

PR research team studies human fears and how to overcome them

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A team of scientists in Puerto Rico is studying the neural mechanisms of fear and preparing what could be the first article from the island in more than a decade to appear in the prestigious scientific journal “Nature.”

During an interview in his laboratory at the Medical Sciences Campus in San Juan, neuroscientist and team leader Gregory Quirk told Efe that this research has been in progress for three years.

During that time, “advanced results” have been obtained that tell us more about the neural processes that make humans react with fear at what they observe or because of what happens to them.

“Now the question is how to endure or overcome those fears. We have all known some kind of fear or traumatic experiences, and many of us function just as well after overcoming them,” said the scientist and leader of the 15 professionals and students working on the research project.

Nonetheless, he said, “people are afraid of things that are not dangerous. Why? That’s what we’re seeing here as well.”

To learn such things, the team does not do research on human beings but rather experiments with rats and observes what mechanisms cause them fear.



Dr. Gregory Quirk

According to the scientist, the cerebral behavior of rats is 99 percent similar to that of humans.

Christian Bravo, a student in his final year of a doctorate in anatomy and neurobiology and a member of the team, told Efe the research consists in manipulating different parts of rats’ brains “so as to know not only how they express fear, but also their process of decision.”

This process is achieved by placing several rats in different cages with food and water. The researchers then set off electric shocks to observe the fearful reaction of the rodents, which normally “seek protection.” In that way the researchers can study how “the conflict between eating and protecting themselves” works.

“Previously it was only the reaction of fear that was studied, but now we can study the cerebral cortex and

understand better how we ourselves behave when faced with fear,” said Bravo, 27, noting that the plan is “to see the expression of fear that surrounds decision.”

For his part, Brazilian veterinarian Fabricio Do Monte, 33, studies rats’ behavior when they are connected to two optical fiber cables capable of activating certain neurons in the brains of those animals.

Meanwhile, graduate student Kelvin Quiñones Laracuate concentrates on recording the neural activity of rats’ brains during different activities, such as eating, sleeping and walking.

“We want to relate what the neurons are saying versus what the rats are doing,” Quiñones Laracuate said about his work in electrophysiology.