



# Harmonious Triads: Physicists, Musicians, and Instrument Makers in Nineteenth-Century Germany (Transformations: Studies in the History of Science and Technology)

By Myles W. Jackson

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Historically, music was long classified as both art and science. Aspects of music—from the mathematics of tuning to the music of the celestial spheres—were primarily studied as science until the seventeenth century. In the nineteenth century, although scientists were less interested in the music of the spheres than the natural philosophers of earlier centuries, they remained committed to understanding the world of performing musicians and their instruments. In *Harmonious Triads*, Myles Jackson analyzes the relationship of physicists, musicians, and instrument makers in nineteenth-century Germany. Musical instruments provided physicists with experimental systems, and physicists' research led directly to improvements in musical-instrument manufacture and assisted musicians in their performances. Music also provided scientists with a cultural resource, which forged acquaintances and future collaborations. Jackson discusses experiments in acoustical vibrations that led to the invention of musical instruments and describes work with adiabatic phenomena that resulted in the improvement of the reed pipe, used by organ builders. He examines the collaborations of physicists and mechanicians aimed at standardizing beat and pitch and considers debates stirred by the standardization of aesthetic qualities. He describes the importance for scientists of choral societies as a vehicle for social life and cultural unity. Finally, he discusses a subject that occupied both physicists and musicians of the era: Could physicists, using the universal principles of mechanics, explain musical skill? Was the virtuosity of a Paganini or a Liszt somehow quantifiable? Jackson's historical consideration of questions at the intersection of music and physics shows us how each discipline helped shape the other.



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## **Editorial Review**

### Review

"In Harmonious Triads, Myles Jackson recounts the astounding confluence of acoustics, mechanics, music, and politics in the Germanic states in the early 19th century. His story encompasses a menagerie of musical machines headed for extinction, the struggle to perfect the pipe organ, fiercely nationalistic debates on standard pitch, and the birth of an extraordinary union of music and science that prefigured both the flowering of physics in Germany in the decades to come and the tragic political developments that brought it to a close in the following century. If you are intrigued by the concept of 'singing savants' or by the connection between Alexander von Humboldt and Felix Mendelssohn, read on!"--Daniel Kleppner, Lester Wolfe Professor of Physics, Emeritus, MIT

"In this ambitious, demanding, and fascinating book, Myles Jackson examines the intersections of three ostensibly independent communities and shows the several ways in which they helped shape each other."  
Deborah Jean Warner Technology and Culture

### About the Author

Myles W. Jackson is Albert Gallatin Research Excellence Professor of the History of Science at NYU-Gallatin and Professor of History at NYU. He is the author of *Spectrum of Belief: Joseph von Fraunhofer and the Craft of Precision Optics* and *Harmonious Triads: Physicists, Musicians, and Instrument Makers in Nineteenth-Century Germany*, both published by the MIT Press.

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