

MARK BLACKLOCK, *THE EMERGENCE OF THE FOURTH DIMENSION: HIGHER SPATIAL THINKING IN THE FIN DE SIÈCLE* (OXFORD: OXFORD UNIVERSITY PRESS, 2018) ISBN 978-0-19875-548-7 (HB) £58.00 [MAXIM SHADURSKI]

The Emergence of the Fourth Dimension: Higher Spatial Thinking in the Fin de Siècle is a highly intelligent, perceptive, and stimulating intervention into how a mathematical idea was transposed into literary fiction, inflecting its spatial concerns and prefiguring new modes of representation. Mark Blacklock recounts a history of what he calls a mistranslation, whereby the algebraic notion of n-dimensionality triggered a rethinking of three-dimensional geometry and resulted in the fictional explorations of spatial union, instant communication, corporeal inversion, co-location, and permeability (208). The latter instances, in turn, anticipated literary modernism's focus on formal experimentation and the interior spaces of its characters.

In general outline, Blacklock weaves a rich tapestry of intellectual and sociocultural concurrences into the exchanges between mathematics and literature. His monograph traces the emergence of the fourth dimension, primarily, to the work of mathematicians. In the 1840s-1860s, Arthur Cayley and James Joseph Sylvester began to shape discussion of n-dimensionality in contradistinction from Euclidean geometry and in ways that surpassed strict disciplinary categories. Their approach put pressures on the extant Victorian notions of space and existence therein. Blacklock examines Edwin Abbott's novel *Flatland* (1884) as a vivid illustration of a major conceptual shift in contemporary spatial thought, inseparable from its socio-political underpinnings. *Flatland* renders Britain's social body into an interplay of two-dimensional geometrical figures, creating thus a satirical version of a stringently patriarchal order, as well as inviting the reader to envisage alterity beyond the status quo. On this count, Blacklock accords special significance to Charles Howard Hinton, whose 1880 essay and 1904 book on the fourth dimension not only enquired into the essence of higher space, but also stipulated its necessity. Like Cayley, Hinton used the cube, a form unknown in biology, to visualise the relations that transcend three-dimensionality. Hinton's model of the tesseract pointed up both moral and political implications of the fourth dimension. Morally, people could unite by overcoming the dividing lines imposed on them by Euclidean geometry. Politically, the fourth dimension would bring out a universe of hereto untapped powers (132), radically new and therefore utopian. Blacklock's account does not limit its premises to the British context. Rather, it orients itself resolutely towards Immanuel Kant's concept of space and Hermann von Helmholtz's revision of it. Foundational to much of the nineteenth-century novel, Kantian space favoured the precession of ideal, Euclidean arrangements that might find their way into reality (8, 19-20). Conversely, Helmholtz invested in the analogy between higher space and evolutionary progress (32), which allowed him to lift the weight of spatial predetermination and free up alternate configurations of space. In his record of the sociocultural practices that the fourth dimension acquired in the fin de siècle, Blacklock turns to the Spiritualists and Theosophists. He convincingly demonstrates that each group, albeit dismissive of the idea in principle, co-opted it to their own distinctive goals. Yet the Theosophical Society epitomised the potential of the fourth dimension. Driven by faith in co-location and permeability, the Theosophists attracted an international following, which traversed both space and time (207).

Blacklock's monograph considers H. G. Wells in the context of fin-de-siècle writers, including Henry James, Joseph Conrad, Ford Madox Ford, and H. P. Lovecraft, among others. This comprehensive analysis of Anglophone writing seeks to highlight the ambiguities with which said authors treated the fourth dimension, designating it as both a promising prospect and an irreversible violation of an extant three-dimensional order. Blacklock inspects 'The Chronic Argonauts' (1888) as a text in which Wells exhibits his initial expertise in n-dimensional geometry, foreshadowing its expansion in *The Time Machine* (1895). However, in having Nebogipfel and the Time Traveller move back and forth across time, Wells upholds causality. Albeit marginal, the narrator's stance in *The Time Machine* frames the fourth dimension as a tool whereby degeneration can be circumvented and human effort unified; the novel's epilogue entertains the possibility 'for us to live as though it were not so'.¹ In his ensuing readings of 'The Remarkable Case of Davidson's Eyes' (1895), 'The Plattner Story' (1896), and *The Invisible Man* (1897), Blacklock construes Wells's recourse to higher space in predominantly minatory terms. Thus, Davidson, whose gaze reaches out towards an island in the Antipodes, suffers

¹ H. G. Wells, *The Time Machine*, in *H. G. Wells: Classic Collection I* (London: Gollancz, 2010), 84.

from a mental aberration (196). Plattner sets out on a journey that inverts his body, and Griffin undergoes a moral inversion, which he fails to reverse (180-1). In each case, the fourth dimension figures as a life-threatening condition. Similarly, Blacklock's contextualisation of 'The Door in the Wall' (1906) in imperial discourse communicates a cautionary note. Lionel Wallace, the protagonist of Wells's short story, opens the door from his metropolitan life into an oriental garden whence he eventually never returns (200). Symptomatically, dreams of alterity and the exoticism of colonial outposts close in on themselves. In his concluding section, Blacklock comments on *In the Days of the Comet* (1906), where Wells enables 'a privileged position from which to observe, a removal from entanglement' (204). This position overlaps with the capacity to exercise higher spatial thought, which, as Blacklock contends, transforms three-dimensional reality into the immaterial domain of the fourth dimension (205).

Thought-provoking as it is, Blacklock's monograph poses questions about the transgressive potential of the fourth dimension. In this regard, the Wellsian reader may recall the uses to which Wells put the phenomenon in *A Modern Utopia* (1905). The novel's narrative permits the protagonists to navigate the fourth dimension as an integral part of their material being in the world; the Owner of the Voice admits: 'We should scarcely note the change. Not a cloud would have gone from the sky. [...] Yet I have an idea that in some obscure manner we should come to feel at once a difference in things'.² Absent from Blacklock's nuanced investigation, *A Modern Utopia* conceives of the fourth dimension as an extendable mode of three-dimensional reality, a dynamic emergence that blurs the boundaries between imagination and physical experience.

² H. G. Wells, *A Modern Utopia*, intro. Mark R. Hillegas (Lincoln: University of Nebraska Press, 1967), 14.