

MUSHROOMS USE UP TO 50-WORD LANGUAGE TO COMMUNICATE

The ability for us to get in on the conversation could be right at our fingertips

[Previous scientific research](#) has proven that many species of trees and plants use a sort of “fungal internet” to send electrical signals through underground filaments to communicate with each other, much like human nerve cells communicate with each other through similar pulses. In other words, there are active “brains” working underground to connect our forests, which is pretty mind-blowing in its own right.

Now, a breakthrough study has found that mushrooms send their own electrical signals in clusters, which resemble human vocabulary. Translation: the mushrooms quite possibly are speaking to each other in a language. What’s more: we might be able to decode it.

THE STUDY

Andrew Adamatzky is a professor at the [University of the West of England’s Unconventional Computing Laboratory \(UWE\)](#). On 6 April 2022, he published a paper in the journal Royal Society, Open Science entitled “[Language of fungi derived from their electrical spiking activity](#),” in which he details his groundbreaking study.

To record the electrical signals that the fungi were sending to each other, Adamatzky inserted pairs of iridium-coated stainless steel subdermal needle electrodes into the soil where several mushrooms were growing. He and his team took a large pool of measurements across a sampling of mushroom species over the course of about 5 days.

After studying the recordings, the researchers discovered that spikes in the mushrooms’ electrical signals were grouped into regular, patterned streams of activity. These findings led them to ponder whether or not those patterns are actually the building blocks of a language.

THE DEEP DIVE

To find out, they considered a number of linguistic phenomena that have previously been used to decode pictish symbols into a written language. How and when characters repeat, syntax, the actual number of characters: many [factors can be studied mathematically](#) or otherwise to decode a series of symbols into letters, words, and concepts.

Adamatzky’s team applied the same techniques to the mushrooms’ electrical impulses. After a thorough analysis utilizing [a wide variety of tools](#), the team was shocked to discover such was the case with the mushrooms. The clusters of signals they were sending to each other did indeed map to many linguistic trademarks.

Diving deeper, they found each species of mushrooms had its own unique stream of patterns, or “language.” Some were simplistic; others were rich in diversity. From their sampling, the team reported a maximum of about 50 words or letters per lexicon, with the average being around 15-20.

NEXT STEPS

Adamatzky now believes his findings should lead to further research, studying more mushroom species and their grammatical constructions. He also calls for the creation of a detailed classification of fungal words.

If his suggestions are to be followed, humanity could be on the brink of not only decoding the mushrooms' language, but perhaps even wielding it ourselves to communicate with them directly. Considering the mounting scientific evidence that the fungi can [actually teach us about our own consciousness](#), we might consider following his lead.