Probing Question: Is a Stradivarius violin better than other violins?

November 6 2008

Some sell for more than $3.5 million. Only 700 of them exist, and they're stored in vaults, frequently stolen and often counterfeited.

The object in question? Stradivarius violins, constructed by famed Italian instrument-maker Antonio Stradivari between 1680 and 1720. Treasured for possessing sublime acoustic properties, these rare instruments have spawned dozens of theories attempting to explain their legendary tone, and luthiers, makers of stringed instruments, are still trying to reproduce it.

The question remains: Are Stradivarius violins worth all the fuss?

There's no objective answer, said James Lyon, Penn State professor of music in violin. When Stradivari was crafting violins, most musicians performed in churches and courts. Rulers and the wealthy sponsored artists to enhance their prestige. As music moved away from this patronage system in the first half of the 19th century, Lyon explained, musicians' careers became dependent on fitting more people into concert halls. Thus, although they were originally built for much smaller venues, almost every Strad still around today has been altered to sound best in a large concert hall setting.

The violin world frequently stages blind tests of modern and vintage violins, including Stradivari's, Lyon noted, and as often as not the audience prefers the sound of the modern instruments. But many musicians and luthiers argue that these tests are virtually meaningless.

For one thing, the player usually knows which violin is the Stradivarius and could unintentionally bias the results by playing the fabled instrument differently. For another, even trained musicians can't reliably pick out the sound of a Strad, he said.

Asking people to choose between modern and vintage violins, said Lyon, is like asking their favorite ice cream flavor. You never get complete agreement because people like different things. In addition, it takes a while to get to know an instrument, and the testing format doesn't allow for this. Sometimes half a year after purchasing an instrument, Lyon explained, the player "is still learning how it wants to be played."

Still, luthiers since Stradivari's time have tried to reproduce the classic "Strad" sound. Some claim the secret lies in the craftsmanship, others the varnish, others the wood. Virtually every aspect of the violin has been touted as the key. Scientists, too, have tackled the question from various angles.

Some chemical analyses suggest that the smooth, mellifluous tones may have resulted, in part, from an application of an oxidizing mineral such as borax, often used in Stradivari's day to prevent woodworm infestation. Dendrochronology, the study of annual growth rings in trees, suggests that the wood Stradivari used grew largely during the Little Ice Age that prevailed in Europe from the mid-1400s to the mid-1800s. Long winters and cool summers produced very dense wood with outstanding resonance qualities, the thinking goes. The dense wood also helps the instruments stand up over hundreds of years of use.

In light of the dozens of theories put forth to explain the Stradivarius reputation, Lyon can't choose just one. "I think there's likely no magic bullet here. Stradivari was just an incredibly consistent craftsman, and he was a real groundbreaker." But given technological advances over the last 300 years, he added, it seems crazy to assume that the old luthiers

knew everything there was to know about their trade.

The mystique remains, however. Asked if putting aside the monetary value of the instrument, he would like to have a Stradivarius to play, Lyon said, “Yes, I can’t imagine anyone who wouldn’t. Partly it’s the history that goes with them.”

Source: By Joy Drohan, Research Penn State