

formed among children and with their teachers, all of whom were listening to one another” in the process (p. 154). And that is a very important lesson indeed from a book well worth reading.

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**Architecture in Play:
Intimations of Modernism
in Architectural Toys**

Tamar Zinguer

Charlottesville, VA: University of Virginia Press. 2015. Acknowledgments, notes, illustration credits, and index. 252 pp. \$49.50 cloth. ISBN: 9780813937724

Several architects, including Frank Lloyd Wright, Le Corbusier, Buckminster Fuller, and Charles and Ray Eames, have credited Friedrich Froebel and his Kindergarten Gifts with their professional pursuits. As such, what formative influences do toys possess? Responding to this query, Professor of Architecture at Cooper Union Tamar Zinguer seeks answers in her book *Architecture in Play*. Defining construction toys as “kits consisting of individual parts that can be assembled into something larger” (p. 7), she confirms that they imitate as well as intimate architecture—a term suggested by Anthony Vidler, Professor and Dean of the School of Architecture at Cooper Union. More than teaching historical or contemporary architectures, playing with these artifacts teaches children who tinker with blocks a process of experimentation familiar to designers.

Zinguer explains these experiments

in architecture, crystallography, engineering, and pedagogy in accessible language while she supplies ample explanations to help most readers better comprehend the issues. In architecture, for example, she delves into the history of prefabrication and succinctly displays the depth of her knowledge from commercial endeavors like the Levitt Brothers and Lustron Homes to projects by architects Konrad Wachsmann, Buckminster Fuller, and Walter Gropius. The book also contributes to the literature on architects Gustav Lilienthal and Charles and Ray Eames, without providing a full corpus. In addition, readers fascinated with early flight experiments, like those of Alexander Graham Bell or the Lilienthal brothers, or bridge engineering, such as designs by Thomas Bouch or Sir John Fowler, will be pleasantly engrossed and enticed to discover more.

Readers interested in building toys will also be pleased. In four generously illustrated chapters, Zinguer covers six of the most popular and long-produced construction toys from the late nineteenth century to the middle twentieth century in Europe and North America. Friedrich Froebel’s Kindergarten Gifts and Occupations (1836) instructed children in the unity of life which reflected his academic interests in the science of crystals lead by Samuel Weiss. Weiss translated the work of Abbé René Hüay who noted how crystals broke into basic shapes and developed a theory of crystallographic axes. Taking this knowledge, Froebel’s second gift adopted these axes. The first two case studies tell a lineage of these objects because Gustav Lilienthal illustrated Froebel’s manual.

Unlike Froebel, who never lived to see Edward Wiebé’s interpretation and Milton

Bradley's production of the gifts, architect Gustav and engineer Otto Lilienthal saw their product, Anchor Stone Building Blocks (1877), gain popularity with Friedrich Richter's leadership. Despite making advances in the formula and fabrication, the brothers were unable to compete with their original product. Gustav Lilienthal, now experienced with manufacturing, used prefabricated concrete blocks at cooperative Freie Scholle and panels called Terrast-Decke. Human flight, another pursuit of the brothers, provided a similar point of view for blocks, Zinguer claims. She fills the book's chapters with charmingly loose associations like these.

To make further connections, the second half of the book groups construction toys. Yet by combining examinations of pseudoengineering societies replete with newsletters, prescribed masculinity, and inspiration from the industrial landscape of train rides into a single chapter, Zinguer muddles the differences between book-keeper Frank Hornby's Meccano (1901) and factory owner Alfred Gilbert's Erector Set (1911). Instead of relying on the inventors' other endeavors (note that neither possessed an engineering background despite the toys' advertised educational objectives), this chapter is underpinned with a history of trusses and bridge failures offset by advertising campaigns that claimed boys were destructive and constructive.

Contemporaneous definitions of work and play aid Zinguer in arguing that these toys acted as a bridge between play and work. Architects Charles and Ray Eames intended *The Toy* (1951), by far the largest of the artifacts, to be used as toy, set design, or interior decoration and meant it

to bend boys to architecture or engineering and to mold girl's "homing instinct" (p. 148). Prompted by kites, the structures were composed of tetrahedrons and cubes. While most of the case studies have the obligatory paragraph judging it against similar toys, I was surprised there was no description of other large-scale blocks, like those of Patty Hill Smith.

Although using cards to build a structure was a pastime originating in the eighteenth century, the Eames's created their own adaptation of *The House of Cards* (1952), which included unique features such as the cards' eight slots, everyday graphics, and a rejection of sequential order. Compared to multimedia spaces, free from linear presentation styles, Zinguer concludes that both reflect the Eames's interest in communication theory. From communication to crystallographic theory, each chapter embarks on a different historical exploration.

From this sample of construction toys with diverse inventors, materials, and periods, Zinguer offers three unifying themes. First, by analyzing Roland Barthes and Charles Baudelaire, she remarks that blocks, if abstract, create something new and provide repetitive play, albeit several of the sets make destruction as tedious as construction. Second, she applies Claude Lévi-Strauss's bricolage (or working with odds and ends) to construction toys. Third, in reference to Ernest Gombrich's "Meditations on a Hobby Horse," she contends that like hobby horses these toys are function substitutes rather than dependant on their formal qualities to denote meaning.

The author illustrates the principles in a few examples of how boys actually played with these toys; like that of Nobel physicist

Max Born who soon strayed from the prescribed structures of Anchor Stone Building Blocks or of Nobel chemist Sir Harry Kroto who built molecules with Meccano.

The bulk of the book, however, covers the cultural context and intentions behind the objects even though Zinguer concedes that it is implausible that direct pedagogical aims, like current professional debates, could be absorbed through play. Still, toys prepare children for later pursuits indirectly because there is architecture in the play of inventors and children through an intimation of modern methods.

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How Games Move Us: Emotion by Design

Katherine Isbister

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How Games Move Us is the latest addition to MIT's Playful Thinking series, a collection of compact, interdisciplinary books designed not for a specialist audience but rather for the generally curious. In the words of the series editors, the Playful Thinking line of books is "for any reader interested in playing more thoughtfully or thinking more playfully" (p. ix).

How Games Move Us fits this charge well: with uncluttered prose, focused discussion, and modest but lively and carefully selected examples, it asks about the principal design mecha-

nisms for creating emotion in players. The provenance of these mechanisms are choice and flow, phenomena that Isbister argues distinguish games from other mediated experiences. The meaningful decisions of the players and the investment and control consequential to those decisions give "games their unique power to create empathy and connection" (p. 2). Games, in other words, work differently from film and television, print and radio. They invite conversation and its attendant intimacy, creating a rich possible space for evoking a range of emotions and experiences for players.

Consider embodiment, for example, or the way a game's avatar comes to signify its player's desires and decisions over time and space and through various physical and cognitive dimensions. Isbister explains that there is a "joining of player to virtual self through avatar-based action" (p. 13). Control causes connection, connection incites identification, and identification engages the emotional register, which then stimulates more meaningful control and connection. In describing, for example, both the poignant existentialism conjured by *Cart Life* (2011) (and its characters' struggles to balance work and home) and the provocative combination of paranoia and psychosis (and the right to religious freedom) of *Waco Resurrection* (2004), Isbister argues that games—and by extension, their designers—"have the capacity to take us into different emotional territory than any other medium" (p. 131). We are on the verge, ostensibly, of a revolution in creative expression and understanding.

Admittedly, it is hard not to be captivated by Isbister's enthusiasm and to hap-