, it is prudent to give a brief account of the physics that came before.⁴⁸

Newtonian Mechanics

Until Albert Einstein, the scientific landscape was dominated by the ideas of the English natural philosopher Isaac Newton (1643-1727). Newton made significant contributions to the fields of mechanics and optics, as well as writing on areas that engaged his philosophical and theological interest. Newton's most significant contribution, his formulation of the law of universal gravitation, gave physical explanation for the motion of the planets, and by the same mechanism explained the behaviour of falling earthly objects (such as the fabled apple). (Pfister and King 2015, §§1.1-1.3) (Earman and Friedman 1973). Two aspects of Newton's thought are integral to the arguments presented in this chapter. The first is the Relativity Principle, and the second is the concept of absolute time.⁴⁹

⁴⁷ This paper developed Max Plank's proposal that to solve the blackbody radiation energy must be absorbed and emitted in packets, so-called *quanta*. Einstein's paper was the first to propose that energy itself is quantised. This radical idea was deeply controversial at the time of publication. (Plank 1900) (Plank 1900).

⁴⁸ I use 'paradigm' and 'paradigm shift' in the Kuhnian sense. (Kuhn 1962).

⁴⁹ The term 'relativity principle' has been used by later scholars with reference to Newton's work. It should be emphasised, however, that he did not speak specifically of coordinates but only of active boosts.

i) The Relativity Principle

Newton formulated three laws of motion which were considered to be universal, viz. they hold in every physical system. (Maudlin 2012, 4). The correct nomenclature for such a physical system is a *frame of reference*, of which David Bohm offers a helpful definition: a frame of reference is a ‘regular grid of coordinates, set up to make possible the expression of the results of different measurements in a common language, and thus to facilitate the establishment of relationships between these measurements.’ (Bohm 2006, 5). Such coordinate systems function as structures relative to which events are spatiotemporally referred, in the same way that one measures the motion of a bicycle in reference to the surface along which it moves. (Einstein 2010, 5).

Physics describes and formulates laws about events, objects, and their relations with each other.⁵⁰ To do this, one must demarcate a fixed system in which the relevant objects can be labelled. Coordinates are assigned to events and objects, and all events and objects that are stationary relative to each other and moving with uniform velocity comprise an *inertial frame of reference*. Inertia describes force free bodies which move in straight lines at uniform velocity. Bodies in such motion relative to each other can be described within the same inertial frame. There are an infinite number of frames of reference as the starting point for one’s coordinate system can be chosen arbitrarily, but within each *inertial* frame the laws of Newtonian mechanics are invariant.

This brings us to the Relativity Principle. Though a form of the Relativity Principle is foundational to the relativity theories, it was not introduced by Einstein. Traditionally attributed to Galileo, the Relativity Principle claims that a stationary system and a system in inertial motion are subjectively indistinguishable. Between inertial frames the laws of physics, i.e. the force of gravity and Newton’s laws of motion, are invariant. This means that when the system undergoes a so-called *Galilean boost* (being boosted from being stationary to being in uniform motion) the physics describing the system does not change.

After such a boost, the relevant objects must be considered from the perspective of a different frame of reference – an inertially moving frame rather than the initial stationary frame. To map the change of frames geometrically, one uses *Galilean transformations*, which include translations, spatial rotations, and Galilean boosts. The veracity of Newton’s laws is unaffected by these coordinate transformations. The Galilean Relativity Principle, then, tells us that the physics inside a translated, spatially rotated or boosted system should not differ from the physics that determined the behaviour of a stationary system. Newton’s laws hold in all inertial frames that are related by the Galilean transformations, a claim that can be reformulated as the claim that Newton’s laws are *Galilean invariant*. (Einstein 2010, 12-15) (DiSalle 2009).

ii) Absolute Time

In *Philosophiae Naturalis Principia Mathematica*, Newton makes the now famous proclamation that ‘absolute, true, and mathematical time, of itself, and from its own nature, flows equably without relation to anything external, and by another name is called duration.’ (Newton 1686, Scholium to Definition viii). From this definition two vital features of Newton’s understanding of time may be gleaned. The first is that time is real and absolute, it flows independently of material objects, thus is an ontological feature of the world independent of any bodies, objects, or relations. Newton is a substantivalist, namely a proponent of the view that space and time are fundamental ontological features of reality that exist independent of the objects within them. (Pooley 2013b, 523). Essentially, if everything in the universe vanished, time would still pass. (Brown 2005, 18).

⁵⁰ Though the existence of physical laws is assumed for empirical purposes, the philosophical debate about their existence is unsettled. (Carroll 2020).

The second significant aspect of this view is a denial of the Aristotelian connection between time and change – independent and ‘mathematical time’, according to Newton, would continue to ‘flow equitably’ regardless of whether the objects in the universe were undergoing any movement or change. Aristotle identified time with change, defining it as ‘a number of motion with respect to the before and after.’ (Aristotle 219b1-2). This definition is frequently read as denoting time as the numerical measurement of change.⁵¹ Essentially, time has no ontological status distinct from the processes which it is deemed to measure. Aristotelian thought shaped natural philosophy until Newton (and others) catalysed the scientific revolution.⁵²

In summation, Newton held that the temporal metric is independent of the contingencies of any physical processes one might use as a clock, and time flows at a uniform rate everywhere in the universe.⁵³ From this we can assume that he believed in the absolute simultaneity of distant events, i.e. a single time value can be assigned to every slice of time that passes in the whole universe, and it is meaningful to assign the same time coordinate to events at either side of the universe. The Newtonian view is thus consistent with an A-theory of time, though one may still be a Newtonian B-theorist if one accepts his mechanics and rejects his metaphysics.⁵⁴ SR, I argue, leaves less room for metaphysical manoeuvre.

The Special Theory of Relativity

a) A Principle Theory

Einstein derived SR from two empirically sound postulates.⁵⁵ The first is the Relativity Principle, which Einstein defines thus: where K is a coordinate system, ‘if, relative to K, K’ is a uniformly moving coordinate system devoid of rotation, then natural phenomena run their course with respect to K’ according to the exact same laws as with respect to K.’ (Einstein 2010, 13). The difference between this and the Galilean Relativity Principle is the frames to which they apply and the translations that relate these frames, which we shall come to later.⁵⁶

The second is the light postulate. By 1899, Einstein was convinced that the Relativity Principle applied to electrodynamics as well as to mechanics. Electrodynamics, formulated by Maxwell in the 19th century, stated that electrodynamic radiation, of which visible light is a form, is a disturbance in the electrodynamic field which propagates according to electrodynamic laws. It is a fundamental electrodynamic law that the speed of light in a vacuum is always c , regardless of the speed of the source. (Einstein 2010, 17). From just these two postulates, SR was born.

In the Newtonian system, there is a tension between these two postulates. Newtonian mechanics dictates that velocity is additive, and therefore light emitted from a moving source should have the cumulative

⁵¹ There are different interpretations of this definition. See (Bardon 2013, 13-14) (Roark 2011).

⁵² The Aristotelian conception of time persisted in thinkers like Leibniz.

⁵³ For further reading on Newtonian Mechanics and the laws he supposed they reflected, see: (Friedman 1983, §III.7) (Brown 2005, §§2.2, 3.1, 3.2).

⁵⁴ One need not treat Newton’s mechanics and metaphysics as a ‘package deal’. However, I have chosen to consider them together as my primary concern in Part I is the connection between metaphysics and physics in how each relates to the nature of time. Additionally, Chapter 3 considers the neo-Lorentzian attempt to return to a Newtonian metaphysic, so it is helpful to introduce both metaphysics and mechanics here.

⁵⁵ In an article for the *Times* published in November 1919 Einstein distinguished between two types of physical theory: a constructive theory and a principle theory. A constructive theory provides an account of observed phenomena in terms of the fundamental microphysics. For example, the kinetic theory of gases builds a description of the complex behaviour of gases from the hypotheses of molecular motion. Principle theories begin from empirical regularities and raise them to the status of postulates, giving rise to ‘mathematically formulated criteria which the separate processes or theoretical representations of them have to satisfy.’ The paradigm example of a principle theory is thermodynamics as it began with the impossibility of perpetual motion of the first and the second kind – these then became the first and second laws. Einstein identified SR with the latter. (Einstein 2010, 228).

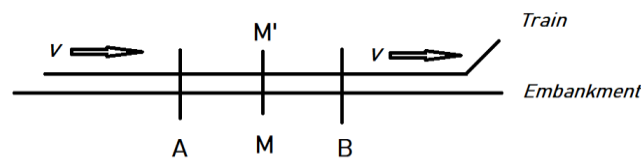
⁵⁶ For further reading, see: (Brown 1995).

velocity of $c + v$ where v is the velocity of the source. Yet if the speed of light isn't always c , then there are certain states the perspective from which a fundamental law of physics is broken – this violates the Relativity Principle. Within Newtonian mechanics, these postulates cannot both be true. (Maudlin 2012, 67) (Einstein 2010, 18).

Einstein reconciled the Relativity Principle and the light postulate by discarding the Newtonian belief in absolute space and absolute time. One calculates the distance something travels by multiplying the speed by the amount of time that it takes: distance = speed $\times$ time. To preserve the fact that that from all observational perspectives the speed of light in a vacuum is c , Einstein concluded that observers will not always agree on either *time* or *distance*.⁵⁷ Though this move is highly counter-intuitive, it is mathematically sound and has since been empirically verified to a high degree of accuracy.⁵⁸

Einstein illustrated the significant implications of the frame dependence of space and time through thought experiments. Imagine that lightning has struck the rails on the embankment at two distant places A and B . Einstein argues that there is no sense to be made of the claim that these struck simultaneously until it can be demonstrated empirically. (Einstein 2010, 22). Perhaps, he suggests, one might place an observer at the midpoint M between the distance AB and supply her with mirrors which would allow both points to be observed at the same time. This would only work, however, if one could be sure that the lightning flash travelled the distance AM with exactly the same velocity as along the distance BM , 'but an examination of this supposition would only be possible if we already had at our disposal the means of measuring time.' (Einstein 2010, 22-23). The proponent of such an argument has made two assumptions: 1) that sense can be made of an objective and observable time-value associated with every event, 2) that all clocks that would measure this time-value go *at the same rate* if they are of identical construction. (Einstein 2010, 24). In SR, these assumptions are erroneous.

Einstein differentiates between two frames of reference: the railway embankment and the train. The definition of simultaneity can be given relative to the train in exactly the same way as with respect to the embankment. A natural consequence follows, however: two events (e.g. the two strokes of lightning A and B) which are simultaneous with reference to the embankment are not simultaneous relative to the train. See the diagram below:⁵⁹



For A and B to be simultaneous relative to the embankment, on the previously suggested definition, the rays of light emitted at A and B meet each other at M . When the flashes of lightning occur, M , the midpoint for the observer on the embankment, and M' , the midpoint for the observer on the train, are aligned. But the observer on the train is moving toward the beam of light coming from B and away from

⁵⁷ At this point, it is worth noting a clarificatory point made by Hans Reichenbach that variability in the subjective perspectives of individual persons is not what is meant by observers measuring certain durations and distances differently. Rather, the term 'observer' is used to illustrate a definitional system: 'it is convenient to identify one definitional system with one observer; to speak of different observers is merely a mode of speech expressing the *plurality of definitional systems*. In a logical exposition of the theory of relativity the observer can be completely eliminated.' (Reichenbach 1969, 295). Emphasis added.

⁵⁸ Time dilation effects will receive extensive treatment in the next chapter. Length contraction effects are not directly relevant to time and so will not be considered.

⁵⁹ This diagram was reproduced from one found in (Einstein 2010, 25).

A. The observer on the train will therefore believe that the lightning flash *B* took place earlier than *A*. Einstein concludes that ‘events which are simultaneous with reference to the embankment are not simultaneous with respect to the train, and *vice versa* (relativity of simultaneity). Every reference-body (co-ordinate system) has its own particular time; unless we are told the reference-body to which the statement of time refers, there is no meaning in a statement of the time of an event.’ (Einstein 2010, 26). Through this simple thought-experiment, Einstein demonstrated that the concept of absolute simultaneity cannot be substantiated within relativistic physics without imposing extra structure against which such simultaneity could be referred.

Behind these theoretical claims is the geometric unification of space and time into a single four-dimensional manifold known as Minkowski spacetime. The transformations that allow one to move from one perspective in spacetime to another, the Lorentz transformations, have the consequence of space contraction and time dilation. Only once these have been explained can the true implications of SR for space and time be understood.

a) The Lorentz Transformations

The Relativity Principle *simpliciter* dictates that physical laws are invariant between inertial frames, and the aforementioned Galilean Relativity Principle operates over the domain of reference frames which are related by translations, spatial rotations, and Galilean boosts. The Einsteinian Relativity Principle, however, holds that the laws of physics are *Lorentz* invariant, meaning that the transformations which relate inertial frames, whilst preserving the laws of physics, are the Lorentz transformations.⁶⁰ By assuming a) a relation of causal connectibility, defined over all events that are described in some global extension of a local time map, and b) that any other admissible frame of reference is one in which that causal connectibility is preserved, one can show that any pair of frames are related by the Lorentz transformations. (Newton Smith 1980, 179-180) (Brown 2005, §2.3, ch. 5, §6.4). The Lorentz transformations can be expressed mathematically through equations or illustrated visually using spacetime diagrams – I have chosen the latter.

The goal of SR is to explain how motion looks from different perspectives, particularly moving perspectives. Each inertial frame can be mapped onto a coordinate system which assigns spatial and temporal coordinates to events. Within an inertial frame, these coordinates are fixed. From the perspective of different inertial frames, however, the coordinates assigned to events changes. The physical consequence of unifying space and time is that observers in motion relative to each other may not agree on the duration of, or distance between, events in spacetime. Spacetime is the fundamental structure, so observers situated in frames related by the Lorentz transformations will *always* agree on the spacetime interval between events (sometimes just referred to as the Interval), but the measurements of time and space as separate dimensions are no longer absolute. (Angel 1980, 82).

To represent the perspective of a specific observer *O* on a spacetime diagram their world-line must be a straight line through $x=0$, as is shown in the figure below.



⁶⁰ I am with Balashov and Janssen in acknowledging that ‘a historian of relativity will have to be more careful, but for our philosophical purposes, as well as for all practical purposes of modern physics, this characterization is perfectly adequate.’ (Balashov and Janssen 2003, 330).

Coordinates are not absolute; they only ever represent relationships between points in their frame of reference. As such, moving from one perspective to another should be straightforward. For the diagram to represent the world-line of observer P, shown by the orange line, one must perform a transformation that aligns P's worldline with the time axis (i.e. $x=0$). To move between two inertial frames, the transformation must preserve the Interval between the two events, which means the angle between the two lines must remain the same after the transformation. The two diagrams below represent O's perspective and P's perspective respectively.



The invariant speed of light introduces a dimension of complexity to this otherwise straightforward process. In a standard spacetime diagram the speed of light c is represented by a 45° angle, or $x=t$. SR holds that there is no privileged perspective, so the laws of physics cannot change when moving between inertial frames. When performing a transformation from O's perspective to P's perspective, the world-line of the light ray represented by line c must remain at a 45° angle to be consistent with the light postulate (i.e. regardless of which observer's worldline runs through $x=0$). As such, a straightforward translation or rotation (like those in the class of Galilean transformations) will not suffice. Contrary to the Newtonian view, SR reveals that the laws of physics are not Galilean invariant.



To preserve the angles between the world-lines of the observers whilst ensuring that c is still represented by a line drawn at a 45° angle, one must perform a transformation which involves a stretching and squashing of the coordinate points along the 45° angle. As the above figures illustrate, the speed of light will be preserved but the coordinates marking events along the x and t axis will change.⁶¹ The empirical consequence of this is that the measurement of spatial distances and temporal durations will not always be consistent between observers. This is the essence of the Lorentz transformation, and it is the only transformation (plus rotations and reflections) that leaves the speed of light invariant. (Bohm 2006, 75). Therefore, only the Lorentz transformations are consistent with the two postulates from which Einstein derived SR.

As has been demonstrated through the spacetime diagrams above, in performing a Lorentz transformation, the spatial and temporal coordinates assigned to events changes. This geometrically

⁶¹ These are not precisely mathematically accurate but have been included to illustrate the effects of a Lorentz transformation on a coordinate system.

represents the fact that in order to preserve the light postulate and the relativity principle, absolute space and absolute time are lost. These effects, *time dilation* and *length contraction*, have been demonstrated empirically. (Kennedy-Thorndike 1932) (Ives-Stilwell 1938) (Brown 2005, 82-87). If what SR reveals about the nature of space and time seems counter-intuitive, this is because the effects are negligible at the relatively low speeds we encounter. Once observers approach the speed of light, both time dilation and length contraction have a more noticeable effect.

b) Minkowski Spacetime

In 1908 Hermann Minkowski published a paper which reformulated SR geometrically, as a theory of spacetime structure, as opposed to the dynamical account initially proposed by Einstein. Instead of focusing on electrodynamics and moving bodies, Minkowski argued that the effects of SR were best explained by unifying space and time into a single four-dimensional manifold: *spacetime*. The geometry of spacetime provides the ontological explanation for the physical effects SR predicts. Whilst Einstein initially called it ‘superfluous learnedness’, Minkowski’s was, in the words of Harvey Brown, ‘a crucial advance.’ (Brown 2005, 128).⁶²

In his 1908 paper, Minkowski made the now famous declaration: ‘henceforth space by itself, and time by itself, are doomed to fade away into mere shadows, and only a kind of union between the two will preserve an independent reality.’ (Minkowski 1908). This union involves abandoning the claim that either of these concepts is distinct or absolute. Instead, they form a single manifold comprised of four dimensions: three spatial and one temporal. A point in Minkowski spacetime is denoted by four coordinates: x , y , z , and t . Minkowski affords this seemingly trivial point ontological weight.⁶³ The separation of two events in Minkowski spacetime is described by the following equation:

$$s^2 = x^2 + y^2 + z^2 - c^2t^2$$

Minkowski’s geometric formulation of SR introduces a new conceptual tool based on the behaviour of light. As Maudlin explains: ‘if we accept that in a vacuum there is no physical structure except for the structure of spacetime itself, then the behaviour of light in a vacuum implies that the geometry of spacetime alone determines the trajectory of light rays.’ (Maudlin 2012, 68). Thus, the behaviour of light reveals something fundamental about the structure of spacetime. For this reason, Minkowski introduced the lightcone, which he defined thus:

The first, the past lightcone of O , consists, we can say, of all worldpoints which “send light to O ”, the second, the future lightcone of O , consists of all worldpoints which “receive light from O ”. The area bounded solely by the past lightcone may be called before O , whereas the area bounded solely by the future lightcone – after O . (Minkowski 1908).

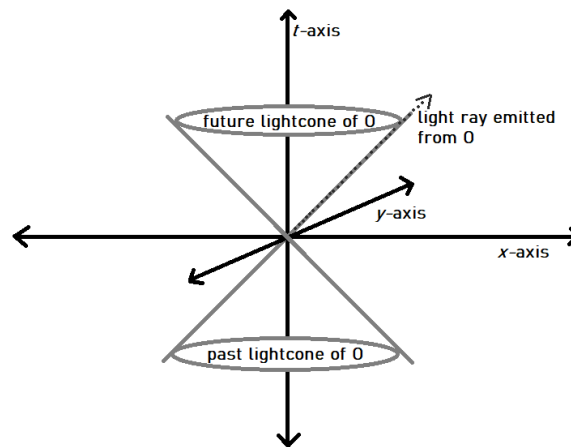
Lightcones are divided into past lightcones and future lightcones. The future lightcone of O is comprised of the light rays, travelling in all directions, emitted at O , and O ’s past lightcone is comprised of all the light rays that reach point O . The concept of a lightcone draws out the connection between causality and light signals in SR – anything outside the past or future lightcone of O is causally unrelated to O , as there is no way a signal (or anything else, due to c ’s function as a cosmic speed limit) could reach O if it does not pass through O ’s lightcone. If a bulb goes off in a vacuum at O , the light will occupy the entire future lightcone of O .

⁶² Einstein later acknowledged this, and Minkowski spacetime proved foundational in the formulation of the General Theory of Relativity (GR).

⁶³ Tim Maudlin argues that Einstein’s principle approach presents the theory in ‘a complex and confusing way.’ Maudlin points out that an inertial system is derivative and not fundamental, therefore properly one should begin with intrinsic geometry rather than coordinate systems or reference frames, and for this reason Minkowski’s formulation is vastly preferable. (Maudlin 2012, 67).

The lightcone of O divides the universe into five topologically connected sets: 1) the events within the future lightcone, 2) the events on the future lightcone, 3) the events within the past lightcone, 4) the events on the past lightcone, 5) and events outside the lightcone. Events within the past or future lightcone are called *time-like separated* from O, as reference frames may disagree about whether they are in the same location, but all reference frames agree that they occur at different times. Events on the future or past lightcone are *light-like separated* from O. Those outside the lightcone are *space-like separated* from O, as there may be disagreement between frames about whether they are simultaneous but there is no reference frame in which they are at the same location. (Maudlin 2012, 74).

The lightcone plays a limiting role, meaning that the trajectory of any physical entity, i.e. a beam of light, that goes through an event never goes outside the lightcone of that event. (Maudlin 2012, 75). This a geometric formulation of the empirical claim that ‘nothing can go from travelling at subluminal speeds to superluminal (and vice versa).’⁶⁴ As we shall see later, the lightcone replaces Galilean spacetime’s foliation into simultaneity slices. The diagram below illustrates the light cone of O.⁶⁵



Minkowski spacetime and four-dimensional Euclidean space share the same affine (straight line) structure. As such, Newton’s first law can take the same form that it did in Galilean spacetime: ‘the trajectory of any physical entity subject to no external influences is a straight line in Minkowski spacetime.’ (Maudlin 2012, 75). *Mutatis mutandis*, the trajectory of a light ray in a vacuum is a straight line in Minkowski spacetime. Minkowski spacetime and Euclidean space are also topologically identical, therefore Euclidean spacetime diagrams can represent these aspects of Minkowski spacetime. (Maudlin 2012, 70). Time-like separated events exhibit fixed ordering relations. As causality can only operate within light cones, *earlier than* and *later than* relations are meaningful within the light-cone structure. Hence, SR is able to accommodate B-relations between any causally relatable events. (Bardon 2013, 93).

c) The Clock Hypothesis and the Twin Paradox

A conceptual key to understanding the physical consequences of SR is the Clock Hypothesis. Tim Maudlin defines it thus: ‘the amount of time that an accurate clock shows to have elapsed between two events is proportional to the Interval along the clock’s trajectory between those events, or, in short, clocks measure the Interval along their trajectories.’ (Maudlin 2012, 76). Essentially, a clock tells us something about spacetime.⁶⁶ When moving clocks show different elapsed times to stationary clocks

⁶⁴ The existence of tachyons (particles which travel faster than the speed of light) is not inconsistent with SR.

⁶⁵ This reproduced diagram is based on one found in (Maudlin 2012, 74).

⁶⁶ For a recent study of the clock hypothesis, and a proposal for an idealised light clock which could perfectly satisfy it, see: (Fletcher 2013).

this is a consequence of some feature of the world rather than a fault in the workings of the clock. A clock in relativity does not function exactly the same as a clock in Newtonian mechanics. It cannot measure absolute time as, unlike Galilean spacetime, Minkowski spacetime is not foliated into simultaneity slices and so is inhospitable to the very existence of absolute time. Instead, a clock in SR measures the spacetime Interval along its worldline. Given this fact, it makes sense that synchronised clocks beside each other will run at the same rate; their spacetime trajectories are equal in length. Spatially separated clocks, however, may record completely different lapsed times between the same pair of events. (Maudlin 2012, 76). It is this fact that the Twin paradox illustrates.

The Twin paradox concerns two twins with synchronised clocks in separate rocket ships, one of whom is spatially separated and moves at a velocity which is a significant fraction of c . The twins are then brought back together, only to find that their clocks have recorded different times. The twin who approached the speed of light is biologically younger than the twin who remained stationary. The paradox lies in the fact that the twins have aged at different rates, though once SR is properly understood the paradox fades away.⁶⁷ The twin paradox has received extensive treatment in the literature, and further discussion is not within the scope of this chapter. (Luminet 2011) (Maudlin 2012, 77-105) (Bohm 2006, 195-204) (Brown 2005, 79, 88, 105). Its relevance in this context is that it illustrates how time passes differently for different observers if those observers are in motion relative to each other, and that this difference is genuine insofar as it affects physical processes such as ageing.

Conclusion

From just two empirically steadfast postulates, Albert Einstein was able to derive the Lorentz transformations and formulate SR. (Einstein 1959, 57). The physical consequences of this are far reaching, but the two most important are: a) within SR, there is no physical basis on which to establish absolute simultaneity between distant events. Newtonian absolute time, therefore, cannot be preserved without significantly modifying the theory. b) Time and space are part of the same more fundamental entity, meaning measurement of their relative values may differ between inertial frames.

The second point follows closely from the first: measures of distance depend on measures of time. This makes the date assigned to a distant event an implicit function of the spatial distance of that event. (Newton Smith 1980, 179). Different inertial frames will assign different time values to different events. The Lorentz transformations which generate time dilation effects are not just mathematical tools, they have ontological content. Thanks to SR, we know that time and space are not fixed absolutes. It is their union, Minkowski spacetime, which is absolute. This chapter has set out the physics contained in Einstein's Special Theory of Relativity. Physics alone, however, cannot adjudicate in metaphysical matters. We must now turn to the rich and lively debate regarding the philosophical implications of SR for the ontology of time.

⁶⁷ Other paradoxical elements are as follows: as there are no privileged observers, the travelling twin could just as easily say that the earth-bound twin is moving relative to their reference frame. From this perspective, we should expect the earth-bound twin to have aged less and the travelling twin to have aged more. These contradictory expectations generate a paradox. Yet the outcome, predicted by SR and borne out in empirical investigation, is that the travelling twin's clock runs slower due to their increased acceleration and not the reverse. (Debs and Redhead 1996) (Maudlin 2012, chapter 4) (Weeks 2001).

3

SPECIAL RELATIVITY AND THE A VERSUS B DEBATE

In Chapter 1, I stated the case against the A-theory of time, the overarching term used to encompass dynamic, tensed, temporal theories such as presentism and the growing block.⁶⁸ Whilst the metaphysical considerations of the first chapter paved the way for the B-theory, it cannot be established on the failure of the A-theory alone. Furthermore, whilst metaphysical arguments do important work in clarifying what is conceptually at stake in debates between competing theories, to ignore empirical considerations would be to turn away from a rich wealth of evidence which provides the strongest support for a B-theory of time. In this chapter I present two rival interpretations of SR, arguing that the B-theoretic spacetime interpretation is preferable to the A-theoretic neo-Lorentzian interpretation. Through this analysis I distil the metaphysical implications of SR from the mathematics and measurements. It is where metaphysics meets physics that the argument for the B-theory is found. Neither physics nor metaphysics can *prove* that time is tenseless, but this is not essential for this thesis (nor for metaphysics more generally). I argue that a compelling cumulative case for the B-theory is built through the philosophical and scientific arguments presented here.

General Metaphysical Considerations

SR illuminates two features of the physical world which undermine the objective distinction between tenses that is so integral to the A-theory.⁶⁹ These are time dilation and the relativity of simultaneity. I will argue that an A-theory requires the existence of absolute time, whose component parts are robust temporal passage and a universal and objective *now*. Without these, it is hard to imagine what could be meant by the ontological priority of the knife-edge of the present, and the objective flow of time that makes events objectively *past*, *present* and *future*.⁷⁰ I argue that these concepts cannot be accommodated within SR, which is a good reason to accept the fundamentality of the B-theory.

As we saw in the previous chapter, the time dilation effects described by the Lorentz transformations follow from the union of the light postulate and the relativity principle. Minkowski spacetime is structured in such a way that the time coordinate of an event cannot be completely separated from its spatial coordinates. The Interval is the invariant measure of an object's trajectory through spacetime, whereas one's specific measurements of duration and distance are frame dependent. Throughout the subsequent discussion, the problems this presents for absolute time will be spelled out in more detail.

Simultaneity planes depend on one's frame of reference, which means that observers in different frames of reference will not always agree on which events are simultaneous with the present, viz. occurring *now*. Kurt Gödel explains:

⁶⁸ With the exception of the eternalist A-theory the moving spotlight, which isn't directly relevant to the concerns of this work. For a defence of the compatibility of the moving spotlight with SR, see (Skow 2009).

⁶⁹ One can only preserve absolute time by introducing extra structure, an approach which will be discussed in this chapter.

⁷⁰ I use 'knife-edge' to refer to the present because it describes the present as an extremely sharp dividing line between the past and future, which has very little extension. There is a debate about the extension of the present, often termed the specious present. First introduced by William James. (James 1890) . See also, (Mabbott 1955) (Kelly 2005) (Power 2012).

The instance of an objective lapse of time ... means ... that reality consists of an infinity of layers of “now” which come into existence successively. But, if simultaneity is something relative ... reality cannot be split up into such layers in an objectively determined way. Each observer has his own set of “nows,” and none of these various layers can claim the prerogative of representing an objective lapse of time. (Gödel 1949, 558).

Gödel draws out the problem the relativity of simultaneity poses for the A-theory. The A-theory depends on events possessing the objective tensed properties *past*, *present*, *future*, and on time being dynamic in the sense that it genuinely passes. The demise of absolute simultaneity and the introduction of time dilation seem incompatible with the claim that events can possess objectively tensed properties, as the present is defined differently for different observers. Therefore, the designation of an event as present is, in at least some sense, subjective. This is strong evidence in favour of the B-theorist’s denial of tensed facts and an objective present.

A further set of questions is raised regarding simultaneity in SR, namely those relating to the conventionality of simultaneity.⁷¹ Whether two distant events are simultaneous must be ascertained by measuring the time of each event and seeing if they occurred at the same time. To do this, one needs a method for synchronising clocks. SR says this must be a matter of convention.⁷² The best two means of clock synchronisation are the clock transportation method and the signal method. The former involves synchronising two clocks and then moving them apart, and the latter uses signals (the fastest being electromagnetic) to synchronise already spatially separated clocks. (Maudlin 2012, chapter 5).

The problem is, whilst clocks can be synchronised next to each other, when their worldlines are separated SR dictates that they are likely to run off different times. Without using signals there is no way to tell whether the clocks remain synchronous, and the finite velocity of light rays means that there is a limit to how accurately one can measure the time at which a distant event occurred. The distance between the Earth and the sun is 8 light minutes, meaning it takes light from the sun 8 minutes to reach one the Earth. If one wishes to synchronise two clocks, one on the sun and one on the Earth, the light signal method would prohibit the clocks being synchronised to an accuracy of any greater than 8 minutes. This is clearly a highly significant problem when trying to ascertain simultaneity relations over cosmic-scale spatial distances (these are essential for absolute simultaneity, as absolute entails universality).

Einstein proposed what has come to be known as the Einstein-Poincaré convention, which involves synchronising clocks via signal transmission, and drawing the simultaneity plane at the midpoint between the two clocks. This has been adopted as the standard way to ascertain simultaneity planes within a reference frame, yet there is a debate about whether this is the only choice possible. (Brown 2005, 95-105). This debate discloses that even within a reference frame the choice of simultaneity planes may itself be arbitrary, further undermining the concept of absolute simultaneity in SR.

Richard Swinburne bifurcates possible responses to the problem of distant clock synchronicity into the absolutist (Swinburne, Craig) and operational (Einstein, Minkowski) responses. The first, the absolutist position, holds that SR’s claims are limited by the operational and epistemic limitations of scientific endeavour itself. On this view, our inability to synchronise distant clocks is only a practical limitation, meaning SR’s inability to substantiate absolute simultaneity, and therefore absolute time, is a methodological problem which does not reveal anything fundamental about temporal metaphysics. (Swinburne 2008, 253). It is still meaningful to speak of absolute time, and thus the absolute simultaneity of distant events, but SR shows that *discovering* this truth is, at the very least, deeply

⁷¹ For further reading, see: (Chunghyoung 2020) (Janis 2018) (Eddington 1924, §§1.4, 1.11).

⁷² David Malament disagrees. (Malament 1977). See also (Stachel and Sarkar 1999)

problematic. On this account, there exists a privileged frame in relation to which simultaneity relations have their absolute truth value.

The second response is the operational/spacetime (henceforth just ‘spacetime’) interpretation which holds that one should not postulate the existence of any entity or relation that is not contained within the formal structure of SR. This means that the frame-dependence of simultaneity reflects an observer-independent temporal fact, and entities, structures, or forces not described by the theory are explanatorily superfluous and to be avoided. On this view, time dilation effects are real consequences of spacetime structure and reveal that time is not absolute. In what follows I give an account of each position, outlining their strengths and weaknesses, ultimately arguing that the spacetime interpretation should be favoured. This provides empirical support for the B-theory and serves as a rebutting defeater of the A-theory by rebutting its central commitment to the existence of an objective present moment.

The Spacetime Interpretation

The spacetime interpretation of SR has, in effect, already been outlined in the previous chapter. It uncontroversially holds that all SR’s claims are true, and more contentiously, that metaphysical postulates that transcend the claims of our best scientific theories should be rejected. Therefore, it is not appropriate to postulate the existence of anything further than that which is contained in the basic principles of SR.

On this view SR reveals more than limitations of our ability to ascertain certain facts about the natural world, it reveals that there are no such facts. We cannot discover absolute simultaneity relations because they do not exist, and time dilation effects occur because time is not absolute but is one dimension of the more fundamental spacetime. Most importantly, the interpretation claims that the four-dimensional spacetime manifold genuinely exists and is not just instrumentally valuable in generating empirical predictions.⁷³ Hence, it is referred to as the *spacetime* interpretation. D.C. Williams advocates such a view: ‘I believe that the universe consists, without residue, of the spread of events in space-time ... the theory of the manifold is anyhow literally true and adequate to that world.’ (Williams 1951, 457). Williams speaks glowingly of the spacetime interpretation of SR, calling it ‘the logical account of events *par excellence*, the teeth by which the jaws of the intellect grip the flesh of occurrence.’ (Williams 151, 459). Here he is championing the operationalist interpretation of Minkowski spacetime that characterises the spacetime interpretation.

Einstein is committed to the importance of measurability in defining scientific concepts: ‘the concept does not exist for the physicist until he has the possibility of discovering whether or not it is fulfilled in an actual case. We thus require a definition of simultaneity such that this definition supplies us with the method by means of which ... [one] can decide by experiment whether or not both lightning strikes struck simultaneously.’ (Einstein 1920, 22). This statement shows Einstein’s commitment to an entailment relation between epistemic and ontological facts. On Einstein’s view, one can only meaningfully discuss ontological facts once epistemic access to them is possible, in this case through empirical investigation. No belief has meaning until it has been empirically verified, and these verified beliefs correspond to mind-independent facts about the world. This position, known as Operationalism, is fundamental to the spacetime interpretation. The operationalist defines scientific concepts in terms of the operations used to demonstrate them, maintaining that meaning is inextricably linked to

⁷³ The spacetime interpretation is agnostic r.e. the existence of Minkowski spacetime, but it prohibits commitment to any *further* structure. As I understand it, the view is committed to its existence, but Einstein’s writings were ambiguous on the matter (he first called Minkowski’s idea ‘superfluous learnedness’).

measurement.⁷⁴ An operational definition of time, for example, would be that time is what clocks measure. (DiSalle 2009).

The crux of the issue for absolute simultaneity in SR is that when synchronised clocks undergo spatial separation their synchrony is upset, and they show different elapsed times. This is strong empirical evidence against the notion of absolute simultaneity, as two spatially separated events can be deemed simultaneous by the measurement of one clock and not by the measurement of the other. To map the time coordinate of an event one needs to receive a signal from that event, ordinarily in the form of a light signal. The light leaving the event enters the observer's retina, or measuring apparatus, and a time stamp is given to that event. The fact that light travels at a fixed and finite speed means that light from distant events will take a certain time to reach any observer or any clock.

If two clocks A and B are spatially separated and an event *e* takes place much closer to clock A, then the light signal will reach clock A before it reaches clock B. Clock A will record *e* as happening at a different time to clock B. Both the time of occurrence and the spatial position of *e* will affect the time clocks A and B will measure *e*'s occurrence, and this holds also for pairs of events. If the relation of simultaneity depends on which clock is used, or which inertial frame an observer is viewing from, then it is not a *uniquely* obtaining *factual* relation.

The spacetime interpretation has been typically understood as supporting a B-theoretic model of time, particularly the so-called 'block universe', precisely because it cannot substantiate absolute simultaneity. B-series temporal order is comprised only of the B-relations *earlier than*, *later than*, and *simultaneous with*.⁷⁵ Whether A-properties or B-relations are more fundamental depends, I argue, on the status of absolute simultaneity. The A-theory requires events to possess the objective tensed properties *past*, *present*, and *future*, and for an event to be objectively present it must be simultaneous with some moment we call *now*. This *now* must be universal and observer-independent. *Occurring now* or *being present* must be a property that is possessed by all present events. This requires the existence of an absolute simultaneity relation that obtains between such events and with the present moment.

The spacetime interpretation is inconsistent with the existence of absolute simultaneity. Without absolute simultaneity, there can be no objective and universal *now*. The A-theory requires the existence of such a *now* to function as the frontier of becoming – potential (viz. non-real) future events *come into being* when they become present. If the present cannot be clearly defined, then it cannot be an ontologically privileged boundary between the actual present and the potential future. The A-theory is committed to a non-actualised future, and SR seems incompatible with this claim.

Hillary Putnam famously argued, using A-theoretic (specifically, presentist) assumptions, that SR leads us to the conclusion that '*future* things (or events) are already real!' (Putnam 1967, 242). These assumptions are as follows: 'future things (which do not already exist) are not real (on this view); although, of course they will be real when the appropriate time has come to be the present time. Similarly, past things (which have ceased to exist) are not real, although they were real in the past.'

⁷⁴ The Operationalist position was first explicitly defined and defended at length by Nobel Prize winning physicist P.W. Bridgeman in 1927: 'we mean by any concept nothing more than a set of operations.' (Bridgeman 1927, 5).

Though this postdates Einstein's writing on the matter, meaning he could not have had Bridgemanian Operationalism in mind, operationalist-like commitments underlie Einstein's writing. In particular, when defining simultaneity through a means to experimentally test it. Einstein's proposed definition of simultaneity, discussed in the previous chapter, leads to disagreement between observers on whether two distant events are simultaneous or not. For this reason, the spacetime interpretation regards absolute simultaneity as non-existent. Frame-dependent simultaneity is not merely an epistemic restriction on our ability to measure absolute simultaneity relations, it is the consequence of mind-independent, objective, fact about temporal reality.

⁷⁵ Note: the B-series holds that simultaneity is a fundamental relation, but it does *not* require that simultaneity be global, objective or absolute. (Read and Qureshi-Hurst 2020, footnote 8).

(Putnam 1967, 240). We can also assume the claim ‘I am present’, and therefore I am now real. Importantly, relativity also teaches us that there are no privileged observers.

Because ‘is real’ is a transitive relation, everything standing in the simultaneity relation with ‘me-now’ is real. As Special Relativity indicates, however, an observer simultaneous with me-now could experience events as present (and thus real) which lie in my future – making future events already real. As there is no objective way to determine which of us is a privileged observer, for no such observer exists within the theory, then from at least one valid perspective future events are already real. If objects or events that are *future* from one perspective *already exist* (as they are present from another perspective) then the present moment, at which point potential future events become actual present events, cannot be such a universal and objective feature of reality.

Putnam argued for a tenseless understanding of the nature of time given the insights provided by SR.⁷⁶ The future is already real, and there is nothing privileged about our temporal perspective which we believe to be constituted by *now*. This follows from the central claims of SR. When moving at high velocities or when at a great distance from each other, future events in my frame of reference may already be present and therefore real in your frame of reference, undermining the A-theorist’s claim that the present is a sharp divide between past events which are gone and future events which are yet to come into existence. Though Putnam’s argument was aimed at presentism, it is an argument against any A-theory,⁷⁷ as all A-theories of time require an unrealised future sharply distinguished from the past by a moving present. Both presentism and the growing block require the future to be open and deny the present reality of future events. The reality of future events is perfectly consonant with a B-theory of time, and follows from the spacetime interpretation of SR.

The A-theorist is committed to the claim that the future itself is unreal, and only becomes real when it becomes objectively present. As Matias Slavov points out, however, another reason to reject such an absolute present moment is that ‘relativistic physics indicates that the temporal order of two spacelike separated events is relative.’ (Slavov 2020, 1398). If two observers can disagree with the order that events occurred, then this further undermines the notion of a universal *now* at which point events objectively come into being. Furthermore, interpreting the relativity of temporal ordering relations for spacelike separated events against a backdrop of A-theoretic assumptions leads to a contradiction, namely the claim ‘the future is real’ is both true and not true. This is yet another reason to reject the A-theory following relativistic physics.

This point is worth explicating further. Imagine two spacelike separated events, A and B. From observer O’s perspective A happened before B, but from some other observer P’s perspective, B happened before A. After O and P have observed only the first event (O observes A and P observes B), from each perspective the second event has not yet happened. However, as O has observed the event that is *after* the first event for P, and as there are no privileged observers, the A-theorist is forced to conclude that the event has both happened and not happened. From O’s perspective, A has happened and B has not; from P’s perspective, B has happened and A has not. As there are no privileged observers, event A and event B has both happened and not happened.

On A-theoretic reasoning, one would be forced to conclude that the future that holds this event both exists and does not exist. The future is defined as the unrealized set of potential events that will come into being but have not yet done so. Any event that has not happened yet (but will happen) falls into this category. When viewed from inside the system, i.e. from the perspective of O or P, whichever event

⁷⁶ Robert Weingard critiques Putnam’s argument on the basis that it does not fully appreciate the implications of the conventionality of distant simultaneity. Weingard thus adapts Putnam’s argument to incorporate this phenomenon and draws the same conclusion r.e. the incompatibility of relativity and presentism. In short, he argues that if all events simultaneous with I-now are real, then we must conclude that all events outside my lightcone are real; from this, he shows that all events in relativistic spacetime are real. (Weingard 1972).

⁷⁷ Except the moving spotlight, which is unviable for aforementioned reasons.

happens first is a present event and the other is a future event. The order A and B is observer-dependent, however, meaning that A is both future and present, and has both happened and not happened. Thus, the A-theorist must conclude that the future that holds the events is both real and not real. This conclusion that the future is both real and not real, therefore the present is fuzzy and not clearly defined, is incompatible with the A-theory. Such a present moment cannot be the universal boundary at which point future events objectively come into existence. The A-theory requires the present to function as a sharp, objective, and definitive distinction between the future and the past – only objects that are present are real. Both presentism and the growing block require such a knife-edge present moment. On the B-theory, on the other hand, the future does exist and so there is nothing ontologically problematic about an event being present from one perspective and being future from another.

Thus, the absence of absolute simultaneity is a problem for the A-theory for two reasons: 1) there can be no objective and universal *now* which sharply divides the future from the past, thus an objective distinction between tensed properties is unsubstantiated. 2) events which are in my future may be present from another observational perspective, making future events already real. This undermines the claim that *now* is the boundary at which point potential future events come into existence.

As stated previously, the absence of an absolute simultaneity relation is good evidence for the B-theory. Nothing in the B-theory requires the relation *simultaneous with* to be objective, or to be with some present moment *now*. Moreover, the existence of future events is contained within the ontology of the B-theory. The B-theory is committed to the co-existence of all events which together with the spacetime that contains them comprise a four-dimensional block universe. SR indicates that absolute, flowing, time has no place in that universe. This is compatible with the claims of the B-theory. As Oliver Pooley writes, a B-theorist is committed to the claim that a complete account of temporal reality can be given with ‘an exhaustive catalogue of which events occur, and how they are temporally related.’ (Pooley 2013a, 234). SR does not negate temporal ordering relations, though it does indicate that these relations hold only for time-like separated events. Fortunately, the B-theory does not require B-relations to be invariant.

I conclude that the spacetime interpretation of SR gives direct and indirect support for the B-theory. It directly supports the B-theory by preserving B-relations and by implying the non-objectivity of tense (through the existence of future events). It also provides indirect support for the B-theory by rebutting a core claim of its closest and most plausible rival, namely the existence of an objective present moment. Adolf Grünbaum argues similarly that ‘the failure of human measuring operations to disclose relations of absolute simultaneity is ... the epistemic consequence of the primary non-existence of these relations.’ (Grünbaum 1964, 352). More recently, Oliver Pooley has argued that any attempt to recover the objective passage of time (and therefore the A-theory) fails, as it either does not take passage seriously or does not take relativity seriously. (Pooley 2013a, 322).⁷⁸ We cannot measure absolute simultaneity relations as they do not exist. Without absolute simultaneity, the idea of a metaphysical knife-edge where all existing things and events are simultaneous with both the present and each other is incoherent. If the spacetime interpretation of SR is correct, then the B-theory is vindicated.

⁷⁸ Dennis Dieks provides a so-called deflationary analysis of passage in which passage is defined simply as ‘the coming to be of events.’ (Dieks 2006, 170-171) On this view, in the block universe events happen ordered in their respective B-relations and this happening is sufficient to account for temporal becoming. Pooley agrees with Earman that this is a ‘thin and yawn-inducing’ sense of passage which makes heavy weather of facts about the occurrence of events that almost no one denies. (Earman 2008, 159) Moreover, this view fails to capture an important feature of temporal passage, namely that past events become ‘more past’ (i.e. becoming ever further away in the past) as new events become present and are then added to the growing set of past events. Thus, Pooley concludes that a deflationary analysis of passage does not take passage seriously. Pooley argues that the other alternative, namely trying to recover an objective present moment in relativity exemplified by the neo-Lorentzian interpretation, does not take relativity seriously.

Absolutism: Against the Spacetime Interpretation

a) The Neo-Lorentzian Interpretation

The neo-Lorentzian interpretation of SR, championed by William Lane Craig, builds upon the work of relativity pioneer Hendrik Lorentz, the namesake of the Lorentz transformations. Proponents interpret SR in line with a Newtonian commitment to absolute space and absolute time and insist that the two remain ontologically distinct.⁷⁹ In the literature this is often referred to as a 3+1 spacetime ontology. The neo-Lorentzian commitment to absolute time is a commitment to both observer independent temporal passage and the existence of absolute simultaneity. For this reason, it is an A-theory of time. Though he gives philosophical and scientific reasons for interpreting SR within a Newtonian framework, Craig's argument is ultimately advanced on theological principles.

Lorentz identifies his position as akin to the nineteenth century consensus that 'the aether possesses at least some substantiality, space and time can be sharply separated, and simultaneity without further specification can be spoken of.' (Lorentz 1920, 23). As Craig explains, 'Lorentz refuses to jettison what he took to be the intuitively obvious reality of absolute simultaneity among events in the world just because one cannot determine which spatially separated events are simultaneous or because Einstein's operationally re-defined notion of simultaneity is relative to reference frames.' (Craig 2001c, 15). The neo-Lorentzian interpretation of SR holds that:

- (1) the round-trip vacuum propagation of light is isotropic in a preferred (absolute) reference frame R_0 (with speed $c = 1$) and independent of the velocity of the source, and
- (2) lengths contract and time rates dilate in the customary special relativistic way only for systems in motion with respect to R_0 . Such a theory is required in view of divine temporality, for God in the "now" of metaphysical time would know which events in the universe are now being created by Him and are therefore absolutely simultaneous with each other and with His "now." (Craig 2002, 139).

In this passage, Craig makes three points. The first is a commitment to the existence of some form of background structure which functions as a preferred frame of reference against which the objective passage of time can be measured. Absolute simultaneity relations are grounded in such a frame. Lorentz was committed to the existence of the since debunked luminiferous aether, so Craig suggests a range of other possibilities, the most plausible of which will be considered in the next chapter. The second point explains time dilation effects without requiring that time be non-absolute. Bodies in motion with respect to the preferred frame will experience time dilation and length contraction, without having any bearing on absolute time or space. These commitments make this interpretation *Lorentzian*; it is *neo-Lorentzian* as it does not include commitment to Lorentz's 'defunct electron theory' or the luminiferous aether. (Craig 2001a, 170). The third point draws out the significance of theism in motivating the neo-Lorentzian position. The argument runs as follows:

- 1) God exists.
- 2) The A-theory of time is correct.
- 3) If an A-theory of time is correct, there are tensed facts and temporal becoming.
- 4) If God exists and there are tensed facts and temporal becoming, then God knows tensed facts and is the cause of things coming to be.
- 5) If God knows tensed facts and is the cause of things' coming to be, then God is temporal.
- 6) There are tensed facts and temporal becoming. (2, 3)
- 7) God exists and there are temporal facts and temporal becoming. (1, 6)
- 8) God knows tensed facts and is the cause of things' coming to be (4, 7)
- 9) God is temporal.

⁷⁹ For an overview of Newton's views on time, see (Schliesser 2013).

- 10) If God is temporal, then a privileged reference frame exists.
- 11) If a privileged reference frame exists, then a Lorentzian interpretation of SR is correct.
- 12) A privileged frame exists. (9, 10)
- 13) A Lorentzian interpretation of SR is correct. (11, 12) (Craig 2001a, 165).

The neo-Lorentzian position identifies God's frame as the preferred frame of reference which grounds absolute simultaneity relations. By *God's frame* Craig means 'the reference frame on whose associated hyperplane of simultaneity at the time of any event on the world line of a hypothetical observer at rest in that frame lie those events which God in the 'now' of metaphysical time knows he is then creating.' (Craig 2001a, 165). Craig claims that the neo-Lorentzian interpretation is empirically equivalent to the spacetime interpretation, and thus is on equal footing in terms of scientific viability. It should be preferred, he maintains, for metaphysical reasons. I shall assess this claim and interrogate whether the neo-Lorentzian alternative is an appealing reinterpretation of scientific orthodoxy. I will also examine Craig's background assumptions and active theistic agenda, with a view to demonstrating that at the present time, the neo-Lorentzian interpretation of SR is not a persuasive alternative to the spacetime interpretation.

b) The neo-Lorentzian Commitment to Absolute Metaphysical Time

Craig dismisses judgments that SR dissolves the classical notion of absolute time as 'mistaken and ... predicated upon a deficient understanding of the metaphysical, and particularly theistic, foundations of the classical concept of time, as well as upon a defective epistemological approach to these problems.' (Craig 2002, 129). From the outset he is outlining both his commitment to absolute Newtonian time and his theistic motivations for taking such a position. Craig draws the reader's attention to the General *Scholium* to the *Principia*, added in 1713, which grounds absolute time and space in the divine attributes of omnipresence and eternity. Time and space, then, are contingent upon God and their attributes are formed by his divine nature. As Schliesser writes, 'Newtonian time is an attribute-like aspect of a self-causing God.' (Schliesser 2013, 97). For both Craig and Newton, one's metaphysics cannot be divorced from one's theology: '[God] is eternal and infinite ... that is, his duration reaches from eternity to eternity; his presence from infinity to infinity ... He endures forever, and is everywhere present; and, by existing always and everywhere, he constitutes duration and space.' (Newton 1686, 2:545).

Craig distinguishes, along with Newton, between two types of time: time that is measured and time that exists observer-independently. (Schliesser 2013, 89-92). Newton named them relative, apparent, commonplace time and absolute, true, mathematical time. Craig names them physical time and metaphysical time. The former is that which is measured by clocks, and the latter is grounded in divine eternity. Craig understands metaphysical time as time from God's perspective, i.e. the series of mental events in the divine mind. Craig's metaphysical temporal series is unaffected by the Lorentz transformations, inertial frames, and measurement, as it is non-physical and therefore transcends the physical restrictions SR imposes on matter. We may only have access to physical time due to the limitations of measurement, but whether metaphysical time is accessible not, this does not affect its ontological status.

Craig argues that God 'would know, without any dependence on clock synchronisation procedures or any physical operations at all, which events were simultaneously present in metaphysical time.'⁸⁰ DeWeese supports Craig's distinction between metaphysical (real) time and physical time, believing that failure to do this 'is the root of many misapplications of SR.' (DeWeese 2004, 230).⁸¹ In distinguishing metaphysical time from physical time, SR can be relegated to a theory that describes physical processes but leaves Newtonian true, metaphysical time untouched. This only works if one has a solid basis for claiming that real, metaphysical time exists at all, and Craig roots his claims about

⁸⁰ Craig, W.L. *God, Time and Eternity*. 165

⁸¹ DeWeese is referring to those who try to construct B-theoretical models for God's relation to time.

metaphysical time in God. From this theistic starting point, he begins his scientific and metaphysical analysis.

Craig's notion of absolute time depends upon theistic assumptions, for example that an omniscient God would have perfect knowledge of the time events occurred: 'the use of light signals to establish clock synchrony is a convention that finite and ignorant creatures have been obliged to adopt, but the living and active God, who knows all, is not so dependent.' (Craig 2002, 139). For Craig, the relation of absolute simultaneity is grounded in the mind of a transcendent God – no wonder, then, that it cannot be disclosed by science. Science must, on Craig's view, be interpreted in the context of one's accepted metaphysical or theological framework. It is only by probing deeper than the surface of the science, Craig argues, that we arrive at a more comprehensive understanding of reality. In order to do this, one must also interrogate the metaphysical underpinnings of our best physical theories.

c) The Implicit Assumptions in the Spacetime Interpretation

Craig and Smith seek an interpretation of SR that deviates from the Spacetime account on the basis of its epistemological and ontological assumptions which are, they claim, 'questionable, unjustified, false, [and] perhaps even illogical.' (Craig and Smith 2008, 4). Here Craig and Smith are referring to Operationalist and Verificationist assumptions regarding the ontological status of empirical findings, and the ontological facts one can assert on the basis of epistemic claims. Verificationism may be defined as the idea that only that which can be logically or empirically verified can possess meaning. Verificationists hold empirical science in high esteem due to its rigorous methodology and use of *a priori* mathematics, rejecting any metaphysical speculation on physical theories that exceeds what can be empirically tested and subsequently verified. Summarised in a sentence, these assumptions lead to reality being reduced to what we measure. In the context of SR, these assumptions lead to the dissolution of absolute space and absolute time.

The philosophical position Craig and Smith are critiquing began with logical positivism and the epistemic project of the Vienna Circle. Several different thinkers led the movement at different times, and thus the project changes its emphasis throughout the years of its heyday. The general idea, however, was empiricist in nature. Broadly stated, the positivist position is that science, through observation and experiment, offers the route to truth, and that no belief that cannot be logically or empirically verified can assuredly be called knowledge. Positivism, then, roughly equates to the idea that nothing over and above what can be given by observation and experimentation can be asserted. The position incorporates both Operationalist and Verificationist assumptions.

Craig and Smith argue that Einstein's 1905 paper is predicated on such positivist assumptions, defining time with reference to simultaneity, which in turn is defined with reference to clocks and their readings. In other words, the meaning is reduced to the measurement. Craig and Smith reject this position on the grounds that the assumptions on which it is based are no longer philosophically acceptable. Whilst an argument from consensus is not a sufficiently strong philosophical position, Craig and Smith illuminate the influence of implicit positivistic assumptions and making the persuasive case that these cannot be adopted uncritically. This is an important point. The twentieth century saw both the rise and fall of positivism, primarily due to the fact that Verificationist claims cannot themselves be verified, and as such they are self-refuting and an incoherent basis on which to construct an epistemological system. Craig and Smith argue that although positivism has collapsed, the positivist assumptions embedded in the orthodox interpretation of SR have remained there unchallenged. The collapse of positivism was a significant philosophical event, and Craig and Smith are right in drawing attention to latent positivist assumptions in received scientific orthodoxy.

The neo-Lorentzian interpretation makes metaphysical claims that far exceed what is contained within the theory, going beyond what Verificationists and Operationalists could bear. Verificationists and Operationalists no longer call the shots, however, and there are several areas of contemporary physics

within which the boundary between metaphysics and physics has become blurred. The most notable example is Quantum Mechanics, of which there are many empirically equivalent interpretations, meaning one's preferred interpretation is at present a matter of metaphysical judgement. (Schlosshauer and Kofler and Zeilinger 2013). Without metaphysical considerations a worldview could not emerge from the statistical and probabilistic analysis of Quantum Mechanics' mathematical formalism. Positivism is no longer the default position when dealing with empirical matters. As such, I will assess the neo-Lorentzian alternative to SR leaving Verificationist and Operationalist assumptions at the door. Despite this, I will argue that the neo-Lorentzian interpretation ultimately fails to offer a compelling alternative to the spacetime interpretation of SR. Craig has exposed the implicit assumptions of SR and argued that without them we are not *forced* to accept that SR dissolves the notion of absolute time. Nevertheless, SR still gives good reason to accept the B-theory.

Assessment of the Neo-Lorentzian Interpretation

Craig's argument relies heavily on his claim that the neo-Lorentzian interpretation of SR is empirically equivalent to the spacetime interpretation. What he means by this is as follows: one cannot derive an empirical test to determine which of these theories is preferable. Though there may be deep disparities between all other features of the theories, their empirical consequences are identical. In this case, Craig is referring to the fact that both interpretations predict length contraction and time dilation, although each gives a profoundly different explanation for these phenomena. If two theories are empirically equivalent, one must select between candidate interpretations based on something other than empirical evidence. This might include the structural simplicity of the theory, its metaphysical implications, or its coherence with one's background assumptions.

The straightforward analogy one can draw is between this and the various candidate interpretations of Quantum Mechanics (QM) – the mathematical formalism underdetermines which metaphysical interpretation of QM is the correct one. As such, QM has many incompatible interpretations (e.g., the Copenhagen interpretation, the DeBroglie-Bohm interpretation, and the Many Worlds interpretation) between which the evidence cannot decide at present. (Schlosshauer and Kofler and Zeilinger 2013). Thus, metaphysical arguments are often used in discourse surrounding which interpretation should be favoured. If this is also the case for SR, and there are two empirically equivalent interpretations from which to choose, then similarly something other than empirical evidence must be used to select the superior interpretation. I argue here that, although neo-Lorentzianism and the spacetime interpretation may be empirically equivalent, *that is not all there is to it*. Neo-Lorentzian SR contains several features which render it a far less appealing alternative than the more widely accepted spacetime interpretation.

In their extensive critique of the neo-Lorentzian interpretation, Balashov and Janssen write that it 'runs counter to the spirit if not the letter of [SR] by retaining a preferred frame of reference and absolute simultaneity.' (Balashov and Janssen 2003, 331). This does not, of its own accord, render the interpretation unworthy of consideration. Nevertheless, in countering scientific orthodoxy one must present a strong case, giving robust reasons and compelling evidence for overriding the prevailing view (which, presumably, has been generally accepted for good reason). Craig believes that challenging the epistemological underpinnings of the spacetime interpretation of SR is a significant step in this direction, with the final moves being made by his alternative neo-Lorentzian approach. I will argue that he is right to interrogate the Operationalism of the spacetime interpretation, but that ultimately his is not a compelling alternative.

The neo-Lorentzian interpretation of SR involves a rejection of the relativization of space and time that began at the turn of the 20th century and has persisted almost unchallenged since. Robert Russell, himself an advocate of flowing time '[agrees] with Craig that we need a tensed interpretation of SR for *theological* reasons.' (Russell 2012, 308). Nevertheless, he maintains that time dilation effects lead to the 'downfall of the present.' (Russell 2012, 234). Whilst Russell is a theologically motivated proponent of dynamic time, for scientific reasons he favours the spacetime interpretation of SR. On this

interpretation, which takes seriously time dilation effects, he argues that a global present is an unneeded anthropocentric illusion. Insofar as temporal duration is not fixed, identical observers in relative motion do not proceed uniformly together into the future. As a result, the events we expect to be mutually present are not those which identical, moving clocks mark out.

As Russell writes, ‘the results are clear: according to SR there is no physically meaningful way of determining a universally agreed upon present.’ (Russell 2012, 234-236). His solution is to establish a flowing time model within the spacetime interpretation of SR called an ‘inhomogeneous relational interpretation’ of the spacetime interpretation of SR. Unfortunately, consideration of this alternative is outside the scope of this thesis. For our present purposes, it is sufficient to note his and Craig’s shared theological motivations, and yet radically different interpretations of the science at hand.

Though Russell points out that the neo-Lorentzian interpretation is one that few physicists would accept, Craig repeatedly insists that the choice between the Spacetime and neo-Lorentzian interpretations is one between two scientifically viable and empirically equivalent theories. (Russell 2012, 293). In a comprehensive paper on the subject, Balashov and Janssen endeavour to show ‘how forcefully the physical evidence militates against such a return to the days before Einstein.’ (Balashov and Janssen 2003, 330). They criticise Craig at several points, not all of which can be considered here. One concern they raise is that the neo-Lorentzian theory requires multiple amendments and the inclusion of several additional principles in order to augment SR in such a way that absolute time is preserved. (Balashov and Janssen 2003, 336-339). Though interesting, this is not an argument against the *viability* of the theory, but instead its structural simplicity. An even more pressing challenge is the one they raise against Craig’s claim that the neo-Lorentzian and spacetime interpretations have equal explanatory power.

Balashov and Janssen locate the crux of the debate between these competing interpretations of SR as the status of Lorentz invariance. (Janssen 2002) (Balashov and Janssen 2003, 341-342). The spacetime interpretation explains Lorentz invariance as a consequence of the structure of Minkowski spacetime. This explanation is both simple and elegant and follows naturally from the structure of the theory. Minkowski spacetime is structured in such a way that the individual dimensions of space and time comprise a more fundamental metric: the spacetime interval. This interval is absolute, but the relative measures of space and time vary from frame to frame. Clock retardation and length contraction, then, are part of the spatiotemporal behaviour of systems in Minkowski spacetime due to its fundamental structure; no further explanation of the phenomena is required.

On the neo-Lorentzian interpretation, however, ‘Lorentz invariance is a property accidentally shared by all laws effectively governing systems in Newtonian space and time.’ (Balashov and Janssen 2003, 341). The well documented special relativistic behaviour of rods and clocks requires explanation in Newtonian spacetime that is not contained in its internal structure. Newtonian spacetime is absolute, and therefore time dilation and length contraction cannot be explained by appealing to the fundamentals of Newtonian spacetime. The explanation has to be given in terms of dynamical laws instead.

Balashov and Janssen argue that explaining length contraction and time dilation in terms of dynamical laws violates Earman’s symmetry principles, and as such the neo-Lorentzian interpretation ‘fails completely.’ (Balashov and Janssen 2003, 343). Earman’s symmetry principles state that every symmetry of the space-time posited by a theory should be a symmetry of that theory’s dynamical laws and vice versa. (Earman 1986, 46). These principles are SP1 and SP2 respectively, and are a method for ascertaining consistency between one’s spacetime structure and the dynamical laws that govern bodies within it. In a consistent theory, these should not be in tension with one another. Balashov and Janssen argue that ‘Galilean transformations correspond to symmetries of the space-time posited by the neo-Lorentzian interpretation, but not to symmetries of the theory’s dynamical laws (i.e., SP1 fails). Lorentz transformations correspond to symmetries of the dynamical laws in the neo-Lorentzian interpretation, but not to symmetries of its space-time (i.e., SP2 fails).’ (Balashov and Janssen 2003, 341).

In Newtonian spacetime, the framework to which Craig is committed, the laws of physics are Galilean invariant. Therefore, the behaviour of objects such as rods and clocks should, on the neo-Lorentzian interpretation, be governed by laws that are Galilean invariant. Absolute, Newtonian spacetime postulated by the neo-Lorentzian interpretation does not generate the kind of behaviour described by SR. Thus, the symmetries governing both the spacetime structure and the dynamical laws of the neo-Lorentzian interpretation do not correspond. Rather than the structure of the spacetime explaining the behaviour of bodies within it, as is the case with the spacetime interpretation, the structure of the spacetime leaves a significant explanatory gap. Moving between inertial frames using the Galilean transformations does not generate length contraction or time dilation. Yet the dynamical laws of the neo-Lorentzian interpretation are intended to generate length contraction and time dilation, as it is still an interpretation of SR and its effects. The dynamics fail to match the spacetime structure in a way that satisfies Earman's symmetry principles. Balashov and Janssen conclude, therefore, that:

[It is] an unexplained coincidence that the laws effectively governing different sorts of matter all share the property of Lorentz invariance, which originally appeared to be nothing but a peculiarity of the laws governing electromagnetic fields. In the space-time interpretation this coincidence is explained by tracing the invariance of all these different laws to a common origin: the space-time structure posited in this interpretation. (Balashov and Janssen 2003, 341-342).

The neo-Lorentzian view lacks independent explanatory power regarding the phenomena of length contraction and time dilation. Balashov and Janssen illustrate how forgoing the structure of Minkowski spacetime in one's interpretation of SR leaves a gap which Craig fails to fill with his alternative account.

A further, though related, critique regarding the scientific viability of the neo-Lorentzian alternative is offered by Oliver Pooley. He argues that those who reformulate SR to accommodate the central claim of the A-series, namely an objective and global present moment, do not take relativity seriously. (Pooley 2013a, 321). Pooley identifies two stages in the neo-Lorentzian approach. The first, discussed above and found wanting, is the reinterpretation of special relativistic physics within the framework of Newtonian spacetime. The second involves reformulating the Newtonian structure in line with one's preferred A-theoretic metaphysic.

The problem Pooley identifies is this: by virtue of its absolute structure, in Newtonian spacetime there are facts about the spatial or temporal distance between events that obtain regardless of the perspective or motion of any observer. Yet empirical investigation has repeatedly disclosed that the physical measures of rods and clocks correspond to the Minkowski metric, and not some hidden Newtonian structure. As such, the neo-Lorentzian seems bound to the view that, insofar as the Minkowski metric generates time dilation and length contraction, it 'systematically misrepresents the [true] spatial and temporal distances between events.' (Pooley 2013a, 345). The primary cost of such a view is that 'temporal distance, as measured by clocks and as encoded in the metric, is no longer a measure of the single distance between successive sets of co-occurring events. In short, is no longer a measure of the passage of time.' (Pooley 2013a, 345). This highly counterintuitive claim is avoided by the spacetime interpretation.

So, whilst Craig repeatedly claims that the neo-Lorentzian interpretation is *empirically* equivalent to the spacetime interpretation, the two are not *scientifically* equivalent. There are many other factors involved in scientific theory selection, and Pooley, Balashov, and Janssen demonstrate that the empirical equivalence between neo-Lorentzianism and the spacetime interpretation is not the only factor worthy of consideration. The aforementioned discussion has indicated that there are good scientific reasons for favouring the spacetime interpretation of SR.

Pooley, Balashov and Janssen have given many scientific reasons to reject the neo-Lorentzian interpretation. Although I take these to be damning in themselves, I add another – *parsimony*. If these

interpretations are empirically equivalent, one tried and tested way to choose which is preferable is by the criterion of simplicity, which will be discussed in detail in the following chapter. At this point we need only note the following: all other things being equal, the theory most likely to be true is the one in which the mathematical formalism is most concise, the fewest gratuitous ontological commitments are made, and the structure of the theory is the simplest.

Craig's neo-Lorentzianism is far less parsimonious for two reasons. First, as pointed out by Balashov and Janssen, his theory requires multiple amendments and the inclusion of several additional principles to generate the same empirical predictions as the spacetime interpretation (whereas in the spacetime interpretation these predictions flow naturally from the structure of spacetime posited by the theory). It is, therefore, much less structurally simple than the spacetime interpretation. (Balashov and Janssen 2003, 336-339). Although this alone is not sufficient reason to discard the neo-Lorentzian interpretation, it adds to a cumulative case against it when considered in addition to the many other reasons given in this chapter.

Secondly, Craig posits two temporal structures – physical time and metaphysical time – to explain how time dilation (a consequence of physical time) does not undermine the credibility of absolute flowing (metaphysical) time. He invokes metaphysical time, which exists over and above the relative time dimension and absolute spacetime, to substantiate absolute time. His arguments for these two times rely on a heady combination of divine temporality, the temporal A-theory, and neo-Lorentzian Special Relativity. This creates a nexus of metaphysical, theological, and scientific theories that are interdependent – each relies on the others to be compelling. This is not a problem if each interconnecting theory is robust, but if one is weakened all are weakened. Without neo-Lorentzian SR, the plausibility of the A-theory is significantly lessened; without an A-theory of time, divine temporality is nonsensical; without divine temporality, there is not sufficient justification for bifurcating time in two, which is necessary to get the neo-Lorentzian interpretation over the line. It seems as though the failure of one of these theories causes serious damage to the others, insofar as they all depend on each other for their plausibility. Should Craig be worried? In my view, yes.

In Chapter 1, I showed that the A-theory is deeply flawed, and the discussion in this chapter has significantly weakened the viability of neo-Lorentzianism. With two of the three interconnecting theories significantly damaged, and divine temporality also being a controversial viewpoint for theological reasons (see Chapter 7), I argue that this multiplication of temporal structures is insufficiently motivated. If it is insufficiently motivated, then positing two times instead of one is surplus to the requirements of the theory, and thus violates the principle of parsimony. Positing two times where there is only evidence for one requires strong justification – justification that the neo-Lorentzians have failed to provide. Though philosophers of science need no longer restrict their explanatory capabilities to Operationalist and Verificationist requirements, adequate justification must still be given when postulating additional entities unverified within the theory. I argue that Craig has failed to give robust reasons for believing in the two times required for the neo-Lorentzian interpretation of SR to succeed.

Following all the previous discussion, I conclude that Craig's neo-Lorentzianism fails to supersede the spacetime interpretation it sought to replace. It is unparsimonious in both its theoretical structure and insofar as it posits two times (one of which is gratuitous). Finally, as Balashov and Janssen expertly argue, the neo-Lorentzian interpretation violates Earman's symmetry principles, meaning it has less *explanatory power* than the spacetime interpretation. Despite its shortcomings, Craig's work is highly valuable in illuminating how implicit assumptions can lie dormant in physical theories long after having been eschewed by philosophy, and he continues to enrich the debate in the philosophy of relativity.

Special Relativity and the B-theory of Time

In this chapter I have presented two opposing interpretations of Einstein's Special Theory of Relativity, the spacetime interpretation and the neo-Lorentzian interpretation. Though the former contains unfavourable epistemic assumptions, namely the Operationalist and Verificationist assumptions revealed by Craig's analysis, I contend that its interpretation of the mathematics and measurements of SR remains good and true. The alternative, the neo-Lorentzian position, interprets SR in line with a Newtonian commitment to absolute and distinct space and time. It explains away the effects described by SR as features of physical time which do not bear on the absolute metaphysical time grounded in the mind of God. I have argued that the absolutist position fails to take seriously the ontological significance of time dilation effects for the notion of an absolute and objective temporal passage. I have also argued that in the absence of the absolute simultaneity relation, the idea of a knife-edge present constituted by an observer-independent *now* is incoherent.

Moreover, the bifurcation of time into two types – local and cosmic or physical and metaphysical – violates the Principle of Parsimony in a genuinely problematic way, a problem that will be addressed in detail in the next chapter. There is not sufficient warrant, without turning to God, to ground two distinct times whilst also remaining committed to absolute spacetime in which we have very good reason to believe. Absolute spacetime is sufficient to explain what is described by SR, and recourse to God is unhelpful in this context. I conclude, therefore, in favour of the spacetime interpretation of SR which holds that time and space are not wholly distinct but are instead different dimensions of the more fundamental spacetime manifold. Time dilation effects are real and a reflection of time's true nature, and there is no objective standard of absolute simultaneity.

Given what these features of SR disclose about reality, the preferable theory of time is the B-theory. To briefly reiterate, the B-theory is a tenseless theory of time comprised of the relations *earlier than*, *later than* and *simultaneous with*. The succession of temporal events is laid out in an immovable order with no ontological priority given to the present; therefore, our perception of both tense and temporal passage have no ontological content. In SR and GR causal order within a light-cone is fixed, and events are laid out in relations with one another. This satisfies a basic requirement of the B-theory that what is fundamental are the relations between events, not their possession of the objective properties: *past*, *present*, and *future*. Moreover, SR does not allow for absolute simultaneity relations which the A-theory requires to get off the ground, and time dilation effects reveal that different observers will assign different temporal coordinates to events. Without a universal 'now' which events can be in objective relations with, possessing the property of *being present*, absolute temporal passage is incoherent. For these reasons, I believe that SR gives compelling reasons to accept the tenseless B-theory of time.

4

CAN GENERAL RELATIVITY SAVE THE A-THEORY?

I have argued in the previous chapter that SR is the final nail in the coffin for the A-theory. The knife-edge present moment, an integral structural feature of the A-theory, requires the existence of *absolute simultaneity*, i.e., agent-independent facts about which events count as being simultaneous. Yet in SR, simultaneity is a frame-relative matter. In light of these issues, discussed in depth in the previous chapter, A-theorists have had recourse to a range of tactics. One is to augment SR to include a privileged frame. This strategy was taken by William Lane Craig, and found wanting. A second option is to turn to the General Theory of Relativity (GR), and in particular to cosmological solutions thereof. In such solutions, unlike in SR, an objective foliation of the four-dimensional universe into simultaneity surfaces of constant time appears to be possible: this is known as *cosmic simultaneity*, and the associated temporal parameter orthogonal to such surfaces is known as *cosmic time*. If this correct, then the A-theorist would appear to be saved: certain solutions of general relativity (including, perhaps, the solution which we take to correspond to the actual world) are equipped with sufficient structure with which to ground an objective past/present/future distinction.

Critiques of this latter strategy have been mustered from a number of directions. First, one might argue that to focus thus on cosmological solutions of GR is, in fact, to change the theory under consideration and in so doing illegitimately disengage from the relevant domain of discourse. Second, one might object that cosmological solutions of GR are mere idealisations and are therefore not true descriptions of the actual world. In this case, one cannot appeal to the structure of such solutions in order to ground an objective past/present/future distinction *in the actual world*. A third response is to argue that to use cosmic simultaneity as a vehicle for grounding an objective past/present/future distinction is ill-conceived. The original motivation to introduce primitive tensed properties was to recover our agential experience of the flow of time, yet cosmic time is radically disconnected from that experience. Therefore, it is insufficient to establish the kind of temporal passage the A-theorist requires. Finally, one might follow Gödel in presenting a modal argument, to the effect that whether a universe manifests primitive tensed properties cannot be a contingent affair – but since (for technical reasons) it would *have to be* a contingent affair in GR, there can exist no such objective tensed properties *tout court*.⁸²

This chapter is based upon the third of these arguments, though it also draws upon the second.⁸³ I will argue here that in turning to GR the A-theorist faces a dilemma, and that either horn of this dilemma incurs significant problems for the viability of their thesis. The dilemma pertains to temporal experience and whether its source is cosmic time or local time. The A-theorist must choose between two options. Either cosmic time is radically distinct from the local time described by SR, in which simultaneity is a frame-dependent relation, and temporal duration can be experienced differently by different observers – an inhospitable environment for the A-theory. In this case it is not the kind of thing to which we, as middle-sized objects restricted to the domain of SR, could have phenomenological access. Or, cosmic time is the type of thing to which we *do* have phenomenological access, making it a suitable source of temporal experience but raising the ‘two times’ problem.

On the first horn, cosmic time cannot function as the time that grounds our temporal experience. This is a problem insofar as tensed properties were introduced into GR to explain certain features of our temporal experience, particularly the uniqueness of the present and the reality of passage. If we are

⁸² For a detailed discussion of all of these, see (Read and Qureshi-Hurst 2020).

⁸³ I invite the interested reader to refer to mine and Dr Read’s paper for a more systematic treatment of the issue.

unable to phenomenologically access the cosmic time to which the tense theorists refer, then it cannot be the source of our experience of time. Given this, one of the key reasons for introducing tensed properties into GR is undermined. If cosmic time does not ground temporal experience, then why should it be introduced? This question remains unanswered in the first horn of the dilemma. To grasp the second horn of the dilemma is to accept the claim that cosmic time and local time are both times to which we could have access, and both could ground our temporal experience. This introduces the objection that the bifurcation of time is a violation of the principle of parsimony. As such, I will argue that the A-theorist's prospects are not good, and despite arguments from Craig and Swinburne, GR is unable to save the A-theory.

Cosmic Time as a Standard of Absolute Time

Cosmic time has been employed by A-theorists as a means by which an absolute present can be recovered in physics. It arises in certain solutions of GR, namely FLRW solutions, that contain perfect isotropy and homogeneity. By exploiting these symmetries, spacetime can be foliated into absolute simultaneity planes that constitute *cosmic simultaneity*, and the temporal parameter orthogonal to this foliation is *cosmic time*. Such cosmic time would chart the passage of time since the beginning of the universe in an observer-independent way, i.e. without having to account for variability between moving frames, rendering the A-theorist's absolute present coherent within physics once again. As Jeffrey Koperski writes, 'it is this notion of time used when cosmologists tell us that approximately 14 billion years have elapsed since the Big Bang.' (Koperski 2014, 125). If cosmic time exists, then it functions like a universal clock and could plausibly be believed to substantiate the objective passage of time.

As will emerge in the subsequent discussion, however, whether cosmic time is a feature of our actual universe is an open question, *and*, whether it really can substantiate the type of *now* required by the A-theorist is far from certain. Nevertheless, the cosmic time of GR provides the best hope for the A-theorist in relativistic physics at this moment, and arguments employing it must be taken seriously.

One formulation of such an argument is given by Richard Swinburne, who has devoted several writings to the issue of time. (Swinburne 1968) (Swinburne 1993) (Swinburne 1996). Similar commitments to cosmic time as a standard of absolute time can also be found in Craig. (Craig 2000) (Craig 2001) (Craig 2001a). Both stand with Newton in postulating the existence of absolute time (i.e. an A-theory), arguing that it is not necessarily contradicted by relativity. (Swinburne 2008, 249). Both also concur with Newton that there is an 'absolute, true and mathematical time,' however Swinburne rejects the claim that it 'flows without relation to anything external.'⁸⁴ He acknowledges the features of SR that reveal the effect of objects and motion on recorded time, however he seeks to establish the reality of absolute time through the existence of *Cosmic Time*.

Swinburne summarises his argument as follows:

I argue in this paper that Einstein gave good, but not compelling, grounds for supposing that the concept of absolute simultaneity would have no application in a universe empty of matter and so governed entirely by the laws of Special Relativity. But I claim that there is absolute simultaneity in our homogeneous and isotropic universe of galaxies receding from each other with a metric described by the Robertson-Walker line element. '*Cosmic Time*' provides a correct standard of absolute simultaneity. (Swinburne 2008, 224).

Swinburne's argument has two parts:

⁸⁴ I expect Swinburne rejects this position as a result of the gravitational effects of massive bodies on time as described by the General Theory of Relativity. As spacetime structure is wedded to matter, and time slows down nearer large gravitational masses, time no longer flows without relation to anything external.

- (1) GR saves the A-theory, as it includes an absolute standard of time known as *cosmic time*.
- (2) Cosmic time is in principle empirically accessible through an experiment involving caesium clocks.

This two-pronged attack on B-theoretic interpretations of relativity serves a dual purpose. (1) aims to empirically substantiate the claims of the A-theory in our best cosmological theory; (2) is an attempt to play the operationalist at their own game. As discussed in the previous chapter, the spacetime interpretation of relativity does not accommodate absolute time for reasons that are, in part, operational in nature – if Swinburne can devise an experiment that could *in principle* set out a way to access cosmic time, then the operationalist proponent of the spacetime interpretation is in trouble. The concept of absolute time would have meaning despite its inaccessibility *in practice*. Thus, whilst the success of part (2) of Swinburne’s argument is not necessary for the success of part (1), it is a crucial move in challenging the operationalist’s conclusions about A-type time. This chapter will begin by assessing (2) and demonstrating that his experiment must inevitably fail given the restrictions SR imposes on distant clock synchrony. I will then proceed to (1) and argue that despite the serious challenge this poses to theories of time that deny the existence of an absolute simultaneity relation, cosmic time is ultimately unable to provide a firm physical basis from which to assert a global present moment. As such, Swinburne’s argument fails on both counts.

(1) claims that cosmic time provides a standard for absolute time, and that this is empirically demonstrated through the Robertson-Walker line element. Each solution to Einstein’s field equations is one possible physical instantiation of GR, and this solution falls under the class of Friedman-Lemaître-Robertson-Walker (henceforth FLRW) cosmological solutions. In such solutions – unlike in SR – an objective foliation of the four-dimensional universe into simultaneity surfaces of constant time appears to be possible. FLRW solutions of GR satisfy the properties of (i) homogeneity (the universe is the same at every point), (ii) isotropy (there is no preferred direction in the universe), and (iii) expansion (the overall size of the universe evolves dynamically).

Imposing these symmetries implies that these models can be foliated by globally extended instants, leading to Swinburne’s well-defined notion of cosmic time. This seems to recover the Newtonian picture of instants of absolute space, known as ‘spacelike hypersurfaces’, strung together by absolute time. In light of the notion of cosmic simultaneity which these solutions manifest, they would once again (i.e., harking back to Newtonian mechanics) seem to constitute a hospitable environment for objective tense. If this correct, then the A-theorist would appear to be saved: certain solutions of GR, including, importantly, the solution which we take to correspond to the actual world, are equipped with sufficient structure with respect to which an objective past/present/future distinction is physically substantiated. (Read and Qureshi-Hurst 2020).

Swinburne argues that this foliation, defined as a ‘particular way of dividing up spacetime into spacelike hypersurfaces,’ (Monton 2006, 4). grounds absolute simultaneity, as each globally extended hyperplane attributes the simultaneity relation to all events which occur on it. If one of the FLRW models is true, which empirical evidence currently seems to indicate is the case, then Swinburne argues that the central claims of the A-theory are vindicated. As Craig Callender explains, ‘the idea that the present is special, that it is what exists or what becomes, is famously threatened by relativity. Finding a scientifically respectable absolute time according to which the world comes into being would give [Swinburne and others who share his view] “proof” that they need.’ (Callender and McCoy forthcoming, 4).

(2) holds that one can devise a thought experiment which would, if carried out, allow us operational access to these simultaneity slices. In this stage of his argument, Swinburne is working within the scientific methodology to establish the physical reality of absolute simultaneity planes. Swinburne believes that what SR discloses about time is not final, and through GR the Newtonian understanding of time is reintroduced. I will begin with (2), and then move to (1).

Accessing Cosmic Time: A Thought Experiment

Swinburne claims that ever more accurate clocks are getting closer to measuring the true time scale. By true time scale Swinburne means absolute and uniform temporal passage, i.e. as viewed from a God's-eye perspective. He argues that 'statements about temporal intervals are statements about what would have been or would be recorded by true clocks,' in line with the clock hypothesis that has received extensive treatment in the literature. (Swinburne 2008, 246) (Maudlin 2012, 107-114) (Brown 2005, 95). Clocks are formed by objects or systems which exhibit regularity of process, for example the rotation of the earth or the swing of a pendulum, with each interval between one repeatable cycle of consistent duration constituting a unit of time. One rotation of the Earth we call a day, each swing of a pendulum in a pendulum clock we call a second. The distinction between absolute time and its relative, apparent, and commonplace counterpart can be traced back to Newton. (Maudlin 2012, 14). The latter is measured by our imperfect systems, whilst the former is independent of measurement.

The most accurate clocks in use at the present time are caesium clocks which measure time through the natural frequency of caesium radiation. Swinburne accepts that these processes measure the true time scale: 'I cannot understand what would be meant by there being a true time scale independent of what instruments showed; and so I am inclined to say that the primary tests for temporal interval at one place analyse the nature of the concept.' (Swinburne 2008, 249). On this line of reasoning, if Swinburne cannot devise a way to measure the 'true time scale' through instruments at our disposal, then it does not exist. His ontological claims regarding absolute time depend on the primary test he devises to measure it, seeming to reveal a commitment to operationalist principles. By 'primary tests' he means any direct methods we use to measure time, a good example being the aforementioned caesium clock.

Somewhat contradictorily, Swinburne also argues that there are 'grounds for supposing that our concept of (absolute) simultaneity is more basic than the primary tests for its application.' (Swinburne 2008, 254). In effect, he argues that the existence of absolute truths about the times of events is unaffected by our inability to access such truths. The concept of absolute time is basic, and our current tests for it do not reveal anything fundamental about its nature. Whilst this seems to be in tension with the quotation above, I think Swinburne can be interpreted as claiming that the actual restrictions imposed by SR do not affect whether time is absolute, and if we can theoretically devise a test which would circumvent the restrictions imposed by the finite speed of light then that test would measure absolute time. The restrictions on our measurements of relative, apparent time do not reflect the nature of true, mathematical time. Our primary tests accurately measure 'temporal interval at one place', namely relative, apparent time. Methodological restrictions on actual clock synchronisation do not affect the logical possibility of some method for establishing the distant simultaneity that is necessary for absolute, mathematical time, even if only in principle. This is a fair working-interpretation of Swinburne's argument, and the rest of the discussion will proceed without further reflection on this apparent confusion.

Swinburne's argument is premised on the postulate that SR is a theory which has limited applicability, namely in the domain of inertial frames in flat spacetime. As William Lane Craig and Quentin Smith explain in the introduction to the volume in which Swinburne's paper appears, operationalist interpretations of SR which hold that SR dissolves the notion of absolute time are a so-called 'vacuum solutions' to GR, that is, they only hold in a universe without matter. (Craig and Smith 2008, 8). Thus, Swinburne acknowledges that in such an empty universe SR may accurately describe the absence of simultaneity relations.⁸⁵

Our universe, however, contains matter and energy and is described by the equations of GR. Our physical universe contains galaxies moving away from each other at a velocity increasing proportional

⁸⁵ Though it would be meaningless to speak of simultaneity as there would be no events which could partake in such a relation.

to their distance apart. This is a very important point. SR is not the most comprehensive physical theory in the scientific canon. Nevertheless, it is metaphysically relevant. SR may be limited in scope, but our best experiments show that it is correct in the domain of its applicability. As its domain of applicability relates to the behaviour of clocks and the discrepancy between observers in assigning time coordinates to events, what it reveals about time dilation and absolute simultaneity must be taken seriously.

Contemporary astrophysics indicates that the distribution of matter in the universe is, on a cosmic scale, homogeneous and isotropic – symmetries that are required for FLRW universes. Swinburne proposes that we imagine a frame of reference in the vicinity of each galaxy relative to which the isotropy of the galaxy is exact. All other such galactic frames the same distance from it are of isotropic distribution and recede from it ‘with uniformly the same velocity.’ (Swinburne 2008, 255). From this Swinburne defines a principle which is central to his argument, namely the Principle of Equivalent Laws:

If then the observable Universe is always isotropic relative to each fundamental observer, it seems a further simplification to postulate that the laws of physics as formulated by an observer on each fundamental frame, using his measurements of distance and clocks, are the same; and so that they are the same in each galaxy, if we make allowances for any random motion or rotation of the galaxy. (Swinburne 2008, 255-256).

It follows from the Principle of Equivalent Laws that any clock relying for its function on the laws of physics alone (the aforementioned caesium clock) will measure time in a relevantly similar way at any point in the universe. He calls this the Principle of Similar Clocks and argues that through it ‘there will be a unique method of ascertaining the instant by the clocks on any galaxy at which a distant point occurred.’ (Swinburne 2008, 256). In so far as caesium is an effective clock in one area of the universe it is an effective clock in some distant part of the universe, and that in every area of the universe in which a caesium clock can exist then there is at least in principle a method for accurately recording time there. On these two principles hangs Swinburne’s argument.

The laws of physics coupled with our observations of galactic red-shift indicate that the universe was at one time in an infinitely hot dense state called a singularity. (Hawking and Penrose and Bondi 1970). Swinburne draws on this fact, arguing that in principle caesium clocks in close spatial alignment could have been synchronised at a very early point in the evolution of the universe. These could then have continued to measure the passage of time as they move apart. Given the Principle of Isotropy, namely that the universe’s distribution of matter and energy is the same in all directions, we can expect the clocks to have travelled relevantly similar trajectories even though their world-lines have separated. From this, he argues that there exists in principle a unique plane of simultaneity measured by all the clocks on all the frames marking the beginning of the universe.

Given the Principle of Similar Clocks, observers in each galaxy can retrodict how many units of a given time ago some event happened. As long as the clocks remained stationary relative to their galactic inertial frame the clocks would have continued to tick at the same rate and would measure the same time. (Swinburne 2008, 257). Whether or not these clocks exist is irrelevant – if it is possible that these clocks could remain in synchrony despite being vast distances apart, then the notion of absolute time is coherent.

So, is it possible? The simple answer is no, as the Principle of Similar Clocks does not hold in a universe governed by SR. Though caesium will always radiate at the same perceived frequency within each inertial frame, when reuniting and comparing once synchronised caesium clocks that have since been in different inertial frames (after a boost, for example) they will likely show different elapsed times. Swinburne recognises this yet maintains that ‘the Principle of Similar Clocks gives us a cosmic time, a unique true clock for measuring the time of occurrence of events on the cosmic scale’ (Swinburne 2008,

258). because SR is only an account of a universe without matter, and that the actual universe, governed as it is by the laws of GR, does not behave as SR describes.

For this reason, Swinburne is confident in the claim that cosmic time is a good and true measure of absolute time, given the Principle of Similar Clocks and the Principle of Equivalent Laws. The absolute simultaneity relation can be ascertained by working out how much time has elapsed since the beginning of the universe: x . One then applies the simultaneity relation to any and all events that happened at the moment that x amount of time has elapsed between the beginning of the universe and the happening of the event. Swinburne concludes that cosmic time is sufficient to establish the concept of absolute simultaneity at least in principle. In the following sections I assess Swinburne's argument, arguing that it is based on faulty premises that render his conclusion false. Ultimately, a stronger defence of absolute time must be given if the A-theory and its claims of objective temporal passage are to be substantiated in relativistic physics.

a) The Principle of Equivalent Laws

The Principle of Equivalent Laws is the claim that the laws that govern the natural world, sometimes called *laws of physics* or *laws of nature*, hold everywhere in the universe. That is, if the Light Postulate is a law of nature then for every beam of light anywhere in the universe, its speed *in vacuo* is c irrespective of the speed of the source. This is deemed by physicists and philosophers of science to be the case for all principles we call physical laws. (Earman 1978) (Lyon 1976) (van Fraassen 1989, part 1). Indeed, it is this universal application which leads them to be called laws.⁸⁶ It is a highly significant feature of the universe and it is what makes science possible. Without belief in the uniformity of physical laws we would be unable to extrapolate back from the state of the universe today and postulate anything relating to cosmic beginnings. Nor would we be able to observe distant galaxies and make any claims about their behaviour or composition. That the laws of physics hold everywhere is the cornerstone of modern science. We have very good empirical reasons to suppose that this is true in our observable universe, and whilst further claims about unobservable regions of the universe must be made inductively it is not an unreasonable leap to take. As such, no further consideration of this principle is necessary.

b) The Principle of Isotropy

The general consensus in modern cosmology is that on large enough scales the universe is both homogeneous and isotropic. The former refers to the uniformity of the distribution of matter and energy, and the means that the universe is the same in all directions.⁸⁷ Since the laws of physics are universal, we expect them to cause matter and energy to behave uniformly and distribute itself with regularity throughout the large-scale structure of the universe. According to Inflation Theory, in its very early stages the universe underwent a period of rapid inflation which caused large-scale homogeneity and isotropy as the universe evolved. (Knobel 2013).

Swinburne does well to alert his readers to this principle when making a cosmology-grounded argument, however, his argument requires that multiple caesium clocks could measure with *complete accuracy* and *no individual deviation* the amount of time that has elapsed since the universe began. Even the smallest variation in the time recorded on the clocks would undermine his claim that they are able to measure absolute time, as absolute time admits of no variation. The isotropy found in the universe only holds when averaging over extremely large scales. This is a problem for Swinburne's

⁸⁶ Treatment of the extensive debate in metaphysics as to the nature of physical laws falls outside the scope of this paper. For an introduction, see (Carroll 2020).

⁸⁷ This has been argued for using the Cosmic Microwave Background, first discovered by Penzias and Wilson. This radiation, the afterglow of the big bang, exhibits remarkable homogeneity and isotropy on large enough scales (Wilson 1978).

caesium clock experiment. One only needs to turn a basic telescope to the night sky to see stunning variation in the cosmic objects in our galactic vicinity alone.

Craig and Smith acknowledge that the existence of an absolute plane of simultaneity ‘remains debatable,’ but ‘only in the sense that our universe is not perfectly homogeneous, so that the concept of a hypersurface of simultaneity is the concept of an abstract hypersurface that results from averaging out the variations in matter on very large scales.’ (Craig and Smith 2008, 8). This ‘averaging out’ is somewhat insignificant on the cosmic scales that a ‘God’s eye’ perspective may afford, yet it is highly significant for the present discussion. Not only does it raise questions about the actual existence of a hyperplane of simultaneity that, in order to genuinely ground relations of absolute simultaneity, must be constructed by an abstract process of averaging. It also has tangible ramifications for Swinburne’s proposal of ascertaining absolute simultaneity planes through synchronised caesium clocks.

Whilst the distribution of stars and galaxies is certainly the same in all directions when considering the universe as a whole, it is not perfectly homogeneous. The variation between cosmic neighbourhoods (such as the solar systems in our galactic vicinity) is vast. Caesium clocks are, like ourselves, middle sized objects which suit and respond to the Middle World. Middle World is the domain comprised of the orders of magnitude of size and speed within which our bodies operate, namely the world of biological organisms and the objects they create. This is in contrast to the quantum world of subatomic particles and the cosmic world of stars and galaxies. The cosmic scales on which the universe is homogeneous and isotropic are too large to be relevant for the behaviour of a Middle World caesium clock.

The world-line of each of the clocks Swinburne describes goes through a distinct region of the universe, which is highly likely to affect the time it measures. GR predicts that for an object near a massive body with a large gravitational field, time runs slower than it would for an equivalent object in empty space. A caesium clock on the surface of the Moon, for example, would run faster than a caesium clock on the surface of Jupiter, and that is just the variation that exists in our solar system. The path the caesium clocks take matters greatly, and without some method of verification the claim that they stay in synchrony is empirically unjustifiable. The Principle of Isotropy alone cannot advance Swinburne’s argument, he requires the Principle of Similar Clocks to show that the clocks moving away from each other in different directions would record the *exact same time*.

c) The Principle of Similar Clocks

Swinburne’s argument from the Principle of Similar Clocks begins with the uncontroversial claim that spatiotemporally coincident caesium clocks could be synchronised. It is a fundamental feature of SR that within an inertial frame all observers (or in this case caesium clocks) will agree on the time coordinates assigned to events. Therefore, his postulation of spatiotemporally aligned and synchronised caesium clocks at a very early point in the universe is workable, and that this would have defined a simultaneity plane in the inertial frame in which all the clocks were situated. SR dictates that these caesium clocks will measure the local time as defined by their inertial frame, and on Swinburne’s argument this happens to be a large portion of the universe at an early stage of its evolution.

It is in Swinburne’s next move that the argument fails. He claims that the caesium clocks could, if moved apart at in uniform motion relative to their closest galaxy (in the fundamental frame he earlier defined) remain synchronised. Through this remaining synchronicity, Swinburne argues that an absolute simultaneity plane could be defined, and that an observer could retrodict from the time recorded on their caesium clock to the beginning of the universe. Through this, they could access simultaneity relations between distant events that occurred at the same amount of elapsed time since the beginning of the universe.

There are clear issues in the fundamental structure of relativity which forbid this method of clock synchronisation from achieving Swinburne’s objectives. The first issue arises when the clocks are

moved apart, and the second issue arises when any observer wishes to ascertain whether distant events are simultaneous. These are the same problems outlined in the very foundations of SR, and one cannot help but feel that Swinburne has dismissed these issues a little too hastily. Clocks that are moved apart and then moved back together record different elapsed times, and as Robert Angel argues, ‘it cannot be overemphasised that the difference between the two measurements is wholly objective.’ (Angel 1980, 73). This has been empirically demonstrated, and usually occurs when at least one clock undergoes a boost to move it away from the other clock. I accept that in this case Swinburne is referring to spatially separated caesium clocks which do not undergo any boost to move apart or back together, which would likely reduce the difference in elapsed times on the clocks. Nevertheless, as they move farther apart, we have no independent way to tell if they are recording the same time or even travelling at the same speed, and until the clocks are checked there is no way to ascertain either of these facts. This leads to the second critique.

There is no way to test whether the clocks have remained synchronised until they are checked; indeed, going by past experimental data it is highly likely that they would *not* continue to record the exact same time. As the clocks move apart and their worldlines deviate, they measure distinct spacetime Intervals, which leads to different time measurements. Maudlin explains this phenomenon with the analogy of odometers in two cars. (Maudlin 2012, 76). According to the clock hypothesis, accurate clocks in relativity are like odometers; where the odometer measures a car’s mileage in space, a clock measures its trajectory through spacetime. Imagine two cars driving side by side. Whilst the two cars are co-moving their odometers record the same amount of distance travelled, but as soon as the cars deviate, they may record very different mileages to each other. Likewise, with clocks, as their worldlines deviate and they travel different spacetime Intervals they will record different elapsed times. Swinburne himself acknowledges that these caesium clocks could be affected by the random motion or rotation of the galaxy in whose rest frame they are situated. (Swinburne 2008, 255-256). It is far from certain that these clocks would stay synchronised.

Simultaneity is a physical relation. As Grünbaum notes, ‘non-coinciding *spatially separated* events can sustain physical relations of one kind or another only in virtue of the presence or absence of some kind of actual (or physically possible) physical linkage between them.’ (Grünbaum 1964, 347). We have no way of knowing whether the clocks remain synchronised, and until checking whether this is the case and establishing some linkage between them one cannot claim otherwise within the boundaries of relativity. Once they undergo spatial separation all the problems Einstein initially addressed when trying to formulate a method for synchronising distant clocks arise again. There is weak empirical basis for Swinburne’s claim that the clocks would stay in synchrony, and SR reveals the physical impossibility of verifying whether they have to the required degree of accuracy. As such, this proposed experiment is not a reliable means by which to establish an absolute simultaneity plane. A stronger argument for the existence of absolute time must be given if the A-theory is to remain viable.

Swinburne’s caesium clock thought experiment fails to circumvent the restrictions on clock synchrony raised by SR and supported by a century of empirical evidence. It is, therefore, unable to offer a route by which cosmic time could be accessed. Nevertheless, the success of (2) is not necessary for the success of (1). Even if the caesium clock experiment would fail to give empirical access to the preferred foliation described by the cosmological model in question, the preferred foliation may be a feature of the actual universe. Whilst this would be bad news for an A-theoretic operationalist, they are not the only readers to whom Swinburne is addressing his argument. Perhaps the ontological reality of absolute simultaneity does not depend upon our epistemic access to it. If cosmic time does prove to be sufficient to physically ground absolute simultaneity, then Swinburne can still maintain that physics gives us good reason to believe in an axis of becoming and a universal present moment. Therefore, a robust response must be given in order to defend the B-theory. In what follows I argue that cosmic time, even if it were a feature of the universe in which we live, is not up to the task of establishing absolute time and saving the A-theory.

Can Cosmic Time Save the A-Theory?

a) Is Cosmic Time a Feature of the Actual Universe?

FLRW solutions require certain input assumptions to generate a clearly defined cosmic time: *perfect* homogeneity and isotropy. It is only by exploiting these extreme symmetries that a single cosmic time emerges, and whether our universe has such properties is an open empirical question. As Christopher Smeenk writes, ‘questions like ... - “how old is the universe?” - are only well-posed within a remarkably restricted class of spacetime models. The questions are moored to the structure of the models fixed by strong symmetry assumptions, so to speak. But in more realistic models describing a lumpy, bumpy “almost-FLRW” universe, these questions are cast adrift.’ (Smeenk 2013, 7).

In light of their manifesting the properties of absolute homogeneity and isotropy, FLRW solutions of GR are highly idealised. One might ask (following, for example, (Norton 2012, 207-232)): can our world *really* be an FLRW universe? The answer, clearly, is *no*. But in that case, the question in turn arises: in an ‘almost-FLRW’ universe such as our own, do we still have available a well-defined notion of cosmic simultaneity? If not, then there would seem to exist serious problems for the A-theoretic project of grounding objective tense in GR.

When responding to this point from Smeenk, it is important to distinguish two questions:

- 1) Is an objective past/present/future distinction possible in GR?
- 2) Is an objective past/present/future distinction possible in the GR solution corresponding to the actual world?

Smeenk’s concerns speak only to the second point here; they lead us to question whether one can ground an objective past/present/future distinction *in the actual world*. This is distinct from the former question which regards the possibility of grounding such a distinction in at least one solution of GR. Since Smeenk concedes (as he should) that the FLRW solution of GR is a legitimate solution, the above concerns do nothing to lead one to question invoking an affirmative response to question (1). In the remainder of this section, I will focus on addressing Smeenk’s negative answer to the second of the above two questions.

Whether a privileged notion of cosmic simultaneity is available in the actual world is an open empirical question, the answer to which depends upon (a) our gathering sufficient empirical data to determine which specific perturbed-FLRW solution corresponds to our own world, and upon (b) theoretical appraisal of whether that solution admits of cosmic simultaneity – that is, whether that solution retains a dynamically privileged simultaneity choice. Clearly, any affirmative answer to (1) (such as that given by Swinburne) must wait upon answers from physics to (a) and (b). In the meantime, however, any such claim can only be conditional in nature.

The aforementioned points notwithstanding, developments in cosmology could end up establishing cosmic time as a feature of our universe. Therefore, I will put the previous discussion to one side for the moment and interrogate Swinburne’s argument on its own terms. The question, then, is this: is cosmic time a physically and metaphysically robust concept, capable of substantiating the A-theory?

b) Swinburne’s Dilemma

Setting theistic motivations aside, one of the strongest reasons for committing oneself to the A-theory is our experience of temporal presentness and passage. As Huw Price writes, ‘in practice, the most influential argument in favour of the objective present and the objective flow of time rests on an appeal to psychology – to our own experience of time. It seems to us that time flows, the argument runs, and surely the most reasonable explanation of this is that there is some genuine movement of time which we experience, or in which we partake.’ Though Price goes on to argue that ‘arguments of this kind need to be treated with caution,’ (Price 1996, 14-15). he is right in noting the power of temporal experience in motivating the A-theorist. It is reasonable to suppose that there is some clearly definable

relation between temporal experience and temporal ontology, and that, therefore, time grounds temporal experience. This is certainly the A-theorist's view, and it will be examined in greater detail in Chapter 8.

In the context of GR, cosmic time is proposed as that which grounds absolute simultaneity, yet it is both abstract and far removed from the realm of human experience. Of key importance is establishing its relation to local time and determining which (and to what extent, each) ontologically grounds our psychological experience of temporal presentness and passage. As I see it, Swinburne and his fellow A-theorists face a dilemma neither horn of which is favourable to the viability of their thesis. The two horns of the dilemma are as follows:

- 1) Cosmic time is phenomenologically inaccessible, hence radically distinct from local time.
- 2) Cosmic time is phenomenologically accessible, and therefore operates in the same domain as local time.

Grasping the first horn would commit oneself to the view that middle-sized objects, like those described by and contained in SR, cannot access cosmic time. The second horn holds that cosmic time can be accessed by middle-sized objects such as persons and clocks. If one accepts the first horn, then it follows that cosmic time is not phenomenologically accessible to human agents and is a poor candidate for the source of temporal experience. If one embraces the second horn, then one faces the charge of constructing two times which perform the same function, a clear violation the principle of ontological parsimony. As such, even if cosmic time is a feature of our universe (itself an open empirical question) it brings with it a plethora of problems which challenge its viability for vindicating the A-series.

i) Horn 1: cosmic time is phenomenologically inaccessible

The first horn of the dilemma, in my view the more relativistically viable option, commits the proponent to defining cosmic time in such a way that it is radically different in kind to local time. Craig defines cosmic time thus: 'Cosmic time appears fundamentally as a parameter in GR ... as a parameter it is not part of the spacetime manifold, and it thus measures the duration of the universe in an observer-independent way, that is to say, the lapse of cosmic time is the same for all observers. (Craig 2001a, 211). If cosmic time is defined as a parameter which objectively measures the age of the universe and is not a feature of its internal structure, then by definition there is an unconquerable chasm between the local time middle-sized creatures encounter and the cosmic time that charts the temporal distance between the origin of the universe and each subsequent temporal point. It seems an implausible source of temporal experience.

For our present purposes, it is imperative to bridge the gap between an abstract temporal parameter and the kind of temporal becoming we appear to perceive when an acorn becomes an oak tree. Craig argues in support of Swinburne that 'cosmic time supplies a physical time *which is well-suited to accommodate the philosophical notion of temporal becoming.*' (Craig 2001a, 211).⁸⁸ It is of critical concern that we establish whether the kind of tensed properties cosmic simultaneity could allegedly establish are recognisable in the context of our experience. If not, then the reason for which those properties were introduced is undermined. This point is echoed by Wüthrich:

In all this, it remains utterly mysterious how this highly idealized construction connects to our intuitions regarding temporal becoming and the present. If the absolute time constructed from this idealizing averaging procedure over vast cosmic scales is the time which determines what is the present, then how does the human perceptual and cognitive apparatus latch on to this idealized structure? (Wüthrich 2013, 17).

⁸⁸ Emphasis added.

Our temporal experience is, plausibly, a function only of our local environment, rather than of the entire universe. Absent argumentation to the effect that we can have local access to cosmic time, it is not at all obvious that these cosmological notions can do the work of grounding our local temporal experience in the way the A-theorist desires. Indeed, there are good *prima facie* grounds to question whether this gap can be bridged. Local observers in a relativistic universe will be subject, in principle, to all the familiar relativistic effects such as time dilation and gravitational redshift. As Smeenk points out, ‘a globally defined cosmic time function generally doesn’t correspond to the time elapsed on an observer’s wristwatch.’ (Smeenk 2013, 218). In light of this, it is reasonable to ask: how could any such observers account for all such effects, and thereby establish a reliable means of gaining access to cosmic time?

Grasping the first horn of the dilemma commits one to the view that cosmic time is phenomenologically inaccessible. Local time, described by SR as having all the counter-intuitive properties regarding the effects of motion and mass on observer’s measurements of duration and length, still exists, and is a far more likely candidate for the source of temporal experience. If we cannot access cosmic time it cannot be the source of our temporal experience, and the A-theorist’s introduction of tensed properties into GR is ill motivated in at least this respect. Cosmic time, on this first horn, is rendered explanatorily redundant for the purpose for which it was invoked. In the next section I argue that even if Swinburne can side step the issues discussed above by grasping the second horn, there remain good reasons to reject any appeal to cosmic time as a means of grounding agential temporal experience.⁸⁹

ii) Horn 2: cosmic time is phenomenologically accessible

The second horn of the dilemma holds that we *can* access cosmic time as it operates locally. This approach faces both empirical and philosophical problems. Empirically, it is far from clear that we can phenomenologically access cosmic time, as in order to do so we would have to be fundamental observers, i.e., physical bodies such that any ideal clock comoving with those bodies would read off intervals of cosmic time.⁹⁰ Swinburne argues that galaxies are fundamental observers, and given that human agents are observers within one such galaxy, we, too, can have approximate access to cosmic time. If that is correct, then the gap between cosmic time and our local temporal experience is bridged. Unfortunately for Swinburne, more needs to be done in order to make this response convincing. In spite of our being *situated* in approximately fundamental observers, namely galaxies, we *ourselves* are *not* fundamental observers. As Pettini writes:

Are we fundamental observers? No, because:

- The Earth rotates around its axis and orbits the Sun.
- The Sun moves relative to the *Local Standard of Rest* (the local reference frame defined by the motions of the stars nearest the Sun).
- The Sun is one of $\sim 10^{11}$ stars in a spiral galaxy, the Milky Way.
- The LSR orbits the centre of the Milky Way Galaxy with a period $P \approx 240$ million years.
- The Milky Way moves relative to the centre of mass of the Local Group.
- The Local Group is infalling into the Virgo Cluster of galaxies.

⁸⁹ Note that this concern would also apply to any attempt to ground temporal experience in Newtonian mechanics in the privileged simultaneity structure available in that theory – at least, if Newtonian mechanics is understood in the four-dimensional framework of e.g. (Malament 2012, chapter 4).

⁹⁰ Setting aside concerns regarding the possibility of constructing accurate and reliable rods and clocks in arbitrary spacetimes – see e.g. (Menon and Linnemann and Read 2018) for some discussion.

- The Virgo Cluster, along with several other large clusters, is in turn speeding towards a great concentration of mass known as ‘The Great Attractor’. (Pettini 2018, 1-2).

Following this, coupled with the fact that there may exist further relativistic effects within our galaxy such as those incurred through gravitational time dilation, there are significant empirical problems with the claim that cosmic time (and hence the absolute time it is supposed to physically substantiate) is phenomenologically accessible. A much stronger case must be made if the claim that we have experiential access to cosmic time is to be empirically credible.

The second horn also faces a significant philosophical problem, namely that it requires commitment to two times that operate in the same domain. This is in tension with a principle to which Swinburne is deeply committed. As I argue in a recent paper, woven throughout Swinburne’s writing is commitment to *simplex sigillum veri* – the simple is a sign of the true. (Qureshi-Hurst forthcoming). It is also known as Ockham’s razor, or the principle of simplicity/parsimony.⁹¹ Swinburne justifies its usage scientifically, arguing that ‘science requires us to postulate the simplest explanation of the data.’ (Swinburne 2004, 165). The most detailed articulation of the criterion of simplicity is found in *Simplicity as Evidence for Truth* in which he argues that ‘it is an ultimate *a priori* epistemic principle that simplicity is evidence of truth.’ (Swinburne 1997, 1).

Swinburne is not alone in holding the principle of simplicity in high esteem – it has been used in a variety of ways throughout the history of science.⁹² Swinburne employs the principle to demonstrate ‘the nature and force of the criterion of simplicity by considering cases of conflicting theories where the other criteria for choice between them are equally satisfied.’ (Swinburne 1997, 15). As one can construct an infinite number of theories which yield the same data with the same degree of inductive probability, but whose predictions differ, ‘without the criterion of simplicity we can make no step beyond the observable data.’ (Swinburne 1997, 15). Swinburne illustrates this with a straightforward example:

$$\begin{array}{r} x \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \\ y \quad 0 \quad 2 \quad 4 \quad 6 \quad 8 \quad 10 \quad 12 \end{array}$$

Consider the above relation between two variables x and y . An obvious formula suggests itself, namely $y=2x$; it yields the data in that from any x value one can deduce the corresponding y value. Consequently, he argues, it satisfies the criterion of yielding the data maximally well. Yet other formulas also satisfy this criterion. Consider:

$$Y=2x + x(x-1)(x-2)(x-3)(x-4)(x-5)(x-6)z$$

This second formula yields the data equally well, and ‘there are an infinite number of formulae of that form, according to the filling you give to z , which may be a constant or some function of x .’ (Swinburne 1997, 16). Thus it also maximally satisfies that criterion. The formulas are not equivalent, however, as they make totally different predictions; it is important to select the right one in order to have the correct theory with the appropriate predictive power. Swinburne argues that if our lives depended on predicting the correct value for $x=9$, it would be utterly irrational to make any other prediction than that consonant

⁹¹ For an overview of the principle and its use in making predictions, see (Sharber 2014). For a focus on explanatory power, see (Baker 2003).

⁹² For example, in Early Modern astrophysics by Copernicus. (Martens 2009); in biogeography in the 19th century (Baker 2007); in the formation of genetics (Carlson 1966) ; in cognitive psychology (Chater 1999). Many other examples are available.

with the simplest formula: $y=18$. (Swinburne 1997, 15-16). This is supported by Kevin T. Kelly, who argues that, ‘always choosing the simplest theory compatible with experience, and ... hanging onto it while it remains simplest, is both necessary and sufficient for efficiency.’ (Kelly 2007, 561). Swinburne’s arguments frequently rely on this criterion of hypothesis selection.

Though Swinburne’s above example focuses on the predictive power of theories, another way to judge their simplicity is through the notion of ontological parsimony, which is generally explained through Quine’s notion of ontological commitment. Quine describes simplicity as a good criterion for selecting both a desirable and probable theory and outlines a sufficient condition for a theory being more parsimonious than another, namely that it has fewer ontological commitments. (Quine 1981, 47). A theory T has an ontological commitment F iff T entails that F exists. Ontological parsimony, Quine argues, is a good way of framing a theory’s simplicity and thus desirability and probability.

Commitment to a cosmic time which operates over local domains (as does the local time measured by clocks and described by SR) is a violation of the principle of simplicity. It requires ontological commitment to a further structure, found in the preferred foliation, which functions in the same way as local time whilst remaining distinct from it. In other words, if one accepts the second horn of this dilemma, one must accept that Swinburne has invoked a second time to advance his A-theory without providing sufficient justification.

In my view, this is a *gratuitous* ontological commitment; therefore, by Swinburne’s own argument it should be eschewed by our best theories. Committing oneself to two times that co-exist and operate in the physical world multiplies entities for the sake of an argument, rather than because we have strong empirical or metaphysical reasons for doing so. The problem isn’t whether or not there exists a cosmic temporal parameter. The problem is whether or not this parameter can be considered *time* in the way the term is commonly used. If Swinburne answers this in the affirmative, he is committed to an unparsimonious multiplication of temporal structures. Given his commitment to the principle of simplicity, he would be hoist on his own petard.

Conclusion

In this chapter I have argued that the first part of Swinburne’s argument, i.e., ‘GR saves the A-theory, as it includes an absolute standard of time known as *cosmic time*’ fails. Cosmic Time is not robust enough to establish the knife-edge present required by the A-theory. Moreover, the second part of his argument, namely ‘Cosmic time is in principle empirically accessible through an experiment involving caesium clocks’ is unable to escape the restrictions SR imposes on clock synchrony, and so is equally unsuccessful. Despite the situation looking better for the A-theorist in GR, the arguments of this chapter have shown that ultimately GR does not provide sufficient motivation to be an A-theorist. The A-theory requires an objective *now* which must be sharp if it is to accord with our experience of temporal presence, and universal if it is to be the point at which all potential future events becomes actual and the present is lost to the past. The cosmic time described by FLRW solutions does not offer such a picture. Even if one were able to construct a bridge between cosmic time and locality such that it could phenomenologically connect with middle-sized agents, itself an empirically questionable claim, further problems arise. It is unparsimonious, and thus deeply suspect following Swinburne’s own position, to postulate two times which operate over the same domain and fulfil similar functions.

The first horn is the more relativistically viable position – cosmic time, if it exists, must be sharply distinct from local time in that it is a *parameter* which measures the universe as a whole, rather than being a *dimension* within the spacetime manifold. Yet for precisely this reason, and because we are not fundamental observers, cosmic time is unable to ground temporal experience, and is therefore ill-motivated as an argument for the A-theory. Even if one grasps the second horn to avoid the problem of inaccessibility, the coast is far from clear. Cosmic time is relegated to a second local time, an unparsimonious multiplication of the temporal dimension we already see described in SR. Moreover, it

has already been empirically demonstrated that local time has frame-relative properties, and as such is in tension with the A-theory.

The above has illustrated that there is no further motivation to be an A-theorist in GR as compared with any other context. Thus, A-theorists cannot appeal to GR in order to override the problems SR presents for absolute time. I conclude, then, that at the present time the A-theory in the relativistic context only fares as well as in the classical philosophical debates on these matters: if the A-theory fails for philosophical reasons, then GR will not save it.

In Part I, I have laid the foundations for the subsequent analysis. I introduced the metaphysics of time using McTaggart's influential 'A-series' and 'B-series', and argued that, given the empirical support provided by SR and GR and the logical problems for the A-theory posed by McTaggart's paradox, the B-theory is the best metaphysical model on offer. In other words, the A-theory is subject to both logical and rebutting defeaters, whereas the B-theory is not. In Part II we temporarily depart from the physics and metaphysics of time to explore Paul Tillich's *Systematic Theology*, the theological framework within which salvation and time will be brought into dialogue.

PART II:

PAUL TILLICH

5

AN INTRODUCTION TO PAUL TILlich AND *SYSTEMATIC THEOLOGY*

Part I surveyed the physical and metaphysical theories of time that emerged throughout the twentieth century. During this period physics underwent a seismic shift, catalysing a renewed vigour in metaphysical analyses of temporal issues. I argued that, currently, both metaphysics and physics best supports the B-theory of time. A philosophically significant question is raised by the B-theory: how can our experience of both passage and change be accommodated on such a view? This question will occupy Part III and forms the climax of the thesis. Before addressing it, however, the theological context in which this question will be answered must be laid out.

Part II concerns Paul Tillich, in particular his three-volume *magnum opus: Systematic Theology*. There are philosophical and theological reasons for choosing Tillich as a dialogue partner. Tillich scholarship has dwindled in recent years, leading to an underrepresentation of his ideas in the contemporary theological landscape. This is unfortunate. Tillich's work beautifully articulates the Christian experience in an era shaped by existentialist concerns whilst also providing meaningful philosophical insight into what it means to exist as a finite being in an imperfect world, whether one believes in the truth of the Christian message or not. His assessment of finitude and the anxiety it brings transcends the boundaries of Christianity whilst retaining commitment to its core message – this makes Tillich an important thinker for the theist and the secular philosopher alike.

Tillich identifies universal features of human experience and offers ways to overcome them. Though both his identification of the problems we face and his proposed solution to them are rooted in Christianity, his thought is deeply relevant for all humanity insofar as humans experience estrangement and alienation from what gives their life ultimate meaning. Thus, I engage with Tillich in part to demonstrate that his philosophical insights are deeply relevant to universal features of human experience. Moreover, by bringing Tillich into dialogue with contemporary physics and metaphysics, I will illustrate his value in advancing important areas of the relatively new field 'science and religion.' Though engagement with Tillich has waned since his heyday in the mid-Twentieth century, I offer the first steps towards a revival of this radical and insightful thinker.

Tillich has been chosen as the subject of this thesis because a) consideration of his doctrine of salvation alongside the nature of time generates a rich wealth of philosophical discussion which is yet to receive scholarly attention, b) his existentialist formulation of fallenness and salvation opens up scope for the reinterpretation of the doctrine of salvation toward which this thesis is directed, c) his method of correlation not only permits but encourages such a reinterpretation of his theology. As John P. Clayton reminds readers: 'Tillich's tendency constantly to rethink his basic concepts causes no small difficulty for anyone who would comprehend his thought. But it is a tendency wholly consistent with Tillich's avowed intention to do theology in 'the present situation'.' (Clayton 1980, 5). I continue this legacy in this thesis. The 'present situation' in which I intend 'to do theology' is a cultural climate which affords privileged epistemic status to science, and in which philosophical interpretations of our best scientific theories support a theory of time which seems incompatible with the notion of objective change and hence any form of salvation that requires a transformation in time. As Tillich himself writes:

New organizing principles appear, neglected elements acquire central significance, the method may become more refined or completely different, with the result that a new conception of the structure of the whole emerges. This is the fate of every system. But this is also the rhythm in which the history of Christian thought has moved through the centuries. The systems were points of crystallization toward which the discussion of particular problems moved and from which new discussions and fresh problems arose. It is my hope that, in however limited a way, the present system may perform the same function. (Tillich 1951, 4).

Due to Tillich's holistic understanding of a theological system, it is necessary to provide a summary of *Systematic Theology*. Each part fits into the whole, thus in order to demonstrate that my reinterpretation fits within his system, the system itself must be introduced and explained. This is the task of Chapter 5. Chapters 6 and 7 explore in detail the two critical pieces of the puzzle for the thesis' ultimate argument. The former centres on Tillich's doctrine of salvation, the piece of theology with which this thesis is primarily concerned, whilst the latter explores Tillich's understanding of history, as well as his brief treatment of the concept of time and its relation to eternity. Without addressing how Tillich understood time, Part II would be incomplete. Nevertheless, the examination of time in *ST* is metaphysically impoverished, and as such some *post hoc* construction will be necessarily in order to carry out the metaphysical heavily lifting required in Part III.

Integral to *ST* is Tillich's *method of correlation*. This distinctive methodology involves a synthesis of philosophical and theological components and was devised as a means to reconstruct theology in such a way that it speaks to the culture in which it is to be received. Structurally, writing in accordance with the method of correlation involves first posing the existential question and then providing the theological answer. This thesis has been constructed to reflect the structure dictated by Tillich's method of correlation. As such, Part I began with the philosophical questions raised by physics and metaphysics, and Part II opens up the theological arena in which Part III can offer up a theological answer.

Systematic Theology

Paul Tillich was born 1886 in Starzeddel, Germany (today Starodiele in Poland), and lived until 1965. (Schübler 2009, 3). His was a varied life, marked by the upheaval of having to leave Germany after vociferously opposing the Nazi party. There are more than 500 works in Tillich's bibliography, and I will not consider them all here. It is *Systematic Theology (ST)*, containing his formulation of the doctrine of salvation, which is the subject of the remainder of this thesis. By Tillich's own definition, the nature of systematic theology requires apprehension of the whole system if one is to appreciate each individual component. The parts both comprise and reflect the whole. As such, it is with the whole system that we must begin.

ST is comprised of five parts, each of which is designed to provide a theological answer to a question posed by the human condition. The first, *Reason and Revelation* lays down the epistemological foundations on which the rest of the system is built. It contains an analysis of human rationality and the answer to its ambiguities: revelation. Here Tillich introduces his views on the significance of symbols which he believes, with the aid of interpretive reason, should be used to represent revelation to every receptive culture. It comes first for two reasons: first, the system cannot be understood apart from its epistemological underpinnings; secondly, the doctrine of revelation 'is presupposed in all parts of the system as the ultimate source of the contents of the Christian faith.' (Tillich 1951, 76).

The second part, *Being and God*, introduces the substance of Tillich's thought and suggests God as the answer to the question of human finitude. Here Tillich defines 'being' – arguably the most critical term in the system – and explores the nature of God who he argues is the ground of being. Insofar as theology is first and foremost a doctrine of God, Tillich argues that the answers given here contain all other answers. The third part, *Existence and the Christ*, includes the main body of his soteriology, and will

receive the most attention. It argues that fallenness is characterised by the existential condition and its psychological consequences, laying out how Christ's soteriological action brings about the possibility of a new state of being. Christ is given as the soteriological answer to pervasive feelings of estrangement and alienation.

The fourth part, *Life and the Spirit*, is formulated around the manifestations of essential and existential characteristics in 'the complex and dynamic unity which is called "life."' (Tillich 1951, 75). Here Tillich details the ambiguities that arise in life and outlines a way toward living an unambiguous life, suggesting that the answer lies in the Spirit. The final part, *History and the Kingdom of God*, considers the questions raised by the historical dimension of humanity and gives answers in terms of the Kingdom of God. As long as the salient features of *Systematic Theology* are presented here, the reader will be equipped to engage with the more detailed treatment of Tillich's soteriology which is to follow.

The Method of Correlation

Tillich's primary motivation is to construct a communicative bridge between historical Christianity and contemporary culture through *the method of correlation*. Tillich holds this to be both a possible and appropriate project as he believes that in their essential forms, religion and culture are two sides of the same coin – they both ought to make manifest the divine Spirit in human communities. The relationship between Christianity and culture has a complex history and is complex today. (McGrath 2014, 252-256). Whilst some Christians wish to distance themselves from culture in order to preserve a pure and unadulterated faith, Tillich's attitude could not be more different. Indeed, Tillich argues that theology and culture must exist symbiotically for the success of both.

Tillich understands the situation in which he writes as one defined by existential questions that emerge out of an acute awareness of finitude. To some extent, these existential concerns are universal features of human experience, and to some extent they represent the concerns of his specific cultural context. Tillich claims that, 'in using the method of correlation, systematic theology proceeds in the following way: it makes an analysis of the human situation out of which the existential questions arise, and it demonstrates that the symbols in the Christian message are the answers to these questions.' (Tillich 1951, 70). The method of correlation is constructed with the aim of fostering a dynamic interplay between existential questions and theological answers. Tillich's method of correlation has been interpreted in several ways, and the literature varies in which aspects are emphasised. Some have emphasised its apologetic motivations, others argue that it reveals Tillich's deep commitment to existentialism; some argue that it is grounded in Tillich's epistemology, and others root it in ontology. Following a review of some key voices in this debate, I will set out how I understand Tillich's methodology and how it will be employed in this thesis going forward.

Guyton Hammond argues that Tillich's method is fundamentally existential: 'in this [method] the philosopher must draw upon interpretive material from all realms of culture. This material, though diverse, is given focus according to Tillich by its concern with one central question: what does it mean to exist? The analysis of man with which Tillich is concerned is necessarily "existential."' (Hammond 1964, 248). One might interpret Tillich's existentialism as a consequence of his particular cultural situation. By this I mean, the method of correlation *per se* is a method by which theology responds to the questions raised by culture, and Tillich's existentialism is an accidental consequence of the demands of his culture, as opposed to a necessary orientation of the method of correlation. Hammond, on the other hand, argues that the method of correlation 'is necessarily existential', as the existential predicament is a fundamental feature of the human experience. Therefore, existence is 'the fundamental problem which precedes all specific problems concerning man. Existence is the question which underlies all other questions.' (Hammond 1964, 248). Hammond argues that Tillich's method elevates these existential questions into theological analysis, giving them a Christian framework through the concept of 'self-estrangement' – a concept that features in both existentialist analyses of alienation and estrangement, and the Christian concept of sin. As humanity's existential predicament can only be

overcome through the saving work of Jesus Christ, theology and existentialism are bound together. The method of correlation is, on this view, Tillich's framework for exploring this interdependence.

Keith Chan focuses on the ontological aspects of the method of correlation. In line with Tillich's understanding of ontological reason, which is to follow, Chan notes that the method of correlation echoes the ontological relation between humanity and God – human reason is structured in such a way that it can recognise and respond to the divine. Chan suggests that theological methodology is constructed in accordance with its subject matter. As such, insofar as *ST* focuses on Christological and Pneumatological questions, the method of correlation is 'established through the connection with Christology and Pneumatology.' (Chan 2015, 40-44). The manifestation of the Christ in the world brought a transformation; through the continuing action of the Spirit, the potentiality inherent in this transformation can grasp and change the individuals who are receptive to it. On Chan's interpretation, Tillich believes this occurs through the method of correlation – theology adapts and responds to the pressing questions of culture in order to increase the individual's receptivity to the grasping power of the Spirit.

Musser and Price also develop the ontological strand of the method of correlation, arguing that it recognises not only ontological reason, but also the fact that God as the ground of being should be the answer to all questions implied in human existence. They identify two formal criteria that are central to the method of correlation: the object of theology is ultimate concern, and that which concerns us ultimately is that which determines our being or nonbeing. (Musser and Price 2010, 7). With these two criteria in mind, the method of correlation proceeds by identifying preliminary concerns that emerge through culture, and answering the questions implied therein theologically. This process is rooted in Tillich's ontological analysis of God as the ground of being and human reason as ontological.

Alternatively, one may interpret the method of correlation as founded on the idea that theology and culture should be in a communicative relation. Donald Arthur, for example, defines the method of correlation as a framework for *dialogue* between religion and cultural institutions (particularly science). (Arthur 2001, 263). This dialogue is able to proceed because these systems of thought operate over ontologically distinct dimensions of reality, and therefore do not occupy the same cognitive space. Hence, the ideas therein do not conflict as they do not refer to the same objects. Nevertheless, science can raise existential questions to which theology offers response, and this dialogue is necessary for the productive advancement of both theology and science. Those who, with Arthur, interpret the method of correlation as primarily communicative and explanatory emphasise its epistemic features. With the aim of reformulating aspects of Christianity for his contemporary readership, this approach sees Tillich's methodology as developed in light of his belief that theology must present the Christian message through symbols that are appropriate to the context in which they will be received. Such an interpretation would situate Tillich within the contemporary interdisciplinary field of 'science and religion', as seen in the work of Robert Russell and Alister McGrath. (Russell 2012) (McGrath 2019).

Alternatively, Mark Kline Taylor argues that Tillich's method of correlation is 'an interpretive art requiring sensitive readings of both human situations and also of Christian symbols in the tradition. It is a continual tracking back and forth between a situation and a Christian message that are always in some kind of mutual interrelation.' (Taylor 1987, 126-127). Religious language is fundamentally symbolic as the radical otherness of God cannot be captured by ordinary language. Instead, the theologian must circle inwards toward God by speaking of symbolic representations that convey religious truths. Moreover, each specific situation has a unique set of questions; theology's answers use symbols which speak to that situation.⁹³ The epistemic task of theology, on this view, is to translate Christianity in such a way that it can be understood in various cultural contexts.

⁹³ Clayton offers extensive treatment of the method of correlation, focusing particularly on the concept of correlation itself. (Clayton 1980).

On this interpretation, the method of correlation has an apologetic function. Its aim is to translate timeless theological truths into accessible symbols for culture in order that individuals will be more inclined to believe in the Christian message. David Kelsey, for example, writes that ‘Tillich’s principal goal was to make Christianity understandable and persuasive to religiously sceptical people, modern in culture and secular in sensibility.’ (Kelsey 2005, 62). By ‘secular sensibility’ Kelsey refers to a life lived apart from the systems of belief and practice that comprise a religious life. George F. Thomas also highlights Tillich’s apologetic motivations, grounded on the belief that theology must answer the questions posed by specific situations in order to compel people into a situation of faith. (Thomas 1952, 87). Over and above this, however, is the need to ensure that theological discourse does not stagnate. Without a continuous reappraisal of theology, one risks receptivity to the Christian message being conditional upon a specific cultural situation (i.e. one not too far from the biblical narratives). Then the further one moves from that cultural situation, the more likely it is that important aspects of theology are lost in translation.

Alternatively, Langdon Gilkey emphasises the fundamental interrelatedness of the theological and philosophical poles of Tillich’s work, highlighting the method of correlation’s purpose as a practical way of engaging philosophical, cultural, and theological issues. On this view, Tillich is read as constructing a positive feedback loop through which the structure of being (philosophy) and the meaning of being (theology) correlate in theological reflection. Gilkey explains his reading thus:

[Tillich’s] point was that the answers characterised by culture, even a secular culture whether in politics, law, art, morals, or philosophy, had as their deepest ground the *religious* dimension of the cultural question, its religious substance (in philosophy its “mystical a priori”), and that these answers were structured by the “mythos” of the culture and enacted in its common rights. As a consequence, one of the important cultural roles of the theologian was to uncover, analyse and criticize those answers. (Gilkey 1985, 331).

This interpretation acknowledges the profound impact that the problems Europe faced in the first half of the twentieth century had on the content and motivations of Tillich’s theology. As Clayton points out: ‘Tillich’s work as a whole records a serious and sustained attempt to respond theologically to the uncertainties and the questions implied in the cultural situation of the first half of the [twentieth] century.’ (Clayton 1980, 4). He spoke for his own time, and to those living through it, within the framework of his distinctive methodology. This view understands the method of correlation as designed to allow theology to address these problems whilst retaining the core of its message, assigning particular importance to the particular historico-cultural context out of which it arose. Indeed, this may partly explain why engagement with Tillich has decreased in recent years – his theology was written for a specific historico-cultural moment which has now passed. Nevertheless, both Tillich and his supporters see the method of correlation as having value across other concrete situations in which Christians find themselves, and in which the Christian message might be received. In this way, Tillich is a theologian with potential relevance for eras to come. He began a conversation which, by the very nature of the method by which it was devised, must be continued as cultures evolve and change. This thesis is constructed with that fact in mind.

Tillich insists that theological enquiry must take place within the theological circle, a concept he defines thus: ‘theology formulates the questions implied in human existence, and theology formulates the answers implied in divine self-manifestation under the guidance of the questions implied in human existence. This is a circle which drives humanity to the point where question and answer are not separated.’ (Tillich 1951, 69). The theological circle is symbolically drawn by the universal validity of the core Christian message, and Tillich argues that the theologian metaphorically enters the circle through more than belief alone. Rather, one must immerse oneself wholly in the existential situation of faith. (Chan 2015, 37-40). Experientially, this means orienting one’s life toward living a Christian

existence, allowing oneself to be grasped by the Spirit, and recognising God as one's ultimate concern. Epistemically, Tillich holds that religious claims should be subject only to the conditions of epistemic verification set by theology itself, and thus theology should not be judged by, or subject to, external verification methods. Though theology should interact with and respond to culture, culture should not pass judgement on the validity of theology. Christianity is an internally coherent system, and this is enough.

In a similar vein, Andrew Moore argues that some elements of Christian theology resist explanation and require faith: 'theological concern is to conserve the integrity of God's name, and to bear intellectual witness to his *character* has been increasingly eclipsed by preoccupation with defending the logical coherence of an abstract *concept* of God and her/his/its *attributes* from which biblical narrative conceptions have been almost totally eviscerated.' (Moore 2003, 32-33). Externally referred theology, on this view, loses sight of the biblical witness and its portrayal of the divine. Both Tillich and Moore argue that such external verification is not necessary, and can actually be harmful.⁹⁴ Through the symbol of a circle, Tillich shows that his functional epistemology begins with Christian theology and ends with Christian theology, and to stand in the theological circle (viz. to accept theological truths without needing their external verification) is to be in a situation of faith.

Nevertheless, this brings a fundamental ambiguity with which the theologian must contend: faith involves doubt. As such, 'every theologian is committed *and* alienated; he is always in faith *and* in doubt; he is inside *and* outside the theological circle ... therefore, one criterion alone can be applied: a person can be a theologian as long as he acknowledges the content of the theological circle as his ultimate concern.' (Tillich 1951, 13). Theologians cannot overcome these ambiguities; rather, they must accept them as an act of faith. Similar ideas, but with a closer focus on ethics, are found in Søren Kierkegaard's teleological suspension of the ethical. (Kierkegaard 1843) (Evans 2004) (Rae 2010).

Of course, Tillich's method of correlation is a rich tapestry which involves all of the strands unpacked in the previous paragraphs. Nevertheless, I will argue in line with Kelsey, Gilkey, and Clayton, that the method of correlation is primarily a practical way of doing culturally embedded theology. Methodology is practical, and this interpretation preserves that basic point. To remain both fresh and relevant, theology must interact with the culture in which it is to be received. In this sense, the method is first and foremost a pragmatic way to make progress in theological epistemology.⁹⁵ Whilst its form is shaped by Tillich's ontological focus, and its subject is existential in nature, the method is first and foremost a practical methodology and not its abstract corollaries.

In an article that predates *ST*, Tillich defines method as 'the systematic way of *doing* something, especially of gaining knowledge. No method can be found in separation from its actual exercise; methodological considerations are abstractions from methods actually used.' (Tillich 1947, 16).⁹⁶ As such the value of the method of correlation is in its practical application. This thesis employs the method of correlation in its presentation of Tillich's theology, and, as it reaches its climax, the method of correlation will play a significant role in presenting a reinterpretation of Tillich's theology in light of questions raised by the physics and metaphysics of time.

Reason and Revelation

Reason and Revelation, the first part of *ST*, uses the method of correlation to lay out the epistemological foundations upon which the rest of the system is constructed. As Kelsey explains, 'we constantly find our efforts to grasp and shape reality threatened either with meaninglessness or with uncertainty. And

⁹⁴ Tillich's rejection of external verification for theological claims is an epistemic point about the justification of beliefs. He does not advocate an isolationist theology which does not interact with the wider culture of which it is part (as is evident in the method of correlation).

⁹⁵ Both in terms of *how* theological knowledge should be gained, and *what* that knowledge actually is.

⁹⁶ Emphasis added.

yet we do not know enough to live on. The question is, “How can it be that the threat is overcome?” The answer is provided by the Christian symbol “Logos.” (Kelsey 2005, 66). We do not fully understand the world, and in our efforts to understand it through, for example, evolutionary biology and cosmology, we come face to face with our finitude. Humanity is one of many species that has lived for a sliver of time on a small rocky planet in an unremarkable galaxy of which there are billions. How are we to find meaning in such a life? The answer Tillich offers is through the symbol of Christ as the Logos, the innate rationality that runs through reality as a result of being created by, and in the image of, a rational God. Such a sentiment is found in John 1:1-18 and in the doctrine of *imago Dei* (Genesis 1:27).

The notion of symbol is introduced at this early stage of *ST* and its use is justified by the need for theology to speak to each specific historico-cultural situation. It makes structural sense for Tillich to present this part first as it clarifies questions of method for the reader. Revelation is defined as truth revealed by God. Reason is defined as the means by which the human intellect can grasp and make sense of that which is revealed. Both are necessary to form an understanding of religious truths and develop a relationship with the divine. Whilst revelation comes from above, viz. it is divine in origin, reason comes from both above and below. Traditionally, reason has been understood as one of the ways in which humanity shares in *imago Dei*: God is perfect rationality and humanity is able to participate in this rationality in an imperfect way, as humanity was created in God’s image and thus shares aspects of his nature.⁹⁷ Expressed in terms appropriate to the method of correlation, reason is the philosophical question and revelation is the theological answer.

Tillich begins with reason. His overarching concern in the earlier parts of the system is ontology; namely, enquiry into the nature of existence. Ontology determines entities’ mode of existence, including one’s mode of knowing. As such, epistemology, namely the study of knowledge, is for Tillich ‘implicitly ontological’ in so far as knowing is an event within the totality of events which is to be ontologically determined. (Tillich 1951, 81). One exists, and the way in which one exists informs how one can encounter, know, and understand, other objects that exist. This claim is clarified through Tillich’s distinction between ontological and technical reason. (Tillich 1951, 83).

Technical reason is reason reduced to the capacity for reasoning. It is exemplified in logical positivism and the scientific method – rational capabilities are used for problem solving. (Creath 2017).⁹⁸ It is a cognitive tool by which the world is empirically examined or mathematically formulated. This is how ‘reason’ is understood in common parlance, featuring prominently in analytic philosophy. Ontological reason, on the other hand, is the rational structure which underlies both mind and world. Through participation in the divine Logos, human consciousness and the natural world share a rationality which is a fundamental component of their being. Their existence, substance, and interactions are rational as a result of the rationality imbued into creation. Creation and humanity bear the marks of their creator through the rational structures with which they are encoded; as a key opens a lock, our rationality opens up understanding of the world. Tillich argues that technical reason has taken over since the breakdown of German classical idealism and in the wake of English empiricism. Attributable, at least in part, to the rise of science and its prevalence as the dominant epistemology of the contemporary era, the use of ontological reason in philosophical and theological writing has declined.

⁹⁷ Over the course of Christian history different denominations have attributed different capabilities to human reason, usually dependant on the cognitive effects of the Fall. Peter Harrison offers an interesting account of this in Early Modern Europe. (Harrison 2002).

⁹⁸ Key figures in this early twentieth century debate included A.J. Ayer and Rudolf Carnap. (Ayer 1936) (Carnap 1928/1967).

Arguably the leading figure in the development of the scientific method was Karl Popper. (Popper 1959). For an introduction to the scientific method, see (Andersen 2015).

Tillich argues that technical reason is an expression of ontological reason, as it is a mental faculty generated by a rational being. (Tillich 1951, 81). Nature is written in a language that human consciousness can understand – the ontological reason through which both were created. Through this we *grasp* reality. Yet the structures of the mind also *shape* how the external world is experienced. Human consciousness latches onto the rationality in the world in order to perceive it, but the mental structures which allow this also mediate and affect the way the world is understood. (Tillich 1951, 80). These mental structures are themselves shaped by the conditions of finite existence – also referred to as categories of finitude. As Robinson James writes:

In *grasping reality*, we and all beings “receive” it. As we grasp it, reality enters us, unites with us, and we share its powers. In *shaping reality*, we and all beings “react.” We shape, reshape, and leave our mark upon the objective world. When we shape the world, and even when we grasp it, we help to make it what it is, namely, a meaningful place in which we can “have a life,” as we might say today.’ (James 2003, 34).

Tillich argues that we grasp the world through categories of finitude, a notion heavily reminiscent of Kantian thought. (Haywood Thomas 2000, 71). In *Critique of Pure Reason* Kant argues that reality is bifurcated into a sensible world and an intelligible world. (Kant 2003). The former is the world of *phenomena*, things as they appear. The latter, the world of *noumena*, or things in themselves, cannot be directly experienced. We can only apprehend external reality via perception, which is fundamentally mediated by the structure of our minds. The human mind is comprised of fundamental categories, Kant argued, which mediate our experiential encounter with external reality. Time, space, and causality were included in these categories – human experience can never directly access noumena, as our phenomenological encounter with the world will always be through the lens of conceptual categories. Our *logos* is constrained by the limits the intellectual categories place on our encountering of the world.

Tillich echoes Kant’s claim that even time and space are mental categories, using this to argue for the limitations of reason: ‘The main category of finitude is *time*. Being finite means being temporal. Reason cannot break through the limits of temporality and reach the eternal, just as it cannot break through the limits of causality, space, substance, in order to reach the first cause, absolute space, universal substance.’ (Tillich 1951, 91). As reason is fundamentally finite, and has access only to phenomena in the finite world, it cannot directly apprehend the divine. Even if it could, reason is constrained by the cognitive categories which filter and distort that which is perceived. As such, reason alone cannot provide knowledge of God. This is reason’s existential predicament – it is subject to and limited by the conditions of existence. Out of this rises the quest for revelation. (Tillich 1951, 92).

Tillich understands revelation as ‘the manifestation of the ground of being for human knowledge.’ (Tillich 1951, 105). He believes that revelation must always be directed at a particular individual or group who are ‘*in a concrete situation of concern*.’ (Tillich 1951, 123). God reveals himself to an individual or group by speaking to the specific situation in which they exist. By this he means two things. First, ‘the kerygma of faith – its message – must be explained in contemporary language’ if it is to be properly received. (Musser and Price 2010, 5). By language Tillich does not just mean a system of grammar and syntax, he also means a symbolic world inhabited by interacting individuals and groups. Secondly, it must be given to people who will receive it in the appropriate religious context. As such, Tillich believes revelation to be a strictly in-group phenomenon. It cannot just be received – it must also be interpreted, using reason, within the correct religious framework. Here, again, he introduces the interplay between objectivity and subjectivity, arguing that revelation requires an objective event subjectively received and understood. Both elements are essential.

Tillich identifies several mediums of revelation, including nature, history, and the word. This revelation, in so far as it is given to a particular individual or group in a particular situation, occurs within the theological circle. He argues that knowledge of revelation must be judged by its own implicit criteria

made explicit by symbols which are themselves revealed. In his introduction to *ST* he writes that the object of theology is *ultimate concern*. The ultimate is that which determines our being and non-being; namely, that which gives existence and substance to the finite world. Theology is directed towards concern for this ultimate. Being is defined as ‘the whole of human reality, the structure, the meaning, and the aim of existence.’ (Tillich 1951, 17). All of which is existentially threatened, meaning it can be lost or saved. Ultimate concern, then, is concern with that which gives us life and determines how that life plays out. As Tillich writes, humanity ‘is infinitely concerned about the infinity to which [it] belongs, from which [it] is separated, and for which [it] is longing.’ (Tillich 1951, 17).

Nevertheless, preliminary concerns which may arise through artistic expressions, historical narratives, scientific practice, and other cultural endeavours, are still grounded in ultimate concern, as it is ultimate concern that gives them being. For example, crucifixion scenes can be depicted through a painting, symbolising the suffering of Christ and his love for humanity, without the art itself displacing God or the Bible as sources of theology. Similarly, linguistic symbols can point to truth without being taken literally. Symbol is Tillich’s primary tool. Analogies and symbols, as long as they are firmly understood as such and do not supplant the proper object of theology, give a greater knowledge of God. It is an idolatrous mistake to treat the symbol as the object of worship; however, Tillich argues that without analogies and symbols, a transcendent God who does not directly manifest in the realm of finite existence could not be known.⁹⁹ Whilst the ultimate, final revelation came through Christ, symbols also carry revelation to humanity if they are appropriately interpreted in the context of their specific situation. This has pragmatic consequences for the way Tillich chooses to present *ST* in so far as he endeavours to represent the Christian message in symbols appropriate for the age in which he writes.

Janet Martin Soskice develops similar ideas regarding the use of metaphor in science and religion. She argues that the vagueness of metaphorical terms is what makes them an indispensable tool; a lack of strict definitional stipulation allows for necessary revisability whilst circumventing problems which would arise were arbitrary terms used. Without directly describing God and risking idolatrous misrepresentation, ‘the theist can reasonably talk of his God, bound as it is within a wheel of images, as being reality depicting, while at the same time acknowledging its inadequacy as a description.’ (Soskice 1985, 141). An epistemic gap exists between humanity and God – Tillich articulates this in existentialist language, calling it *estrangement*. Through symbol, theological claims can be expressed whilst retaining sufficient vagueness. Though such vagueness may be frustrating for the more analytically minded philosopher, it is an indispensable tool in Tillich’s arsenal when attempting to visualise God through the fog of existential estrangement.

The symbols used by Tillich are mostly philosophically generated and aim at reformulating the core of the Christian message for a twentieth century whose epistemological framework is primarily determined by philosophy and science. Theology is continuously judged by criterion devised by culture. Whilst Tillich argues against this, maintaining that theology must only be internally referred and coherent within the confines of the theological circle, theology must still adapt and respond to the concerns of culture. The questions theology answers are culturally generated; thus, theology must answer them in the appropriate symbolic language. Moreover, as Musser and Price argue, ‘while it addresses the questions articulated by philosophy and culture, theology must also wrestle with unanticipated challenges by new philosophical propositions and cultural expressions, bracketing its anticipated answers to recurrent questions and revisioning responses in light of the new dimensions of the questions and situations.’ (Musser and Price 2010, 6). Through symbols, reason interacts with revelation to speak

⁹⁹ Of course, Christians believe that God *did* manifest himself directly within the finite realm of existence once, through the person and work of Jesus Christ. However, as this was a historical event, without symbols it would only be available to those who directly experienced Christ and his works and could not be passed down and continuously encountered by subsequent generations.

to each new situation, and without symbols theology risks becoming stagnant and unable to resonate with people whose existential situation is not represented.

Reason and revelation, then, are inextricably linked. The conditions of existence inform how revelation is given and also how reason interprets what is revealed. Thomas draws attention to Tillich's sharp rejection of the neo-Orthodox claim that the Bible is the only source of revelation, 'on the ground that the Biblical message could not have been understood and cannot be received without the preparation for it in religion and culture.' (Thomas 1952, 93). There are both active and passive roles for the human subject in the revelatory experience, differentiating Tillich from his contemporary Karl Barth who argued that revelation could only be passively received: God stands 'over and against humanity...and is never, ever identical with anything which we name, experience, conceive or worship as God.' (Barth 1968, 10). We receive religious truths 'perpendicularly from above,' as revelation alone, with no interpretive latitude for human reason. (Barth 1968, 5-6). Reason is incapable of grasping truths about God as humanity suffers permanent postlapsarian cognitive damage. This brief point of contrast illuminates the significant role Tillich believes human agents have in the formation of religious knowledge.

Tillich recognises the need of the human subject to interpret the Christian message within the boundaries of their own situation. Revelation is both received by and mediated through human reason. Tillich's understanding of reason and revelation frames how he constructs his system and the method by which he carries it out; therefore, the epistemic context provided by part one of *ST* is highly important. Here, Tillich sets the epistemological stage upon which he develops his doctrine of God, Christology, soteriology, pneumatology, and his interpretation of history that follows.

Being and God

Being and God begins by outlining the existential question that is raised by awareness of our finitude and is answered simply with God. God, the source of ultimate concern, is here defined as the ground of being – that which gives existence to everything else and the goal toward which all material reality is fundamentally directed. The transition between the first two parts consists, therefore, of a move from the epistemological to the ontological. Tillich's philosophical focus is intended to show, as Haywood Thomas writes, 'how philosophical questions coincide with religious ones and in particular to illustrate that the idea of God is a philosophical expression of the living awareness of the dimension of the holy. Thus, this idea of God as ultimate concern is the 'abstract translation' of the First Commandment.' (Haywood Thomas 2000, 76). The following discussion is structured using Tillich's own method of correlation – first, I will explain the existential question regarding the meaning of being. I will then present Tillich's theological answer.

i) The Existential Question

Tillich believes that the most important questions arise out of an awareness of our own finitude. To contemplate finitude is to contemplate non-being – the cessation of existence altogether – and from this one is led to the question of the meaning of being. As Tillich argues, 'the question of God must be asked because the threat of non-being, which man experiences as anxiety, drives him to the question of being conquering non-being and courage conquering anxiety.' (Tillich 1951, 231). So the existential question is this: 'what is being-itself?' (Tillich 1951, 181).

Tillich identifies certain psychological characteristics as defining human existence and experience. First, and perhaps most importantly, he argues that what distinguishes humanity is its ability for heightened self-reflection. Through philosophical and theological contemplation, humans have developed highly complex methods for reflection upon their own nature and the conditions of finitude by which it is shaped. Humanity is unique in its ability to question itself and its surroundings in a way not totally constrained by evolutionary impulses to reproduce, seek nourishment, and avoid predation. Tillich writes: 'every being participates in the structure of being, but man alone is immediately aware

of this structure.’ (Tillich 1951, 186). Significant here is the ‘awareness’ humans have of the structure of being in which they participate. For Tillich, humanity is distinguished by its motivation to understand being itself and its intellectual ability to do so. Nevertheless, this heightened awareness brings existentialist feelings of anxiety and alienation.

Humanity finds existence uncomfortable due to the omnipresent threat of our own finitude. Tillich’s specific understanding of finitude is ‘being, limited by non-being’ – existence limited by the threat of eventual non-existence. (Tillich 1951, 210). Humans experience finitude as we are able to look beyond the finite and imagine the infinite. We are capable of both experiencing and transcending the limitations of our finitude through reason and contemplation. Awareness of one’s own finitude is a significant source of existential *Angst* – defined as anxiety and dread, usually directed at the conditions of existence or existence itself.

For Tillich, ‘finitude in awareness is anxiety.’ (Tillich 1951, 212). Such anxiety is best understood in contrast to fear. The latter is directed toward a specific object and can be alleviated. My fear of spiders can cause me to feel terror on seeing a spider run past my desk, but that feeling can be alleviated if someone comes and removes the spider for me. Anxiety, on the other hand, is not properly directed. It is an altogether more ethereal mood which colours our experience of the world. Not quite feeling at home in the world makes us contemplate the possibility of the world without us, and, subsequently the inevitability of that coming to pass when we die. From these philosophical questions comes the need for a theological answer.

ii) The Theological Answer

The theological answer provided in *Being and God* is, simply and unsurprisingly, God. (Tillich 1951, 181). Tillich understands God as the ground of being, also referred to as being-itself, as he explains in *The Shaking of the Foundations*:

The name of this infinite and inexhaustible depth and ground of all being is *God*. That depth is what the word *God* means. And if that word has no meaning for you, translate it, and speak of the depths of your life, of the source of your being, of your ultimate concern, of what you take seriously without any reservation. Perhaps, in order to do so, you must forget everything traditional that you have learned about God, perhaps even that word itself. For if you know that God means depth, you know much about God. (Tillich 1948, 53).

This passage is loaded with symbolic language. Musser and Price argue that ‘the metaphors of “ground” and “depth” provide Tillich with language that resonates with his ontological concept of God, and to an extent these metaphors correspond with traditional metaphors of divine transcendence, though they employ the symbol of space differently. (Musser and Price 2010, 23).¹⁰⁰ Being, as Tillich understands it, ‘is the beginning without a beginning, the end without an end. It is its own beginning and end, the initial power of everything that is.’ (Tillich 1951, 211). Everything else is ontologically and logically subordinate to being, for without being-itself nothing could participate in being (i.e. exist) in any sense.

In *The Courage to Be*, Tillich rejects traditional definitions of God, and three misunderstandings surrounding theism, arguing that the only appropriate response to God is absolute faith. The content of absolute faith is believing in ‘God above God.’ This seemingly nonsensical statement is intended to demonstrate that absolute faith proper must transcend the theistic idea of God, be that as: a) a moral absolute or as poetic or practical symbol, because this is irrelevant to faith; b) as a personal divine-human encounter because it is too one-sided; c) as strictly theological, because it conceives of God as a being, not being-itself. Accepting, with absolute faith, that God is ‘God above God’, means rejecting theism’s definitions of God in favour of the statement that God is being-itself. Tillich argues that this is

¹⁰⁰ For more on Tillich’s relationship with depth psychology, see (Rogers 1985) (Ulanov 1985, 119-127).

the only non-symbolic theological statement one can make about God; everything else must take the form of religious symbolism. Moreover, the statement that God is being-itself functions as the boundary between the symbolic and non-symbolic: 'up to this point every statement is non-symbolic (in the sense of a religious symbol). Beyond this point every statement is symbolic (in the sense of a religious symbol).' (Tillich 1957, 11). Thus, to move past the statement that God is being-itself is to enter the territory of religious symbolism.

God must be understood as the creative and substantive ground of everything existent. This is what the term 'being-itself' means. God creates *ex nihilo*, in contrast to human creation which is always out of some pre-existent materials, and this radical and essential creativity brings everything into being. Moreover, insofar as God is the *ground* of being, God is the ontological basis for all other modes and instantiations of being. An infinite qualitative distinction exists between creature and Creator, what Tillich calls 'an infinite jump,' and this ontological gap has epistemic consequences. (Tillich 1951, 263). Tillich argues that 'God must be approached cognitively through structural elements of being-itself. These elements make him a living God, a God who can be man's ultimate concern. They enable us to use symbols which we are certain point to the ground of reality.' (Tillich 1951, 264). This highlights the importance of symbol for Tillich as a method of understanding the divine.

As will emerge in the discussion of part three, *Existence and the Christ*, Tillich identifies the concept of finitude as essential to understanding both the human predicament and the way God is the answer to its problems. (Tillich 1951, 184). God is the answer to finitude because God is its antithesis, therefore understanding finitude throws the nature of God into sharp relief. Non-being is experienced both as a threat, and as a means by which we can imagine its opposite, namely, the infinite. It fills us at once with a constant dread that we could, at any moment, be thrown into oblivion and our substance lost, whilst also providing something to look beyond. The anxiety that results from awareness of our finitude is offset by the courage to face it. (Tillich 1952). The human condition is characterised by a profound fear of meaninglessness. Being-itself and the courage to be is the means by which that fear is overcome. Through God, humanity finds the meaning it craves.

In all this it may seem as though God is rendered the impersonal 'God of the philosophers', and not the living and active God witnessed in Scripture. Musser and Price, however, remind their readers that this need not be so by drawing attention to Tillich's use of the symbol 'personal God' as absolutely fundamental. Person-to-person relationality is integral to the human condition, and as such 'man cannot be ultimately concerned about anything that is less than personal.' (Musser and Price 2010, 22). Being, for Tillich, is the ground of the personal. Though God does not literally live, as this would reduce him to the subject-object paradigm of finite existence, in so far as God participates in everything that is, he participates in life. This leads to Tillich's revolutionary claim that God does not exist. To state 'God exists' is to bring God into finitude and make him an object among objects, which Musser and Price note, 'actually [expresses] idolatry rather than affirming the divine.' (Musser and Price 2010, 24). God grounds existence, he does not exist. He is simply him who said to Moses 'I am who I am.' (Musser and Price 2010, 24) (Exodus 3:14).

Existence and the Christ

Part three deals with existence, Christ, and salvation. Tillich defines existence as standing out of non-being. On entering existence, each individual is actualised and in so doing the entire space of possibilities is collapsed into a single, actual life. In this sense, we stand out of our own potentiality. We become alienated from our potential – from what we know we could be, on both an individual and a species-wide level – and feel perpetually dissatisfied with the realities of existence. Moreover, the realities of the world mean that our interpersonal interactions are often fraught with misunderstanding or marred by self-interested actions. Hence, we are also alienated from other people with whom we share the world. Existence is characterised by a deep fear of meaninglessness, raising questions about how we can live a full and authentic life. Tillich attributes these psychological experiences,

characteristic of the existentialist analysis of the human psyche, to being fallen. The theological answer is found in Jesus as the Christ.

If Tillich's doctrine of God seems impersonal, his Christology is not. *Existence and the Christ* deals more thoroughly with the conditions of existence than either of the two preceding parts. Much of *ST* works through tensions between opposing concepts and toward the tentative synthesis their resolution supplies. *Existence and the Christ's* particular contribution to this wider programme is the creative and novel Christology which uses the method of correlation: Christ is the theological answer to the existential question of estrangement that underlies existence. (Tillich 1957, 16). Tillich's ontological concern is what it means to exist as a human agent in the finite spatio-temporal realm, and his theology embraces the paradoxical union of divine and human in the person and work of the Christ.

Christ represents God to man through the paradoxical union of God and man in his being, violating our expectations of human potential. Fundamental to Tillich's Christology is the claim that we can only understand redemption through Christ when contextualising him in the framework of putatively universal human experiences of estrangement and anxiety. His Christology is rooted in his understanding of Christ's soteriological function as redeemer from an existential predicament. Tillich's doctrine of atonement, simply put, is that Jesus as the Christ took on the conditions of finite existence, namely estrangement, guilt, and death, and conquered them. Fallenness, which Tillich calls Old Being, is characterised by existence, actuality, and alienation; the contrasting New Being is found in essence, potentiality, and reconciliation. Salvation is the transformation from Old Being to New Being. This volume of *ST* is the focus of the remainder of the thesis, and the next chapter lays it out in detail.

Life and the Spirit

In *Life and the Spirit* Tillich sets out his understanding of the nature of life, and the role of both human spirit and divine Spirit in the realm of finite existence in which life is made manifest. Kelsey identifies this point in the text as a pivot from discussion of the potential – in Tillich's usage referring to the idealised possibilities involved in the highest potential of human life – to discussion of the actual: Tillich's technical ontological concept of concrete life. (Kelsey 2005, 70). This concrete life is considered in conjunction with the Spirit who works within it. As Gilkey argues, 'Tillich is in truth a theologian of being, but what he means by being is often misunderstood if he is not also seen as a theologian of the Spirit.' (Gilkey 1990, 164).¹⁰¹

Life and the Spirit can be read as a continued exploration of what it means to be saved and welcomed into a life of New Being, with a particular focus on the role of the Spirit in this soteriological process. Frederick Parrella encourages readers of Tillich to see his understanding of the Spirit in the ontological context in which Tillich constructs the entirety of *ST*. The kind of ontology Tillich fashioned, Parrella argues, developed the Platonic-Augustinian ontology of participation found in classical mystics and mystical theologians in which 'God is immediately knowable and the ground of self-knowledge. This theological perspective ... reaffirms the paradox of God's transcendence and immanence and re-establishes the immediacy of God in human experience.' (Parrella 2009, 75). The Spirit is the critical piece of the puzzle in *ST* through which the system is brought together.

Tillich's dialectical interplay between the ontological and existential gave God as the answer to the question of the meaning of being, and Jesus as the Christ as the answer to the question of existence. The Spirit is the answer to the questions posed by actual life. Kelsey writes: "‘Actuality’ refers to your life precisely in its concrete uniting of ‘essence’ and ‘existence.’ This is a key point. ‘Uniting’ is a *process*, the process of actualizing potentiality or ‘essential nature.’" (Kelsey 2005, 70). Tillich argues that life is fundamentally ambiguous, a view that results from his belief that life has an essential and existential

¹⁰¹ For further discussion of the significance of the Spirit for Tillich's Christology, and wider theological project, see (Chan 2015).

element which are merged to such an extent that neither is exclusively dominant. As such, features of both of these elements of life bubble up and create ambiguity. (Tillich 1964, 137). All living beings, he argues, seek centredness and self-transcendence which comes as a result of living an unambiguous life. What Tillich calls the 'ontological concept of life' requires dual consideration due to its essentialist and existentialist poles. (Tillich 1964, 12-13).

The distinction between existence and essence is the difference between what is and what ought to be. The existential/actual pole of life is the real, finite life characterised by the estrangement and anxiety discussed in *Existence and the Christ*. In each actual life the individual is constantly conscious of alienation from their true potential. This ambiguous interchange between the actual and the potential is a cause of the anxiety that, for Tillich, characterises fallenness. The essential/potential pole of life, on the other hand, is the fullest realisation of unbounded potentiality. Unambiguous life, the perfect manifestation of being in religion, culture, and morality, is possible through union with the Spiritual Presence, first realised through Jesus as the Christ. Spirit permeates the various dimensions of life, but it is fully realised through the self-conscious, self-integrating and self-creating human spirit. For this reason, the essentialist pole of human life is a life fulfilling its true potential, united with the Spirit, in each concrete situation.

Tillich identifies three *functions of the spirit*: morality, culture, and religion. By spirit (uncapitalised) he means that aspect of life which characterises humanity as humanity, not to be confused with the divine Spirit (capitalised). Spirit, the third trinitarian person, is that aspect of God's personhood which remains active in the world and is that through which Christians believe living humans can have meaningful encounters with the divine. The symbol 'human spirit' transcends the concepts of soul and mind, though it is rooted in both. It has specific functions which make humanity unique in the animal kingdom, namely morality culture and religion. Each of these functions of the spirit generates specific ambiguities.

Religion, culture, and morality each have an essential, potential, and pure form. Indeed, Tillich argues that religion, culture, and morality are essentially united. The perfect religion is the manifestation of the Spiritual Presence in a Spiritual Community free from external interference; the perfect culture is a manifestation of Spiritual Presence in secular forms of life; the perfect morality is the exact expression of the divine will through the action of the Spirit in human interactions. Essentially, they are one. Yet in finite existence this unity has been shattered and each function of the spirit is made fundamentally ambiguous. This ambiguity arises in both theory and practice. (Tillich 1964, 77). In attempting to understand the theoretical side of religion, culture, and morality, one must use language. Yet words both create a universe of meaning which is unique to each individual and separate the meaning from the reality to which it refers (the word 'love' for example may bring wonderful or terrible associations depending on one's previous experience). As soon as a concept is grasped, Tillich argues, a gap between object and meaning emerges which distorts the essential *theoria* into an existential *theoria* which is riddled with ambiguity.

In *praxis*, too, such distortion occurs. Practical life and the practice of religion, culture, and morality involves self-determination toward a specific end. However, the conditions of existence prohibit the individual from the fullest realisation of their potential and stymie personal, social, and moral development. Religious and cultural institutions are never free of selfish or unsavoury motives which sully the potentially good work to be done. Similarly, in morality, hubris or virtue-signalling can detract from the moral value in moral acts and systems. Life is ambiguous because it has an essential and existential element that have merged to the extent that neither is exclusively dominant. These ambiguous functions of the spirit are in a state of Old Being and it is only through union with the divine Spirit, Tillich writes, that unambiguous life can be achieved.

The divine Spirit, or Spiritual Presence, fulfils the function of bringing unambiguous life to those who open themselves up to being grasped by it. This simple concept feeds into previous claims in *ST*

regarding tensions between opposing forces, and humanity's ambiguous participation in these forces. There are, he argues, three elements of faith: 'first, the element of being opened up by the Spiritual Presence; second, the element of accepting it despite the infinite gap between the divine Spirit and the human spirit; and third, the element of expecting final participation in the transcendent unity of unambiguous life.' (Tillich 1964, 142). Through faith and love, human persons allow themselves to be infused, inspired, and filled by Spirit and as a consequence are elevated to a state of unambiguous life. Spirit, then, performs both a soteriological and a communicative function in *ST* – it propels individuals to a state of salvation on the one hand, and enriches the divine human relationship on the other. Though these two functions are undoubtedly two sides of the same coin, insofar as salvation involves a rich and renewed relationship with the divine, they have different emphases, and must both be recognised.

Tillich argues that the Spiritual Presence properly manifested in human groups should resemble a *theonomy*, defined as a situation in which each function of the spirit is free from external interferences and open to the Spiritual Presence working through it. By creating a theonomous religion, culture and morality, Tillich believes the Spiritual Presence properly grasped brings reconciliation, unity, and essential being back into the finite sphere. Tillich's understanding of theonomy is best understood in contrast to two alternative formulations of religion, culture, and morality (discussed primarily in the context of a theology of culture). The first, autonomy, is a culture in which individuals assume the role of God in their self-direction and self-governance. Examples of such epochs in Western culture include Ancient Greece and the European Enlightenment. (Musser and Price 2010, 61). The second, heteronomy, describes a culture in which the religious expressions that give rise to culture have been made absolute, and the culture is preserved and maintained in terms of a specific moment of its creativity. This is exemplified in eras of rigid Protestant orthodoxy. A theonomous culture is one in which individuals are consciously rooted in the ground of being and allow the Spiritual Presence to work through them.

It is worth saying a little more about Tillich's views on religion specifically. The Spiritual Presence must be received by the Spiritual Community. Tillich uses this term to describe the ideal community who are grasped by the Spiritual Presence – the community of the New Being. Parrella explains that 'the church's nature is ontological: it should "stand for the power of being itself". Its function is soteriological: it should "mediate a courage which takes doubt and meaninglessness into itself."' (Parrella 2009, 82) (Tillich 1952, 178). Tillich claims that Spiritual Presence is manifest throughout all history and can be seen in particular historical groups through the effective presence of the appropriate symbols through which the impact of the Spirit is clearly expressed. (Tillich 1964, 148-149). All revelatory experiences which have a saving and transformative character, he argues, show the Spirit breaking into humanity's spirit in social groups. Humanity is not alone (in the sense of being abandoned by God) in finite worldly existence, though evidence for Spiritual Presence is fragmentary.¹⁰² All that is required is openness to being grasped by its power.

Tillich sets out the ambiguities that occur in the realm of finite existence as a result of the split between essence and existence, particularly with regards to religion, culture, and morality. He argues that 'the essential unity of religion, culture, and morality is destroyed under the conditions of existence, and in the process of life only an ambiguous version of it remains.' (Tillich 1964, 283). His solution is an 'unambiguous, though fragmentary, reunion ... under the impact of the divine Spirit.' (Tillich 1964, 283). It is here that, in accordance with the method of correlation, the theological answer is given to the aforementioned existential questions raised by finite existence. Again, the theological answer is God.

¹⁰² Tillich insists that fragments do not express with any less strength the presence of the divine power which they represent – each fragment still wholly and completely possesses and represents the Spirit. Each individual person, or fragment of a group, that encounters and accepts the Spiritual Presence is still brought into a state of New Being. Though the Spirit conquers fragmentarily, Tillich argues, it conquers life's ambiguities in the spheres in which it is accepted – the onus is on humanity not God to ensure a more complete Spiritual Presence in the realm of finite existence.

Specifically, through the Spiritual Presence who acts in and through the ambiguous functions of spirit to bring them into an unambiguous state of New Being.

Life and the Spirit, then, fits with the rest of the theological system in *ST* in its existentialist themes whilst adding the dimension of lived experience. *Being and God* and *Existence and the Christ*, in their focus on the first two trinitarian persons, leave little room for the personal, cultural, lived aspects of finite existence. As Parrella succinctly surmises: being grasped by the Spiritual Presence ‘is a profoundly personal but never an individual affair, because it must always be grounded in a community in which such a response can be heard, received, and sustained.’ (Parrella 2009, 88). Introducing the personal and the communal into what was until this point highly abstract and conceptual, *Life and the Spirit* is a welcome foray into the meaning of Tillich’s theological system for the practical realities of human life.

History and the Kingdom of God

In a sense, the final part of *ST* returns to epistemology. Whilst *Reason and Revelation* set up the epistemological project of system, *History and the Kingdom of God* is wider in scope insofar as it sets out the epistemological framework of historical enquiry in general. Ontological concerns are also at the forefront – Tillich argues that history is directed toward the fullest realisation of the potential inherent in being. *History and the Kingdom of God* addresses the possibility of unambiguous life in the historical sphere with the aim of answering the question: ‘is there meaning in history?’ (Tillich 1964, 322).

Tillich identifies several features which are to be examined. These are: the structure of the historical process, the logic of historical knowledge, the ambiguities of historical existence and the meaning of historical movement. These are the existential questions that Tillich answers through the symbol of the Kingdom of God, a symbol that expresses the possibility of unambiguous life in a historical rather than social dimension. Tillich identifies groups as the bearers of history, as individuals always exist in a social context. It is within this context that history proper is carried – groups construct systems of meaning through shared symbols and narratives, which transcend the aggregate personal histories that comprise them. The three movements that constitute life also comprise history: history drives self-integratingly toward the centeredness of groups in a harmony of justice and power, self-creatively toward the creation of new and unambiguous states of affairs, and self-transcendingly toward unambiguous fulfilment of potential being. (Kelsey 2005, 72). Only after the spirit has been actualised in the process of life, however, can the element of history be properly developed. (Tillich 1964, 317).

Tillich understands part five as a continuation of part four, but with a different emphasis.¹⁰³ Part four focused on synchronic considerations regarding the role of spirit in religion, culture, and morality. Part five is a diachronic assessment of life’s ambiguities across human history, in which Tillich also sketches out his understanding of the difference between time and history, and the relationship between time and eternity. In Chapter 7 we will return to these questions.

Summary

ST is a theological system responding to an age of existentialist concern. Tillich shows an appreciation of the importance of relating doctrine to the cultural climate in which his theology will be received, and his culture is all the richer for it. After setting the epistemological parameters in which *ST* takes place and outlining his method of correlation, Tillich explores Christianity through a trinitarian structure. The analysis ends with a consideration of history and the relation of time to eternity which features heavily in later chapters.

¹⁰³ For a discussion of Tillich’s understanding of history *before* the publication of this volume, see (Adams 1952).

This summary of *ST* has also shown how deeply relevant Tillichian theology can be for each culture and each historical moment – his method of correlation positively encourages each new generation of theologians and religious scholars to examine culture, ascertain its most pressing and urgent questions, and provide theological answers. For this reason, Tillich’s legacy has the potential to outlive the culture for which it was written. His particular articulation of a theological system may become dated, as many historical and cultural artifacts do, but woven into the very fabric of his thought is a commitment to the continuous re-examination and re-interpretation of theology. Thus, one can very easily take his core ideas and apply them to a variety of contexts, avoiding any stagnation of the ideas contained therein. Despite a decline in active engagement with Tillich in recent years, I hope to have begun to show why he is an incredibly important thinker whose ideas can be easily incorporated to theology today. Moreover, his active encouragement of dialogue between religion and culture, including cultural institutions like science, makes his system highly relevant in the twenty-first century in which interdisciplinarity and cross-disciplinary collaborations between science and religion are becoming increasingly prevalent.

6

PAUL TILLICH'S EXISTENTIAL SOTERIOLOGY

Salvation is a broad and multifaceted concept, and reflections on the human quest for salvation has an extremely rich history. Indeed, it is arguably a universal feature of human experience, whether it is conceived as the search for fulfilment in earthly life, for the healing of individuals or groups, or the conservation of a natural world systematically exploited by human greed. A common thread that runs throughout all the formulations is that salvation is the search for authentic life. It involves change from a prior state in which an individual or group is unfulfilled or falling short personally or relationally, to a state of authenticity, fulfilment, and rich relationality.¹⁰⁴

The Christian faith is specific in its understanding of salvation. Paul Fiddes writes that the term 'atonement' (at-one-ment), first introduced by William Tyndale in his 1526 early English version of the New Testament as a neologism to translate the notion of reconciliation (at a time when there was no English word 'reconciliation'), aptly reflects the Christian belief that salvation is 'dependent upon the restoring of a relationship between human beings and God, who are estranged from each other.' (Fiddes 1989, 3-4). Salvation happens for an individual by drawing that individual deeper into a relationship with God. (Fiddes 2007, 177).

Specifically, such atonement depends upon a particular moment in time and space at which point Jesus of Nazareth was crucified on a cross. For Christians, this event is the centre point in human history. A defining belief of Christianity is that atonement depends on this moment; however, precise formulations of the Christian doctrine of salvation are multifarious.¹⁰⁵ Nevertheless, 'salvation' is always salvation *from* something; it assumes that the life of human beings and world in which we live is distorted, self-destructive, or failing to reach its true potential. (Fiddes 2007, 176). Typically, how one conceptualises salvation depends upon one's understanding of the human predicament in the cultural context in which salvation occurs. As Fiddes notes, task of theology is locating where the mystery in our midst is to be found. (Fiddes 1989, 5).

Fiddes identifies three core features of the human predicament which occur in all doctrines of atonement. The first is a sense of alienation/estrangement. This can be understood as a loss of contact with one's social fabric, distance from the divine, or distance from oneself. Such themes are culturally ubiquitous, from Hegelian philosophy to Shakespeare's sonnets. Fiddes argues that these notions appear primarily in existentialist analyses (i.e. Tillich) and Marxist analyses that argue the proletariat are alienated from the objects of their labour through the structure of capitalism. (Fiddes 2007, 177) *Kain 1979). The second is a failure to fulfil potential, both our individual potential and the potential of our species. As Jean-Paul Sartre puts it, we have an 'unhappy consciousness' that reaches out to what we always lack. (Sartre 1957, 90; c.f. Fiddes 1989, 6).

The third feature is sin. Ian McFarland writes that 'the semantic range of the term 'sin' includes not only particular *acts* that contravene God's will, but also the congenital *state* of opposition to God that subsists apart from and prior to any specific actions a person performs.' (McFarland 2007, 141). Scripture identifies the root of sin as Adam and Eve's first disobedience, the consequences of which are passed down throughout human history (Genesis 2-3). Christian doctrine teaches that sin permeates the very nature of humanity and is manifested in every act in which a person turns away from God. This

¹⁰⁴ With other people, the natural world, or the divine.

¹⁰⁵ McGrath provides a helpful survey of the various portrayals of salvation in the New Testament. (McGrath 2020).

picture of sin as a quasi-personal power largely stems from the Pauline literature in which it was initially developed. (Tolmie 2005) (McGrath 2014, 93-94). It can be characterised as unbelief, a failure to trust in the Christian message and the life it recommends, or a rejection of God in favour of earthly things. Sin has, therefore, both individual and relational components. Sin creates the conditions of fallenness, that from which we are saved.¹⁰⁶ The Christian doctrine of salvation has a rich history, one which unfortunately falls outside the scope of this work. For the purpose of the present discussion, an account of Paul Tillich's soteriology is all that is required.

Paul Tillich's Doctrine of Salvation

Tillich's Christology, the centre-point of his theological system, is the only part presented in a stand-alone volume. In Tillich's view, it contains that which should sit at the heart of every Christian theology: the person and work of Jesus as the Christ, and an interpretation of the finite existence in which he took on flesh and dwelt among us (John 1:14). These meet in the doctrine of salvation. Understanding the existential human condition is imperative for an understanding of Christ's role in bringing salvation from it. Tillich's doctrine of salvation is a primary corollary of his Christology, as it is through the person and works of Jesus as the Christ that salvation is made possible. *ST* defines salvation as a transformation into a new state of being, leaving behind the old state of being and the alienation and anxiety caused therein. This transformative experience occurs through conscious receptivity to being grasped by the Spirit, who was brought by Christ into the finite realm of existence. Fallenness is framed as estrangement from one's essence and the failure to fulfil one's true potential – both of these have psychological and ontological dimensions. Christ brings salvation in the form of reconciliation and fulfilment, and to accept this salvation is a conscious act, the significance of which emerges in Part III. Through his now familiar method of correlation, Tillich sets out what he believes to be the pressing existential questions of his time, before constructing a Christological and Soteriological answer.¹⁰⁷

- a) The Existential Question: Existence and Fallenness
 - i) Existence

Understanding salvation requires an understanding of that from which we are saved. For Tillich, fallenness and existence cannot be separated – fallenness is woven throughout the very fabric of existent reality. To exist is to be fallen. Finite existence creates the conditions of fallenness through alienation, actualisation of potential, and the anxiety caused therein. *Existence and the Christ* hinges on the concept of finitude laid out in *Being and God*, though finitude is given further existential formalisation. Finitude's psychological consequences are explored – existence in this paradigm creates estrangement from 'the ground of [our] being, from other beings, and from [ourselves].' (Tillich 1957, 51). Tillich's existential soteriology is founded upon several key binaries: potentiality/actuality; essence/existence; alienation/reconciliation. Both reality, and human experience of reality, is split in accordance with these binary pairs; they have, therefore, both ontological and psychological dimensions. Running through the entire discussion is the belief that human individuals are estranged from their essence and awareness of this causes deep anxiety.

¹⁰⁶ For further details on the relationship between sin and fallenness, see (McFarland 2007).

¹⁰⁷ It must be made clear that Tillich does not argue for an entailment relation between the question and the answer, nor does he wish to claim that the fundamental truths of Christian theology are born out of existentialist analysis. In the introduction to *Existence and the Christ*, he emphasises that the existential question is not the source of the theological answer, nor can one derive Christology from an analysis of the existential situation. The existential question is a fundamentally human question asked by humans and answered by humans. The theological answer, on the other hand, is only manifest from God. The existential question and the theological answer are two independent yet interrelated poles. By this Tillich wishes to convey the humanity-independent truth status of the core of the Christian message, whilst emphasising that aspects of theological reflection can be adapted to answer the pressing concerns of the cultural situation in which the question is formulated.

Essence is potentiality; standing out of essence involves existential distortion. Donald Dreisbach notes the Platonic influences on this conception of finite existence, particularly the theory of the forms. (Dreisbach 1980, 523). Dreisbach argues that Tillich's formulation of essence has three primary strands. (Dreisbach 1980, 526). The first is empirical, namely that an object's essence is gathered from empirical knowledge about the general behaviour of objects that belong to certain kinds. Observation of hens shows that they produce eggs, hence one's empirical knowledge of the essence of a hen is that it is a being that produces eggs. The second strand is evaluating – a hen is evaluated against the standards one expects, hence a hen unable to produce eggs fails to live up to the expectations generated by an understanding of its essence. It is evaluated poorly against these standards. This evaluation requires the third strand of essence: potentiality. The fullest realisation of a hen's potentiality involves the production of eggs, and a failure to produce eggs is a failure to actualise this potentiality. For human beings, the fullest realisation of essence is out of reach in the finite realm of existence. We are unable to live up to these expectations and manifest the potentiality inherent within us, hence we experience estrangement and anxiety.

Existence and the Christ begins with a discussion of the etymology of the terms 'existence' and 'existential'. The word existential refers to existence, whereas the philosophical school of existentialism is the distinctive study of the human predicament. The ideas therein emerged in the nineteenth and twentieth centuries, and Tillich identifies their roots in responses to Hegelian idealism. Hegel argued that the human existential situation is to be in a state of estrangement from one's essential being, yet through the process of history reconciliation had occurred. The post-Hegelian rebels (i.e. Marx, Kierkegaard, Schelling) roundly rejected this. Whether it was Marx's denial of a reconciled society, or Kierkegaard's denial of the reconciled individual, or Schelling and Nietzsche's denial of a reconciled life in general, the existentialist movement vociferously opposed this central Hegelian claim. (Tillich 1957, 45). Tillich sits within this historical trajectory.

Tillich explores the concept of existence through the Latin root *existere*, namely, to stand out. This idea of 'standing out' is at the heart of Tillich's existentialist concern. On Tillich's understanding, existence is to stand out of non-being/nothingness. If something exists then it stands out of non-being in such a way that is discoverable, either directly or indirectly, in the finite physical realm. Entities participate in being at least to some extent – a pre-existent entity participates in the power of being before that power has been actualised. Therefore, it participates in *potentiality*. In standing out of its own non-being, namely coming into existence, the individual moves from potentiality to actuality. Yet by the very nature of finitude, the unity of being and non-being, one cannot totally stand out of non-being. Human beings experience the liminality that comes from standing out of mere potentiality whilst also remaining in it to a certain extent. A being 'never pours out its power of being completely into its state of existence. It never fully exhausts its potentialities.' (Tillich 1957, 21). Through the transition from essence to existence, leaving behind potentiality for the finite actuality of existence, something fundamental is lost. The individual becomes estranged from the ground of being and from the realisation of their potential, whilst standing in being enough to be aware of the possibility of reconciliation. This introduces pervasive feelings of alienation.

Essence and existence, the first binary pair introduced in *Existence and the Christ*, maps the transition into existence that each finite object undergoes. The transition from essence to existence is, Tillich claims, the original fact – it underlies all other facts and is a universal quality of finite being. (Tillich 1957, 37). Under the conditions of existence, essence and existence are split. The ontological dimension of this split has its roots in Plato's theory of the forms. In existing, an individual object participates in the essence that gives it its nature, whilst being fundamentally distinct from it. Tillich gives the example of a tree in his garden – that specific tree exists in the finite realm in a way that treehood does not, but the tree only exists by participating in the power of being which is treehood. We recognise all objects that participate in treehood – it is the essence that gives each tree its nature. Treehood itself does not

exist; it is mere potentiality. In its actuality, an existing tree participates in the mere potentiality of its essence.

Adrian Thatcher argues that the main features of the Plato's theory of the forms are a significant mythological and philosophical backdrop to Tillich's ideas regarding ontological essences. (Thatcher 1978, 100). Musser and Price develop similar thoughts, arguing that Tillich adapts Plato's understanding of the forms, 'identifying [them] as essence or that which underlies, energises, and defines the ideal of all that exists.' (Musser and Price 2010, 27). The essential and existential dimensions are ontologically distinct, and, following Plato, Tillich understands the existent world as the deceptive, less real world. True being, therefore, is essential being. (Tillich 1957, 23). The other binaries that reappear throughout *Existence and the Christ* echo this ontological distinction, providing the architecture for Tillich's explication of fallenness and how salvation from it is to be attained.

Tillich shares Plato's misgivings about the existent world insofar as it is capable of being the fulfilment, morally and spiritually, of what is ontologically possible. Existent objects participate in essences whilst simultaneously being estranged from realisation of their true potential. Through this process of actualisation, the entity loses some aspect of what it essentially is, becoming distorted by the conditions of existence. In *Life and the Spirit*, Tillich develops his ideas about how this emerges in the ambiguous actuality of life. By existing in the finite physical realm, objects stand out of non-being to participate in being without fully separating themselves from non-being; they become existent and estranged from their essence whilst participating in it to the extent that its essence gives it its nature. Consequently, the transition from essence to existence is a loss of true essentiality. In this sense, to exist 'is to fall away from what man essentially is.' (Tillich 1957, 22).

Existence involves the collapse of an individual's infinite potential into a single, actualised self. Tillich argues that 'existence is estrangement and not reconciliation; it is dehumanisation and not the expression of essential humanity ... the existence of the individual is filled with anxiety and meaninglessness.' (Tillich 1957, 28). The psychological dimension of this is feelings of meaninglessness. In *ST*, this does not mean the absence of meaning. Ann Ulanov argues that 'the problem is not a lack of meanings, but too many of them. We see multiple meanings, ambivalent meanings, even opposite meanings, especially when we look at large historical currents, political issues, or problems of global dimension. It is the abundance of meanings that so confounds us.' (Ulanov 1985, 130). Through this quagmire no single or significant meaning emerges, and the multiplicity of meanings feels threatening. Moreover, embodied existence causes us to experience estrangement from our essential selves, as concrete existence consists of limitation and a narrowing of one's possibilities. We participate in essence only partially, through vague semi-conscious remembrance, and this awareness has the pervasive psychological consequences hitherto discussed. Closely related is the second binary Tillich identifies as permeating the finite realm: potentiality and actuality.

Essence is pure potentiality, and existence is finite actuality. Ontologically, to fall out of potentiality into actuality is to 'fall away from what man essentially is.' (Tillich 1957, 24). The divine being is pure essence and unlimited potential; being created in the image of God allows us to participate in this essence. Thus, to transition from essence into existence is to be estranged from the ground of our being. Phenomenologically, the transition from essence to existence implies a split between potentiality and actuality insofar as the individual is thrown into existence *from* potentiality *into* actuality. The psychological consequences, therefore, are similar. The true essence of humanity is in its potentiality, not in each actualisation of a human self, and our spiritual existence is permeated by an awareness of estrangement from what we essentially are. This manifests in both the quotidian and the spiritual.

Quotidian existence consists of limiting oneself to a specific path, whether that is a career, a vocation, or another lifestyle choice. We are fundamentally limited by the finiteness of our being and can never exhaust all the possibilities of a human life; there is neither the time nor the freedom to do so. Continuously stymied by a manifold of both external and internal phenomena that inhibit us from

fulfilling our potential, we desire unobtainable fulfilment. (Dreisbach 1980, 527). This creates a deep fear of meaninglessness, and the threat of death and non-being sharpens this into anxiety. As Heywood Thomas notes, ‘man is aware of his non-being and this ‘inward’ expression of his ‘outward’ finitude is the anxiety which is the fundamental character of his life.’ (Heywood Thomas 2000, 88). The external features of the finite world shape individuals’ internal psychology in characteristically existentialist ways. Hence, as Dreisbach writes,

My essence is a cluster of possibilities, possibilities that belong to me because I am a man and because I am the particular man that I am. These possibilities are real, and therefore have some ontological status, which Tillich calls potential being, a limited, unactualized level of being. The act of existing, of taking on actual being, is the actualization of potentialities. But in this process of actualization potentialities are rejected, and those that are actualized are not perfectly realized. Hence existence, although ontologically a higher state of being, is a distortion of and a falling away from essential possibilities. So to be, and especially to be a human being, is to be in a continual tension between essence and existence, between what is and what could be. (Dreisbach 1980, 531).

This tension is the root of fallenness.

ii) Fallenness

Fallenness and the doctrine of creation are, in many ways, two sides of the same coin.¹⁰⁸ Understanding how finite reality is fallen is fundamentally linked to how it was created, and the characteristics and limitations imposed on it from the beginning. Tillich understands anything finite as inherently imbued with non-being, despite standing out of non-being into existence. By this he means that reality is actual but contingent – existence is fragile, and destruction and death are real threats.

The particularly human dimension of finite existence within the created order is that only humanity is aware of non-being, and as such is able to transcend it. We can contemplate the certainty of death and the fear of meaninglessness, and in so doing we can try to overcome these.¹⁰⁹ The finitude of the physical universe is characterised by the ontological bifurcation of that which is united in the ground of being we call God; thus, the infinite is liberated from the fragmentary finite world in which human beings exist. The split between essence and existence does not apply to God, as God possesses the symbolic unity of essence and existence. God is beyond the split, a consequence of divine perfection. In Christian terms, this is expressed through the idea that creation, as opposed to the creator, is fallen.

The transition from essence to existence is encapsulated by the Fall. In keeping with the rest of *ST*, the Fall narrative is understood as both a myth and a religious symbol. Tillich argues that Fall narrative given in Genesis 1-3 symbolically represents the transition from essential to existential being. Genesis 1-3 is interpreted as a spiritually, ethically, and theologically rich mythical text which contains truths about the human condition, rather than a historical document detailing actual events of the past. His aim is to ‘unambiguously represent the Fall as a symbol for the human situation universally, not as the story of an event that happened “once upon a time.”’ (Tillich 1957, 33). The Fall ontologically precedes everything in time and space in that it sets the conditions for spatiotemporal existence. The world must exist in this fallen state, as fallenness is a precondition for actual finite existence. This also means that Tillich sees ‘humanity before the Fall’, not as a reality, but as an ontological potentiality. Fallen

¹⁰⁸ Anne Marie Reijnen, for example, argues that the human predicament (as set out via creation) must be understood in order that the saving power of New Being be grasped. Creation and salvation must be considered together. (Reijnen 2009, 60-63).

¹⁰⁹ Of course, death cannot be overcome at the present time. Advances in transhumanism speak to this existentialist concern and humanity’s drive to transcend the limits of finitude. (Bostrom 1998) (Bostrom 2005).

existence is imperfect fulfilment, and the Edenic human form is the fullest realisation of the potential lying latent in each human individual.¹¹⁰

Tillich rejects any literalistic interpretation of Genesis 1-3 which overemphasises historicity. Rather than a historically accurate text depicting actual events of the past, Genesis denotes ‘the trans-historical quality of all events in time and space.’ (Tillich 1957, 46). Truths explicated in the Fall narrative underlie all events in the physical universe. Like humanity, creation is essentially good, and only falls into universal estrangement through its actualisation. (Tillich 1957, 50). The Genesis narrative reveals four things – the possibility of the Fall, its motives, the actual event, and its consequences. (Tillich 1957, 31). In the words of Heywood Thomas, Tillich’s concern is twofold: ‘to stress first of all that this doctrine is true in that its balancing of freedom and destiny is a realistic picture of man, and, secondly, to emphasize that the truth of the doctrine is this ontological understanding which needs a myth for its expression.’ (Heywood Thomas 2000, 93). The possibility of the Fall lies in the nature of *finite* freedom.

Tillich argues that freedom is a necessary part of human nature. Paradoxically, this freedom is both a weakness and humanity’s greatest strength. Humanity is free to penetrate the depths of reality by asking fundamental questions about its composition; it is free to learn and follow moral codes; it is free to build and create albeit within limits. Crucially, however, humanity is also free to contradict or turn away from its essential nature. Human beings can, Tillich states, ‘surrender [their] humanity.’ (Tillich 1957, 32). All these freedoms are limited by the opposing ontological pole: destiny. The dynamic interplay between these two states comprises finite freedom, and it is within this context that the transition from essence to existence is possible.

Rejecting the traditional interpretation of the Fall narrative as detailing a prior state of paradisiacal perfection from which humanity degenerated, Tillich argues that instead it depicts essential humanity, that from which each individual is estranged. Essential humanity is a state of a dreaming innocence. While this concept is rich in *symbolic* truth, it does not refer to any prior historical time during which humanity was either dreaming or innocent – each point to a state of non-actualised potentiality. It expresses the idealised state of fully realised human potential, as opposed to a state of being which preceded the existential human condition temporally. Here, understanding the mythical dimension of the Fall narrative is imperative. The idealised state of prelapsarian Adam exists as potentiality in all of humanity, but it is obscured by the ontological fragmentation undergone in the transition from essence to existence. It symbolises the crystalizing of the myriad potentialities into actual, finite existence. Thus, the task of theologians is not to analyse the degradation from an actual perfect past to a current fallen state, but rather to discern the inherent potentiality in creation through existential distortion. (Heywood Thomas 2000, 91).

In the myth, humanity is influenced by subhuman and superhuman figures. The serpent symbolises the dynamics of nature. It has influence, but without the freedom of humanity to actualise its desires it is impotent. The final decision is humanity’s, and humanity bears responsibility for the consequences. (Tillich 1957, 40). The fruit symbolises knowledge of, and power over, the finite realm – that which Tillich earlier referred to as being driven by preliminary concerns.¹¹¹ In eating the fruit, humanity chooses to centre itself in creation and concern itself with preliminary matters. In this sense, the serpent’s claim that ‘your eyes will be opened and you will be like God’ (Genesis 3:5) is correct – the act of rebellion displaces God from the centre and idolises a warped deification of humanity and its pursuit of knowledge and power. Finite existence becomes all-encompassing, and concern for the

¹¹⁰ An obvious problem here is theodicy – how could anxiety, estrangement and sin enter the world if no literal Fall event occurred? That humanity would be tempted at all presupposes estrangement. The answer lies in the correct interpretation on concupiscence. For further discussion, see (Tillich 1957, 128-131).

¹¹¹ For a discussion of how this takes place in individuals, see (Ulanov 1985, 129-130).

ultimate is almost entirely lost. Awareness of one's finitude and the possibility of the infinite, however, creeps in and causes the anxiety with which so much of *ST* is concerned.

The most important symbolic moment in Genesis 1-3 is, Tillich argues, the divine prohibition from eating from the tree of knowledge (Genesis 2:16-17). The mere fact that this command is necessary illustrates the fundamental split between creature and creator. It presupposes the *desire* to sin; a sin which has not yet occurred but is no longer innocent. Tillich calls this the moment of 'aroused freedom', the moment at which the choice between preserving one's dreaming innocence and actualising one's freedom to acquire knowledge and power emerges. In this moment, humanity chooses to actualise freedom. With that, the transition from essence to existence is complete.

Heywood Thomas draws attention to Tillich's attempt to balance the responsibility and tragedy of the situation of fallenness. Tillich does not wish to claim that fallenness is ontologically necessary; however, he identifies fallenness in all existent creation. Through the transition from essence to existence, all existent reality is fallen. Though the Fall is ultimately a consequence of human freedom, the universe participates in fallenness by the interdependence of humanity and the natural world. As Tillich explains, 'man reaches into nature, as nature reaches into man. They participate in each other and cannot be separated from each other. This makes it possible and necessary to use the term "fallen world" and to apply the concept of existence (in contrast to essence) to the universe as well as to man.' (Tillich 1957, 49). Its fallen state is instead an inescapable result of its finitude. Nevertheless, it is similarly imbued with the potentiality for salvation.¹¹² Whilst Tillich speaks most often of estrangement (which applies to humanity and nature alike) when he uses the word sin, he is referring to the specific responsibility humanity has for its condition. (Heywood Thomas 2000, 93). Estrangement is the tragic predicament, human responsibility for it is sin.

iii) Sin

Despite its prominence in *ST*'s lapsarian discourse, estrangement cannot replace the idea of sin in Christian theology. More acutely and directly than estrangement, sin expresses humanity's personal responsibility for turning away from God. Tillich claims that 'sin' must be retained, because 'the word has a sharpness which accusingly points to the element of personal responsibility in one's estrangement.' (Tillich 1957, 46). An important distinction must be made at the outset between 'sins' and 'sin'. The pluralised 'sins' refers to individual instantiations of the permeating force underlying existence that is 'sin' – the latter should not be reduced to the former. In this move away from legalistic conceptions of sin as a rule-breaking act, Tillich aligns himself with St Paul's definition of sin as a quasi-personal power which rules the finite world. (Tillich 1957, 52). Moreover, in his sermon *You Are Accepted*, Tillich defines sin as a 'state of separation. And separation is threefold: there is separation among individual lives, separation of a man from himself, and separation of all men from the Ground of Being. This three-fold separation constitutes the state of everything that exists; it is a universal fact; it is the fate of every life.' (Tillich unknown). Discrete transgressions are therefore an expression of the more fundamental estrangement – before sin is an act, it is a state. (Tillich unknown). Moreover, the doctrine of *imago Dei* is given a distinctly moral character in the context of Tillich's formulation of sin: 'only he who is the image of God has the power of separating himself from God.' (Tillich 1957, 37).

Tillich presents a tripartite formalisation of sin as unbelief, hubris, and concupiscence. The first, unbelief, is not just a weaker form of knowledge; rather, it is a turning away from the ground of being toward a less real form of life. Just as faith is standing, with the whole of one's personhood, inside the theological circle, so too is unbelief an act of total personality. Knowledge, emotion, and will are all

¹¹² Tillich does devote some attention to addressing the notion of a fallen cosmos, and the of possibility of other intelligent species who might also experience fallenness. In an age of science, these questions are somewhat unavoidable. However, as he largely restricts his discussion to what fallenness means for humanity specifically, the present discussion does the same.

involved in this turning away from God. The second is hubris, which is represented by the pride before the fall. It is the self-elevation of the human to the godly, and the failure to acknowledge one's own finitude. Hubris is not, therefore, a single instantiation of sin; it is the dye that seeps through the sinner tainting them in their totality. Humans have the freedom to reject God as their centre and revolve only around their own self-consciousness, but in doing so reorient themselves toward an ever-more alienated and selfish existence.

Thirdly, sin is concupiscence, which Tillich defines as the motivation of sin. It is the desire to possess and/or dominate that which is external to the self. Traditionally, concupiscence has been associated with sexual desire (Augustine, Luther) and power (Nietzsche's 'will to power'), though it can just as easily be applied to an insatiable desire for knowledge (as is the case with Goethe's *Faust*). The previous two dimensions are turning the self away from the divine centre (unbelief) and placing oneself at the centre instead (hubris); by drawing the whole world into itself (concupiscence) humanity in its finite particularity rejects the possibility of entering into divine life. Concupiscence represents the selfish hunger to possess, control, and exploit the world for earthly gains. In other words, it is the appetite to sin in all its multifarious forms. (Heywood Thomas 2000, 97).

Tillich's understanding of sin is best understood through the ontological polarity of freedom and destiny to which he frequently returns. Sin is a free act, and as such is the personal responsibility of the individual sinner. Dreisbach ties this back to potentiality and actuality – in choosing one set of circumstances over another we fail to actualise all the potentiality contained within the essence of humanity. Essence is distorted, and this distortion of essential possibilities is the consequence of freedom, and so is properly called sin. Dreisbach writes: 'Sin is, for Tillich, more than just another word for estrangement. It points to "the element of personal responsibility in one's estrangement" and "the personal act of turning away from that to which one belongs" (ST II, 46).' (Dreisbach 1980, 529). Each individual's freedom is part of the wider universal destiny to exist in a state of estrangement. Tillich explains this by claiming that sin is fact before act – the act of freedom can only be understood in the context of the fact of destiny. Even in light of this, personal responsibility cannot be diminished. Once again, the individual is torn between two poles and resigned to living an ambiguous existence, which brings feelings of guilt and anxiety into sharp relief. Until, that is, the New Being entered reality through Jesus as the Christ.

b) The Theological Answer: Christ as the Bringer of New Being
i) The Paradox of Jesus as the Christ

Tillich grappled with the problem of history throughout his theological career, particularly with regard to the question of the historical Jesus.¹¹³ His consideration of the historical life of Jesus of Nazareth is limited. Instead, *ST* emphasises Christ's messianic role in bringing New Being into a fallen cosmos and for a fallen humanity. When Tillich discusses history, he discusses Christ's place at the centre-point of history; Christ is he who wrought a soteriological transformation that changed the course of history forever.¹¹⁴ When considering history, the existentialist meaning of history always supersedes the events themselves. Hence attention to the finer details of Jesus' life is limited.¹¹⁵ Indeed, Tillich has been criticised for failing to emphasise the radical particularity of Jesus of Nazareth, implying that 'Christ'

¹¹³ For a discussion of the historical Jesus in Tillich, see (Reijnen 2009, 68-71); for a related discussion, but of pre-*Systematic Theology* Tillich, see (Mollegen 1952, 231-327).

¹¹⁴ For further discussion of Tillich's Christology, see (Reijnen 2009) (Musser and Price 2010, 27-31) (Heywood Thomas 2000, 106-136) (Gilkey 1985) (Mollegen 1952).

¹¹⁵ It has been argued that Tillich was even willing to concede that Jesus may never have lived. This has dismayed many who may otherwise have been attracted to his position. (McEnhill and Newlands 2004, 260); for an alternative interpretation that sees Tillich as valuing the historical actuality of Jesus, see (Gilkey 1985, 319-324).

is a role that could have been played by anyone.¹¹⁶ In line with Tillich's own focus, these sections on Christology will focus on the function of the Christ as redeemer, rather than the life of the historical Jesus.

The union of God and humanity in Jesus, Tillich argues, is paradoxical: 'the appearance of the New Being under the conditions of existence, yet judging and conquering them, is the paradox of the Christian message.' (Tillich 1957, 92). A paradox must not be confused with irrationality or the destruction of formal logic. Nor is it nonsense. It is a *prima facie* contradiction. Etymologically, it is that which contradicts *doxa*, 'the opinion which is based on the whole of ordinary human experience, including the empirical and the rational.' (Tillich 1957, 92). Crucially, this experience-based opinion has been formed in the finite physical realm under the conditions of existence.

As Tillich laid out in the earlier sections of *ST*, entities that have undergone the transition from essence to existence (Tillich's existentialist framing of fallenness) experience estrangement, ontological fragmentation, and anxiety. As detailed in *Reason and Revelation*, postlapsarian human reason is imperfect. Furthermore, the external world is also subject to the consequences of the Fall. Thus, humanity's ability to form reliable judgements about what is rational or possible has been compromised. The idea of a being entering the conditions of existence and conquering them so profoundly violates human expectations that it appears paradoxical. This paradox is rooted in humanity's misconceptions and does not speak to any irrationality in the divine person Christ.

Opinion of this kind is formed through experience of the external world, i.e. by phenomenologically encountering the world and shaping our expectations of subsequent encounters on the basis of previous ones. The mechanism by which this transpires is the same as that which forms our intuitions that releasing an object from a height will always result in it falling to the ground, and that touching water will always result in wetness. The existence of Christ in the finite realm is a paradox in itself, and by conquering the conditions of existence he violates our expectations entirely. This is the fault of our expectations, formed as they are in a finite fallen world. Jesus as the Christ brings a fundamentally new mode of being into the world through his life and death, and this paradox is the key to salvation.

'Jesus is the Christ' is the assertion that distinguishes Christianity and those who affirm it are Christian. The Christ, or messiah, is he who has been chosen by God to establish the reign of God in the world. Tillich understands the term 'Christ' as a symbol for the individual who represents God to man. Through this the Christ unites that which the conditions of existence have torn asunder, and in so doing, embodies the fullest realisation of human potential. He shows humanity what God intended humanity to be. By this Tillich does not wish to depict Christ as half-god half-man, as such a being could not represent God or humanity. Tillich writes: '[Christ] represents the original image of God embodied in man, but he does so under the conditions of estrangement between God and man ... the paradox of the Christian message is that in *one* personal life essential manhood has appeared under the conditions of existence without being conquered by them.' (Tillich 1957, 93). Christ's role is to bring a new eon. In Tillichian language, the paradoxical conquering of the conditions of existence results in an ontological renewal, namely: 'New Being.'

ii) New Being

New Being is understood in *ST* as the result of an ontological renewal, bringing a new reality in which the Old Being (the existentialist framing of fallenness) is overthrown. New Being is the manifestation of essential being in historical existence – the radical realisation of the potentiality inherent in creation

¹¹⁶ Tillich explicitly stated that were Jesus to have succumbed to temptation he would have ceased to be the Christ. Such a picture appears to render 'Christ' a role that can be picked up and discarded, and Jesus' fulfilment of the role depended on his works and not his innate personhood. (Tillich 1957, 126). This is a contentious claim that has received criticism. An example of this critique, albeit levelled against a pre-*Systematic Theology* Tillich, is (Baillie 1948, 78-79).

but obscured by the consequences of the Fall. Both humanity in the finite physical world participate in New Being. Humanity directly participates as it was in and through a human life that New Being was introduced. The universe and humanity participate in each other through their shared ontological reason, and as such creation also participates in New Being. Tillich understands everything as fundamentally connected, both through the creative agency which brought everything into being and through the continuous presence of the Spirit in the world. Salvation, therefore, is possible for the whole of reality. He writes, a human being ‘belongs to physical, biological, and psychological realms ... he is a universe in himself. What happens in him, therefore, happens by mutual universal participation.’ (Tillich 1957, 120-121). Nevertheless, for each individual human person to experience salvation they must open themselves up to the spiritual presence and act with receptivity when grasped by it.

New Being, Gilkey argues, ‘represents the central category or symbol for Tillich’s theology.’ (Gilkey 1985, 307). It embodies both what the Christ represents and what he brought into spatio-temporal domain, becoming a lens through which most central Christian doctrines are to be interpreted. Tillich’s theology, A.T. Mollegen notes, is radically Christocentric, and Christ is defined primarily through his role in salvation, i.e. bringing New Being. (Mollegen 1952, 230). It is new in two important respects. The first is that ‘it is new in contrast to the merely potential character of essential being’ and the second is that ‘it is new over against the estranged character of essential being.’ (Tillich 1957, 137). The first point is that Christ made manifest that which has only ever been potential before – essential being under the conditions of existence. Christ represents essential humanity to individual finite persons by embodying the *imago Dei*. Secondly, in representing the union of God and humanity, he overcame the fundamental estrangement between the two that characterises fallenness.

The New Being, Tillich argues, can be understood as the end of history. Clearly history has continued to run for two millennia since the Christ event, and has continued to bear all the marks of existential estrangement: existential distortion, ambiguity, anxiety, and the threat of meaninglessness. End has two meanings in English: completion and goal. The preparatory part of history has been completed, and the goal of history – to manifest the New Being and welcome the Kingdom of God – has been reached. But the historical process itself continues, and thus in the first sense history has not come to an end, even though its goal has been reached.

Indeed, the actualisation of the New Being has itself become existentially distorted through being drawn into the ambiguities of life. The second coming, that which concludes history, is yet to occur. Thus, humanity remains in the liminal state between fallenness and New Being – New Being is obtainable for the individual if one can discern it through the fog of finite fallenness, even though its fullest realisation it yet to manifest at the completion of history. Tillich refers to this as ‘the oscillation between the “already” and the “not yet”.’ (Tillich 1957, 120). There is a reason that every person who hears of Christ is not immediately won over in Damascene conversion. The ambiguities of life that plague humanity’s finite historical situation continue to have purchase. Without the Spirit, New Being could remain forever out of reach.

New Being appeared in a personal life. For humanity, salvation could not have been revealed in any other way. As James explains: ‘if the restorative action of the infinite is to get at us where we live, it must do so *through* some of the objects, persons, and events within our world. Thus, the situation is two-sided. We cannot grasp the transcendent. It must grasp us. But it must do so through things we can grasp, that is, through things within our world.’ (James 2003, 40). In a personal life, the ambiguities of existence, the ontological polarities (e.g. freedom and destiny), and anxiety and fear of meaninglessness are crystalized. A human being is free to enter into the divine life, or to turn away from it entirely and deny their own humanity in the process. This radical agency, even if limited by the restrictions imposed by finitude, allows the possibility of both fallenness and salvation to play out. If fallenness reaches its pinnacle in a human life, then salvation too must occur through a human life. Moreover, only through

intense suffering and death could the Christ fully participate in finite existence. Such participation is essential if the conditions of finite existence are to be conquered.

The New Being in Jesus as the Christ conquered estrangement. This statement is at the core of Tillich's soteriology. Estrangement was conquered ontologically, through uniting God and humanity in his being. Estrangement was also conquered practically in events witnessed in Scripture. Tillich interprets the temptations faced by Christ as representations of the choice to prioritise preliminary concerns over ultimate concern, surrendering oneself to the allure of a self-centred existence. Anne Marie Reijnen reminds readers that Tillich 'warns repeatedly against the monophysitic mistake of portraying Jesus the Christ as a semi-God, impervious to frailty or only pretending to enter the human condition.' (Reijnen 2009, 65). Tillich believes that the temptations faced by Christ were real and powerful – to deny such a fact is to deny Jesus' full humanity and deprive him of his finitude. This would be a profound mistake. As Tillich explains,

Like every man, he experiences the threat of the victory of non-being over being, as, for instance, in the limits of the span of life given to him ... he experiences the lack of a definite place. From his birth on, he appears strange and homeless in his world. He has bodily, social, and mental insecurity, is subject to want, and is expelled by his nation ... his frequent desire for solitude shows that many hours of his daily life were filled with various finite concerns produced by his encounter with the world. (Tillich 1957, 131).

Only by taking on finitude in its entirety can estrangement be conquered. Though Jesus proclaims that he is truth (John 14:6), he is not omniscient. He remains finite and subject to the psychological consequences entailed by Old Being. He is wise but imperfect in his understanding of the world – on no other interpretation would his claim on the cross 'my God, my God, why have you forsaken me' make sense (Matthew 27:46; Mark 15:34). Tillich interprets John 14:6 as the symbolic representation of the fact that Jesus is the truth in his embodiment of true human potential, not his encyclopaedic knowledge.

Ontologically, Jesus as the Christ unites that which has been separate since the finite world came into being: essential and existential being. Since the inception of the universe, there has been a fundamental split between the ground of being (God) and existent reality; there has also been a split between the entities that exist in the finite world and their essence. This ontological fragmentation, and the psychological consequences awareness of this fact brings, constitute Tillich's existentialist framing of fallenness. By uniting all these disparate elements, Christ embodies a fundamental oneness that had previously been unrealised. The negatives of existence are taken on and transcended, without removing them. In a personal life and a human body, essence and existence, potentiality and actuality, are united. God enters existence, the human potential to enter into the divine life and embody *imago Dei* becomes actual, and thus estrangement becomes reconciliation. This is the paradox to which Tillich referred, and its legacy lasts far beyond the limits of Jesus' earthly life. The ontological dimension of Christ's salvific work, however, is only one half of the picture. Without human receptivity to the Christ event, New Being would not have taken hold of the world nor become a possibility within it.

The psychological dimension of the New Being as salvation is just as important. The very fact that the Christ event appears paradoxical reveals how overcome human consciousness is by the conditions of existence. That reality could be any way other than that which Old Being implies seems logically impossible, due to the influence of the conditions of existence in the formation of our intuitive and rational faculties. Tillich claims that existentialism is the 'natural ally' of Christianity, as it 'has analysed the "old eon", namely, the predicament of man and his world in the state of estrangement.' (Tillich 1957, 27). As the "old eon" describes fallen existence, existentialism and the Christian doctrine of salvation go hand-in-hand.

As Musser and Price write, in 'addressing this flawed condition of human memory and anxiety, of human inadequacy and failure, the New Being revealed in Jesus as the Christ provides assurance of the human quest for the restoration of persons with being itself.' (Musser and Price 2010, 27-28). Existentialism holds that estrangement and anxiety seem inescapable features of human existence. The Christian answer to the question of how this is to be overcome is simple. The radical anxiety of being can be met only with love. Through love, anxiety and death are overcome. Individuals must then be made aware of the reconciliation made possible in the life and death of Jesus as the Christ in order to enter into a state of New Being.¹¹⁷ Salvation is reached, Reijnen notes, 'through grace by faith.' (Reijnen 2009, 63). In and through the grace of the Spirit the Christian message grasps them, and they must respond. Without this crucial step, salvation cannot be attained.

Conclusion

All of this may strike the reader as highly abstract. As such, a translation into what salvation means concretely for each individual is required. The categories Tillich identifies have real and tangible psychological consequences that are directly relevant to lived human experience. Experientially, salvation thus defined is the alleviation of the psychological consequences of fallenness. Individuals no longer feel the pervasive force of anxiety and dread at their situation, and meaninglessness is turned to a sense of satisfaction at one's place in the world. Tillich weaves his soteriology out of existential analyses of the human predicament and Christian theology. Meaning is afforded through understanding of the fact that Jesus of Nazareth, as the Christ, took on the conditions of estrangement and overcame them. Out of love, he resisted temptation and suffered and survived a violent death. In a state of estrangement, he brought reconciliation; in a state of actuality he fulfilled human potential; in the face of death he rose again. Tillich identifies these as a succession of conquering events, and by understanding the significance of these the individual is able to overcome the anxiety that previously plagued their existence. The experience of the alleviation of anxiety has its root in the ontological reconciliation of that which in finite fallen existence had always been distinct. Gilkey explains the way in which the New Being is experienced as a 'unifying healing' that brings 'ontological courage' – salvation is experienced as a reunion with God, the ground of being, which gives the individual courage to continue to face and overcome the conditions of existence without fear of meaninglessness or anxiety. (Gilkey 1985, 309). New Being is an eon of ontological healing, and of hope.

¹¹⁷ Similar ideas are developed in Tillich's sermon 'You Are Accepted'.

TIME AND HISTORY IN SYSTEMATIC THEOLOGY

Introduction

The subject of this thesis is time. Tillich's treatment of temporality in *ST* is limited, with the concept of history receiving far greater attention. Nevertheless, he explores time as a category of finitude, weaves temporal considerations into his treatment of history, and briefly explores the relationship between time and eternity. By giving an account of these, in this chapter Tillich's views on time and related questions will be made as clear as Tillich himself made them. Furthermore, the scope for this thesis' reinterpretation of Tillich's doctrine of salvation within a B-theory of time will become clearer. Whilst Tillich does not explicitly commit himself to a specific temporal theory, this chapter attempts to reconstruct his views on time in accordance with the temporal theory to which his thought most closely fits. Moreover, with the concluding section of the thesis in mind, and as Paul Fiddes argues, 'a doctrine of atonement positively *needs* the help of historical enquiry.' (Fiddes 1989, 36). Without historical enquiry, one is not equipped to understand the event on which atonement hangs – the crucifixion of Christ on the cross. Unpacking Tillich's historical methodology will also clarify certain questions raised by the doctrine of salvation. Specifically, can how a single historical event, confined to the past, have salvific force for individuals today?

Part I considered physical and metaphysical theories of time. Tillich's treatment of time, along with his treatment of history, is far more subjective and immediate. This chapter focuses on the specific strata of time and history as they appear in *ST*. In an article about the anguish of losing written work, Peggy Phelan meditates on the difference between time and history. She argues that we live in the 'sweating pulse of time', an image that invokes dynamism, experiential immediacy, and vitality. History, on the other hand, is described as having 'sweeping ambitions' – it is formed by narratives, methodologically constructed, and open to interpretation. (Phelan 2014, 119). History is frequently painted in broad brushstrokes. Each second of time, on the other hand, is definitively encountered.

Moreover, history, by the time it becomes history proper, is essentially indirect – the historian must be at least one degree of separation from the events they describe. Whilst historical events occurred objectively, the historian's task is the subjective interpretation of evidence toward the aim of constructing an informative narrative. Whilst the aim is to hold fast to the facts, the history cannot be divorced from the perspective of the historian. Time, on the other hand, is experienced directly. Whether or not temporal passage is an ontological feature of reality, its phenomenological immediacy is indisputable. In this chapter, I explore Tillich's treatment of these two central concepts. Where detail is lacking, particularly with regards to temporal metaphysics, I reconstruct Tillich's thought in way not previously discussed by interpreters of Tillich. In order to do this, an account of some traditional understandings of God and time in Christian theology is necessary.

God and Time in Christian Theology

Scripture contains repeated reference to God's eternity. Natalja Deng points to several: God's "years have no end" (Psalms 102:27); God exists "from everlasting to everlasting" (Psalms 90:2, 103:17); "I am the first and I am the last" (Isiah 44:6). Moreover, we are told that God promised us eternal life "before the ages began" (Titus 1:2), and that "He himself is before all things" (Col. 1:17). (Deng 2018). Eternity in Scripture seems to mean infinite duration, which for various reasons has since been theologically dismissed as a mode of divine time. The primary reason being that it blends temporality

and atemporality in an unsatisfactory way. If God is outside time then he does not experience duration, as duration is a temporal property. If God is inside time, then he experiences duration alongside finite creation. Moreover, relativistic considerations indicate that time and space are observer-dependent perspectives on metaphysically absolute space-time; a transcendent God, therefore, will not experience time as spatiotemporal creation does.

The Christian God, witnessed in Scripture and discussed by theologians spanning two millennia, has several key attributes, including both transcendence and immanence. Transcendence refers to God's occupation of a radically distinct metaphysical state 'above' physical creation; a transcendent God 'does not dwell in temples made with hands' (Acts 17:24), and 'the highest heavens cannot contain Him' (2 Chronicles 2:6). Immanence, refers to an intimate *presence* in human lives, seen repeatedly in Scripture: 'My presence will go with you, and I will give you rest' (Exodus 33:14), 'For where two or three are gathered in my name, there am I among them' (Matthew 18:20), and also direct *action*: 'for you created my inmost being; you knit me together in my mother's womb.' (Psalm 139:13). Though Scriptural depictions of the divine nature, time, and eternity are a useful starting point, they only supply part of the picture. Philosophical concerns also play a significant role in one's understanding of the God-time relationship.

The relation of God to time is, implicitly or explicitly, embedded in almost every theological question, as it concerns the relation of Creator to creation. This debate has a long theological history and has been dominated by the question of whether God is temporal or atemporal.¹¹⁸ Early instances of such discourse appear in Book XI of Augustine's *Confessions* and Book V of Boethius' *The Consolation of Philosophy*. While the latter finds the idea of timeless eternity relatively unproblematic, the former struggles with the difficulties in defining time, writing: 'what then is time? If no one asks me, I know; if I want to explain it to a questioner, I am baffled.' (Augustine 1993, book XI) (Hernandez 2016). Many have wrestled with these questions throughout Christian history, generally concluding that God is timeless, viz. outside time. Recent historical events, however, have reshaped the contours of this debate.

The horrors of the twentieth century resonated throughout European consciousness, and Eli Wiesel's question loomed large: where God was during the Holocaust? (Wiesel 1958). In response, Jürgen Moltmann developed the doctrine of a suffering God who is co-present with sufferers and bears that suffering with them. (Moltmann 1974). This position requires that God be within time in order to share in and respond dynamically to the unfolding suffering within creation. Without a temporal God, divine response to suffering is impossible. Further elements of this type of view are found in the work of Bethany Sollereeder. (Sollereeder 2019, 111-113). Another, more general example is the theodical question of whether responsibility for moral evil is held by humans or God. (Plantinga 1975). The crux of this debate is whether or not God can have knowledge of the counterfactuals of freedom, which depends on a) the relation of God to time, b) the nature of time itself, and c) whether human agents have libertarian free will.¹¹⁹

Another key issue is the relation of God to time and space through the lens of the incarnation. (Holland 2012). Thomas Torrance began this discussion in *Space, Time and Incarnation*, arguing that the Special and General theories of Relativity have demonstrated that space and time are not mere abstractions but are the ontological foundation of the contingent events inseparably and objectively rooted in them. As such, any physical and historical doctrine of the incarnation must take time seriously. Torrance argued that theology must not be an isolated discipline and took steps toward a greater unification of theology

¹¹⁸ On the question of whether God is timeless, see (Swinburne 1993) (Ganssle and Woodruff 2002) (Craig, 2001b) (DeWeese 2004) (Leftow 1991) (Leftow 2018)

¹¹⁹ i.e., on an A-series of time in which God is temporal and humans have libertarian free will, God cannot know what action a human agent will perform until it takes place.

and science, but his focus was primarily on space rather than time. It is time to move the discussion forward.

Since the early twentieth-century, how one understands God's relation to time is typically linked with one's commitment to either an A-theory or B-theory. Time is a feature of creation, and by understanding creation one better understands the creator.¹²⁰ Hence, one can associate theories of time with corresponding models of the God-time relationship. In Part I, for example, we saw the way that William Lane Craig's theological beliefs motivated him to argue for an A-theory of time. As he explains: 'divine timelessness is most naturally associated with a B theory of time, while an A theory of time seems to imply that, if God exists, he exists now, i.e., temporally.' (Craig 2007, 601). After setting out these two alternatives, the stage will be set for situating Tillich within the metaphysics of time.¹²¹

a) God as Timeless

The idea of God as timeless draws on God's transcendence and sovereignty. God is outside time and observes creation in its entirety. God is eternal, not subject to change or passage, and is fundamentally separate from the spatiotemporal realm in which human lives play out. Since the medieval period, the Christian understanding of divine eternity was primarily influenced by Boethius' formulation:

Eternity, then, is the *complete possession all at once of illimitable life*. This becomes clearer by comparison with temporal things. For whatever lives in time proceeds as something present from the past into the future, and there is nothing placed in time that can embrace the whole extent of its life equally ... it does not yet grasp tomorrow but yesterday it has already lost; and even in the life of today you live no more fully than in a mobile, transitory moment. ... Therefore, whatever includes and possesses the whole fullness of illimitable life at once and is such that nothing future is absent from it and nothing past has flowed away, this is rightly judged to be eternal, and of this it is necessary both that being in full possession of itself it be always present to itself and that it have the infinity of mobile time present [to it]. (Boethius 2001, book V prose 6)¹²²

Here, eternity is understood as both infinite life and the possession of all temporal moments at once. As we shall see, this bears resemblance to Tillich's understanding of divine eternity as 'the transcendent unity of the dissected moments of existential time' (Tillich 1951, 305-306). in which God holds all moments of time together. Eleonore Stump and Norman Kretzmann identify four key features of this definition of eternity. First, the eternal being has life. Second, that life cannot be limited; it has no beginning or end. Third, this illimitable life should be conceived as one of infinite duration, drawing on the Platonic tradition that holds this view, and echoing later interpretations of Boethius' claim.¹²³ Fourth, by defining eternity as possessing *all of life at once*, Boethius introduces atemporality into his definition – anything possessing all of their life at once cannot be temporal, as temporal beings possess their life sequentially.

¹²⁰ This claim underpins the enterprise of natural theology, though it remains controversial. Karl Barth, for example, vociferously denies this, claiming instead that knowledge of God can only come 'perpendicularly from above.' (Barth 1968, 5-6).

¹²¹ A third option was presented in the 1980s by Eleonore Stump and Norman Kretzmann in which they present their 'E-T simultaneity' relation. The purpose of this alternative was to marry A-series time with divine eternity. Though this proposal is highly interesting, it has proved controversial. Unfortunately, an in-depth assessment of it is outside this thesis' scope. (Stump and Kretzmann 1981) (Fitzgerald 1985) (Delmas 1984) (Swinburne 1993) (Padgett 1992, 67) (Craig 1999).

¹²² (c.f. Stump and Kretzmann 1981, 430). Emphasis added.

¹²³ i.e. as presented in Plato's *Timaeus*. (c.f. Stump and Kretzmann 1981, 433).

Thinkers who subscribe to this mode of divine existence are *eternalists*, and historically, their arguments are based on the Platonic idea of divine immutability.¹²⁴ That which is perfect cannot change, as any change would be a degradation from perfection; therefore, a changeless being is outside time by necessity. Anselm, Aquinas, and Scotus were all eternalists. (Deng 2018). Brian Leftow, a contemporary eternalist, argues that divine atemporality is entailed by other core theistic claims such as immutability, divine foreknowledge, and human freedom. (Leftow 1991).

This God-time relational model makes most sense on a B-theory, whereby reality is comprised of a block universe and an eternal God views all the co-existing events in creation concurrently. On this view, God does not experience passage, presentness, or other temporal properties because they do not exist. Rather, God directly apprehends the block universe in its spatiotemporal entirety from an atemporal perspective. As such, this view preserves divine omnipotence – there is nothing in heaven and Earth that is uncertain or unknown to God – but raises significant problems for the issue of divine action and response to petitionary prayer, i.e. if God is outside time how can he interact with anything within temporal reality? Craig rejects this understanding of the God-time relation for the reason that it does not represent the immanent, interactive God attested to in Scripture. As such, he favours the temporal to which we now turn.

b) God as Temporal

Proponents of divine temporality argue that God is inside time, meaning he is subject to temporal passage, he directly experiences the present, and thus he does not have direct access to the past or future. Typically, those who subscribe to divine temporality are A-theorists, for the obvious reason that in order for God to experience temporal passage time must actually pass. Building on this, divine temporalists appeal to God's omniscience – there are certain things about A-series time that one can only know if one is subject to the dynamic unfolding of events; for example, what time it is *now*. If one is outside A-series time, then one does not experience either *nowness* or passage – something Lewis Delmas terms 'actuality-blindness' – but if these are central features of creation then an omniscient being must know them. (Delmas 1984, 78).

A further reason is providential in nature. Theism (as opposed to deism) holds that God interacts with creation, both to events as they unfold and in response to petitionary prayer.¹²⁵ These ideas only make sense on an A-theory, in which both becoming and change are comfortably accommodated. A block universe already contains all the objects and events that will ever exist – it is a closed system that cannot accommodate action from outside.

Richard Swinburne examines the temporal challenge to God's sovereignty – in so far as time stands over and above God who is subject to the inexorability of its passing – and argues that God is inside time, but, crucially, by choice. Therefore, no challenge to divine omnipotence is raised. Swinburne argues that effects cannot precede, or be simultaneous with, their causes. Causes always precede their effects. Yet for God to be outside time he would have to be simultaneous with the creation of the universe and every subsequent event within it (except events that are the result of free human agency). In other words, divine causality would be simultaneous with its effects. As this is a logical impossibility, Swinburne argues, the timeless understanding of God is incoherent. (Swinburne 1993). Nicholas Wolterstorff shares Swinburne's view but for historical rather than logical reasons. He argues for divine temporality on the basis of the dynamic biblical representation of God – Scripture details God as having a history, as well as being intimately involved with human history. (Wolterstorff 2001, 188).

¹²⁴ Plato's *Timaeus* contrasts the eternal forms with the temporal, material world of change and becoming. (Plato 2001, 37E6–38A6).

¹²⁵ A contemporary example of how this divine providence might take place without violating the laws of nature (following the challenge to interventionism advanced by David Hume) is the Divine Action Project. (Wildman 2010).

William Lane Craig argues that God exists changelessly and timelessly prior to creation and in time after creation. (Craig 1978, 503). He writes, ‘the fact that the world is not sempiternal but began to exist out of nothing demonstrates that God acquires a new relation at the moment of creation.’ (Craig 1999, 522). In some sense, he tries to have his metaphysical cake and eat it too, combining the benefits of transcendent eternity with immanent temporality. However, it is God’s temporality that is his main focus, as his primary concern is how God relates to creation and those who exist within it. That ‘God is creatively active in the temporal world,’ he argues, ‘is essential to Christian theism.’ (Craig 1999, 522). In order for God to know tensed facts, to experience things coming into being, and to respond directly to the wants and needs of creation, Craig believes God must be temporal.

As Craig points out, the eternalist may object that divine simplicity and immutability must be sacrificed due to God’s changing knowledge, and that this is too high a price to pay. (Craig 2007, 600). Moreover, both omniscience and omnipotence are challenged. If presentism is true, then time objectively passes, and only the present exists. God is forced to experience the tenses as they objectively occur – God cannot go back to the past except in memory, and, as long as individuals have some genuine freedom, God cannot know the future (in so far as that future is pure potentiality, as yet unshaped by the free choices of agents). God cannot experience or interact with anything other than the present, as nothing else exists, rendering almost all of creation utterly inaccessible. Hence, temporality radically challenges both divine sovereignty and omnipotence.

In order to overcome this, Swinburne argues that God *chooses* to be inside time. On this view God has good reason to be inside time, namely, to achieve a level of intimacy with creation that could not otherwise have been achieved and to be able to respond to petitionary prayer. He willingly sacrifices some sovereignty in this regard, but as this was a free choice God remains omnipotent. (Swinburne 1993). Although this may seem a neat solution, it fails to properly address the issue that at any one time almost all of creation is inaccessible to God. Much more could be said with regard to these models of the God-time relationship, but unfortunately such a discussion is not within the scope of this thesis. In order to ascertain which of these overarching perspectives is most consonant with Tillichian theology, we must turn to his treatment of time and history.

History

a) The Meaning and Method of History in ST

Tillich defines history methodologically and with an emphasis on subjectivity, meaning history is understood primarily as a mode of enquiry which aims to construct narratives and find meaning in past events. (Tillich 1964, 320). He argues that the significance of events lies in the interpretation, not what objectively occurred. Tillich identifies four characteristics of human history: ‘to be connected with purpose, to be influenced by freedom, to create the new in terms of meaning, to be significant in a universal, particular, and teleological sense.’ (Tillich 1964, 305). A multiplicity of meanings can be embossed onto various historical events. Before this interpretive act, events are objective but meaningless occurrences. They attain their significance through their situatedness within history.

As Tillich writes: ‘personalities, communities, events, and situations are significant when more is embodied in them than a transitory occurrence within the universal process of becoming ... History describes the sequence of such events but with a decisive qualification: it describes them as they appear under the conditions of existence and within the ambiguities of life.’ (Tillich 1964, 304). Events within the finite realm of existence are ambiguous and transitory; their significance properly emerges through the meaning human consciousness interprets within them. Moreover, drawing from Christian motifs, Tillich argues that there is an inherent directedness to history, with each event attaining significance to the extent to which it drives history toward its ultimate end. (Tillich 1964, 304). History proper is inescapably teleological, and this telos is ascribed to God’s ordering and sustaining creativity within the historical narratives constructed by Christian theologians.

Life under the dimensions of the spirit is able to produce cultural artefacts and religious experiences with almost inexhaustible meaning, all of which reflect the ultimate and move history toward its end. Such meaning is absent from the non-human domain, so Tillich argues that the only real history, understood methodologically and in terms of its meaning, is human history. As Musser and Price argue, 'since historical consciousness identifies and describes historical events, history is necessarily human history ... only humans possess the consciousness required for transforming events into *historical* occasions.' (Musser and Price 2010, 39). Though the factual events are necessary, they are ontologically secondary.

Further to the subjective focus on historical enquiry, Musser and Price note that the objective character of the historical events themselves draws its distinct characteristics from human historical consciousness. History is formed out of the dynamic interplay of the ontological polarity between *freedom and destiny*. For an event to have the potential to become an historical event, human purpose and freedom must interact with dynamic events. Humans are free to transcend situations with purpose, which injects a genuine openness into the historical process. This openness is mediated by the destiny God imposes on history by creating it with an innate teleology. The significance of the events is indissolubly linked to their subjective interpretation. Through the process of human creativity, the qualitatively new is generated in history. (Musser and Price 2010, 40). History proper is a function of human consciousness.

The generation of the qualitatively new occurs within the context of a cultural group which bears history. The concept of a history bearing group is crucial in *History and the Kingdom of God*, and the possession of certain characteristics determines what counts as such a group; for example, they must be 'centred'. By this Tillich means they must have an administrative, lawgiving, and law enforcing authority which both preserves the power of the group when interacting with similar groups and which keeps the individuals within the group sufficiently united. Additionally, each history-bearing group will have a shared history and a shared destiny which unites its members, a so-called 'vocational consciousness.' (Tillich 1964, 330).

Individuals are embedded centres of meaning within wider historical narratives. The introduction into history of new and unique embodiments of meaning drives history forwards and produces new centres of subjective interpretation into the world which can, themselves, reflect upon and construct history. However, it is only a group that can bear history proper. As individual polyps form complex coral reefs, so too do generations of individuals sharing a language and upholding cultural traditions comprise the body of history. The meaning that history-bearing groups impose onto events is interpreted through *symbols of interpretation* which are pertinent to the group. This history is transmitted, not primarily by remembering events, but through traditions. In this way, past events reverberate down the generations through their symbolic repetition.

As is characteristic of *ST*, part five includes an extended discussion of ambiguity. The ambiguity of history arises because the achievement of individual aims in history both fulfils and denies the ultimate end of history. All manifestations of historical ambiguity are rooted in this fundamental dynamic. (Tillich 1964, 362). The limited aims of a history bearing group may be to spread their socio-cultural values to different groups, to increase their economic or political power, or to dispute with other groups and come out victorious. These preliminary concerns do not advance groups toward what Tillich identifies as their ultimate aim, also referred to as the meaning of history and expressed in the symbol Kingdom of God, which is the full realisation of the New Being in history. History bearing groups allow New Being to manifest by being receptive to the grasping power of the spirit, and by channelling that power into the movement of history. Tillich explains: 'saving power breaks into history, works through history, but is not created by history.' (Tillich 1964, 387). Human agents have a hugely significant part to play in the manifestation of the New Being in history as human life is the dimension of the spirit through which saving power 'breaks in.' Through the work of the Spirit, history moves toward its *telos*.

b) Salvation and History in *ST*

As we saw in the previous chapter, salvation in *ST* is the conquering of ambiguity, and the estrangement caused therein. This ambiguity appears in history as well as in individuals. Tillich writes: ‘salvation is the conquest of [the ambiguities of life in all its dimensions]; it stands against them and cannot be identified with the realm in which they are.’ (Tillich 1964, 362-363). Salvation occurs in history through the manifestation of the Kingdom of God, a symbol that represents the telos of human history, namely the appearance and conquering power of the New Being.

The Kingdom of God is realised at a point of *kairos* – a Greek term Tillich uses to mean ‘fulfilment of time.’ (Tillich 1964, 369-372). It must be understood in contrast to *chronos*, namely measured time/clock time. At a point of *kairos*, history had matured to the extent that it was ready to receive the centre-point of history: Jesus Christ.¹²⁶ At this point the true meaning of history becomes knowable.¹²⁷ *Kairos* appears in the New Testament: ‘The time is fulfilled, and the kingdom of God is at hand; repent and believe in the gospel.’ (Mark 1:15). This event was not the only moment of *kairos*, though it was, in Tillich’s view, by far the most significant. Other *kairoi* come, though one must be wary of them as they can be distorted or erroneous. Tillich writes: ‘*kairoi* are rare and the great *kairos* is unique, but together they determine the dynamics of history in its self-transcendence.’ (Tillich 1964, 372). One way this occurs is by feeding into the overarching narrative of providence which characterises the Christian understanding of salvation-history.

Moreover, Tillich understands providence as a non-interventionist manifestation of the divine will in the created order. Importantly, *kairos* is not just the recognition of an opportune moment, it is a *response* to that moment. (Earle 2017). The divine will has been made manifest in creation, and we are called to respond accordingly. Through the ontological polarity of freedom and destiny history moves in the direction of the new. Tillich understands this process as one in which free creatures, specifically members of the history bearing group the Spiritual Community, act in accordance with the spirit to actualise a destiny which is both new and providential.¹²⁸ This is driven, in part, by *kairoi*. Destiny, i.e. the realisation of the Kingdom of God, is actualised, but human freedom is able to sculpt the specific path it takes.

The Kingdom of God possesses an innate duality – it is both an immanent symbol, in so far as it represents the Spiritual Presence in the dimension of history, and a transcendent symbol which represents eternal life and liberation from the finite realm in which history is made manifest. The essential feature of the Kingdom of God is that it represents the *end* of history. *End* is used here in both senses of the English term: it is both the completion and goal of history. Tillich employs this definitional duality to express the two sides of the Kingdom of God: the transcendent and the inner-historical. The inner-historical dimension is that which is concerned with salvation within history, as opposed to the universal salvation that is attained when the Kingdom of God is realised for all of creation. Haywood Thomas reminds Tillich’s readership that ‘though the idea of the Kingdom does refer beyond history, it has a very clear and immediate reference to history.’ (Haywood Thomas 2000, 169). Its immanence, namely its significance for salvation history, cannot be ignored in favour of a total focus on its transcendence. Where there is salvation there is revelation, and where there is revelation there is

¹²⁶ Centre is not used here quantitatively to denote the temporal mid-point of the duration of history. Rather, it is used symbolically to represent the fact that everything before this moment was preparation and everything after it is reception.

¹²⁷ Haywood Thomas argues that Tillich does not mean to absolutize Christianity here – his concern ‘is the revelatory event, not the religion.’ (Haywood Thomas 2000, 163). However, one could argue that much of *ST* does exactly this. This point is worthy of note, however as this debate is not directly relevant to our concerns, it cannot detain us further.

¹²⁸ In pages 395-417 Tillich offers a mechanistic explanation of the way in which Churches, the ambiguous embodiment of the Spiritual Community, both realise and stymie this goal. It is not within the scope of the present discussion to detail this account; the argument runs similarly to the other such arguments in *ST*.

salvation. The concrete situation of history involves both these features, and the Kingdom of God represents their presence.

Nevertheless, the transcendent dimension of the *telos* of history cannot be ignored. The end of history in this sense transcends all moments of the temporal process – it brings the absence of time altogether, namely eternity. Tillich argues that in every temporal moment individuals stand face to face with the eternal. The Kingdom of God's transcendent element is represented through the symbol 'Eternal Life' – a point of salvation which involves the conquering of all life's ambiguities, the realisation of true potential, and the cessation of alienation and estrangement between the creator and the creature in a unity no longer bound by time, space, causality and substance. This is what it means to enter into New Being. This transcendent facet of the Kingdom of God represents salvation for all of creation, over and above the individual-level salvation attained by receptivity to the grasping power of the Spirit.

The end of history is Eternal Life, namely the manifestation of the Kingdom of God. In other words, overcoming the ambiguities that dominate finite existence. Tillich describes this process as 'the elevation of the positive in existence into eternal life [which] implies liberation of the positive from its ambiguous mixture with the negative which characterises life under the conditions of existence.' (Tillich 1964, 398). The end of history, then, is the resolution of all the existential questions raised in *ST*.

Time

As a concept, time is most extensively discussed in *ST* as one of the four categories of being. These, under the dimensions of history, provide the basic elements with which one can describe history's movement: 'time provides the element of irreversibility in the historical movement; causality provides the element of freedom, creating the underivably new; space and substance provide the relatively static element out of which the dynamics of time and causality break and into which they return.' (Tillich 1964, 326). The most extensive discussion of the categories of finitude occurs in *Being and God*. (Tillich 1951).

Influenced by Kant, Tillich argues that the human mind grasps and shapes reality through conceptual categories. These categories determine one's experience of the world, as a curved or coloured lens would shape visual perception. As they are formed within the finite realm of existence, which is fractured and fallible, human cognition is likely to err. These categories structure *all* cognition, including one's interpretation of religious claims and religious symbols, as theology is a subset of one's apprehension of the world.

Along with all the ontological categories of finitude, time receives dual treatment in *ST*. It has both negative and positive sides. The negative aspects of time are that it acutely embodies the reality of non-being for the individual, and the positive aspects are its irreversibility and its creative components. As the *Reader's Guide to Systematic Theology* explains,

The anxiety about "having to die" is the inner experience of nonbeing, and is potentially present in every moment of one's existence. This anxiety is present in man's essential nature (Adam) and in man's new reality (Christ). The positive side of man's temporal existence is that it "is balanced by a courage which affirms temporality", without which there would be a resignation from the present. Human beings, because of consciousness, have more anxiety about time, and thereby need more courage to affirm the present. Humans must defend their present against the conception of infinity past and future. (Wildman unknown, II.I.C.8).

Here several features of Tillich's understanding of time emerge. First, the important aspects of time are its subjective qualities, such as human beings' experience of temporality, particularly the immediate present moment in the face of a daunting infinity of past and future. Second, contemplating time causes

anxiety, as it discloses the threat of non-being. One is required to courageously affirm one's presentness in the face of the anxiety caused by reflecting on the distant past or distant future.¹²⁹ Third, reflection on time can be empowering if one focuses on the courageous affirmation of one's existence *now* in the present moment, and the possibility to creatively generate the new as one moves forward through time. Through courage, one can encounter and overcome this anxiety.

Tillich's emphasis on the fundamental irreversibility of time is intended to be positive. History moves toward its *telos* through the creation of the qualitatively new. Musser and Price comment:

For [Tillich] there is no overarching category of time that is the same in all dimensions of being and existence. Within each dimension there is a certain category of time ... although history is a dimension that moves beyond temporality itself, history is a human creation that embraces an understanding of time as always moving forward – time is inescapably, irreversibly, and unrepeatably moving toward what is new. (Musser and Price 2010, 41).

Time is depicted as multifarious and one's experience of it is deeply contextual. In this way, time's subjectivity is far more significant in Tillich's theological system than any objective formulations provided by metaphysics or physics. History moves forward, generating the inescapably new. Yet this *telos*, this newness, is subjectively constructed. Through the conscious interpretation of historical events new meaning is generated, and it is precisely this *subjective* newness that is generated within history.

Eternity

ST explores the transition (Tillich also uses the word 'elevation') of the temporal to the eternal, and one can tease out Tillich's views on divine eternity and creation's temporality in this discussion. This occurs after the final judgement and is not a temporal event, just as creation is not a temporal event. Tillich writes:

The transition from the temporal to the eternal, the "end" of the temporal, is not a temporal event. Time is the form of the created finite (thus being created with it), and eternity is the inner aim, the *telos* of the created finite, permanently elevating the finite into itself. With a bold metaphor one could say that the temporal, in a continuous process, becomes "eternal memory." But eternal memory is living retention of the remembered thing. It is together past, present, and future in a transcendent unity of the three modes of time. (Tillich 1964, 399).

Here Tillich clearly articulates that the inner aim of finite existence involves the cessation of time, as time is 'the form of the created finite' – hence, without finitude there is no temporality. By claiming that time will be remembered in eternity as 'past, present, and future' but in a 'transcendent unity', Tillich implicitly equates time and tense. Thus, the Kingdom of God, namely the end of history, will exist in an eternal temporal mode which does not exhibit any ontological distinction between tenses.

Importantly, time (understood as tensed, A-time) is not necessarily fundamental – it is a feature of finite reality, that which Tillich repeatedly claims to be fallen, ambiguous, and a distorted reflection of essence. In referring to the temporal becoming eternal as a 'continuous process', however, he seems to require at least some temporal dynamism in the eternal domain. As Tillich does not make explicit ontological claims about tense, passage, or spacetime, it is not clear how time's ontology is understood within *ST* in terms that will be familiar to the reader from Part I. In fact, Tillich's portrayal of both time and the relation of the temporal to the eternal is metaphysically muddled. Nevertheless, it remains the case that ontologically distinct tenses do not feature in Tillich's view of what an unfragmented Kingdom of God, a perfect expression of essence, looks like.

¹²⁹ Of which the individual will not be, or was not, part.

As Tillich's understanding of the Kingdom of God is the realisation of Eternal Life, to grasp what it looks like, one must understand his definition of eternity. *Being and God* rejects definitions of eternity as either timelessness or endless time. It is worth quoting Tillich's definition of eternity in full here. Eternity is:

The power of embracing all time. Since time is created in the ground of the divine life, God is essentially related to it. In so far as everything divine transcends the split between potentiality and actuality, the same must be said of time as an element of the divine life. Special moments of time are not separated from each other; presence is not swallowed by past and future; yet the eternal keeps the temporal within itself. Eternity is the transcendent unity of the dissected moments of existential time. (Tillich 1951, 305-306).

In this passage Tillich's understanding of temporality, particularly tense, is that it is a function of finite existence that emerges through the bifurcation of potentiality and actuality. Finite time is formed by the A-series *at least phenomenologically*. God is eternal; if God apprehends time then God apprehends all events at once. God is not within the spatiotemporal domain; God does not experience the passage of time. Perhaps the best explanation for why an omniscient God does not experience temporal passage is that time does not actually pass. The divine essence involves the holding of all events concurrently, whilst existence involves the fragmentation of tenses. God *transcends* the split between potentiality and actuality – he is outside finitude and outside time. It is unclear whether Tillich holds time in the finite realm to be ontologically tensed or whether the apparent distinction between past, present, and future is a function of human perception. In places, Tillich appears to commit himself to a B-theory and in other places he makes decisively A-theoretic claims. Clearly, *ST* was not written with any fixed temporal metaphysic of the kind discussed in Part I in mind.

Before an interpretation of Tillich within a specific temporal metaphysic can proceed, the concepts of time and eternity need more unpacking. An important distinction to recognise is that temporal and eschatological ends must be considered separately. The eschatological end is the realisation of the Kingdom of God. Temporally, however, humanity could destroy itself or cease seeking eschatological fulfilment before this *telos* is attained. Eschatology, for Tillich, is not just concerned with end-times – it also concerns the relation of temporality to eternity.

Though the eschaton is defined as 'the last things' or 'the last of all days,' it is not restricted to a single day at the chronological end of human history. (Tillich 1964, 395). Eschatology, like the symbol the Kingdom of God, also has a transcendent dimension which is encapsulated in 'the symbolic expression of the relation between the temporal and the eternal.' More specifically, Tillich writes, 'it symbolises the "transition" from the temporal to the eternal, and this is a metaphor similar to that of the transition from the eternal to the temporal in the doctrine of creation, from essence to existence in the doctrine of the fall, and from existence to essence in the doctrine of salvation.' (Tillich 1964, 395).

Considered in this way, eschatology transcends the symbolic imagery of a far-off moment in measurable time (a distant *chronos*) and becomes an expression of humanity's standing in the face of the eternal *in* a particular mode of time. Christian symbolism is intertwined with such temporal modes – eschatological symbolism embodies the future and creational symbolism embodies the past. Moreover, the existential connotations of these temporal symbols represent creaturely dependence both for existence (past and present) and for salvation (future). The eschaton, experienced presently, is a synthesis of these temporal modes and their connotations: 'we stand *now* in the face of the eternal, but we do so looking ahead toward the end of history and the end of all which is temporal and eternal.' (Tillich 1964, 396). By participating in salvation, one participates in a foreshadowing of the eschaton.

In each *chronos*, the individual makes decisions which affect their relation to being-itself and determine their soteriological future when the Eternal Life is made manifest. Tillich argues that the new which is

actualised in time and space, through individual choice and action, produces something qualitatively new which finds realisation in the Kingdom of God. He writes that this ‘gives an infinite weight to every decision and confirms the seriousness of what is meant in the symbol “ultimate judgement.”’ (Tillich 1964, 401). Hence, eschatology must be a present concern for Christians, and cannot be relegated to some far-off temporal future. The final task of this chapter is situating these thoughts within the metaphysics of time.

Situating Tillich within the Metaphysics of Time

The central question in this chapter is where the arguments of *ST* sit most comfortably in temporal metaphysics. I argue that Tillich’s thought is more consistent with a B-theory than an A-theory, though this is far from a foregone conclusion. Tillich defines time as ‘after-each-other-ness.’ (Tillich 1964, 334). Whilst a core claim of the B-theory is that a complete description of time can be given by ‘an exhaustive catalogue of which events occur, and how they are temporally related,’ i.e. an account of temporal ordering relations, it would certainly be a stretch to say that this definition commits Tillich to a relational B-theory. (Pooley 2013a, 324). Nevertheless, it indicates that he shares the view with the B-theorist that time is fundamentally relational rather than fundamentally about objective passage.

Despite this, he does go on to make A-like claims: ‘in spite of the continuity of time-flux, every discernible moment of time in a physical process excludes the preceding and the following moments. A drop of water running down the riverbed is here in this moment and there in the next moment and nothing connects the two moments.’ (Tillich 1964, 336). Though this may seem like Tillich is defending A-type time here, in the rest of *ST* he almost entirely leaves questions of temporal metaphysics aside, focusing the bulk of his discussion on human beings’ subjective experience of time. We do experience time as A-like – neither Tillich nor I wish to deny this. However, to move the discussion forward we must interrogate past Tillich’s discussion of time toward the metaphysical underpinnings of time’s innate structure.

As I argue in Chapter 9, the method of correlation encourages other disciplines, in this case physics and metaphysics, to answer these questions on their own terms. Theology then responds to questions raised therein. Arthur points out that the method of correlation is fundamentally a dialogue, and by necessity, a dialogue involves two interacting voices. Hence, Tillich’s methodology invites science to weigh in on matters relating to preliminary concerns. (Arthur 2001, 263). The issue of time is a perfect example of this. Science and religion occur in *ST* as two distinct dimensions of cognitive encounter with reality. Arthur writes, ‘Tillich generalizes this contrast in summary form by stating that science is primarily concerned with facts or finite relations and that religion in the fundamental sense is primarily concerned with the meaning of being.’ (Arthur 2001, 262). Hence, no conflict is possible. Instead, scientific questions and theological answers can be brought into dialogue whilst one remains cognizant that they are concerned with different levels of reality.

Though Tillich leaves metaphysical questions regarding time largely to one side, he does refer to time in relation to eternity in a way that appears to contain structural components. He writes:

The eternal is not a future state of things. It is always present, not only in man (who is aware of it), but also in everything that has being within the whole of being. And with respect to time we can say that its dynamics move not only forward but upward and that the two movements are united in a curve which moves both forward and upward. (Tillich 1964, 400).

Though this image is somewhat vague, his use of the term *dynamics* is A-theoretic in tone. Nevertheless, he may not be referring to any objective structural dynamism in finite time, but rather to the generation of the qualitatively new in history.

On this view, time is driven forward not by objective A-theoretic passage, but by the emergence of the qualitatively new in history through the symbolic reinterpretation of events. This subjective interpretation moves history toward its *telos*, Tillich maintains, by creating the qualitatively new in terms of meaning. (Tillich 1964, 305). Subjectivity, in this sense, is more of a concern for Tillich than the objective, mind-independent structure of time.

Moreover, the separation between divine eternity and created temporality fits more closely with a B-theorists depiction of God as outside time. Tillich explicitly states that temporality is a feature of creation, not divine eternity. The dynamic time experienced by human beings in the context of finite existence is starkly contrasted with the eternal which both awaits creation at the end times and frames God's atemporal experience. God is not described as being within time and experiencing passage along with creation, and for this reason Tillich's theology fits more comfortably within the B-theory than the A-theory.

Importantly, Tillich uses the term 'eternal' when referring both to God and to the soteriological goal of history. With regard to God, Tillich's commitment to divine eternity is clear. To restate the quotation above: 'everything divine transcends the split between potentiality and actuality ... special moments of time are not separated from each other; presence is not swallowed by past and future ... Eternity is the transcendent unity of the dissected moments of existential time.' (Tillich 1964, 305-306). Though God is *related* to time, he transcends it entirely. Finitude is shaped by the experience of tense, but in eternity temporal moments are united. Moreover, when history reaches its point of completion and the *telos* of humanity (and perhaps the whole of creation) the cessation of time occurs to be replaced with the divine experience of time, namely eternity.

Tillich's descriptions of time as dynamic are not ontological claims, and need not be understood as referring to the nature of time when human perceptual experience of the finite world ceases. Rather, we can understand time as fundamentally static, and human experience, clouded by the ambiguities inherent in the finite world of existence, as what gives the appearance of temporal dynamism. Tillich repeatedly states that finitude distorts reality and our ability to understand it, this holds for time also.

On this view, Tillich's statements that appear to support an A-theory are comments on our experience of temporal passage rather than the ontology of time itself. Though it may appear tenuous to impose a B-theoretic temporal ontology onto Tillich's specific doctrine of salvation as it is presented in *ST*, his method of correlation invites continuous reinterpretation in light of new knowledge or new culturally pertinent questions. Hence, it is sufficient for our purposes to show only that Tillich's own views are *compatible* with a B-theory, and let physics and metaphysics do the heavy lifting.

Conclusion

The aim of this chapter was to present Tillich's treatment of history, particularly how it relates to salvation, examine *ST*'s depiction of time, and situate these within the context of wider discourse on God and time. History was shown to be subjective and methodological at its core, with human consciousness interpreting events within narratives and metanarratives that bear history. Human individuals bear history only to the extent that they comprise larger groups, and the non-human world has at best a quasi-history. This reveals the primacy of subjective experience and the way that it gives meaning to events in Tillichian thought. The idea of history as the subjective layering of symbolic meaning over objective events is very fertile ground in which to sow the seeds of mind-dependent salvific becoming, a concept that will be argued for in Part III.

As for time, it is both an independent and a relational concept in *ST*. (Tillich 1964, 334). It is treated in a way not dissimilar to history, in that Tillich emphasises its *subjectivity*, relegating objective considerations to secondary status. In leaving the question of time's ontological structure largely unanswered, he leaves open the possibility of fleshing out his work with insights from science and

philosophy. In contrast to *ST*'s detailed consideration of history, however, Tillich's treatment of time seems cursory. There are several reasons one might suggest as to why this is the case:

- 1) The nature of time is primarily a question for metaphysicians and physicists, and so has been left open.
- 2) These questions are largely unanswered and are unlikely to be solved by a work of systematic theology.
- 3) Apart from history, time plays less of a key role in the system as a whole.
- 4) Time has been comprehensively explained in *ST*, and any incompleteness is illusory.

It seems highly unlikely to be (4), as it is a fact that many of the key questions in the philosophy of time (such as those addressed in Part I) are absent from *ST*. (3) seems dubious, as time appears throughout as one of the categories of finitude. Because it is understood to fundamentally shape embodied finite existence, downplaying its importance would do a disservice to the centrality of finitude in Tillich's doctrine of salvation and the concepts Old and New Being. Therefore, (1) and (2) seem the more likely reasons, and indeed they are interrelated.

The most likely reason that time is not unpacked to the same extent as, for example, history, is given in the opening pages of *ST* in a discussion about preliminary concerns and ultimate concerns. The reader may remember this quotation from this thesis' introduction:

Theology cannot and should not give judgements about the aesthetic value of an artistic creation, about the scientific value of a physical theory or a historical conjecture, about the best methods of medical healing or social reconstruction, about the solution of political or international conflicts. The theologian as theologian is no expert in any matters of preliminary concern. (Tillich 1951, 15).

Time is a matter for both metaphysicians and physicists – they have the methodological tools for the task. The theologian cannot, and need not, address these so-called preliminary concerns. This is a clear mandate to take what physics and metaphysics disclose about time as reliable and trust their expertise in generating answers to central temporal questions.

Tillich argues that 'science dominates our understanding of time now, and the picture it offers is mechanistic. There is little space for biological or historical time.' (Tillich 1964, 376). Tillich's treatment of time is importantly distinct from scientific questions. Nevertheless, his method of correlation encourages us to allow physics and metaphysics to inform us about time, whilst generating theologically pertinent questions about the subjective experience of temporality. The role of the theologian, in Tillich's view, is to address these questions. In this case, the block universe described by a B-theory of time, argued for in Part I, raises questions about change and newness that are highly important for the doctrine of salvation. The theologian's task, and the task taken in this thesis, is to answer the question: how can soteriological change be accommodated on a B-theory of time, given the B-theory's commitment to a static temporal ontology?

As is clear, there is great scope for reinterpretation of Tillich through the lens of time. Despite his thorough treatment of history within *ST*, Tillich's consideration of time is brief and at times unclear. As such, there is interpretive latitude within which to reconstruct elements of *ST* within a more comprehensive temporal framework. This is the task of the third and final part of the thesis, to which we now turn.

PART III:

AN ARGUMENT FOR MIND- DEPENDENT SALVATION

8

MIND-DEPENDENT BECOMING

EXPLAINING TEMPORAL EXPERIENCE ON A B-THEORY OF TIME

Throughout the preceding chapters an obvious concern will have arisen in the mind of the reader: the physical and metaphysical arguments for the B-theory are all well and good, but our *experience* of temporal passage is so compelling that the A-theory cannot easily be dismissed. Every moment of every day we experience reality as dynamic and changing, from acorns becoming oak trees and rivers flowing into the sea, to locking eyes with our aging reflections each morning. The inescapable certainty with which time passes is taken as a given by those who do not engage in philosophical contemplation. I argue that this fundamental phenomenological phenomenon must be taken seriously, but that it should *not* be taken as veridical. As Heather Dyke rightly notes, however, denying the reality of passage leads to a troubling question: ‘how come we seem to be deceived by our experience on such a massive scale?’ (Dyke 2002, 145).

In my view, our experience of apparent change is the primary reason for our temporal experience – processes of change seem to demarcate something we interpret as the passage of time. Yet on a B-theory, in which all events co-exist timelessly in the four-dimensional spacetime manifold, change is not so easily accommodated. In this chapter I address this concern.¹³⁰ B-theorists have offered various tenseless explanations for our experience of passage, and here I consider what are, in my view, the most compelling. As Simon Prosser argues, ‘if experience can be explained in a way that is consistent with the truth of the B-theory then this, in itself, undermines any support that the A-theory may be thought to derive from experience.’ (Prosser 2016, 23). In other words, it is an *undercutting defeater* for belief in the reality of the A-theory. Once B-theoretic explanations of passage have been presented and assessed, my case for the explanatory power and internal coherence of the B-theory is complete.

As I have previously acknowledged, the B-theory cannot be demonstrably proved (nor need it be). Nevertheless, in this thesis I have presented a compelling case for why the B-theory is the best metaphysical theory of time on offer. The combination of metaphysics, physics, and phenomenology together form a robust theory of time which explains phenomena both internal and external, from the motions of celestial bodies to the distinction between memory and anticipation. In this chapter, I examine the pervasive and persuasive notion of temporal passage, offering my support for a psychological theory of time which does not depend for its success on the ontological reality of that passage. Thus, our experience of passage will be sufficiently explained without recourse to objective temporal dynamism. The core claim in this chapter is that temporal becoming is *mind-dependent*.

The purpose of this chapter is threefold: 1) to address the explanatory gap in the B-theory created by temporal experience; 2) to survey the philosophical landscape with the aim of identifying ‘philosophical questions’ which are necessary constituents of Tillich’s method of correlation; and 3) to show that my argument in the next chapter, though original in the context of salvation, is built on firm philosophical foundations. Therefore, this chapter is first and foremost a survey of the relevant literature, though I do present novel arguments for why I favour one particular B-theoretic explanation of our experience of

¹³⁰ As the A-theory has been set aside for metaphysical and scientific reasons, I will not be conducting a parallel analysis of A-theoretic explanations of passage for the purposes of comparison. There is a wealth of material on temporal experience on the A-theory. (Craig 2000) (Dainton 2011, 404-418) (Ismael 2011) (Frischhut 2017).

time. Once I have set out my case for mind-dependent becoming, the path has been prepared to re-examine Paul Tillich's doctrine of salvation in light of what has been learned.

Passage: A Persuasive Illusion?

What do philosophers mean by temporal passage? There are two parts to this claim. First, (it seems that) there is an objective present moment, and second, which instant seems present keeps changing – we experience now as moving along a series of times from earlier to later times; thus our experience seems to support the A-theory. Whether this experience has ontological content is the primary question of this chapter. The centrality of temporal experience is illustrated by A.N. Prior's famous example of the sharp phenomenological distinction between anxious anticipation of a future event and relief when the event has passed. 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, 17).

Prior rightly points out that there are certain features of experience that cannot easily be captured tenselessly. This fact made a powerful impression on me when, on 9th April 2018, I decided to skydive the following day. Nervous anticipation overwhelmed me for the 24 hours before I jumped, I even had nightmares about plummeting to my death. After the jump, I was buzzing with the thrill of having done something I perceived to be so dangerous and relief that all had gone to plan. This experiential asymmetry powerfully relayed to me the explanatory gap in the B-theory – how can such time-structured experience be tenselessly explained?

On the B-theory, each event always exists, therefore there is nothing special about my being located prior to or after the event in tenseless B-theoretic terms. The events before and after the jump have equal ontological status. At some time, I am before it, and at another time I am after it. But something important seems missing from this description. As Prior noted, I was not thanking goodness that my successful jump was simultaneous with my utterance, or that it was simultaneous with 10th April 2018. I would not thank goodness for that. Rather, I was thanking goodness that the event about which I was so worried was *in my past* and no longer posed an existential threat. The B-theory seems to require that at least some aspect of this experience is illusory.

Not only is our experience structured by apprehensions of tense, but, as Barry Dainton rightly points out, our phenomenological apprehension of the world possesses a fundamentally dynamic character. We are conscious of a continuity of sounds, sights, and sensations. One moment and its sensory contents flow into the next, creating a so-called 'stream of consciousness' and a corresponding stream of experience. This seems so irreducible that one could be tempted to think that this dynamic quality of experience is an essential attribute of conscious states. (Dainton 2011, 385). Thus, fundamental features of our lived experience seem to imply that time flows or passes. These features of our experience must be explained without recourse to objective tense if the B-theory is to be a compelling alternative to the intuitively and phenomenologically compelling A-theory.¹³¹

¹³¹ Not all scholars agree that our temporal experience contains a sense of passage. Indeed, Matt Farr argues that 'passage-talk plays no useful explanatory role with respect to temporal qualia.' (Farr 2020b, 1).

There are several ways that temporal experience can be understood on a B-theory. As such explanations integrate passage into the four-dimensional manifold, Dainton labels them *integrationist*, arguing that integrationists subscribe to the following claims:

- (1) Our sense that time passes or flows derives (to a significant extent) from the dynamic features of immediate experience.
- (2) Time in our immediate universe is as the block theorist maintains, and our experiences are themselves part of the block universe.
- (3) The dynamic character of our immediate experience does not require time itself to be dynamic. (Dainton 2011, 391).

Hence, a B-theorist must explain how our dynamic experience is derived, if not from dynamic time.

Explaining Passage

The B-theorist has recourse to a range of tactics, but general B-theoretic responses fall into two broad camps: Illusionism and Veridicalism. Illusionism holds that we have the experience that time passes, and that this is illusory. Veridicalism denies this. Instead, the veridicalist holds that we experience features of the world like succession, order, and duration, and this is all our temporal experience amounts to. As such, there is no illusion to explain away, and our temporal experience is sufficiently accounted for by the B-theory. I will consider each of these responses in turn.

a) Illusionism

Illusionism holds that a) we experience time as passing, and b) this experience is *not* veridical, meaning it does not represent the factual, ontological state of the mind independent world. Though we experience time as passing, time does not actually pass. Therefore, in some important respect, our temporal experience is illusory. Though a critic of Illusionism, Matt Farr offers a powerful rebuttal of the A-theorist's claim that the phenomenal, qualitative aspects of temporal experience (or, temporal qualia) provides good evidence for the reality of temporal passage:

Temporal passage is not something present in physics textbooks; we don't need to know any special properties of the passage of time to account for the behaviour of any known phenomena (except allegedly our first-person experience of time). As such, this requires some kind of special connection between our brains and temporal passage that 'goes around' the physical sciences. There is good reason to suppose then that if passage is to play a role in the explanation of temporal qualia, it is not in the sense that our temporal qualia are offering a glimpse into an underlying feature of the world. (Farr 2020b, 10-11).

This perspective is shared by all B-theorists who reject the reality of passage on the basis of SR and GR. It depends on the view that physics is a more reliable way of obtaining knowledge about the nature of time than experience, and in a conflict between science and experience, science should win.

As Simon Prosser notes, the debate between the A-theory and B-theory is a metaphysical debate, and yet A-theorists frequently try to resolve it using arguments from pure experience. It is odd, he argues, to be 'told that a metaphysical debate can be settled by just looking (or just experiencing, at any rate). It is hard to think of any other metaphysical dispute where it has been suggested that the dispute can be settled in that way.' (Prosser 2016, 23). Similarly, Michael Pelczar argues that phenomenal properties do not provide sufficient evidence to believe that such a property exists objectively or mind-independently. I might see a cross-section of a cylinder and mistakenly believe that I am observing a sphere – my phenomenal experience of roundness is not sufficient in this case to demonstrate that the object is objectively and three-dimensionally round. He argues that the same can be said of temporal phenomenology: 'if someone says that phenomenal temporality is evidence of objective temporality,

the burden is on him to substantiate that claim.’ (Pelczar 2017, 232). This reflects a general wariness on the part of many philosophers to allow such a debate to be swung by something as notoriously unreliable as first-person experience. Farr, Prosser, and Pelczar agree that there is no compelling reason to suppose that a) we have direct experiential access to the fundamental nature of time that would make experience a reliable source of knowledge on the subject, and b) that experience can supersede empirical science when it comes to the issue of temporal passage.

Given this, many (though by no means all) philosophers of time seek explanations for passage phenomenology that do not hinge on the reality of passage, i.e. the truth of the A-theory. There are several notable thinkers who put forward explanations of temporal experience on the B-theory who fall into the broad category of ‘Illusionism’. Though they all subscribe to the claim that passage phenomenology is a purely mind-dependent phenomenon, each fleshes out the precise mechanism by which this experience is generated slightly differently. In what follows, I introduce several leading voices in this debate.

Adolf Grünbaum, twentieth century giant of metaphysics, locates the source of temporal experience in the mind’s subjective interpretation of the world as apprehended through sensory experience, rather than some ontological feature of mind-independent reality. That he subscribes to Illusionism (though he does not use this term) is evident when he writes, ‘my account of nowness as mind-dependent disavows rather than vindicates the common sense view of its status.’ (Grünbaum 1967, 384).¹³² Grünbaum notes that the respect with which events are deemed to change is intimately connected to passage. (Grünbaum 1971, 195). The experience of successive present moments is an essential feature of passage, and as such his account of temporal experience hinges on the concept of *presentness* or *nowness*. More specifically, Grünbaum centres his account of becoming on the status of the present as a property of events which is encountered in perceptual awareness. Along with twenty-first century B-theorists, Grünbaum forges analogies between temporal properties and sensory properties, including colour and taste, when introducing the concept of *mind-dependence* which is so central to his analysis of temporal experience.¹³³

With regards to time, as with regards to colour and taste, the mind apprehends certain external stimuli and then constructs powerful but subjective meaning out of these. For Grünbaum, *presentness* is more than event *e* being simultaneous with time *t*, and it being objectively the case that *t* (and therefore *e*) is *now*. Instead, what is necessary to qualify *e* as being present at *t* is at least one conscious, mind-possessing being (i.e. a person) *M* being conceptually aware either of experiencing *e* or of experiencing some other event that is simultaneous with *e* in *M*’s reference frame. (Grünbaum 1971, 206). By experiencing successive subjectively defined presents, dynamic temporal experience is generated. In effect, persons subjectively construct the notion of becoming or passage through experience of successive *now* moments which are perceptually immediate, and the mind takes these to be present. Through the attribution of the adverbial property *now*, and the experience of successive *nows*, the mind constructs becoming, and we experience time as dynamic.

Grünbaum offers a specific set of criteria by which one can determine whether *e* is present. *e* can only qualify as occurring *now* derivatively in one of the following ways:

- (a) Someone’s experience of the physical event does so qualify or

¹³² By common-sense he means A-type assumptions, though in this context he could also be referring to veridicalist assumptions whereby our experience of passage is grounded in some aspect of mind-independent reality.

¹³³ This is not to say that Grünbaum understands *now* to be a sensory quality, only that like sensory qualities, *nowness* depends on awareness. (Grünbaum 1967, 386).

(b) if unperceived, the physical event must be simultaneous with another physical event that does so qualify in the derivative sense described in (a). (Grünbaum 1967, 382).

Nowness depends fundamentally on experience – *e* does not become, and cannot be understood as happening *now*, unless a conscious agent experiences *e* (and is aware of experiencing *e* as present) or experiences an event *f* that is simultaneous with *e* (and is aware of experiencing *f* as present). (Grünbaum 1971, 197). The informative content of a *now* experience is its conceptual quality, not the atemporal facts describing its location in spacetime.¹³⁴

For example, if I say that the time is now 11:30am GMT, I am invoking phenomenological considerations regarding my experience of *now* being contemporaneous with 11:30am GMT. As Grünbaum argues, without the added experiential quality the temporal judgement ‘it is 11:30 GMT’ seems to say nothing more than the truism ‘11:30 GMT’ happens at ‘11:30 GMT’. (Grünbaum 1967, 383).¹³⁵ This establishes the necessary inclusion of perceptual awareness in denoting an event as occurring *now*. Time-consciousness is therefore understood as an emergent but essential property that supervenes on tenseless B-facts. In the words of Bertrand Russell: ‘past, present and future arise from time-relations of subject and object, while earlier and later arise from time-relations of object and object.’ (Russell 1915, 212). This B-theoretic explanation of our experience of passage is dubbed *mind-dependent becoming*.

Subsequent scholarship has built upon Grünbaum’s proposal, fleshing it out with data from experimental psychology and cognitive science.¹³⁶ Robin LePoidevin, for example, argues that the B-theory can sufficiently account for our temporal experience through a coupling of directly experiencing an event as present and a very recent memory of a prior event. This generates a stream of consciousness that appears to the perceiver like temporal passage. Ian Phillips categorises this response as a ‘memory-theory of succession’, illustrating it through the example of hearing music. (Phillips 2009, 443). One can only directly hear one musical tone at a time, and yet we experience the piece as a flowing movement because our direct experience is conjoined with memories of very recent experiences of previously heard tones.¹³⁷ Similarly, the mind generates passage phenomenology from the conjunction of present experience and very recent memory.

Moreover, LePoidevin argues that the mind is an active participant in (not a passive recipient of) this construction: ‘the datum of experience, that we experience motion, is ... no mere passive reception of an objective phenomenon, but one that arises, in part, from the active interpretation of the mind. It is, at least in some cases, a projection.’ (LePoidevin 2007, 93). Such projection occurs through certain cognitive mechanisms, i.e. those involved in motion perception. LePoidevin points to several experiments which generate the illusion of motion and draws an analogy between these and features of experience that generate the illusion (according to him) of temporal passage. (LePoidevin 2007, chapter 5). As Natalja Deng notes, LePoidevin’s illusory source of passage phenomenology is ‘our experience of time on short time scales’, for example hearing a musical phrase, watching a raindrop trickle down a window, or feeling a summer breeze on one’s skin. (Deng 2013a, 368). LePoidevin’s central thesis, then, is that A-properties are projected onto the world in response to certain features of experience. This

¹³⁴ Yet it is these atemporal facts that describe the event both objectively and fundamentally, rendering Grünbaum’s analysis firmly within the B-theory.

¹³⁵ Grünbaum gives a similar example about the time being 3pm EST.

¹³⁶ For an excellent survey of the literature on cognitive science and temporal experience, see (Baron and Cusbert and Farr and Kon and Miller 2015).

¹³⁷ LePoidevin also argues for a memory-theory of succession due to his commitment to certain epistemic principles, primarily the claim that memories require truth-makers for them to constitute knowledge. If I remember eating hot cross buns for breakfast this morning, then it must be true that I ate hot cross buns – those buns and my eating of them must be ‘out there’ to act as truth-maker. Only the B-theory can accommodate truth thus conceived.

process is closely analogous to the projection of secondary qualities (i.e. colours) onto objects. (LePoidevin 2007, 95).¹³⁸

Laurie Paul argues similarly that our experience of passage, though central to our subjective perspective, is an illusion generated by visual perception and mental representation of successive, though static, events. (Paul 2010, 333). Simon Prosser notes that LePoidevin and Paul's work follows a 'representational turn' in the philosophy of temporal experience; by this he means philosophers are increasingly emphasising the role of the representational content of perceptual experiences in generating passage phenomenology. (Prosser 2012, 96). Paul, however, relies less heavily than LePoidevin on the role of memory and projection in this process. She forges an analogy between the way motion pictures or time-lapse photography generate dynamic films from many still frames, and our temporal experience generated by our brains through experiencing cognitive inputs from a series of static events and B-facts. Each of these creates an 'illusion of animation'. As Deng summarises: 'in a nutshell, the recommendation is: if you are a B-theorist, think of life as a whole as a kind of film.' (Deng 2013a, 375).

Paul's empirical foundation is experiments on 'apparent motion' in which blinking dots shown on a screen in rapid succession generate the illusion that a single dot is moving back and forth. (Wertheimer 1912; c.f. Paul 2010, 348) (Dennett and Kinsbourne 1992). From static images the brain generates the stable illusion of a persisting, moving dot.¹³⁹ She likens this perceived movement generated by static images to temporal experience insofar as temporal experience is generated by successive experiences of static events. (Paul 2010, 348). Similar qualitative experiences are produced by 'colour-phi' experiments in which the static images of dots are coloured and the subject perceives the dot as both moving and changing colour. Subjects experience the illusion of both animated motion and animated change, i.e. static inputs leading to dynamic outputs. Paul argues that these findings from experimental psychology provide solid empirical evidence that the brain engages in constructive work when it comes to visual perception, at least in the cases of flashing images. If one can show the brain does this in simple experiments such as the above, then it is no great leap to hold that the brain similarly constructs the phenomenology of change and passage out of static, B-series events.¹⁴⁰

Both LePoidevin and Paul's Illusionism liken temporal properties to secondary qualities. They each argue that *nowness* is akin to *redness* in the following way: when I experience *nowness* I am experiencing a now-qualia, as I experience a red-qualia when I am experiencing *redness*. In explaining *nowness* through qualia, namely so-called 'what-its-like' phenomenology, LePoidevin and Paul divorce the representational content of the perceptual quality from any ontological, mind-independent, content to which one may assume it refers. (Tye 2017). In other words, we do experience time as though it passes, but our (dynamic) temporal experience can be explained without reference to (dynamic) temporal ontology. Dainton notes the viability of this option for the B-theorist, namely, to argue that passage is projected onto external reality, like colour perception is on a Lockean-style representational (or indirect) theory of perception. (Dainton 2011, 382). On this view, our perception of colour is *phenomenal*, it has representational content that does not correspond to a mind-independent characterisation of that object.¹⁴¹

¹³⁸ This causal theory of perception of secondary qualities has its roots in the work of John Locke. For an introduction, see: (Uzgalis 2018) (Wilson 2016). Richard Gale critiques the analogy between secondary qualities and temporal properties on the basis that A-determinations, unlike secondary qualities, are not sensible properties. (Gale 1968, 228).

¹³⁹ Paul refers to this as 'stable' as it persists even when the subject is told that they are merely seeing a set of discrete, unmoving images. (Paul 2010, 351).

¹⁴⁰ Balcells critiques this view. (Balcells 2019).

¹⁴¹ If we were able to apprehend such a characterisation, which, of course, we cannot.

Whilst I accept the basic points and underlying motivations of LePoidevin and Paul's proposals, they each rely on rather rudimentary experiments which may have limited applicability to the world outside the laboratory. Moreover, there are outstanding philosophical concerns with the analogies between the illusory motion phenomenology they measure and our allegedly illusory experience of passage phenomenology. (Farr 2020b, section 5). I am not inclined to disagree with their basic claims, but it seems to me that currently the empirical link is tenuous. There is not sufficient evidence against their claims, but neither is there sufficient evidence *for* them at the present time. In other words, the jury is still out.

For this reason, out of the plethora of proponents of Illusionism, I have chosen to engage most extensively with Grünbaum. Grünbaum's Illusionism does not rely on data from cognitive science that has had a mixed reception in the philosophical literature.¹⁴² This is a strength – by leaving the specifics empirically open, he has left space for later research to fill in the blanks when the appropriate advances in experimental psychology have been made. His lasting metaphysical legacy alone makes him a worthy dialogue partner; however, I have also chosen his proposed mechanism for making sense of our temporal experience as his more general proposal is appropriately malleable for the final task of this thesis: re-examining Tillich's doctrine of salvation in the block universe.

b) Veridicalism

Veridicalism holds that our temporal experience accurately represents the objective nature of time in some important way. To be a veridicalist with respect to passage entails commitment to the following: a) we do not experience time as dynamic, and b) time is not dynamic, therefore c) our experience is veridical. As we do not actually experience time as flowing or changing, (which, Deng argues, would involve experiencing events as though they are objectively present and then objectively past), there is no illusion that requires explanation. The source of temporal experience is the succession, order, and duration of events. (Deng 2019, 7). As succession is an objective property of events on the B-theory, namely events are ordered by the relations *earlier than*, *later than*, and *simultaneous with*, our experience is veridical. But as those real features of the world are not A-properties or tensed facts, Veridicalism (of this type) remains B-theoretic. There are several contemporary proponents of Veridicalism.¹⁴³ I have chosen Natalja Deng as a dialogue partner as her view is suitably representative of the position more widely.

By claiming that our temporal experience is veridical, Deng departs from Grünbaum who holds that we do have passage phenomenology, and that this is an illusion, viz. non-veridical. Deng defines her veridicalism thus:

At any given time, i.e. at any given moment, the subject's temporal experience has a content that is to a large extent shaped by perceptions and actions, memories and anticipations at that time, including any tensed beliefs that may be involved in these, as well as by all other tensed beliefs that the subject has at that time. Each such time, with its accompanying momentary experience, constitutes what I will call a temporal perspective for the subject. Thus, on the B-theoretic conception, subjects of temporal experience have a number of successive temporal perspectives (that is, temporal perspectives that are related to each other by the B-relation of succession): their lives are spanned by a large number of momentary experiences

¹⁴² i.e., (Deng 2013a) (Prosser 2012).

¹⁴³ For example, (Hoerl 2014) (Farr 2020b) (Miller and Holcombe and Latham 2018).

that stand in the succession relation to one another, each of which has a content that is largely characterised by the subject's tensed beliefs, perceptions and actions, memories and anticipations, at that time. (Deng 2013b, 715).

There are at least two ways Veridicalism can be interpreted, but the most straightforward interpretation is that the mind receives successive sensory inputs regarding events' order, duration, and succession, which, coupled with memory and anticipation, generate our temporal perspective. As our temporal experience is grounded in real features of the world, namely successive temporal perspectives, it is firmly veridical.

c) Veridicalism or Illusionism?

Grünbaum holds that it is the awareness of our experiences as being *present* that generates the phenomenology of passage: 'if I just hear a noise at time *t*, then the noise does not qualify *t* as *now* unless at *t* I am judgementally aware of the fact of my hearing it at all and of the temporal coincidence of my hearing of it with that awareness.' (Grünbaum 1971, 207). In a footnote he further emphasises the importance of the distinction between the mere hearing of something and the awareness that it is being heard. One must experience the event *and* believe that experience to be happening *now*. Thus, the experience of passage is built from conscious awareness of successive *nows*. By experiencing a present moment, we experience an A-property. By experiencing many *nows* one after the other, we experience time as passing. Grünbaum's account is a two-stage, active, and conscious process. Subjects have a first order experience of events, for example hearing a church bell. Only when one is aware of hearing the church bell, generating a second order experience of *nowness*, does the subject believe that they are presently experiencing the ringing of the church bell. It is this second order awareness of the first order experience that differentiates Grünbaum from Deng and generates the illusion that time is like the A-theory.

Alternatively, Deng characterises *nowness* as akin to *hereness* – there is no illusion in my thinking that I am *here* at my desk typing away, though *here* is not an ontologically privileged location. Similarly, on Veridicalism, I am under no illusion when I also believe myself to be typing *now*. There is no objective *now*, as there is no objective *here*, but from my observational perspective both are real and shape my experience in important ways. This reveals, according to Deng, that the B-theoretic understanding of temporal perspectives is 'phenomenologically rich, though metaphysically lightweight.' At each time, she writes, 'that time seems special to us, and that sense is not at all misleading—it doesn't involve any mistake about temporal reality. Rather, it points to ways in which each time really is of special importance to us when we're at that time.' (Deng 2013b, 716). So, which of these explanations is preferable?

An initial question arises when considering the viability of Grünbaum's account. He claims that in order to experience something as present, one must have both the first order experience and the second order awareness of experiencing it as *happening now*. Counterfactually: if a subject does not consciously experience an event as occurring *now*, then they do not believe that event to be present. Following this, it seems reasonable to assume that if one is not consciously aware of experiencing a string of *nows*, then one does not have any experience of temporal passage. This is worth unpacking.

This claim is certainly true in the case of dreamless sleep, in which there is almost no phenomenology of passage. Even when dreaming, a subject experiences time passing quite differently than they would when awake (i.e., a seemingly long and detailed dream may only last a few seconds). Thomas Crowther and Matthew Soteriou offer an assessment of time-experience in the context of dreaming which can lend insight here. They begin by contrasting 'ordinary' wakeful experience with dreamless sleep. The

former is constituted by ‘a tensed temporal perspective with an origin in the experienced present,’ which they define as an orientation towards the immediate past and immediate future. (Crowther and Soteriou 2017, 189). For example, as I write this, I am aware of what I have written in the immediate past and what I intend to write in the immediate future; without such awareness my writing would not make sense. Brian O’Shaughnessy calls this the co-presence of past and future in the present. (O’Shaughnessy 2000, 51; c.f. Crowther and Soteriou 2017, 189). Dreamless sleep lacks this awareness entirely.

Crowther and Soteriou acknowledge that a dreamless sleeper may have beliefs which include a notion of ‘now’, if that now is long or loosely defined, but that dreamless sleepers lack any finely-tuned grasp of *nowness* experienced by a wakeful subject. For example, when asleep we would still hold the true belief that it is now 2021, or that it is now Friday, and do not have to reacquire such beliefs when we wake. Yet the dreamless sleeper does not know what time it is *now* at any point during dreamless sleep. They quote O’Shaughnessy on the matter:

If [a dreamless sleeper] fell asleep at 6.00 a.m., and awoke at 6.10 a.m., he cannot at 6.05 a.m. entertain a belief about the instant 6.05 a.m. singled out as “now” ... And he cannot do so, because he cannot do what an experiencer can do: pick out the present as “now”; and that because a non-experiencer is not conscious of “now”, nor therefore of a continuity of “now”s, which is to say of “the passage of time”. (O’Shaughnessy 2000, 51; c.f. Crowther and Soteriou 2017, 185).

Two features of this quotation are relevant to the present discussion. First, O’Shaughnessy acknowledges that the dreamless sleeper does not have the second-order experience of *nowness* with respect to the time being 6:05, as they are asleep when that time occurs. Second, O’Shaughnessy concurs with Grünbaum that a continuity of *nows* is what constitutes passage phenomenology. Such a dreamless sleeper lacks awareness of a finely-tuned *now*, and the experience of successive *nows* that comprise the experience of passage. So far so good for Grünbaum – his criteria for experiencing passage are met by conscious, wakeful awareness of successive *nows*, and in dreamless sleep where we lack this *now*-awareness, we also lack a sense of the passage of time.

Matters get more controversial with regard to dreams.¹⁴⁴ There are various interpretations of the nature of dreams, each of which generates different interpretations of temporal experience in dream-states. Crowther and Soteriou focus on the definition of dreams as imaginative, and thus radically distinct from wakeful experience. My dreamed experience of flying a kite *now* does not correspond to the actual *now* that is simultaneous with my dream-perception, as my imagined kite flying session does not correspond to any event in the real world. In dreams, so conceived, the subject fails to have any *veridical* temporal perspective, as the experienced temporal markers, moments, or *nows*, do not correspond to any objective temporal properties. Nonetheless, the dreaming individual has a temporal perspective (albeit a different one to the waking individual). Crowther and Soteriou identify three shared features between wakefulness and the imagination model of dreaming with respect to temporal experience:

- 1) Dream experience is ontologically akin to wakeful experience, for dream experience is successive and occupies time processively.
- 2) The objects of dream experience have temporal extension and are experienced as such.

¹⁴⁴ Crowther and Soteriou introduce their discussion of the temporal properties of dream-experience with an important caveat: ‘our question ... assumes that dreams are, or involve, conscious experiences that we have during sleep; and that is an assumption that some philosophers have questioned. Even among those who accept the assumption, it is difficult to identify anything like a consensus on the question of the nature and constitution of dreams; and arguably, philosophical disagreement on this topic is exacerbated by the distinctive methodological challenges that are associated with the empirical enterprise of attempting to access and conduct a scientific study of the sleeping mind.’ Resolving these issues cannot detain us here. Reservations notwithstanding, an analysis of the phenomenal character of dreams is still a useful tool for assessing the viability of Grünbaum’s B-theoretic explanation for temporal experience. (Crowther and Soteriou 2017, 190).

- 3) Dream experience involves a tensed temporal perspective, and there is a respect in which the origin of this tensed temporal perspective is an “experienced present”.

This analysis is consistent with Illusionism. The distinction between wakefulness and dreamless sleep supports Grünbaum’s claim that time perception requires a conscious experience of *nowness* but does not require that *nowness* to be grounded in some universal or objective now. Passage phenomenology does not require an A-theory of time. In dream-sleep, the experiencing subject encounters events ordered successively, experiences each of these as *now* when they are phenomenologically immediate, and experiences temporal passage as a result of these cumulative *now* experiences.¹⁴⁵

What this shows, then, is that you do not *need* to ground temporal experience in some veridical feature of the external world. Non-veridical features of experience can generate a sense of temporal passage. Furthermore, without consciously experiencing an event *as happening now*, as is the case in sleep, passage phenomenology does not occur. Nevertheless, our experience is so persuasive that veridicalists such as Deng have nonetheless been motivated to find explanation for it in real features of the world.

Our temporal experience is both pervasive and persuasive, and precisely for this reason accepting that it is illusory is intuitively unappealing. Moreover, Deng writes that proponents of Illusionism underestimate the magnitude of their task, erroneously holding that pointing to mechanisms that generate perceptual illusions and drawing analogies with our temporal experience is sufficient to prove that passage phenomenology is illusory. She writes: ‘for [Illusionism’s] explanation to go through it is not enough that there be some cases of perceptual illusion. What is needed is an element of temporal perception that is pervasive, and which yet involves an illusion.’ (Deng 2013a, 373). Deng argues that Illusionism has failed to provide this, and that the better explanation for temporal experience lies in firmly veridical features of the world. In what follows, I assess whether Veridicalism succeeds in replacing Illusionism as the best explanation of temporal experience on the B-theory. One may interpret Veridicalism in two ways, each of which can be supported by different aspects of Deng’s writings. I argue that neither is a compelling alternative to Illusionism.

On the first reading, Veridicalism denies that our temporal experience has any dynamic content whatsoever. This interpretation understands Deng as arguing that our experience is veridical because neither it, nor time itself, is dynamic. Deng supports such a reading when she writes that ‘if the veridicalist is right, then we don’t have experiences of time as (robustly) passing.’ (Deng 2017, 243). She also denies that ‘the folk’ endorse A-theoretic explanations of temporal experience, i.e. the existence of an objective present or robust passage. (Deng 2013a, footnote 2). Furthermore, after a detailed proposal for why our temporal experience is not dynamic, she writes: ‘what, then, do we perceive, if not the passing of time? We perceive temporal succession, temporal order, and temporal duration.’ (Deng 2019, 7). There is, simply put, no illusory perception of passage that needs further explanation.

This view is echoed by other veridicalists such as Christoph Hoerl: ‘there is in fact no phenomenology of passage of the type envisaged that is part of perceptual experiences of movement and change.’ (Hoerl 2014, 188). Similarly, Matt Farr writes that Illusionism ‘is based on a mistake’, arguing that ‘time perception illusions [such as those described by LePoidevin and Paul] should not be read as supporting the claim that temporal qualia are illusory.’ (Farr 2020b, 2). This, the most popular iteration of Veridicalism, involves subscribing to the claim that *we do not experience time as passing*. Veridicalists

¹⁴⁵ Crowther and Soteriou argue that dream-perception fails to actually instantiate a veridical temporal perspective, like the one Veridicalists and A-theorists claim we have during wakefulness, as the *now* in a dream-state does not correspond to the actual *now*. As the B-theorist rejects the existence of such a *now*, my treatment of their chapter has not included this aspect of their argument. For the purposes of the present discussion, all that is required is a comparative analysis of temporal perspectives in dream states and wakeful states.

of this type therefore hold that Illusionism is predicated on a misunderstanding of temporal experience – as we do not, in fact, have passage phenomenology, there is no experiential illusion to explain away.

On first blush, this seems like a bold (bordering on incredulous) claim. Fortunately, whether we experience passage has been empirically investigated, and these findings can shed some light on this philosophical disagreement. In 2019 Andrew Latham, Kristie Miller, and James Norton, experimentally investigated whether, in their sample of US residents, the ‘folk view’, or ‘naïve theory’, of time is dynamical. (Latham and Miller and Norton 2019). By ‘naïve theory of time’ they mean an understanding of the nature of time that a child may develop, and an adult may hold, after interaction with the world but without familiarity with any relevant science. They found that on average 70% of participants had an extant theory of time which is closer to a dynamical than a non-dynamical theory.

Latham *et al* concluded that appeals to the ordinary view of time can have some sway in debates between dynamists and non-dynamists, i.e., between Illusionists who hold that our experience of time is dynamic and Veridicalists who deny this. Though the sample is limited insofar as it is drawn from a single country, and therefore one cannot make any claims regarding universalizability, this study does indicate that most ordinary folk (in the U.S at least) *do*, generally, experience time as dynamic. Though a significant minority (~30%) were found to have a *non*-dynamical theory of time, and thus the findings do not unambiguously demonstrate that everyone who has a naïve theory of time has a dynamical theory of time, they do show that veridicalists denying that ordinary people experience time as dynamic have some explaining to do.¹⁴⁶

Similar conclusions were reached in a 2020 study by Jack Shardlow, Ruth Lee, Christoph Hoerl, Teresa McCormack, Patrick Burns, and Alison S. Fernandes. (Shardlow *et al.* 2020). They examined ordinary folk’s temporal experience by gathering and analysing subjective reports in which individuals described their experience of time. Specifically, they wanted to interrogate the A-theorist’s argument that we experience time as dynamic, as this is a critical piece of evidence in the A-theorist’s arsenal. Shardlow *et al* identified the following criteria against which they assessed participants’ experience and whether it is consonant with the A-theorist’s argument from experience: 1) participants must agree that they do experience time passing; 2) when asked to explain what they mean by time passing, they must describe temporal passage in recognizably A-theoretic ways. i.e. they cannot give a description that is compatible with the truth of the B-theory. (Shardlow *et al.* 2020). Shardlow *et al* found that a majority of participants (72.9%) *did* hold the intuition that time passes, i.e. they held a naïve A-theory of time. Shardlow *et al* specifically state that their findings are in line with ‘what the phenomenal illusionist would predict.’ (Shardlow *et al.* 2020, 5).

This echoes the findings above, including that a notable minority do not hold a naïve A-theory. Latham *et al*, however, have since conducted a further study into whether ordinary folk have passage phenomenology, and whether this phenomenology leads individuals to hold a dynamical theory of time (naïve or otherwise). They argue in favour of an ‘ambiguity thesis’, arguing that ‘there is ambiguity either in the content or character of the phenomenology, or in what its character tells us about the world.’ (Latham and Miller and Norton 2020). They conclude that there is no overwhelming reason for philosophers to conclude that ordinary folk unambiguously have strong passage phenomenology.

Though this particular study does not support Illusionism, neither does it save the day for Veridicalism. I argue, therefore, that while empirical research into temporal experience does not establish with certainty that all individuals hold a naïve A-theory of time, the combined findings of these studies are currently more supportive of Illusionism than Veridicalism. At the very least, they place the burden of

¹⁴⁶ For an in-depth examination of temporal experience with more of a cross cultural focus, see: (Evans 2003). Interestingly, Miller and others have elsewhere argued that though we *think* we have passage phenomenology, this is a false belief. This theory is known as Cognitive Error Theory. For more on this view, see: (Miller 2019) (Miller and Holcomb and Latham 2020).

explanation on the veridicalist – on what grounds may the veridicalist now claim that most people *do not* experience passage, but instead only experience temporal properties like succession and duration? Present data simply does not support this position. Currently, Veridicalism seems built on empirically shaky ground.

Though Deng offers an intricate and thought-provoking analysis of temporal experience, she risks over-philosophizing if she fails to acknowledge that, generally, ordinary people *do* seem to have passage phenomenology. Philosophical analysis can draw out contradictions in commonly held beliefs; it can force us to re-examine that which we took for granted; it can shed light on complex and abstract matters. What it should not do, I argue, is deny that humans actually experience something, in this case, temporal passage, when most ordinary people *do* believe they experience that thing. What good is philosophy if it begins at a starting point ordinary people would not recognise, especially when the concern of that philosophy is an explanation of universal human experience? On this interpretation, Veridicalism is unhelpfully divorced from ordinary experience and has limited relevance outside the ivory tower in which it was constructed.

On the second reading, Veridicalism claims that any passage phenomenology we do have is grounded in mind-independently real features of reality, like the succession of events, and therefore is veridical. Deng supports this interpretation when she writes in a 2013 article, B-theorists ‘can acknowledge that we experience time as passing, and take that aspect of experience to be entirely veridical. ... I advocate a version of the B-theory on which it includes passage by virtue of including succession.’ (Deng 2013b, 714). Deng also writes: ‘uncontroversial elements of the B-theory straightforwardly ground a veridical sense of passage.’ (Deng 2013b, 713). An acknowledgement that we do have some passage phenomenology fits better with the findings above, even if this reading still rejects that ordinary folk experience time as *dynamic*.¹⁴⁷ This seems to stand in contrast with her 2017 definition of Veridicalism as a rejection of the claim that ‘we have experiences of time (robustly) passing.’ (Deng 2017, 240). Such sentiments are echoed in a 2019 work: ‘there is no illusion of passage: all we perceive is one thing after another.’ (Deng 2019, 4). One can assume that her thoughts on the matter have changed, and that she no longer believes that passage phenomenology is part of the B-theory. This is perfectly reasonable, but it is still worth assessing this second interpretation of Veridicalism as others may subscribe to it.

This second form of Veridicalism, apparent in Deng’s earlier writings, holds that passage phenomenology is generated by our experience of successive events, and that our experience is veridical in the sense that succession is a real feature of events. The B-theory holds that the relations *earlier than*, *later than*, and *simultaneous with*, are part of a fundamental description of temporal ontology. Events stand in dyadic temporal relations of precedence and succession to one another, and describing those relations is sufficient to describe the temporality of those events. Thus, these features of the B-theory are integral to our experience of time. If I experience *a* then *b*, then I have experienced the succession of events *a*, *b*. Deng argues that by experiencing events in this way, we passively experience events as occurring in an order, and each of those is phenomenologically immediate to us at different times. We experience this succession as passage, and as this succession is real then our experience is veridical.

Something is missing here – succession and passage aren’t the same thing. Passage has the additional properties of change and becoming that are missing in the term succession. Consider these two possible experiences. 1) I sit at a sushi restaurant and see several dishes, let’s say, nori, miso soup, maki, and nigiri, pass by me on the conveyor belt successively. 2) I watch a sped-up video of a plate of sushi over several weeks as it decays. Experience 1) involves multiple different objects presented successively. Though nori passes by me before miso soup, I do not experience nori *becoming* miso soup. My experience of the sushi conveyor belt can be adequately represented by separate cards with one dish on

¹⁴⁷ There were no stable results regarding *which* dynamical time the folk’s naïve theory of time was most like.

each card ordered as they appeared to me on the belt. Nothing fundamental is lost by this representation – the objects are ordered by relations of precedence and succession.

2), on the other hand, involves the two features that are missing from this experience – the *same object* has changed over time; it has *become* something else. Succession alone cannot represent our temporal experience. Without dynamism, our experiences would be presented to us as the sushi is on the belt – one after another, without any illusions of passage, becoming, or change. This misses a crucial aspect of our temporal phenomenology which is represented by the footage of the sushi decaying. The same object has changed over time, in that it possesses the property of being fresh at time t and decayed at time t' . I argue that without this dynamism, one has not captured temporal experience. Therefore, in order to accurately reflect experience, the second interpretation of Veridicalism must include an illusory phenomenology of dynamic time. If the mind generates dynamic experience from succession, then Veridicalism (the second reading) has collapsed into the Illusionism it tried to replace.

Following this assessment, I conclude that Illusionism is the preferable explanation of temporal experience given the B-theory. Veridicalism either fails to take passage phenomenology seriously and is therefore alienated from ordinary human experience, or it collapses back into Illusionism by including non-veridical dynamic content in our temporal experience. As Deng's more recent writing supports the first interpretation, the failure of the second reading is no great blow. Nevertheless, I argue that insofar as her Veridicalism fails to acknowledge passage phenomenology, it does not speak to the ordinary experience of most people. As such, it fails to be a compelling alternative to Illusionism.¹⁴⁸

Mind-Dependent Becoming

In what remains of the thesis I accept Illusionism; in particular, the version presented by Adolf Grünbaum. Illusionism is appealing insofar as it takes the content and character of our everyday experience of time seriously and provides a compelling explanation for why we experience time as dynamic in a static block universe. Thus far in this chapter, I have focused on phenomenological considerations alone. It is now appropriate to reintroduce ontology into the discussion. Grünbaum holds that we experience time as dynamic, but that this is *not* a reflection of the mind-independent nature of time. Phenomenologically, we encounter the world as though it is described by the A-theory. Events appear to come in and out of being as they come in and out of our immediate experience; objects appear to change as our perception of them changes. This experience jars with the way physics and metaphysics describe time. A way forward has been offered by Grünbaum which marries the phenomenological and ontological dimensions of time: mind-dependent becoming.

On this view, becoming, i.e. the processes of coming into existence and of change, are properties of the *mind* and not of objects in themselves. The conscious mind apprehends particular objects or events, understands these as present, and generates a phenomenology of passage from experiencing successive present moments, and the objects and events therein. Apparent change, and the apparent coming into existence of objects and events, is a result of said objects and events coming in and out of our immediate perceptual awareness. Though we *perceive* this as objective becoming, it is not so. All objects and events exist concurrently in the four dimensions of Minkowski spacetime that form the block universe.

On this view, there cannot be objective becoming, as all objects always exist. Nor can there be objective, robust, change, as all actualised states of objects exist, albeit in different spacetime locations. Though this may seem counter-intuitive, there is interesting work being done which explores what this might mean in physics and metaphysics more broadly. (Dorato 2006). The salient point for our present

¹⁴⁸ The veridicalist may have recourse to a final option, namely, to endorse non-representationalism with respect to the phenomenology of passage. This deflationary view involves rejecting the claim that we have the phenomenal experience or sensation of passage and instead endorsing the view that we only have a naïve belief that time passes. As such, the passage of time has no representational content. This approach has been taken by Giuliano Torrengo. (Torrengo 2017) (Torrengo 2018).

purposes is this: things do not objectively become, though we experience becoming. Becoming is mind-dependent. Phenomenologically rich dynamic temporal experience is generated by human consciousness interacting with the block universe. In the words of St Augustine: ‘it is within my mind, then, that I measure time. I must not allow my mind to insist that time is something objective. When I measure time, I am measuring something in the present of my mind.’ (Augustine 1993, book XI).

Conclusion

Temporal experience presents specific problems for the B-theorist that do not arise with the A-theory. Our uncritical, naïve, quotidian understanding of time is based on passage phenomenology – we see things changing around us, we remember the past and anticipate the future, and in these ways, we appear to experience the passage of time. The A-theory easily accommodates such experience by providing the ontological structure on which such experience hangs. Insofar as the B-theory provides no ontological basis for this experience, our temporal experience must be explained by other means than the fine-structure of the block universe.

In this chapter, I have provided a brief insight into literature on the philosophy of temporal experience. This rich and lively area cannot possibly be done justice in a single chapter, and there are key areas which I have not been able to include. One such area is the philosophy of thermodynamics, particularly entropy and the arrow of time, which offers a physical explanation for time’s directionality. (North 2011). Another fascinating area which can provide important insights into our temporal experience is evolutionary psychology, particularly the concept of adaptive psychological projection. (MacLaurin and Dyke 2002).

By considering Illusionism and Veridicalism, I have surveyed two broad responses to the problem of passage available to the B-theorist. The preceding analysis of these has achieved two things:

- 1) I have shown that there are at least two explanations of temporal experience which do not require the truth of the A-theory. Hence:
 - a. A key argument for the A-theory has been undermined via an *undercutting defeater*.
 - b. A robust defence of the plausibility of the B-theory (drawing on metaphysics, physics [SR and GR], and experience) is complete.
- 2) I have presented a case for Illusionism, my preferred B-theoretic explanation for passage phenomenology.

This completes my arguments for the conceptual coherence and explanatory power of the B-theory. I have also, as promised in Chapter 1, presented several defeaters against belief in the A-theory; together these create a cumulative case for rejecting it. Chapter 1 provided a *logical defeater*; Chapters 2-4 provided *rebutting defeaters*; this chapter provided the final, *undercutting*, defeater. Therefore, the B-theory stands on firm footing. The path is now prepared to return to Tillich, and to reinterpret his doctrine of salvation in light of what has been learned.

9

MIND-DEPENDENT SALVIFIC BECOMING A NEW READING

Introduction

Each chapter of this thesis has been building towards this final chapter. In Part I, I began with a survey of the metaphysics of time, arguing that the B-theory is the preferable metaphysical model given the arguments available. I then argued that SR and GR offer further support for the B-theory. Part II contained an exposition of Paul Tillich's *Systematic Theology*, with a focus on his doctrine of salvation and his treatment of time and history. Part III began with the philosophy of temporal experience, suggesting that Illusionism is the best candidate for explaining passage phenomenology on a B-theory. Following a defence of Illusionism, my case for the internal coherence and explanatory power of the B-theory was complete.

In this final chapter, I draw all of these threads together – following Tillich's own mandate, I reinterpret Tillich's doctrine of salvation in light of relativity and a B-theory of time. As Tillich argues, 'a [theological] system should be not only a point of arrival but a point of departure as well. It should be like a station at which preliminary truth is crystallized on the endless road toward truth.' (Tillich 1951, vii). The reconstruction I offer here will be carried out in accordance with the method of correlation and will follow Tillich's own commitment to a continuous reinterpretation of theology in response to an ever-evolving culture. Part I set out the existential questions raised by the physics and metaphysics of time, and Part III sets out my theological answer.

Tillich is committed to theology's continuous evolution:

After the central theological answer is given to any question, there is always a return to the existential question as the context in which a theological answer is again given. Consequently, new answers to new or old questions do not necessarily disrupt the unity between the earlier and later parts of the system. It is a dynamic unity open for new insights, even after the whole has been formulated. (Tillich 1957, 3).

This passage clearly shows Tillich legitimising dynamic engagement with his theology. Langdon Gilkey echoes these sentiments:

All profound and significant thought (embodied ontological reason) is a combination of philosophical and theological elements, of analysis of structure and uncovering of meaning, of reason and the depths of reason; separated out into philosophy (autonomy) and unphilosophical theology (heteronomy), both lose their power, their depth, their significance, and fail utterly – for then culture is cut off from its own religious substance and religion from its possibilities of reflective power. Only in concert together can philosophy and theology either ask important questions or find healing answers, whether in cultural or religious matters, in "philosophy" or "theology". (Gilkey 1985, 331-332).

This thesis follows in the footsteps of Tillich, Gilkey, and others who have grappled with the relationship between theology and other areas of human thought. In it, I bring physics, metaphysics, and theology together. It is motivated by a belief that isolationist theology has no place in a dynamic

and multifarious culture, and that theology is greatly enriched by dialogue with other branches of human understanding. (McGrath 2016) (McGrath 2019) (Russell 2012).

The philosophical question raised in Part I concerns the possibility of change in the block universe. Tillichian salvation requires a change from alienation and estrangement to reconciliation. It also requires the possibility of introducing genuine novelty into reality – Christ is believed to have entered the universe to be present in a way he was not before, bringing the new possibility of salvation into the universe and the lives of those who inhabit it. On the B-theory, all events co-exist. Without the possibility of newness, or a metaphysically privileged now, change becomes difficult to accommodate. Nevertheless, instead of dismissing salvific change altogether, a possibility introduced by the B-theory *simpliciter*, I offer a reinterpretation of Tillichian soteriology which incorporates scientific knowledge without being subservient to it. Physics and metaphysics are used as a means through which Tillich's doctrine of salvation is fine-tuned. This new reading is, I argue, both coherent and compelling.

My argument in this chapter is this: though salvation in *ST* is presented as a form of ontological change, namely the transition from Old Being to New Being, following insights from the philosophy of time it is best understood as a form of phenomenological and qualitative change. I have named this process *mind-dependent salvific becoming*, and I use conceptual tools provided by Grünbaum's Illusionism in its construction. As the mind constructs passage phenomenology out of ordered events in the block universe, so too can the mind construct a soteriological transformation from spiritually significant events in the block universe. The saved individual goes through a subjective, psychological, qualitative change, which for them constitutes and corresponds to personal salvation.

Tillich understands such salvation as entering into a life of New Being. Moreover, New Being introduces a new, enriched relationship between God and the saved individual. Though the change is not strictly speaking *new* in terms of entering into the block universe (i.e. it was always in the individual's future), it is *qualitatively* new. Qualitative newness, I argue, is still highly significant for the individual and satisfies the criteria Tillich sets out for his soteriological transformation. Tillich's explanation of the transition from Old Being to New Being is perfectly compatible with such a reading, if one focuses on its psychological consequences of the transformation over and above its potentially ontological underpinnings. This fits well with both Tillich's existentialist focus and his ideas about creating qualitatively new meaning in history through the subjective interpretation of events.

Though my discussion focuses on Tillich, particularly his formulation of soteriology presented in part three of *ST*, any understanding of salvation as a transformation in time must wrestle with these questions. Christian theological accounts tend to envisage salvation as involving a process of chronological transformation – for example, in Augustine of Hippo's idea of Christ as a physician who both causes and superintends the healing process in a patient. (Martin 2001). While some Protestant thinkers consider justification to be an instantaneous divine pronouncement of the believer being accounted or considered righteous in the sight of God, this is accompanied by an emphasis on the process of sanctification, in which the believer becomes righteous through a chronological process of transformation. In Orthodox theology, deification (*theosis*) is likewise conceived as a process of ontological transformation. (Clifford 2005) (McGrath 2020) (Van der Watt 2005).

What I identify here is a general problem, despite the fact that it is articulated in conversation with a specific theologian. Tillich is an appealing dialogue partner here, as his system provides tools for the task of a reconstruction of atonement that is compatible with a B-theory of time. In other words, contained within Tillichian theology is one way of understanding salvific change in the block universe. A more general treatment of this problem is unfortunately outside of this thesis' scope, but it must be emphasised that this is a general problem for any soteriology that requires a transformation in time. As previously stated, even if other more traditional soteriologies can augment their accounts to include reference to temporal parts, the account I offer here is highly useful when considering how a salvation-

transformation under the conditions of existence is *experienced* as a robust change when the B-theory seems to prohibit such change.

The Problem

The term ‘block universe’ illustrates why the B-theory is sometimes called static. Each event enclosed in the fabric of spacetime exists always, and no slice, frontier, or moment is ontologically privileged. The objective temporal dynamism of the A-theory intuitively provides sufficient structure within which to understand change. Entities possess distinct properties at different times, and the objective passing of time means that the property an entity possesses *now* changes. If *e* is *x* at time *t*, and *y* at time *t'*, then when the time changes from *t* to *t'*, *e* has changed from *x* to *y*. Without an A-theory, such ontological change becomes harder to understand. In short, the B-theory forbids change, whilst salvation (and much of ordinary experience!) requires it.

As Adrian Bardon explains, ‘the idea that change is both conceptually indispensable and, apparently, unreal places us in an odd position. On the one hand, logic and science seem to leave no room for dynamic change; on the other, the conceptual indispensability of change would mean that we literally cannot contemplate a world without it.’ (Bardon 2013, 109). This general problem has received significant scholarly engagement since Parmenides; however, it is yet to receive much theological attention. In this section I outline the specific problem a static temporal ontology poses for the concept of salvation, and more specifically Paul Tillich’s doctrine of salvation as a transformation from Old Being to New Being.

If the B-theory is true, this has significant repercussions for soteriology. The primary problem the B-theory presents for salvation is that it seems to prohibit robust, ontological change. If all things and events co-exist in the spacetime manifold, then in what sense can genuine change be accommodated? Change is an act or process by which something *becomes* different. It is precisely such becoming that is prohibited by the static temporal ontology of the block universe. As we saw in Chapter 1, believing that change is a necessary feature of time was McTaggart’s primary reason for concluding time was unreal. He held that it is only within an A-series that genuine change is possible. The only conceivable B-series change is the impossibility of an event ceasing to be an event. (McTaggart 1908, 459). Thus McTaggart concludes that genuine change is impossible on the B-series.¹⁴⁹

Salvation requires change from a prior state of sin to a subsequent state of atonement, and this change is generally understood to bring something fundamentally new to the life, indeed the being, of the saved individual. Moreover, on a Christian worldview this salvation was brought by Jesus of Nazareth, the Son of God, who entered physical reality to be present in a way he was not before to bring the genuinely new possibility of salvation to the cosmos and its inhabitants. This specific act at a specific moment in history is, in the Christian tradition, the exact moment at which the entire course of history was forever changed. Such change, particularly the introduction of something *new* into the spacetime manifold that was not previously present, appears incompatible with the B-theory. If one accepts this point, then two alternatives seem apparent:

- 1) Conclude that salvific change is impossible on a B-theory, and that therefore the doctrine of salvation must be rejected altogether.

¹⁴⁹ As McTaggart maintained that change is only compatible with an A-series description of time, and he held that the A-series is self-contradictory, he concluded that time must be unreal. I agree that change and the B-theory *seem* incompatible. Nevertheless, I do not conclude with McTaggart that time is unreal. Temporal passage and the objectivity of tensed facts are not necessary components of *time* itself. There is not space to develop such arguments here.

- 2) Try and reconceptualize the mechanism of salvific change so that it is coherent within a block universe.

Though 1) may hold initial appeal to opponents of religion, there are good reasons for rejecting it. First, it dismisses the core beliefs of many systems that are theologically or spiritually committed to doctrines that require ontological change. As Tillich writes, science is not in the business of refuting religion: ‘the theologian as theologian is no expert in any matters of preliminary concern. And, conversely, those who are experts in these matters should not *as such* claim to be experts in theology.’ (Tillich 1951, 15). Whether one takes Stephen Jay Gould’s dictum that science and religion are ‘non-overlapping magisteria,’ namely, independent domains which should not interfere with one another, McGrath’s view that they can be mutually enriching, or Russell’s proposal for science and religion engaging in Creative Mutual Interaction, the view that science and religion are inherently conflicting is a view increasingly relegated to the past.¹⁵⁰ (Gould 1999) (McGrath 2016) (Russell 2012).

The second reason for rejecting 1) is that if change cannot be accommodated within temporal reality, then one must dismiss many other important concepts with it. If the block universe is so rigid as to prohibit any flexibility or dynamism (physical or otherwise) then hard determinism follows, a thesis many believe to be incompatible with free will. (O’Connor 2018). If 1) is chosen, and the possibility of salvation is restricted *precisely because the B-theoretic temporal ontology forbids change*, then the implications for free will are clear. Free choice is prohibited if change is not possible, and without the possibility of choice one cannot make decisions that bring about a transformation, soteriological or otherwise.

With regards to free will: if Alice had cereal for breakfast this morning, Alice could have had nothing else. She could not have changed her mind from cereal to eggs, as the block universe does not permit such flexibility. If the events of the future already exist in distant regions of spacetime then agents do not make free choices as to which future is instantiated. Freedom depends upon having multiple options that one can instantiate with deliberate action. The range of possible futures, i.e. the various possible worlds in which Alice has eggs, pancakes, or no breakfast at all, do not exist. The future is fixed, meaning she cannot make the choice to change which possible future she instantiates, and thus her choices are not free.

If change is prohibited, then choice is an illusion. This relationship between change and freedom provides strong motivation to explore other avenues. Dismissing the possibility of salvific change altogether necessitates the rejection of any relational, ontological, or mental change. I argue that advocates of this position throw the baby out with the bathwater, and they do so too hastily. For these reasons, 2) is more productive. As science shouldn’t be in the business of refuting core theological claims, especially within a Tillichian framework, I suggest that Part I’s support for the B-theory should instead be taken as an open invitation to clarify and fortify the concept of salvation rather than disposing of it altogether. In this chapter, I do just that.

Method

How one proceeds with a reinterpretation of Tillich in light of contemporary science must be guided by Tillich’s own understanding of the science-religion relationship. Donald Arthur argues that one can typify Tillich’s understanding of the relationship between science and religion in several ways, depending on the level and aspect of analysis. (Arthur 2001, 262). By defining religion as ‘ultimate concern’, and science as ‘preliminary concern’, no conflict is possible as they are different dimensions

¹⁵⁰ For an introduction to the conflict thesis whereby science and religion are deemed fundamentally incompatible and in conflict, see (McGrath 2010). For arguments in favour of the conflict thesis, see (Dawkins 2007) (Hitchens 2007) (Johnson 2013).

of cognitive encounter with reality. Science is concerned with facts and finite relations, whereas religion is concerned with the meaning of being. (Arthur 2001, 262).

Conversely, religion, when defined as a social group which concretely manifests the pursuit of ultimate being, can enter into a fruitful dialogue with science. Regarding this second definition, Arthur argues that ‘the method of correlation itself implies a relationship of dialogue between science and religion.’ (Arthur 2001, 262). The method of correlation encourages the theologian to interact with science, as long as science is not used to refute, obfuscate, or displace core theological claims. The method involves identifying questions raised by a philosophical analysis of existence, including more general questions raised by culture, and correlating these with answers of theological affirmation.

As I argued in Chapter 6, the method of correlation is primarily a pragmatic way of doing theology in a specific cultural context. Its communicative aims are to translate theological truths into the symbols of the culture into which those truths are to be received. It is also constructive, insofar as it offers new, culturally conditioned, insights which depend upon both the knowledge and the *zeitgeist* of the historical situation in which the reconstruction occurs.

Ours is a culture dominated by science and technology, both practically in terms of our day-to-day reliance on technology, and epistemologically, insofar as science is generally held to be a primary source of knowledge. Therefore, according to Tillich’s method of correlation, any reinterpretation of theology should take science into consideration. Hence both science and the philosophical analysis of that science must play an integral role in a reconstruction of Tillichian theology. I take up that task here.

When following the method of correlation, however, it is imperative that one remains conscious of the important distinction between preliminary and ultimate concerns. Preliminary concerns are those that arise in culture, relating to, for example, the artistic, scientific, or political. They influence our secular existence but bear no relation to ultimate concern. Though preliminary concerns are significant in shaping our ordinary lives, and thus not to be dismissed, the theologian must be aware of several important points: 1) preliminary concerns are rooted in existence, therefore in the final analysis they are riddled with fallenness and alienation; 2) preliminary concerns should not detract from ultimate concern, as it is in ultimate concern that the meaning of being is fulfilled; 3) the theologian is not an expert in matters of preliminary concern, and therefore ‘if nothing is an object of theology which does not concern us ultimately, theology is unconcerned about scientific procedures and results and vice versa.’ (Tillich 1951, 21). If the reinterpretation offered here is to be in keeping with the spirit of *ST*, then preliminary concerns outlined by physics and metaphysics must not overwhelm or override Tillich’s core theological claims. As Paul Fiddes rightly states, ‘the living and incomparable Lord cannot be pinned down under the microscope of scientific investigation.’ (Fiddes 1989, 36). Science should not have the final word on matters of theology. Following the method of correlation and engaging with the philosophical questions raised by culture, whilst ensuring those do not engulf the theology with which it is in dialogue, is a fine line to tread.

As outlined in this thesis’ introduction, the appropriate way for this project to proceed is to use preliminary concerns, in this case the physics and metaphysics of time, as a *vehicle* through which the ultimate is understood. As Tillich explains: ‘in and through every preliminary concern the ultimate concern can actualise itself. Whenever this happens, the preliminary concern becomes a possible object of theology. But theology deals with it only in so far as it is a medium, a vehicle, pointing beyond itself.’ (Tillich 1951, 16). In this chapter I take up this task. Though mine is a unique take on Tillich – his doctrine of salvation is yet to be reinterpreted in light of relativity or a B-theory of time – similar projects have been undertaken in the past. Therefore, whilst my approach is original, it is not without precedent.

In *Time in Eternity: Pannenberg, Physics and Eschatology in Creative Mutual Interaction*, Robert Russell seeks to reinterpret and reconstruct Wolfhart Pannenberg’s views on eschatology in the context

of Einstein's Special Theory of Relativity. Russell explicitly states that his aim is *not* to advance his own theological agenda but to faithfully reinterpret Pannenberg in light of contemporary science:

What I bring to the table, as both a theologian and a physicist, will help in this process of 'friendly reconstruction' in light of science ... The purpose of this book is not what has become routine in the academy: first a critical engagement of Pannenberg's work, then an exposition of his theological "weaknesses," and then an advance of one's own theological agenda. Instead the goal of this book is to "take him at his word," and to explore the "what if" question: what if much of what Pannenberg claims is deeply *right* about "time and eternity," even though some reconstruction is first needed in light of contemporary physics, cosmology, and mathematics. (Russell 2012, 10).

My aims align with those expressed by Russell. I have partaken in less critical engagement with Tillich than is perhaps customary in a thesis which centres on one theologian. My reason is the same as Russell's – I am concerned with 'friendly reconstruction', not advancing my own theological agenda. I do not attempt to prove or disprove the central tenets advanced in *Systematic Theology*, nor to comment on the truth or falsity of the Christian faith. Rather, in line with Tillich's method of correlation, I have assessed the portrayal of time in both physics and metaphysics with the aim of reformulating Tillich's doctrine of salvation in light of the knowledge these disciplines provide. Scholarship on Tillich has stagnated in recent years. What I offer here has the potential to revive discourse on this important and influential theologian, and to renew his appeal in a world dominated by science.

Russell articulates a methodology for interaction between science and theology, namely 'Creative Mutual Interaction', which shares similarities with Tillich's method of correlation. Similar ideas can also be found in the work of Alister McGrath. (McGrath 2016). The shared core of these methodological approaches to 'religion and science' or 'theology and culture' is that each can offer valuable insights to the other. According to the method of Creative Mutual Interaction, a robust philosophical interpretation of scientific theories can be used to creatively reformulate theological doctrines. In addition, theology so reformulated can lead to suggestions for fruitful new research programs in both science and the philosophy of science. (Russell 2012, 8). Science and the philosophy of science have the ability to identify gaps, oversights, or inaccuracies in theology, such as the interpretation of Joshua 10:12 that generated the geocentric model of the solar system; this then catalyses positive developments in theology. In turn, theology has the potential to influence science.

Russell seeks to reinterpret SR to accommodate flowing, A-theoretic time. Following this, he reinterprets Pannenberg's eschatology in light of the A-theoretic interpretation of SR. Therefore, whilst Russell and I engage in similar projects, we come to radically different conclusions at every stage.¹⁵¹ These conceptual differences are somewhat by-the-by. The salient point is that Russell's engagement in such a project sets a precedent for the type of reconstruction in which I engage here.

Mind-Dependent Salvation

a) The Proposal

My argument offers a way to understand soteriological change on a B-theory of time, namely a shift in focus to subjectivity and the mind-dependent nature of salvific becoming. In essence, a salvation-transformation occurs in the mind. Tillich's emphasis is on the psychological healing power of Christ the redeemer whose soteriological significance sits in the context of putatively universal human experiences of estrangement and anxiety. Christ brings atonement by embodying the unity of essential

¹⁵¹ It is not within the scope of this chapter to engage in a detailed comparison of our two arguments, though the interested reader is welcome to come to their own conclusions about which interpretation is preferable.

humanity with actual human existence. On this interpretation we return to an anthropocentric framing of Tillich's soteriology.

Mind-dependent salvific becoming fits comfortably with themes in Tillich's wider theology. It accommodates the soteriological change with which *ST* is concerned whilst avoiding some of the issues raised by a tenseless theory of time. Salvation, for the individual, is the alleviation of *Angst* that existence and finitude impose on the human psyche, with the promise of reconciliation to the ground of being both once the soteriological transformation has occurred and in whatever awaits after this life.

My argument for mind-dependent salvific becoming has two stages. The first, employing an argument from Carl Hoefer, shows how free choice can be compatible with a B-theoretic ontology. The second draws on Adolf Grünbaum's Illusionism to argue that the mechanism of salvific change is best conceived as mind-dependent becoming. On this model, individuals freely choose to respond to a saving power. They then *experience* a salvation-transformation as a result. Essentially, I argue that the change required by Tillich's doctrine of salvation is sufficiently accounted for by a subjective change in the consciousness of the individual, and the new relationship with the ground of being. From the perspective of the saved person, I argue that a subjective, phenomenological change can be just as significant and transformative as an objective, ontological change.

b) Choice on a B-theory

To examine salvific becoming on the B-theory, one must also examine the related question of *choice*. If one is not free, then one cannot make a choice which enacts any form of change, salvific or otherwise. The viability of personal salvation depends upon agents being able to make free choices and those choices having soteriological significance. Moreover, Tillich's frequent return to the issue of freedom, particularly when paired with destiny, demonstrates the importance of the concept in his theological system. Tillich writes that 'man, in so far as he sets and pursues purposes, is free. He is not bound to the situation in which he finds himself, and it is just this self-transcendence that is the basic quality of freedom.' (Tillich 1964, 303). I understand this as a rejection of any metaphysics which completely denies the possibility of human freedom. Tillich maintains that we have the freedom to transcend the situations in which we find ourselves, therefore a B-theoretic interpretation of Tillich must remain cognizant of that fact. Free will must have a place in the block universe in order for my re-interpretation of Tillich to be faithful to his original arguments.

Typically, the block universe is considered hostile to free will for reasons alluded to above, whereas the possibility of an open future provided by (non-deterministic) A-theories is compatible with freedom. It has generally been held that if agents can make choices which genuinely shape the course of future events, then they are free. Swinburne, for example, argues that despite God's omniscience, God does not know the free choices of agents before those choices have been made, because a free choice depends on the possibility of performing multiple possible actions.¹⁵² If God knows what an agent will choose before they choose it, then they could have chosen no other outcome, a conclusion incompatible with libertarian freedom. (Swinburne 1993). Essentially, in order for an agent to be free in a given situation, they *could have done otherwise*. The block universe seems hostile to freedom thus defined.

Carl Hoefer rejects the view that the A-theory is the only temporal theory which can accommodate free choice, arguing that B-theory choice operates as 'freedom from the inside out.' Hoefer argues:

The very 'timelessness' of the 4-D block (in an A-series sense) leaves us free to reject the customary view that past events determine present choices. From the B-series perspective there is no reason to think of past -> future determination as more important or real than future -> past determination. And, even more to the point,

¹⁵² For further details, see: (Talbert 2019).

one can equally view a set of events in the middle as determiners of both past and future events ... Our free actions, intentions, thoughts etc., in the middle of the block universe, are part of what determines how the rest of the block shall be. (Hoefer 2002, 205).

The crux of the argument is this – the block universe says nothing about *causal* relations between slices of spacetime, merely that they all co-exist. Hoefer is advocating a break between determination and causal explanation by arguing that our experience of temporal asymmetry does not necessitate causal determinism running from the past to the future. In the block universe, there is no ontologically privileged location. All slices of spacetime are concurrent, and there is no more reason that the past must determine the future, than that the future must determine the past.

Our intuitive sense that the past causes the future, Hoefer argues, is the result of an ‘unholy marriage of A-series time with deterministic physics.’ (Hoefer 2002, 208). This union, though phenomenologically understandable, is nonetheless a mistake. He argues that regions of the block logically determine one another, in that each slice is dependent on the others for its existence, but there is no physically compelling reason to believe that the past *temporally* or *causally* determines the future. Physical determinism, Hoefer argues, implies *no explanatory priority* of the past over the future, or the future over the past, or the middle over either. None of these tenses are objectively privileged, and so there is no reason to believe the early regions of the block universe have any deterministic effect on later regions. This leaves space for action to be at least partly determined by desires, beliefs, and intentions.¹⁵³ In other words, we may reasonably hold our actions as not determined by the past, but by our own wills. Hoefer writes: ‘we can view our own actions, *qua* physical events, as primary explainers, determining—in a very partial way—physical events outside ourselves to the past and future of our actions, in the block. We adopt the perspective that the determination or explanation that matters is from the *inside* (of the block universe, where we live) outward, rather than from the *outside* (e.g. the state of things on a time slice 1 billion years ago) in.’ (Hoefer 2002, 207).

Hoefer’s argument for ‘freedom from the inside out’ requires *downward causation*, a concept initially developed by John Dupré, to explain how free action is causally efficacious in the block universe. In downward causation, higher level processing, viz. our choices and intentions, are the primary explainers for the effects produced on the ‘lower’ ontological levels, viz. our actions. Hoefer gives a mundane but illustrative example. When writing, he wishes to type certain words to express his ideas. To do that, he must type particular letters. His intention to type ‘t’ makes the atoms in his hand move toward the ‘t’ key – the higher-level intention precedes the lower-level effect. This example illustrates what he means by downward causation: human consciousness, intentionality, and mental processing are the first link in the causal chain that generates action. (Hoefer 2002, 201).

Dupré argues that this is possible because causal order is partial and incomplete, i.e. *causal* determinism is false. Humans are both vastly complex and highly ordered, thus we provide oases of order and predictability. This leads Dupré to claim that ‘the causal structure that impinges on a human being, whether externally from macroscopic causal interaction, or internally, from constitutive microstructural processes, is not such as to threaten the natural intuition that humans are, sometimes, causally efficacious in the world around them.’ (Dupré 1996, 386). By saying that reality is causally incomplete he means that there is not sufficient causal explanation for every event by virtue of physical regularities

¹⁵³ This position has its roots in Kant.

alone. He then locates free action within this open causal structure.¹⁵⁴ Downward causation, namely the mechanism through which this is possible, occurs through creative acts of the human mind.¹⁵⁵

If free choice is compatible with a block universe, then the idea of salvific becoming stands on firmer ground. Though the block universe may seem to prohibit choice and change, agents can make choices through downward causation and instantiate one choice over others. Whilst this alone is not sufficient to establish salvific change on a B-theory, it does offer a means by which agents are capable of making choices which can have soteriological significance. This is highly important in any reinterpretation of Tillich due to the emphasis he places on human freedom. Salvation is not possible without humanity being free to actualise our latent potential, respond to the grasping power of the spirit, and enter into a life of New Being. We now turn to the second stage of the argument which sets out the precise mechanism of salvation: mind-dependent becoming.

c) Salvation and Becoming on a B-theory

As we saw in the previous chapter, proponent of Illusionism Adolf Grünbaum argues that the property *being present* is a mind-dependent phenomenon, not a property of events. When a conscious mind experiences an event, and is aware of experiencing this event *now*, the criteria for calling this event ‘present’ has been fulfilled. Experiencing several of these in a row generates the appearance of passage. Hence, our temporal experience can be sufficiently explained through *mind-dependent becoming*, namely, our mind generating the illusory phenomenology of becoming through experiencing successive events in the block universe. On this view, agents subjectively experience the world as changing by virtue of their consciousness piecing together such change from a thread of events experienced in a certain order.

This can be applied to an individual’s experience of a salvation-transformation. On this view, conscious awareness plays a highly important role in phenomenologically substantiating the type of change required to transform an individual’s life from a state of fallenness to a state of salvation. Essentially, individuals can choose to instantiate actions which lead to an authentic, soteriologically directed, life, and then experience a transformation from fallenness to salvation.¹⁵⁶

In Christian terms, individuals are free to respond to the grasping power of the Spirit in their lives, opening themselves up to the renewed existence of a life with God. The enhanced psychological existence, enriched relationality, or fulfilment that follows both constitutes and signifies salvation. Though each event a person experiences has always existed in a distant region of the block universe, humans have the ability to bring about genuine, albeit subjective, change into their lives through the mechanism of freedom outlined above. One form this change takes is the psychological transformation from an unfulfilled, fallen existence to a saved one. Though such salvific becoming is mind-dependent, it is no less real.

d) Salvation as Qualitative Change

Mind-dependent becoming is, I argue, a suitable mechanism of salvation in the block universe, but it remains to address what kind of change this involves. M.O. Fiocco defines change thus: ‘an entity

¹⁵⁴ These sentiments implicitly reference the Copenhagen Interpretation of Quantum Mechanics, in which micro-physical processes are statistical and probabilistic rather than deterministic. There is not scope to discuss these issues here, but I have written on them elsewhere. (Qureshi-Hurst and Pearson 2020)

Similar arguments have been made by Robert Russell regarding divine action within the causal openness provided by the Copenhagen Interpretation of QM. (Russell 1997) (Russell 2001) (Russell 2018). For an assessment of his arguments, see: (Qureshi-Hurst and Bennett 2021) (Qureshi-Hurst forthcoming).

¹⁵⁵ Dupré develops this idea both Humean and Kantian ideas in the ‘Concluding Remarks’ section. (Dupré 1996).

¹⁵⁶ Though it will always have been in one’s future, and so in that sense it is not radically new or undetermined, it comes into one’s perceptual awareness as something apparently new.

changes if and only if it *in itself is one way at one moment and an incompatible way at a distinct moment.*' (Fiocco 2014, 89). In the static temporal ontology of the block universe this is evidently troubling, as all objects co-exist eternally, including each iteration of that object at each moment of its existence. Change seems to require absolute and dynamic time to generate the objective distinction between two moments. Without such a distinction, it is hard to imagine from what grounds one could say the object or entity has undergone an objective change. Absolute, flowing time would also allow the mind-independent *coming into being* of new states or properties which support the possibility of what I will call *robust change*. Robust change involves the same entity possessing different properties at objectively different times and implies the possibility of *newness* which seems incompatible with the metaphysics of the block universe.

Robust change is particularly important for salvation for two reasons: 1) salvific change is generally understood to be objective, 2) salvation is the result of Christ entering reality at a certain historical moment to be present in creation in a way that he was not before. Both of these seem to require robust change – the saved person comes to possess new soteriological properties, and Christ brought something fundamentally new into the cosmos. The possibility of such change is inextricably linked with temporal metaphysics. As previously stated, on the A-theory, if entity *e* is *x* at time *t* and *y* at time *t'*, then when time objectively passes from *t* to *t'*, *e* has objectively changed from *x* to *y*. Thus, the A-theory accommodates robust change without difficulty. B-theoretically, if entity *e* is *x* at time *t* and *y* at time *t'*, then there is no objective way to say whether *e* is *x* or *y* because *t* and *t'* are equally, tenselessly, real. Hence, the block universe presents a specific, serious challenge to salvation insofar as salvation requires a change from being fallen to being saved.

C.D. Broad's assessment of McTaggart in *An Examination of McTaggart's Philosophy* introduces a concept which he calls qualitative change. Qualitative change, as defined by Broad, is a type of change in which an enduring subject acquires qualities it did not possess previously. Broad acknowledges McTaggart's premise that events do not change; however, he distinguishes between events which do not change, and *things* which do. (Broad 1938, 317). Things – persisting entities – can possess different properties at different times and as such are susceptible to qualitative change. Qualitative change can be understood as the possession of different properties at different points in the B-series. On the B-theory, an individual is a four-dimensional extension. It is perfectly reasonable to hold that the subject can possess different properties at different points without having to invoke the reality of tense to say which set of properties the thing possesses *now*. Whilst this does not pass the threshold of robust change, it does account for a more impoverished form of change which can still hold soteriological relevance when coupled with mind-dependent becoming.

Mind-dependent becoming offers a B-theoretic explanation for our experience of passage whereby the conscious mind constructs passage phenomenology out of experiencing events in a certain order. Applying this to salvation, an individual in the block universe can undergo the qualitative change from Old Being to New Being when they possess the mental properties associated with each at different times. They then *experience this as* robust change, analogous to the experience of time as robustly passing, despite neither robust change nor robust passage being real (i.e. mind-independent or objective). Thus, our experience of such change is illusory in the same way our experience of passage is illusory.

Nevertheless, this does not mean that salvation itself is illusory. On the contrary, the saved individual objectively possesses the property of being fallen at certain B-series points during their lives, and objectively possesses the property of being saved at later B-series points. The experience of robustly changing between these two states is illusory insofar as neither is a genuinely new state which was not already present in the block universe or the four-dimensional extension of an individual's being. Yet just as the events in the block universe are real and ground an (illusory) robust sense of passage, so too

are the properties of being fallen and being saved objectively real. It is the experience of a robust change from one to the other that is illusory and is accounted for by mind-dependent becoming.

Consider this example. Paula may undergo a transformation from a life characterised by anxiety, fear of meaningless, and estrangement from both the ground of being and the truest realisation of her own potential, to a life characterised by reconciliation and healing. Her life has gone from being defined by Old Being, Tillich's existentialist articulation of fallenness, to being defined by New Being. A life of New Being follows from a life reconciled to the triune God, being-itself, and is experienced as a highly significant change from the way life was before. This qualitative change is both powerful and profound, and represents a soteriological transformation, despite not being robust in the way previously defined.

On this view, though Paula's four-dimensional ontology has not changed, her experiential reality has. At different times, the same subject possesses distinct mental properties which colour her psychological existence.¹⁵⁷ Moreover, she enters into a new relation with God at a certain B-series point on her world-line. In these two important ways, she has undergone a qualitative change. There are two alternative and equally viable interpretations of what this might look like. To clarify, I have included a diagram below which helps express what I mean by mind-dependent salvation as a qualitative (not ontological) change.

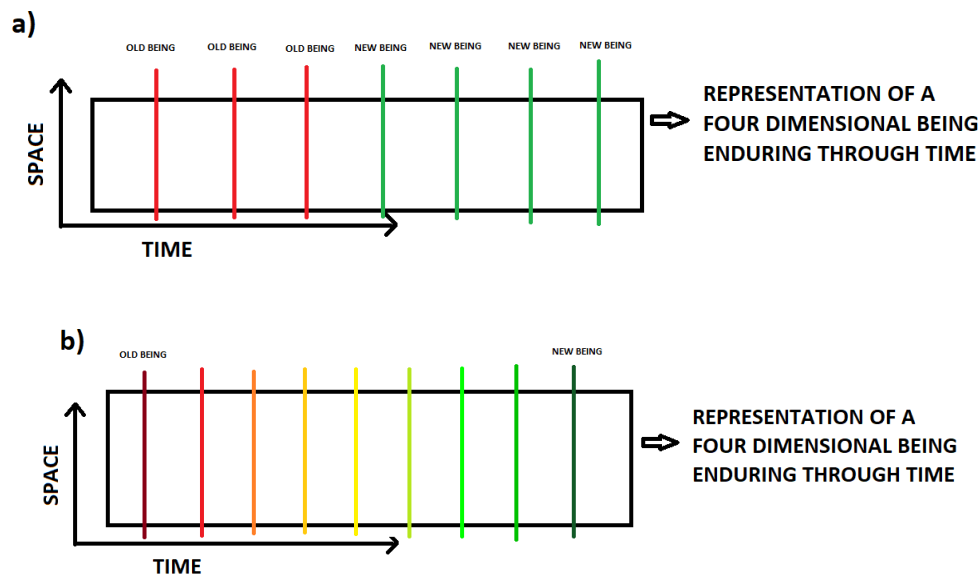


Diagram a) represents a sudden transformation. A life characterised by Old Being, represented by a red line through the time axis, is transformed to one which is characterised by New Being in one fell swoop. Such a transformation is analogous to a Damascene conversion – a stark and immediate change from one mode of being to another. This might be experienced phenomenologically as a sudden alleviation of anxiety, fear of meaningless, and other psychological consequences of fallenness. The saved individual would then experience reconciliation characteristic of a life of New Being. Diagram b), on the other hand, represents a more gradual transformation from Old Being to New Being, with many in-between stages. This reflects the type of transformation an individual may undergo over several months

¹⁵⁷ There are two general metaphysical positions one can take about how an entity and their various properties persist over time: endurantism and perdurantism. The metaphysical debate between these concerns whether persons are a single numerically identical objects that endure through time or four-dimensional objects with temporal parts. Either the same enduring subject possesses different soteriological properties at different times, or the later temporal parts of the perduring subject have different soteriological properties than the earlier parts. Each would constitute a salvific transformation. My claims regarding a soteriological transformation apply equally (though slightly differently) for each of these metaphysical positions, thus one's subscription to endurantism or perdurantism should not affect the crux of my argument. As such, this debate is orthogonal to the present discussion. For further reading, see: (Balashov 2011) (Magidor 2016) (Hawley 2020).

or years, as they gradually allow themselves to be grasped by the saving power of the Spirit and experience the psychological healing that ensues. b) more closely resembles Tillich's own view of how salvation occurs in the life of the individual. Nevertheless, both are equally valid interpretations of what a salvation transformation might look like in the block universe.

These (albeit rather simple) diagrams demonstrate why the soteriological transformation I propose is not an ontological change, but is a phenomenological, qualitative, and relational change. In the block universe, beings exist as four dimensional 'worms' in Minkowski spacetime. Thus your ontology, namely your existence, mode of being, and fundamental properties, is four-dimensional and insofar as it exists eternally it does not change. What does change, however, is our phenomenological apprehension of ourselves and the world at each slice of spacetime we experientially encounter. This is what the above diagrams illustrate. The rectangle represents a subject in the block universe (with the obvious weakness of all the dimensions of space being represented by one axis) and the lines represent the individual's conscious experience at particular slices of spacetime.¹⁵⁸

Each soteriologically relevant experience enhances one's relationship with God. The individual allows themselves to be grasped by the saving power of the spirit, recognises the paradox of the Christ which represents the full potential of humanity, and is reconciled to the ground of being we call God. This trinitarian explanation of salvation is compatible with both *ST* and the B-theory. Moreover, by representing the enduring subject as extending in four-dimensional spacetime, and all the properties possessed by that being at B-series locations, these diagrams illustrate why B-theoretic mind-dependent salvific becoming is a qualitative, not an ontological, change.

Mind-Dependent Salvation in *Systematic Theology*

I have now articulated my proposal for mind-dependent salvation and argued that it is a form of qualitative change. To demonstrate that these concepts are a robust and appropriate reinterpretation of Tillichian soteriology, we must return to *ST*. Areas of particular relevance for the development of a doctrine of mind-dependent salvation are *kairos*, ontological reason, the role of the Christ in the soteriological process, and the creation of the qualitatively new in history.

a) Kairos

An important concept for any reconstruction of Tillich is that of *kairos*, which Tillich defines as 'an outstanding moment in the temporal process, a moment in which the eternal breaks into the temporal, shaking and transforming it and creating a crisis in the depth of human existence.' (Tillich 1948). *Kairos* is a specific moment in time; a moment where latent potential comes into fruition. As Elizabeth Earle writes, 'for Tillich, *kairos* is a moment of immanence, or a breaking into transcendence, which carries implications for action and agency. (Earle 2017, 25). During a time of crisis, the opportunity to act to advance what matters most is presented. (Smith 2002, 55). Tillich developed his ideas about the concept *kairos* early in his career, first publishing on them in 1922, in response to a perceived need to critique one's present moment. (Tillich 1922). Daniel Weidner argues that Tillich's notion of *kairos* is symptomatic, in that it arose from the widespread feeling of crisis after Germany's defeat in WWI. (Weidner 2020, 73). Yet an even greater *kairos* was coming, namely the Nazi regime, which facilitated greater reflection on these ideas. Tillich practiced as he preached, and his vociferous critique of Nazism eventually led him to being forced out of Germany. He identified a moment of *kairos*, a crisis wrought by human hubris and extreme cruelty, and acted accordingly.

Though there are several contexts in which *kairoi* may emerge, the salient point is that at a moment of *kairos*, the divine will breaks into human history calling for an appropriate response. Earle argues that Tillich's existential formulation of *kairos* 'is rooted in humanity, in existence, in experience, in context, in culture, and upon the earth. It occurs in a moment of humanity, a moment of consciousness as a call

¹⁵⁸ Or, as we experience them, moments in time.

to a certain profound emptiness in our soul.’ (Earle 2017). Apocalyptic and prophetic overtones are present in Tillich’s articulation of *kairos*, which is understandable given the context in which it was developed.

Though *kairos* is typically understood as resonating throughout entire groups and having a social or political dimension, discrete *kairoi* can manifest in an individual’s life. A perfect example, in this context, is a call to respond to the grasping power of the spirit. Earle identifies ‘Saint Paul’s conversion as an example of *kairos* as a breaking through of the eternal into the temporal.’ (Earle 2017). As this example demonstrated, *kairoi* may emerge in an individual’s life when the eternal breaks into the temporal, encouraging the individual to transform their existence through manifesting their latent soteriological potential and entering into a life of Christ. The role of *kairoi* in Tillichian thought is consonant with a mind-dependent analysis of soteriological becoming – individuals consciously respond to a call from God and from the grasping power of the Spirit to bring about a qualitative change in their lives. In so doing, they enter a life defined by New Being.

b) Ontological Reason and Mind-Dependent Salvation

According to *ST*, New Being is possible for humanity due to humanity’s unique position. Humans were created *imago Dei*, and through this we share the ontological reason imbued in us by our Creator. Tillich defines ontological reason as ‘the structure of the mind which enables the mind to grasp and transform reality.’ (Tillich 1951, 80). This underlying rational structure permeates our being, and through it we both apprehend the world and generate new and subjective meaning. Nature, like humanity, was created with an underlying rationality that both reflects and participates in the ground of being, and through our shared ontological reason humanity is able to comprehend the world. Tillich calls this *grasping* reality. Yet the structures of the mind also *shape* how the external world is experienced. Human consciousness latches onto the rational structures of the world, and the cognitive capacities that facilitate this also mediate and affect the way the world is understood.

This interaction between mind and world generates the qualitatively new, and it is here that New Being becomes possible. The dynamic interplay between human consciousness, the world it inhabits, and the creative force that grounds it (God) allows the manifestation of New Being. As Tillich explains: ‘theology must show that although the essence of ontological reason, the universal *logos* of being, is actualised in self and world, it is dependent on the destructive structures of existence and the saving structures of life; it is subjected to finitude and separation, and can partake in the “New Being”. Its actualisation is not a matter of technique but of “fall” and “salvation”.’ (Tillich 1951, 83). Ontological reason functions as the means by which we grasp and shape reality; it also allows us to consciously respond to the grasping power of the Spirit when that power manifests in a moment of *kairos*. New Being is actualised through, and because of, ontological reason.

As ontological reason allows the conscious individual to grasp and shape reality, so too can it allow the conscious mind to undergo a soteriological transformation. Human ontology reflects and participates in divine ontology – this is symbolised through Jesus as the Christ who reveals that humanity’s true potential is to be united with God in our very being. We contain this potential and yet are continuously frustrated when we fail to actualise it. Indeed, many of the psychological consequences of fallenness stem from awareness of alienation and estrangement from both God and the truest realisation of human potential. Old Being is characterised by such experiences. Through ontological reason humanity is made aware of this latent potential, and through ontological reason humanity can make steps towards actualising it.

Moreover, salvation involves an enriched relationality with the ground of being. By entering into a life of New Being, through conscious receptivity to the grasping power of the Spirit, the individual enters into a new relationship with God. In so doing, the individual steps into the theological circle as an act of faith. Tillich explains: ‘as classical theology has rightly taught, there is “assent” in faith – there is

cognitive acceptance of truth, not of true statements about objects in time and space but of the truth about our relation to that which concerns us ultimately and the symbols expressing it.’ (Tillich 1964, 141). This cognitive acceptance of truth is central – the mind plays a critical role in reorienting oneself to a life of reconciliation. Truth is defined here as contextual and symbolic, as opposed to atemporally factual, disclosing that, for Tillich, accepting theological truths is more than just believing factual propositions. The individual realigns their entire being towards God, seeking and finding a deeper truth that resonates through the very structure of their being. This is made possible by ontological reason. I argue that this realignment can be understood as a qualitative change experienced through mind-dependent becoming.

c) Christ and Mind-Dependent Salvation

Tillich’s formulation of the transition from Old Being to New Being supports a mind-dependent re-reading. The conditions of existence, namely that from which Christ saves us, are characterised by feelings of alienation from the fullest realisation of one’s potential, estrangement from the ground of being, fear of meaninglessness, and the threat of non-being. These conditions of existence, shaped by the binaries potentiality/actuality, essence/existence, estrangement/reconciliation, have ontological and psychological dimensions. In existing, one stands out of non-being. One cannot stand completely out of non-being, however, as we are finite and fallible creatures whose death looms on the horizon. Ontologically, we are separate from the ground of being. Our finite existence involves being estranged from God, playing out our lives in a fallen world. Tillich’s existentialist analysis leads him to conclude that this causes a deep ache. This, coupled with the *Angst* brought on by a persistent fear of a meaningless existence and an inevitable death, demonstrates Tillich’s distinctly psychological framing of fallenness.

Moreover, the role Christ plays in the soteriological process supports a mind-dependent reading. All the anxiety a fallen existence brings has the potential to be alleviated through acceptance of Christ as redeemer. Christ represents God to humanity whilst also representing the fullest realisation of human potential. Insofar as Jesus of Nazareth was fully God and fully human, he embodies the actualisation of latent human potential – reconciliation with God the ground of being. Moreover, Christ took on the conditions of existence and conquered them. He took human form, lived amongst people, died a horrible death, and rose again. By conquering death, he overcomes the threat of non-being and represents the possibility of life beyond this one. By being both fully God and fully human, he reveals the divine possibilities in human nature. This violates our expectations about what is possible, and, in so doing, overthrows the fear and dread inherent to Old Being. Thanks to the saving power of Christ, humanity need not live a life clouded by anxiety and estrangement. If one reorients oneself toward this truth, accepting it not simply as a factual proposition but as an ontological truth that underlies all of existence and in light of which one should live their life, then New Being is within reach.

The significance of human consciousness in the soteriological process is further emphasised in Tillich’s claim that ‘the doctrine of atonement is the description of the effect of the New Being in Jesus as the Christ on those who are grasped by it in their state of estrangement.’ (Tillich 1957, 196). The psychological experience of fallenness, encompassed by estrangement and anxiety, is alleviated by the conscious acceptance of, and reorientation towards, Jesus as the Christ who conquered estrangement under the conditions of finitude. Salvation is comprised of divine action (through the creative power of the ground of being, the saving power of Christ, and the continued action of the Spirit) and human reaction. Therefore, atonement ‘necessarily has an objective and a subjective element.’ (Tillich 1957, 197).

The significance for the present analysis is in the subjectivity. This should not be read, however, as denying either that the saved individual objectively possesses the property of being saved or that the individual really has entered into a new relationship with God. The subjective dimension is the focus, but not the only factor. Tillich believes that the Spirit *grasps* individuals, and atonement is attained

through receptivity to this grasping: ‘the Spiritual Presence is not that of a teacher but of a meaning-bearing power which grasps the human spirit in an ecstatic experience.’ (Tillich 1964, 122). Allowing oneself to be grasped by this power opens the possibility of salvation, which Tillich defines as the overcoming of the conditions of finitude.

Though finitude is inextricably linked to physicality, and existence is inseparable from the time and space in which it is embedded, the existentialist framing of fallenness is far more psychological than physical in focus. Langdon Gilkey echoes this, arguing that ‘being for Tillich is always existentially encountered; that is, it is known and so defined within the context of the experienced conquest or victory of being over the nonbeing inherent in *finitude*.’ (Gilkey 1985, 309). Finitude is characterised by a psychological/conscious experience of estrangement and alienation over and above a physical experience of bodily existence. Knowledge of Christ’s conquering of Old Being gives the individual courage in the face of the conditions of finitude, and in this courage, salvation begins to emerge.

d) History and Mind-Dependent Salvation

By revisiting Tillich’s treatment of history, it will become evident that qualitative change is easily accommodated within his theological framework. A similar concept already exists in *ST*, namely the creation of the qualitatively new in history through the subjective reinterpretation of events. Tillich identifies four characteristics of human history: ‘to be connected with purpose, to be influenced by freedom, to create the new in terms of meaning, to be significant in a universal, particular, and teleological sense.’ (Tillich 1964, 305). ‘Creating the new in terms of meaning’ shares an important resemblance to the type of qualitative change I envision as the transition from Old Being to New Being. This also requires that one ‘be influenced by freedom.’

Tillich argues that the practice of historical enquiry creates the qualitatively new. He defines events as ‘a syndrome (i.e., a running-together) of facts and interpretation.’ (Tillich 1964, 302). Human creativity interacts with these events, generating qualitatively new meaning, and in this way the subjective interpretation of events *precedes* the happenings themselves in terms of their significance for individuals and groups. (Tillich 1964, 300). Without the human mind, with its creation of symbols and its subjective interpretation of the meaning of events, history as Tillich understands it would not exist. This reveals the significance of subjectivity: history, and historical reflection by cultural groups who bear that history, weaves objective events and subjective meaning together to create the qualitatively new.

This is analogous to the mechanism by which I propose salvation occurs, and why my reconstruction of Tillich’s soteriology is compatible with many of his original claims. The B-theory dictates that all events co-exist in the four-dimensional manifold comprised of Minkowski spacetime and bound by the laws of special and general relativity. Yet the Tillichian need not worry – precisely via the mechanism by which human social groups generate qualitatively new meaning into history by subjectively reflecting on it and making it history, so too do human individuals generate a sense of qualitative change in their lives after they enter into a life of New Being. The salvific becoming required by Tillich’s doctrine of salvation is *mind-dependent*. The human mind constructs a salvation narrative out of the string of objective happenings through being receptive to the grasping power of the Spirit. Salvation is qualitatively new, whilst complying with the laws of special and general Relativity, and the block universe those theories describe.

This fits with a downward causation model of free action. As Tillich writes: ‘the transition from one situation to another is in part determined by man’s centred reaction, by his freedom. According to the polarity of freedom and destiny, such self-transcendence is not absolute; it comes out of the totality of elements of past and present, but within these limits it is able to produce something qualitatively new.’ (Tillich 1964, 303). Human consciousness, through both its subjective interpretation of events and freedom to act (albeit within certain constraints), generates the qualitatively new. In this way, novelty

can be injected into the block universe, though of course this change is qualitative rather than robust. Humanity is free to create new meaning, values, and subjective significance out of events – Tillich calls this creation of the new in history ‘the creation of new actualizations of value *in* centred personalities’ and ‘the production of new and unique embodiments of meaning.’ (Tillich 1964, 303-304).

This creation of new meaning need not be limited to historical events. History, Tillich maintains, is born by groups for whom that history is significant, and by subjectively reinterpreting historical events, these history-bearing groups generate new meaning. This mechanism for generating the qualitatively new can have significance for salvation on an individual level, as well as on history on a group level. Hence, Tillich has provided the tools by which my reinterpretation of salvation as mind-dependent becoming and qualitative change can be constructed.

Undergoing a soteriological transformation is, I argue, another example of the actualisation of new embodied meaning, not in a group as it is with history, but in a centred personality. Transitioning from one situation to another, for example the transformation from a situation characterised by Old Being to one defined by New Being, is determined in part by humanity’s freedom (made possible by downward causation) and partly by the subjective interpretation of each situation. The qualitative change between the two situations is generated by the interpretive power of human consciousness. This is further support for the integration of mind-dependent becoming into Tillich’s theological system.

Throughout the preceding sections, I have argued first that Tillich’s doctrine of salvation, namely the transition from Old Being to New Being, is best understood in terms of its psychological consequences. I then argued that robust change is not possible given the ontological framework provided by the block universe. Despite this, salvation *can* be understood as a profound and powerful change in an individual’s life, if it is understood as a qualitative change that is brought about through mind-dependent becoming. Moreover, the saved individual enters into a new, reconciled, relationship with the ground of being, and in this way also undergoes a relational change.

One must remember the important role of the Spirit in this process, as Tillich writes: ‘there is no significant uniqueness where the dimension of the spirit is not actual ... life under the dimension of the spirit is able to experience ultimacy and to produce embodiments and symbols of the ultimate.’ (Tillich 1964, 305.¹⁵⁹ All of this contributes to the possibility of manifesting New Being in an individual’s life. The ontology of individuals in the four-dimensional block universe is unchanging. However, at each B-series moment individuals may possess distinct properties, such as the property ‘being fallen’ or ‘being saved’, and will experience the transition between these two states as constituting a powerful transformation. Such becoming is mind-dependent and is a form of qualitative change. This concludes my case for mind-dependent salvation. To demonstrate that it is a coherent and compelling proposal, I shall review and respond to some possible objections.

Possible Objections

a) Tillich Subscribes to Ontological (not Phenomenological or Qualitative) Change

The first objection one might make regarding this reconstruction of Tillich is that ontological change is an essential feature of Tillich’s system, and therefore the qualitative, phenomenological change I propose cuts no ice. Responding to this objection requires a closer look at *ST*. Writing on objective and subjective dimensions of ontological reason, Tillich states:

Nobody doubts that reality changes, but many people believe that change is possible only because the structure of reality is unchangeable. If this were so, the rational structure of the mind itself would be unchangeable, and the rational

¹⁵⁹ This quotation is specifically directed at the historical process, but as I have already argued I define mind-dependent salvation as analogous to the creation of the qualitatively new in history.

process would have only two elements – the static element and the failure to grasp and to shape it adequately. One would have to dismiss the dynamic element of reason altogether if subjective reason alone were dynamic. Reality itself created structural possibilities within itself. Life, as well as mind, is creative ... the new and the old in history and nature are bound together in an overwhelming rational unity which is static and dynamic at the same time. The new does not break this unity; it cannot, because objective reason is the structural possibility, the *logos* of being. (Tillich 1951, 88).

Here Tillich states that reality changes, seeming to reject B-theoretic claims that reality is unchangeable and static. This may initially seem incompatible with my re-reading, as I use a static temporal metaphysic as a framework which is hostile to robust change. Nevertheless, on closer inspection the problem fades. It is *reason* that Tillich argues is dynamic, whereas ‘history and nature are ... static and dynamic at the same time.’ One can read this as the claim that reality itself must be dynamic, or one could read this as the claim that dynamism is generated when reason works interchangeably with reality to create the new. As we saw in the earlier analysis of history, through this mechanism qualitative newness occurs. Considering this in the wider context of Tillich’s system, particularly the aforementioned parts that support my re-reading and its B-theoretic metaphysical backdrop, it seems that the dynamicity of reason is the most important factor here. This passage can reasonably be read as a claim that reality is subject to qualitative change, rather than a claim that it is susceptible to robust change, due to the centrality of reason in grasping, shaping, and thus changing, the world. In short, the change comes not from reality itself, but from human consciousness interacting with that reality. This is not merely compatible, but supportive, of the notion of mind-dependent becoming.

Some may find this response inadequate, however, and shift the focus away from change *qua* change toward soteriological change specifically. Tillich defines salvation as a transformation from Old Being to New Being, the objector may say, and though this has psychological dimensions it is, in the final analysis, ontological. On this view, the soteriological transformation Tillich outlines must be understood as an objective, robust change that occurs in the very core of one’s being and radiates out into their entire personhood.

Moreover, the presence of the Christ must have brought something fundamentally new into creation. If my reconstruction cannot accommodate such ontological change, the objector may say, then it disregards the core theology advanced in *ST*. Consequently, I will have failed to use preliminary concerns as a vehicle. Instead, a B-theory of time will have been used to refute the possibility of salvation as an ontological transformation, which amounts to allowing physics and metaphysics to have the final say on matters of theology.

The best response to such an objection is through an examination of how salvation as an ontological transformation has typically been understood theologically. In a 2018 article, Ben Page examines the ontological transformation a person undergoes when they become a new creation, as discussed in St Paul’s second letter to the Corinthians: ‘if anyone is in Christ, there is a new creation: everything old has passed away; see, everything has become new.’ (2 Corinthians 5:17). Page is concerned with the instantaneous transformation through which an individual becomes a ‘new creation’, and therefore this focus is on a very specific facet of salvation, namely the decision to turn to Christ, and not the entire soteriological process. Nevertheless, his treatment of ontological transformation in the context of a Christian life is relevant to our present concerns insofar as it serves as a framework through which Tillich’s soteriological transformation can be assessed.

Page notes that a key feature of an ontological transformation, which he argues is present or heavily implied by many theologians, is that it affects every essential aspect of a person – this must be taken to include the physical, mental, and spiritual dimensions of an individual’s personhood. (Page 2018,

526).¹⁶⁰ Page gives two examples of ontological transformations defined, following the above, as a change in every essential aspect of the person: mixing and radical replacement. In the former, a human person undergoes a mixing of kinds with either created grace or the Holy Spirit (which of these one believes to be the case depends on one's theological predilections). This mixing leads to the saved individual being ontologically transformed through being mixed with a soteriologically significant substance. Like a drop of ink in a glass of water, every essential aspect of the individual's being is permeated by the substance with which it is mixed, and therein lies the complete ontological transformation.

In the latter, the individual is ontologically transformed through the replacement of some of their temporal parts from sinful parts to saved parts. This idea requires both an A-theory of time and a perdurantist theory of identity in which an individual is comprised of temporal parts which are continuously replaced at every new moment of time. On this view, God creates the individual anew with saved parts, replacing the old fallen parts, and thus the individual has undergone a complete ontological transformation with respect to those parts. As Page writes, 'on this view nothing endures through the transformation of the believer. Therefore, when God transforms the believer, He goes from creating one temporal part of the believer, which is untransformed, to creating the next temporal part of the believer, which is transformed.' (Page 2018, 534). For obvious reasons, namely the B-theoretic framework within which this thesis is carried out, this option is unsatisfactory.

Tillich does not commit himself to either of these modes of salvific change. In fact, he does not claim that the entire personhood of the saved individual must undergo a total transformation. New Being has two primary dimensions: the psychological/existential dimension and the relational dimension. An individual living a life of New Being experiences the alleviation of the psychological consequences of Old Being, and this comes from an understanding of, and relationship with, that which concerns them ultimately, namely the ground of being. Despite the terms 'New Being' and 'Old Being' implying an ontological transformation, in fact New Being is a realisation of latent potential in the human subject made manifest by the Christ. Christ brings the possibility of New Being into the cosmos, but this ontological potential is already present in humanity through *imago Dei*. Thus, the transformation is psychological and relational, not strictly speaking ontological, as it makes manifest an aspect of the individual's ontology that was already present at earlier times even though it was only then present in potentiality.

To demonstrate that Tillich's soteriological transformation *can* be understood as a phenomenological and qualitative change, and not an ontological transformation, Tillich must be compared to a theologian who is committed to an ontological transformation. By comparing these two cases, it will become clear that Tillich's primary concern is the existentialist, experiential dimensions of salvation and not a complete ontological transformation. A theologian in whom we do see commitment to such an ontological transformation is Byzantine theologian Gregory Palamas. Palamas understands salvation as a process of deification (or, *theosis*) in which the individual is ontologically transformed into God. This formulation of the doctrine of salvation is found in the Orthodox tradition. (Meyendorff 1974) (Costache 2011) (Williams 1999). As Bishop Kallistos of Diokleia writes:

In the Orthodox understanding Christianity signifies not merely an adherence to certain dogmas, not merely an exterior imitation of Christ through moral effort, but direct union with the living God, the total transformation of the human person by divine grace and glory – what the Greek Fathers termed 'deification' or 'divinisation' (*theosis*, *theopoiesis*). In the words of St Basil the Great, man is

¹⁶⁰ He gives these examples: (Grudem 1994, 699) (Erickson 1998, 957) (McCabe 2010, 41) (Wright 2013, 1072).

nothing less than a creature that has received the order to become God.
(Mantzaris 1984, 7; c.f. Chia 2011, 125).

Salvation as deification holds that in and through the soteriological process, individuals undergo a total ontological transformation in which their entire being is transformed *into the divine*. As Palamas writes, '[We become] entirely God in body and soul through grace and through the divine radiance of the blessed glory.' (Palamas, 3.3.13). Whether this is through a process of mixing or radical replacement, it is clearly a total transformation. Therefore, it is notably different from Tillich's formulation of the doctrine of salvation, both in terms of the individual's salvation and the relationship between the saved individual and God.

For Tillich, the individual enters into New Being because of the soteriological work of Jesus as the Christ, in which Christ represents the potential *already latent* in humanity having been created *imago Dei*. Humanity participates in the divine essence through being created in the divine image, but this potential is always present (though unrealised) in every individual and so its realisation cannot properly be called an ontological transformation. Christ came and conquered the conditions of fallen existence, allowing this soteriological potential to become actual, and in so doing, individuals are now able to overcome the anxiety, guilt, and fear of meaninglessness that characterised their previous mode of existence. Nothing is mixed or replaced, and the entire being of the individual is not transformed. Rather, the individual is saved from something, namely fallenness, and the psychological consequences of Old Being.

This fits better within the Western idea of salvation by justification, as George Vandervelde explains: 'the language of justification by faith is unimaginable without reference to notions such as alienation, guilt, hostility, and sin. Its starting point is the fallen human condition as it stands before God's judgement and grace.' (Vandervelde 2001, 74; c.f. Chia 2011, 127). Tillich's focus on sin, alienation, and fallenness in his formulation of the doctrine of salvation reveals the difference between his concerns and those within the Orthodox tradition and their commitment to salvation as an ontological transformation. Though Tillich does emphasise the ontological dimensions of salvation, he is not committed to a total transformation of all aspects of personhood. Moreover, the role of sin, fallenness, and their psychological consequences discloses that there are other emphases in his doctrine of salvation than *theosis*.

Moreover, for Tillich the saved individual also experiences a new relationship with God which is characterised by reconciliation and not estrangement. In this process, the individual does not *become* God, nor is their entire being changed into divine being, and thus they do not undergo an ontological transformation (*theosis*) via mixing or radical replacement. Rather, the saved individual is reconciled to God. As Lucian Turecescu notes, 'the Orthodox do not account properly for the process of reconciliation; instead, they jump rather quickly to the second part of the process of salvation, deification.' (Turecescu 2001, 74; c.f. Chia 2011, 132). Through entering into a life of New Being, the estrangement between humanity and God that characterises fallenness is overcome. This relational change is different from the type of change envisaged by Palamas and others, though it does involve similar commitments to an ontological closeness between the saved individual and the divine.

Following this snapshot of the differences between Tillich and the Orthodox understanding of salvation as an ontological transformation, it is apparent that Tillich's doctrine of salvation does not describe a strict ontological transformation as it has been traditionally understood, though there are ontological dimensions to his claims. Therefore, I believe that my reinterpretation of salvation as phenomenological and relational change stays true to his original theology.

b) Salvation as Subjective = Salvation as Illusory

The objector may also claim that mind-dependent salvific becoming, i.e. a focus on the subjective dimensions of salvation, renders the whole process of salvation an illusion. If my reconstruction renders

Tillich's doctrine of salvation little more than a quirk of the mind, taking both God and objectivity out of the picture, then it has failed. Not only would such a reading fail to be Tillichian, it would be theologically irrelevant. Part of this concern may stem from my use of Illusionism and its principles in formulating mind-dependent salvific becoming. Fortunately, this is not the case in mind-dependent becoming as it is proposed by Grünbaum, and nor is it the case with mind-dependent salvific becoming. As Grünbaum writes:

The mind-dependence thesis does deny that physical events themselves happen in the tensed sense of coming into being apart from anyone's awareness of them. But this thesis clearly avows that physical events do happen independently of any mind in the tenseless sense of merely occurring at certain clock times in the context of objective relations of earlier and later. Thus, it is a travesty to equate the objective becominglessness of physical events, asserted by the thesis, with a claim of timelessness. (Grünbaum 1967, 385).

The events that constitute a person's salvation really occur, and that person is really saved. This is no illusion. What is illusory is the process of *becoming* as the salvific process is actualised in a person's life. As earlier stated, the objective B-series events in an individual's life do exist. Indeed, it is precisely *because* they do exist that ontological change is not possible. One does not give rise to another as it goes out of existence, each event timelessly exists on an individual's worldline. Therefore, the events that constitute a salvation-transformation are all objectively real. The illusion is that there has been a robust change from Old Being to New Being, or that any of these events are genuinely new (in the sense that they did not already exist in a *later than* relation with previous events). Instead, the individual has undergone a qualitative change by possessing different properties at different times. They experience this qualitative change through the mechanism of mind-dependent becoming – as their conscious mind is simultaneous with each event, they experience this event as coming into and then going out of existence. Therein lies the illusion. The new life defined by New Being is objectively real.

Fiddes offers some clarification on this point. He writes, 'an interpretation of atonement may be said to be 'subjective' when it describes salvation as a process in present human experience. It is 'objective' when it locates salvation in a past event, outside our experience and feelings.' (Fiddes 2007, 179). My model of salvation clearly involves both elements – I focus on the subjectivity of the soteriological *process*, but the salvation events themselves are objective insofar as they are grounded in the redemptive work of the Christ and in the objective events and choices in a person's life. Subjective salvation, namely the present human experience of the transition from Old Being to New Being, is grounded in the objective events contained in the four-dimensional reality of the block universe. As it contains both a subjective and an objective element, salvation is no illusion.

Conclusion

This chapter is the final piece of the puzzle I have been assembling throughout this work. In it, I presented my re-interpretation of Tillich's doctrine of salvation as a transformation from Old Being to New Being. I argued that the ontological underpinnings of the transformation from Old Being to New Being are not as important for the individual, or for Tillich's own purposes, as the existential, phenomenological dimensions. Tillich's basic claim was that fallenness is characterised by anxiety, alienation, estrangement, fear of meaninglessness, and the threat of non-being. Though there are ontological dimensions to these, they are first and foremost *experiences*. Tillich's existentialist concern is the primary driving force in his articulation of both fallenness and salvation. New Being is characterised by the alleviation of the psychological consequences of fallenness. Entering into a life of New Being involves conscious receptivity to the grasping power of the spirit, and a willingness to reorient your entire personhood to a life in Christ. Following this, one is reconciled to God. This triune doctrine of salvation is not lost by my re-reading, and, as such, I have remained faithful to the aims and claims of Tillich's original system.

Science and religion are not inherently conflicting beasts resigned to perpetual warfare, they are distinct thought-worlds whose interaction can throw up interesting and important points of contrast. Many scholars now recognise this as a unique opportunity to fine-tune theological doctrines and, for some, scientific theories as well. Tillich's own theological method encourages such a dialogue, and I have embarked upon this reinterpretation with encouraging words from Tillich. The metaphysical model of time best supported by Einstein's Relativity Theories, the B-theoretic block universe, presents a unique challenge to the doctrine of salvation traditionally formulated. Tillich's soteriology is susceptible to critique from B-theorists, but also contains within it the conceptual tools to mount a response. In this chapter I have provided such a response, bearing in mind that a theological system is but a station on the never-ending road towards truth.

The best way to accommodate salvation, namely the transformation from Old Being to New Being, within the block universe is to argue that it is a form of qualitative change. The soteriologically significant events are objectively real, but one only *experiences* a robust change between them. No such robust change is possible in the block universe. The transition into a life of New Being is experienced through mind-dependent becoming and brings with it an enriched relationship with the ground of being. Hence, it is also a relational change. Though this reading takes away the possibility of novelty – one's salvation is out there in the block universe, waiting for one to arrive – such novelty is not necessary for salvation to occur. A life of New Being, of reconciliation with God, and of realising one's true potential, brings a deep and profound peace. In the context of a human life, this may well be enough.

CONCLUSION

Time is phenomenologically inescapable, encircling all other experiences. It fundamentally shapes our lives and permeates even the most basic questions about the relationship between God and creation. That it is under-represented in science and religion discourse is regrettable, and in the preceding pages I have sought to address this oversight. Something so ubiquitous as time deserves attention, even if it is notoriously nebulous and difficult to pin down. The issue on which I chose to focus was the relationship between time and salvation, as these are deeply interconnected. I set out to identify the specific problems posed for salvation by Einstein's Relativity Theories and the B-theory of time which they support and reconstruct Paul Tillich's doctrine of salvation in light of what was learned.

This was motivated in part out of a desire to identify and address general problems for any form of salvation that requires a transformation in time. Though Tillich was my theological dialogue partner, the problems I identify are relevant to salvation in a much broader sense. I was also motivated to embark upon this project by Tillich's own words. Tillich encourages his readers to use the theological system presented in *ST* as a point of departure; a starting point from which one can advance along the unending road toward deeper understanding. (Tillich 1964, vii). This project sought to do just that.

The overarching structure of this work reflects Tillich's method of correlation – philosophical questions are identified and are then correlated with theological answers. I began the thesis by setting the metaphysical scene, presenting McTaggart's famous argument for the unreality of time and the influential 'A-series' and 'B-series' introduced therein. I agreed with McTaggart that the A-series contains deep structural problems that render it unconvincing. I rejected Craig's claim that belief in the passage of time is properly basic, arguing that McTaggart's argument provides a logical defeater.

I then turned to the best empirical evidence for the B-series, and the B-theory of time which has been built upon it, namely Einstein's Special Theory of Relativity (SR). I traced the history of the physics of time from Newton to Einstein, drawing attention to the particular features of SR which undermine core claims of the A-theory. The relativity of simultaneity and time dilation, I argued, dissolve the notion of a global now that is so integral to the A-theory's success. Two rival interpretations of SR were considered, namely the B-theoretic spacetime interpretation of Einstein and Minkowski and the A-theoretic neo-Lorentzian interpretation of William Lane Craig. Craig's neo-Lorentzianism was found wanting on both scientific and theological grounds. This empirical evidence is, I argued, a rebutting defeater against belief in the A-theory.

Before concluding Part I's argument for the empirical preferability of the B-theory, I turned to General Relativity (GR). Though GR tends to play less of a leading role in temporal metaphysics, GR is the more fundamental theory. Therefore, if GR is compatible with the A-theory then the B-theorist faces a problem. Richard Swinburne, among others in the literature, argues that FLRW solutions of GR save the A-theory by introducing extra structure that is sufficient to ground an objective present moment. This structure, cosmic time, is held as a standard of absolute of time against which local times can be measured. Swinburne claims that this reintroduces the possibility of absolute simultaneity and a global now, thus vindicating the A-theory.

Swinburne's argument, and the caesium clock thought-experiment intended to demonstrate its operational coherence, was shown to induce a dilemma neither horn of which is acceptable. The first horn commits one to the claim that cosmic time is sharply distinct from local time and is thus phenomenologically inaccessible. The second horn holds that cosmic time is phenomenologically accessible, but as such operates over the same domain as local time.

If one grasps the first horn and argues that cosmic time is a *parameter* which measures the universe as a whole, rather than being a *dimension* within the spacetime manifold, then it is rendered phenomenologically inaccessible. Yet for precisely this reason it is unable to ground temporal experience. The primary reason for seeking support for the A-theory in relativity is the A-theoretic nature of our temporal experience, therefore a phenomenologically inaccessible cosmic time does not fulfil the function it was introduced to explain. Hence it is explanatorily redundant. I then argued that if Swinburne grasps the second horn to avoid the problem of inaccessibility, he is hoist by his own petard.

On the second horn, cosmic time is relegated to a second local time, an unparsimonious multiplication of the temporal dimension we already see described in SR. Any violation of the Principle of Simplicity by Swinburne is incompatible with his commitment to it throughout his life's work, and thus we can assume it would be unacceptable to him. Moreover, it already been empirically demonstrated that local time has frame-relative properties, and as such is in tension with the A-theory. As such, I concluded that GR gives no further reason to be an A-theorist than metaphysics or SR provide, and, as both these areas have given good reasons to reject the A-theory, I conclude that the A-theory is unsatisfactory. From the end of Part I onwards, I accept the B-theory and the block universe it describes as the best metaphysical model of time on offer.

In Part II I turned to Paul Tillich's *Systematic Theology*. I chose Tillich as the subject of this thesis because a) consideration of his doctrine of salvation as an ontological transformation alongside the nature of time generates a rich wealth of philosophical discussion which is yet to receive scholarly attention, b) his psychological formulation of fallenness and salvation opens up scope for mind-dependent salvation toward which this thesis is directed, c) his method of correlation not only permits but encourages such a reinterpretation of his work.

I began by setting out his method of correlation, as this methodology is fundamental to both Tillich's work and this thesis. I then explicated the core themes of *ST*, going through the work volume by volume. This was necessary as Tillich emphasises that each aspect of a theological system is related fundamentally to the whole. This point is frequently reiterated through the term 'theological circle' – commitment to the Christian message as a matter of faith enters one into a (non-vicious) circle in which the beliefs are mutually self-consistent. Therefore, examining one feature of the system illuminates all the others. Similarly, to properly understand one aspect, in this case the doctrine of salvation, one must understand the larger whole of which it is part.

Following a general overview of *ST*, we were able to delve deeper into Tillich's doctrine of salvation presented in *Existence and the Christ*. I argued that though Tillich defines salvation as the transformation from Old Being to New Being, and thus his soteriology seems committed to an ontological transformation, the psychological dimensions of this process are the more significant. His existentialist framing of fallenness leads to an existential understanding of salvation – existence, and the failure to actualise potential, fear of meaninglessness, and the threat of non-being, causes deep anxiety. This is Old Being. Christ represents the soteriological potential latent in humanity by uniting that which finite existence draws asunder. He is God and human, he is the fullest realisation of human potential, he took on the conditions of existence and overcame them. In so doing, he represented and embodied New Being.

Tillich repeatedly emphasises the psychological healing power of Christ the redeemer whose soteriological significance sits in the context of putatively universal human experiences of estrangement and anxiety. Christ brings atonement by embodying the unity of essential humanity with actual human existence. I argued that the significance of this for personal salvation is in the psychological consequences of New Being, namely an alleviation of anxiety, alienation, guilt, fear of meaninglessness, and the threat of non-being. A saved individual is reconciled to God, and this is detectable through, and

experienced as, the aforementioned psychological dimensions of New Being. At this point the individual enters into a new relation with God, and the existentialist concerns that dominated their previous mode of existence melt away.

The final chapter in Part II was an exploration of Tillich's treatment of time and history in *ST*. The former receives far less attention than the latter, which meant some speculative reconstruction was necessary. I explored Tillich's understanding of the historical process, particularly the subjective interpretation of historical events and the qualitatively new meaning this generates. This generation of the qualitatively new re-emerges in Part III's argument for mind-dependent salvation, and so it was necessary to lay it out in detail.

I then showed that Tillich's theology was compatible with a B-theory, though Tillich does not commit himself unequivocally to any specific temporal metaphysic. Indeed, his presentation of time in *ST* is metaphysically muddled. At the very least, I showed that his theological system is compatible with a B-theory. Although Tillich does not specifically endorse a B-theory this is no great blow, as the method of correlation encourages readers to correlate new insights from philosophy (including insights from science) with theological doctrine. All that was necessary was to show that my reinterpretation did not directly contradict any core theological claim made in *ST*. As was detailed in the introduction, Tillich maintains that preliminary truths should only be used as a vehicle through which one can come to know ultimate truth and should never claim ultimacy – this prohibits the use of science to disprove theology. Science, and its philosophical interpretation, can only clarify and fortify existing doctrine. I have remained cognizant of this throughout the thesis and have made every effort to bring theology and science together constructively rather than destructively.

Constructive communication between science and theology on the matters of time and salvation is the primary goal of Part III. Part III contains my original contribution to this neglected debate – the argument for mind-dependent salvific becoming as a process of qualitative change. Before presenting this argument, it was necessary to present B-theoretic explanations of temporal passage. An obvious explanatory gap in the B-theory is its *prima facie* inability to account for our temporal experience. We experience time as though it is described by an A-theory – there seems to be a privileged now, time seems to pass, and there is a clear psychological distinction between the past (which we remember) and the future (which we anticipate).

In Chapter 8 I presented and assessed two rival explanations of passage phenomenology, Veridicalism defined and defended by Natalja Deng, and the Illusionism of Adolf Grünbaum. I argued that Illusionism was the better explanation as it took our experience of passage seriously, whereas Veridicalism either failed to do this or collapsed back into the Illusionism it sought to replace. B-theoretic explanations of temporal passage are undercutting defeaters for belief in the A-theory – they undermine one's reasons to believe in it (i.e. our pervasive and persuasive temporal experience). This concluded my case for the coherence and explanatory power of the B-theory. A key concept for the final analysis, namely mind-dependent becoming, was introduced as the means by which dynamic experience is generated from static temporal ontology. With all the important elements in hand, we were ready to proceed to the climactic argument of the thesis.

My final argument was as follows: given a tenseless theory of time, Tillich's doctrine of salvation as the transformation from Old Being to New Being should be read as denoting mind-dependent salvific becoming, which is a process of qualitative change. This hangs on a reading of Tillich's soteriology which emphasises the psychological, existential dimensions of fallenness and salvation over and above the ontological dimensions. My argument had two stages. The first, employing an argument from Carl Hoefer, showed that free choice can be compatible with a B-theoretic ontology. The second drew on the work of Adolf Grünbaum to argue that the precise mechanism of salvific change is best conceived

as mind-dependent becoming. I then argued that in order for Tillich's work to be coherent in light of relativity and the block universe, the type of becoming salvation requires must be a qualitative, not a robust, change.

Through Carl Hoefer's argument for 'freedom from the inside out,' I explain how individuals are *free* to respond to the grasping power of the Spirit and attain salvation. Hoefer argues that free action is generated by individuals and not determined by prior regions of the block universe. The standard block universe view appears hostile to the kind of counterfactual choice required for libertarian freedom. Hoefer, however, uses John Dupré's concept of *downward causation* to explain how free action can be causally efficacious in the block universe. Downward causation holds that higher-level processing, namely our choices and intentions, are the primary explainers for the effects produced on the 'lower' ontological levels, namely our actions. Thus, human agents are free to make soteriologically meaningful choices within the block universe.

After showing that freedom can exist in the block universe, I explicated my argument for mind-dependent salvific becoming. Using Grünbaum's concept of mind-dependent becoming, I argued that a salvation-transformation should be understood as a subjective, qualitative, phenomenological change. This claim sits somewhat comfortably in the historical tradition of Christian theology, insofar as salvific change comes from *within* and is of the *mind/soul*, but I offer an alternative route to arriving at this long-held conclusion.

Though this change is qualitative and not robust, that does not mean that salvation is unreal or unconnected to God. The block universe prohibits robust, ontological, change, as persons exist as four-dimensional worms extended in Minkowski spacetime. Therefore, an individual possesses all their properties at once, though these are spread out at different points on their world line. When human consciousness is contemporaneous with certain points in which they are fallen, their psychological existence will be coloured by the existentialist consequences of fallenness Tillich identifies.

Importantly, this does not mean that salvation itself is illusory, though the argument uses concepts from Illusionism. The individual is objectively saved, and this occurs through receptivity to the grasping power of the spirit. On this important matter Tillich's claims have been preserved. Yet that this change is *objective* or *ontological* is illusory. This is an inevitable consequence of life in the block universe in which all moments of your life are laid out eternally in four-dimensional Minkowski spacetime. No moment is ontologically privileged, though your consciousness picks out phenomenologically immediate points as it moves along your worldline. Through experiencing your life-events successively, you experience qualitative change. I applied this to salvation. Though this may be a weaker form of soteriological change than some may like, it is the best possible model given the B-theory of time. The B-theory poses a genuine threat to the possibility of personal salvation under the conditions of existence insofar as it is hostile to robust change. If the B-theory is true, then I argue this is the most compelling explanation for a salvation-transformation available. Moreover, it is a compelling reinterpretation of Paul Tillich's doctrine of salvation in light of relativity and a B-theory of time.

Areas for Future Research

A doctoral thesis cannot hope to cover all the important issues that arise in relation to the chosen subject matter. As my interdisciplinary project involves a multiplicity of topics and each of them is incredibly broad, much has had to be left aside for future work. An entire thesis could be devoted to each of the principal areas I address here, namely: the metaphysics of time, the philosophy of special and general relativity, systematic theology, soteriology, and the phenomenology of temporal experience. Inevitably, questions will arise that I cannot answer here. In this final section, I identify some areas for future research.

a) Quantum Mechanics and Quantum Gravity

For the purposes of this thesis, I decided to stay within the boundaries of relativity. Einstein's Relativity Theories have received a century's worth of empirical and theoretical scrutiny, and there is little disagreement about their most fundamental claims. There are merits and pitfalls in this approach, but when working within the philosophy of any science one must select certain theories over others with which to work. The strengths are that the metaphysical argumentation stands on empirically solid foundations, and the theories are highly successful in their domains of application. The weakness of this approach, however, is clear. Both theories of relativity are at best approximately true, as they are yet to be reconciled with Quantum Mechanics (QM).

QM is a formal theory with several interpretations. Until disputes between rival interpretations, each of which paints a slightly different picture of the nature of time, are resolved, time remains an open question. Answers may only be provided when a quantum theory of gravity is developed, in which a relativistic understanding of spacetime is incorporated into QM.¹⁶¹ When describing the large-scale interactions of massive bodies in curved spacetime, GR models time as continuous. QM describes the counter-intuitive behaviour of sub-atomic systems; it introduces discreteness into a multiplicity of properties, e.g. energy and length. The need to reconcile what these disparate understandings mean for time is known as 'the problem of time.' (Anderson 2017) (Muga *et al.* 2008). In recent years, several possibilities have been advanced.

One possibility, advanced by Carlo Rovelli, holds that a fruitful search for a quantum theory of gravity requires physicists to forget time. Rovelli argues that to give a fundamental description of nature 'we must forget the notion of time altogether, and build a quantum theory of gravity where this notion does not appear at all.' (Rovelli 2009, 1). Time may then be reconstructed in particular situations, despite the fact that it must disappear when moving to a deeper level of description. Rovelli urges his colleagues to take General Relativity's lack of a preferred independent time notion seriously, viewing mechanics as describing the relative evolution of variables (and not, as in the Newtonian picture, the evolution of a system in absolute time). Time, then, is understood as an emergent property of macroscopic systems that is not present or effectual at the level of quantum physics.¹⁶²

An opposing view, that time is irreducible and cannot be left out of fundamental descriptions of nature, is advocated by Lee Smolin. Smolin argues that the problem of time can be resolved by reformulating the basic mathematical framework used in classical and quantum physics, as opposed to eliminating time as a fundamental concept. (Smolin 2000, 3). In effect, by incorporating observers into complex quantum descriptions of the universe, time is shown to be fundamental. He claims that arguments that deny this fail to recognize the observations and experiences of real observers within the universe.

Smolin describes quantum cosmology in terms of histories. Whilst a conventional quantum system requires only one observer to take a measurement of the whole system, the cosmos is far larger, more complex, and has a greater number of variables. Because a quantum description of the cosmos requires multiple simultaneous observations to be made by multiple observers, it need not be conceived of as static, as conventional quantum systems tends to be. Instead, the causal structure of the history of the universe defines a context, and observers experience the reality of time within this context. (Smolin 2000, 24). By reconceptualizing quantum physics to accommodate real observers, Smolin argues that

¹⁶¹ For an interesting alternative take in which the author suggests ways the search for quantum gravity can stimulate metaphysical discussion *now*, see: (Le Bihan 2020).

¹⁶² John Barbour goes further than Rovelli's claim that time is not fundamental to argue that time is not real. (Barbour 1994) (Barbour 1999) (Barbour 2009). For further arguments that time is non-fundamental, see: (Huggett and Wuthrich 2013, 276-285).

time's fundamentality is recovered.¹⁶³ On Smolin's view, time is the most fundamental feature of reality – everything else, including the laws of physics themselves, emerge from and evolve in time.

As is clear, the so-called 'problem of time' is very much an open question.¹⁶⁴ QM operates over the sub-atomic realm and paints an entirely different metaphysical picture than the relativistic one. Until a so-called 'theory of everything' is formulated, many metaphysical questions relating to the nature of time must remain open. The search for a quantum theory of gravity is a highly speculative science at the present stage, with multifarious alternatives (that are often diametrically opposed on key issues) abounding.

Baptiste Le Bihan disagrees, arguing recently that the search for a quantum theory of gravity can yield important metaphysics *now*. Whilst he acknowledges that it is difficult to 'defend a particular ontological interpretation,' he argues 'that looking at research programs in quantum gravity allows us to take a step back in order to evaluate which part of the quantum and relativistic revolutions are—beyond reasonable doubt—to be preserved in the future.' (Le Bihan 2020, 2). Though this is undoubtedly interesting and valuable work, I believe it is too speculative an area upon which to build a science and religion thesis at this time. I have decided in this thesis to remain on the sturdier ground provided by the relativity theories. There is an interesting debate regarding the metaphysical implications of QM and the search for quantum gravity to which the interested reader could turn, but it will not be found in this thesis.

Quantum Gravity may well answer all of the open questions in the philosophical and physical enquiries into the nature of time. Alternatively, it may open a whole new set of debates. Until this unified theory is developed, it will be impossible to answer temporal questions with certainty. For this reason, QM and Quantum Gravity have been left to one side for the purposes of this project. I have written on these issues elsewhere and hope to develop my thoughts on this further in future work. (Qureshi-Hurst and Pearson 2020) (Qureshi-Hurst 2020).

b) Past Salvation, Future Salvation, and Cosmic Salvation

As Alister McGrath notes, the Pauline literature 'sees salvation as having past (e.g. Romans 8:24), present (e.g. 1 Corinthians 1:18), and future (e.g. Romans 13:11) dimensions.' (McGrath 2014, 94). This scriptural sentiment echoes down Christian tradition. I have been primarily concerned with present salvation in this thesis, though I have considered elements of past salvation insofar as I discuss the Christ event bringing the possibility of salvation into the cosmos at a fixed point in history. There is more work to be done to assess the implications of the block universe for the notion of past salvation. Comfortingly for the Christian, the block universe dictates that Christ physically exists in a distant spatiotemporal region. He has not left the finite realm of human existence completely, as he would if presentism were true. This gives metaphysical weight to his claim that 'I am with you always, even to the end of the age' (Matthew 28:20). Christ's redemptive presence is secured. However, this also means that every version of each person is also 'out there', each being as real as the other. In what sense might one say the saved version of you should take precedence? That the saved version of you is the final version of you depends on the claim that *later than* events have priority over *earlier than* events. This fact cannot be substantiated by the metaphysics of the block universe alone – in order to establish that the (relational) past version of you is not the final version of you, a relation of precedence of ordered events must be introduced. Future scholars may wish to delve deeper into this issue.

Moreover, the type of salvation with which this thesis is concerned is present, personal salvation experienced in an individual's life. The future question of life after death has been left firmly to one

¹⁶³ He makes similar arguments regarding the fundamental reality of time in (Smolin and Unger 2015).

¹⁶⁴ For detailed discussion of this and related issues, see (Muga *et al.* 2008) (Isham 1993). For a comprehensive survey of Quantum Cosmology, see (Halliwell 1990).

side. This is partly due to Tillich's limited treatment of the issue, and partly due to its tangential relevance to the issue of time. Christian theology generally holds that heaven and hell exist outside the spatiotemporal realm, and so a thesis on the nature of time and salvation cannot consider these. Nevertheless, there is scope for important future work on the issue. Scripture speaks of a bodily resurrection. Though Tillich does not place the soteriological emphasis on physical, bodily resurrection, this point cannot go unacknowledged. More work needs to be done to establish a model for bodily salvation on a B-theory. There not space for this here. It is worth noting, however, that in a block universe the body of a deceased person does not vanish into a non-existent past as it would with presentism, and therefore the concept of bodily resurrection is coherent within the spacetime ontology of the B-theory, as the body is in principle recoverable.

As my focus has been on salvation for the individual, experienced in an individual life, eschatological questions regarding future salvation and cosmic salvation remain open. The question remains: what would my reinterpretation mean for the salvation of the *world*? By 'world' I mean both physical cosmos and nonhuman animals. Tillich puts the concern this way:

The problem [of the relation between man and nature] is most urgent when Christian theology deals with the fall and salvation of the world. Does "world" refer to the human race alone? And, if so, can the human race be separated from other beings? Where is the boundary line in the general biological development; where is the boundary line in the development in the individual man? Is it possible to separate the nature which belongs to him through his body from universal nature? Does the unconscious realm of man's personality belong to nature or to man? Does the collective unconscious admit of isolation of the individual from the other individuals and from the whole of living substance? (Tillich 1951, 290).

When considering such questions, one may well bring in insights from evolutionary biology. If there is no clear boundary line that denotes a difference in *kind* between humanity and non-human animals with respect to certain soteriologically salient properties, then theology may have to face the question of non-human salvation. Tillich's preliminary answer is this: 'these questions show that the element of participation in the polarity of individualisation and participation must be considered much more seriously with respect to the mutual participation of nature and man. Here theology should learn from modern naturalism, which at this point can serve as an introduction to a half-forgotten theological truth. What happens in the microcosm happens by mutual participation in the macro-cosmos, for being-itself is one.' (Tillich 1951, 290). Here we see Tillich's enthusiasm for a more integrated world-view which included a broader swathe of the natural world than traditional Christian theology has previously included. The relationship between cosmic salvation, the natural world, and the nature of time is outside the scope of these pages. It is certainly a potential area for future work, both in Tillich scholarship and theology more widely.

Final Remarks

This thesis has brought together soteriology and the physics and metaphysics of time in an original, though not unprecedented or unjustified, way. The result has been, I hope, a thorough and empirically sound reconstruction of Tillich's doctrine of salvation which introduces a radical re-reading of doctrine whilst remaining faithful to the core claims set out in *ST*. Tillich encourages dialogue between theology and culture, including science and philosophy, and here I have brought his theological system into conversation with literature from metaphysics, the physics and philosophy of relativity, and analyses of temporal passage phenomenology.

I argued at the outset that understanding the nature of time is of utmost importance to a comprehensive account of personal salvation, as both require the reality of change. I have both demonstrated this throughout the preceding pages and provided a truly novel solution to the problems I identified. Debates

on the nature of time are far from conclusive, and scientific advancements may yet undermine relativity's depiction of time. For now, however, the tenseless B-theory of time stands on firm ground, and a reading of Tillich's soteriology through this lens offers a deeper understanding of his central claims.

Throughout the preceding pages, I have shown the value of true interdisciplinarity. I close with the hope that the budding field of 'science and religion' continues to blossom, and that engagement with the nature of time will draw out some of its brightest blooms.

BIBLIOGRAPHY

- Adams, J. L. (1952). Tillich's Interpretation of History. In Kegley, C.W. & Bretall, R.W. (Eds.), *The Theology of Paul Tillich* (pp. 294-309). New York: Macmillan.
- Andersen, H. (2015). Scientific Method. *The Stanford Encyclopaedia of Philosophy*. In Zalta, E. N. (Ed.)
- Anderson, E. (2012). The Problem of Time in Quantum Gravity. *Annalen der Physik*, 524(12), 757-786.
- Anderson, E. (2017). *The Problem of Time: Quantum Mechanics Versus General Relativity*. Cham: Springer International Publishing.
- Angel, R. B. (1980). *Relativity: The Theory and its Philosophy*. Oxford; New York; Toronto; Sydney; Paris; Frankfurt: Pergamon Press.
- Arthur, D. E. (2001). Paul Tillich's Perspectives on Ways of Relating Science and Religion. *Zygon*, 36(2), 261-267.
- Augustine. (1993). *City of God*. New York: Modern Library. Translated by Dods, M.
- Austin, W. H. (1968). Models, Mystery and Paradox in Ian Ramsey. *Journal for the Scientific Study of Religion*, 7, 41-55.
- Ayer, A. J. (1936). *Language, Truth, and Logic*. London: Gollancz.
- Baker, A. (2003). Quantitative Parsimony and Explanatory Power. *The British Journal for the Philosophy of Science*, 54, 245-259.
- Baker, A. (2007). Occam's Razor in Science: a case study from biogeography. *Biology and Philosophy*, 22, 193-215.
- Balashov, Y. (2011). Persistence. In Callender, C. (Ed.), *The Oxford Handbook of Philosophy of Time*. Oxford: Oxford University Press. 13-41.
- Balashov, Y. & Janssen, M. (2003). Review: Presentism and Relativity. *The British Society for the Philosophy of Science*, 54, 327-346.
- Balcells, M. (2019). The Dynamic Block Universe and the Illusion of Passage. In Arstila, V. & Bardon, A. & Power, S.E. & Vatakis, A. (Eds.), *The Illusions of Time: Philosophical and Psychological Essays on Timing and Time Perception* (pp. 35-51). Basingstoke: Palgrave Macmillan.
- Ballie, D. M. (1948). *God Was in Christ*. New York: Charles Scribner's Sons.
- Barbour, I. G. (1974). *Myths, Models and Paradigms: A Comparative Study in Science and Religion*. New York: Harper & Row.
- Barbour, I. G. (2002). On Typologies for Relating Science and Religion. *Zygon*, 37(2), 345-360.
- Barbour, J. (1982). Relational Concepts of Space and Time. *British Journal for the Philosophy of Science*, 33, 251-274.
- Barbour, J. (1994). The Timelessness of Quantum Gravity: i. The Evidence from the Classical Theory. *Classical and Quantum Gravity*, 11 (12), 2853-2873.
- Barbour, J. (1999). *The End of Time*. New York, Weidenfeld, Nicolson, London: Oxford University Press.
- Barbour, J. (2009). The Nature of Time. <https://arxiv.org/pdf/0903.3489.pdf>.
- Bardon, A. (2010). Time-Awareness and Projection in Mellor and Kant. *Kant-Studien*, 101, 59-74.

- Bardon, A. (2013). *A Brief History of the Philosophy of Time*. New York: Oxford University Press.
- Baron, S., & Braddon-Mitchell, D. (forthcoming). Presentism, Continuous Time-Travel and the Phenomenology of Passage. *Erkenntnis*.
- Baron, S. & Braddon-Mitchell, D. (2015). Temporal Experience, Temporal Passage and the Cognitive Sciences. *Philosophy Compass*, 10, 560-571.
- Barrow, J. D., & Tipler, F. J. (2009). *The Anthropic Cosmological Principle*. Oxford: Oxford University Press.
- Barth, K. (1968 [1933]). *The Epistle to the Romans*. Oxford: Oxford University Press.
- Bauckham, R. (2007). Eschatology. In Webster, J. & Tanner, K. & Torrance, I.R. (Eds.), *The Oxford Handbook of Systematic Theology* (pp. 306-321). Oxford: Oxford University Press.
- Bayer, O. (2009). Tillich as a Systematic Theologian. In Manning, R. R. (Ed.), *The Cambridge Companion to Paul Tillich*. Cambridge: Cambridge University Press. 44-62.
- Beer, M. (2010). Tense and Truth Conditions. *Philosophia*, 38, 265-269.
- Belot, G. (2005). Dust, Time and Symmetry. *British Journal for the Philosophy of Science*, 56, 255-291.
- Bigelow, J. (1996). Presentism and Properties. *Philosophical Perspectives*, 10, 35-52.
- Boethius. (524 [2001]). *The Consolation of Philosophy*. Indianapolis, IN: Hackett Pub. Co.
- Bohm, D. (2006). *The Special Theory of Relativity*. London: Routledge Classics.
- Bostrom, N. (1998). What is Transhumanism? www.nickbostrom.com.
- Bostrom, N. (2005). A History of Transhumanist Thought. *Journal of Evolution and Technology*, 14.
- Bourne, C. (2004). Becoming Inflated. *British Journal for the Philosophy of Science*, 55, 107-119.
- Bourne, C. (2006). *A Future for Presentism*. Oxford: Oxford University Press.
- Braddon-Mitchell, D. (2004). How do we Know it is Now? *Analysis*, 64, 199-203.
- Brennan, J. (2007). Free Will in the Block Universe. *Philosophia*, 35, 207-217.
- Bridgeman, P. W. (1927). *The Logic of Modern Physics*. New York: MacMillan.
- Broad, C. D. (1923). *Scientific Thought*. London: Kegan Paul.
- Broad, C. D. (1938). *An Examination of McTaggart's Philosophy*. Cambridge: Cambridge University Press.
- Brook, A. (2013). Kant and Time Order Idealism. In Bardon, A. & Dyke, H. (Eds.), *A Companion to the Philosophy of Time* (pp. 120-134). Somerset: John Wiley & Sons, Inc.
- Brown, H. (2005). *Physical Relativity: Spacetime Structure from a Dynamical Perspective*. Oxford: Clarendon Press.
- Brown, H. & Sypel, R. (1995). On the Meaning of the Relativity Principle and Other Symmetries. *International Studies in the Philosophy of Science*, 9(3), 235-253.
- Burns, R. M. (1999). Richard Swinburne on Simplicity in Natural Science. *Heythrop Journal*, 40, 184-206.
- Butterfield, J. (1984). Seeing the Present. *Mind*, 93, 161-176.

- Butterfield, J. (1985). Indexicals and Tense. In Hacking, I. (Ed.), *Exercises in Analysis*. Cambridge: Cambridge University Press.
- Butterfield, J. (1998). Determinism and Indeterminism. In Craig, E. (Ed.), *Routledge Encyclopaedia of Philosophy*. London: Routledge.
- Butterfield, J. (2012). On Time Chez Dummett. *European Journal of Analytic Philosophy*, 8, 77-102.
- Butterfield, J. (2013). Time in Quantum Physics. In Bardon, A. & Dyke, H. (Eds.), *A Companion to the Philosophy of Time* (pp. 220-241). Somerset: John Wiley & Sons, Inc.
- Byrne, J. M. (2009). Time and Eternity: Antje Jackelén's Theological Study. *Zygon*, 44(4), 951-964.
- Cajori, F.E. (1960). *Sir Isaac Newton's Mathematical Principles of Natural Philosophy and His Systems of the World*. Berkeley: University of California Press.
- Callender, C. (2010). Is Time an Illusion? *Scientific American*, 302, 58-65.
- Callender, C. (1997). Review of M. Dorato 'Time and Reality'. *British Journal for the Philosophy of Science*, 48, 117-120.
- Callender, C. (2013). *The Oxford Handbook of Philosophy of Time*. Oxford: Oxford University Press.
- Callender, C. & McCoy, C.D. (2017). Time in Cosmology. In Knox, E. & Wilson, A. (Ed.), *Routledge Companion to the Philosophy of Physics*.
- Cameron, R. P. (2015). *The Moving Spotlight: An Essay on Time and Ontology*. Oxford: Oxford University Press.
- Carlson, E. (1966). *The Gene: A Critical History*. Philadelphia: Saunders.
- Carnap, R. (1928 [1967]). *Der logische Aufbau der Welt*, translated by R.A. George as *The Logical Structure of the World*. Berkeley: University of California Press.
- Carroll, J. W. (2020). Laws of Nature. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Carter, B. (1974). Large Number Coincidences and The Anthropic Principle in Cosmology. In *Confrontation of Cosmological Theory with Observational Data* (pp. 291-298). Dordrecht: Reidel.
- Cartwright, N. (1983). *How the Laws of Physics Lie*. Oxford: Oxford University Press.
- Caruana, L. (2005). God's Eternity and Einstein's Special Theory of Relativity. *Revista Portuguesa de Filosofia*, 61, 89-112.
- Chakravartty, A. (2017). Scientific Realism. *The Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Chan, K. (2015). Paul Tillich's Understanding of Theology: A Pneumatological Christological Perspective. *Sino-Christian Studies*, 20, 33-86.
- Chater, N. (1999). The Search for Simplicity: a fundamental cognitive principle. *The Quarterly Journal of Experimental Psychology*, 52A, 273-302.
- Chia, R. (2011). Salvation as Justification and Deification. *Scottish Journal of Theology*, 64, 125-139.
- Chisholm, R. & Zimmerman, D. (1997). Theology and Tense. *Nous*, 31, 262-265.
- Christensen, F. (1976). The Source of the River of Time. *Ratio*, 18.

- Clayton, J. P. (1980). *The Concept of Correlation: Paul Tillich and the possibility of a mediating theology*. Berlin, New York: W. de Gruyter.
- Clifford, R.J. & Anatolios, K. (2005). Christian Salvation: Biblical and Theological Perspectives. *Theological Studies*, 66(4), 739-769.
- Colijn, B.B. (2010). *Images of Salvation in the New Testament*. Downers Grove, IL: IVP Academic.
- Correia, F. & Rosenkranz, S. (2003). Living on the brink, or welcome back, Growing Block! In Zimmerman, D. (Ed.), *Oxford Studies in Metaphysics* (Vol. 8, pp. 333–350). Oxford: Oxford University Press.
- Correia, F. & Rosenkranz, S. (2018). *Nothing to Come: A Defence of the Growing Block Theory of Time*. Cham, Switzerland: Springer.
- Costache, D. (2011). Experiencing the Divine Life: Levels of Participation in St Gregory Palamas' On the Divine and Deifying Participation. *Phronema*, 26, 9-25.
- Craig, W. L. (1994). Prof. Grünbaum on Creation. *Erkenntnis*, 40, 325-341.
- Craig, W. L. (1996). Tense and the New B-theory of Language. *Philosophy*, 71, 5-26.
- Craig, W. L. (1998). McTaggart's Paradox and the Problem of Temporary Intrinsics. *Analysis*, 58, 122-127.
- Craig, W. L. (1999). The Eternal Present and Stump-Kretzmann Eternity. *American Catholic Philosophical Quarterly*, 73, 521.
- Craig, W. L. (2000). *The Tensed Theory of Time: A Critical Examination*. Dordrecht: Kluwer Academic Publishers.
- Craig, W. L. (2000). *The Tenseless Theory of Time: A Critical Examination*. Dordrecht: Kluwer Academic Publishers.
- Craig, W. L. (2001a). *God, Time and Eternity*. Dordrecht; London: Kluwer Academic Publishers.
- Craig, W. L. (2001b). *Time and Eternity: Exploring God's Relationship to Time*. Wheaton, IL: Crossway Books.
- Craig, W. L. (2001c). *Time and the Metaphysics of Relativity* Dordrecht Kluwer Academic Publishers.
- Craig, W. L. (2002). The Elimination of Absolute Time by the Special Theory of Relativity. In Gaggale, G.E. and Woodruff, D.M. (Eds.), *God and Time* (pp. 129-152). Oxford: Oxford University Press.
- Craig, W. L., & Callender, C. (2002). *Time, Reality and Experience*. Cambridge: Cambridge University Press.
- Craig, W. L. (2007). Time, Eternity, and Eschatology. In Walls, J. L. (Ed.), *The Oxford Handbook to Eschatology*. Oxford: Oxford University Press.
- Craig, W. L. (2008). The Metaphysics of Special Relativity: three views. In Craig, W.L. & Smith, Q. (Eds.), *Einstein, Relativity, and Absolute Simultaneity*. London; New York: Routledge.
- Craig, W. L. & Smith, Q. (2008). *Einstein, Relativity and Absolute Simultaneity*. London; New York: Routledge.
- Creath, R. (2017). Logical Positivism. *The Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Crisp, T. (2003). Presentism. In Loux, M.J. and Zimmerman, D. (Eds.), *The Oxford Handbook of Metaphysics*. Oxford: Oxford University Press.
- Crisp, T. (2007). Presentism and The Grounding Objection. *Nous*, 41, 90-109.

- Crowell, S. (2015). Existentialism. *The Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Crowther, T. & Soteriou, M. (2017). Time in the Dream. In Phillips, I. (Ed.), *The Routledge Handbook of Philosophy of Temporal Experience* (pp. 184-200). Abingdon; New York: Routledge.
- Dainton, B. (2000). *Stream of Consciousness: unity and continuity in conscious experience*. London; New York: Routledge.
- Dainton, B. (2010). Temporal Consciousness. *The Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Dainton, B. (2011). Time, Passage, and Immediate Experience. In Callender, C. (Ed.), *The Oxford Handbook of Philosophy of Time* (pp. 382-419). Oxford: Oxford University Press.
- Dasgupta, S. (2015). Substantivalism vs Relationalism About Space in Classical Physics. *Philosophy Compass*, 10, 601-624.
- Dawkins, R. (2005). The Universe is Queerer than We Can Suppose. *TED.com, Ted Global*, Oxford, UK.
- Dawkins, R. (2007). *The God Delusion*. London: Transworld Publishers.
- Dawson, P. (2020). Hard Presentism. *Synthese*.
- Debs, T.A. & Redhead, M.G. (1996). The Twin “Paradox” and the Conventionality of Simultaneity. *American Journal of Physics*, 64, 384-392.
- Delmas, L. (1984). Eternity Again: A Reply to Stump and Kretzmann. *International Journal of Philosophy and Religion*, 15, 73-79.
- Deng, N. (2013a). On Explaining Why Time Seems to Pass. *The Southern Journal of Philosophy*, 51, 367-382.
- Deng, N. (2013b). Our Experience of Passage on the B-theory. *Erkenntnis*, 78, 713-726.
- Deng, N. (2017). Making Sense of the Growing Block View. *Philosophia*, 45, 1113–1127.
- Deng, N. (2017). Temporal Experience and the A versus B debate. In Phillips, I. (Ed.), *Routledge Handbook of Philosophy of Temporal Experience*. Oxford, New York: Routledge.
- Deng, N. (2018). Eternity in Christian Thought. *The Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Deng, N. (2019). *God and Time*. Cambridge: Cambridge University of Press.
- Deng, N. (2019). One Thing After Another: Why the Passage of Time is Not an Illusion. In Bardon, A. Arstila, V. Power, S. & Vatakis, A. (Eds.), *The Illusions of Time: Philosophical and Psychological Essays on Timing and Time Perception* (pp. 3-15): Palgrave Macmillan.
- Dennett, D.C. & Kinsbourne, M. (1992). Time and the Observer. *Behavioral and Brain Sciences*, 15, 183-247.
- DeWeese, G. J. (2004). *God and the Nature of Time*. Aldershot: Ashgate.
- Diekemper, J. (2014). Divine Events. In Oaklander, L.N. (Ed.), *Debates in the Metaphysics of Time*. London and New York: Bloomsbury.
- Dieks, D. (2006). Becoming, Relativity and Locality. In Dieks, D. (Ed.), *The Ontology of Spacetime*. Amsterdam: Elsevier.
- DiSalle, R. (2009). Space and Time: Inertial Frames. *The Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)

- Dolev, Y. (2014). Motion and Passage: The Old B-Theory and Phenomenology. In Oaklander, L.N. (Ed.), *Debates in the Metaphysics of Time*. London/New York: Bloomsbury.
- Dorato, M. (2006). Absolute Becoming, Relational Becoming and the Arrow of Time: Some non-conventional remarks on the relationship between physics and metaphysics. *Studies in History and Philosophy of Modern Physics*, 37, 559-576.
- Dreisbach, D. F. (1980). Essence, Existence, and the Fall: Paul Tillich's Analysis of Existence. *The Harvard Theological Review*, 73, 521-538.
- Dreistadt, R. (1968). An Analysis of the Use of Analogies and Metaphors in Science. *Journal of Psychology*, 68, 97-116.
- Dummett, M. (1960). A Defense of McTaggart's Proof of the Unreality of Time. *The Philosophical Review* 69, 497-504.
- Dupré, J. (1996). The Solution to the Problem of Free Will. *Philosophical Perspectives*, 10, 385-402.
- Dyke, H. (2002). McTaggart and the Truth about Time. In Craig, W. L. (Ed.), *Time, Reality, and Experience*. Cambridge: Cambridge University Press.
- Dyke, H. (2013). Time and Tense. In Bardon, A. & Dyke, H. (Eds.), *A Companion to the Philosophy of Time* (pp. 328-344). Somerset: John Wiley & Sons, Inc.
- Earle, E. (2017). The Rhetoric of Kairos: Paul Tillich's Reinterpretation. *Journal of Communication & Religion*, 40, 24-36.
- Earman, J. (1978). The Universality of Laws. *Philosophy of Science*, 45, 173-181.
- Earman, J. (1989). *World Enough and Spacetime: Absolute and Relational Theories of Motion*. Cambridge, MA: MIT Press.
- Earman, J. (2008). Reassessing the Prospects for a Growing Block Model of the Universe. *International Studies in the Philosophy of Science*, 22, 135-164.
- Earman, J. & Friedman, M. (1973). The Meaning and Status of Newton's Law of Inertia and the Nature of Gravitational Forces. *Philosophy of Science*, 40, 329-359.
- Eddington, A. (1924). *The Mathematical Theory of Relativity*, 2nd ed. Cambridge: Cambridge University Press.
- Eddington, A. (1928). *The Nature of the Physical World: Gifford lectures of 1927*. Cambridge: Cambridge University Press.
- Einstein, A. (1905a). "Ist die Trägheit eines Körpers von seinem Energieinhalt abhängig?" [Does the Inertia of a Body Depend Upon Its Energy Content?]. *Annalen der Physik* (in German). 18 (13): 639-641.
- Einstein, A. (1905b). "Über einen die Erzeugung und Verwandlung des Lichtes betreffenden heuristischen Gesichtspunkt" [On a Heuristic Point of View about the Creation and Conversion of Light] (PDF). *Annalen der Physik* (in German). 17 (6): 132-148.
- Einstein, A. (1905c). "Zur Elektrodynamik bewegter Körper" [On the Electrodynamics of Moving Bodies]. *Annalen der Physik* (in German). 17 (10): 891-921.
- Einstein, A. (1905d). "Über die von der molekularkinetischen Theorie der Wärme geforderte Bewegung von in ruhenden Flüssigkeiten suspendierten Teilchen" [Investigations on the theory of Brownian Movement]. *Annalen der Physik* (in German). 322 (8): 549-560.
- Einstein, A. (1954). *Ideas and Opinions*. London: Souvenir Press.

- Einstein, A. (1969). Autobiographical Notes. In Schlipp, P.A. (Ed.), *Albert Einstein: Philosopher-Scientist* (Vol. 1). London: Cambridge University Press.
- Einstein, A. (2010 [1920]). *Relativity: The Special and General Theory* (Robert W. Lawson D.Sc. Translation). Manfield Centre: Martino Publishing.
- Emery, N. (2020). Actualism, Presentism and the Grounding Objection. *Erkenntnis*, 85, 23-43.
- Emery, N. & Markosian, N. & Sullivan, M. (2020). Time. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Erickson, M. (1998). *Christian Theology*. Grand Rapids, MI: Baker Academic.
- Evans, S. (2004). *Kierkegaard's Ethic of Love: Divine Commands and Moral Obligations*. Oxford: Oxford University Press.
- Evans, V. (2003). *The Structure of Time: language, meaning and temporal cognition*. Amsterdam: John Benjamins Publishing.
- Farr, M. (2020a). C-theories of Time: on the adirectionality of time. *Philosophy Compass*, 15(12), 1-17.
- Farr, M. (2020b). Explaining Temporal Qualia. *European Journal for Philosophy of Science*, 10, 1-24.
- Faye, J. (2014). Copenhagen Interpretation of Quantum Mechanics. *The Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Fiddes, P. (1989). *Past Event and Present Salvation: The Christian Idea of Atonement*. London: Darton, Longman & Todd.
- Fiddes, P. (2007). Salvation. In Webster, J. & Tanner, K. & Torrance, I.R. (Eds.), *The Oxford Handbook of Systematic Theology* (pp. 176-195). Oxford: Oxford University Press.
- Fine, K. (2006). The Reality of Tense. *Synthese*, 150, 399-414.
- Finlan, S. (2007). *Options on Atonement in Christian Thought*. Collegeville, MI: Liturgical Press.
- Fiocco, M. O. (2007). Passage, Becoming and the Nature of Temporal Reality. *Philosophia*, 35, 1-21.
- Fiocco, M. O. (2014). Becoming: Temporal, Absolute, and Atemporal. In Oaklander, L. N. (Ed.), *Debates Within the Metaphysics of Time*. London and New York: Bloomsbury.
- Fitzgerald, P. (1985). Stump and Kretzmann on Time and Eternity. *The Journal of Philosophy*, 82, 260-269.
- Fletcher, S. (2013). Light Clocks and the Clock Hypothesis. *Foundations of Physics*, 43, 1369–1383.
- Forbes, G. (2015). The Growing Block's Past Problems. *Philosophical Studies*, 173, 699-709.
- Forest, P. (2004). The Real but Dead Past: A reply to Braddon-Mitchell. *Analysis*, 64, 358-362.
- Freud, S. (1920). *A General Introduction to Psychoanalysis*. New York: H. Liveright.
- Freud, S. (1930). *Civilization and its Discontents*. New York: Jonathan Cape & Harrison Smith.
- Freud, S. (1923 [1961]). The Ego and the Id. *The American Journal of the Medical Sciences*, 5, 656.
- Friedman, M. (1983). *Foundations of Space-Time Theories*. Princeton, NJ: Princeton University Press.
- Frischhut, A. (2017). Presentism and Temporal Experience. In Phillips, I (Ed.), *The Routledge Handbook of Philosophy of Temporal Experience*: Routledge.

- Gale, R.M. (1968). *The Language of Time*. London: Routledge.
- Gallagher, S. (2013). Husserl and the Phenomenology of Temporality. In Bardon, A. & Dyke, H. (Eds.), *A Companion to the Philosophy of Time* (pp. 135-150). Somerset: John Wiley & Sons, Inc.
- Ganssle, G. E., & Woodruff, D. M. (2002). *God and Time: Essays on the Divine Nature*. Oxford: Oxford University Press.
- Geach, P. (1969). *God and the Soul*. London: Routledge.
- Gilkey, L. (1985). The New Being and Christology. In *The Thought of Paul Tillich* (pp. 307-329). New York: Harper & Row.
- Gilkey, L. (1985). The Role of the Theologian in Contemporary Society. In Adams, J.L. & Paul, W. & Shinn, R.L. (Eds.), *The Thought of Paul Tillich*. San Francisco: Harper & Row.
- Gilkey, L. (1990). *Gilkey on Tillich*. New York: Crossroad.
- Glanzberg, M. (2018). Truth. *The Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Gödel, K. (1949). A Remark about the Relationship between Relativity Theory and Idealistic Philosophy. In *Albert Einstein: Philosopher-Scientist* (pp. 557-562): Open Court.
- Godfrey-Smith, P. (2006). The Strategy of Model-Based Science. *Biology and Philosophy*, 21 725-740.
- Goswick, D. L. (2013). Change and Identity Over Time. In Bardon, A. & Dyke, H. (Ed.), *A Companion to the Philosophy of Time* (pp. 365-386). Somerset: John Wiley & Sons, Inc.
- Gould, S. J. (1999). *Rock of Ages*. New York: Ballantine Pub. Group.
- Graham, D. W. (2019). Heraclitus. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Gruber, R., Smith, R., and Block, R. (2018). The Illusory Flow and Passage of Time within Consciousness: A Multidisciplinary Analysis. *Timing and Time Perception*, 6, 125-153.
- Grudem, W. (1994). *Systematic Theology*. Leicester: Inter-Varsity Press.
- Grünbaum, A. (1964). *Philosophical Problems of Space and Time*. London: Routledge & Kegan Paul Ltd.
- Grünbaum, A. (1967). The Status of Temporal Becoming. *Annals of the New York Academy of Sciences*, 138, 374-395.
- Grünbaum, A. (1971). The Meaning of Time. In Freeman, E. & Sellars, W. (Eds.), *Basic Issues in the Philosophy of Time* (pp. 195-228): Open Court.
- Gustavsson, K. (2017). Charlie Dunbar Broad. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- H., P. (1967). Time and Physical Geometry. *The Journal of Philosophy*, 64, 240-247.
- Halliwell, J. (1990). Introductory Lectures on Quantum Cosmology. In Coleman, S. & Hartle, J. & Piran, T. & Weinberg, S. (Ed.), *Proceedings of the Jerusalem Winter School on Quantum Cosmology and Baby Universes*. Singapore: World Scientific.
- Hammond, G. B. (1964). An Examination of Tillich's Method of Correlation. *Journal of Bible and Religion*, 32, 248-251.
- Harrison, P. (2002). Original Sin and the Problem of Knowledge in Early Modern Europe. *Journal of the History of Ideas*, 63(2), 239-259

- Harrison, P. (2015). *Territories of Science and Religion*. Chicago: University of Chicago Press.
- Haught, J. F. (2009). Tillich in Dialogue with Natural Science. In *The Cambridge Companion to Paul Tillich* (pp. 223-237). New York: Cambridge University Press.
- Hawking, S. W., Penrose, R. & Bondi, H. (1970). The Singularities of Gravitational Collapse and Cosmology. *Proceedings of the Royal Society of London*, 314, 529-548.
- Hawley, K. (2020). Temporal Parts. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Haywood Thomas, J. (2000). *Tillich*. London: Continuum.
- Heller, M. (1994). On Theological Interpretations of Physical Creation. In *Quantum Cosmology and the Laws of Nature: Scientific Perspectives on Divine Action* (pp. 91-102). Notre Dame: University of Notre Dame Press.
- Henson, S. (2016). Throwing Dice? Thoughts of God in a Quantum World. In *Abraham's Dice: Chance and Providence in the Monotheistic Traditions*. Oxford: Oxford University Press.
- Hernandez, W. A. (2016). St Augustine on Time. *International Journal of Humanities and Social Science*, 6.
- Hilgevoord, J. & Attkinson, D. (2011). Time in Quantum Mechanics. In Callender, C. (Ed.), *The Oxford Handbook of Philosophy of Time*. Oxford: Oxford University Press.
- Hinchliff, M. (2000). A Defence of Presentism in a Relativistic Setting. *Philosophy of Science*, 67, S575-S586.
- Hofer, C. (2002). Freedom from the Inside Out. *Royal Institute of Philosophy Supplement*, 50, 201-222.
- Hofer, C. (2016). Causal Determinism. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Hoerl, C. (2014). Do We (seem to) Perceive Passage? *Philosophical Explorations*, 17, 188-202.
- Hoerl, C. (2017). Temporal Experience and the Philosophy of Perception. In Phillips, I. (Ed.), *The Routledge Handbook of Philosophy of Temporal Experience*.
- Holland, R. A. (2012). *God, Time and the Incarnation*. Eugene: Wipf and Stock.
- t'Hooft, G. (2007). On the Free Will Postulate in Quantum Mechanics. *Open Access*, <https://arxiv.org/pdf/quant-ph/0701097.pdf>.
- Hudson, H. (2014) *The Fall and Hypertime*. Oxford: Oxford University Press.
- Huggett, N. (2015). Absolute and Relational Theories of Space and Motion. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Huggett, N. & Wuthrich, C. (2013). Emergent spacetime and empirical (in)coherence. *Studies in History and Philosophy of Science Part B: Studies in History and Philosophy of Modern Physics*, 44, 276–285.
- Hume, D. (1748 [2007]). *An Enquiry Concerning Human Understanding*. Oxford; New York: Oxford University Press.
- Isham, C. J. (1993). Canonical Quantum Gravity and the Problem of Time. In Ibort, L. A. & Rodríguez, M. A. (Eds.), *Integrable Systems, Quantum Groups, and Quantum Field Theories* (Vol. Kluwer Academic Publishers, pp. 157-287): Dordrecht
- Isham, C. J., Polkinghorne, J. (1993). The Debate over the Block Universe. Russell, R.J. & Murphy, N. & Isham, C. J. (Ed.), *Quantum Cosmology and the Laws of Nature: Scientific Perspectives on Divine Action* (pp. 135-144). Vatican City State: Vatican Observatory Publications, and Berkeley, The Center for Theology and the Natural Sciences.

- Ismael, J. (2011). Temporal Experience. In Callender, C. (Ed.), *The Oxford Handbook of Philosophy of Time*. Oxford: Oxford University Press.
- Ismael, J. (2015). Quantum Mechanics. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Ives, H. E., Stilwell, G. R. (1938). An experimental study of the rate of a moving atomic clock. *Journal of the Optical Society of America*, 28.
- Jackelén, A. (2005). *Time and Eternity: The Question of Time in Church, Science, and Theology*. Philadelphia and London: Templeton Foundation Pres.
- James, R. (2003). *Tillich and World Religions: encountering other faiths today*. Macon, GA: Mercer University Press.
- James, W. (1890). *The Principles of Psychology*. New York: Dover.
- Janis, A. (2018). Conventionality of Simultaneity. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Janssen, M. (2002). Reconsidering a Scientific Revolution: The Case of Einstein versus Lorentz. *Physics in Perspective*, 4(4), 421-426.
- Johnson, A. (2013). An Apology for New Atheism. *International Journal for Philosophy of Religion*, 73, 5-28.
- Kain, P. J. (1979). Alienation and Estrangement in the Thought of Hegel and the Young Marx. *The Philosophical Forum*, 11, 136-160.
- Kaiser, D. (2015). Peter Abelard's Theology of Atonement: A Multifaceted Approach and Reevaluation. *Journal of the Adventist Theological Society*, 26, 3-28.
- Kant, I. (1781 [2003]). *The Critique of Pure Reason*. Mineola, N.Y.: Dover Publications.
- Kant, I. (1795 [2012]). *Groundwork of the Metaphysic of Morals*. Cambridge: Cambridge University Press.
- Kant, I. (1997). *Practical Philosophy (the Cambridge edition of the works of Immanuel Kant)*. Cambridge: Cambridge University Press.
- Keil, F. C. (2006). Explanation and Understanding. *Annual Review of Psychology*, 57, 227-254.
- Keller, S. (2004). Presentism and Truthmaking. In Zimmerman, D. (Ed.), *Oxford Studies in Metaphysics*. Oxford: Oxford University Press.
- Kelly, K. T. (2007). A New Solution to the Puzzle of Simplicity. *Philosophy of Science* 74, no.5, 561-573.
- Kelly, S. D. (2005). The Puzzle of Temporal Experience. In Brook, A. & Akins, K. (Eds.), *Cognition and Neuroscience*. Cambridge: Cambridge University Press.
- Kelsey, D. H. (2005). Paul Tillich. In Ford, D. and Muers, R. (Eds.), *The Modern Theologians: An Introduction to Christian Theology since 1918 [third edition]*. Malden, MA: Blackwell Pub.
- Kennedy, R. J., Thorndike, E. M. (1932). Experimental Establishment of the Relativity of Time. *Physical Review*, 42 (3), 400-418.
- Kierkegaard, S. (1843 [2014]). *Fear and Trembling (Alastair Hannay translation)*. London: Penguin Classics.
- Kiverstein, J. & Arstila, V. (2013). Time in Mind. In Bardon, A. & Dyke, H. (Eds.), *A Companion to the Philosophy of Time* (pp. 444-469). Somerset: John Wiley & Sons, Inc.
- Knobel, C. (2012). An Introduction into the Theory of Cosmological Structure Formation.
<https://arxiv.org/abs/1208.5931>

- Koperski, J. (2014). *The Physics of Theism*. Hoboken: Wiley-Blackwell.
- Kuhn, T. (1962). *The Structure of Scientific Revolutions*. Chicago; London: University of Chicago Press.
- Lam, V. & Wuthrich, C. (2018). Spacetime is as Spacetime Does. *Studies in History and Philosophy of Science Part B: Studies in History and Philosophy of Modern Physics*, 64, 39-51.
- Latham, A. & Miller, K. & Norton, J. (2019). Is our naïve theory of time dynamical? *Synthese*.
- Latham, A. & Miller, K. & Norton, J. (2020). An empirical investigation of purported passage phenomenology. *Journal of Philosophy*, 117, 353-386.
- Le Bihan, B. (2019). Spacetime Emergence in Quantum Gravity: Functionalism and the Hard Problem. *Synthese*.
- Le Bihan, B. (2020). String Theory, Loop Quantum Gravity and Eternalism. *European Journal for Philosophy of Science*, 10.
- Le Poidevin, R., & Mellor, D. H. (1987). Time, Change, and the 'Indexical Fallacy'. *Mind*, 96(384), 534-538.
- Le Poidevin, R. (2007). *The Images of Time: An Essay on Temporal Representation*. Oxford: Oxford University Press.
- Le Poidevin, R. (2017). The Arrow of Mind. *Journal of Consciousness Studies*, 24, 112-126.
- Le Poidevin, R. (2019). The Experience and Perception of Time. *The Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Leftow, B. (1991). *Time and Eternity*. Ithaca; London: Cornell University Press.
- Leftow, B. (2014). Instants, Events, and God. In Oaklander, L. N. (Ed.), *Debates in the Metaphysics of Time*. London and New York: Bloomsbury.
- Leftow, B. (2018). Presentism, Atemporality and Time's Way. *Faith and Philosophy*, 35, 173-194.
- Leiner, M. (2009). Tillich on God. In Manning, R. R. (Ed.), *The Cambridge Companion to Paul Tillich*. Cambridge: Cambridge University Press.
- Leopold, D. (2018). Alienation. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Lipton, P. (2007). Science and Religion: The Immersion Solution. In Moore, A. & Scott, M. (Eds.), *Realism and Religion*. Aldershot: Ashgate.
- Lombrozo, T. (2007). Simplicity and Probability in Causal Explanation. *Cognitive Psychology*, 55, 232-257.
- Lopez-Corredoira, M. (2009). Quantum Mechanics and Free Will: counter-arguments. *Neuroquantology*, 7, 449.
- Lorentz, H. A. (1920). *Das Relativitätsprinzip (Pais translation)*. Leipzig: Teubner.
- Lowe, J. (1987). The Indexical Fallacy in McTaggart's Proof of the Unreality of Time. *Mind*, 96(381), 62-70.
- Lowe, J. (1987). Reply to Le Poidevin and Mellor. *Mind*, 96(384), 539-542.
- Luminet, J.-P. (2011). Time, Topology, and the Twin Paradox. In *The Oxford Handbook to the Philosophy of Time* (pp. 528-545). Oxford: Oxford University Press.
- Lyon, A. (1976-1977). The Immutable Laws of Nature. *Proceedings of the Aristotelian Society*, 77, 107-126.
- Mabbott, J. D. (1955). The Specious Present. *Mind*, 64, 376-383.

- Mackie, J. L. (1955). Evil and Omnipotence. *Mind*, 64, 200-212.
- Maclaurin, J., and Dyke, H. (2002). Thank Goodness That's Over: The Evolutionary Story. *Ratio*, 15, 276–292.
- Magidor, O. (2016). Enduransitm vs. Perdurantism?: A Debate Reconsidered. *Nous*, 50, 509-532.
- Malament, D. (1977). Causal Theories of Time and the Conventionality of Simultaneity. *Nous*, 11, 293-300.
- Malament, D. (2012). *Topics in the Foundations of General Relativity and Newtonian Gravitation Theory*. Chicago, IL: University of Chicago Press.
- Mann, R. B. (2014). Puzzled by Particularity. In Klaas J.K. (Ed.), *God and the Multiverse: Scientific, Philosophical, and Theological Perspectives* (pp. 25-45). London: Routledge.
- Manning, R. R. (2015). The Real Tillich is the Radical Tillich. In Manning, R. R. (Ed.), *Retrieving the Radical Tillich. His Legacy and Contemporary Importance* (pp. 1-22). New York: Palgrave MacMillan.
- Manning, R. R. (2015). *Retrieving the Radical Tillich. His Legacy and Contemporary Importance*. New York: Palgrave MacMillan.
- Mantzaridis, G. L. (1984). *The Deification of Man*. Crestwood, NY: St Vladimir's Seminary Press.
- Markosian, N. (2004). A Defense of Presentism. In Zimmerman, D. (Ed.), *Oxford Studies in Metaphysics*. Oxford: Oxford University Press.
- Mariña, J. (Ed.) (2005). *The Cambridge Companion to Friedrich Schleiermacher*. Cambridge: Cambridge University Press.
- Martens, R. (2009). Harmony and Simplicity: aesthetic virtues and the rise of testability. *Studies in History and Philosophy of Science*, 40, 258-266.
- Martin, T. F. (2001). Paul the Patient: Christus Medicus and the "Stimulus Carnis" (2 Cor. 12:7): A Consideration of Augustine's Medicinal Christology. *Augustinian Studies*, 32(2), 219-256.
- Maudlin, T. (1993). Buckets of Water and Waves of Space: Why Space-Time is Probably a Substance. *Philosophy of Science*, 60, 183-203.
- Maudlin, T. (2002). Remarks on the Passing of Time. *Proceedings of the Aristotelian Society*, 102, 259-274.
- Maudlin, T. (2007). *The Metaphysics Within Physics*. New York: Oxford University Press.
- Maudlin, T. (2012). *Philosophy of Physics: Space and Time*. Princeton: Princeton University Press.
- Maudlin, T. (2019). *Philosophy of Physics: Quantum Theory*. Princeton, NJ; Oxford: Princeton University Press.
- McCabe, H. (2010). *The New Creation*. London: Continuum.
- McDonald, W. (2017). Søren Kierkegaard. *The Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- McEnhill, P., Newlands, G. (2004). *Fifty Key Christian Thinkers*. London: Routledge.
- McFarland, I. (2007). The Fall and Sin. In Webster, J. & Tanner, K. & Torrance, I.R (Eds.), *The Oxford Handbook of Systematic Theology* (pp. 140-159). Oxford: Oxford University Press.
- McGrath, A. (2010). *Science and Religion: a new introduction* (2nd ed.). Malden, Mass: Wiley-Blackwell.
- McGrath, A. (2014). *Christianity: an introduction* (3rd ed.). New York: John Wiley & Sons, Inc.

- McGrath, A. (2016). *Enriching our Vision of Reality*. London: SPCK.
- McGrath, A. (2019). *Narrative Apologetics*. Grand Rapids, MI: Baker Books.
- McGrath, A. (2019). *The Territories of Human Reason: Science and Theology in an Age of Multiple Rationalities*. Oxford: Oxford University Press.
- McGrath, A. (2020). *Iustitia Dei: A History of the Christian Doctrine of Justification* (4th Ed.). Cambridge: Cambridge University Press.
- McTaggart, J. M. E. (1908). The Unreality of Time. *Mind*, 17 (68), 457-474.
- Mellor, D. H. (1981). *Real Time*. Cambridge: Cambridge University Press.
- Mellor, D. H. (1986). Tense's Tenseless Truth Conditions. *Analysis*, 46, 167-172.
- Mellor, D. H. (1998). *Real Time II*. London and New York: Routledge.
- Mellor, D. H. (2001). The Time of Our Lives. *Royal Institute of Philosophy Supplement*, 48, 45-59.
- Mermin, D. N. (2009). *It's About Time: understanding Einstein's relativity*. Princeton; Oxford: Princeton University Press.
- Merricks, T. (2006). Goodbye Growing Block. In Zimmerman, D. (Ed.), *Oxford Studies in Metaphysics* (Vol. 2, pp. 103–110). Oxford: Oxford University Press.
- Meyendorff, J. (1974). *St. Gregory Palamas and Orthodox Spirituality*. Crestwood, NY: St Vladimir's Seminary Press.
- Midgely, M. (2003). *Myths We Live By*. London, New York: Routledge.
- Miller, D. J. (2010). A Constructive Approach to the Special Theory of Relativity. *American Journal of Physics*, 78, 633-638.
- Miller, K. (2018). The New Growing Block Theory vs Presentism. *Inquiry*, 61, 223-251.
- Miller, K. (2019). Does it Really Seem to Us as Though Time Passes? In Arstila, V. & Bardon, A. & Power, S.E. & Vatakis, A. (Eds.), *The Illusions of Time: Philosophical and Psychological Essays on Timing and Time Perception* (pp. 17-33). Basingstoke: Palgrave Macmillan.
- Miller, K. & Holcombe, A. & Latham, A. (2020). Temporal Phenomenology: phenomenological illusion versus cognitive error. *Synthese*, 197, 751–771.
- Minkowski, H. (1908). Die Grundgleichungen für die elektromagnetischen Vorgänge in bewegten Körpern. *Nachrichten der Gesellschaft der Wissenschaften zu Göttingen*, 53–111.
- Mollegen, A. T. (1952). Christology and Biblical Criticism in Tillich. In Kegley, C.W. & Bretall, R.W. (Eds.), *The Library of Living Theology: The Theology of Paul Tillich* (pp. 230-247). New York: MacMillan.
- Moltmann, J. (1974). *The Crucified God* (R. A. Wilson & J. Bowden translation): SCM Press.
- Montgomery, J. W. (1978). Science, Theology, and the Miraculous. *Journal of the American Scientific Association*, 30, 145–153.
- Monton, B. (2006). Presentism and Quantum Gravity. In Deiks, D. (Ed.), *The Ontology of Spacetime* (pp. 263-280). Boston: Elsevier.
- Mooney, J. (2020). How God Knows Counterfactuals of Freedom. *Faith and Philosophy*, 37(2), 220-229.

- Moore, A. (2003). *Realism and the Christian Faith: God, Grammar, and Meaning*. Cambridge, UK; New York: Cambridge University Press.
- Mora, C., Spirandelli, D., Franklin, E. C., *et al.* (2018). Broad threat to humanity from cumulative climate hazards intensified by greenhouse gas emissions. *Nature Climate Change*, 8, 1062-1071.
- Mortensen, C. (2020). Change and Inconsistency. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Mozersky, J. (2011). Presentism. In Callender, C. (Ed.), *The Oxford Handbook of Philosophy of Time*. Oxford: Oxford University Press.
- Mozersky, J. (2014). Temporal Predicates and the Passage of Time. In Oaklander, L.N. (Ed.), *Debates in the Metaphysics of Time*. London and New York: Bloomsbury.
- Muga, G. & Sala Mayato, R. & Egusquiza, I. (eds). (2008). *Time in Quantum Mechanics (second edition)*. Berlin, Heidelberg: Springer.
- Muntean, I. (2015). Metaphysics from string theory: S-dualities, fundamentality, modality and pluralism. In Bigaj, T. & Wuthrich, C. (Eds.), *Metaphysics in Contemporary Physics* (pp. 259–292). Boston, MA: Rudopi/Brill.
- Murphy, N. (1996). *Beyond Liberalism & Fundamentalism: How Modern and Postmodern Philosophy Set the Theological Agenda* Valley Forge: Trinity Press International.
- Musser, D.W. and Price, J.L. (2010). *Tillich*. Nashville: Abingdon Press.
- Newton, I. (1686). *Philosophiae Naturalis Principia Mathematica*. London: Joseph Streater. Reproduced in facsimile by William Dawson & Sons, London: Henderson & Spalding.
- Newton-Smith, W. H. (1980). *The Structure of Time*. London, Boston, Henley: Routledge & Kegan Paul.
- North, J. (2011). Time in Thermodynamics. In Callender, C. (Ed.), *The Oxford Handbook of Philosophy of Time* (pp. 312-352). Oxford: Oxford University Press.
- Norton, J. D. (2012). Approximation and Idealization: Why the Difference Matters. *Philosophy of Science*, 79, 207-232.
- Norton, J. D. (2020). Incubating a Future Metaphysics: quantum gravity. *Synthese*, 197, 1961–1982
- O'Shaughnessy, B. (2000). *Consciousness and the World*. Oxford: Oxford University Press.
- Oaklander, L.N. (1987) McTaggart's Paradox and the Infinite Regress of Temporal Attributions of Temporal Attributions: a Reply to Smith. *Southern Journal of Philosophy*. 25 (3), 425-321.
- Oaklander, L. N. (1996). McTaggart's paradox and Smith's tensed theory of time. *Synthese*, 107, 205-221.
- Oaklander, L. N. (1999). Craig on McTaggart's Paradox and the Problem of Temporary Intrinsic. *Analysis*, 59, 314-318.
- Oaklander, L. N. (2016). *C.D. Broad's Philosophy of Time*. London: Routledge.
- O'Connor, T. (2018). Free Will. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Orilia, F. (2020). Properties. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Padgett, A. (1992). *God, Eternity and the Nature of Time*. New York: St Martin's.
- Page, B. (2018). If Anyone is in Christ - New Creation! *Religious Studies*, 56(4), 525-541

- Palmer, J. (2016). Parmenides. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Parrella, F. J. (2009). Tillich's Theology of the Concrete Spirit. In Manning, R.R. (Ed.), *The Cambridge Companion to Paul Tillich*. Cambridge: Cambridge University Press.
- Pashby, T. (2015). Taking Times Out: Tense logic as a theory of time. *Studies in History and Philosophy of Modern Physics*, 50, 13-18.
- Pattison, G. (2015). *Paul Tillich's Philosophical Theology: A Fifty Year Reappraisal*. Basingstoke, Hampshire: Palgrave-Macmillan.
- Paul, L. (1997). Truth Conditions of Tensed Sentence Types. *Synthese*, 111, 53-71.
- Paul, L. (2010). Temporal Experience. *Journal of Philosophy*, 107, 333-359.
- Pelczar, M. (2014). Physical Time, Phenomenal Time, and the Symmetry of Nature. In Oaklander, L. N. (Ed.), *Debates in the Metaphysics of Time*. London and New York: Bloomsbury.
- Percival, P. (2002). A Presentist's Refutation of Mellor's McTaggart. In Craig, W.L. (Ed.), *Time, Reality, and Experience*. Cambridge: Cambridge University Press.
- Perović, K. (2019). Three Varieties of Growing Block Theory. *Erkenntnis*.
- Peters, E. H. (1963). Tillich's Doctrine of Essence, Existence, and the Christ. *The Journal of Religion*, 43, 295-302.
- Pettini, M. (2018). Introduction to Cosmology: Basic Concepts. *Lecture notes, accessed online:* <https://people.ast.cam.ac.uk/~pettini/Intro%20Cosmology/Lecture01.pdf>
- Pfister, H. & King, M. (2015). *Inertia and Gravitation*. Heidelberg: Springer.
- Phelan, P. (2014). On the Difference Between Time and History. *Performance Research*, 19, 114-119.
- Phillips, I. (2009). The Images of Time: An Essay on Temporal Representation by Robin Le Poidevin (review). *British Journal for the Philosophy of Science*, 60, 439-446.
- Phillips, I. (2014). The Temporal Structure of Experience. In Lloyd, D. and Arstila, V. (Ed.), *Subjective Time: the Philosophy, Psychology, and Neuroscience of Temporality*. Cambridge, Massachusetts; London: MIT Press.
- Phillips, I. (Ed.) (2017). *The Routledge Handbook of Philosophy of Temporal Experience*. Abingdon; New York: Routledge.
- Planck, M. (1900 [1967]). On an Improvement of Wien's Equation for the Spectrum (reprint). In Haar, D.T. (Ed.), *The Old Quantum Theory*. Oxford: Pergamon.
- Planck, M. (1900 [1967]). On the Theory of the Energy Distribution Law of the Normal Spectrum. In Haar, D.T. (Ed.), *The Old Quantum Theory*. Oxford: Pergamon.
- Plantinga, A. (1967). *God and Other Minds*. Ithaca: Cornell University Press.
- Plantinga, A. (1975). *God, Freedom and Evil*. London: Allen & Unwin.
- Plantinga, A. (1983). Reason and Belief in God. In Plantinga, A. & Wolterstorff, N. (Eds.), *Faith and Philosophy*. Notre Dame, Ind: University of Notre Dame Press.
- Plantinga, A. (1993). *Warrant and Proper Function*. New York: Oxford University Press.
- Plantinga, A. (2000). *Warranted Christian Belief*. New York: Oxford University Press.

- Plantinga, A. (2011). *Where the Conflict Really Lies*. New York: Oxford University Press.
- Plantinga, A. & Wolterstorff, N. (Eds.) (1983). *Faith and Philosophy*. Notre Dame, Ind: University of Notre Dame Press.
- Plato. (2001). *Timaeus*. Blacksburg, VA: Virginia Tech.
- Polkinghorne, J. (2001). *Quantum Mechanics: Scientific Perspectives on Divine Action*: University of Notre Dame Press.
- Polkinghorne, J. (2002) *The God of Hope and the End of the World*. New Haven: Yale University Press.
- Pooley, O. (2013a). Relativity, The Open Future, and the Passage of Time. *Proceedings of the Aristotelian Society*, 113, 321-363.
- Pooley, O. (2013b). Substantivalist and Relationalist Approaches to Spacetime. In Batterman, R. (Ed.), *The Oxford Handbook to the Philosophy of Physics*. New York: Oxford University Press.
- Popper, K. (1959 [2002]). *The Logic of Scientific Discovery*. London: Routledge.
- Posner, M. and Mitchell, R. (1967). Chronometric Analysis of Classification. *Psychological Review* 74, 392-409.
- Potter, M. and Faulconer, B. (1975). Time to Understand Pictures and Words. *Nature* 253, 437-438.
- Power, S. (2012). The Metaphysics of the 'Specious' Present. *Erkenntnis*, 77, 121-132.
- Price, H. (1996). *Time's Arrow and Archimedes' Point*. New York: Oxford University Press.
- Price, H. (2011). The Flow of Time. In Callender, C. (Ed.), *The Oxford Handbook of Philosophy of Time*. Oxford: Oxford University Press.
- Priest, G. (1986). Tense and Truth Conditions. *Analysis*, 46, 162-166.
- Prior, A. (1959). Thank Goodness That's Over. *Philosophy*, 34, 12-17.
- Prior, A. N. (1968). Changes in Events and Changes in Things. In *Papers in Time and Tense*. Oxford: Clarendon Press.
- Prosser, S. (2012). Why Does Time Seem to Pass? *Philosophy and Phenomenological Research*, 85, 92–116.
- Prosser, S. (2013). The Passage of Time. In Bardon, A. & Dyke, H. (Ed.), *A Companion to the Philosophy of Time* (pp. 315-327). Somerset: John Wiley & Sons, Inc.
- Prosser, S. (2016). *Experiencing Time*. Oxford: Oxford University Press.
- Putnam, H. (1967). Time and Physical Geometry. *Journal of Philosophy*, 64, 240-247.
- Quine, W. V. O. (1981). On Simple Theories of a Complex World. In *Form and Strategy in Science* (pp. 47-51): D Reidel Publishing Company / Dordrecht-Holland.
- Qureshi-Hurst, E. (2020). Quantum Mechanics and Salvation: a new meeting point for science and theology. *Toronto Journal of Theology*, 36(1), 3-13.
- Qureshi-Hurst, E. (forthcoming). Anxiety, Alienation, and Estrangement in the Context of Social Media. *Religious Studies*.
- Qureshi-Hurst, E. (forthcoming). Does God Act in the Quantum World? *Theology and Science*.

- Qureshi-Hurst, E. (forthcoming). Is Simplicity That Simple? An Assessment of Richard Swinburne's Argument from Cosmic Fine-Tuning. *Theology and Science*.
- Qureshi-Hurst, E. & Bennett, C.T. (2021). Outstanding Issues with Robert Russell's NIODA Concerning Quantum Biology and Theistic Evolution. *Zygon*, 56(1), 75-95.
- Qureshi-Hurst, E. & Pearson, A. (2020). Quantum Mechanics, Time, and Theology: indefinite causal order and a new approach to salvation. *Zygon*, 55(3), 663-684.
- Rae, G. (2010). Kierkegaard, the Self, Authenticity and the Teleological Suspension of the Ethical. *Critical Horizons*, 11, 75-97.
- Ramsey, I. (1964). *Models and Mystery*. London: Oxford University Press.
- Ramsey, I. (1973). *Models for Divine Activity* London: SCM Press.
- Read, J. & Qureshi-Hurst, E. (2020). Getting Tense About Relativity. *Synthese*.
- Reichenbach, H. (1969). The Philosophical Significance of the Theory of Relativity. In Schlipp, P.A. (Ed.), *Albert Einstein: Philosopher-Scientist vol. 1*. London: Cambridge University Press.
- Reijnen, A. M. (2009). Tillich's Christology. In Manning, R.R. (Ed.), *The Cambridge Companion to Paul Tillich* (pp. 56-73). Cambridge: Cambridge University Press.
- Reinhardt, S. et al. (2007). Test of relativistic time dilation with fast optical atomic clocks at different velocities. *Nature Physics*, 3, 861-864.
- Roark, T. (2011). *Aristotle on Time: A Study of the Physics*. New York: Cambridge University Press.
- Rodriguez-Pereyra, G. (2008). Postscript to 'Why Truthmakers'. In Lowe, E.J. & Rami, A. (Eds.), *Truth and Truth-Making* (pp. 242-250). Stockfield: Acumen.
- Rovelli, C. (2009). Forget Time. *Essay for FQXi contest on the Nature of Time*, arxiv: 0903.3832v3.
- Rovelli, C. (2018). *The Order of Time (Simon Carnell and Erica Seagre translation)*. Milan: Penguin Random House.
- Rubenstein, M.-J. (2014). *Worlds Without End: The Many Lives of The Multiverse*. New York: Columbia University Press.
- Russell, B. (1915). On the Experience of Time. *Monist*, 25, 212-233.
- Russell, B. (1946 [2004]). *History of Western Philosophy (Routledge Classics edition)*. Abingdon; New York: Routledge.
- Russell, R. J. (1997). Does 'The God Who Acts' Really Act? New Approaches to Divine Action in the Light of Science. *Theology Today*, 56, 43-65.
- Russell, R. J. (1998). Special Providence and Genetic Mutation: A New Defense of Theistic Evolution. In *Evolution and Molecular Biology: Scientific Perspectives on Divine Action* (pp. 191-224): Vatican Observatory.
- Russell, R. J. (2001). Divine Action and Quantum Mechanics: A Fresh Assessment. In Russell, R.J. & Clayton, P. & Wegter-McNelly, K. & Polkinghorne, J. (Eds.), *Quantum Mechanics: Scientific Perspectives on Divine Action*. Vatican City State; Berkeley Vatican Observatory; Center for Theology and the Natural Sciences.
- Russell, R. J. (2006). Quantum Physics and the Theology of Non-Interventionist Objective Divine Action. In *The Oxford Handbook of Science and Religion* (pp. 579-595). Oxford: Oxford University Press.

- Russell, R. J. (2007) Cosmology and Eschatology. In Walls, J.L. (ed) *The Oxford Handbook of Eschatology*. Oxford: Oxford University Press.
- Russell, R. J. (2008). *Cosmology from Alpha to Omega: The creative mutual interaction of theology and science*. Minneapolis: Fortress Press.
- Russell, R. J. (2008). Natural Theodicy in an Evolutionary Context and The Need for an Eschatology of New Creation. In Russell, R.J. (Ed.), *Cosmology from Alpha to Omega*. Minneapolis: Fortress Press.
- Russell, R. J. (2012). *Time in Eternity: Pannenberg, Physics and Eschatology in Creative Mutual Interaction*. Notre Dame, Ind: Notre Dame University Press.
- Russell, R. J. (2018). What We Learned from Quantum Mechanics about Noninterventionist Objective Divine Action in Nature - and Its Remaining Challenges. In Russell, R.J. (Ed.), *God's Providence and Randomness in Nature: Scientific and Theological Perspectives*. West Conshohocken, PA: Templeton Press.
- Rynasiewicz, R. (1996). Absolute Versus Relational Space-Time: An Outmoded Debate? *Journal of Philosophy*, 93, 279-306.
- Rynasiewicz, R. (2000). On the Distinction between Absolute and Relative Motion. *Philosophy of Science*, 67, 70-93.
- Rynasiewicz, R. (2011). Newton's Views on Space, Time and Motion. *The Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Saathoff, G. et al (2003). Improved Test of Time Dilation in Special Relativity. *Physical Review Letters*, 91(19).
- Sarkar, S. & Stachel, J. (1999). Did Malament Prove the Non-Conventionality of Simultaneity in the Special Theory of Relativity? *Philosophy of Science*, 66, 208-220.
- Saunders, S. (2002). How Relativity Contradicts Presentism. In Callender, C. (Ed.), *Time, Reality & Experience*. Cambridge: Cambridge University Press.
- Savitt, S. (2002). On Absolute Becoming and the Myth of Passage. In Callender, C. (Ed.), *Royal Institute of Philosophy Supplement, 50: Time, Reality and Experience* (pp. 153-167). Cambridge: Cambridge University Press.
- Savitt, S. (2011). Time in the Special Theory of Relativity. In *The Oxford Handbook to the Philosophy of Time* (pp. 546-568). Oxford: Oxford University Press.
- Schliesser, E. (2013). Newton's Philosophy of Time. In Bardon, A. & Dyke, H. (Eds.), *A Companion to the Philosophy of Time* (pp. 87-101). Oxford: Wiley-Blackwell.
- Schlosshauer, M., Kofler, J., & Zeilinger, A. (2013). A Snapshot of Foundational Attitudes toward Quantum Mechanics. *Studies in the History and Philosophy of Modern Physics*, 44, 220-230.
- Schoot, H. J. M. (2009). Divine transcendence and the mystery of salvation according to Thomas Aquinas. In Goris, H.J.M.J. & Rikhof, H. & Schoot, H.J.M. (Eds.), *Divine transcendence and immanence in the work of Thomas Aquinas* (Vol. Publications of the Thomas Instituut te Utrecht; No. XIII, pp. 255-281). Leuven: Peeters Publishers.
- Schübler, W. (2009). Tillich's Life and Works. In Manning, R.R. (Ed.), *The Cambridge Companion to Paul Tillich*. Cambridge: Cambridge University Press.
- Sharber, J. (2014). *The Predictive Focus Account of the Principle of Simplicity*. New Brunswick: Rutgers The State University of New Jersey - ProQuest Dissertations Publishing.

- Shardlow, J. & Lee, R. & Hoerl, C. & McCormack, T. & Burns, P. & Fernandes, A. (2020). Exploring people's beliefs about the experience of time. *Synthese*.
- Shoemaker, S. (1969). Time Without Change. *Journal of Philosophy*, 66, 363-381.
- Skow, B. (2009). Relativity and the Moving Spotlight. *Journal of Philosophy*, 106, 666-678.
- Skow, B. (2015). *Objective Becoming*. Oxford: Oxford University Press.
- Slavov, M. (2020). Eternalism and Perspectival Realism About the 'Now'. *Foundations of Physics*, 50, 1398–1410.
- Smart, J. J. C. (1949). The River of Time. *Mind*, 58, 483-494.
- Smart, J. J. C. (1953). The Temporal Asymmetry of the World. *Analysis*, 14, 79-83.
- Smeenk, C. (2013). Time in Cosmology. In Bardon, A. & Dyke, H. (Ed.), *The Blackwell Companion to the Philosophy of Time* (pp. 201-219). Oxford: Blackwell.
- Smith, D. W. (2013). Phenomenology. *The Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Smith, J. E. (2002). Time and Qualitative Time. In Sipiora, P. & Baumlin, J.S. (Ed.), *Rhetoric and Kairos: Essays in History, Theory, and Praxis* (pp. 46-57). Albany: State University of New York Press.
- Smith, Q. (1986) The Infinite Regress of Temporal Attributions. *Southern Journal of Philosophy*. 24 (3), 383-396.
- Smith, Q. (1993). *Language and Time*. New York: Oxford University Press.
- Smith, Q. (1994). The Logical Structure of the Debate about McTaggart's Paradox. In Oaklander, L.N. & Smith, Q. (Eds.), *The New Theory of Time*. New Haven: Yale University Press.
- Smith, Q. (1994). McTaggart's Paradox and the Infinite Regress of Temporal Attributions. In Oaklander, L.N. & Smith, Q. (Eds.), *The New Theory of Time*. New Haven: Yale University Press.
- Smith, Q. (1994). The Truth Conditions of Tensed Sentences. In Oaklander, L.N. & Smith, Q. (Eds.), *The New Theory of Time* (pp. 69-76). New Haven: Yale University Press.
- Smolin, L. (2001). The Present Moment in Quantum Cosmology: Challenges to the Arguments for the Elimination of Time. *arXiv:gr-qc/0104097*.
- Smolin, Lee & Unger, R.M. (2015). *The Singular Universe and the Reality of Time*. Cambridge: Cambridge University Press.
- Sollereeder, B. (2018). Exploring Old and New Paths in Theodicy. *Zygon*, 53(3), 727-738.
- Sollereeder, B. (2019). *God, Evolution, and Animal Suffering: Theodicy Without a Fall*. Abingdon & New York: Routledge.
- Soskice, J. M. (1985). *Metaphor and Religious Language*. Oxford: Clarendon Press.
- Southgate, C. (2008). *The Groaning of Creation*. Louisville, London: Westminster John Knox Press.
- Stadler, F. (2001). *The Vienna Circle: studies in the origins, development, and influence of logical empiricism*. Wien: Springer.
- Stapp, H. P. (2008). Philosophy of Mind and the Problem of Free Will in the Light of Quantum Mechanics. Open Access, <https://arxiv.org/ftp/arxiv/papers/0805/0805.0116.pdf>.

- Stein, H. (1968). On Einstein-Minkowski Space-Time. *Journal of Philosophy*, 65, 5-23.
- Stump, E. (2003). *Aquinas*. New York: Routledge.
- Stump, E. & Kretzmann, N. (1981). Eternity. *The Journal of Philosophy*, 78, 429-460.
- Swinburne, R. (1968). *Space and Time*. London: Palgrave MacMillan.
- Swinburne, R. (1993). God and Time. In *Reasoned Faith* (pp. 204-222). Ithaca, London: Cornell University Press.
- Swinburne, R. (1996). The Beginning of the Universe and of Time. *Canadian Journal of Philosophy*, 26 (2), 169 - 189.
- Swinburne, R. (1997). *Simplicity as Evidence for Truth*. Milwaukee: Marquette University Press.
- Swinburne, R. (2001). Review of Warranted Christian Belief by Alvin Plantinga. *Religious Studies*, 37, 203-214.
- Swinburne, R. (2004). *The Existence of God, second edition*. Oxford: Clarendon Press.
- Swinburne, R. (2008). Cosmic Simultaneity. In Oaklander, L.N. & Smith, Q. (Eds.), *Einstein, Relativity and Absolute Simultaneity*. Oxford: Routledge.
- Swinburne, R. (2009). The Universe Makes It Probable That There Is A God. In *Science and Religion in Dialogue Volume 1* (pp. 203-234). Chichester: Wiley-Blackwell.
- Talbert, M. (2019). Moral Responsibility. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Tallant, J. & Ingram, D. (2020). The Rotten Core of Presentism. *Synthese*.
- Tamm, M. & Olivier, L. (Eds.) (2019). *Rethinking Historical Time: New Approaches to Presentism*. London; New York: Bloomsbury Academic.
- Taylor, C. (1989). *Sources of the Self: The Making of Modern Identity*. Cambridge, MA: Harvard University Press.
- Taylor, Edwin F. & Archibald Wheeler, John. (1963 [1992]). *Spacetime Physics*. San Francisco: W. H. Freeman and Company.
- Taylor, M. K. (1987). *Paul Tillich: Theologian of the Boundaries*. London: Collins.
- Teller, P. (1991). Substance, Relations, and Arguments about the Nature of Space-Time. *Philosophical Review*, 363-397.
- Thatcher, A. (1978). *The Ontology of Paul Tillich*. Oxford: Oxford University Press.
- Thomas, G. F. (1952). The Method and Structure of Tillich's Theology. In Kegley, C.W. & Bretall, R.W. (Eds), *The Library of Living Theology: The Theology of Paul Tillich* (Vol. 1, pp. 86-107). New York: MacMillan.
- Thorbjørnsen, S. O. (2013). Paul Tillich. In Kristiansen, S.J. & Rise, S. (Ed.), *Key Theological Thinkers: From Modern to Postmodern* (pp. 101-111). Farnham, Surrey: Ashgate.
- Tillich, P. (1922). Kairos. *Die Tat*, 14, 330-350.
- Tillich, P. (1947). The Problem of Theological Method. *The Journal of Religion*, 27, 16-26.
- Tillich, P. (1948). *The Protestant Era* (J. L. Adams., Trans.). Chicago: Chicago University Press.

- Tillich, P. (1948). *The Shaking of the Foundations*. New York: Charles Scribner's Sons.
- Tillich, P. (1951). *Systematic Theology I*. Digsowell Place: James Nisbet.
- Tillich, P. (1952). *The Courage to Be*. London: Nisbet.
- Tillich, P. (1957). *Dynamics of Faith*. New York: Harper Collins.
- Tillich, P. (1957). *Systematic Theology II*. London: James Nisbet and co. LTD.
- Tillich, P. (1963). *The Eternal Now*. New York: Scribner.
- Tillich, P. (1964). *Systematic Theology III*. Digsowell Place: James Nisbet & co. ltd.
- Tillich, P. (1973). *The Boundaries of Our Being: A Collection of his Sermons with his Autobiographical Sketch*. London: Collins.
- Tillich, P. (unknown). You Are Accepted. https://wedgeblade.net/files/archives_assets/20810.pdf. accessed 30/03/2021
- Tolmie, D. F. (2005). Salvation as Redemption: The Use of 'Redemption' Metaphors in Pauline Literature. In Van der Watt, J.G. (Ed.), *Salvation in the New Testament: Perspectives on Soteriology* (pp. 247-269). Leiden: Brill.
- Tooley, M. (1997). *Time, Tense, and Causation*. Oxford: Oxford University Press.
- Torrance, T. (1969). *Space, Time and Incarnation*. London: Oxford University Press.
- Torrenço, G. (2017). Feeling the Passing of Time. *The Journal of Philosophy*, 114, 165-188.
- Torrenço, G. (2018). Perspectival Tenses and Dynamic Tenses. *Erkenntnis*, 83, 1045-1061.
- Treisman, M. (1999). The Perception of Time. In Butterfield, J. (Ed.), *The Arguments of Time*. New York: Oxford University Press.
- Turecescu, L. (2001). Soteriological Issues in the 1999 Lutheran-Catholic Joint Declaration on Justification: An Orthodox Perspective. *Journal of Ecumenical Studies*, 38.
- Tye, M. (2017). Qualia. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Ulanov, A. B. (1985). The Anxiety of Being. In Adams, J.L. & Pauck, W. & Shinn, R.L. (Ed.), *The Thought of Paul Tillich* (pp. 119-136). San Francisco: Harper & Row.
- Uzgalis, W. (2018). John Locke. *Stanford Encyclopaedia of Philosophy*. Zalta, E. N. (Ed.)
- Van der Watt, J. G. (2005). *Salvation in the New Testament: Perspectives on Soteriology*. Leiden: Brill.
- van Fraassen, B., C. (1989). *Laws and Symmetry*. Oxford: Clarendon Press.
- van Fraassen, B. C. (2015). *An Introduction to the Philosophy of Time and Space PDF. Edition*. PDF: Princeton University Press.
- Vandervelde, G. (2001). Justification and Deification – Problematic Synthesis: A Response to Lucian Turcescu. *Journal of Ecumenical Studies*, 37.
- Webster, J. (2012). Incarnation. In Jones, G. (Ed.) *The Blackwell Companion to Modern Theology* (pp. 204-226). Oxford: Wiley-Blackwell.

- Weeks, J. R. (2001). The Twin Paradox in a Closed Universe. *The American Mathematical Monthly*, 108, 585-590.
- Weidner, D. (2020). Prophetic Criticism and the Rhetoric of Temporality: Paul Tillich's Kairos Texts and Weimar Intellectual Politics. *Political Theology*, 21(1-2), 71-88.
- Weingard, R. (1972). Relativity and the Reality of Past and Future Events. *British Journal for the Philosophy of Science*, 23, 119-121.
- Whitehead, A. N. (1964). *The Concept of Nature (1920)*. Cambridge: Cambridge University Press.
- Whitehead, A. N. (1925 [1967]). *Science and the Modern World*: The Free Press.
- Widerker, D. (1994). Providence, Eternity, and Human Freedom: A Reply to Stump and Kretzmann. *Faith and Philosophy*, 242-254.
- Wiesel, E. (1958). *Night (translation: Marion Wiesel)*. London, New York: Penguin.
- Wiesel, E. (1997). A Prayer for the Days of Awe. *The New York Times* (October 2nd).
- Wildman, W. (2010). The Divine Action Project, 1988–2003. *Theology and Science*, 2(1), 31-75.
- Wildman, W. (Ed.) (unknown). Reader's Guide to Systematic Theology.
<http://people.bu.edu/wwildman/tillich/stguide/stguide.htm>
- Williams, A. N. (1999). *The Ground of Union: Deification in Aquinas and Palamas*: Oxford University Press on demand.
- Williams, D. C. (1951). The Myth of Passage. *Journal of Philosophy*, 48, 457-472.
- Wilson, E. O. (1999). *Consilience: The Unity of Knowledge*. New York: Vintage.
- Wilson, R. A. (2016). Primary and Secondary Qualities. In Stuart, M. (Ed.), *A Companion to Locke* (pp. 193-211). Chichester: Wiley Blackwell.
- Wilson, R. W. (1978). The Cosmic Microwave Background. *Nobel Lecture*.
<https://www.nobelprize.org/uploads/2018/06/wilson-lecture-1.pdf>
- Wolterstorff, N. (2001). Unqualified Divine Temporality. In *God & Time: Four Views* (pp. 187-213). Downers Grove: InterVarsity Press.
- Wright, N. T. (2013). *Paul and the Faithfulness of God*. London: SPCK.
- Wüthrich, C. (2013). The Fate of Presentism in Modern Physics. In Ciuni, R. & Miller, K. and Torrenço, G. (Eds.), *New Papers On The Present—Focus On Presentism* (pp. 91–131). Munich: Philosophia Verlag.
- Zachman, R. C. (2017). John Calvin. In Lindberg, C. (Ed.), *The Reformation Theologians: An Introduction to Theology in the Early Modern Period* (pp. 184-197). Malden, MA; Oxford; Victoria: Blackwell Publishing Ltd.
- Zahl, S. (2013). Atonement. In Adams, N. & Pattison, G. and Ward, G. (Ed.), *The Oxford Handbook of Theology and Modern European Thought*. Oxford: Oxford University Press.
- Zimmerman, D. (1998). Presentism and Temporary Intrinsics. In van Inwagen, P. & Zimmerman, D. (Eds.), *Metaphysics: the big questions* (pp. 206-289). Oxford: Blackwell.
- Zimmerman, D. (Ed.) (2004). *Oxford Studies in Metaphysics vol 1*. Oxford: Oxford University Press.

- Zimmerman, D. (2008). The Privileged Present: Defending an 'A-Theory' of Time. In Sider, T. & Zimmerman, D. & Hawthorne, J. (Ed.), *Contemporary Debates in Metaphysics*. Oxford: Blackwell.
- Zimmerman, D. (2011). Presentism and the Space-Time Manifold. In Callender, C. (Ed.), *The Oxford Handbook of Philosophy of Time* (pp. 163–244). Oxford: Oxford University Press.