

Assessing Theory of Mind in NH Primates: Insights for Enhanced Welfare and Care

BACKGROUND

The Necessity of Understanding NH Primate Theory of Mind

Despite extensive research, there is no strong evidence of Theory of Mind (ToM) across all NH primate species. Some studies suggest basic ToM abilities in certain NH primates, but conclusive proof is lacking. This gap highlights the need for further investigation to improve our understanding and enhance NH primate welfare.

METHOD

New Experimental Design to Assess NH Primate Theory of Mind

We propose developing multimodal communication tasks to assess ToM in NH primates. **These tasks aim to detect the presence of a specific multimodal shift behavior, which is an indicator of ToM.** Additionally, we adapt Wellman's developmental scale to evaluate the development of ToM in NH primates, providing clearer insights into their cognitive abilities.

RESULTS

Successful Testing and Future Application

Our experimental designs successfully demonstrated perceptual ToM in Asian Elephants. However, the recognition of false beliefs remains untested. Future applications will focus on assessing these aspects in NH primates.

Adapting the Wellman scale enables us to distinguish and test two levels of ToM in animals: perceptual ToM, which involves understanding others' perspectives, and false-belief ToM, which involves recognizing that others can hold incorrect beliefs.



CONCLUSION AND DISCUSSION

Ethical Implications of Recognizing a NH Primate Theory of Mind

Although it remains challenging, the optimal path to ensuring NH primate welfare is to recognize that higher levels of cognitive development should correspond to greater protections in both conservation and research. The European Union has previously taken steps in accordance with this principle, banning research involving great apes, likely due to the substantial evidence of their advanced level of ToM. **Should we then argue that certain levels of ToM in NH primates should lead to their exclusion from research?**

We believe that a complete ban on their use in research could be detrimental. Instead, it would be more beneficial to extend their protections while incentivizing the development and use of alternative research models. Moreover, understanding NH primates' cognitive abilities allows for the development of strategies that respect their mental wellbeing, thus minimizing stress and disruption and yield more reliable research outcomes.

Therefore, a deeper understanding of primate cognition could not lead to a reduction in research but rather encourage more studies, as we can increasingly ensure their well-being and minimize stress levels. **The ongoing understanding of NH primate cognition calls for a reevaluation of our ethical standards, as new findings in the ToM field raise significant ethical concerns.**

Assessing the theory of mind development in nonhuman primates to improve their well-being

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