

Overture (mainly polemic): why time?

I wasted time, and now doth time waste me. Shakespeare, *Richard II*

PERSONAL (1)

When I wake up each morning, I am less likely to reflect that a new day has arrived than that yet another day has departed. What we unthinkingly call “the passage of time” tinges the first few minutes with apprehension. I have entered my seventies and, although the end is as invisible as it ever was, my probability of dying in a given year is many times greater than when, as a teenager, I first tried to imagine the extinction of my life, my world, and all those who had shared it with me. My human being is more “begoing” than becoming. As Christopher Hitchens put it, “every day represents more and more subtracted from less and less”¹. The merely probable “not-yet” is shorter than the definite “no-longer”; and “ago” is increasingly measured in decades rather than years. An optimistic calculation puts the number of days I imagine as “lying ahead” of me between a half and a third of the number that lie behind me: I am somewhere between supper-time and midnight in my life’s day. Since my last phase may be marked by chaos, confusion, pain and despair, the period in which I may be capable, in particular capable of thought, will most probably be even shorter than the quantity of time that remains to me.

This may be why, in certain moods, an ordinary Tuesday can seem, from the ordinary Wednesday that succeeds it, unreachable, beyond recall, in its own special sunlight; a privileged place merely in virtue of owning more of the future than does this present day. The extra day of “being there” becomes a giant stretch when I think of the fewness of my days of “I am” compared with the days of “I am not”, the endless – dateless and data-less – night of my absence which lacks even the quality of darkness.

What's more, the pace seems to be quickening. "I can't believe that a year has gone by since ..." is now replaced by a second order dismay: "I really can't believe a year has gone by since I last said 'I can't believe a year has gone by since ...'". Inflation seems to affect time as surely as it does money. There is an obvious, but probably wrong, explanation for this feeling that the tug towards increasing age is getting stronger; namely that the lengthening contrail of memory makes each successive day a smaller fraction of life so far. This proportionality explanation does not work, of course, because, by the time you were forty, days would be flashing by 80 times as fast as when you were 6 months old. Such an acceleration does not seem to fit with the occasional day that does drag, as when you are ill, listening to the uninvited monologue of a fellow passenger on a long haul flight, or stuck on a slow-moving train late for an appointment.² Perhaps the acceleration is due to the diminishing significance or novelty of the events that fills our hours.

Whatever the cause, on each 1 January the number designating the year just past looks less used up than its predecessor. By the time 1960 had arrived, my 1959 was worn out and its replacement overdue. When 2011 was announced, I was still not used to 2010 and even 2009 and 2008 looked scarcely touched. It is hardly surprising that I sometimes feel – as I imagine you, reader, do when yet another day, another week, another summer, another year has melted away – as if I were being swept, log-like, towards a cataract dropping into oblivion.

This feeling of suppressed panic has prompted me to think systematically about time, perhaps in the hope that, by cultivating a special kind of attention to it, I might slow it down or (if the expectation of having such an impact on the universe was unrealistic) slow my own passage to oblivion. An exploration prompted by gathering uneasiness would, you might think, best be addressed through lyric poetry or fiction that endeavours to rescue time lost. I have chosen philosophy not just because the familiar conundrums always yield something new. No; it is because the traditional problems are the visible surface of the invisible mystery of our "time-torn" condition. Granted, it is easy, too easy, to slip from thinking about whatever we have in mind when we feel the need to engage with "time itself" to thinking about the thoughts that others have had about time.

If this is an ever present danger it is because the literature on time – even if you confine yourself to metaphysics and bypass the huge bibliographies on the psychology of time perception, the representation of time in myth, in different cultures, in history, and the various ways time is expressed in narrative – is almost boundless. I am sufficiently aware of the size of that literature to know that no life of normal duration would be adequate to engage with it. And this will be evident in the modest list of references at the end of the book.

In his brilliant *Real Time II*, one of the many books that I have argued with (mainly against) in the last decade or so, D. H. Mellor says that he hopes "that the fewness of my references will not be taken as a sign of ignorance or arrogance"; on the contrary, it is because "I take it that my main points, if disputed, to be so common in the literature as to be by now public property."³ In my case, arrogance is not an issue; indeed, I am humbled by my awareness of the other failing named by Mellor, namely "ignorance".

Even so, I think I know enough of what is, and has been, thought about time that I can be reasonably sure of not missing the main issues and of not being self-deceived into a fantasy of originality simply because, like Irie in Zadie Smith's *White Teeth*, I was unaware that certain thoughts had been "thunk" before.⁴ To elect not to engage with the ideas and arguments of other thinkers, advanced in the millennia since time became a central theme of western philosophy, would be a self-impoverishing and self-defeating ordinance that would result not in intellectual independence and novelty but an unwilling dependence on a muddled version of the half-recalled views of predecessors. While much of *Of Time and Lamentation* is closer than it may appear to being an argument with myself than a work of scholarship, I am aware that an argument that has sufficient merit to be worthy of auditing by a third party, must be enriched by engagement with the work done by others in the philosophy of time, even when the engagement is non-systematic and far from comprehensive.

A first philosophy?

I have written about time as an indirect way of thinking about mortality. If *Of Time and Lamentation*, therefore, has all the appearance of a treatise, and even at places a scholarly one, it is not, as conventional as it appears. Its scope and ambition, for a start, is foolhardy – as befits an attempt to confront my (and your) finitude; of trying to think about a truth that defeats thought because it spans all that I am. Not that the mysteries of time offer an easy approach to otherwise inconceivable mortality: they resist contemplation almost as strongly as death repels it.⁵ Most obviously, this is because we seem to have to stand outside of time to be able to see it clearly; to adopt a viewpoint that is not merely outside of some particular inside but outside of all outsides. There is something deeply contradictory about assuming such a position if only because writing, thinking, reading are all located in time.⁶

Of course time-talk is not uniquely disabled in this way.⁷ Philosophy is always written in the teeth of its own impossibility if only because it is encircled, and encroached upon, by its objects of study; and the inquiry often rests on the assumptions or materials that are being inspected. Any metaphysical discussion of "Being" has to be conducted by beings, who are minute fragments of Being, the bounded part trying to encompass the boundless whole. The philosophy of language has to be pursued from within language, using words and sentences to rise above words, and examine sentences. Thinkers have to think their way to a position from which they imagine they can think about "thought". Discussions of "the reality of the outside world" have to assume that it is "out there", if only in the form of interlocutors. Anyone who wants to think at a metaphysical level about time – or "consciousness" or "the universe" come to that – therefore faces the Munchausen challenge of lifting one's self by one's own hair. We can sometimes do this, or seem to do so, too easily, commenting in the most automatic even absent-minded, way on, say, "the world", asserting gigantic truths (or falsehoods) in ordinary sentences that hardly have the draught to accommodate the thoughts we echo.

The very existence of the word “time” and the identification of time as a discrete theme for inquiry should therefore surprise us. We should not assume unquestioningly that there is something definite, unified, solid corresponding to a word, even when it has the office of a noun. This assumption does however form a necessary platform from which to launch our inquiry. Here, as elsewhere, to philosophize is to enter a conversation and we have to employ the terms that are used by our interlocutors. Uncertainty about the firmness of this platform, however, explains why the question “(What) Is Time?” is postponed to the final part of the book, where I shall try (among other things) to clarify what remains when we have set aside the almost irresistible metaphors that intervene between our experience of time and our thoughts about it.

Ontology, logic, epistemology have all laid claim to being a starting point for philosophy; and Emmanuel Levinas has even argued that, since responsibility precedes any searching after truth, ethics is the foundational philosophical discipline.⁸ Some of the reasons for adding the metaphysics of time to this short list will, I hope, be evident in the chapters that follow. Like any ground floor philosophical inquiry, that into the nature of time reaches into other fundamental philosophical preoccupations – for example, the nature of change, the fundamental stuff of the world, the relationship between discourse and that which it is about, human consciousness (by a long chalk, the most frequent subject of my published philosophical writings), and human freedom. Time entered the history of Western philosophy even before philosophy clearly separated itself from mythology and it has subsequently been a theme of equal concern to philosophers and theologians.

Physics and philosophy

If thinking about time is an indirect way of meditating on our mortality, then we need to focus on time as it is lived. This means rescuing time from the jaws of physics, one of the primary aims of the present volume – and it connects with the fundamental motivation of many of my other books.

For several decades, I have believed that the great intellectual challenge of contemporary thought is to find a way of thinking about ourselves that does not regress to supernatural beliefs or slip into a reductive naturalism. As part of meeting this challenge, we have to deal with the conflict between on the one hand possibly the most profound, and certainly the most practically effective, ways of thinking about the world in which we pass our lives, namely natural science, and on the other our everyday experience of the world, of ourselves, and of each other – the world in which scientists actually live and the rest of us make use of their findings. Science aims towards the most objective view and arrives at us humans – its starting point – last. The humanities and the arts begin from ourselves and reach out to the world; or at least they have done so in recent times in Western cultures though, historically, they have often skipped the world and reached past it to God. The endeavour to find a place at which the scientific and humanistic views of humanity are

reconciled, and to examine the relationship between what the American philosopher Wilfrid Sellars characterized as the “manifest” and the “scientific image”, and to seek something that encompasses them both, is our real task.⁹ This goes deeper than merely making links between art and the sciences – between bad art and pop science.

More importantly, this project begins with a rejection of scientism that sees science (ultimately physical science) as in some sense superseding the view of ourselves explored and elaborated in the arts and humanities. It is an essential part of this project to challenge the increasingly prevalent assumption that physics has the last word on the nature of time. To do so, however, is to risk being classified with the kind of individual who, writing to Professor Einstein from a park bench (with a crayon in one hand and a methylated spirits spritzer in the other), points out the errors in his theory of relativity. So it is important to make clear that *Of Time and Lamentation* does not aim to correct the physics of time but only to say why and how physics has little or nothing to say about much that truly matters about time. In an important sense it “loses” time – something that some physicists might welcome, given that aspects of it seem to have no place in a physical world whose laws seem to be time reversible, or invariant with respect to temporal reversal, and hence indifferent to the unfolding of time.

Several prominent physicists have attacked philosophy as a waste of breath. Notable among them is the Nobel Prize winner Steven Weinberg, who devotes an entire chapter of his *The Theory of Everything* to this topic.¹⁰ Even where “the insights of philosophers have occasionally benefitted physicists”, he says, this has been “generally in a negative fashion – by protecting them from the preconceptions of other philosophers.”¹¹ Ouch! And he reports that “I know of *no-one* who has participated actively in the advance of physics in the post-war period whose work has been significantly helped by the work of philosophers.”¹²

It is tempting to respond by inviting him to “get out more” or at least to note that in the early part of the twentieth century many of the great physicists (Einstein, Bohr, Schrödinger, and Heisenberg) *were* preoccupied with philosophy and acknowledged the influence of philosophers. Some physicists and philosophers of physics – most notably Lee Smolin – have even argued that the stagnation in particle physics since the Standard Model was completed in 1974, might have something to do with the rejection of the kind of radical reflection on the conceptual framework of science that philosophers indulge in.¹³ George Musser notes that while certain physicists think that being seen talking to a philosopher is “like being caught coming out of a pornographic cinema” others do have different views.¹⁴ Musser quotes Carlo Rovelli, a leading figure in the endeavour to reconcile quantum mechanics with the general theory of relativity, who has argued that “the contributions of philosophers to the new understanding of space and time in quantum gravity will be very important.”¹⁵

Rovelli – who, as we shall discuss, believes that time at the fundamental level is unreal – and Smolin are probably in a minority in their belief that physicists need philosophy. The quantitative epidemiology of opinions is an uncertain science: it is possible to mistake loudness for quantity. What is beyond question is the prominence

of those for whom mathematical physics is the only way to advance our understanding of time. Foremost among them in the popular mind is Stephen Hawking. He has famously argued that questions such as “How can we understand the world in which we find ourselves? How does the universe behave? What is the nature of reality? Where did all this come from? Did the universe need a creator ... ?” – traditionally questions for philosophy – are this no longer. His assertion that “philosophy is dead. Philosophy has not kept up with modern developments in science, particularly physics” attracted wide public attention and a good deal of uncritical agreement.¹⁶ The absurdity of his one-time claim that astrophysics can even answer questions that philosophers usually leave to theologians does not seem to have discredited him in the eyes of many people. M-theory, which unifies (or, we are promised, will one day unify) quantum mechanics and the general theory of relativity, is apparently able to explain how the universe came into being; why there is something rather than nothing.¹⁷

The dismissal of philosophy by physicists has been made easier by the fact that many philosophers have colluded in the capitulation of metaphysics to physics. The heirs of the Vienna Circle who gave birth to logical positivism and the most scientific strands of analytical philosophy would have agreed with Weinberg: “The insights of the philosophers I studied seemed murky and inconsequential compared with the dazzling successes of physics and mathematics.”¹⁸ The deferential attitude to physics among philosophers has outlived logical positivism and the discrediting of its critique of metaphysics. The philosopher Hilary Putnam was speaking for many when he stated quite baldly that philosophy has little to contribute to our understanding of time: “I do not believe that there are any longer any philosophical problems about Time; there is only the physical problem of determining the exact physical geometry of the four-dimensional continuum that we inhabit.”¹⁹

The conviction that the last word on the ultimate nature of the universe, and even of items in the universe such as you and me, belongs to (mathematical) physics which is approaching by successive approximations a God’s eye view is tenacious. The contrary notion that time is inseparable from human consciousness – which would seem to challenge the assumption that physics has the last word on time – does not cut much ice with some. After all, physicalist accounts of consciousness have, until recently, been in the ascendant in philosophy, though there are signs that they are now in retreat.²⁰ One of the most striking expressions of the belief that metaphysical problems are problems for physicists is an incongruously cheerful philosophical suicide note by James Ladyman and his fellow authors in *Every Thing Must Go*.²¹ They embrace scientism as “a badge of honour” and advance what they call the “Principle of Naturalistic Closure”:

Any new metaphysical claim that is to be taken seriously at time t should be motivated by, and only by, the service it would perform, if true, in showing how two or more specific scientific hypotheses, at least one of which is drawn from fundamental physics, jointly explain more than the sum of what is explained by the two hypotheses taken separately.²²

This is an assertion that quickly runs into all sorts of internal difficulties (as do the conclusions it is used to uphold, such as denying the reality of particular objects located in definite places including, one presumes, Professor Ladyman's own body, in favour of relations or relational structures)²³ but its main deficiency is that it bypasses the essential work of the metaphysician, which transcends Ladyman's claim that it is "the attempt to unify the sciences."²⁴ What is meant by "unification" here is not clear; after all it is obviously the job of physics, not metaphysics, to unify (say) the laws of electricity and magnetism into those of electromagnetism, to connect thermodynamics with the laws governing the movements of atoms, or reconcile quantum mechanics and relativity theory. At any rate, thinking philosophically about the fundamental nature of the world will go beyond adopting the humble under-gardener role of helping current science ("at time t !") to progress towards its own notion of a Theory of Everything; it will include looking critically at science itself, at the metaphysical assumptions upon which it is founded, and the processes by which its mathematical objects and images become established as either the most faithful or most complete portrait of reality in itself.²⁵

It is, of course, entirely proper that we should be willing to sacrifice an intuitively satisfying understanding of the phenomena of everyday life for the sake of mathematical truths that will greatly enhance our predictive and manipulative power through the technology that mathematized science makes possible. To this end, we may embrace an awe-inspiringly effective theory such as quantum mechanics when we try to predict what is happening in the physical world and to create technologies that exploit our mathematized understanding of the nature of material reality. And, as Tim Maudlin has expressed it, "Empirical science has produced more astonishing suggestions about the fundamental structure of the world than philosophers have been able to invent, and we must attend to those suggestions."²⁶ But we should not accept that the last word on the universe in which we live and on the nature of reality is to be spoken in the language of physics – for the simple reason that the great pioneers from Nils Bohr onwards admitted that quantum mechanics was not only "astonishing" but also unintelligible.

It was Richard Feynman who said "I can safely say no one can understand quantum mechanics" – with the implication that anyone who thought they *did* understand quantum mechanics manifestly did not.²⁷ As the astrophysicist Jim Al-Khalili has noted:

[Quantum mechanics] is remarkable for two seemingly contradictory reasons. On the one hand, it is so fundamental to our understanding of the workings of our world that it lies at the very heart of most of the technological advances made in the past half-century. On the other hand, no one seems to know exactly what it means.²⁸

And the progress of physics in those areas where it would presume to displace metaphysics has, over the last half-century, been ever deeper into unintelligibility, notwithstanding its increasing mathematical power to make predictions that extend even to previously undiscovered properties of the material universe.

It is an appropriate philosophical task, and an urgent intellectual challenge, to confront the fact that a theory such as quantum mechanics that is entirely unintelligible should also be so powerful, vastly extending our ability to manipulate and predict the world. It makes the chasm between the scientific and everyday or manifest image of the world a kind of scandal. In addressing this, we must bear in mind that the power of physics depends on excluding much of the world, exsanguinating it of phenomenal reality, reducing it to a residual stuff best described mathematically. Weight is reduced to a ratio, and shorn of the sense of heaviness; inertia is characterized without appealing to the experience of effort and labour; colours are combinations of radiations defined in terms of frequency and amplitude; and so on. Physics travels fast and far because it travels light.

There comes a point, after qualities such as warmth, brightness and loudness have been dismissed as merely secondary, when effort and hurry disappear as they are replaced by forces and velocities, and even the idea of definite location is seen as belonging only to the macroscopic realm of approximate truths, when we want to say “stop”. This point has been reached when physicists and their philosophical fellow travellers tell us that their understanding trumps all other ways of understanding and, what is more, that one day it will be complete in the sense of encompassing everything, leaving nothing, including ourselves, unexplained. Just as it would be unscientific to accept current scientific theories as the definitive account of space and time, it is unphilosophical to assume that *any* scientific theory would have the last word on what there is and what we are. What is more, as we have already suggested, some of the present difficulties that fundamental physics finds itself in may be due to conceptual confusions which result from failure to pay attention to those things that concern philosophers. At any rate, it seems likely to be true that, as Hans Halvorson has said, “If we put bad metaphysics into our scientific theories, then we can expect to get bad metaphysics out of them.”²⁹

Mellor deplores the fact that “so many philosophers are absurdly credulous of the wildest speculations of physicists about time.”³⁰ Not all philosophers it seems are so prone to cringe before the authority of science or believe that their role is merely to act as cheerleaders for physical science on the grounds that the immensely powerful, and complex and largely unintelligible discourses of science are not only the latest, but will generate the last, word on metaphysical issues. Numerous writers have assimilated the findings of physicists but have nonetheless continued with their own inquiries, confident that the nature of time is not entirely to be revealed in the world of mathematical physics. They have examined the logic of tenses, puzzled over the nature of becoming, tried to grasp what we mean, or should mean, about the passage of time and the idea of the direction of time, endeavoured to make sense of past and future events, and wondered whether time is inseparable from change, whether it is punctuate or continuous, and whether tensed time, or even time itself, are real – all without deferring to physics.

Those who hunger to make other than mathematical sense of physical theories such as those of quantum mechanics are often rebuffed by physicists. The truth is in the mathematics: this is all ye know and ye need to know. This attitude is encapsulated

in David Mermin's famous "Shut up and calculate!"³¹ This is unsatisfactory – not the least to those such as myself who are not particularly brilliant at calculation. But that's not the only reason that I, for one, am not going to shut up. The more important reason for opening my mouth – or at least thinking for myself – is that I, too, live in time and inhabit space, and so I am entitled to talk about both. And I am inclined to retort to the physicists: "shut up and get on with your calculations". For I have no problem with those who simply get on with their calculations, so long as they don't think their calculations are metaphysics, or that they render philosophical metaphysics redundant, like a cognitive ox cart in an age of sports cars and jumbo jets.

There are other reasons for not turning to physics for the last word on time. Firstly, physics is itself in something of an impasse, with its two most powerful theories in conflict. As Barry Dainton has put it:

We know that our current fundamental physical theories are imperfect: quantum theory and general relativity have yet to be fully reconciled. It may well be that the theory that emerges from this eventual marriage will have very different implications for the nature of space and time than those of currently acceptable theories, so it would be very short-sighted to take *current* scientific theories to be the last word on space and time *in our universe*.³²

Since general relativity treats physical quantities such as velocity and position as having determinate values which quantum mechanics cannot accommodate and quantum mechanics allows influences to be transmitted at faster-than-light speeds not permitted by general relativity, this is not only short-sighted but also contrary to the spirit of science.

But there is a deeper reason that is closest to what has motivated this book. There are many aspects of time – most notably tense, but also other key features of it – that lie beyond the reach of physical science (even where the reality of time is accepted at all). The assumption that what physical science cannot see, or has no use for, is not real or is less real, needs to be questioned. It is an assumption that has allowed the scientism that is so prevalent in contemporary thought to spread unchallenged and for an anti-humanist naturalism to predominate in so many quarters.³³ The case against this scientism – though it must still acknowledge that we are in some respects (minute) parts of the natural world and that living our lives requires us to go with the grain of the natural world – is well founded. We are (a) conscious of the natural world; (b) active explorers of that world who have ever-increasing objective knowledge of it; and (c) true agents whose lives are acted out rather than merely suffered. Making this case will require much preliminary work – including showing how physical science is unable to accommodate the conscious observer that makes physical science possible. That is why it is not until the final chapter of this work that it is addressed head on.

For the present I note that it is not only unscientific but also unphilosophical to assume that *any* findings and theories from objective, quantitative science will settle

the nature of time once and for all or that what is lost in physics of our experience and of what makes our world intelligible was well lost because illusory.³⁴ To say this is not to reject science – how could any sane person deny that it is the greatest collective cognitive achievement of humanity? – but to assign it to its proper place and to rescue time from the jaws of physics and from the dropped jaws of philosophers so awed by physics as to hand over metaphysical inquiry to physicists. And in respect of the latter, physics-savvy philosophers should not succumb to the temptation described by Jean Paul Van Bendegem: “When appealing to findings from empirically well-grounded disciplines, philosophers face a strong temptation to overstate their case – especially if their opponents can be relied upon to be relatively innocent of new developments in the relevant sciences.”³⁵

Although much of this book amounts to affirmative action for our ordinary experience of time, I don’t entirely support the claim that immediate experience and intuition are more significant than rationalism and science for understanding reality.³⁶ For a start, we need to clarify what we mean by “reality”: it is wilfully naïve to confine it to what is present to unmediated and immediate experience or even to the mediated experience of common sense. It is, however, equally culpable to overlook the “there” in the conception of “what is there” (or even what there is). As I shall discuss in Chapter 11, the irruption of viewpoint – that makes what there is be explicitly what is *there* and underpins the emergence of those aspects of time that physics seems to let slip or set aside – has to be taken into account in any fundamental understanding of reality.

And there are many physicists, most notably Einstein, who were unhappy with the impoverished (though immensely powerful) conception of time he had had such a crucial role in developing. He would have sympathized with this question from Paul Davies, physicist and brilliant popularizer of science:

Should we simply shrug the human experience of time aside as a matter solely for psychology? ... Does our impression of the division of time into past, present and future tell us nothing about what time *is* as opposed to how it merely appears to us muddle-headed humans? ... It seems to me that there is an aspect of time that we have so far overlooked in our description of the physical universe.³⁷

It is the role of philosophy to try to bridge – or, if this is too ambitious, to find a way of thinking that accommodates – both of Wilfrid Sellars’s epistemic realms and not to reject either in favour of the other. While the emphasis in the present volume (especially in the first part) has been to criticize the assumption that natural science (and in particular physics) will ultimately provide us with all we need to answer metaphysical questions insofar as they are answerable, this is only because *Of Time and Lamentation* is a *corrective*. What is left unaddressed (because I do not know how to address it) is the actual contribution physics may make to metaphysics and vice versa or what a unified world picture, beyond a unified science, would look like. In physics (or at least in quantum mechanics under certain interpretations) it may be

true that (as Ladyman argues) “every thing” – mountains, trees, tables, and bodies – “must go”, we then have to try to understand how it is that we live in a world where things most definitely have stayed and just where they always are: here, there and everywhere. I shall return to the question of the relationship between philosophy and physics at the end of Part I.

PERSONAL (2)

I have come late to thinking about this First Philosophy and to writing about it even later. Though I touched on time in my commentary on Martin Heidegger’s *Being and Time*,³⁸ my focus has been on the philosophy of mind, in the broadest sense, and on the relationship between language and the world. Of all the grand topics of philosophy, time had until recently seemed most alien to me, notwithstanding that nothing else, seemingly, could touch more intimately on the kind of beings we are, on our mode of existence.

I blame this on the first discussions I had about time as a schoolboy. These were dominated by those classmates who, unlike me, had televisions and had watched Hermann Bondi’s pioneering series on cosmology, physics – and time. They were able to talk with seeming confidence about relativity, time dilation, and the famous twin paradoxes. The knowingness of those who thought that Einstein had spoken the last word on time both irritated and dispirited me. Even then, I did not believe that the truth of time could be grasped only by those who felt at home with complex mathematics. But while I was genuinely sceptical of the relevance of mathematics and physics to understanding what time meant in everyday life, I had an uneasy feeling that my scepticism may have been at least in part motivated by my limited mathematical abilities. Even so, Lorentz coordinates and the like seemed remote from the time that was expressed in hurry, anxiety, hope, longing, waiting, enduring, planning, promising, joyful expectation, and grief; in short from time as it was manifested in my life and narrated in the thoughts that accompanied that life. Real time was composed of mornings and afternoons and evenings as well as quantities that could be tucked under a denominator or multiplied by themselves and seemed to have little to do with physical systems that evolved according to physical theory in a way that requires complex numbers to be represented.

And so things remained until a few years ago, when a concatenation of events awoke my interest in this theme. The first was retirement after 37 years as a physician. As the dust settled down on a career that had occupied most of my waking consciousness between my early twenties and the age of 60, I had the sense of entering what had once been viewed as the final phase of life, along with the leisure to reflect on this. Another was the accident of coming across, in my own library, and not re-read for 30 years, a remarkable collection of papers about time edited by Richard Gale and accompanied by an equally remarkable introduction and commentary.³⁹ I read it on a Greek island, in sunlight that seemed especially conducive to thought. I

made copious notes that in turn spurred me to further thought. In 2008, my mother, the place of my beginning in time and with whom I had spent much time, especially in the decade after my father's death, died after a long illness. The fact that she and I could no longer talk together seemed at least as strange as it felt sad. We had often talked about the strangeness of death and it was doubly strange now that I could not talk to her about that strangeness. Her going made the mystery of her life visible and demanded that I should think, at a level deeper than I had customarily done so, about mortality and transience, and hence time. All my experiences of her were in the past and it seemed more urgent to examine the nature of past events.

It has often been said that philosophy should teach one how to die. As a doctor I have seen enough of dying to be aware of the distance of most philosophical thought from the final phase of our return to the earth which has supported our singular existence. Nevertheless, I do believe we should use the idea of death to enhance our sense of life and its mystery.⁴⁰ Life at its most abundant is life lived in full consciousness of its finitude, in luminous awareness that our hands will grasp and our eyes will see and our hearts will beat for only a while. The art of living is also the art of outliving: to get over those who have "gone before" without becoming shallow. A meditation on time – on the mystery of the past we shared with them, the passage of time that took us past them, the future which seems to lie like a buffer between this moment and death – is an appropriate kind of *memento mori*, a way of getting closer to the unthinkable.

It will now be clear why this book is written in implicit, and frequently explicit, opposition to the domination of scientific accounts of time rooted in mathematical physics. The glory and triumphs of physics are in part the result of our getting ourselves, our parochial perspectives, out of the way; as a consequence, however, it looks straight past our lives. While there is nobility in seeing ourselves as part of a greater whole, and an unsentimental honesty in thinking of ourselves – including our days and hours – as minute physical parts of a boundless physical world, the domination of physics and natural science in our thinking threatens to attenuate our conception of what we and our lives are. And this is most strikingly elevated in its stripping time to the quantitative skeleton of itself. A truly serious inquiry into time, one that is adequate to our death-pervaded lives, should be haunted, as our lives are, by hope, loss, and fear; by joy and lamentation. The story told by caesium clocks and four-dimensional coordinate maps needs to be supplemented by moss on rocks, and tears on faces, and the long narratives of our human journey. Our temporal lives deserve a richer attention than is afforded by equations, diagrams, and numbers. The present work (alas, more argumentative than lyrical) is at least a preface to that kind of attention. The fact that I have avoided the Rolls-Royce of philosophical logic in favour of the sedan chair of ordinary English prose is not merely a reflection of my lack of expertise in this area. I have not tried very hard to amend this because I feel that you can lose contact with any intuitive sense of the issues at stake when formulae take over and you don't seem somehow to arrive at the places they take you to. I believe this feeling may be shared by many of those whom I hope might read this book.

I am not sufficiently capable of magic thought to believe that, by thinking hard about time, and perhaps revising conceptions of it, I can somehow escape the transience that characterizes all of time's children. Or that by showing the notion of "the passage of time" to be ill-formed I can render myself immune from the mortality to which increasing age makes me increasingly vulnerable. The journey from my house to the excellent pubs and cafés where much of this book has been written could still be the scene of a car crash that will mark this day as my last and any publication of *Of Time and Lamentation* that of a posthumous torso. Nothing that I have written or thought will make it a whit more likely that "the block of frozen urine falling towards my head from an overhead 747" (to borrow Nick Hornby's metaphor for the catastrophic event, always expected in general but always unexpected when it happens) will reverse direction and return whence it came.⁴¹ In short, I do not imagine that by unpicking a few conceptual locks, I will escape the prison of transience; or take the benefits of universal change (the most obvious being that it brought me into existence) without paying the price of it (that it will sooner or later bring Raymond Tallis to an end).

Nevertheless, I have to confess that this exploration of lived time *is* in part an attempt to think my way out of the sense of being frogmarched past a succession of "day marks" to the end of myself; an endeavour to row back against the ultimate helplessness, and the inevitable end of purpose, stealing up as we express and deliver on our purposes. If, as I know full well, even this is more than can be hoped for, I still feel that, by re-thinking time, we may elude a form of naturalism that sees us as being at bottom material objects whose nature will ultimately be described by physics. We are more than cogs in the universal clock, forced to collaborate with the very progress that pushes us towards our own midnight. By placing human consciousness at the heart of time, it is possible to crack ajar a door through which a sense of possibility can stream.

And if this still seems like magic thinking, it is nothing compared with the hope of Paul Davies that physics may lead us to a place beyond lamentation, the sunlit uplands of No More Tears:

And what if science were able to explain away the flow of time? Perhaps we would no longer fret about the future or grieve for the past. Worries about death might become as irrelevant as worries about birth. Expectation and nostalgia might cease to be part of the human vocabulary. Above all, the sense of urgency that attaches to human activity might evaporate.⁴²

Rather touching that this hope should flower in what must be the stoniest of soils, in an intellectual landscape dominated by physical science.

While, inevitably, there will be some difficult passages in what follows, it is genuinely addressed to anyone who, like myself, is obsessed by what we are inclined to call "the passage of time" and wants to see it more clearly. I take my cue from the great philosopher Henri Bergson, who once said to a journalist: "There is nothing in philosophy that could not be said in everyday language."⁴³ This was not always apparent

in Bergson's own works but I hope that there will be sufficient everyday language in what follows, given that it deals, however inadequately, with the profoundest everyday concern of us all; that, as Hamlet's mother characterized it, chiding her son for his excessive grief over his father, "all that lives must die / Passing through nature to eternity".⁴⁴

Nor will I pretend to question things that cannot truly be questioned. The picture of time that I offer is descriptive, a set of reminders, not revisionary; for I agree with the great American philosopher C. S. Peirce that we should "not pretend to doubt in philosophy what we do not doubt in our hearts".⁴⁵ But I might at the very least feel that I have earned the right to look critically at something I said at the outset of this Overture: that my days are numbered.⁴⁶ For our lives are not truly represented as divided into temporal units, even ones that are as informal and homely as days. Or if they are, the numbers do not reach to the heart of our experience of time.

I would like this book not only to intrigue but also at times to console. I have mentioned my 37 years as a doctor. The physician's habit of trying to "cure, improve, or comfort" is hard to break. I warm to Epicurus:

Empty are the words of that philosopher who offers no therapy for human suffering. For just as there is no use in medical expertise if it does not give therapy for bodily diseases, so too there is no use in philosophy if he does not expel the suffering of the soul.⁴⁷

In this case, the patient and the physician are one. Join me, fellow sufferers in examining the source of our pain, and our joy, of our limitations and our capabilities, of actuality and possibility: time.