

EAORC BULLETIN 1,216 – 4 October 2026

CONTENTS

NOTICES.....	2
FORMATTED VERSION OF THIS BULLETIN	2
PUBLICATION ALERTS	2
EDITORIAL INTERJECTIONS	2
ACADEMIA.EDU – Stone tool use in a new population of semi-free-ranging robust capuchins	2
ADELA CEBEIRO et al with JUSTIN PARGETER – Stone tool use in a new population of semi-free-ranging robust capuchins (<i>Sapajus</i> spp.) at Monkeyland Primate Sanctuary, South Africa	2
ACADEMIA.EDU – Energetic yields of springbok (<i>Antidorcas marsupialis</i>) marrow from long bones	3
SIVARNIAH MOODLEY et al with JUSTIN PARGETER – Energetic yields of springbok (<i>Antidorcas marsupialis</i>) marrow from long bones: A co-produced experimental study from the Boomplaas Cave field school	3
ACADEMIA.EDU – Hunting with Howiesons Poort segments	3
MARLIZE LOMBARD & JUSTIN PARGETER – Hunting with Howiesons Poort segments: pilot experimental study and the functional interpretation of archaeological tools	3
NEWS.....	3
NATURE BRIEFING – Monkeys show hints of good grammar	3
NEWS FROM SCIENCE – AI helps decipher what elephant herds are ‘saying’	4
THE CONVERSATION – Why do some chimpanzee mothers carry their dead infants for months?	4
PUBLICATIONS.....	4
Animal Behaviour.....	4
PAPERS.....	4
ATHENA S. BROWN et al – Two decades of song evolution and revolution on a humpback whale migratory corridor	4
eLife.....	4
PAPERS.....	4
JAMES FODOR, CARSTEN MURAWSKI & SHINSUKE SUZUKI – When word order matters: human brains represent sentence meaning differently from large language models.....	4
Frontiers in Language Sciences.....	4
PAPERS.....	4
KYLE SEAKGWA et al – Cross-linguistic variation in the detection of conversational click sounds.....	4
Heliyon.....	5
PAPERS.....	5
BJØRN GRINDE – An explanation for dreaming based on neuronal maintenance	5
Human Nature	5
PAPERS.....	5
JULIA VERBE et al – The Bodily Self: How the Social Environment Influences Cardiac Interoceptive Accuracy.....	5
iScience.....	5
PAPERS.....	5
SHIYU ZHA, CHENG LI & CHAO ZHANG – Genomic structural variations distinguishing archaic and modern humans are associated with neurodevelopment.....	5
Mind & Language	5
PAPERS.....	5
SAM CLARKE – The big–small problem in infant number cognition	5
Nature	6
ARTICLES.....	6
RACHAEL PELLIS – “I turn up late to meetings to dodge small talk. Am I wrong?”	6
Nature Genetics	6
PAPERS.....	6
TING HU et al – CCNB1IP1 regulatory evolution underlies gradual increases in cortical size and folding in primates	6
Nature Human Behaviour.....	6
PAPERS.....	6
ERIK K. FONN et al – Gendered motives for group formidability among children and adults	6
MARIUS C. VOLLBERG & JÖRG GROSS – Selfish and prosocial individuals both distort their actions’ impact, but selfish distortions can be more contagious	6

Nature Neuroscience	7
ARTICLES.....	7
HENRIETTA HOWELLS – In conversation with Edward Chang.....	7
PAPERS.....	7
MELISSA FRANCH et al with SUZANNE KEMMER & STEVEN T. PIANTADOSI – A population code for semantics in human hippocampus.....	7
ZHAO ZHAO et al – A neural architecture for imagined and overt speech motor dynamics.....	7
Nature Reviews Biodiversity.....	7
PAPERS.....	7
PATRIK NOSIL & ZACHARIAH GOMPERT – Evolution by natural selection can be complex yet predictable.....	7
Nature Scientific Reports.....	8
PAPERS.....	8
HUANG QIUYANG, WU HUA & CHEN ZHENGJUN – Cross-cultural modeling of body satisfaction using social media selfies and self-descriptions ...	8
LOUIS MAHON et al – Social context information and acoustic convergence in elephant vocal choruses.....	8
New Scientist	8
ARTICLES.....	8
JAMES WOODFORD – Dogs pay more attention to consonants than vowels when we speak.....	8
CHRISTA LESTÉ-LASSERRE – Copying others can help young orangutans build a broad diet	8
PLoS One.....	9
PAPERS.....	9
DONALD SNYDER – The weight of words: Applying concreteness to elite media language.....	9
Royal Society Open Science.....	9
PAPERS.....	9
GEMMA SARIGU & ALEXANDRA C. PIKE – Catastrophizing and meaning-making after stressful life experiences.....	9
Science Advances.....	9
PAPERS.....	9
SARAH VAHED & ALAN G. SANFEY – Psychological and computational evidence that merit is a constructed evaluative process	9
Trends in Ecology and Evolution.....	9
PAPERS.....	9
STUART SEMPLE, RAMON FERRER-I-CANCHO & MORGAN L. GUSTISON – Linguistic laws in biology	9
SUBSCRIBE to the EAORC Bulletin	10
UNSUBSCRIBE from the EAORC Bulletin	10
PRODUCED BY AND FOR THE EAORC EMAIL GROUP.....	10

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 – Stone tool use in a new population of semi-free-ranging robust capuchins

Primates, 1273 (2026).

ADELA CEBEIRO et al with JUSTIN PARGETER – Stone tool use in a new population of semi-free-ranging robust capuchins (*Sapajus* spp.) at Monkeyland Primate Sanctuary, South Africa

Once thought to be uniquely human, tool use is now recognized in a range of non-human animals, with non-human primates frequently using tools in foraging contexts. Stone tool use is a common behavior in different species of capuchin monkeys, with evidence of behavioral and cultural differences across populations. In this study, we document stone tool use during percussive foraging in a previously unstudied population of capuchin monkeys at the Monkeyland Primate Sanctuary, South Africa. Of 87 mapped nut-cracking sites, 77 yielded behavioral data comprising 1,359 recorded bouts. Capuchins showed a strong preference for organic anvils (roots $n = 1,161$, trunks $n = 173$, branches $n = 23$; with only 2 bouts on stone anvils) and

used a wide range of hammer masses (25–1,581 g). Average nut-cracking success was ~ 75%. Results show that nut-cracking success varies depending on both the capuchins' preferred hand and the size of the hammer they use. Additionally, we found strong individual differences in hand preference, which suggests that Monkeyland capuchins can adapt their techniques to improve their success. Because observations were limited to a subset of identified individuals between May and August, sex-bias results are preliminary and future year-round sampling is needed. Overall, our study adds to the growing body of research on capuchin cultural diversity by documenting tool use in a previously unstudied semi-free-ranging population. This preliminary assessment demonstrates the value of Monkeyland as a primate archaeology research site that preserves key ecological and social conditions while offering a unique balance between naturalistic behaviors and research accessibility.

https://www.academia.edu/176447170/Stone_tool_use_in_a_new_population_of_semi_free_ranging_robust_capuchins_Sapajus_spp_at_Monkeyland_Primate_Sanctuary_South_Africa

ACADEMIA.EDU – Energetic yields of springbok (*Antidorcas marsupialis*) marrow from long bones

Southern African Field Archaeology, 21:4983 (2026).

SIVARNIAH MOODLEY et al with JUSTIN PARGETER – Energetic yields of springbok (*Antidorcas marsupialis*) marrow from long bones: A co-produced experimental study from the Boomplaas Cave field school

Understanding the nutritional value of past hunter-gatherer prey is highly informative for archaeologists seeking to interpret human decision-making regarding hunting, processing, and meat consumption. Much zooarchaeological theory and methodology is devoted to this work, including applications of human behavioural ecology, utility indices, considerations of skeletal element representation, and discussions of transport decisions. However, there remain several prey species for which nutritional values have not been evaluated, including springbok (*Antidorcas marsupialis*), which is present in several southern African archaeological assemblages. Here we present the energetic values (kilocalories) of yellow marrow in select long bones (humeri, radii, femora, and tibiae) from two springbok individuals. We butchered these animals and recorded the yellow marrow data as part of a student co-produced knapping and butchery experiment conducted during the 2025 Boomplaas Cave field season in the Western Cape province of South Africa. During this experiment, students and experts collaborated to collect and analyse data and write this paper. Our results show that the hindlimb values were greater than those of the long bones in the forelimb, and that the tibia had the highest energetic values among the elements we evaluated. Our work not only provides nutritional information for an animal for which no such prior data exist but also demonstrates how experimental archaeology can be used to embed students in the research process, creating a unique training environment that directly links their work to the archaeological record.

https://www.academia.edu/176447147/Energetic_yields_of_springbok_Antidorcas_marsupialis_marrow_from_long_bones_A_co-produced_experimental_study_from_the_Boomplaas_Cave_field_school

ACADEMIA.EDU – Hunting with Howiesons Poort segments

Journal of Archaeological Science 35 2523-2531 (2008).

MARLIZE LOMBARD & JUSTIN PARGETER – Hunting with Howiesons Poort segments: pilot experimental study and the functional interpretation of archaeological tools

For many decades the use of backed pieces from the Howiesons Poort, between about 70 ka and 55 ka ago, in South Africa has been a point of discussion. Recently direct evidence has been provided to associate these tools with Middle Stone Age hunting strategies. Yet, whether they were used to tip hunting weapons or as barbs remained an open question. In this paper we introduce a set of pilot experiments designed to test the effectiveness of Howiesons Poort segments, the type fossils of the industry, hafted in four different configurations as tips for hunting weapons. It is shown that the morphological type can be used successfully in this way. We present the results of a macrofracture analysis conducted on the experimental tools and compare these to results obtained from three Howiesons Poort backed tool samples. By correlating experimental outcomes, macrofracture data and the interpretation of micro-residue distribution patterns, we provide some insight into the functional variables that might be associated with Howiesons Poort segments.

https://www.academia.edu/687810/Hunting_with_Howiesons_Poort_segments_pilot_experimental_study_and_the_functional_interpretation_of_archaeological_tools

NEWS

NATURE BRIEFING – Monkeys show hints of good grammar

The vocalizations of the common marmoset (*Callithrix jacchus*), the olive colobus monkey (*Procolobus verus*) and the bonobo (*Pan paniscus*) all appear to contain patterns that resemble complex elements of human grammar. Researchers used mathematical models to analyse clips of these monkey's communications and identified some elements similar to supra-regular recursion — a grammatical structure that requires a listener to process a word or statement nested within a wider sentence without context. This level of complexity was thought to be unique to humans.

<https://www.sciencealert.com/primate-communication-may-follow-grammar-patterns-once-thought-uniquely-human>

NEWS FROM SCIENCE – AI helps decipher what elephant herds are ‘saying’

What sounds like a jumble of noise is actually a group signal.

<https://www.science.org/content/article/ai-helps-decipher-what-elephant-herds-are-saying>

THE CONVERSATION – Why do some chimpanzee mothers carry their dead infants for months?

New research looks for patterns in this sad phenomenon.

<https://theconversation.com/why-do-some-chimpanzee-mothers-carry-their-dead-infants-for-months-292509>

PUBLICATIONS**Animal Behaviour****PAPERS****ATHENA S. BROWN et al – Two decades of song evolution and revolution on a humpback whale migratory corridor**

Oceania in the South Pacific contains a metapopulation of humpback whales, *Megaptera novaeangliae*, with several connected breeding grounds. Male humpback whales sing complex socially learned songs that are socially transmitted between breeding grounds within Oceania. We investigated fine-scale song evolution observed on a migratory corridor within Oceania: the Cook Islands. This corridor connects different breeding grounds within Oceania, and the song recorded each season reflects the migratory streams of whales using the corridor, as well as wider metapopulation connectivity. We identified 16 different song types sung from 1998 to 2018, including at least nine ‘revolutionary’ song types (i.e. new song types introduced from neighbouring populations that replaced current song types). All but one song type (off-white, 2012) matched previously identified song types in the New Caledonia breeding ground. In three seasons (2014, 2015, 2016) multiple song types were recorded within a season, indicating either multiple migratory streams or a shift away from the standard one population-wide song per season. Song complexity oscillated over time but did not reflect the traditional patterns observed in nonmigratory locations. The Cook Islands’ migratory corridor represents an important location for singing behaviour, highlighting the importance for protection of such spaces for migratory species and the conservation of complex animal cultures as the metapopulation increases in abundance.

<https://www.sciencedirect.com/science/article/pii/S000334722600237X>

eLife**PAPERS****JAMES FODOR, CARSTEN MURAWSKI & SHINSUKE SUZUKI – When word order matters: human brains represent sentence meaning differently from large language models*****Reviewed Preprint***

Large language models based on the transformer architecture are now capable of producing human-like language. But do they encode and process linguistic meaning in a human-like way? Here, we address this question by analysing 7T fMRI data from 30 participants reading 108 sentences each. These sentences are carefully designed to disentangle sentence structure from word meaning, thereby testing whether transformer representations of sentence meaning resemble those formed by the brain. We found that while transformer models match brain representations better than models that completely ignore word order, all transformer models performed poorly overall. Further, transformers were significantly inferior to models explicitly designed to encode the structural relations between words. Our results provide insight into the nature of sentence representation in the brain, highlighting the critical role of sentence structure. They also cast doubt on the claim that transformers represent sentence meaning similarly to the human brain.

<https://elifesciences.org/reviewed-preprints/108442>

Frontiers in Language Sciences**PAPERS****KYLE SEAKGWA et al – Cross-linguistic variation in the detection of conversational click sounds**

There are two types of click sounds that have been studied in linguistics. The first are those that form part of the consonant inventory of certain African languages, such as Zulu and Xhosa. In these languages, clicks are used phonemically. The second group of click sounds exist in many - if not all - languages, but they are used paralinguistically, that is, they convey pragmatic and discursive functions. For example, a click can convey exasperation, surprise, or the idea that the speaker is searching for what to say. Although these latter clicks are common, it is not clear to what extent speakers are aware of them. Vigil and Pinto (2020) found that English speakers are hardly able to detect paralinguistic clicks in stretches of semi-spontaneous speech. The present study uses the same paradigm and stimuli in an online setting, and tests both native English speakers and multilingual speakers of English and one or more click languages. The results show that people who grew up speaking a click-based language are better than English speakers at spotting some of these paralinguistic clicks.

<https://www.frontiersin.org/journals/language-sciences/articles/10.3389/flang.2026.1932401/full>

Heliyon**PAPERS****BJØRN GRINDE – An explanation for dreaming based on neuronal maintenance**

Dreams are a fascinating phenomenon. Investigations have moved from attempts to interpret their content to seeking a biological function. In both cases, it has proven difficult to obtain convincing answers. The objective of the present text is to present a hypothesis that may help explain why people dream. It is argued that dreams are the consequence of a requirement for sustained activity in nervous systems. That is, regular firing of signals is necessary for neuronal development and maintenance. Dreams result from this principle operating in circuits involved in generating conscious experiences. The brain is prone to create a form of sense out of neurological activity; the text hypothesizes that this mechanism contributes to the story-like quality of dreams. The lack of cognitive (or top-down) control explains their weirdness. The activity would be expected to be partly arbitrary and partly converge on prominent circuits such as those commonly or recently used. Circuits are strengthened by activation; therefore dreams can contribute to memory consolidation and learning.

[https://www.cell.com/heliyon/fulltext/S2405-8440\(26\)01065-0](https://www.cell.com/heliyon/fulltext/S2405-8440(26)01065-0)

Human Nature**PAPERS****JULIA VERBE et al – The Bodily Self: How the Social Environment Influences Cardiac Interoceptive Accuracy**

The embodied self emerges from dynamic interactions between internal bodily signals and external sensory inputs, including those of social origin. Interoception (the perception and interpretation of internal bodily states) plays a central role in bodily self-consciousness and social cognition. Although socially salient contexts have been shown to modulate interoceptive accuracy (IAcc), the influence of passive social presence remains largely unexplored. In this study, we examined how the social exteroception modulates cardiac interoceptive accuracy using a heartbeat counting task in a Cave Automatic Virtual Environment (CAVE). Neurologically healthy participants (N = 32; ages 19–45) completed the task under both social and non-social exteroceptive conditions. Results showed that the mere presence of social exteroceptive cues significantly decreased IAcc. These findings indicate that even minimal social cues can influence internal bodily awareness, supporting the view that the embodied self is inherently relational and dynamically influenced by its social environment. This effect may reflect attentional competition between interoceptive and exteroceptive processes, consistent with predictive coding and attentional switching models. By leveraging immersive virtual reality, we created ecologically valid yet precisely controlled social contexts, minimizing the confounds of real-life physiological coregulation. Beyond theoretical implications, this study raises methodological considerations regarding the potential influence of social context, including experimenter presence, on interoceptive performance, and may inform clinical research on mental health conditions characterized by altered interoceptive and social processing.

<https://link.springer.com/article/10.1007/s12110-026-09526-z>

iScience**PAPERS****SHIYU ZHA, CHENG LI & CHAO ZHANG – Genomic structural variations distinguishing archaic and modern humans are associated with neurodevelopment**

Understanding the divergence in neurodevelopment between extinct archaic hominins and modern humans is a central goal in evolutionary biology. Structural variants (SVs) are key genomic drivers of phenotypic change. Here, we identified a set of SVs present in archaic humans by screening fixed SV events from diverse non-human primate (NHP) lineages, termed archaic hominin structural variants (AHSVs). AHSVs are significantly enriched in genes governing brain development and function, many of which are implicated in neuropsychiatric disorders. We found that several AHSVs overlap with brain cis-regulatory elements (CREs). Furthermore, in three neural-related genes (PDE10A, RAPGEF4, and DCTN4), modern human-specific chromatin loop anchors coincide with deletions shared by archaic hominins, suggesting that AHSVs may have influenced three-dimensional chromatin architecture. Overall, this study expands our understanding of the adaptive evolution of the modern human brain.

[https://www.cell.com/iscience/fulltext/S2589-0042\(26\)03122-6](https://www.cell.com/iscience/fulltext/S2589-0042(26)03122-6)

Mind & Language**PAPERS****SAM CLARKE – The big–small problem in infant number cognition**

When subitizing, infants precisely discriminate collections containing three or fewer items, after which performance falls to chance. It remains unclear, however, why performance falls to chance given that infants approximately enumerate larger collections. This is the big–small problem. This paper clarifies the problem, notes that it is exacerbated by influential ways of thinking about numerical cognition and argues that existing “solutions” prove unsatisfactory. It then develops an improved solution, which turns on independently motivated claims about mental formats and infant working memory. This improved

solution has ramifications for numerical architecture, the structure of perceptual representations, and the ways in which perceptual states refer.

<https://onlinelibrary.wiley.com/doi/abs/10.1111/mila.70063>

Nature

ARTICLES

RACHAEL PELLIS – “I turn up late to meetings to dodge small talk. Am I wrong?”

A jury weighs in on whether a latecomer is simply using their time efficiently or disrespecting their colleagues.

<https://www.nature.com/articles/d41586-026-02201-4>

Nature Genetics

PAPERS

TING HU et al – CCNB1IP1 regulatory evolution underlies gradual increases in cortical size and folding in primates

The gradual expansion and folding of the cortex are key factors in human cognitive evolution, yet their molecular underpinnings remain not well understood. Here we identify cyclin B1 interacting protein 1 (CCNB1IP1) gene as a key regulator of human brain evolution using tree shrew as an outgroup. In primates, CCNB1IP1 acquired brain expression and gradually increased its expression during evolution, mirroring the increase of cortical size and folding. Comparative analysis of cis-regulatory elements reveals evolutionary changes underlying the increase of CCNB1IP1 expression. Overexpression of CCNB1IP1 affects the cell cycle, increasing the abundance of basal progenitors and neurons. Mechanistically, we demonstrated that CCNB1IP1 represses the transcription factor E2F1 through the ubiquitin-mediated degradation pathway. Moreover, CCNB1IP1 knock-in can develop cortical folding in otherwise smooth mouse brains. These findings reveal that evolutionary changes in CCNB1IP1 expression have contributed to the enlargement and folding of the primate cortex.

<https://www.nature.com/articles/s41588-026-02773-x>

Nature Human Behaviour

PAPERS

ERIK K. FONN et al – Gendered motives for group formidability among children and adults

Recent decades have seen a surge of research revealing the core, early emerging psychological building blocks for navigating human societies. Yet, how such core motives operate across life, undergirding political ideology, remains unknown. Here we use the same kind of minimal, abstract group stimuli across the lifespan to show that gendered preferences for majority groups manifest among preschoolers and adults alike (but not among preverbal infants) and that they motivate support for sustaining intergroup hierarchies (for example, ethnic persecution, militarism and social welfare opposition) among adults. Preschool (N = 317) boys, but not girls, preferred majority rather than minority members, whereas infants (N = 180) chose randomly between the two. Among adults (N = 3,467), males also liked the majority more than females, and these coalitional preferences correlated robustly with political ideology. These results indicate that gendered motives for intergroup formidability are rooted in earliest childhood once children begin navigating peer relationships independently.

<https://www.nature.com/articles/s41562-026-02606-1>

MARIUS C. VOLLBERG & JÖRG GROSS – Selfish and prosocial individuals both distort their actions’ impact, but selfish distortions can be more contagious

People often act without knowing exactly how their actions impact others. Here, across nine preregistered online experiments (N = 8,769 adults, predominantly US residents), we tested whether people exploit this ambiguity to make themselves look good. On average, selfish individuals inflated the social benefit of their choice while downplaying that of the alternative, reporting the two options as more similar than prosocial individuals did (experiment 1a: $b = 0.24$, 95% confidence interval 0.14–0.34). Prosocial individuals portrayed their choice as comparatively more socially beneficial; they also inflated their implied relative sacrifice, although less consistently. We observed distortions even before people made a choice and when choices were forced, consistent with distortions reflecting social preferences rather than mere justification. While people differed in whether and how they distorted, distortions favouring selfishness showed evidence of contagion: others adopted them and became more selfish (experiment 6, selfish-serving versus no-distortion: $b = 0.49$, 95% confidence interval 0.10–0.88). These findings offer a psychological foundation for why polarized positions about the social impact of one’s actions may emerge. When social consequences are open to interpretation, people may predictably form divergent interpretations.

<https://www.nature.com/articles/s41562-026-02585-3>

Nature Neuroscience

ARTICLES

HENRIETTA HOWELLS – In conversation with Edward Chang

As part of our special issue on neurotechnology, we spoke with Edward Chang, Margaret Liu Collins and Edward B. Collins distinguished Professor and Chair of neurosurgery at the University of California, San Francisco, about the evolution of speech brain–computer interfaces (BCIs). He discusses how advances in AI are accelerating the translation of BCIs into the clinic, the challenge of restoring natural communication, and why large-scale neural datasets may ultimately help build computational models of the human brain.

<https://www.nature.com/articles/s41593-026-02453-3>

PAPERS

MELISSA FRANCH et al with SUZANNE KEMMER & STEVEN T. PIANTADOSI – A population code for semantics in human hippocampus

Motivated by the successes of large language models (LLMs), we hypothesized that semantic information in the brain may be expressed in distributed patterns of neural activity. We recorded responses of hippocampal neurons while individuals listened to narrative speech. Here, using an encoding model approach, we find robust encoding of semantics, even after controlling for phonemics and grammar. Individual words had complex selectivities that included multiple words in multiple semantic categories. Similar to embedding vectors in LLMs, distance between neural population responses correlated with semantic distance. For semantically similar words, even contextual embedders showed an inverse correlation between semantic and neural distances; we attribute this pattern to the noise-mitigating benefits of contrastive coding. Finally, neural population activity aligned most closely with GPT-2 embeddings, and variation in response patterns correlated with LLM-derived polysemy measures, indicating that semantic encoding is largely contextualized. Ultimately, these results provide a neurocomputational account for understanding how hippocampal neurons encode word meaning during language listening.

<https://www.nature.com/articles/s41593-026-02436-4>

ZEHAO ZHAO et al – A neural architecture for imagined and overt speech motor dynamics

Mental imagery is a hallmark of human cognition, yet its neural mechanisms remain poorly understood. Speech imagery (the internal simulation of speech without overt articulation) has been proposed to partially share substrates with speech production, but its spatiotemporal dynamics remain controversial. Here, we leveraged high-resolution electrocorticography to investigate shared and modality-specific coding of articulatory kinematic trajectories during speech imagery and articulation. Linear modeling revealed robust articulatory kinematic trajectories encoding in frontoparietal cortex across modalities. Supramodal populations across middle premotor, subcentral and postcentral–supramarginal regions exhibited spatiotemporal stability during integrative planning. In contrast, modality-specific populations for speech imagery and articulation were somatotopically interleaved in primary sensorimotor cortex, revealing a distinct spatiotemporal organization. We further developed a generalized decoding framework that achieved high prediction accuracy for speech imagery (median 80.4%; chance 16.7%), comparable to speech articulation (78.3%). These findings uncover a somato-cognitive organization linking supramodal planning with modality-specific representations, informing imagery-based brain–computer interfaces.

<https://www.nature.com/articles/s41593-026-02456-0>

Nature Reviews Biodiversity

PAPERS

PATRIK NOSIL & ZACHARIAH GOMPERT – Evolution by natural selection can be complex yet predictable

Despite evolution by natural selection being a deterministic process well-established across both science and society, the extent to which evolution can be predicted remains debated. A large body of previous work has usefully highlighted how individual selective pressures and stochastic events can each affect the predictability of evolution in isolation. Here, we argue that predicting evolution can be aided by understanding interactions between different sources of selection, termed ‘complex selection’, rather than simply considering their individual or summed effects. For example, selection can be affected by external perturbations such as seasonal or rare climatic events, by factors internal to a system such as the frequency of traits in a population or population density, and also by interactions between these and other processes. We outline how understanding complex selection can be central to predicting directional evolution, stasis and a range of dynamics, including the coupling of ecological and evolutionary dynamics that shape biodiversity. The framework outlined here is derived from insights across a range of study systems and argues that the prediction of evolution can be feasibly improved through nuanced understanding of complex selection.

<https://www.nature.com/articles/s44358-026-00200-x>

Nature Scientific Reports

PAPERS

HUANG QIUYANG, WU HUA & CHEN ZHENGJUN – Cross-cultural modeling of body satisfaction using social media selfies and self-descriptions

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.

Body satisfaction is a core component of psychological well-being and is closely intertwined with how individuals present themselves on social media. While prior research has examined body image through self-report measures or qualitative analyses of online content, it remains unclear whether body satisfaction is systematically associated with naturally occurring multimodal self-presentation behaviors, particularly across cultural contexts. In this study, we propose a cross-cultural multimodal mixed-methods framework to examine self-reported body satisfaction using social media selfies and self-descriptions. A sample of 240 participants from Western and East Asian cultural contexts provided self-reported body satisfaction measures alongside selected social media images and textual materials. Visual features were extracted using convolutional neural networks, while linguistic features were derived from multilingual transformer-based language models. These modalities were integrated through a late-fusion strategy to examine the extent to which multimodal self-presentational features were associated with self-reported body satisfaction. Results indicate that multimodal models outperform single-modality approaches in both regression and classification tasks. Moreover, feature importance and explainability analyses reveal culturally differentiated patterns of self-presentation: visual cues such as facial expression and body posture were more predictive in Western participants, whereas contextual and linguistic cues contributed more strongly among East Asian participants. Qualitative analyses of a purposively selected subset of misclassified and high-attention cases further illustrate cultural patterns in self-expression, modesty, and self-objectification strategies. Together, these findings suggest that body satisfaction is systematically associated with multimodal social media self-presentation and that cultural context plays an important role in shaping how such associations manifest online. This study illustrates the value of integrating computational modeling with qualitative interpretation to advance cross-cultural research on body image and digital mental health, while underscoring that predictive associations should not be interpreted as causal, clinical, or diagnostic evidence.

<https://www.nature.com/articles/s41598-026-74109-y>

LOUIS MAHON et al – Social context information and acoustic convergence in elephant vocal choruses

Elephants use low-frequency rumbles to communicate among individuals. Rumbles occur in several patterns: as discrete, non-overlapping calls, in antiphonal sequences where individuals alternate vocalizations, and in choruses where multiple individuals produce overlapping calls. Despite the wide availability of bioacoustics tools, most studies focus on non-overlapping signals rather than on choruses. Here, we address this gap by investigating multi-caller rumble choruses recorded in several behavioral contexts. We show that behavioral context can be predicted from single (i.e., non-overlapping) and from overlapping, chorused rumbles. We find that individual rumbles in a chorus share structural similarities with single rumbles used in the same behavioral context, suggesting that choruses are composed of context-matched individual elements that together form a distinct multi-caller signal. We also find that the rumbles within choruses converge acoustically in particular behavioral contexts. Lastly, we find that the rumbles associated with various contexts vary systematically among individuals and family groups and suggest that individual acoustic differences may account for the observed family-level variation. Our findings extend previous work showing that rumbles encode behavioral context and caller identity, providing novel evidence that elephant choruses function as group signals encoding context through both their composition and patterns of acoustic convergence.

<https://www.nature.com/articles/s41598-026-68525-3>

New Scientist

ARTICLES

JAMES WOODFORD – Dogs pay more attention to consonants than vowels when we speak

Hooking up dogs to non-invasive EEG monitors has helped identify exactly which component of human speech the animals are most attuned to.

<https://www.newscientist.com/article/2590694-dogs-pay-more-attention-to-consonants-than-vowels-when-we-speak/>

CHRISTA LESTÉ-LASSERRE – Copying others can help young orangutans build a broad diet

Orangutans spend more than eight years learning how to cope on their own, and now we have a clearer idea of how they work out which foods to incorporate into their diet.

<https://www.newscientist.com/article/2590803-copying-others-helps-young-orangutans-build-a-broad-diet/>

PLoS One**PAPERS****DONALD SNYDER – The weight of words: Applying concreteness to elite media language**

This study introduces lexical “concreteness” – a psycholinguistic measure of vivid language – as a scalable tool for political and news text analysis. Using a dictionary of approximately 40,000 English word lemmas rated for concreteness, this construct is applied to more than two million New York Times articles published between 2000 and 2025. Exploratory analyses show that average concreteness declines over time in headlines and abstracts and varies systematically across material categories, document formats, print page placement, and article length. Descriptive formats, including news reports and biographies or obituaries, generally use more concrete language than editorial or opinion content. Taken together, these analyses suggest that concreteness may be a meaningful linguistic feature in the political news context, capturing unique stylistic features in media language.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0359092>

Royal Society Open Science**PAPERS****GEMMA SARIGU & ALEXANDRA C. PIKE – Catastrophizing and meaning-making after stressful life experiences**

Catastrophizing, or the tendency to expect the worst, is a transdiagnostic feature of several mental health conditions. Previous studies in high-risk populations have shown that catastrophizing is linked with an individual's ability to cope with stressful life experiences. We aimed to assess this relationship in a general population sample, using a recently developed Catastrophizing Questionnaire. Over two online studies ($n = 170$ and $n = 123$), we estimated the relationship between participants' catastrophizing scores and Integration of Stressful Life Experiences Scale (ISLES) scores. In study 2, we further investigated whether coping with stressful life experiences was a mediator in a hypothesized relationship between the occurrence of stressful life events and catastrophizing. We found a strong negative relationship between catastrophizing and ISLES scores—more catastrophizing is associated with less successful integration of stressful life experiences into one's personal narrative, and this integration partially mediates the relationship between the occurrence of life stressors and catastrophizing. The results also showed a weaker negative relationship between catastrophizing and perceived socio-economic status: higher catastrophizing was associated with lower perceived socio-economic status. There is scope for future research to explore other mediators of the relationship between catastrophizing and integration of stressful life experiences.

<https://royalsocietypublishing.org/rsos/article/13/9/252344/483444/Catastrophizing-and-meaning-making-after-stressful>

Science Advances**PAPERS****SARAH VAHED & ALAN G. SANFEY – Psychological and computational evidence that merit is a constructed evaluative process**

Merit is a foundational moral principle invoked to justify inequality between people, yet an individual's productivity is shaped not only by their efforts but also their opportunities. How, then, do people construct merit judgements? Across four preregistered, incentivized studies with US-based samples (total $N = 759$), we provide psychological and computational evidence that merit is not the product of a fixed rule, but rather the outcome of a subjective valuation. In a two-stage paradigm, participants first completed a real-effort tournament that dissociated performance (effort) from structural productivity (output dependent on opportunity). Thereafter, groups of observers and stakeholders allocated resources to tournament players. Across studies, a player's performance and structural productivity influenced how people judged deservingness. Computational modeling revealed that decision-makers integrated these dimensions of merit into a value computation that shaped allocations. Crucially, individuals differed in their latent weighting patterns, yielding subgroups with directly opposing conceptions of deservingness. By revealing merit as a nonuniform ideal, these findings provide a mechanistic account of how deservingness is determined, helping explain the compelling yet contested nature of meritocracy.

<https://www.science.org/doi/10.1126/sciadv.aeh5472>

Trends in Ecology and Evolution**PAPERS****STUART SEMPLE, RAMON FERRER-I-CANCHO & MORGAN L. GUSTISON – Linguistic laws in biology**

Linguistic laws, the common statistical patterns of human language, have been investigated by quantitative linguists for nearly a century. Recently, biologists from a range of disciplines have started to explore the prevalence of these laws beyond language, finding patterns consistent with linguistic laws across multiple levels of biological organisation, from molecular (genomes, genes, and proteins) to organismal (animal behaviour) to ecological (populations and ecosystems). We propose a new conceptual framework for the study of linguistic laws in biology, comprising and integrating distinct levels of analysis, from description to prediction to theory building. Adopting this framework will provide critical new insights into the fundamental rules of organisation underpinning natural systems, unifying linguistic laws and core theory in biology.

[https://www.cell.com/trends/ecology-evolution/abstract/S0169-5347\(21\)00230-5](https://www.cell.com/trends/ecology-evolution/abstract/S0169-5347(21)00230-5)

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.