

Intersections of music and science in experimental violins of the Nineteenth Century.

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Intersections of Music and Science in Experimental Violins of the Nineteenth Century

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Abstract/Description:	<p>Tensions between innovation and tradition in violin making have impeded the acceptance of most attempts to improve or alter the structure of the instrument. The nineteenth century, however, saw a proliferation of innovative violins, as luthiers responded to musical developments and changing social and economic environments during the Industrial Revolution. As nineteenth-century composers called for greater range and diversity in timbre, chromaticism, dynamics, range, and key instruments were developed to accommodate these demands. But perhaps more important than the pure musical considerations was the interdisciplinary collaboration between musicians and scientists in the pursuit of acoustic perfection. Many luthiers view themselves as scientists and engineers, experimenting with acoustic properties and new materials in order to improve upon the existing form of the violin. In a reciprocal relationship, acousticians</p>

recognized musical instruments as rich sources for the study of acoustic principles, and luthiers consulted with acousticians and engineers about the technical construction of experimental forms. François Chanot, Jean-Baptiste Vuillaume, Félix Savart, Johann Georg Stauffer, Thomas Howell, Nicholas Sulo and Alfred Stelzner developed innovative violins informed by science in attempts to improve the acoustics, playability, and ease of production of the instrument. This paper will examine the environment and conditions in the early-to-mid nineteenth century that impelled these makers to experiment with the traditional form of the violin. Discussing the maker biographies and examining the technical construction of these instruments for insight into their novel construction techniques and acoustic properties, this paper relates the experimental trend to the alliance of the sciences and arts during the Industrial Revolution and briefly discusses continued innovation the following two centuries. A study of the motivations and aims of such experimental violin makers and the technical construction of these instruments offers a look into the cultural milieu of the first decades of the nineteenth century, when technology, arts, history, and science intersected in new ways, challenging musical tradition

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