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Pulses of Abstraction: Episodes from a History of Animation

ANDREW R. JOHNSTON, 2020

Minneapolis, University of Minnesota Press

pp. 271, notes, and index, £23.99 (paper)

Pulses of Abstraction takes an innovative approach to animation history, combining key figures, elements, techniques, and technological developments. Johnston explores the development of abstract animation in the period from the 1950s to the 1970s, and points towards how this continues to influence the medium today.

The book is divided into five chapters, each one focusing on a specific artistic element. The first chapter, 'Line: Signatures of Motion', looks at the scratch animations of Len Lye, and argues that the use and movement of the line can transcend the simplicity of the image and 'reveal this form's ability to possess and convey energy' (p. 48).

The second chapter focuses on colour, exploring this through the Lumia art of Thomas Wilfred. 'Color: The Prometheans' discusses that, through the use of a machine called a Clavilux, Wilfred aimed to create animation that would 'not only affect the eye, but radiate throughout the body as well' (p. 92), and that the moving, projected lights that formed his animation would be able to 'retune the senses' (p. 97). This chapter draws heavily on work by the Romantics, alongside work from physicists and scientists, to explore colour theory and explain Wilfred's work.

Robert Breer's use of time in his collage films is the focus of chapter three 'Interval: Don't Blink'. Johnston argues that Breer was influenced by neo-avant-garde movements, and that his manipulation of the intervals between frames allowed 'viewers to inhabit new technical modes of time' (p. 23) which kept each encounter with his work fresh and novel.

Chapter four, 'Projection: Algorithms of Light' examines Mary Ellen Bute's films, specifically her use of an oscilloscope, a device which visualises frequencies. Johnston argues that Bute used this device to 'visualize sensual information as isomorphic frequencies' (p. 175) and create abstract animation that explored ideas of perception.

The final chapter, 'Code: Models of Time' traces the development of real-time digital filmmaking technologies in the 1960s and 70s. Unlike other chapters, chapter five looks at a number of key figures such as John Whitney, Charles Csuri, Lillian Schwartz, and Larry Cuba, who worked with various technologies such as digital computers, hardware, programming languages, and projectors to generate movement in their work. Johnston argues that the interplay between media such as digital animation, photography, and printed paper, within the context of wider scientific and media landscapes generated new aesthetics within animation. The conclusion brings together these techniques and explores them through the work of Lewis Klahr.

Throughout the book Johnston draws from philosophers, academics, artists, critics, and scientists to enrich his aesthetic analysis of certain artists and works. Archival images from featured works, as well as technical diagrams of the Clavilux and other devices, help illustrate the technologies and technological developments that Johnston explores. Nevertheless, animation is a medium in motion, so while the images do help they are unable to fully explain how some of the works operated. Background knowledge is key when reading this book, as it is definitely intended for an academic audience already familiar with animation history. At times it can be densely written, with scientific, technological, and philosophic jargon interspersed throughout.

Overall, *Pulses of Abstraction* is a hugely interesting and engaging read for those already well versed in animation history who want to add to their understanding, or have a new perspective revealed, as is a fascinating piece of media archaeology that blends aesthetics and technology to provide new understandings of abstract animation.

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