DO ANIMALS MAKE MUSIC? DO THEY DANCE?

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ABSTRACT

This project involves exploring the presence of music and rhythmic abilities in specific animal species. The main subjects are: whales, sea lions, gorillas, elephants, birds, and mice. The goal of this project was to compare their abilities to those of humans, but, overall, determine whether such abilities are considered musical. Cases where animals demonstrate the ability to move to a beat, both learned and innate, are analyzed, along with animals who demonstrate musical vocal abilities naturally in the wild. The previously unknown frequencies of whales, mice, and elephants, are brought to light. These findings bring up the possibility of even more animals having musical abilities than those examined in this project.

WHAT IS MUSIC?

- If music is "a combination of sounds, sound in vibration", and "an agreeable sound", does every creature on Earth have the capability of creating it?

- Are humans the only animals capable of creating music?

VOCAL MIMICRY

- When an individual learns a sound from another species or the environment.

- Animals capable of this are not the only ones capable of rhythmic entrainment.

RHYTHMIC ENTRAINMENT

The ability to synchronize with an external beat. Most humans have this ability, and now other animals are being found to have it too.

RONAN

Born in the wild in 2008, Ronan was rescued by the Marine Mammal Center in Sausalito the following year after her third stranding incident. She seemed to have been having difficulty making her own way in the wild. She was very underweight, and had been repeatedly found interacting with people.

She was permanently adopted in 2010 by the Pinniped Cognition and Sensory Systems Laboratory in Santa Cruz.

There, she was taught by graduate student Peter Cook how to bob her head in time with the rhythm in music.

"Her training began with a simple sound, like a metronome," said Cook. "Once she got the initial beat-keeping down, it became apparent that it was not a difficult task for her to do. She simply had to figure out what the scientists wanted from her."

Ronan's success challenges the theory that only animals with the ability of vocal mimicry can respond to rhythm.

She appears to have a particular affinity for "Boogie Wonderland" by Earth, Wind, and Fire.

SNOWBALL

Snowball the sulphur-crested cockatoo lives at the Bird Lovers Only Rescue. He moves in time to the beat of songs. When studied to see whether he would choose "the social aspect of dancing with a partner" over following the rhythm, he chose the latter.

His keeper, Irena Schulz, would dance along with him and would start to dance off tempo. He appeared to become frustrated by this. "He would prefer to dance with me without any music than to dance with me," Schulz said. "If I were not dancing on the beat of the song playing. This shows us that Snowball has the ability to analyze the beat."

"'Another One Bites the Dust'" plays. Snowball, perched atop an arm chair, waits for a few seconds. Then he puffs his feathers out, his yellow crest flares up, and he immediately begins bobbing his head and body in rhythm. He starts moving his left foot up and down to the tempo and then alternates each of his feet in time."

WHALES

Acoustic biologist, Katy Payne heard her first whale song in 1964. "I had never heard anything like it. Oh, my God, tears flowed from our cheeks"

The humpback, another non-vocal mimic, has the power to bring people to tears with their songs.

Payne traced the spectrograms, or visual representations, of their songs, and learned they had very specific structures - even melodies and rhythms.

"Do you hear echoes?" Payne said. "From the bottom of the sea, the underside of the waves? [With] every sound, all the whales are listening. They have memorized this song."

FINAL THOUGHTS

"Human musical ability may in fact have foundations that are shared with animals. People have assumed that animals lack these abilities. In some cases, people just hadn't looked" (Cook).