

Study shows even professional musicians can't tell old master violins from new

January 3 2012, by Bob Yirka



Violin

(PhysOrg.com) -- It's been a known fact in the musical world for at least a couple of centuries; violins made by two old Italian masters, Giuseppe Guarneri del Gesu, and especially Antonio Stradivari are superior in every way to anything that has come since. Because of this, various scientists over the years have studied these special instruments to discern their secrets and while they've come up with several theories, none has been able to conclusively prove anything. This might be, suggest Claudia Fritz and Joseph Curtin, because the musical magic wrought by the classical instruments is nothing more than a myth. The two have conducted a study at a violin competition in Indiana this past year using professional violinists to gauge the quality of a variety of violins, some

from the old masters, some that were made very recently. And as they describe in their paper to be published in the *Proceedings of National Academy of Sciences*, master violinists, it appears, aren't able to tell which instrument is which, any better than anyone else.

Conducting the study was no small feat, to pull it off the duo (Fritz is an acoustical physicist and Curtin a well known [violin](#) maker) had to talk owners of multi-million dollar instruments into allowing their prized possessions to be included in the study, which meant allowing others to play them. They did succeed, but only in a limited way. They managed to secure just three highly prized old master-crafted violins; one from Guarneri and two from Stradivari. They then added three newer high quality (but much lower cost) violins to complete their test set.

The tests were conducted in a low-light hotel room, with twenty one volunteer professional violinists wearing welding goggles to prevent them from being able to pick up on identifying traits or markings on the violins. The testers also applied perfume to the violins to mask any telltale odors that might give away their history. Then, to ensure that the testers themselves weren't influencing the outcome, they had third party assistants, who also wore goggles present the instruments to the [musicians](#).

Each musician was asked to play two violins, one after the other. Unbeknownst to them, one of the instruments was new and one was one of the old prized violins. Afterwards, each musician was asked to judge both instruments on four criteria: tonal color range, projection, playability and response. In tallying up the responses, there were no clear winners, though there was one clear loser, one of the older instruments.

Next, each volunteer musician was asked to try out all six of the violins (by sound alone as they were still wearing the goggles) for a few minutes and then to pick one as their favorite; one they'd like to take home. In

this part of the study, one of the newer violins was the clear favorite, while the loser from the first test was found to be the least favorite of all the violins tested by all of the musicians.

The loser in both tests just happened to be a violin labeled “O1” and has quite an illustrious history. It’s been used by many famous violin virtuosos over the years, both in concert and in recordings.

These findings suggest, the researchers write, that it appears the old masters were no better at violin making than are those of today, and those that don’t believe it, are simply fooling themselves.

More information: "Player preferences among new and old violins," by Claudia Fritz, Joseph Curtin, Jacques Poitevineau, Palmer Morrel-Samuels, and Fan-Chia Tao, *PNAS* (2011).

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