

Helmholtz and the Modern Listener

The musical writings of scientist Hermann von Helmholtz (1821–94) have long been considered epoch-making in the histories of both science and aesthetics. Widely regarded as having promised an authoritative scientific foundation for harmonic practice, Helmholtz can also be read as posing a series of persistent challenges to our understanding of the musical listener. Helmholtz was at the forefront of sweeping changes in discourse about human perception. His interrogation of the physiology of hearing threw notions of the self-possessed listener into doubt and conjured a sense of vulnerability to mechanistic forces and fragmentary experience. Yet this new image of the listener was simultaneously caught up in wider projects of discipline, education, and liberal reform. Reading Helmholtz in conjunction with a range of his intellectual sources and heirs, from Goethe to Max Weber to George Bernard Shaw, Steege explores the significance of Helmholtz's listener as an emblem of a broader cultural modernity.

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BENJAMIN STEEGE



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Chronology

- 1821 Hermann von Helmholtz born in Potsdam (Prussia)
- 1843 Works as a military surgeon for Potsdam regiment of the Prussian army
- 1845 Joins newly founded Physikalische Gesellschaft zu Berlin (Physical Society of Berlin), a group of young reform-minded scientists, many studying with physiologist Johannes Müller
- 1847 *Ueber die Erhaltung der Kraft* (*On the Conservation of Force*), an account of the mechanical equivalent of heat, part of the first law of thermodynamics, helping to establish the conceptual basis of modern experimental physiology
- 1849 Appointed Professor of Physiology, University of Königsberg (Prussia)
- 1853 Moritz Hauptmann, *Die Natur der Harmonie und der Metrik* (*The Nature of Harmony and Meter*)
- 1856 Appointed Professor of Physiology and Anatomy, University of Bonn (Prussia). “Ueber Combinationstöne” (“On Combination Tones”), *Handbuch der physiologischen Optik* (*Handbook of Physiological Optics*), vol. I, the model for Helmholtz’s later, parallel work in physiological acoustics
- 1857 “Ueber die physiologischen Ursachen der musikalischen Harmonie” (“On the Physiological Causes of Harmony in Music”), an early statement of views on the relation between acoustics and music, written for a popular audience
- 1858 “Ueber die Vocale” (“On Vowels”)
- 1859 Appointed Professor of Physiology, University of Heidelberg (Baden). “Ueber die Klangfarbe der Vocale” (“On the Timbre of Vowels”)
- 1860 “Ueber Klangfarben” (“On Timbres”)
- 1861 “Ueber musikalische Temperatur” (“On Musical Temperament”)
- 1862 “Über die arabisch-persische Tonleiter” (“On Arabic-Persian Scales”)

- 1863 *Die Lehre von den Tonempfindungen als physiologische Grundlage für die Theorie der Musik*
- 1864 Meets Alexander J. Ellis during a visit to London
- 1866 Arthur von Oettingen, *Harmoniesystem in dualer Entwicklung* (*System of Harmony, Developed Dualistically*), questions the privileging of the major triad in Helmholtz and suggests an alternative, in which the tonic overtones are balanced by analogous “phonic” undertones generating the minor triad
- 1868 *Handbuch der physiologischen Optik*, vol. III
- 1870 *Die Lehre von den Tonempfindungen*, 3rd (revised) edition
- 1871 Unification of German nation with Berlin as capital. Appointed Professor of Physics, University of Berlin
- 1875 *On the Sensations of Tone as a Basis for the Theory of Music*, translated by Alexander J. Ellis from *Die Lehre von den Tonempfindungen*, 3rd edition
- 1877 *Die Lehre von den Tonempfindungen*, 4th (revised) edition
- 1880 (*circa*) Socializes with Richard and Cosima Wagner in Berlin salons
- 1882 Hugo Riemann, “Die Natur der Harmonik” (“The Nature of Harmony”), places the development of physical and physiological acoustics in historical perspective, to be superseded by psychological perspectives on harmony
- 1883 Carl Stumpf, *Tonpsychologie*, vol. I
- 1885 *On the Sensations of Tone*, 2nd (revised) edition, translated by Alexander J. Ellis from *Die Lehre von den Tonempfindungen*, 4th edition. Receives Johannes Brahms and Joseph Joachim at his home in Berlin
- 1887 Appointed president of newly founded Physikalisch-Technische Reichsanstalt (Imperial Physico-Technical Institute), Berlin
- 1890 Carl Stumpf, *Tonpsychologie*, vol. II, proposes a psychological theory of consonance as “fusion” (*Verschmelzung*) in distinction from Helmholtz’s physiological theory of consonance as the absence of beats
- 1894 Dies in Berlin