

ELIZABETH L. THROESCH, *BEFORE EINSTEIN: THE FOURTH DIMENSION IN FIN-DE-SIÈCLE LITERATURE AND CULTURE* (LONDON AND NEW YORK: ANTHEM PRESS, 2017) ISBN 978-1-78308-623-8 (HB), DIGITAL (EPUB) £70.00 [NINA ENGELHARDT]

Before Einstein: The Fourth Dimension in Fin-de-Siècle Literature and Culture by Elizabeth L. Throesch examines the concept of the fourth dimension in the nineteenth and the beginning of the twentieth centuries, with a focus on its reverberations in literary fiction and implications for literary aesthetics. Almost half of this well-written and engaging book is dedicated to the life, work, and contexts of the foremost populariser of the fourth dimension, Charles Howard Hinton. This careful tracing of the history of the spatial fourth dimension provides a valuable contextualisation of H. G. Wells's fictions and his aesthetic, before a chapter on Wells's four-dimensional literary aesthetic consolidates existing research and, with reference to *The Invisible Man* and *Boon* in particular, shows the fruitfulness of reconsidering this writer's literary employment of the fourth dimension in view of its wider cultural life at the turn of the century.

Since the 1920s, the fourth dimension has been understood primarily as time in a space-time continuum. But before the publication of Albert Einstein's theories of relativity and their popularisation after the First World War, a spatial notion of the fourth dimension dominated scientific as well as literary and cultural discourse. It is this latter concept that *Before Einstein* introduces with its focus on Charles Howard Hinton's hyperspace philosophy and its influence on 'four-dimensional' literary aesthetics in the works of H. G. Wells, William James, and Henry James. The first part of the book develops Hinton's work in detail, and in the second part, Throesch uses this basis to read Wells and the James brothers through the lens of a four-dimensional literary aesthetic, that is, to examine the role of further dimensions in these writers' texts and ideas about the nature of literature. Along the way, *Before Einstein* makes comparisons between Wells's and the James brothers' works and frames the famous debate between Wells and Henry James in terms of their respective engagements with the fourth dimension.

In the chapters not focused on Wells, *Before Einstein* analyses Hinton's popularisation of the fourth dimension and its aesthetic implications in general and for the works of William and Henry James in particular. Chapter two is dedicated to the first series of Hinton's *Scientific Romances* (1884-1886) and its exercises for perceiving the fourth dimension by

manipulating twenty-seven wooden cubes with the ultimate aim of approaching reality in a new way. Crucially for Throesch's argument of Wells's four-dimensional literary aesthetic, Hinton encourages his readers to engage actively in constructing the fourth dimension – by manipulating cubes, cutting out shapes of paper, and combining to a fuller understanding the partial treatments of the fourth dimension in each of the stories in *Scientific Romances*. Here, it becomes clear that for Hinton, the fourth dimension is not a place to be attained but a process – a process of developing consciousness that is set into motion when reader and author work together. As for Hinton, the fourth dimension is a vehicle to expand consciousness and arrive at new perspectives on the world, it has social and ethical implications, and Throesch examines these in chapter three. In the subsequent chapter, she analyses the written correspondence between Hinton and William James. Reading James's pragmatism in the context of Hinton's hyperspace philosophy, she highlights the shared use of metaphors of fluidity and movement to emphasise consciousness as a process. Notions of process also resurface in the discussion of Wells: if Hinton argued that the process of recognising the fourth dimension could lead to 'a new era of thought', *Before Einstein* shows how Wells draws on it to develop a new literary aesthetic that would suit the demands of the twentieth century. In the conceptualisations of both thinkers, the fourth dimension lends itself to the creative process of achieving a higher dimension of consciousness and this, so Throesch concludes, characterises the 'aesthetic potential of the fourth dimension before Einstein: it is the "space" of literary self-creation' (197).

Throesch addresses Wells at length in chapter five. It has a focus on his early work, up to the publication of *Boon* in 1915, so that the analysis concerns texts that emerged before Einstein's relativity theory became a relevant context. The influence of Hinton on Wells is well known of course – not least since he adopts the term 'scientific romances' from Hinton and explicitly refers to four-dimensional theory in his early fiction. The value of *Before Einstein* for Wells scholars lies in its extended introduction of Hinton's concept of the fourth dimension as a way to enter another dimension of mind and in its examination of the social and psychological implications of his hyperspace philosophy. In particular, Throesch shows that with *The Invisible Man*, Wells responds to Hinton's *Stella* and employs the fourth dimension to present the 'other' in view of Victorian social and sexual politics, which also form the context of Hinton's novel.

Before Einstein also fruitfully brings together a 'four-dimensional reading' of Wells's early fiction with developments in X-ray technology,

William James's pragmatism as another late-Victorian discourse on relativity, and Wells's debate with Henry James on the nature and purpose of fiction. Throesch's analysis is based to a significant extent on William J. Scheick's work on the fourth dimension and what he calls Wells's 'splintering frame technique'. *Before Einstein* adds to this by examining how Wells disrupts the conventions of literary realism with fantastical and metafictional elements in his early work, which Scheick excludes from his analysis. Encouraging the reader to become self-aware and consider the constructed nature not only of the text they are reading but of lived reality and to take political action, the splintering frame technique awakens a higher-dimensional consciousness in the reader – one that goes beyond the fictional world to the 'fourth dimension' of the world outside the text. The 'fourth-dimensional' novel does not constitute a universalising moral force however, rather, for Wells, moral value is relative and the novel part of its continued negotiation. In chapter six, Throesch contrasts Wells's encouraging the reader to achieve a dimensional shift in perspective with Henry James's work, where characters come to approach the author's position of viewing all the dimensions from a 'fourth-dimensional' overview perspective. Both advocate a movement to a higher dimension, towards extra-textual awareness, and share the aim of awakening the reader to a state of aesthetic alertness. Comparing and contrasting Wells's and James's aesthetics in view of their respective employment of the fourth dimension, Throesch points to the importance of hyperspace philosophy in their conceptions of a 'new', modernist literature that responds to the scientific, social, and cultural changes at the end of the nineteenth century.

Recovering Hinton and the spatial fourth dimension from the later dominance of Einstein's relativity theory, *Before Einstein* focuses existing research on hyperspace philosophy in the nineteenth century and expands it with insightful analyses and connections between key players. In its wider contexts, Throesch's very readable book is a welcome addition to the field of literature and science studies, shedding light on the tangled scientific, spiritual, and aesthetic dimensions of the fourth dimension, and adding a particularly welcome piece to the recently growing research on the relationship between the mathematical and the literary imagination.