opportunities and riches. For each commodity revolution, there are decaying urban landscapes – 'sacrifice zones' – left behind by the ebbs and flows of ecosystems.

Finally, a theme that might have been developed further. The role of aquaculture and its demand for fishmeal changed the destinations for production from the 1980s. This is touched upon but not developed further, despite the 'boom' of salmon production in Chile that changed the composition of fisheries production within two decades, from low-cost export of fishmeal to high value salmonids. There is also the more recent evolution in replacing fishmeal in salmon feed with soya and products – due to criticism of the poor protein conversion ratios involved – which is yet another blow for the fishmeal sector.

I am sure that there are also lessons to be drawn from the fishmeal revolution for other commodities, hence the connections between this detailed, interdisciplinary historical assessment and other commodities and sacrifice zones in the region. The ability to weave these economic, political, and ecological histories together as nested, panarchical, evolving systems is a skill that the author provides us with, as a case study in how similar research histories of sustainability might be crafted.

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Selling the American People: Advertising, Optimization, and the Origins of Adtech. *By Lee McGuigan*. Cambridge, MA: MIT Press, 2023. 348 pp., 6 x 9 in, 9 b&w illus. Paperback, \$50.00. ISBN: 978-0-262-54544-0. doi:10.1017/S0007680524000060

Reviewed by Cynthia B. Meyers

Too often, advertising is studied as a set of cultural artifacts—especially print ads—rather than as an industry intertwined with media content companies. Lee McGuigan usefully focuses on the distribution of advertising—that is, the selection and buying of ad space and time. Both the industry's boosters and its fiercest critics have referred to this process as buying "eyeballs" or audience attention. Boosters celebrate the monetization of attention as promoting growth and profit—not just for advertisers, but also for media outlets, because ad revenues subsidize

information and entertainment. Ad industry critics condemn this as little more than a dehumanizing, anti-democratic prostitution of information and entertainment. McGuigan writes in this critical tradition, following such scholars as Oscar Gandy, Joseph Turow, and Dallas Smythe (who coined the term the audience commodity). Also influenced by Sherrie Turkle's work on surveillance capitalism, McGuigan's contribution is to apply these critiques to adtech—the way advertising is distributed on the internet. Adtech is not a specific technology, but "an intimidating but often clumsy assemblage of computers, databases, code, metrics, models and algorithms, consumers and users, high- and low-wage workers, scoring and classification systems, technical standards, market mechanisms, professional loyalties, and apparently authoritative claims to expertise and truth" (p. 9).

McGuigan's purpose is to demystify adtech by rooting its practices not in the history of the internet but in twentieth-century theories of marketing: "Across a much longer period than we typically appreciate, related efforts to predict and influence consumers' habits, and to package and sell audience attention, have channeled and amplified currents in surveillance, information technology, and behavioral and management sciences" (p. 7). Specifically, during the postwar "control revolution," many businesses sought efficiencies by applying principles from operations research and management science (OR/MS), which McGuigan describes as "a mathematical science of optimization that uses models, algorithms, and other statistical means to help executives determine the best possible outcomes when facing complex decisions" (p. 73). McGuigan argues that the prevalence of OR/MS in midcentury corporations and ad agencies "prefigure[d] the culture of data-driven advertising and its orientation toward surveillance, profiling, and discrimination" (p. 123).

McGuigan fills a large hole in advertising historiography by focusing not on agency creative departments (where ads are made), but on agency media departments, which historically negotiated for and purchased media space and time in order to earn a percentage of a client's media expenditures. (For a client's purchase of newspaper ad space for \$100, for example, an agency would have forwarded \$85 to the newspaper and kept \$15 as a 15 percent media commission). In response to clients' suspicion that media buying served the agencies' interests over the clients', agencies sought to justify themselves by pointing to quantitative measures. McGuigan goes back to 1915 to trace the beginnings of the ad industry's "calculative evolution" (p. 49) and the development of agency departments of market research and media research. McGuigan focuses on the rise of television as the single largest advertising medium. In the 1950s and 1960s, as television shifted from

single sponsorship (when one advertiser rented a time period and controlled its program, as with *General Electric Theater*) to participation sponsorship (in which multiple advertisers bought one-minute units of airtime within a program they did not control), agencies had to manage increasingly complex media buying transactions. Agencies began hiring "math men" and buying computers to calculate appropriate media buys. In 1961, for example, the BBDO agency developed "linear programming" to make media schedules designed to maximize value to the advertiser (to reach certain types of audiences instead of others) and to minimize cost (to find lowest airtime prices)—a process of optimization that could also convince clients to buy more airtime (p. 89).

McGuigan argues that four key affordances celebrated by the adtech industry today have roots in earlier media practices. Programmability, or automation of ad buying, is detectable in the 1970s automation of spot television buying. Addressability, or personalization, was a goal of 1990s cable system operators targeting specific households with ads. Shoppability, or interactive commerce, has a long history, going back to Macy's 1944 television "teleshopping" program (p. 194). Accountability, or proof that a particular ad results in actual sales, has been a problem throughout advertising history. Only the direct mail strategy of placing a code onto a mail-in order form has enabled marketers to make a definitive connection. Although digital ad servers are "evidence machines," few marketers can clearly assess attribution because the adtech industry keeps most of its processes hidden (p. 234). Meanwhile, the largest adtech entities, Google and Meta, apply machine learning to huge data sets of user behavior and so exercise a power to "configure choice architectures" (p. 235). Their "panoptic sorting" may be manipulating our behavior or, at least, shaping the "allocations of power, access, and possibility" (p. 244).

While the sorting of media audiences into desirable or undesirable categories is an optimization strategy designed for the convenience of marketers, is this truly "a hazard—to equity, to justice, to sustainability" (p. 250)? Both the boosters and the critics assume advertising has strong effects (to sell or to manipulate), but, ironically, there may be an attribution problem here. The adtech industry has an incentive to claim manipulative powers because that is what they are selling to advertisers. How many claims are puffery? As to the media outlets that rely on ad revenue, they must simultaneously cater to audience preferences and serve advertisers' needs to reach certain audiences. Although both advertisers and media outlets may strive to manipulate those preferences, some audience predilections, such as interest in sex and violence, certainly predate adtech and even mass advertising, so we can

debate which is the dog and which is the tail. In any case, McGuigan's contribution to these ongoing debates is well researched and detailed. *Selling the American People* is a fascinating narrative of how midcentury management scientists, mathematicians, and ad agencies sought to solve the puzzle of how to place advertising effectively and how the adtech industry today follows in their footsteps.

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