



Home > Science > How does our brain process emotional voices?

Science

How does our brain process emotional voices?

Researchers from the University of Geneva studied the way our attention focuses on different sounds in our environment and observed how the brain is alerted when it perceives anger.

By **Pranjal Mehar** - December 7, 2018

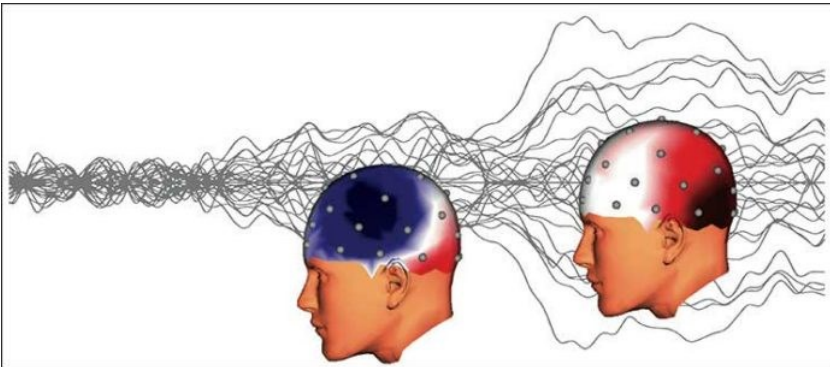


Image: UNIGE

A major role of sensory receptors is to help us learn about the environment around us, or about the state of our internal environment. But what happens within the brain when it perceives a threatening signal, for example- an aggressive voice? How does our brain distinguish this voice from surrounding noise?

Scientists at the [University of Geneva](#), have found the answer to these questions. They have studied brain activity during the processing of various emotional voices.

SOCIALIZE

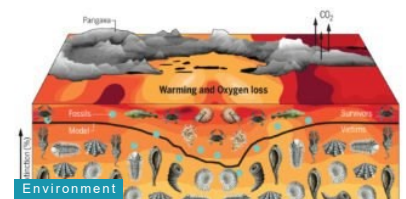
 20,820 Fans	 92 Followers	 208 Followers
 98,924 Followers	 190 Followers	 42 Subscribers

POPULAR THIS WEEK



Aliens may have visited us already but we missed it

December 8, 2018



Global warming wiped out 95% of marine life 252 million years...



Fotokalender online erstellen. Top Qualität - Jetzt bis zu 20% Rabatt.

Ad ifolor

Jetzt einkaufen

December 9, 2018



Science

Why do we want to squeeze cute, tiny things?

December 9, 2018

Scientists were keen to know how fast our attention responds to the different intonations of the voices.

They found that we notice a voice much faster when it is considered threatening than when it is perceived as normal or happy. Our attention is more focused on threatening voices to enable us to clearly recognize the location of the potential threat.

Scientists involved 35 participants in the study. To examine the brain's response to threats in the auditory environment, scientists presented 22 different voices of humans. All those sounds were neutral utterances or expressed either anger or joy. By using two loudspeakers, scientists presented these sounds to the participants.

They then used electroencephalogram (EEG) to measure electrical activity in the brain down to the millisecond. While tracking, they mainly focused on the electrophysiological components related to auditory attentional processing.

Leonardo Ceravolo, a researcher at UNIGE's Swiss Centre for Affective Sciences said, "Each participant heard two sounds simultaneously: two neutral voices, one neutral and one angry voice, or one neutral and one happy voice. When they perceived anger or joy, they had to respond by pressing a key on a keyboard as accurately and quickly as possible. We then measured the intensity of brain activity when attention is focused on the different sounds, as well as the duration of this focus before a return to the basic state."



Health

Study offers new benefit of drinking orange juice daily

December 9, 2018



Later on, scientists used data from the EEG to examine the appearance of a cerebral marker of auditory attention called N2ac.

Nicolas Burra said, "When the brain perceives an emotional target sound, N2ac activity is triggered after 200 milliseconds. However, when it perceives anger, the N2ac is amplified and lasts longer, which is not the case for joy!"



Science

Bermuda Triangle mystery 'solved,' scientists claim

August 2, 2018



Space

InSight lander captures 1st sounds of Martian wind

December 8, 2018

Read on Google Newsstand



Ceravolo said, "Subsequently, after 400 milliseconds, our attention must disengage from the emotional vocal stimulus. At this moment, a cerebral marker of auditory attention, called LPCpc, intervenes. Interestingly enough, LPCpc activity is also stronger for angry than for happy voices."



"This happens because, Anger can signal a potential threat, which is why the brain analyzes these kinds of stimuli for a longer time. In an auditory environment, this mechanism allows us to not become alarmed at the slightest potentially threatening noise or, conversely, to adopt the most appropriate behavior in case of danger. These extra milliseconds of attention are, therefore, crucial to the accurate interpretation of a threat in a complex auditory environment."

Nicolas Burra said, "This additional temporal cost was also evident in the participants' response times. When they had to indicate that they perceived anger, it took them longer than when they did so for joy. In contrast, brain activity was enhanced in the case of angry stimuli. Does it sound conflicting?"

"No. The explanation is logical. As attention in the brain remains focused on the threatening sound, the motor response via the keyboard is delayed."

This is for the first time, scientists have demonstrated that in a few hundred milliseconds, our brain is sensitive to the presence of angry voices. This rapid detection of the source of a potential threat in a complex environment is essential, as it is critical in crisis situations and a great advantage for our survival.

The study is published in the journal [Social, Cognitive and Affective Neuroscience](#).

REFERENCE University of Geneva

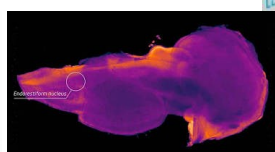
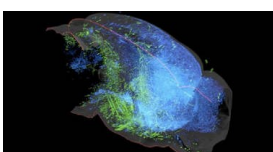
JOURNAL REFERENCE DOI: 10.1093/scan/nsy100

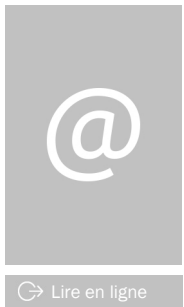


See stories of the future in your inbox each morning.

SUBSCRIBE

YOU'LL ALSO LIKE





A new map of the brain's serotonin system



Neuroscientists Construct First Whole Brain Map

Scientists decode mechanism of remembering—and...



Study describes the curse of zombie fossils

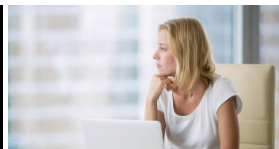
Scientists found new part of the human brain



How Many Emotions do Humans Have?



Can we influence brain circuitry to treat depression and...

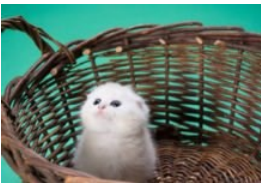


Daydreaming is Good. It Means You're Smart



Scientists discovered three new type of neurons in ear

EXPLORE MORE



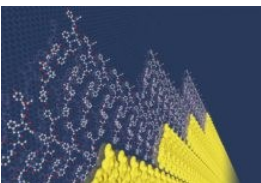
Why do we want to squeeze cute, tiny things?



Haryana's Rors brought Western flavor to Indus Valley



High-temperature electronics? That's hot



Two-dimensional materials skip the energy barrier by growing one row at a time



Alzheimer's is not one disease but six different conditions



Classifying brain microglia: Good and bad

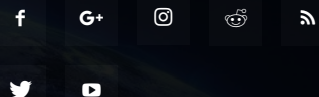


ABOUT US

TECH EXPLORIST

Tech Explorist covers every technology that shapes our world and changes our lives from Earth to Space and everything in between.

FOLLOW US



Date: 10.12.2018

Kundenartikel

Argus Data Insights Schweiz
8027 Zürich

Genre de média: Internet
Type de média: Type de média inconnu



↳ Lire en ligne



**UNIVERSITÉ
DE GENÈVE**

Ordre: 1094772

Référence: 173791239

Contact us: editor@techexplorist.com

© 2018 - Tech Explorist

[About](#) [Contribute](#) [Advertising](#) [Privacy](#) [FAQ's](#) [Terms of use](#) [Sitemap](#)