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# The Fourth Dimension And Non-Euclidean Geometry In Modern Art (Leonardo Book Series)



## Synopsis

In this groundbreaking study, first published in 1983 and unavailable for over a decade, Linda Dalrymple Henderson demonstrates that two concepts of space beyond immediate perception -- the curved spaces of non-Euclidean geometry and, most important, a higher, fourth dimension of space -- were central to the development of modern art. The possibility of a spatial fourth dimension suggested that our world might be merely a shadow or section of a higher dimensional existence. That iconoclastic idea encouraged radical innovation by a variety of early twentieth-century artists, ranging from French Cubists, Italian Futurists, and Marcel Duchamp, to Max Weber, Kazimir Malevich, and the artists of De Stijl and Surrealism. In an extensive new Reintroduction, Henderson surveys the impact of interest in higher dimensions of space in art and culture from the 1950s to 2000. Although largely eclipsed by relativity theory beginning in the 1920s, the spatial fourth dimension experienced a resurgence during the later 1950s and 1960s. In a remarkable turn of events, it has returned as an important theme in contemporary culture in the wake of the emergence in the 1980s of both string theory in physics (with its ten- or eleven-dimensional universes) and computer graphics. Henderson demonstrates the importance of this new conception of space for figures ranging from Buckminster Fuller, Robert Smithson, and the Park Place Gallery group in the 1960s to Tony Robbin and digital architect Marcos Novak.

## Book Information

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## Customer Reviews

In this masterful, meticulously-researched book, Henderson unravels the deep connections between early 20th century art (cubism, futurism, dadaism, surrealism, and related movements) and the mathematics of the 19th century, particularly the emergence of the fourth dimension and the idea of non-Euclidean spaces. For example, she shows how the artist Duchamp was influenced by the mathematician Poincaré, rather than (as commonly believed) by Einstein. The new edition begins with a magnificent "reintroduction" spanning the latter half of the 20th century (1950s - 2000), and including vital cultural connections between the fourth dimension and the visual arts (along with other media). As Henderson demonstrates, interest in higher dimensions has grown in recent decades through the emergence of string theory and other scientific ideas. This rebirth of interest has been reflected in artistic ventures of the period. *The Fourth Dimension And Non-Euclidean Geometry In Modern Art* is an essential book for anyone interested in the intersection between science, mathematics and culture. It offers a riveting chronicle of the emergence of the idea of the fourth dimension in math, its popularization in literature and its adoption by the world of art that has persisted until the present day. Highly recommended! -Paul Halpern, author of *Edge of the Universe: A Voyage to the Cosmic Horizon and Beyond*

This is such an excellent work! This text is truly a revolutionary piece of scholarship, sure to revolutionize the minds of every reader. Anyone interested in modern art, mathematics, physics, or intellectual history needs to spend some time with this text. It was almost entirely unavailable until the printing of this second edition, so get your hands on it ASAP!

My friend is really into cubism and needless to say this made an excellent and informative present; she loved it! :)

Thanks!

Great

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