

PLAY THAT MONKEY MUSIC

Tunes inspired by tamarin calls seem to alter the primates' emotions

By [Jenny Lauren Lee](#)

From *Science News* magazine

Published online: September 26th, 2009; Vol.176 #7 (p. 10)



MOVING MELODYCotton-top tamarins (one shown) seem to respond with emotion to professionally composed cello music based on their calls. Bryce Richter/University of Wisconsin–Madison

[Listen to the monkey sounds / music at the bottom of the article.](#)

When people play their funky music for cotton-top tamarins, the monkeys hardly get their groove on. But playing monkey music does the trick. Cello music that mimics tamarin calls seems to bring forth the same sort of emotions in the monkeys that the original calls would have elicited, researchers report online September 1 in *Biology Letters*.

People from many different cultures respond similarly to certain musical characteristics, such as inflection and pitch, says coauthor Charles Snowdon of the University of Wisconsin-Madison. “But we shouldn’t expect other species to process it in the same way.” He and coauthor David Teie of the University of Maryland School of Music in College Park wanted to know whether monkeys’ emotional states could be manipulated by music the way people’s emotions are.

Teie, a composer and cellist, used traits from calls that tamarins made in response to both stressful and calming situations to create a series of original compositions designed especially for monkeys, using cello and voice.

After listening to a 30-second clip inspired by contented vocalizations, the tamarins acted calmer and more social than usual, grooming each other more and eating more. Threatening music, full of ch-ch-ch noises and short staccato notes on the cello, made for anxious monkeys. In this case, the tamarins moved around from perch to perch and urinated more frequently than usual.

“I think it’s a very creative approach,” says cognitive biologist Tecumseh Fitch of the University of Vienna in Austria. “It’s unusual to have a composer and scientist interact like this.”

Snowdon says even the music that made the monkeys content is not pleasant to the human ear. The tamarin calls are higher pitched than human voices and use faster tempos. Likewise the authors report that the monkeys showed no response to samples of human music, except for an unexpected 'calm' reaction to a rousing piece by the heavy-metal band Metallica.

Even though it sounds different, the music tamarins and people find relaxing or stressful shares some common core elements. Long legato notes and certain jumps in pitch, such as the jump from do to mi in the do-re-mi of Western music, are calming sounds for both the monkeys and people. Clashing chords and short staccato bursts seem to have menacing associations.

Snowdon says these similarities suggest that tamarins and people may share evolutionary roots for music. But neuroscientist Joshua McDermott of New York University says further studies would be necessary to make that claim.

"Although I don't see that these initial results tell us a whole lot about the origins of human music, I think there are extensions of [the study] that could," McDermott says. He also says he would like to see the researchers use a more objective measure of the monkeys' stress—for example, levels of the hormone cortisol.

The suggestion that tamarins rock to a different tune than people do could help improve the quality of life for captive monkeys, Snowdon says. Zoos and labs that play human music to try to keep animals' minds active might not be doing them a favor.

"If our music is as irritating to monkeys as monkey music is to me, it's probably not a good idea for captive facilities to turn on the radio," Snowdon says.

[This story contains multimedia available with article at:

http://www.sciencenews.org/view/generic/id/46942/title/Play_that_monkey_music]

MONKEY MUSIC Cellist David Teie composed and performed music designed to induce a calmed (top) or threatened (bottom) feeling in tamarins using an analysis of the monkeys' calls. The sounds are all produced by human voice and an 18th century cello. (Courtesy of David Teie.)

MONKEY CALLS A contented tamarin call (top) is marked here by a descending cascade of pitches, whose regularly spaced drops in tone are easier for humans to hear when the call is slowed down and lowered three octaves (center). A threatened call (bottom) has a raspy, grating quality and short staccato notes. (Charles Snowdon/University of Wisconsin–Madison.)