

ers of first-party Sega console games to provide a cogent overview of how Sega of America organized its product development and how its many partner studios brought numerous beloved games to life. The result is a monograph as comprehensive as it is enlightening.

In *The Sega Arcade Revolution*, however, the author largely recounts the history of games developed in Japan, and here the language barrier often betrays him. He focuses on sixty-two games ranging from Sega's first video game, *Pong Tron* (1973), to *Planet Harriers* (2000), but a lack of English-language sources leads to uneven coverage. Entries on seminal games like *Turbo* (1981) and *Zaxxon* (1982) feature relatively little information about their development, while Horowitz explores lesser, though still noteworthy, games like *Flicky* (1984) and *Columns* (1990) in greater depth merely because interviews with their creators have been conducted in or translated into English. His analysis of the impact of these games in the marketplace is also occasionally problematic, because he often relies on Sega's own, inherently biased proclamations in trade magazines like *Replay* and *Play Meter* without appearing to subject them to critical scrutiny.

Despite these concerns, Horowitz is to be commended for creating the most comprehensive examination of Sega's arcade output yet attempted. By drawing on virtually every English-language source pertaining to Sega arcade game development and conducting fresh interviews of his own where practicable, the author has melded piecemeal revelations about seminal arcade games into detailed and informative write-ups. Although the

book spends more time chronicling the development of these games than analyzing their significance, *The Sega Arcade Revolution* should be required reading for any scholar aiming to contextualize Sega's vast influence on the development of the coin-operated video game.

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—Alexander Smith, *Six Mile Regional Library, Granite City, IL*

### **A Play of Bodies: How We Perceive Videogames**

*Brendan Keogh*

Cambridge, MA: The MIT Press, 2018. Introduction, notes, references (bibliography and ludography), and index. 225 pp. \$39.95. Cloth. ISBN: 9781138189485

Brendan Keogh's *A Play of Bodies: How We Perceive Videogames* is an interesting read, particularly for its minute observations of how digital play actually happens, drawn from a massive knowledge of games. It is somewhat limited in references to game ethnography and play experience beyond the United States and Australia, but nevertheless, the connections Keogh makes between embodied play and contemporary game culture are strong and original contributions to the literature.

One of the consistent dreams of video games has been—at least since Janet Murray's *Hamlet on the Holodeck* (1997)—the total integration of player and game to the point that the player lives the story in full body immersion. This is the topic Brendan Keogh tackles head on in this interesting

and challenging work.

Excluding the introduction and conclusion, the book has six named chapters concerned with video game worlds, interfaces, hand-game interaction, sensory input, play processes, and player identities. Keogh's primary sources are games, which he lists at in a dense ludography (pp. 219–23). The usefulness of setting game references apart from other references can be debated, but in this case, it showcases Keogh's comprehensive knowledge of the topic at hand, and the book reflects this intimate knowledge of the field.

Central to Keogh's introduction is the sense of being part of the game, and in his case, it is a very physical presence—a situated and sensorial experience. This does not mean a blurring of boundaries between fantasy and reality. Instead, he carefully presents the points of intersection between the body and the game. His language is evocative, but precise, as he describes how the games use the limited options for input and information about the player to make him feel as if he is tearing into the game universes. For example, Keogh discusses how the movements of his thumbs merge with the actions on the screen until the figure performing on the screen feels like an extension of himself. This extension of the self makes Keogh, as player, feel as if he is fighting to win or lose when there are only pixels being manipulated.

Throughout the first chapter, Keogh continuously returns to Katherine Hayles' *How We Became Posthuman* (1999) and her concept of contemporary humanity as so closely integrated with technology that we are cyborgs. In chapters 2 through 5, Keogh describes in detail how we incor-

porate game interfaces, input devices, sounds, and images into the way we feel and act. From detailed descriptions of the difficulties with sharing and even recognizing the tricks needed to manipulate the controller correctly in a particular game to in-depth discussions of timing and rhythm as embodied experiences, Keogh continuously returns to how the technology of digital games depends on the skill of our bodies. To demonstrate this, he draws on a rich variety of game examples, as well as an enlightening history of input devices for computers and games, from the QWERTY keyboard to current console controllers.

Although Brendan Keogh engages with the same set of scholars we expect to see in an analysis of game structures—namely Espen Aarseth, Jesper Juul, Ian Bogost, and Graeme Kirkpatrick—he does move somewhat outside of this narrow focus by looking at methods and studies of digital ethnography, represented mainly by Larissa Hjort, and nonhegemonic perceptions of the body through mentions of the works of Adrienne Shaw and T. L. Taylor. Considering the book's focus on lived experience and player practice, it is surprising that the ethnographic approach to game studies, a rich field of study focused on how games are integrated in the lives of players, is not a larger part of the book. This becomes particularly obvious in chapter 6, "From Hackers to Cyborgs," in which he discusses Donna Haraway's *Cyborg Manifesto* (1985) and strives to find meaning in games beyond game play.

This is perhaps the most original and insightful part of Keogh's book. Where the previous chapters have been filled with minute and, at times, somewhat repetitive

observations of how digital play is embodied, Keogh's sixth chapter tells us why this is important. By criticizing two main paradigms of game culture, the hacker and the cyborg, Keogh proposes a frame for understanding how games are integrated in and understood as a part of a larger technicity. In this context, the hacker represents the mastery over the (computer) system, an empowered position of dominance. Opposing this is the cyborg, the human integration with the machines, an embrace that destabilizes the hegemonic

dominance, as Keogh puts it. This chapter explains the importance of the previous chapters with their careful mapping of how the game technology demands a mastery that turns the different input devices and interfaces into extensions of the body. Here Keogh brings the whole cyborg versus hacker discourse into the field of game culture and positions it on the brink of a deeply insightful, critical reading.

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—Torill Elvira Mortensen. *IT University of Copenhagen, Denmark*