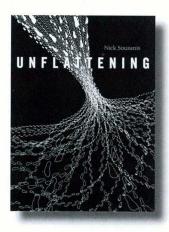
Unflattening

By Nick Sousanis Harvard University Press, 2015 208 pp./\$22.95 (sb)



It is a measure of Nick Sousanis's vigor as an artist and thinker that any traditionally academic review of his book must proceed from the strain of the translator's predicament, and no less from the pleasures of laboring under the spell of his work. Unflattening is the first doctoral dissertation written and drawn entirely in comic book form, comprised of eight chapters and two interludes in which comics illuminate the ethical stakes of allowing visual thinking and embodied cog-

nition into contemporary educational culture. Concerned with the entrenched denigration of multimodality in the Western intellectual tradition, Unflattening is a delightfully profuse work on the nature of imagination itself. Beyond its efficacy and beauty as a piece of graphic nonfiction, Unflattening makes an important contribution to the growing pedagogical literature around comics.

The academic inauguration of comics studies has coalesced in just the past few decades, and the call for what educator Maureen Bakis refers to as the "graphic novel classroom" is still nascent. Unflattening connects visual literacy with educational justice, offering an inclusive treatment of the visual logics of the comics medium and a discussion of the generative value of "ideas made spatial" (66). Imaginative "threads of association," inherently decentralized, infuse semiotic possibility into comics and allow greater nuance and referential compression than would be possible through monomodal means (37, 62, 117, 135). Sousanis argues that the fruitful relationship between visual cognition and labile, unhierarchical thinking is a fundamental offering of the comics medium (58). Incorporating the theory of Gilles Deleuze and Félix Guattari ("I think their writing really lends itself to being presented in comics form"), Sousanis demonstrates an affinity between the "lines of flight" associated with rhizomatic structures of meaning and the "vectors" of embodied cognition (39, 45, 58, 136-37, 161). Strongly committed to readerlooker agency, Unflattening manifests the process of visualization as an analytical paradigm and steadily superimposes new lenses on its own material. Stirred by the nonlinearity of its indigenous iconography, the brawn and generosity of Sousanis's first book invites its reader-looker to co-construct meaning on a "journey . . . into the unknown" that draws on the "vast depths within depths" of the human as "living arrow" (80, 96, 139).

Unflattening's immersive visual narrative begins with establishing panels that depict an industrial dystopia of "flatness," after the 1884 novella Flatland: A Romance of Many Directions by Edwin A. Abbott. Its denizens, visually inspired by the figural work of Alberto

Giacometti and Edvard Munch, represent the psychic debasement of an educational system geared toward the "proper results": the standardization of the eventual workforce (9, 22-23, 112-13, 118-20). Haunted and interchangeable, their vacancy is not that of simple victimhood. Sousanis also casts them as "the inanimate chorus" that internalizes and socially enforces the limitations placed on imagination by mind/body dualism, an image/text hierarchy, and the predetermined paths of compulsory education (7, 58, 128). A dominating infrastructure of conveyor belts draws their compliant forms through a machinic world that grasps, sorts, pumps, and molds every individual (6-9). Humanity is "an emptiness to be filled," darkly invoked by the horrific circumstances of mummies, organ-robbed cadavers, and warehoused bodies (8, 12, 13, 55, 138). Visual echoes resound across Sousanis's pages, and one quickly recognizes his Flatland as a parable of the classroom. The Vitruvian man cohabits an early page with human figures that writhe within the bubbles of standardized test answer sheets, subject to "tools devised to calculate and convert the human into data" (12-14). Their deterministic world requires "unflattening," "a simultaneous engagement of multiple vantage points from which to engender new ways of seeing" (32).

The principle of linguistic relativity contends that language influences or even determines the possibilities of thought, a rephrasing of the rupture between experience and expression that distressed philosophers René Descartes and Bertrand Russell (54, 67). As Sousanis notes more broadly, "the medium we think in defines what we can see" (52). An engaging tour through scientific history posits perspectival innovation as foundational to discovery, an insight that morphs into the educator's ethical imperative to honor the human condition through the acceptance of visual, textual, and kinetic thinking alike. "To prepare good thinkers," Sousanis writes, "we need to cultivate good seers" (81). Consistently grounded by a concern for cognitive emancipation, Unflattening argues that a "dynamic cycle of read=look, look=read" characterizes life in "the sequential-simultaneous ecosystem that is comics," and allows for diversity, complexity, and adventure (37-41, 64).

Evoking this spirit, the Flatlander's pained resignation is foiled by the lithe body of Perseus in flight (27, 61, 67, 94, 97). Humanism is premised upon the intrinsic drive toward self-actualization and creativity, the untold potential of human thought and culture, and the body's exquisite suitability for propelling discovery. The extrapolation of intellectual and sensory vitality through a visual lexicon of the mobile, idealized body could easily reinforce a reader's intuitive equation of dysmorphia or sensory handicap with stunted humanity. Yet Sousanis is careful to refute the more virulently privileged interpretations of humanism that his work might attract, making Unflattening noteworthy for its reconciliation of a sensibility of wonder with a criticism of what we might call "sameness humanism" (36, 40, 146). Sousanis emphasizes the invigorating necessity of multiple vantage points, and carefully notes his use of vision as a metaphor "not meant to exclude other modes of perception" (38-40).

Unflattening itself presents a thoroughly visualized argument, and the non-linguistic dimension of the book is "not mere decoration or afterthought" (81). The elusive structure of visual rhetoric is one of Sousanis's most ambitious subjects, compelling his employment of

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the comics medium for visual exposition. Taking up Scott McCloud's canonical Understanding Comics: The Invisible Art (1993), which unpacks the formal mechanisms and historical reception of the medium, Unflattening complicates the concept of visual "closure" in comics—the reader's imaginative leap from partial information to narrative grasp—through a discussion of parallax. Sousanis traces the concept through stereoscopic vision and astronomical measurement, then offers "a further crenulation": the literary employment of parallax in James Joyce's 1922 Ulysses (31, 45). Exploring the notion of "flow," a single page condenses Sousanis's complex argument into a multi-panel, spatiotemporal journey of water through a steaming teapot, rain clouds, a waterfall, a reservoir, an entanglement of pipes. Flow is thus demonstrated as a question of visual rhythm, compositional unity, and theoretical variety, but never does the book collapse toward formalism: "the ways of seeing put forth are offered not as set steps to follow" (41, 45-46). Rather, they offer lush evidence that "comics can hold the unflat ways in which thought unfolds" (66). Sousanis's decision to dissertate through comics aligns the agency of *Unflattening*'s reader-looker with his own fecund moral intelligence, making the book a visual paean to the pedagogy of freedom.

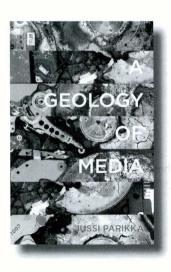
Drawing on a cross-cultural range of intellectual history, naturalism, and educational theory, *Unflattening* is an absorbing peregrination that deserves to be—indeed, must be—encountered in its own form. Integrating visual citation, extensive and personable endnotes, and a bibliography reaching far beyond disciplinary bounds, Sousanis has achieved an exemplary work of creative scholarship of such benevolence and sheer ingenuity that doubts about the kaleidoscopic potential of theoretical comics may be henceforth cast aside (and productively examined for their bigotry).

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NOTE 1. Maureen Bakis, The Graphic Novel Classroom: Powerful Teaching and Learning with Images (Thousand Oaks, CA: Corwin Press, 2011).

A Geology of Media

By Jussi Parikka
University of Minnesota Press, 2015
206 pp./\$24.95 (sb)



Digital culture is commonly thought of in immaterial termsas data embedded in hardwareless networks like the "cloud." Jussi Parikka's A Geology of Media dispels this myth by reminding us of the undeniable link contemporary media technologies share with geophysical reality. The smartphones, laptops, and game consoles that enable digital culture are inconceivable without the metals and minerals like cobalt, copper, aluminum, and palladium that form the basic building blocks of their components.

Likewise, the planned obsolescence and fetishization of the new that characterizes the digital age has generated enormous amounts of electronic waste that have dire environmental implications. In this innovative take on media history, Parikka adopts geology as a critical trajectory not only to unearth the geophysical basis and deep history of modern media technologies, but also to warn of their potentially far-reaching ecological impact for the future.

A Geology of Media represents a valuable contribution to two emerging subdisciplines in media studies. On the one hand, it belongs to media archaeology, which looks beyond the representations produced by media to interrogate the very technologies that enable them. On the other, the book owes much to the ecocritical turn in

media studies. Building on the work of theorists like Friedrich Kittler, Wolfgang Ernst, and Sean Cubitt, Parikka advocates for an "alternative media materialism" that "extend[s] traditional notions of media materialism into a more environmental and ecological agenda" (1, 5). While many recent ecocritical approaches to media consider representations of the nonhuman environment, A Geology of Media reconceptualizes the materiality of media technologies themselves in relation to geophysical nature which, as Parikka points out, is not simply a passive mediated subject, but a medium itself that "affords and bears the weight of media culture, from metals and minerals to its waste load" (viii). Parikka does not confine his investigation to simply uncovering the geological basis of contemporary media, but also considers the dangerous and exploitative labor processes and political controversies surrounding how such materials are extracted, refined, and ultimately turned into hardware.

A Geology of Media is organized into five main chapters, each of which offers a different take on media materialism and temporality by drawing on an array of historical sources, theoretical approaches, and contemporary art projects. In his first chapter, Parikka contextualizes his methodology in relation to media archaeology and ecocriticism. Anyone looking for a genealogical account of key concepts and thinkers in these fields and a succinct examination of how they interrelate will find this chapter useful.

In his second chapter, Parikka draws on the work of German media archaeologist and variantologist Siegfried Zielinski to call for an "alternative deep time" in approaching media archaeology (29). Parikka literalizes the "deep" in "deep time," urging his readers to reconsider media history to include "the long-term durations of geological formations, of mineralization across millions of years, as well as the millions of years of decomposition of fossils to form the fossil fuel layers essential for the modern technological world" (60). As Parikka points out, the minerals and metals that comprise the basic components of contemporary media technologies were formed over eons. Parikka's scope surpasses even the most far-reaching media

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