

EAORC BULLETIN 1,212 – 6 September 2026

CONTENTS

NOTICES.....	2
FORMATTED VERSION OF THIS BULLETIN	2
PUBLICATION ALERTS	2
EDITORIAL INTERJECTIONS	3
ACADEMIA.EDU – Introduction to Anthropological Linguistics: Perspectives from Africa	3
NICO NASSENSTEIN, ALICE MITCHELL & ANDREA HOLLINGTON – Introduction	3
ACADEMIA.EDU – On the southern border	3
J. EMILI AURA TORTOSA et al with I. DAVIDSON – On the southern border. Hort de Cort´ es-Volc´ an del Faro (Valencia, Spain): paleogeography, paleoclimatology, chronology, and human activity at a paleolithic site (35 – 19 cal kBP)	3
NEWS.....	3
NATURE BRIEFING – The impact of words unspoken	3
SCIENCEADVISER – Pygmy raccoons play ball	3
SCIENCENEWS – Monkeys hunt small animals when fruit is scarce	4
THE CONVERSATION – Most would sacrifice some life satisfaction in exchange for a more equal society	4
PUBLICATIONS.....	4
Academia Neuroscience and Brain Research	4
PAPERS.....	4
RÜDIGER J. SEITZ et al – Perceptuo-cognitive development in infancy and childhood	4
Anthropology Today.....	4
PAPERS.....	4
JONATHAN MARKS – Why is anthropology so threatening to reactionaries?	4
AGUSTÍN FUENTES – What does anthropology do now?	4
PAUL H. MASON & GREG DOWNEY – Lice, gossip and the origins of language: A multispecies rethinking of Dunbar's hypothesis	4
Cell.....	5
PAPERS.....	5
HAN SHI et al – Genomics and social practices at Mogou and other Gansu sites during prehistoric trans-Eurasian exchange	5
Cell Reports.....	5
PAPERS.....	5
CHUANYONG XU et al – Orthogonal representational geometry in dACC underpins human hierarchical reasoning	5
Current Biology	5
PAPERS.....	5
FENG-KUEI CHIANG & ERIN L. RICH – Compression as a neural mechanism of mnemonic chunking in prefrontal cortex	5
ESTELLE E. IN ´T ZANDT, RALPH E. PETERSON & DAN H. SANES – Family identity is represented within vocal categories by the gerbil auditory cortex	5
eLife.....	6
PAPERS.....	6
JULIANE SCHUBERT et al – Prediction tendency, eye movements, and attention in a unified framework of neural speech tracking.....	6
REMYA SANKAR et al – Dual pathway architecture in songbirds enables robust sensorimotor learning	6
JONATHAN REINWALD et al – Individual differences drive social hierarchies in male mouse societies	6
LARISSA BARKER & SARAH PAPWORTH – Monkey hear, monkey do what? An application of Automated Behavioural Response systems for hypothesis testing in the world's smallest monkey	7
Evolutionary Anthropology	7
PAPERS.....	7
IULIA BĂDESCU – Primate Play and the Classificatory Making of Human Nature	7
iScience.....	7
PAPERS.....	7
MARTINA T. CINCA-TOMÁS et al – An auditory “low road” for threat processing in humans sensitive to fast temporal cues	7
LARA ZANUTTO et al with CRICKETTE SANZ & ZANNA CLAY – Bonobos innovate, plan, and transmit tool use to solve an extractive foraging task ..	7
Language and Cognition	8
PAPERS.....	8
GUI WANG & BIN SHAO – Less is more: Diachronic evidence for efficient communication in English noun-to-verb conversion over the past century.....	8

Nature	8
NEWS	8
Anxious or outgoing? Huge study links 'Big Five' personality traits to genetic variants.....	8
Nature Communications	8
PAPERS	8
ESZTER TÓTH-FÁBER et al – Longitudinal evidence for decreasing statistical learning abilities across childhood	8
Nature Pediatric Research.....	8
PAPERS	8
MEREL VAN DER STRAATEN et al – Recorded music exposure and brain growth in preterm infants: a randomized controlled trial	8
New Scientist	9
ARTICLES	9
ALISON GEORGE – What the remains of the last Neanderthals tell us about their demise	9
PLoS Biology.....	9
ARTICLES	9
AUDREY J. SEDERBERG – How the brain dances across critical boundaries	9
PAPERS	9
ANAGH PATHAK & DEMIAN BATTAGLIA – Arousal-driven critical roaming reproduces human functional connectivity dynamics	9
PLoS One.....	9
PAPERS	9
TAN ARDA GEDIK, VANIA DE LA GARZA & EWA DABROWSKA – Literacy predicts performance on a second-order false-belief task	9
KASSANDRA GIRAGOSIAN, MARINA DAVILA-ROSS & DERRY TAYLOR – Ontogeny of dialects across chimpanzee vocalisations.....	10
PNAS.....	10
PAPERS	10
LUKE D. FANNIN, CARMEN PAPE & W. SCOTT MCGRAW – A kinematic convergence in ape and monkey vertical climbing informs debates on early hominin arborealism	10
Proceedings of the Royal Society B.....	10
PAPERS	10
TOMMASO SACCÀ et al – Cognitive abilities show distinct developmental trajectories in wild meerkats	10
CATHERINE HOBAITER & NATHANIEL J. DOMINY – Firelight and the origins of spoken language	10
Royal Society Open Science.....	11
PAPERS	11
RALPH S. REDDEN et al – Returning to the effects of inhibition of return on lexical decisions	11
BENJAMIN JAUFFRET et al – Learning behaviour is consistent across time and tasks in <i>Formica fusca</i> ants	11
VALERII CHIRKOV et al – Social information quality and environmental volatility shape collective foraging behaviour	11
Science Advances.....	12
PAPERS	12
KAYSON FAKHAR et al – Human cortical networks trade communication efficiency for computational reliability	12
Trends in Cognitive Sciences	12
PAPERS	12
ROBERTA BIANCO, ROBERT J. ZATORRE & GIACOMO NOVEMBRE – Four missing keystones in the evolutionary origins of music	12
CHRISTIAN BESTE et al – Moving intentions from brains to machines	12
ZHIVAR SOURATI, ALIREZA S. ZIABARI & MORTEZA DEGHANI – The homogenizing effect of large language models on human expression and thought	12
Trends in Ecology and Evolution.....	12
PAPERS	12
DANAI PAPAGEORGIOU et al with SARAH F. BROSANAN – Levelling: behaviours that constrain inequality in animal societies	12
SUBSCRIBE to the EAORC Bulletin	13
UNSUBSCRIBE from the EAORC Bulletin	13
PRODUCED BY AND FOR THE EAORC EMAIL GROUP	13

NOTICES

FORMATTED VERSION OF THIS BULLETIN

A pdf formatted version of this Bulletin is available for download at martinedwardes.me.uk/eaorc/eaorc_bulletins.htm.

PUBLICATION ALERTS

If you have had a paper or book published, or you see something which would be of interest to the group, please send me a publication alert so that I can include it in the newsletter. Many thanks to those who have already sent in alerts.

If there is a journal you feel I should be tracking on a regular basis, let me know.
And if you have any other ideas for extending the “EAORC experience”, please contact me.

EDITORIAL INTERJECTIONS

Comments in curly brackets are editorial interjections. The Editor reserves the right to be wrong, and doesn't object to being called out on it.

ACADEMIA.EDU – Introduction to Anthropological Linguistics: Perspectives from Africa

Anthropological Linguistics: Perspectives from Africa. John Benjamins Publishing Company (2024).

NICO NASSENSTEIN, ALICE MITCHELL & ANDREA HOLLINGTON – Introduction

The study of African languages, cultural practices and speakers' conceptualizations is complex and multilayered. This introductory chapter provides an overview of the goals and scope of the volume. It also offers a short historical survey of anthropological linguistics as well as some reflections on the forms this field of enquiry has taken in relation to African languages. We discuss the structure of the volume, including chapter summaries and intersections, and conclude with some remarks on the future of the anthropological linguistics of Africa.

https://www.academia.edu/114391028/Nassenstein_Mitchell_and_Hollington_2024_Introduction_to_Anthropological_Linguistics_Perspectives_from_Africa

ACADEMIA.EDU – On the southern border

Quaternary Science Reviews 390, 110041 (2026)

J. EMILI AURA TORTOSA et al with I. DAVIDSON – On the southern border. Hort de Cortés-Volcán del Faro (Valencia, Spain): paleogeography, paleoclimatology, chronology, and human activity at a paleolithic site (35 – 19 cal kBP)

The Iberian Mediterranean Region has been considered a refuge during the stadial episodes of the Late Pleistocene, in comparison with more northern regions. Bioclimatic conditions and the ways in which humans coped with the identified fluctuations have been analyzed based on organic records, mainly plant and animal remains obtained from archaeological sites located in inland valleys. At the same time, the study of the effects of sea level rise on the paleogeography of the continental margin has revealed uneven flooding between regions, depending on their morphology and geology. These dynamics have been linked to changes in the production systems of the lithic and osseous industries, in subsistence and mobility, comparing their trends with other regions. The study of the Paleolithic site of Cova de Hort de Cortés-Volcán del Faro (HC-VF), in the Gulf of Valencia, has quantified the flooding of the extensive alluvial plain by sea level rise. The review of a significant sample of archaeological materials obtained in previous excavations has enabled the identification of a long sequence of human occupations dating from approximately 35 to 19 cal kBP. For the first time, data on the entire deposit have been obtained from the study of plant (charcoal) and animal remains (mammals, birds, fish, and mollusks), radiocarbon dating, and lithic and osseous production systems. The results provide relevant information on paleogeographic changes and the increase in arid conditions at the end of the Last Glacial Maximum. Both processes could have affected the distribution of humans, favoring concentration in areas with higher biodiversity. This allows us to propose a hypothesis about the differences observed in the record of the central area of Mediterranean Iberia compared to the southern region.

https://www.academia.edu/170467697/On_the_southern_border_Hort_de_Cort%C3%A9s_Volc%C3%A1n_del_Faro_Valencia_Spain_paleogeography_paleoclimatology_chronology_and_human_activity_at_a_paleolithic_site_35_19_cal_kBP

NEWS

NATURE BRIEFING – The impact of words unspoken

In a world of self-service and remote working, people are speaking fewer words aloud each day now than they were 20 years ago, and the decline is particularly pronounced in people under the age of 25. This dwindling number of spoken words could have knock-on effects, some researchers worry. Replacing speech with text-based messages bypasses some of the cognitive effort required to listen and respond to another person, and saved message histories eliminate the need to remember what's been said — shortcuts that could cause long-lasting changes in the brain over time.

<https://journals.sagepub.com/doi/10.1177/17456916261425131>

SCIENCEADVISER – Pygmy raccoons play ball

Move over, Jimothy—there's a new star procyonid. Endangered pygmy raccoons on Cozumel Island have been observed making toys out of trash and teaching others how to play with them. This kind of “material culture” has not been documented in any raccoon relative before, and is rare among animals in general. “We tend to assume that if we haven't seen an animal do something, the animal's not capable of doing that,” one expert said. But raccoons and their relatives are “socially conscious, playful, learning beings.”

<https://www.mdpi.com/3042-4526/3/3/33?et rid=17774313>

SCIENCENEWS – Monkeys hunt small animals when fruit is scarce

Capuchin monkeys may provide insights into the dietary evolution of our early ancestors.

<https://www.sciencenews.org/article/monkeys-hunt-small-animals-fruit-scarce>

THE CONVERSATION – Most would sacrifice some life satisfaction in exchange for a more equal society

When it comes to fairness, there may be little difference between left and right.

<https://theconversation.com/most-people-would-sacrifice-some-life-satisfaction-in-exchange-for-a-more-equal-society-286696>

PUBLICATIONS**Academia Neuroscience and Brain Research****PAPERS****RÜDIGER J. SEITZ et al – Perceptuo-cognitive development in infancy and childhood**

This paper reviews the development of perceptual and cognitive abilities during infancy and childhood as reported in the literature to connect them with the same in adults. First, infants are engaged with encoding perceptual information about objects and events in memory. When they acquire language skills, they begin to associate words with these perceptual representations and to encode narratives they have heard. This enables them to communicate to others what they have encoded and to reflect on it. Integrating perceptual encounters with emotional loading renders them personally relevant and enforces their encoding. However, the encounters experienced before the age of four years can rarely be recalled in adolescence or adulthood. Thus, beliefs formed during infancy remain largely inaccessible to memory recall later in life, although they are fundamental for individuals' behavior and the development of a person's perspective.

<https://www.academia.edu/3071-4087/2/3/10.20935/AcadNeurosci8401>

Anthropology Today**PAPERS****JONATHAN MARKS – Why is anthropology so threatening to reactionaries?**

Jonathan Marks reads the committee's report on the humanities as an uncredited rehash of the 1990s science wars, a familiar quarrel with the academic left dressed as a defence of knowledge. Rather than rebut it point by point, he sets out ten propositions about human sameness and difference that anthropology has pressed on the comfortable since the 1870s. Much of what feels natural is a product of history rather than biology. Race marks politically relevant groups misrepresented as natural kinds. Human thought is symbolic and linguistic in a way ape thought is not. And one may be an ape and yet, in reading this, certainly human. Anthropology unsettles every generation, he argues, which is precisely why reactionaries find it threatening.

<https://rai.onlinelibrary.wiley.com/doi/10.1111/1467-8322.70097>

AGUSTÍN FUENTES – What does anthropology do now?

Writing amid sustained attacks on the academy, from terminated grants and the mandated removal of gender and race content to a commissioned report questioning anthropology's rigour, Agustín Fuentes asks what the discipline should do now. His answer is to do more anthropology, and to do it together. He identifies three avenues. Teaching counters the delegitimation of knowledge. Collaboration counters the isolation and defunding of scholars. And the recognition of new modes of scholarship counters the narrowing of what is allowed to count. Against a politics that drives inequality, oppression and hopelessness, he argues that anthropology offers grounded, evidence-based hope, and that the discipline should use it more forcefully, intentionally and communally.

<https://rai.onlinelibrary.wiley.com/doi/10.1111/1467-8322.70085>

PAUL H. MASON & GREG DOWNEY – Lice, gossip and the origins of language: A multispecies rethinking of Dunbar's hypothesis

Some 30 years after the popularization of the 'social brain hypothesis', this commentary takes a multispecies lens to highlight the catalytic role that ectoparasites have played in the evolution of grooming and, by extension, potentially in humanly organized multimodal communication. Predators and foraging helped draw our ancestors into groups, but lice and other parasites applied a more intimate pressure, compelling tactile care. If grooming began as a response to parasites, became pleasurable before it became symbolic, and gossip later replaced grooming in larger groups, then the origins of language may be more relational and ecological than previously assumed. This speculative intervention suggests that even our most celebrated capacities may be rooted in interspecies entanglements. A multispecies perspective on human evolution reminds us that the story was never just human, and never just one story. What we know of the human is incomplete if we only know humans.

<https://rai.onlinelibrary.wiley.com/doi/10.1111/1467-8322.70093>

Cell**PAPERS****HAN SHI et al – Genomics and social practices at Mogou and other Gansu sites during prehistoric trans-Eurasian exchange**

Beginning approximately 4,000 years ago, southwest-Asian-originating domesticated crops and livestock began appearing in Gansu, a key crossroads in northwestern China, yet the population dynamics and social practices underlying these historically transformative events in the region have not been fully explored. Despite the adoption of western domesticates, genome sequences of 149 individuals from the large Mogou cemetery and ten other sites in Gansu, dating between 4,700 and 3,000 years ago, revealed migrations within East Asian regions but no detectable evidence of genetic influence from western or central Eurasia, suggesting that early agricultural dispersals may have followed a model distinct from that documented in Europe and Central Asia. The Mogou cemetery represents a continuous community that interacted with surrounding regions but does not exhibit clear matrilineal or patrilineal residential patterns. We found no strong evidence that co-buried individuals represented biological relatives. Non-local ancestry appears to be linked to lower-status burial practices.

[https://www.cell.com/cell/fulltext/S0092-8674\(26\)00919-0](https://www.cell.com/cell/fulltext/S0092-8674(26)00919-0)

Cell Reports**PAPERS****CHUANYONG XU et al – Orthogonal representational geometry in dACC underpins human hierarchical reasoning**

Flexible cognitive control requires inferring the causes of feedback and adjusting accordingly. When tasks are hierarchically structured with high-level rules governing low-level perceptual judgments, good performance requires hierarchical reasoning. Yet how the human brain represents and integrates multiple task-relevant variables to support the computations required for hierarchical reasoning remains unclear. Here, building on Bayesian modeling and recurrent neural network simulation of hierarchical reasoning, we show that such algorithm and its representations are implemented in the human dorsal anterior cingulate cortex (dACC). Accumulated errors and perceptual difficulty are integrated in dACC to estimate high-level rule switch confidence. These variables are represented along two separable dimensions that can be approximated by basis functions. Orthogonality between them supports a two-dimensional representation well suited for hierarchical reasoning. A closer-to-orthogonal representational geometry also correlates with accurate computation and better performance. Together, these findings provide an integrated computational and neural explanation for hierarchical reasoning.

[https://www.cell.com/cell-reports/fulltext/S2211-1247\(26\)01007-7](https://www.cell.com/cell-reports/fulltext/S2211-1247(26)01007-7)

Current Biology**PAPERS****FENG-KUEI CHIANG & ERIN L. RICH – Compression as a neural mechanism of mnemonic chunking in prefrontal cortex**

Chunking is the mental process of grouping information into meaningful units and plays a central role in many cognitive processes such as working memory, yet the neural mechanisms that form chunks remain unknown. Here, we investigated how chunking impacts the representation of mnemonic information in the dorsolateral prefrontal cortex (dlPFC). Macaque monkeys performed a self-ordered visuospatial working memory task, in which spontaneous chunking could be behaviorally characterized. We found that chunking improved memory performance overall and produced lower accuracies and longer reaction times at chunk boundaries. In the dlPFC, chunking systematically biased neural representations of spatial targets toward common chunk centers. At the same time, chunking reduced the dimensionality of population activity, indicating a compression of mnemonic information. Memory-guided behavior was also biased in the same direction as the neural distortions, which suggests that the compression mechanisms are lossy rather than lossless. Together, these results offer a mechanistic account of chunking as a form of lossy compression in neural coding that sacrifices detail within a chunk but improves overall memory retention.

[https://www.cell.com/current-biology/abstract/S0960-9822\(26\)01026-2](https://www.cell.com/current-biology/abstract/S0960-9822(26)01026-2)

ESTELLE E. IN 'T ZANDT, RALPH E. PETERSON & DAN H. SANES – Family identity is represented within vocal categories by the gerbil auditory cortex

Vocalizations are integral to social communication, with acoustic features that may convey both meaning and information about an animal's identity or emotional state. The neural representation of vocalizations must therefore permit animals to generalize across one set of acoustic features to recognize meaning and a different set of features to recognize vocalizer identity. To test this idea, we recorded the responses of gerbil core auditory cortex (AC) neurons to a large array ($n > 1,500$) of variants drawn from four vocalization categories and produced by 5 different families. Each vocalization category could be decoded from a small AC population with high accuracy, despite the acoustic variance across vocalization renditions of different families of origin. Further, a larger AC population was required to decode family identity, using a unique set of acoustic features for each category. Thus, AC activity can be used to simultaneously predict vocalization category and family identity and is robust to the natural range of acoustic variance.

[https://www.cell.com/current-biology/fulltext/S0960-9822\(26\)01079-1](https://www.cell.com/current-biology/fulltext/S0960-9822(26)01079-1)

JULIANE SCHUBERT et al – Prediction tendency, eye movements, and attention in a unified framework of neural speech tracking

Auditory speech comprehension is a multi-faceted process in which attention, prediction, and sensorimotor integration (via active sensing) interact with or complement each other. Although different conceptual models that focus on one of these aspects exist, we still lack a unified understanding of their role in speech processing. Here, we first replicated two recently published studies from our lab, confirming 1) a positive relationship between individual prediction tendencies and neural speech tracking, and 2) the phenomenon of ocular speech tracking - the tracking of attended speech by eye movements - and its shared contribution with neural activity to speech processing. In addition, we extended these findings with complementary analyses and investigated these phenomena in relation to each other in a multi-speaker paradigm with continuous, narrative speech. Importantly, prediction tendency and ocular speech tracking seem to be unrelated. In contrast to the shared contributions of oculomotor and neural activity to speech processing over a distributed set of brain regions that are critical for attention, individual prediction tendency and its relation to neural speech tracking seem to be largely independent of attention. Based on these findings, we propose a framework that aims to bridge the gaps between attention, prediction, and active (ocular) sensing in order to contribute to a holistic understanding of neural speech processing. In this speculative framework for listening, auditory inflow is, on a basic level, temporally modulated via active ocular sensing, and incoming information is interpreted based on probabilistic assumptions.

<https://elifesciences.org/reviewed-preprints/101262>

REMYA SANKAR et al – Dual pathway architecture in songbirds enables robust sensorimotor learning

The acquisition of sensorimotor skills critically depends on basal ganglia (BG)–thalamo–cortical circuits. Prevailing theories propose that the BG optimize motor output through reinforcement learning (RL), using internal performance evaluations to approximate stochastic gradient ascent. However, this framework struggles in non-convex performance landscapes, where local optima hinder efficient learning. Songbirds provide a compelling biological example of robust sensorimotor learning, mastering complex vocalizations through trial-and-error within a specialized BG–thalamo–cortical architecture. Here, we present a computational model constrained by the anatomy, physiology, and developmental trajectory of the zebra finch song system. The model combines a BG-driven RL pathway with a parallel cortical motor pathway that progressively consolidates successful motor patterns via Hebbian plasticity. In addition, we incorporate synaptic volatility within the BG pathway, introducing structured variability across learning. Through simulations of vocal learning using both a biophysical syrinx model and synthetic performance landscapes, we demonstrate that this dual-pathway architecture reliably converges to global optima and outperforms standard and noise-annealed RL approaches. The model reproduces key experimental features of song learning, including non-monotonic learning trajectories, a gradual reduction in motor variability, and the developmental transfer of motor control from subcortical to cortical circuits. Mechanistically, delayed maturation of the cortical pathway provides an implicit regulation of the exploration–exploitation trade-off, while synaptic volatility enables escape from local optima. These results highlight the importance of neural circuit architecture and dynamics in efficient learning, and suggest biologically inspired design principles for improving the robustness and sample efficiency of artificial RL systems in complex sensorimotor domains.

<https://elifesciences.org/reviewed-preprints/112141>

JONATHAN REINWALD et al – Individual differences drive social hierarchies in male mouse societies

Social hierarchies structure groups and confer advantages on high-ranking individuals. In mice, individual position in hierarchies may emerge situationally from current group compositions, or, alternatively, may remain largely stable across groups as an internalized feature. Dominance and subordination are expressed in behaviors like tube competitions or agonistic chasing. The interaction of these behaviors in the shaping of social position in larger male mouse groups remains largely unknown. To address these questions, we developed the NoSeMaze, a semi-naturalistic, open-source, modular platform that enables automated long-term tracking of unperturbed groups. Across more than 4000 mouse-days, hierarchies derived from incidental competitions in the integrated tube tests were non-despotic, transitive, and stable even when group compositions changed. This stability supports an internalized component of competition-based social rank. Chasing was also stable across contexts. Notably, chasing was concentrated among high-ranking individuals, consistent with ongoing negotiation of social rank among individuals at the upper end of the hierarchy. The link between chasing and social rank strengthened in groups with less well-defined rank structure, where mice rely more on aggressive signaling to assert their position. Chasing and social rank were associated with certain dimensions of simultaneously measured physical and cognitive features. In summary, high-dimensional tracking with the NoSeMaze reveals that social position in mice is multifaceted and shaped by stable dimensions of individual behavior that persist across changing social contexts. The approach thus enables longitudinal modeling of individuality and social position as key resilience factors.

<https://elifesciences.org/articles/109354>

LARISSA BARKER & SARAH PAPWORTH – Monkey hear, monkey do what? An application of Automated Behavioural Response systems for hypothesis testing in the world's smallest monkey

Observer effects are a frequent problem in animal behaviour studies, particularly when assessing responses to human disturbance. Automated Behavioural Response (ABR) systems, which combine camera traps with automated sound playbacks, offer a solution but have been primarily used on large terrestrial mammals. Here, we demonstrate their use in a small (~110g) arboreal primate, the eastern pygmy marmoset (*Cebuella niveiventris*). We conducted two playback experiments to test the risk-disturbance and distracted prey hypotheses. The marmosets exhibited strong anti-predator responses to avian predator calls, including increased fleeing and vocalisations. Human speech elicited similar but weaker responses, indicating that pygmy marmosets do not perceive raptors and humans as equivalent threats. Embedding predator calls into anthropogenic noise reduced vocal responses, suggesting that anthropogenic noise interferes with responses to predation cues. Across five weeks, we generated 128 successful experimental trials, demonstrating that ABRs can rapidly produce sample sizes sufficient for hypothesis testing in the field.

<https://elifesciences.org/reviewed-preprints/111960>

Evolutionary Anthropology**PAPERS****IULIA BĂDESCU – Primate Play and the Classificatory Making of Human Nature**

Primate play is often interpreted as a developmental activity through which immature individuals acquire capacities used later in life. This essay uses play to examine a wider process in behavioral research: how classification helps produce behavioral data and shapes the explanations those data can support. It asks how juvenile actions are classified as play and become evidence for claims about development, evolution, and “human nature.” I argue that the same analogies to adult behavior that help recognize and organize juvenile actions as play later reappear in explanations of the roles or capacities that play is proposed to develop. Examples show how such developmental hypotheses become entangled with culturally familiar narratives of gender and human evolution, particularly as scientific claims circulate publicly. A comparative anthropology of play should keep these evidentiary steps visible, distinguish adult analogies from demonstrated developmental outcomes, and situate play within immature primates' immediate social and material worlds.

<https://onlinelibrary.wiley.com/doi/abs/10.1002/evan.70047>

iScience**PAPERS****MARTINA T. CINCA-TOMÁS et al – An auditory “low road” for threat processing in humans sensitive to fast temporal cues**

Rapid threat processing is a fundamental and evolutionarily conserved function of the brain. In vision, influential models of emotion propose the existence of a fast subcortical pathway for threat processing, connecting the visual thalamus with the amygdala, driven by coarse visual inputs. In audition, whether such a “shortcut” operates in humans has remained unknown. Here, using psychophysiology and neuroimaging, we provide convergent human evidence for an auditory pathway that is sensitive to fast temporal acoustic cues, previously linked to salient alarm signals and coarse auditory processing. Threatening sounds with fast temporal cues elicited rapid neural and autonomic responses at early post-stimulus latencies. Notably, right amygdala responses to these cues covaried with individual differences in strength of a direct auditory thalamo-amygdala pathway. Together, these findings identify a previously uncharacterized “low road” for auditory threat processing in humans, and establish fast temporal acoustic structure as a key feature supporting rapid affective responses.

[https://www.cell.com/iscience/fulltext/S2589-0042\(26\)02814-2](https://www.cell.com/iscience/fulltext/S2589-0042(26)02814-2)

LARA ZANUTTO et al with CRICKETTE SANZ & ZANNA CLAY – Bonobos innovate, plan, and transmit tool use to solve an extractive foraging task

The evolutionary origins of tool use remain poorly understood. Drawing inferences from living apes is challenging due to striking differences between chimpanzees (*Pan troglodytes*) and bonobos (*P. paniscus*), our two closest living relatives. Chimpanzees routinely use tools in both the wild and captivity. Conversely, wild bonobos rarely use tools, whereas captive bonobos show diverse tool use. We examined the individual (i.e., age, sex, and rearing history), social (i.e., past and present exposure to conspecifics using tools), and environmental (i.e., tool availability) tool-use drivers in sanctuary-living bonobos using a novel group-based extractive foraging task. Tool use was more frequent in adult females than in males, in human-reared than in mother-reared immatures, after greater exposure to tool use, and when tools were provided. Hence, tool use in sanctuary-living bonobos is driven by social learning opportunities and developmental biases, providing insight into the conditions that may have favored the emergence of tool use during hominin evolution.

[https://www.cell.com/iscience/fulltext/S2589-0042\(26\)02821-X](https://www.cell.com/iscience/fulltext/S2589-0042(26)02821-X)

Language and Cognition

PAPERS

GUI WANG & BIN SHAO – Less is more: Diachronic evidence for efficient communication in English noun-to-verb conversion over the past century

Conversion exemplifies one of the most productive word-formation processes in English. Yet how this phenomenon has evolved over time and what factors drive its development remain underexplored. This study investigates changes in noun-to-verb conversion degree and the semantic, morpho-phonological, stylistic and frequency-based factors shaping this process. Using data from the Corpus of Historical American English, we analyzed 637 noun-to-verb conversion pairs from the 1920s to the 2010s and modeled their trajectories with generalized linear mixed effects models. Results reveal a significant increase in conversion degree over time. This reflects a reconfiguration of how efficient communication is achieved, whereby categorical information is increasingly conveyed by context rather than overt morphological marking. We further found that nouns with higher semantic diversity, lower concreteness, lower frequency and shorter phonological forms display stronger tendencies toward verbal expansion. These lexical properties jointly determine how firmly a noun is anchored at the nominal pole of the noun-verb continuum. Overall, the findings portray the dynamics of conversion as a product of communicative pressures, allowing the English lexicon to achieve greater expressivity with fewer but more flexible forms.

<https://www.cambridge.org/core/journals/language-and-cognition/article/less-is-more-diachronic-evidence-for-efficient-communication-in-english-nountoverb-conversion-over-the-past-century/AE89405C0F3EC0AC8D3C6437893484D4>

Nature

NEWS

Anxious or outgoing? Huge study links 'Big Five' personality traits to genetic variants

Researchers identify more than 1,200 personality-linked genetic variants, with effects largely independent of family background.

<https://www.nature.com/articles/d41586-026-02761-5>

Nature Communications

PAPERS

ESZTER TÓTH-FÁBER et al – Longitudinal evidence for decreasing statistical learning abilities across childhood

We're sharing this article early to provide faster access to peer-reviewed, accepted research. It is citable and carries a permanent DOI. This version is subject to further edits and will be replaced automatically by the final Version of Record. All legal disclaimers apply.

Statistical learning enables us to identify patterns in our environment and predict future events, thereby supporting a range of motor, cognitive, and linguistic skills. Despite its significance, the developmental trajectory of statistical learning has remained unclear due to a lack of comprehensive longitudinal studies. Cross-sectional research has hinted at enhanced statistical learning in children up to 11-13 years, followed by a decline into adulthood, yet definitive insights require a longitudinal approach. Our study addresses this gap by assessing statistical learning in the same participants at ages 7, 8, 11, and 14. Utilising linear mixed models and latent class analyses, we observe a decline in statistical learning with age, and find that higher executive functions—cognitive functions that underlie higher-order goal-directed behaviour—are associated with this decline. This study provides evidence that statistical learning is more effective in early childhood, offering insights into the developmental trajectory of this fundamental cognitive ability.

<https://www.nature.com/articles/s41467-026-77261-1>

Nature Pediatric Research

PAPERS

MEREL VAN DER STRAATEN et al – Recorded music exposure and brain growth in preterm infants: a randomized controlled trial

Premature infants are at risk for adverse neurodevelopmental outcomes. Sensory interventions, such as recorded music, may mitigate these risks by supporting brain development. This study assessed the impact of a recorded music intervention on corpus callosum (CC) growth, a biomarker of neurodevelopment, in preterm infants.

In a single-blind RCT in the neonatal intensive care unit, 76 preterm infants were randomly assigned to a music intervention (N = 42) or placebo group (N = 34). The intervention consisted of an 8-min daily exposure to Brahms' Lullaby, delivered for up to 15 sessions. The primary outcome was growth in CC length, measured via cranial ultrasound at multiple time points. A linear mixed model was employed to analyze the data.

Preterm infants receiving the music intervention showed a significantly steeper daily increase in CC length compared to placebo ($p < 0.001$). This effect persisted after adjusting for several covariates.

These findings suggest that brief, structured music exposure may promote early brain development in preterm infants. It underscores the potential of carefully designed auditory interventions as non-pharmacological support in neonatal intensive

care. Future research should elucidate the mechanisms underlying these effects, optimize intervention protocols, and evaluate long-term neurodevelopmental outcomes.

<https://www.nature.com/articles/s41390-026-05393-7>

New Scientist

ARTICLES

ALISON GEORGE – What the remains of the last Neanderthals tell us about their demise

An isolated population of Neanderthals is shedding new light on their species' final days. Palaeoanthropologist Ludovic Slimak takes us inside the cave where they lived and died.

<https://www.newscientist.com/article/2584621-what-remains-of-the-last-neanderthals-tell-us-about-their-demise/>

PLoS Biology

ARTICLES

AUDREY J. SEDERBERG – How the brain dances across critical boundaries

The brain's functional connectivity dynamics have been explained by a critically tuned model, but such models miss occasional reconfigurations. A new PLOS Biology study shows that modulatory control near a critical point can account for these rare events.

<https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3003950>

PAPERS

ANAGH PATHAK & DEMIAN BATTAGLIA – Arousal-driven critical roaming reproduces human functional connectivity dynamics

Ongoing brain activity displays rich temporal variability associated with efficient cognition, with functional connectivity (FC) continually reconfiguring over time. The resulting functional connectivity dynamics (FCD) specifically show complex, fat-tailed statistics that alternate between persistent epochs and faster reconfiguration transients. While nonlinear whole-brain models tuned nearby a critical point have reproduced some aspects of FCD, they fall short of capturing its full temporal complexity. We propose that slow fluctuations in arousal offer a biologically plausible mechanism for exploring critical regimes in large-scale brain dynamics and thus enrich FCD. Using a connectome-based model of coupled cortical populations, we identified phase boundaries where system dynamics transition between regimes of faster or slower FCD. We then phenomenologically incorporated arousal changes, modeling them as stochastic fluctuations in key parameters such as cortical excitability, input gain, and noise amplitude. This explicitly time-dependent formulation enables the system to roam dynamically across regime boundaries, flexibly tuning its distance from critical transition lines and producing intermittent transitions that mirror the stochastic evolution observed in empirical FCD. Fitting these models to human resting-state fMRI and performing model comparison, we find that arousal-driven models more accurately reproduce the distinctive quantitative features of FCD, with the greatest improvements coming from the previously poorly accounted fat-tailed portions of the distributions. Together, these results suggest that arousal fluctuations—likely mediated by changes in neuromodulatory tone—shape the brain's attractor landscape over time, expanding the repertoire of accessible functional network states and providing a mechanistic basis for the complexity of spontaneous functional dynamics.

<https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3003916>

PLoS One

PAPERS

TAN ARDA GEDIK, VANIA DE LA GARZA & EWA DABROWSKA – Literacy predicts performance on a second-order false-belief task

The vast majority of research on false-belief understanding has been conducted with literate populations. However, to our knowledge, no prior study has examined how literacy acquisition itself influences false-belief reasoning. The development of false-belief understanding is shaped by a range of factors, including language skills, education, reading experience, and cognitive abilities. Illiterate speakers often show substantial variability in language skills and cognitive abilities. In this study, we investigated the impact of nonverbal IQ, inhibitory control, and reading fluency on false-belief understanding in adult native Turkish speakers, comparing literate and illiterate participants. We found considerable individual differences in false-belief performance across both groups, as well as in the cognitive measures. Strikingly, reading fluency (assessed via a 1-minute timed word-reading task) emerged as the most significant predictor of false-belief performance, accounting for 49% of the variance. We propose that literacy acquisition may support the development of false-belief reasoning by enhancing language skills, cognitive control, metalinguistic awareness, and perspective-taking through engagement with written narratives. These findings carry broader implications for psychology, linguistics, and adult education.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0357313>

KASSANDRA GIRAGOSIAN, MARINA DAVILA-ROSS & DERRY TAYLOR – Ontogeny of dialects across chimpanzee vocalisations

Dialects are a vocal signature of population membership. Early in human ontogeny, vocal behaviour is relatively similar across populations from an acoustic perspective. As ontogeny progresses, the difference between populations becomes larger. While research in recent decades has shown chimpanzees show population-specific vocal signatures, debates regarding the sources of this variation, namely whether it results from social, genetic, or ecological factors, continue. By studying the ontogeny of vocal dialects, we can gain new insights into the processes generating cross-population variation in vocal acoustics. In this study, we measured the acoustic characteristics of infant (N = 21) and juvenile (N = 10) chimpanzee (*Pan troglodytes schweinfurthii*) laughs (N = 4733), grunts (N = 3694), and whimpers (N = 2798) at Chimfunshi Wildlife Orphanage and Gombe National Park. Using permuted discriminant function analysis, we found that we could discriminate between sites for all call types, indicating the presence of dialects across the chimpanzee vocal repertoire. This pattern held for juveniles, but infant whimpers did not show site-specific vocal signatures. Furthermore, we could discriminate between sites significantly better for juveniles compared to infants. We discuss the different processes through which the presence of population-specific vocal signatures across the vocal repertoire from infancy may emerge and argue that the development of increasingly recognisable vocal dialects in ontogeny suggests a role for social and ecological factors in shaping chimpanzee vocal acoustics.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0355313>

PNAS**PAPERS****LUKE D. FANNIN, CARMEN PAPE & W. SCOTT MCGRAW – A kinematic convergence in ape and monkey vertical climbing informs debates on early hominin arborealism**

Recent debates on early hominin arborealism center around interpretations of fossilized foot bones as being either “African ape”- or “monkey”- like in their morphology. These dueling interpretations fuel competing locomotor reconstructions of the last common ancestor of chimpanzees and humans (LCA), including disagreements about the prevalence of vertical climbing behaviors. Yet it remains unclear if possessing an ape- or monkey-like foot impacts the safety and efficiency of climbing, in part because few kinematic data exist on cercopithecoid monkeys moving in their natural habitats. Here, we present detailed kinematic data on the feet of a prolific vertically-climbing cercopithecoid monkey (*Cercocebus atys*; the sooty mangabey) in the wild. We show that sooty mangabeys exhibit an extraordinary degree of midfoot dorsiflexion (~46°) during vertical climbs, a value nearly indistinguishable in magnitude to the ankle dorsiflexion of chimpanzees and slightly larger than the ankle dorsiflexion of climbing rainforest hunter-gatherers. This result suggests that, regardless of overall pedal morphology, the fitness challenges posed by vertical movements produced a kinematic convergence in primate foot biomechanics to improve climbing safety. Even if the LCA retained a more monkey-like foot compared to later hominins, our findings suggest that vertical climbing would still be a plausible component of its locomotor repertoire.

<https://www.pnas.org/doi/full/10.1073/pnas.2608183123>

Proceedings of the Royal Society B**PAPERS****TOMMASO SACCAÀ et al – Cognitive abilities show distinct developmental trajectories in wild meerkats**

Understanding cognitive development is fundamental for explaining variation in adult cognitive phenotypes, and thus the processes driving cognitive evolution. The ontogeny of cognitive traits is likely influenced by both population-wide pressures, such as ecological demands, and individual-specific factors, including early life experiences. To properly investigate cognitive variation, we must therefore identify species-level developmental trajectories and individual variation from normative ontogeny. We studied the ontogeny of three cognitive traits—inhibition control, spatial cognition and physical problem-solving skills—in 41 wild meerkats (*Suricata suricatta*) from 12 litters (10 groups). Our longitudinal study followed individuals from early life to nutritional independence and into sub-adulthood. We found that rates of development (learning curves) varied among traits. Performance of cognitive traits did not correlate over ontogeny nor at specific time points, suggesting independent processes underlying each measured trait. While inhibitory control showed little individual variation in its development, spatial cognition and physical problem-solving showed substantive individual differences. Furthermore, physical problem-solving showed consistency in performance over time, a pattern that emerged near nutritional independence, reflecting its ecological importance early in life. Future research should determine the drivers of individual developmental variation and how such differences translate into fitness consequences.

<https://royalsocietypublishing.org/rspb/article/293/2078/20261638/483176/Cognitive-abilities-show-distinct-developmental>

CATHERINE HOBAITER & NATHANIEL J. DOMINY – Firelight and the origins of spoken language

Language and fire are hallmarks of the human condition, but most scholars treat them as independent traits. We develop a theory for the origin of language that links both touchstones of human evolution. First, we show that precursors to language were probably rooted in the gestural systems of living apes. Next, we show that attempts to explain the evolution of spoken language in utilitarian terms (a) are undermined by evidence of these abilities in other species and (b) overestimate the need for language to sustain daily practicalities of early small-scale social groups. Instead, we draw attention to the fireside niche

as the likely site for the origin of language during oral storytelling. Fireside storytelling could: (i) resolve the conundrum of why load-bearing aspects of meaning shifted from gesture to speech, and (ii) promote hierarchical structure and a shift away from embodied gesture into arbitrary generative speech, enabling communication outside of direct experience and into social imagination: from our distant past and future, to other places and peoples. We examine visual properties of firelight to consider how it could enhance the effectiveness of storytelling. We generate testable predictions to address how firelight propelled the characteristically human expression of language.

<https://royalsocietypublishing.org/rspb/article/293/2078/20260602/483174/Firelight-and-the-origins-of-spoken>

Royal Society Open Science

PAPERS

RALPH S. REDDEN et al – Returning to the effects of inhibition of return on lexical decisions

Inhibition of return (IOR), an inhibitory after-effect of visuo-spatial orienting, typically results in slower responding to targets presented in recently attended locations. Although IOR has been ubiquitously observed in simple tasks, the extent to which it influences more complex tasks, such as lexical decisions (Chasteen & Pratt 1999 Psychol. Sci. 10, 41–46. (doi:10.1111/1467-9280.00104)), is largely unexplored. There are two forms of IOR: an input form operating to reduce the quality of information, and an output form operating to bias responding. With careful monitoring of eye movements, our first experiment sought to examine how these two forms (generated with and without saccades to the cue) might affect lexical decisions. By contrast to Chasteen & Pratt, we found no main effect of IOR and no interaction between IOR and word frequency. Our second experiment was a direct, pre-registered replication of Chasteen & Pratt to determine whether we would replicate their finding of IOR slowing lexical decisions, and importantly their main finding of an interaction between IOR and word frequency. Consistent with Chasteen & Pratt in Experiment 2, we too found that IOR does delay lexical decisions, but unlike what was reported by them, IOR did not vary with word frequency.

<https://royalsocietypublishing.org/rsos/article/13/9/rsos240994/483152/Returning-to-the-effects-of-inhibition-of-return>

BENJAMIN JAUFFRET et al – Learning behaviour is consistent across time and tasks in *Formica fusca* ants

Research on interindividual behavioural and cognitive variability has gained momentum over the last few decades. Most studies focused on vertebrates, revealing that individual cognitive performance can be stable across time and tasks and linked to other behavioural traits. Invertebrates, including social insects, have received far less attention despite evidence of interindividual behavioural variability. Here we evaluated the consistency of individual learning behaviour across time and tasks in *Formica fusca* ants. First, we measured the repeatability over time of exploratory activity (open-field) and learning behaviour in an olfactory discriminative conditioning task at the individual level (Experiment 1). Then, we investigated the consistency of individual behavioural response across two learning tasks (discriminative and reversal learning) and the relationship between exploratory activity and learning (Experiment 2). We show that ants' behaviour in a learning task is stable over time and that ants can reverse odorant–reward contingencies, providing the first evidence of individual-level reversal learning in ants. Individual learning behaviour in the discrimination task was positively correlated with learning behaviour in the reversal task. However, exploratory activity was not associated to ants' behaviour in the learning tasks. Our results expand the limited body of evidence for stable cognitive traits and cross-task consistency in invertebrate learning.

<https://royalsocietypublishing.org/rsos/article/13/9/rsos260622/483158/Learning-behaviour-is-consistent-across-time-and>

VALERII CHIRKOV et al – Social information quality and environmental volatility shape collective foraging behaviour

Collective foraging is widespread across the animal kingdom, allowing animals to more effectively discover resources. However, collective foragers need to balance a key trade-off between private exploration and using social information. Social information can come in very distinct forms, ranging from simple positional cues to complex pay-off information. However, how the types of available social cues and environmental volatility shape collective foraging behaviour is not well understood. We address this using a spatially explicit model in which agents track a mobile resource via multi-agent reinforcement learning (MARL). Agents choose between random exploration, private tracking and social attraction. We systematically varied resource volatility and the type of available social cues to analyse their effect on individual and collective behaviour. Our results show that the quality of social information dictates the emerging collective behaviour. Low-quality social cues (e.g. positions and actions) result in a fragile strategy that is effective in stable environments but fails as volatility increases. Conversely, high-quality social information (e.g. pay-offs) enables behavioural diversity: agents selectively copy others and flexibly change between individual tracking or exploration depending on the environmental volatility. Our findings identify the interplay between information quality and ecological context as an important mechanism governing the emergence of distinct forms of collective behaviour from individual decision rules.

<https://royalsocietypublishing.org/rsos/article/13/9/260606/483167/Social-information-quality-and-environmental>

Science Advances

PAPERS

KAYSON FAKHAR et al – Human cortical networks trade communication efficiency for computational reliability

Brains are often described as cost-efficient communication networks that optimally balance long-connection costs against fast communication. Inspired by the “use it or lose it” principle, we present a game-theoretic model of self-organizing neural units showing the brain is suboptimal in both regards. Regional competition for connectivity under propagative dynamics yields networks resembling the human cortex yet more efficient and economical. In addition, using a reservoir computing framework, we find comparable information processing capacity, but synthetic optimal communication networks show lower computational reliability. Last, virtual lesions reveal why these networks are fragile: To optimize communication, they funnel information through a spatially clustered “oligarchy” of transmodal hubs. The human brain instead uses a distributed “rich-club” backbone that better resists targeted attacks, despite higher wiring costs and less efficient communication. Cortical networks thus trade both cost and efficiency for reliable computation, highlighting computational reliability as an overlooked and perhaps even more prominent driver of brain connectivity than wiring cost or communication efficiency.

<https://www.science.org/doi/10.1126/sciadv.aef2894>

Trends in Cognitive Sciences

PAPERS

ROBERTA BIANCO, ROBERT J. ZATORRE & GIACOMO NOVEMBRE – Four missing keystones in the evolutionary origins of music

Music is pervasive across human history, cultures, and development, yet its evolutionary origins remain unresolved due to the interplay of cultural and biological influences. We argue that identifying uniquely human musicality requires cross-primate comparative research that integrates rhythm and melody processing with exposure, computational principles, and intrinsic reward.

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(26\)00159-2](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(26)00159-2)

CHRISTIAN BESTE et al – Moving intentions from brains to machines

Brain–computer interface (BCI) research has achieved remarkable technical progress but remains limited in scope, typically relying on motor and visual cortex signals in limited patient populations. We propose a paradigm shift in BCI design rooted in ideomotor theory, which conceptualizes voluntary action as driven by internally represented sensory outcomes. This underused framework offers a principled basis for next-generation BCIs that align closely with the brain’s natural intentional and action-planning architecture. We suggest a more intuitive, generalizable, and scalable path by reorienting BCIs around the ‘what for’ of action—user goals and anticipated effects. This shift is timely and feasible, enabled by advances in neural recording and artificial intelligence–based decoding of sensory representations. It may help resolve challenges of usability and generalizability in BCI design.

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(25\)00352-3](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(25)00352-3)

ZHIVAR SOURATI, ALIREZA S. ZIABARI & MORTEZA DEGHANI – The homogenizing effect of large language models on human expression and thought

Cognitive diversity, reflected in variations of language, perspective, and reasoning, is essential to creativity and collective intelligence. This diversity is rich and grounded in culture, history, and individual experience. Yet, as large language models (LLMs) become deeply embedded in people’s lives, they risk standardizing language and reasoning. We synthesize evidence across linguistics, psychology, cognitive science, and computer science to show how LLMs reflect and reinforce dominant styles while marginalizing alternative voices and reasoning strategies. We examine how their design and widespread use contribute to this effect by mirroring patterns in their training data and amplifying convergence as all people increasingly rely on the same models across contexts. Unchecked, this homogenization risks flattening the cognitive landscapes that drive collective intelligence and adaptability.

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(26\)00003-3](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(26)00003-3)

Trends in Ecology and Evolution

PAPERS

DANAI PAPAGEORGIOU et al with SARAH F. BROSAN – Levelling: behaviours that constrain inequality in animal societies

Inequality is widespread in animal societies, with certain individuals gaining disproportionate benefits from group living. The degree of inequality varies, but little is known about its regulation. In this review, we explore the function, evolution, and mechanisms of levelling behaviours, which are actions that constrain the influence of high-powered group members and thus moderate inequality. Levelling functions by imposing costs on high-powered individuals. Evolutionary pathways to levelling depend on the costs and benefits to the levellers and the downstream consequences of reduced inequality that are shared by the whole group. Different mechanisms of levelling behaviours can lead to convergent outcomes that ultimately facilitate the maintenance of group living and drive variation in inequality across animal societies.

[https://www.cell.com/trends/ecology-evolution/fulltext/S0169-5347\(26\)00111-4](https://www.cell.com/trends/ecology-evolution/fulltext/S0169-5347(26)00111-4)

SUBSCRIBE to the EAORC Bulletin

If you would like to subscribe to this free weekly newsletter, please contact martin.edwardes@btopenworld.com.

UNSUBSCRIBE from the EAORC Bulletin

Send an email to martin.edwardes@btopenworld.com with the subject "EAORC unsubscribe".

PRODUCED BY AND FOR THE EAORC EMAIL GROUP

EAORC is a fee-free academic internet news service and has no commercial sponsorship or other commercial interests.

EAORC website information is at <http://martinedwardes.me.uk/eaorc/>

If you have received this bulletin, and are unhappy about receiving it, please contact martin.edwardes@btopenworld.com.