

Reporting Summary

Nature Research wishes to improve the reproducibility of the work that we publish. This form provides structure for consistency and transparency in reporting. For further information on Nature Research policies, see [Authors & Referees](#) and the [Editorial Policy Checklist](#).

Statistics

For all statistical analyses, confirm that the following items are present in the figure legend, table legend, main text, or Methods section.

- | | |
|-------------------------------------|--|
| n/a | Confirmed |
| ☐ | ☒ The exact sample size (n) for each experimental group/condition, given as a discrete number and unit of measurement |
| ☐ | ☒ A statement on whether measurements were taken from distinct samples or whether the same sample was measured repeatedly |
| ☐ | ☒ The statistical test(s) used AND whether they are one- or two-sided
<i>Only common tests should be described solely by name; describe more complex techniques in the Methods section.</i> |
| ☐ | ☒ A description of all covariates tested |
| ☐ | ☒ A description of any assumptions or corrections, such as tests of normality and adjustment for multiple comparisons |
| ☐ | ☒ A full description of the statistical parameters including central tendency (e.g. means) or other basic estimates (e.g. regression coefficient) AND variation (e.g. standard deviation) or associated estimates of uncertainty (e.g. confidence intervals) |
| ☐ | ☒ For null hypothesis testing, the test statistic (e.g. F , t , r) with confidence intervals, effect sizes, degrees of freedom and P value noted
<i>Give P values as exact values whenever suitable.</i> |
| ☒ | ☐ For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings |
| ☒ | ☐ For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes |
| ☒ | ☐ Estimates of effect sizes (e.g. Cohen's d , Pearson's r), indicating how they were calculated |

Our web collection on [statistics for biologists](#) contains articles on many of the points above.

Software and code

Policy information about [availability of computer code](#)

Data collection

Data were collected non-invasively in the field, no software was used to collect data.

Data analysis

Data were analyzed using custom code and run in R (version 3.4.4.) statistical environment. All relevant code, functions and raw data tables have been submitted as supplementary data files with the manuscript.

For manuscripts utilizing custom algorithms or software that are central to the research but not yet described in published literature, software must be made available to editors/reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Research [guidelines for submitting code & software](#) for further information.

Data

Policy information about [availability of data](#)

All manuscripts must include a [data availability statement](#). This statement should provide the following information, where applicable:

- Accession codes, unique identifiers, or web links for publicly available datasets
- A list of figures that have associated raw data
- A description of any restrictions on data availability

The data for this study have been uploaded as part of the supplementary files (Supplementary Datasets 1-6) as well as the code used for the statistical analyses (Supplementary Datasets 7 & 8).

Field-specific reporting

Please select the one below that is the best fit for your research. If you are not sure, read the appropriate sections before making your selection.

☐ Life sciences ☒ Behavioural & social sciences ☐ Ecological, evolutionary & environmental sciences

For a reference copy of the document with all sections, see [nature.com/documents/nr-reporting-summary-flat.pdf](https://www.nature.com/documents/nr-reporting-summary-flat.pdf)

Behavioural & social sciences study design

All studies must disclose on these points even when the disclosure is negative.

Study description	We conducted a cross-sectional study of 46 wild chimpanzee communities across Africa as part of the Pan African Programme ('PanAf': http://panafrican.eva.mpg.de) and report our findings relevant to termite-fishing culture in this study. Previously, termite fishing was known to occur in 8 chimpanzee communities, with only two distinguishable techniques observed in two communities. Here, using the PanAf sampling, we found 9 new termite-fishing communities, and conducted a detailed ethnographic analysis of termite-fishing techniques observed in a total of 10 chimpanzee communities. This analysis revealed 38 different technical elements as well as community-specific combinations of three to seven elements. Thirty of those were inferred to not be ecologically constrained in any obvious way, permitting the investigation of social influences on chimpanzee termite fishing culture. Using a combination of mixed models, the Sorensen index and a cultural fixation index, we found that the number and combination of elements shared among individuals were more similar within than between communities, thus supporting community-majority conformity in termite-fishing technique.
Research sample	The research includes data collected in the field on wild chimpanzee populations by the PanAf project. All methods for the PanAf can be found freely online at the website (http://panafrican.eva.mpg.de). For this study, data from 10 chimpanzee communities sampled by the PanAf were included, namely 1463 non-invasive camera-trap videos of 60 seconds in length, containing observations of chimpanzees termite-fishing.
Sampling strategy	The sampling strategy for the PanAf was to conduct a minimum of 1 year of field work on wild chimpanzee communities that were unknown or relatively little was known to scientists in order to better capture the variation present in this species. After 8 years of collecting data at 46 chimpanzee communities across the species range, for a range of 1-30 months, we observed 10 communities termite fishing, 1 of which was already known to do so (Goulougo). This study includes a detailed analyses of this behaviour in those 10 communities.
Data collection	Data collection procedure for the PanAf is available freely online at http://panafrican.eva.mpg.de/english/approaches_and_methods.php and the data collection procedure has also been described in detail in a previous study (Kühl et al. 2019 Science doi:10.1126/science.aau4532; citation number 5 in the manuscript).
Timing	The PanAf data collection began in 2010 and the last site finished in 2018. The number of PanAf months spent in the field at the 10 chimpanzee communities investigated in this particular study averaged 12 months during which camera-trap observations were collected.
Data exclusions	No data from the 10 communities was excluded, all video observations of termite fishing chimpanzees were included in the study and the behaviour of all clearly visible chimpanzees termite-fishing were coded.
Non-participation	There are no participants in this study as it was solely observational, no experiments were conducted and any wild chimpanzee that was recorded termite-fishing on camera-trap videos at these 10 field sites was included.
Randomization	Not applicable as no experiments were conducted.

Reporting for specific materials, systems and methods

We require information from authors about some types of materials, experimental systems and methods used in many studies. Here, indicate whether each material, system or method listed is relevant to your study. If you are not sure if a list item applies to your research, read the appropriate section before selecting a response.

Materials & experimental systems

n/a	Involved in the study
☒	☐ Antibodies
☒	☐ Eukaryotic cell lines
☒	☐ Palaeontology
☐	☒ Animals and other organisms
☒	☐ Human research participants
☒	☐ Clinical data

Methods

n/a	Involved in the study
☒	☐ ChIP-seq
☒	☐ Flow cytometry
☒	☐ MRI-based neuroimaging

Animals and other organisms

Policy information about [studies involving animals](#); [ARRIVE guidelines](#) recommended for reporting animal research

Laboratory animals	No laboratory animals were used in this study.
Wild animals	All methods for collecting data using the PanAf protocol are non-invasive and observational via infrared-sensor camera-trap devices. This study included data on 248 individually identified chimpanzees (adults, adolescents, and young of both sexes).
Field-collected samples	No organic sample collection or lab work was used for this study.
Ethics oversight	Multiple government ministries and organizations approved and provided the PanAf with research permits to conduct field work in their countries. These are all listed in the Acknowledgments of the manuscript.

Note that full information on the approval of the study protocol must also be provided in the manuscript.