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## Is It Worth It? A Look at Antique and Modern Violins: An Annotated Bibliography

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## Is it worth it? A Look at Antique and Modern Violins An Annotated Bibliography

Violin family instruments have been made for hundreds of years. Cremona, a city in Northern Italy, is particularly renowned for producing world-class instruments. Old Italian violins especially from Cremonese makers such as Amati, Stradivari, and Guarneri, are often associated with high-caliber soloists, concertmasters, or quartet first violinists. A multi-million-dollar price tag is also not uncommon for these types of instruments. A newly made or modern violin by an established living maker (luthier) is often marketed toward section players of orchestras, chamber musicians, and conservatory students. These instruments usually carry a price tag of anywhere from eight to eighty thousand dollars. A topic that has been attracting interest in the past few years concerns soloists and top-tier violinists playing modern instruments and whether modern and Old Italian violins can be viewed on the same level playing field. Some of the sources presented here are based on scientific experiments conducted by researchers and violin makers. Others are more casual comparisons looking at new and old violins from different perspectives.

### 1.

Chen, Ray. "I Tried Every Price Level of Violin." YouTube Video, 16:51. July 26, 2023. <https://youtu.be/BhWBDLTt7dI>.

This lighthearted video from superstar violinist Ray Chen's YouTube channels chronicles him trying out violins with different price tags at Fred Oster Violins in Philadelphia. To preface, Fred Oster Violins is an institution in the world of antique violins. His shop located in a historical building across the street from the renowned Curtis Institute of Music contains hundreds of violins ranging from 5k to over 1 million dollars.

Ray Chen has become an icon among many young musicians for many reasons. His playing is phenomenal but furthermore is extremely active on social media. Ray Chen posts daily to his Instagram and other platforms as well as maintaining an active YouTube channel with weekly videos. Many of his videos are very relatable to young musicians addressing problems while giving tips and tricks for playing. Other videos feature Ray Chen comparing different instruments explaining their sound differences and playing musical snippets on the instruments. In this video, Ray compares ten different violins with various price points. While he does not pick favorites, Ray takes the time to explain the nuances and personalities of each violin.

### 2.

Fritz, Claudia, Joseph Curtin, Jacques Poitevineau, Hugues Borsarello, Indiana Wollman, Fan-Chia Tao, and Thierry Ghasarossian. "Soloist Evaluations of Six Old Italian and Six New Violins." *Proceedings of the National Academy of Sciences of the United States of America* 111, no. 20 (April 7, 2014): 7224-29. <https://doi.org/10.1073/pnas.1323367111>.

This article from volume 111 of the Proceedings of the National Academy of Sciences of the United States of America details a study known as the “Paris Experiment”. The 2014 Paris experiment was done in response to a similar 2014 study albeit on a much smaller scale in Indianapolis. Authors Fritz et al seek to justify that newly made modern violins are equivalent or at times even better than Old Italian violins. A limitation of the Paris Experiment would be its limited pool of test instruments and players. In addition, the new violins were made by a variety of makers compared to old violins represented only by Stradivari violins. Other famous Old Italian makers’ works such as Guarneri were not included.

The main author is Claudia Fritz along with Joseph Curtin, Jacques Poitevineau, Hugues Borsarello, Indiana Wollman, Fan Chia Tao, and Thierry Ghasarossian. Fritz is an acoustical researcher at Sorbonne Universités in Paris, France. Curtin is an acclaimed American violin maker from Ann Arbor, Michigan with a special interest in acoustics. Poitevineau is a retired researcher from the French National Centre for Scientific Research. Wollman is also from the French National Centre for Scientific Research. Borsarello is a French violin soloist. Tao is the director of Research & Development at the instrument strings manufacturer D’Addario. Ghasarossian is a violin dealer of Old Italian instruments based in Paris. All authors are well-regarded authorities in their respective fields of violin acoustical research.

### 3.

Fritz, Claudia, Joseph Curtin, Jacques Poitevineau, and Fan-Chia Tao. “Listener Evaluations of New and Old Italian Violins.” *Proceedings of the National Academy of Sciences of the United States of America* 114, no. 21 (May 23, 2017): 5395-5400. <https://www.pnas.org/doi/abs/10.1073/pnas.1619443114>.

This article follows up on the previous article by giving the listener’s perspective and by widening the scope with the inclusion of the New York Experiment. The study in New York involved a larger hall allowing for better listening. A notable difference between the Paris and New York experiments is that the listeners in the Paris study involved only fellow musicians while the New York event was part of a larger public-facing event. A central variable emphasized in the New York experiment was instrument projection. The larger audience size and hall allowed for ample evaluation of an instrument’s projection capabilities. The main takeaway from both studies is that violin soloists are not able to consistently identify a modern violin from a Old Italian violin.

It is unsurprising that the Paris Experiment conducted by Fritz and colleagues has received criticism from many of the older generation of musicians and violin experts. The imagery of first rate soloists playing a Stradivari, Guarneri, or instrument by another Italian maker has been well established since the late 19th century. Playing an Old Italian instrument symbolizes success for many young aspiring soloists. The top prize at major international competitions is often a cash award and a loan to play an Old Italian instrument from a reputable dealer or foundation instrument bank.

4.

Fritz, Claudia, Joseph Curtin, and Jacques Poitevineau. "Reply to Tai: On the Inability of 10 soloists to Tell Apart Old Italian and New Violins at Better Than Chance Levels." *Proceedings of the National Academy of Sciences of the United States of America* 111, no. 27 (July 8, 2014): 2779. <https://www.pnas.org/doi/full/10.1073/pnas.1407929111>.

This article from Fritz et al. is a direct reply to Tai's response to their original publication. Fritz argues that Tai uses timbre as the only factor in determining an instrument's tonal qualities. According to the authors, "we simply report that our 10 subjects seemed unable to guess age at better than chance levels". Fritz makes clear that they are not trying to prove that modern violins are better or worse than a Strad. Fritz also emphasizes that Tai's application of timbre memory to the Paris experiment is irrelevant as "30 s is time aplenty for players to compare short phrases on two instruments".

5.

Levitin, Daniel J. "Expert Violinists Can't Tell Old from New." *Proceedings of the National Academy of Sciences of the United States of America* 111, no. 20 (May 20, 2014): 7168-69. <https://www.pnas.org/doi/full/10.1073/pnas.1405851111>.

Daniel J. Levitin explores the psychology behind the perception of old violins being tonally superior to their modern counterparts. He reasons that the findings by Fritz and her team through the New York and Paris Experiments provide ample evidence that there is no real tonal difference between old and new violins. According to the author, these experiments combine scientific methods (blind testing, controlled variables) and artistic perspective (soloist evaluations). Levitin has this message for skeptics of modern violins "For those artists who are open-minded enough to allow the scientific method in, the findings are loud and clear and should put an end to speculation and rumor and the outrageously high prices charged for musical instruments that are, even to experts we now know, indistinguishable from their less expensive counterparts".

Levitin is a psychologist with a special interest in music. He is a professor at McGill University in Montreal and is part of the team at the Laboratory for Music Perception, Cognition, and Expertise. The lab researches a variety of topics around musical perception as it relates to cognitive response. Through participating in this and numerous other studies related to sound perception, Levitin has ample authority to validate the findings of Fritz and her team's Paris Experiment.

6.

Niles, Laurie. "How Giora Schmidt Found His Modern Violin." *Violinist.com* (blog). October 22, 2014, <https://www.violinist.com/blog/laurie/201410/16309/>.

Violinist soloist Giora Schmidt discusses his modern instrument with Laurie Niles, editor of the Violinist.com blog. Schmidt discusses the process of playing-in a new violin, adjusting, and experimenting with different instrument hardware. There is an accompanying video documentary of Schmidt in conversation with Niles. Schmidt's main talking point is that musician suitability and instrument adjustment are more important than the maker or place an instrument was made. Schmidt was able to replicate the deep rich tonal qualities of an Old Italian Guarneri violin he had played in his modern American-made Iizuka violin. Schmidt, an active violin soloist with concerts worldwide was also involved in the Paris and New York experiments as an instrument tester.

7.

Pham, Alan. "Structural Properties and Perceived Acoustic Quality of Modern Violins." M.S. thesis., California State University, Maritime Academy, 2022. ProQuest Dissertations and Theses Global.

Alan Pham's master's thesis explores the correlation between an instrument's price and quality from the angle of acoustical properties. The author examines three violins from the collection at Shar Music located in Ann Arbor Michigan. They are priced at \$225, \$8000, and \$50000 respectively. The bulk of the paper is dedicated to the concept of vibration analysis. Pham seeks to grasp scientific evidence to justify if expensive violins really are acoustically superior to cheaper violins.

Though Pham does not explicitly cite the Fritz et al. articles, he does reference the Paris Experiments by way of an article summarizing the study published in the widely read string playing and making magazine *The Strad*. Pham was a mechanical engineering student with a special interest in the acoustical properties of musical instruments at CSU Long Beach

8.

Pickett, Sarah Gilbert. "Tradition and Innovation in American Violin Making." PhD diss., Florida State University, College of Music, 2021. ProQuest Dissertations and Theses Global. <https://du.idm.oclc.org/login?url=https://www.proquest.com/dissertations-theses/tradition-innovation-american-violin-making/docview/2547053260/se-2?accountid=14608>

Sarah Gilbert Pickett's PhD dissertation provides an ethnographical view of how violin making has evolved and what has remained the same for the past three centuries. A good portion of the paper is dedicated to the lineage of American violin making. The author traces the evolution of American violin making from the early New York City workshops to the pioneering acoustics researcher and luthier Carleen Hutchins to the renowned living maker Sam Zygmuntowicz. Pickett also details her firsthand experience with violin making through attending the Cambridge Violin Makers Violin Workshop in England. The process of building a violin from scratch is chronicled from choosing tonewood to making final plate thickness decisions.

Pickett was a doctoral student at the College of Music at Florida State University with an interest in learning the craft of building violins. The author mentions interviewing and learning from many violin and bow makers across the country.

## 9.

Rotberg, Barton Samuel. "Old and New Violins, a New Perspective on an Old Dilemma, Part 2." *Violinist.com* (blog). April 17, 2018, <https://www.violinist.com/blog/rotbergmusic/20184/25779/>.

This blog post by violinist Barton Samuel Rotberg discusses old and new violins from many viewpoints. Rotberg considers several factors that contribute to an instrument's sound including age, maker, region, size, arching, and in what type of space the instrument is played. The author does not explicitly say that old and new violins are necessarily better or worse than each other but gives an overview of player preferences as they evolved over the past three centuries and different schools of violin making and their characteristics. This source is similar in nature to the Ray Chen video but in blog post form.

## 10.

Schreil, Cristina. "Letter From the Scene at the 2016 Contemporary Violin Makers Exhibition." *Strings Magazine*, April 2, 2017. <https://stringsmagazine.com/letter-from-the-scene-at-the-2016-contemporary-violin-makers-exhibition/>.

This letter published in the April 2016 issue of Strings Magazine reports on an event that took place in New York City. Modeled after the Paris experiment as discussed in the earlier sources, this informal blind testing of instruments was organized as part of the 2016 Contemporary Violin Makers Exhibition hosted by Reed Yeboah Fine Violins. Interestingly, this listening experiment featured only contemporary instruments. The annual exhibition is a buzzy event for violin connoisseurs and players alike. This event further adds to the previously mentioned Paris and New York Experiments. An interesting takeaway from this comparison of exclusively modern violins is the variability of tonal qualities and projection capabilities.

11.

Tai, Hwan-Ching. "Role of Timbre Memory in Evaluating Stradivari Violins." *Proceedings of the National Academy of Sciences of the United States of America* 111, no. 27 (June 17, 2014). <https://doi.org/10.1073/pnas.1407222111>.

Tai's article is a direct response to the Fritz article. It is much shorter in length and published in the same volume of the PNAS journal as the Fritz article. Tai argues that the evidence gathered by Fritz et al. are not conclusive because of the lack of timbre memory in the experiment's methodology. Tai relies on the concept of timbre memory to refute Fritz's findings. Tai cites studies that show "short term memory for timbre only lasts for seconds... however 20 s is too short for the player to switch violins... therefore it is unreasonable to make meaningful timbre comparisons". He further reinforces the notion that Stradivari violins are tonally superior by citing his own study "found that Stradivari violins produced significantly higher formant frequencies". This means that according to Tai, Stradivari violins can sound quicker soundwaves than other instruments, old and new.

Tai blatantly writes in the first sentence of his direct response to Fritz et al "we disagree with their data interpretation". Fritz concludes that new violins are superior to Old Italian violins in timbre based on evidence that shows two new violins were favored by the majority of the testers. Tai writes that the Paris experiment conducted by Fritz and team is "inadequate for assessing timbre qualities associated with Stradivari violins".

12.

Tai, Hwan-Ching, Shen, Yen-Ping, Lin, Jer-Horng, and Chung, Dai-Ting. "Acoustic Evolution of Old Italian Violins from Amati to Stradivari." *Proceedings of the National Academy of Sciences of the United States of America* 115, no. 23 (May 21, 2018): 5926-31. <https://doi.org/10.1073/pnas.1800666115>.

This article from Tai and his team uses speech analysis techniques to discuss the tonal qualities of Stradivari violins. The finding presented in the article suggests that Stradivari violins produce soundwaves of higher peaks with greater overtones. Tai et al. conclude that "Cremonese violins are capable of producing the formant features of human singers".

Hwan Ching Tai is an associate professor at the Department of Chemistry, National Taiwan University. Tai is the lead researcher of a study looking at the wood used in Stradivari violins. In a biography of Tai published on the website of the International Union of Pure and Applied Chemistry (IUPAC), it writes "Dr. Tai's research suggests that Stradivari's success was not an accident, but a result of applying specific chemical treatments to regulate the process of wood aging".