***eLife’s* transparent reporting form**

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**Sample-size estimation**

* You should state whether an appropriate sample size was computed when the study was being designed
* You should state the statistical method of sample size computation and any required assumptions
* If no explicit power analysis was used, you should describe how you decided what sample (replicate) size (number) to use

Please outline where this information can be found within the submission (e.g., sections or figure legends), or explain why this information doesn’t apply to your submission:

Our results are described using the behavior of four monkeys which is the typical sample size for cognitive neuroscience studies in monkeys.

**Replicates**

* You should report how often each experiment was performed
* You should include a definition of biological versus technical replication
* The data obtained should be provided and sufficient information should be provided to indicate the number of independent biological and/or technical replicates
* If you encountered any outliers, you should describe how these were handled
* Criteria for exclusion/inclusion of data should be clearly stated
* High-throughput sequence data should be uploaded before submission, with a private link for reviewers provided (these are available from both GEO and ArrayExpress)

Please outline where this information can be found within the submission (e.g., sections or figure legends), or explain why this information doesn’t apply to your submission:

Our technical advances of achieving a hybrid environment with a touchscreen setup require no replication since we have described the full design and have used this facility for several months now. We have accurate gaze tracking data across three monkeys, showing that these results are reliable despite inter-individual variability.

The tailored automated training (TAT) paradigm has been replicated across two monkeys, showing that our results are robust across individuals. This sample size is typical for primate cognitive neuroscience studies in which monkeys are trained on complex cognitive tasks.

The novel social learning behavior described in this study was an unusual outcome arising out of introducing one naïve monkey into the existing group of two trained animals. We have now replicated this finding in a second monkey. Our results as they stand are proof-of-concept that such novel and exciting behaviors can be revealed in a facility such as ours, and we have documented this behavior extensively.

**Statistical reporting**

* Statistical analysis methods should be described and justified
* Raw data should be presented in figures whenever informative to do so (typically when N per group is less than 10)
* For each experiment, you should identify the statistical tests used, exact values of N, definitions of center, methods of multiple test correction, and dispersion and precision measures (e.g., mean, median, SD, SEM, confidence intervals; and, for the major substantive results, a measure of effect size (e.g., Pearson's r, Cohen's d)
* Report exact p-values wherever possible alongside the summary statistics and 95% confidence intervals. These should be reported for all key questions and not only when the p-value is less than 0.05.

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Our results are mostly technical advances or learning outcomes, so they did not require any statistical comparisons. All statistical comparisons are described in detail in the text or in figure legends.

(For large datasets, or papers with a very large number of statistical tests, you may upload a single table file with tests, Ns, etc., with reference to sections in the manuscript.)

**Group allocation**

* Indicate how samples were allocated into experimental groups (in the case of clinical studies, please specify allocation to treatment method); if randomization was used, please also state if restricted randomization was applied
* Indicate if masking was used during group allocation, data collection and/or data analysis

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This is not applicable since the results are mostly technical advances or learning outcomes.

**Additional data files (“source data”)**

* We encourage you to upload relevant additional data files, such as numerical data that are represented as a graph in a figure, or as a summary table
* Where provided, these should be in the most useful format, and they can be uploaded as “Source data” files linked to a main figure or table
* Include model definition files including the full list of parameters used
* Include code used for data analysis (e.g., R, MatLab)
* Avoid stating that data files are “available upon request”

Please indicate the figures or tables for which source data files have been provided:

All the data required to replicate the figures in this paper are available on OSF at

<https://osf.io/5764q/>. Supplementary videos related to the main figures are also uploaded to the same OSF project, and are directly linked in the main text.