Brain imaging database of nonhuman primates

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Researchers have released the first open-source data sets from the non-human primate brain imaging consortium.

The international team of researchers led by scientists at the Child Mind Institute, USA and including scientists from the Institute of Neuroscience at Newcastle University, UK has released the first open-source data sets of non-human primate brain imaging.

In a new study, An Open Resource for Non-human Primate Imaging published in the journal *Neuron*, the researchers present details about the rationale, design, and procedures for the PRIMatE Data Exchange (PRIME-DE) consortium, an open science resource for the neuroimaging community that aims to aggregate and share anatomical, functional and diffusion MRI data sets from laboratories around the world.

The goal is to accelerate the development of a map of the neural connections in the non-human primate brain—and, ultimately, the human brain—in an effort to develop biomarkers for mental health disorders and other brain disorders and diseases.

Rare and important datasets

Newcastle University's Professor Chris Petkov, Professor in Comparative Neuropsychology, who contributed to the consortium alongside Professor Michael Schmid, said: "We are delighted to have contributed to this important international brain imaging consortium. Newcastle University and the University of Oxford are the two sites in the UK able to obtain and contribute these rare and important datasets.

"The brain imaging data in nonhuman primates are vital for better translating neurobiological insights to humans, ultimately to the benefit of medical science. Our international consortium will continue to openly share high quality neuroimaging data obtained under the highest animal welfare standards."

The consortium, led by Michael P. Milham, MD, Ph.D., the Phyllis Green and Randolph Cowen Scholar and vice president of research at the Child Mind Institute alongside Charles Schroeder (Columbia University) and Daniel Margulies (ICM and Max Planck Institute), presents details of 25 independent data collections aggregated across 22 sites. The study also outlines the unique pitfalls and challenges that should be considered in the analysis of the non-human primate MRI datasets, including providing automated quality assessment of the contributed datasets.

"This is a rapidly growing and extremely promising area of neuroscience research that suffers from a lack of data," said Dr. Milham. "The PRIMatE Data Exchange is an effort to encourage and enable the independent collection and sharing of brain imaging data through the International Neuroimaging Data-Sharing Initiative (INDI). The ultimate goal is to accelerate research that improves our understanding of how the human brain works and translates that understanding into enhanced methods for the diagnosis and treatment of a range of brain disorders."

More information: Michael P. Milham et al. An Open Resource for Non-human Primate Imaging, *Neuron* (2018). DOI: 10.1016/j.neuron.2018.08.039

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