The Amygdaloids: Scientists who rock out

New York University researchers weave neuroscience and biology into classic rock

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Mar 29, 2007

A quartet of two young women and two older men takes the stage in the cozy basement of New York's West Village hotspot Cornelia Street Café, famous host to artists ranging from Suzanne Vega to Monty Python. With a serious air about him, New York University neuroscientist Joe LeDoux takes hold of a microphone to introduce the first song, about "one of the great enigmas in the history of civilization" -- the mind-body problem.

The Amygdaloids -- whose name is a play on the amygdala, an oval structure in the brain's temporal lobe involved in emotional behavior -- are a band comprised of LeDoux and NYU biologist Tyler Volk on guitar and vocals, NYU neural science postdoctoral student Daniela Schiller on drums, and Schiller's research assistant, Nina Galbraith Curley, on bass. Their "gimmick," says LeDoux, is that all of their original songs are about science."Mind Body Problem" is reminiscent of the Eagles and Bob Dylan -- easygoing classic rock that makes people in the audience tap their feet. "My body wants you so, but my mind just says no," LeDoux sings. At the end of the song, Volk, consistently the most energetic, throws his arms in the air, yelling to the audience in reference to the song's title: "Did that solve it for you!?" Although the band only formed this Fall, LeDoux and Volk go back a few years. Volk, who was at the time working on a book called What is Death? A Scientist Looks at the Cycle of Life, contacted LeDoux in 2002 to learn more about his ideas on how the brain shapes identity. They discovered they both played guitar, and started meeting once a month to jam. After playing a few times for NYU gatherings, they learned that Schiller played the drums and Curley played the bass. That marked the birth of the Amygdaloids, and the foursome has since performed at Brooklyn's Secret Science Club and the Cornelia Street Café's Entertaining Science, a monthly science and entertainment gathering hosted by Nobel Laureate Roald Hoffmann. "Right now it's really fun," says LeDoux of being in the band. "I'm just having a good time." The next two songs in their set are all about fear -- not surprising, since LeDoux is a Principal Investigator at the multi-institutional Center for the Neuroscience of Fear and Anxiety. In "All in a Nut," an easygoing song
with funky guitar effects, LeDoux asks, "Why do we feel so afraid?" Having written several books about cognitive science for the general public, LeDoux, who speaks modestly about his musical abilities, says that he's enjoying experimenting with music as a new venue for his ideas. "Music is so direct and immediate," he says, noting that, in some ways, it's easier to communicate scientific concepts through music than through books. Volk agrees. Lyrics can, in just a few simple lines, make statements that "really grab people," Volk says. "Responses to music are just so, so strong." But don't expect them to abandon other forms of communication -- LeDoux has authored at least six papers each cited more than 300 times, including one 2000 article that has accumulated more than 1,000 citations. Volk's song "Extinction" follows next, marking a shift towards evolutionary biology. It's a dark song that Volk sings so seriously, some of the audience members seem unsure how to react. Volk explains that the song serves as a response to people who believe that humans rule the animal kingdom and always will. "[Extinction] could well happen to humans," Volk says. The band then plays a few cover songs, including a medley consisting of Cream's "Badge" and the Byrds' "Eight Miles High," followed by LeDoux's upbeat "An Emotional Brain" (named after his book of the same name), which is complete with an audience sing-along. Their newest song, "Memory Pill," was written by LeDoux about his recent paper published in *Nature Neuroscience* in which he and his colleagues found a way to erase single memories in rats. By this point, the band and audience have had a few drinks and everyone's having more fun. "Old girlfriends, algebra, playground bullies and achievement tests," LeDoux wails. "Just give me a pill, wash away my memories." LeDoux says the Amygdaloids plan to stay together for the foreseeable future. He has a few new songs in the works, including a song about crimes of passion inspired by the so-called "amygdala defense" lawyers sometimes use. The band has also been invited to go to San Antonio, Texas in December, to play for the Mind Science Foundation's holiday party -- their first road trip.