



Doron Galili. *Seeing by Electricity: Cinema, Moving Image Transmission, and the Emergence of Television, 1878-1939.* Durham: Duke University Press, 2020. xii + 247 pp. \$25.95, paper, ISBN 978-1-4780-0822-4.

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Doron Galili's *Seeing by Electricity: The Emergence of Television, 1878-1939* is a long-overdue, interdisciplinary study of the broadcast moving picture technology's social construction. From the beginning, the reader is aware that this is a subject very near to Galili's research focus. Based on Galili's 2011 dissertation of the same name, *Seeing by Electricity* is arguably a much more refined and exciting journey than the earlier effort. Part of the Duke University Press's Sign, Storage, Transmission series, *Seeing by Electricity* fittingly offers new perspectives on what has traditionally been treated as "media" by connecting technology, culture, and social construction theory to the trajectory of broadcast television as a unique sociocultural medium separate from but parallel to cinema. *Seeing by Electricity* effectively argues that "cinema was 'haunted' throughout its history by a looming other form of moving image media, which continuously threatened to replace it and render it obsolete" (p. 5).

Galili's highly accessible and conversational tone belies the intricate media archaeological and technological argument presented. Despite beginning with Louis Lumière, *Seeing by Electricity* seeks to demonstrate that cinema and television developed in "connections with the inventions and applications which preceded [them]" (p. 1). Di-

vided into two roughly equal parts, the book draws the reader into the era of television history that predates the medium's mass social inculcation. Part 1, titled "Archaeologies of Media Image Transmissions," delves into the various conceptions of not only what a television technology should do but of how to produce moving image transmissions technologically. This archaeological exploration, or what Galili appropriately terms the speculative era, is presented through a range of cultural, technological, and biological ephemera from the late 1870s to the mid-1920s.

Chapter 1, titled "Ancient Affiliates," offers that, as with many other media technologies, no exact, singular point of origin for the story of moving image transmission exists. Galili notes that the history of the television as a media is "deeply embedded in a complex of cultural and media practices" of the mid- to late nineteenth century (p. 17). Through an engaging romp through a broad array of newspaper articles, specialist journals, and popular fiction of the era, Galili identifies two significant themes surrounding television's cultural shaping—first, that television would accelerate the elimination of social separation through the dimensions of time and space, and second, that this could only be achieved through the establishment and configuration of socio-technological defined

networks. First conceived as visual counterparts to enhance or augment telegraphic or telephonic communication, television—like cinema—was a technology that promised an alternative sensory experience. Arguing that television was co-created by media culture and inventor-engineers, Galili demonstrates that as early as the 1870s, distinct reverse-technological salients were recognized that had to be overcome in order for this co-created media to progress from conception to actualization. First, technocrats had to develop or identify a functional "visual variant of the microphone;" second, they had to ensure that this visual microphone would be capable of reacting quickly enough that the "impression of movement could be achieved;" and finally, the network had to ensure that a method of synchronization between the broadcasting and displaying technology could be reliably affected (p. 23).

In chapter 2, evocatively titled "Severed Eyeballs and Prolonged Optic Nerves," Galili argues that television lacked a clarity that other technologies held and so became popularized partly through an "ongoing popular-scientific discourse that served to familiarize the public with the novelty of television" as an extension of physiological sensations of sight, or metaphorically as a technological "apparatus as an eye that 'sees' by electricity" (p. 51). Galili supports this through varied sources touting the technology as a means to replicate, enhance, or even, potentially, replace the limits of the human biological condition.

With this cultural and scientific-based proto-construction narrative established, chapter 3, titled "Happy Combinations of Electricity and Photography," builds a bridge between the conceptions of what the technological system should be and the physical development of practicable nascent broadcast technologies. Here, Galili argues that cinema and television shared significant moments of developmental overlap but that cinema was rendered "a mere component in the prehistory of seeing by electricity" (p. 75). Through his

distinctive archaeological-like approach to media, Galili describes a shifting relationship between the trajectories of television and teletechnology in a way that, similar to David Nye's *Image Worlds: Corporate Identities at General Electric, 1890-1930* (1985), provides both a developmental history of television technology as well as a commentary on the media landscape of the greater Western world of the era. Effectively, argues Galili, cinema had by circa 1910 ceased to be a competitor for a medium that conveyed time, because cinema had become concerned with narrative storytelling, which "represented 'a temporality outside itself' or 'manipulated diegetic time'" (p. 94). Thus, the co-constructed media space for television "in terms of the 'real-time' transmission of the telephone" was cemented (p. 94). All that was lacking was the technological capacity to make it a reality.

Part 2, titled "Debating the Specificity of Television, On- and Off-Screen," is of a slightly different focus as the discussion of television shifts from the proper and socially acceptable role of an abstract to a speculative rush to realize the technology fully. Galili focuses on this transition in the 1920-30s in chapter 4. By focusing on the aspects that defined the system culture of television (a process Galili presents using aspects of Jonathan Sterne's model of articulation and André Gaudreault and Philippe Marion's model of media institutionalization), Galili effectively argues that the medium's characteristics—those abdicated by cinema and those socially co-created such as real-time access and synchronicity—and government regulation of the technology (due to the existing regulation on broadcast radio) were in place before the technology was presented to the consumer. The remainder of the chapter presents a more internalist account of "how television's specificity and intermedial relations were negotiated vis-à-vis the economic interests and cultural function of other [American] mass media institutions" of the day—Hollywood and commercial radio broadcasting networks (pp. 108-109).

Chapter 5, entitled "We Must Prepare!," contrasts the relatively standard American media history with that of Soviet media producer Dziga Vertov. Galili deftly places this countercultural narrative to demonstrate how cultural and political geography can—especially in the early years of a media's development and social inculcation—shape a technological system very differently. Galili describes how the mass adoption of the postrevolutionary broadcast television technology enabled Vertov to "reveal aspects of everyday reality" as an opportunity to "realize the political demands and objectives that film had failed to meet" (p. 155).

Galili concludes his exploration of the emergence of television with chapter 6 as a discussion of how classical film theory interacted with and refined television as a medium. Here, Galili focuses on the interactions of Arnheimian film theory with technology. Galili does more here to open a broader discussion about the canonical film theory readings for a modern reinterpretation through an intermedial perspective. While intellectually stimulating, this chapter does not so much ask new questions. Instead, it redirects the reader to challenge television's preexisting conceptions in a modern context—both as an art and as a socially constructed media.

Galili includes one such observation in his conclusion that truly encapsulates his effort to encourage a rereading of media identity canon: if "today there is a sense that digital media is transforming ... cinema, it is because the new image technologies are seen not as occupying their own

distinct cultural space but threatening the boundaries of what we define as cinema," whereas television "did not appear to be stepping on [cinema's] proverbial toes or violating cinema's integrity as a distinctive form in its own right" (p. 185). Many of these points would indeed make great conversation points to bring up at your next cocktail party—quickly making you one of the most exciting people in the room!

Overall, *Seeing by Electricity* is a genuinely unique effort that is easy to read yet thought-provoking. Galili's focused effort has kept the volume slim but intellectually stimulating without dragging the general reader through an overly academic text. One exceptionally minor criticism that likely falls more upon the editorial staff than upon the author was the misapplication of the homonym "patience" instead of "patients" in reference to the medical profession (p. 25). Although a minor oversight, it did cause this reader to approach the text with a more interrogative approach to the argument. While this reader found chapters in which Galili focused on grounded historical content to be of the most value, Galili found clever ways to ensure that his forays into cinema history or theory did not overpower his primary focus on television. *Seeing by Electricity* is of tremendous value to those interested in television history, film and art theory, media and communications or cultural history, or the history of technology. If you are looking for a great lockdown or stormy weekend read, consider *Seeing by Electricity* as a top contender.

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