

of the aluminum used in these products is a relatively small part of the story, and in the case of guitars, the quantity of aluminum involved is minor.

Perhaps the most revealing example is the Ford Motor Company's ambitious conversion of its popular F-150 pickup truck to an aluminum-bodied vehicle. Here, in addition to using aluminum to reduce the truck's weight and increase its fuel efficiency, engineers also took steps to improve the recycling of scrap aluminum generated during production. A company executive described the vehicle as the "most sustainable truck ever to roll off a Ford assembly line" (98). But, Zimring observes, little was done to address end-of-life issues, with F-150s eventually having to go through the same shredders as steel cars and trucks, all of which produce a toxic fluff of non-metals. A similar critique has been made of Apple's aluminum-bodied laptop. These designs are a success in terms of aesthetics, performance, and efficient production but weak where innovation is needed most, in designing products to be more recyclable after use.

Zimring ends *Aluminum Upcycled* with the observation that upcycling, while desirable, is not—by itself—an effective strategy for sustainable resource use. In the case of aluminum, primary production (the amount of virgin material being introduced into circulation each year) has continued to grow at a steadily increasing rate. He suggests that increasing the level of recycling to a point where primary production declines will take a mixture of innovation at the systems level and policies that encourage movement in that direction. Among other things, he argues that "*upcycling absent a cap on primary material extraction does not close industrial loops so much as it fuels environmental exploitation*" (163, emphasis in original).

What kind of innovation might be encouraged by policies that reduce the ability of producers to treat the cost of disposal as an externality? Certainly, Zimring suggests, such policies will increase the interest of producers in designing products for more efficient disposal and recycling. Zimring also provides a glimpse of other possibilities when he notes that "the most sustainable automobile design of the twenty-first century" might not be the F-150 aluminum truck or the Tesla or any vehicle but new transportation services such as "automobile sharing programs" that reduce the quantity of automobiles in circulation (164). Indeed, sustainable design at the level of policy and systems is even more important than design at the level of products; Zimring's focus on the latter places the limits of strategies such as upcycling in broader perspective.

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JEREMY J. SCHMIDT. *Water: Abundance, Scarcity, and Security in the Age of Humanity*. New York: New York University Press, 2017. Pp. xii, 308. \$35.00.

*Water* presents a bold and ambitious effort to place the evolution of water management within a framework that combines geography, anthropology, and philosophy. Jeremy J. Schmidt courses through the ideas of leading

water thinkers, principally John Wesley Powell, WJ McGee, David Lilienthal, Gilbert White, and Aldo Leopold, to develop the concept of "normal water," sort of a pan-disciplinary hydrological determinism. He traces this line of thought through the successive stages of alleged abundance, scarcity, security, and, ultimately, the "water-energy-food-climate nexus."

At the heart of Schmidt's analysis is his notion of "normal water," which "refers to the program of bringing water's social and evolutionary possibilities into the service of liberal forms of life" (6), and "names a set of judgments that were used to stop the search for further justification of one picture of the world" (206). A case in point is the popular water management framework known as Integrated Water Resources Management (IWRM), which morphed into concepts of resilience, adaptive management, and the nexus alluded to above, but suffers from a "mismatch" of its "aspirations and its implementation" (155).

*Water* is a telling critique of the notion that water is a mere "resource," and can somehow be controlled in a rational, planned way (i.e., by "conservation" and "multi-purpose river basin development"). Schmidt is very effective at pointing out that prevailing concepts of water development and management create a set of cultural, social, and ethical blinders that inhibit more advanced, nuanced, and inclusive concepts that could penetrate the "gossamer" (166) of prevailing water institutions. And this is why "some water challenges are recognized and prioritized and why others are not" (223). For example, the claim that water has become scarce is based on a peculiar notion of scarcity that tends to support traditional notions of water development; this "shift[s] water scarcity from premise to proposition" and allows "the search for justifications of any particular metric to come to an end" (142). Indeed, the real "scarcity" is not in water but in a better conceptualization of water.

Many of the problems exposed by Schmidt's analysis stem from the annoying fact that water is a fickle, unpredictable natural element that refuses to cooperate with the rational, modernist schema that have been imposed on human water institutions: "Many water problems are . . . the outcome of a philosophy of water management that already exists" (3). This philosophy simply fails to deal effectively with "a host of social and political relationships, and relationships to water, that are all open to contest" (27). The entire ideological edifice for normal water is overlaid by the prevailing norms of classical liberalism, which Schmidt dismisses as nothing more than "social pretense" (146).

A prevailing theme in this book is environmental justice, both on a cultural scale—the treatment of Native peoples by neocolonial institutions (11, 27, 46)—and on an international scale (195). Normal water suffers from an "ethnocentric and colonial outlook" (196).

My only critique of the book is that Schmidt may be a bit too hard on the water managers and philosophers of the last one hundred years. Though they have, in his telling, developed a concept of water management that might be workable, he still says, "I have significant

doubts" (32). To be sure, there is plenty to critique about the way water has been mismanaged in the past—and continues to be mismanaged by current institutions that still cling to outmoded models of water development, such as the Tennessee Valley Authority, the U.S. Bureau of Reclamation, and the U.S. Army Corps of Engineers. The fomenters of this approach might be characterized as “dead white males” in other quarters, attendant with all the baggage that comes with such privilege. But, they did build a system that supplies water to 310 million people, feeds them, even to excess, provides a system of waterborne transportation, and generates millions of kilowatts of clean hydropower. Not bad for a “failed” philosophy that Schmidt characterizes as mere “luggage” (36). And scarcity is not just a philosophical chimera, especially in the age of climate change. Indeed, in some areas of the planet the only alternative to coming to the conclusion that water is scarce is to conclude that there is an overabundance of human beings. True, the U.S. may not live up to its status as a “model post-colonial state” (42), but there should be room for some credit for having gotten us this far. That said, Schmidt most definitely provides us with a telling critique, an astute analysis of the weaknesses of normal water, and insightful ideas for moving beyond our current water philosophy stalemate.

Ultimately, Schmidt makes a valiant effort to resolve a “glitch—an ontological hiccup” in Western metaphysics (36), and addresses the “ontological gap between humans and nature” (189). He also adroitly dispels the myth that “water is a resource” (224). But perhaps his greatest contribution is to point out how prevailing water norms have been used to justify hegemonic notions of global water management and both internal and external imperialist expansionism.

I heartily recommend this book to anyone who is interested in the nexus between ideas and water, writ large. It is an impressive and incisive look into the minds of those who control a substance that is essential to all forms of life.

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#### CARIBBEAN AND LATIN AMERICA

NORA E. JAFFARY. *Reproduction and Its Discontents in Mexico: Childbirth and Contraception from 1750 to 1905*. Chapel Hill: University of North Carolina Press, 2016. Pp. xviii, 302. Paper \$32.95.

This important book is the first to examine reproductive discourses and practices in Mexico City and Oaxaca across the “long” nineteenth century. *Reproduction and Its Discontents in Mexico: Childbirth and Contraception from 1750 to 1905* follows the conventional pre-Columbian-colonial-national periodization of Mexican history. Nora E. Jaffary draws on six archives and libraries in Mexico City, four in Oaxaca, and collections at Columbia University and London’s Wellcome Library. Examining documents from abortion and infanticide criminal trials, legislation, published medical and legal tracts

from the sixteenth through nineteenth centuries, and nineteenth-century newspapers, Jaffary employs qualitative analysis of exemplary case studies and statistical analysis of abortion and infanticide records. Engaging a wide literature in Mexican history and European comparisons, Jaffary emphasizes change more than continuity regarding attitudes, expectations, and regulations about reproduction, and she shows persistent behaviors of pregnant women of all classes in seeking midwife expertise and regulating pregnancies.

Examining discourses of sexual honor, public virtue, and motherhood, the book documents a shift in preoccupation with reproduction, which was first limited mostly to elite Spanish colonial women but by the end of the nineteenth century included all women. In chapter 1, while honor, class, and Christianity together determined elite women’s “social virginity” in the colonial period, during the nineteenth century plebeian women could increasingly claim to be social virgins despite physical evidence precluding “biological virginity” (40). By the late nineteenth century, medical and criminal discourses determined biological virginity, and plebeian women faced greater pressure to adhere to definitions of sexual purity. In chapter 2, Mexican women sought indigenous midwives’ expertise—which drew on pre-Columbian cultural knowledge and practical expertise from years of attending births—about conception and pregnancy throughout the colonial and early national periods. European male physicians entered obstetrics bringing new practices, such as internal examinations and forceps delivery, but did not replace midwives. Professional medical and pharmaceutical manuals from the colonial and national periods shared knowledge on preventing miscarriage, and newspapers increasingly advertised remedies for digestive and other side effects of pregnancy. While male doctors and female midwives competed with each other, Jaffary also finds evidence of cooperation, as with a nineteenth-century Oaxacan law calling for “doctors to learn the art of obstetrics from midwives rather than the other way around” (73).

In chapters 3 and 4, Jaffary’s central argument about concern with reproduction reaching further into the population is grounded in new liberal codes and public perceptions extending public honor to the population at large. Chapter 3 draws on “ethnohistorical accounts, medical texts, legal codes, and Inquisition records to trace both practices and attitudes toward abortion and contraception,” largely untreated in Mexican historiography. Colonial midwives regularly assisted women in regulating pregnancies, and in ending them. Abortion, while not legal, was nonetheless “condoned or ignored” in earlier periods (77), along with infanticide. Jaffary uses other historians’ demographic evidence “of high rates of extramarital sexual activity and low birthrates” (83) to contextualize contraception, abortion, and infanticide practices at the turn of the nineteenth century. While institutionalized medicine ignored existent knowledge about contraception and condemned abortion, 1870s liberal legal codes decriminalized abortion in cases of danger to the mother. Popular denunciations of abortion increased de-