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Standardized cognitive testing (CANTAB) in a strepsirrhine primate

The **CA**mbridge **N**europsychological **T**est **A**utomated **B**attery (CANTAB) is a highly renowned tool for comparative cognitive testing that has been validated in humans and monkeys. A CANTAB for small, strepsirrhine primates has not been developed, so far. We translated selected tasks from CANTAB to a non-human primate ageing model, the grey mouse lemur (*M. murinus*). We showed that mouse lemurs can be trained successfully to operate a touchscreen-based operant conditioning setup to solve tasks demanding visual discrimination learning, cognitive flexibility, and visually-guided place-item association learning.

In a visual pairwise discrimination (vPD)/pairwise discrimination reversal (vPDR) paradigm, we demonstrated that age affects both appetitive conditioning learning in the vPD and late vPDR as well as cognitive flexibility in the early vPDR. Further, preliminary results from a second study show that mouse lemurs can be trained in a more complex visuo-spatial paired associates learning task (vsPAL) assessing place-item associations and suggest that ageing also affects vsPAL performance in mouse lemurs.

The here-established CANTAB protocols, therefore, provide a valuable tool for cognitive testing in the non-human primate ageing model *M. murinus* as well as for comparative studies on primate cognition. Due to their high degree of standardization, they allow for the first time to directly compare the cognitive capabilities of a small strepsirrhine primate with those of other primate species tested with CANTAB. For the vPD learning, we could show that the cognitive performance of *M. murinus* is on par with that of some monkey species.

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