**A touchscreen-based, multiple-choice approach to cognitive enrichment of captive rhesus macaques (*Macaca mulatta*)**

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**Abstract**

It is well established that captive animal psychological and physiological wellbeing is enhanced by complex, enriched environments. Historically, this area of research has been dominated by studies investigating social and structural enrichments. As a consequence, sources of cognitive enrichment have been understudied, despite promising external validity, comparability, and applicability. To fill this gap, we developed an interactive, multiple-choice interface for cage-mounted touchscreen devices that animals can freely interact with, outside of their experimental routine. The multiple-choice interface comprises of interchangeable activities that animals can choose and switch between. Our approach does not require social separation nor dietary restriction, and it is intended to increase animals' sense of competence and agency by providing them with more control over their environment. Thanks to the high level of automation, our multiple-choice interface can be easily incorporated as a standard cognitive enrichment practice across different facilities and institutes working with captive animals, particularly nonhuman primates. Our approach is not only the first of its kind, but is also sustainable, scalable, and pragmatic for enhancing cognitive wellbeing in particular and animal welfare in general.