

# *Thinking with Sound: A New Program in the Sciences and Humanities around 1900*

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VIKTORIA TKACZYK'S *Thinking with Sound: A New Program in the Science and Humanities around 1900* is a fascinating, well-written intellectual history of the many ways that various early twentieth century European thinkers took up sound as an area of study. Tkaczyk devotes substantial time to discussions of such well-known thinkers as Sigmund Freud, Albert Einstein, Ferdinand de Saussure, Henri Bergson, Hermann von Helmholtz, Ernst Mach, and Carl Stumpf, as well as some lesser-known figures who also spent time thinking about and engaging with sound in ways emblematic of the period. In covering this wide collection of thinkers, Tkaczyk draws on an impressive array of archival materials—published materials, but also laboratory notebooks, letters, lecture notes, journals, and others—in a variety of languages and across a range of locations, though primarily focused around Berlin, Geneva, Paris, and Vienna. In drawing on this range of thinkers, Tkaczyk offers a sense of an international network of thinkers in conversation about issues raised by thinking with and about sound and a sense of how the “two cultures” of science and the humanities engaged which each other around this blossoming topic.

As Tkaczyk observes, the early twentieth century was an important period of growth and tension around questions of science. Psychology, for instance, had begun splitting away from philosophy—its

parent discipline—towards the end of the nineteenth century. Working to establish itself as a separate discipline, many of its practitioners began to embrace the tools and perspectives of the natural sciences, particularly in the establishment of new psychological laboratories. Especially in the early twentieth century, this led to some interesting and lively tensions between “scientific” and “humanistic” sorts of approaches to psychological and philosophical phenomena. In the United States, for instance, Carl Seashore, whose work Tkaczysk mentions as a parallel and extension of the European approaches she explores, worked to establish a laboratory and scientific approach for research on the aesthetic questions that had been studied by philosophers. Investigating the psychology of beauty, for instance, Seashore used developing scientific instruments of measurement to study such question as what makes for a good vibrato or a beautiful musical tone.<sup>1</sup> Such an approach was closely aligned with that of Carl Stumpf, in particular, whom Tkaczysk explains was working to establish an early form of “laboratory humanities.” Even as psychologists worked to separate themselves from philosophy, they remained committed to many of the same sorts of questions and concerns.

For Tkaczysk, sound becomes a general thread uniting these kinds of questions across geography, approach, and topic. As such, she finds questions of sound in places where they might not always be immediately apparent. This has the interesting benefit of reframing some well-known thinkers via their notions of sound. Media and communication scholars, to whom Tkaczysk’s work is partially addressed, will be familiar with Sigmund Freud for how his notions of psychoanalysis are taken up in a range of approaches to film and media; the same is true of Ferdinand de Saussure’s notions of semiotics. In drilling down on Freud’s and Saussure’s notions of sound, however, Tkaczysk excavates another way of seeing these thinkers engaged with and around media questions. Arguing that much of the contemporary understanding of Saussure’s ideas has been overdetermined by his later *Course in General Linguistics* (itself reconstructed from student notes), Tkaczysk chooses instead to focus on his earlier writings, where we see him building on and departing from existing work in linguistics. One of Saussure’s chief interventions, according to Tkaczysk, was pushing linguistics away from the study of written language towards that of oral and spoken speech. Here, Saussure engaged with and benefitted from technologies such as the phonograph as he developed his own approach that, in the style of the time, worked to cross “humanistic” and “scientific” questions. That Saussure pushed for a notion of a living language adapted to and from the “collective mind of a linguistic community” (75) is both an

<sup>1</sup> Brenton J. Malin, “Not Just Your Average Beauty: Carl Seashore and the History of Communication Research in the United States,” *Communication Theory* 21, no. 3 (2011); Carl E. Seashore, “The Natural History of the Vibrato,” *Proceedings of the National Academy of Sciences* 17, no. 12 (1931); Seashore, “A Voice Tonoscope,” *University of Iowa Studies in Psychology* 3 (1902); Seashore, “The Measure of a Singer,” *Science* 35, no. 893 (1912); Seashore, “Phonophotography in the Measurement of the Expression of Emotion in Music and Speech,” *The Scientific Monthly* 24, no. 5 (1927).

interesting way to see Saussure engaged with sound and a very useful means of understanding his later ideas of signification as laid out in the *Course in General Linguistics*.

Here and elsewhere, Tkaczysk provides additional biographical and contextual information that helps frame these thinkers' discussions of sound as well as their work more broadly. For instance, to explain the ways that the ego responds to sounds in the environment, Freud suggested that it was wearing a "hearing cap," which, Tkaczysk explains, was a device worn in the 1920s by telephone switchboard operators and pilots in order to allow for hands-free communication (37–38). Likewise, in discussing Freud's analysis of "Anna O.," who had a psychosomatic reaction to hearing rhythmic music played, Tkaczysk offers that the Viennese waltz was popular at the time. As Tkaczysk recounts, "rhythmically simple but fast-moving (a three-quarter measure at approximately 60 beats per measure), the Viennese waltz required dancers to stress the first beat and passionately anticipate the second. The thrill of the waltz and the close contact of the dancers drew strong moral objections" (41) that likely influenced Anna O.'s response to it. Similarly, we learn that philosopher Henri Bergson's father was a pianist and composer, which presumably influenced his own discussion of the brain as a piano (87). The physicist Ernst Mach, who studied how sound waves functioned at various speeds, was himself a pianist who also wrote about musical perception (111). In all of these ways, Tkaczysk does a nice job of illustrating how various scholars came to focus on sound and how a focus on sound came to shape other elements of their thinking and theory construction.

As these examples illustrate, Tkaczysk does a nice job of bringing together the history of science—including the history of the social sciences—with the history of various scientific instruments and techniques in ways similar to such turn-of-this-century sound studies luminaries as Jonathan Sterne.<sup>2</sup> Alongside the "hearing cap," Tkaczysk discusses such technical devices as the "laryngograph," a device that measured changes in the larynx and was used to study reading and speech production, and the "acoustometer," "a precursor to modern sound level meters" (126), developed by physicist Sigmund Exner to measure sound reverberations in auditoriums. Tkaczysk also discusses the importance of such developing technologies as telephones, radios, microphones, speakers, and amplifiers, in the production and study of speech. Although Tkaczysk sees Friedrich Kittler's claims about the role of the phonograph in shaping the scientific and media culture of the twentieth century as too deterministic, her discussion of this and these other technologies nonetheless offers an important image of how such technologies shape and are shaped by the inquiries to

<sup>2</sup> Jonathan Sterne, *The Audible Past: Cultural Origins of Sound Reproduction* (Durham, NC: Duke University Press, 2003).

which they are put. This is especially important in this early twentieth century moment of “applied research,” when researchers were not only, like Exner, developing their own technologies, but often marketing and selling them to the broader public as well.

Without falling into a technologically deterministic perspective, it is possible to see the complex ways that the technologies and techniques of various approaches can follow from and shape particular cultural and political values. When early twentieth century social scientists attempted to separate themselves from philosophy, that often meant employing more presumably “objective” means of investigation, eschewing the sorts of personal or subjective approaches that characterized much of philosophy. This could and did create the kinds of hybrid spaces of laboratory humanities and humanistic science that Tkaczyk discusses. But treating speech as an abstract, general topic, divorced from some of its more human elements, could also create grave ethical challenges, as illustrated by the so-called “monster study” conducted under the supervision of Wendell Johnson at Carl Seashore’s University of Iowa, in which graduate student Mary Tudor attempted to make orphaned children stutter by criticizing their speech practice.<sup>3</sup> Tkaczyk finds similar problems in her own analysis. In one study conducted in Germany, a group of musicologists, linguists, and anthropologists led by Carl Stumpf recorded and analyzed “the voices of prisoners of war interned in German camps between 1915 and 1918.” As Tkaczyk explains, “many of the resulting recordings served preservationist and colonialist interests, tied to the objective of systemically investigating the world’s languages, dialects, and musics,” through which this commission, “most of whom were Germans, claimed interpretive sovereignty over these samples of speech from all over the world” (189–90). This connected to desires to create a standardized dialect of German and eventually tied into notions of radio speech and served various aspects of Nazi propaganda.

<sup>3</sup> Mary Tudor, “An Experimental Study of the Effect of Evaluative Labeling on Speech Fluency” (master’s thesis, University of Iowa, 1939).

*Thinking with Sound* is a useful and important book in media and cultural history and science and technology studies. While it is extensively researched, Tkaczyk’s writing here leans much more heavily on her compelling narrative than it does her impressive archival resources. This makes for an eminently readable discussion that should speak to a wide range of readers. Likewise, the “sound” of this book plays an organizational and rhetorical role as much as it does a specific area or topic of study. For Tkaczyk, it encapsulates Freud’s and Bergson’s thinking about images in the mind or brain and Einstein’s conception of time in addition to more literal acoustic waves measured by Stumpf or Exner. This is sound history as cultural and intellectual history writ large. For all of these reasons, *Thinking with Sound*

is a compelling story that should be of great interest to those both within and beyond sound studies.

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