



"Einstein's Dreams"  
a novel by Alan Lightman  
Pantheon Books, 1993  
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179 pages

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First, a little truth-in-advertising. The book jacket calls *Einstein's Dreams* a novel, and notes that author Alan Lightman is a physicist (Caltech Ph.D., 1974) who teaches physics and writing at MIT. Shouldn't we expect, then, that the book will teach us something about Einstein's contributions to physics? It doesn't. Maybe it's more about Einstein the person? No, not that either. Nor is the book really a novel, in any traditional sense. What is it, then?

The book's basic premise is straightforward: while working on the Special Theory of Relativity, published in 1905, Einstein experiences a series of dreams about time. Each dream portrays an alternate world for which the nature of time is different. The dreams are framed by a prologue and epilogue, in which we see Einstein, early one morning, waiting for the typist to come in and do his completed paper; and are punctuated by several interludes, describing meetings between Einstein and his friend and colleague Besso. According to the prologue, one of the dreams provides the key inspiration: "Out of many possible natures of time, imagined in as many nights, one seems compelling. Not that the others are impossible. The others might exist in other worlds."

Only in some of the thirty worlds does time appear to be physically different, and most of those concepts are not unfamiliar — the world where time runs backwards; the world that comes to an end; the world where everything happens over and over again. In other worlds people are different — they live forever; they have no memory of the past; they cannot imagine the future. In still others neither the physical world nor its inhabitants seem very different from ours, but people perceive and react to time differently. One world is virtually indistinguishable from the "real" world — time passes more slowly at higher

altitudes, but the effect is so tiny that it can only be measured with the most sensitive instruments — nonetheless everyone insists on living in the mountains.

Which is the "compelling" vision that inspires Einstein's theory? None of them — or perhaps all of them. To be sure, some of the dreams tease us with relativistic-sounding concepts. In one, everyone is always moving at high speed, since time thereby passes more slowly (just like our world, with the speed of light reset to somewhere around 55 mph). In another, time depends upon relative location, rather than relative velocity. Gradually, however, as we move from one world to the next, distinctions between the physical, human and perceptual natures of time become less and less important, as do the differences between these alternative worlds and the one we are used to. In the world in which people live for only one day, "either the rate of heartbeats and breathing is speeded up ... or the rotation of the earth is slowed .... Either interpretation is valid." The world of immortals is split into the *Later*s, who feel no pressure to do anything, since they have infinite time; and the *Now*s, who are always busy, since they want to be able to do everything that an infinite life allows. (Does this sound at all like anyone you know?) An understanding of relativity arises not out of any single dream, but from the global vision of how time is constituted by interactions between the physical world, its people and their conception of time.

Even though there may be no overt scientific lesson here, Lightman still provides us much to think about. What is the role of metaphor in scientific discovery? What does the conception of time mean for the novelist? To write a novel, after all, is to construct a world; and consciously or otherwise, the novelist must define the nature of time for that world: does it proceed linearly or cycle back? move rapidly or slowly? smoothly or unevenly? While such issues are not raised explicitly, it is hard to imagine that they did not influence the writing of this book.

One of the dreams can perhaps stand for the entire book: "a world in which there is no time. Only images." Such a world is no world at all — but Lightman makes it a beautiful thing to look at. In like fashion, a book like this can be no novel at all — so don't read it as a novel. Read it as poetry — even though it is not written in any form of verse — for the beautiful writing, the thought-provoking ideas, and above all for the lovely images that arise from the making of the worlds, individually and collectively.