

EAORC BULLETIN 1,194 – 3 May 2026

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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.

NEWS

NATURE BRIEFING – Learning from our local aliens

Like us and our big-brained vertebrate relations, cuttlefish, squid and octopuses have excellent memories, use tools and are adept problem-solvers; they have a concept of time and are capable of delayed gratification. But they are not like us. "It's hard to convey how different [the cephalopod brain] is," says neuroscientist Christopher Niell. "We just have no idea of how it functions." Figuring it out could help us to understand where intelligence comes from. But working with a soft, flexible and wily creature — for which we have few ways to relieve pain — is a challenge for neuroscientists.

<https://www.nature.com/articles/d41586-026-01302-4>

SCIENCEADVISER – To infinity, not beyond

To many mathematicians, the idea of a universe without infinity is heresy. "When you first pitch the idea of ultrafinitism to somebody, it sounds like quackery—like 'I think there's a largest number' or something," one such 'heretic' explained. However: "If there might only be finitely many things, then we'd better also be using a math that doesn't just assume that there are infinitely many things at the get-go."

<https://www.quantamagazine.org/what-can-we-gain-by-losing-infinity-20260429/>

THE CONVERSATION – Do birds have accents? The fascinating regional differences in birdsong

Birds have dialects too.

<https://theconversation.com/do-birds-have-accents-the-fascinating-regional-differences-in-birdsong-278108>

THE CONVERSATION – Dolls beat screens for building children's social skills, study finds

Playing with dolls may help children build empathy and better understand other people's thoughts and feelings.

<https://theconversation.com/dolls-beat-screens-for-building-childrens-social-skills-study-finds-280330>

PUBLICATIONS

American Journal of Biological Anthropology

PAPERS

PIANPIAN WEI et al – A New Human Humeral Fossil From the Early Holocene in Northeast China

This study aims to provide new insights into the morphological, biomechanical, and ecological adaptations of early modern humans in Northeast China through an integrated analysis of an Early Holocene humerus from Heilongjiang Province. A multidisciplinary approach is employed to assess the humeral structural and functional characteristics and to infer aspects of the individual's subsistence strategy.

The partial humerus (specimen 23HLJ-H-Hm03) was analyzed using traditional osteometric measurements, computed tomography-based analysis of cross-sectional geometry, morphometric mapping of cortical bone thickness and second moments of area, and stable carbon and nitrogen isotope analysis.

The Heilongjiang humerus exhibits a relatively robust midshaft structure comparable to that of contemporary human fossils, along with diaphyseal and epiphyseal morphology features of anatomically modern humans. Morphometric mapping reveals diaphyseal reinforcement patterns aligned with those of other East Asian Upper Paleolithic humans, though the overall magnitude of reinforcement falls within the upper range of Late Upper Paleolithic modern human variation. Stable isotope values ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$) indicate a predominantly C₃-based diet derived mainly from terrestrial herbivores.

The Heilongjiang humerus exhibits morphological affinities with Late Upper Paleolithic modern humans. Its relatively greater robusticity, coupled with isotopic evidence, supports the inference of a physically demanding hunter-gatherer lifestyle. This study enhances our understanding of modern human variation in East Asia during the Late Upper Paleolithic and offers preliminary insights into the biological and behavioral transitions across the Pleistocene–Holocene boundary in Northeastern Asia.

<https://onlinelibrary.wiley.com/doi/abs/10.1002/ajpa.70253>

Biology Letters**PAPERS****MARTINA FRANCESCONI et al – Despotism trumps phylogeny in explaining suppression of play among adults in non-human primates**

Adult–adult social play is unevenly expressed across human populations and primate species, raising the question of why some societies sustain such play while others do not. We tested whether adult–adult play is shaped by morphology, phylogeny, social structure or social style in 37 primate species, using Bayesian logistic regression with a phylogenetic random effect. Adult play was not predicted by female body mass or sexual dimorphism, which are phylogenetically conserved. Social style was the key factor: tolerant species were more likely to exhibit the behaviour than despotic ones, with intermediate probabilities in moderately despotic species. Phylogenetic analyses further showed that closely related species tend to resemble one another in their likelihood of adult–adult play, and that this phylogenetic signal persists even after accounting for the other predictors. Model comparisons consistently favoured social style over social structure, indicating that it better captures the conditions that enable adult–adult play. Adult–adult play and tolerance may form a positive feedback loop, while despotic systems seem to inhibit both play and its potential social benefits. This pattern mirrors human cultural variation, in which authoritarian regimes suppress playful and creative expression.

<https://royalsocietypublishing.org/rsbl/article/22/4/20250597/481535/Despotism-trumps-phylogeny-in-explaining>

Current Biology**PAPERS****HASSAN AL-RAZI et al – Thermal adaptation and the potential anticipation of overnight weather in the nesting decisions of chimpanzees**

Animals employ behavioral strategies to buffer environmental stress, yet it remains unclear whether such adjustments reflect reactive responses to current conditions or proactive anticipation of conditions yet to come. Nest building by great apes provides an ideal context in which to examine this distinction because nests function both as sleeping platforms and thermoregulatory structures. We investigated the nesting behavior of eastern chimpanzees in relation to fine-scale microclimatic variation. We recorded in situ measurements of temperature, humidity, wind speed, and rainfall at the time of nest construction and during the subsequent overnight period. Then, we modeled how these microclimatic factors influenced the nesting site selection, nest structure, nest insulation, and the characteristics of the nesting tree. Chimpanzees preferentially constructed nests in warmer, less windy microclimates, built thicker and deeper nests under cooler or wetter conditions, and selected taller trees with denser canopy cover prior to rainy nights. Across analyses, models that incorporated overnight weather consistently outperformed those that incorporated weather variables at the time of nest construction, indicating that nesting decisions align more closely with overnight conditions than with conditions at the time of nest building. This outcome is consistent with the possibility that chimpanzees adjust nest-building behavior in relation to expected overnight thermal conditions, potentially using proximate cues, although it does not provide conclusive evidence of anticipatory decision-making. These findings suggest flexible thermoregulatory responses and possible integration of environmental cues in nesting decisions, offering new insight into the cognitive foundations of behavioral adaptation under variable climatic conditions.

[https://www.cell.com/current-biology/fulltext/S0960-9822\(26\)00440-9](https://www.cell.com/current-biology/fulltext/S0960-9822(26)00440-9)

eLife**ARTICLES****RICHARD J. ANTONELLO – Language Models: Does the brain really know what word is coming next?**

Apparent neural encoding of future words may arise from the statistical structure of language itself, rather than from predictive computations in the brain.

<https://elifesciences.org/articles/111163>

PAPERS**YA ZHENG & RUMENG TANG – Dissociable after-effects of prosocial acts: Effort is costly for others but valued for self**
Reviewed Preprint

Engaging in prosocial behavior requires effort, yet people are often averse to exerting effort for others' benefit. However, it remains unclear how effort exertion affects subsequent reward evaluation during prosocial acts. Here, we combined high-temporal-resolution electroencephalography with a paradigm that independently manipulated effort and reward for self and others to elucidate the neural mechanisms underlying the reward after-effect of prosocial effort expenditure. We found dissociable reward after-effects for self-benefiting and other-benefiting effort. For self-benefiting rewards, the reward positivity (RewP) increased with effort demand, suggesting an effort-enhancement effect. In contrast, for other-benefiting rewards, the RewP decreased as effort increased, demonstrating an effort-discounting effect. Critically, this dissociation was contingent upon high reward magnitude and modulated by individual differences in effort discounting, yet remained distinct from performance evaluation. Our findings reveal distinct neural computations for self- and other-benefiting efforts, offering new insights into how prior effort expenditure shapes reward evaluation during prosocial behavior.

<https://elifesciences.org/reviewed-preprints/103566>

SETH R. SULLIVAN et al – Involuntary feedback responses reflect a representation of partner actions

Reviewed Preprint

We have a remarkable ability to seamlessly and rapidly coordinate actions with others, from double dutch to dancing. Humans use high-level partner representations to jointly control voluntary actions, while other work shows lower-level involuntary feedback responses to sudden visual perturbations. Yet, it is unknown if a high-level partner representation can be rapidly expressed through lower-level involuntary sensorimotor circuitry. Here we test the idea that a partner representation influences involuntary visuomotor feedback responses during a cooperative sensorimotor task. Using two experiments and dynamic game theory predictions, we show that involuntary visuomotor feedback responses reflect a partner representation and consideration of a partner's movement cost (i.e., accuracy and energy). Collectively, our results suggest there is top-down modulation from high-level partner representations to lower-level sensorimotor circuits, enabling fast and flexible feedback responses during jointly coordinated actions.

<https://elifesciences.org/reviewed-preprints/109734>

GUO ZHENG & SHIHUI HAN – Neural categorization of visual words of alphabetic and non-alphabetic languages

Reviewed Preprint

Languages provide social-category markers that tag people as one or another social group. How does the brain sort words into different language categories as a basis of the social-categorization function of language? We addressed this issue by testing neural categorization of visual words of different writing systems in nine studies using electroencephalography, magnetoencephalography, and a repetition suppression paradigm. We showed that a neural network, including the anterior temporal, insular, orbital frontal, and ventral occipito-temporal cortices in both hemispheres, was engaged in computations of correlation distances between two words to represent intra-language similarity and inter-language difference during categorization of visual words of alphabetic and non-alphabetic languages. These processes occurred as early as 150 ms post-stimulus, recruited within-hemisphere functional connections, operated independently of words' semantic meanings and pronunciations, and exhibited consistently across individuals with diverse language backgrounds. These findings highlight the neural mechanisms of language-based spontaneous neural categorization of visual words as a basis of the social-categorization function of language.

<https://elifesciences.org/reviewed-preprints/110320>

Frontiers in Ethology

PAPERS

FABIO CREPALDI & MARINA DAVILA-ROSS – Decoding function in primate facial expressions: re-evaluating broader contexts and terminology

In this paper, we reflected on the role of pioneering studies in shaping research on nonhuman primate facial communication, as well as on how their terminology for describing certain expression types may have imposed limitations over time and, in some cases, misdirected research in the field. We then examined the extent to which more recent nonhuman primate studies have applied novel methods to reveal the complexity inherent in their facial morphology, while studies of their functions have not kept pace. Drawing on the current state of research on nonhuman primate facial communication, we concluded that important opportunities exist to investigate the likely complexity of these functions, representing a fundamental step toward reconstructing the evolution of nonverbal communication in humans and their closest relatives.

<https://www.frontiersin.org/journals/ethology/articles/10.3389/fetho.2026.1807686/full>

Frontiers in Human Neuroscience

PAPERS

SILVIA MARTÍNEZ-FERREIRO & MONICA I. NORVIK – Broca's biases in modern aphasiology

Broca's description of aphemia signals the emergence of aphasiology as a discipline. It also marks the beginning of a long tradition of studies of right-handed patients ("Nous parlons avec l'hémisphère gauche") with lesions in the inferior frontal gyrus (Broca's area) displaying production deficits (Broca's aphasia) in their single, mainly Romance or, as years went by, Germanic language. In modern-day aphasiology, language crosses hemispheric boundaries, production is no longer confined to the left inferior frontal gyrus, and lesions in Broca's area do not necessarily entail Broca's aphasia, with recognized production deficits associated with other lesion locations and aphasia types. Nonetheless, idealized monolingual speakers are still at the center of most theories and shape the design of clinical materials. In this paper, we address two key questions Broca left unanswered: (1) How well do current linguistic theories accommodate the diversity of typologies in the nearly 7,000 languages of the world? and (2) How adequate are our clinical resources for the assessment and treatment needs of multilingual individuals? After an introduction, we will discuss crosslinguistic contributions to the development of modern aphasiology in section 2. Section 3 will focus on multilingual aphasia studies.

<https://www.frontiersin.org/journals/human-neuroscience/articles/10.3389/fnhum.2026.1783073/full>

Frontiers in Language Sciences

PAPERS

ALBERTO FALCÓN, MICHELLE RAMÍREZ & ULIANOV MONTANO – The power of words depends on context: action congruence differentially shapes activation by words and sounds

Linguistic labels have been shown to facilitate visual recognition and categorization. Labels have also been shown to be better facilitators than sounds. However, less is known about how nouns in contrast with verbs and non-verbal sounds differentially activate action-related conceptual information. In the present study, we investigated whether words and non-verbal sounds vary in their ability to facilitate visual processing depending on their congruence with an implied action. Participants were presented to an image verification task in which visual stimuli were preceded by either nouns, non-verbal sounds or verbs that were either congruent or incongruent with the action associated with the target stimulus. Reaction times were analyzed using linear mixed-effects models. Results revealed a robust interaction between cue type and action congruence. Non-verbal sounds and verbs produced significantly faster responses when the action was congruent compared to incongruent trials, whereas nouns were optimal only when action was incongruent. These findings suggest that action information plays a role in the representations activated by words and non-verbal sounds. In addition, the evidence shows that verbs appear to activate action-related information similar to that evoked by non-verbal sounds. More broadly, the results contribute to ongoing debates about the mechanisms by which language and non-linguistic cues shape perceptual processing, highlighting the role of action-related cues in predictive conceptual activation.

<https://www.frontiersin.org/journals/language-sciences/articles/10.3389/flang.2026.1789171/full>

Frontiers in Public Health

PAPERS

PETER TABER et al – “Using theories” and “doing theory”: tool and action orientations to theory at the interface of public health and anthropology

The use of “theory” is a common concern in public health and anthropology. However, the term can have quite distinct meanings. In this piece, we seek to name and characterize some tendencies in anthropological theorizing that contribute to potential misunderstandings when communicating with non-anthropologist colleagues in public health. In particular, we highlight differences between the use of recognizable, named “theories” that often explicitly frame public health research and interventions, and the open-ended and context-specific work of “doing theory” sometimes referenced in anthropology. Observing the linguistic shifts entailed to refer to theory in each of these cases—“using theories” versus “doing theory”—we differentiate between “tool” and “action” orientations to theory. We then examine three case vignettes of engagements with “tool” orientations to institutionalized theories, and with “action” orientations to context-tailored theorizing in real-world public health interventions, showing how anthropologists have navigated these orientations. We close by emphasizing the benefits of epistemic diversity for interdisciplinary public health research and interventions.

<https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2026.1707743/full>

iScience

PAPERS

IRENE MONTAÑEZ-RIVERA et al – Powerful or non-powerful? Revisiting hallucal grasping as a key evolutionary innovation in small arboreal mammals

Powerful hallucal grasping is considered a key primate innovation, yet many arboreal mammals show convergent pedal grasping. We hypothesized that hallucal grasping represents a functional continuum beyond the dichotomy of powerful versus non-powerful grasping. Using diceCT to analyze intrinsic hallucal muscle architecture and automated quantification of the entocuneiform–first metatarsal joint (EFMJ) range of motion, we modelled muscle moment arms in 13 small arboreal mammals (primates, scandentians, rodents, and marsupials). All taxa feature a saddle-shaped EFMJ but differ in kinematical emphasis: primates and marsupials favour flexion–extension through facet torsion, enlarged peroneal processes or tilted articulation surfaces, whereas scandentians and rodents prioritize abduction–adduction. Strepsirrhine primates and marsupials possess enlarged flexors and strong adductors enabling sustained torque, while scandentians and rodents are characterized by low anatomical cross-sectional area muscles. Moment-arm analyses reveal torque optimization at different poses, highlighting a spectrum of morphofunctional grasping strategies rather than a single evolutionary pathway.

[https://www.cell.com/iscience/fulltext/S2589-0042\(26\)01288-5](https://www.cell.com/iscience/fulltext/S2589-0042(26)01288-5)

NORA E. SLANIA et al with CATHERINE HOBAITER & KLAUS ZUBERBÜHLER – Chimpanzee culture beyond the conspicuous: Evidence for broad-scale observational social learning in wild individuals

Wild chimpanzee cultures have traditionally been studied through group-level comparisons of a limited set of conspicuous skills. The cultural relevance of everyday behaviors, and consequently the full extent of chimpanzee cultural repertoires has thereby remained largely unexplored. Here, we investigated individual-level cultural processes to assess the breadth of cultural repertoires and patterns of role model selection in a population of wild eastern chimpanzees (*Pan troglodytes schweinfurthii*). First, we validate that wild chimpanzees use peering, i.e. the close-range observation of a conspecific, for targeted social information seeking. We then show that chimpanzees peer at a wide range of everyday skills, such as feeding

and grooming, and direct peering toward various conspecifics from an early age. Our findings suggest that wild chimpanzees use peering to learn a broad variety of skills, thereby highlighting unrecognized cultural potential in everyday behaviors. Furthermore, our findings suggest that peering may have multiple functions and underlying motivations.

[https://www.cell.com/science/fulltext/S2589-0042\(26\)01297-6](https://www.cell.com/science/fulltext/S2589-0042(26)01297-6)

Journal of the Royal Society Interface

PAPERS

YUVAL RABANI, LEONARD J. SCHULMAN & ALISTAIR SINCLAIR – Diversity in evolutionary dynamics

We consider the dynamics imposed by natural selection on the populations of two competing, sexually reproducing, haploid species. In this setting, the fitness of any genotype varies over time due to the changing population mix of the competing species; crucially, unlike other approaches to ensuring time-varying fitnesses, in our model, this fitness variation arises intrinsically from fixed-fitness interactions between the species themselves. Previous work on this model showed that, in the special case where each of the two species exhibits just two phenotypes, genetic diversity is maintained at all times. This finding supported the tenet that sexual reproduction is advantageous because it promotes diversity, which increases the survivability of a species. In the present article, we consider the more realistic case where there are more than two phenotypes available to each species. The conclusions about diversity in general turn out to be very different from the two-phenotype case. Our first result is negative: namely, we show that sexual reproduction does not guarantee the maintenance of diversity at all times, i.e. the above two-phenotype result does not generalize. Our counterexample consists of two competing species with just three phenotypes each. We show that, for any time t_0 and any $\epsilon > 0$, there is a time $t \geq t_0$ at which the combined diversity of both species is smaller than ϵ . Our main result is a complementary positive statement, which says that in any non-degenerate system, diversity is maintained in a weaker, ‘infinitely often’ sense. Here, non-degeneracy is the condition that the game possesses no strict pure Nash equilibria. Thus, our results refute the supposition that sexual reproduction ensures diversity at all times, but affirm a weaker assertion that extended periods of high diversity are necessarily a recurrent event.

<https://royalsocietypublishing.org/rsif/article/23/237/20250709/481555/Diversity-in-evolutionary-dynamics>

Mind & Language

PAPERS

SOFIJA RAPPE & SAM WILKINSON – Deep dialogism, inner voices, and mental health

The idea that cognition involves dialogic interchange between mutually influencing “voices” has long featured in psychology and philosophy. While dialogic structure is most explicit in inner speech, some authors have argued that other types of mental activity can be (or always are) dialogic. We introduce two dimensions of dialogism, strength and depth, and characterize a particularly deep form of dialogism of the mind. We offer a developmental interpretation of deep dialogism and show how this form of dialogism has important payoffs for explaining the mechanisms and the phenomenology of human psychological experiences in general and mental health conditions in particular.

<https://onlinelibrary.wiley.com/doi/full/10.1111/mila.70035>

Nature

NEWS

Do octopus brains work like humans’ — or is there another way to be smart?

Just like vertebrates, cephalopods — such as octopuses and squid — have elaborate brains. Neuroscientists are flocking to them for insights into how intelligence evolved.

<https://www.nature.com/articles/d41586-026-01302-4>

The politics of playful primates

Apes, monkeys and their relatives that live in despotic societies are less likely to clown around as adults.

<https://www.nature.com/articles/d41586-026-01352-8>

Nature Communications

PAPERS

DEBOTTAM BHATTACHARJEE et al – Despotism promotes dyadic cooperation through enhanced interdependencies in non-human primate societies

Cooperation is the cornerstone of human societies, and its emergence is firmly linked to enhanced tolerance and egalitarianism. However, evidence of profuse cooperation in less tolerant and despotic societies challenges this predominant view. The overarching interdependency hypothesis may resolve the conundrum. It posits that group-level interdependencies, like strength in numbers in colonially nesting species or allomaternal care in cooperatively breeding species, promote indiscriminate cooperation through enhanced tolerance. Crucially, this hypothesis also predicts that dyadic interdependence like friendships, nepotistic biases, or coalitions, selectively enhance tolerance, fostering discriminate cooperation in despotic

species. Species belonging to *Macaca*, which have a similar social organization, yet remarkable variation in tolerance, hierarchy steepness, nepotistic biases, and coalitionary tendencies, provide an opportunity for testing the interdependency hypothesis. In social group settings, we experimentally study cooperation, prosociality, and tolerance in six macaque species spanning a tolerance gradient. Our findings reveal high dyadic cooperation in despotic societies, yet this cooperation is restricted to a few partners. Dyadic prosociality, kinship, and tolerance positively predict cooperation. Further, our agent-based models demonstrate that despotic societies have fewer but more stable bonds and, thus, higher dyadic interdependencies than in egalitarian societies. Our results suggest that interdependencies facilitate the emergence and maintenance of cooperation.

<https://www.nature.com/articles/s41467-026-71168-7>

Nature Communications Psychology

PAPERS

VALENTINA ELCE et al – Individual traits and experiences predict the content of dreams

Dreams are universal yet highly idiosyncratic experiences. While memories and personal concerns are known to influence dream content, how such influences evolve over time and how stable individual traits shape dreaming remain unclear. Here, we systematically quantified the semantic structure of dreams in a large, multimodal dataset comprising 3366 reports of dreams and waking experiences collected from 207 adults between 2020 and 2024, alongside demographic, cognitive, psychometric, and sleep measures. To this end, we combined large language model-assisted evaluation of hypothesis-driven semantic dimensions and a data-driven lexical domain approach. Relative to waking reports, dreams shifted from self-referential, thought-centered narratives to perceptual experiences dominated by visuo-spatial details, multiple characters, and bizarre events. Stable traits, including attitude toward dreaming, mind-wandering propensity, and subjective sleep quality, selectively influenced dream content. A second, independent dataset collected during the first 2020 COVID-19 lockdown (80 participants) allowed us to examine the impact of a major external stressor on dream semantics. During lockdown, dreams showed increased references to limitations and heightened emotional intensity, effects that gradually normalized over the following years. These findings demonstrate that stable individual traits and incidental experiences jointly shape dream semantics.

<https://www.nature.com/articles/s44271-026-00447-2>

Nature Genetics

PAPERS

DINA MEMARMOSHREFI, OLIVIA L. JOHNSON & CHRISTIAN D. HUBER – Insights into human adaptation from ancient DNA

Ancient DNA (aDNA) has revolutionized our ability to study human evolution by enabling the direct observation of genetic changes through time. This has reshaped our understanding of human adaptation and its relevance for modern health and disease. In recent years, high-quality ancient genomes and large datasets have made it possible to track allele frequency dynamics and identify episodes of natural selection with unprecedented resolution. Here, we synthesize insights from recent studies that have systematically investigated how humans adapted to shifts in diet, mobility, pathogen exposure and environment. We summarize the approaches used to detect selection in aDNA, examine the role of major migration and admixture events and connect results across time periods and archaeological contexts. Finally, we outline future challenges and opportunities that need to be addressed for aDNA studies to provide new insights into human adaptation that could not be inferred from present-day genomes alone.

<https://www.nature.com/articles/s41588-026-02562-6>

Nature Humanities & Social Sciences Communications

PAPERS

YU WANG et al – The Sound of Populism: Distinct Linguistic Features Across Populist Variants

We are providing an unedited version of this manuscript to give early access to its findings. Before final publication, the manuscript will undergo further editing. Please note there may be errors present which affect the content, and all legal disclaimers apply.

This study explores the sound of populism by integrating classic Linguistic Inquiry and Word Count (LIWC) features, which capture the emotional and stylistic tones of language, with a fine-tuned RoBERTa model, a state-of-the-art context-aware language model trained to detect nuanced expressions of populism. This approach allows us to uncover the auditory dimensions of political rhetoric in U.S. presidential inaugural and State of the Union addresses. We examine how four key populist dimensions (i.e., left-wing, right-wing, anti-elitism, and people-centrism) manifest in the linguistic markers of speech, drawing attention to both commonalities and distinct tonal shifts across these variants. Our findings reveal that populist rhetoric consistently features a direct, assertive “sound” that forges a connection with “the people” and constructs a charismatic leadership persona. However, this sound is not simply informal but strategically calibrated. Notably, right-wing populism and people-centrism exhibit a more emotionally charged discourse, resonating with themes of identity, grievance, and crisis, in contrast to the relatively restrained emotional tones of left-wing and anti-elitist expressions. Our study advances

methods by integrating psycholinguistic features with transformer models and validating translation-based cross-linguistic analysis, and offers the first systematic analysis of U.S. presidential populism across four subtypes alongside a reproducible framework for quantitative research.

<https://www.nature.com/articles/s41599-026-06799-8>

Nature Reviews Psychology

PAPERS

JIM A. C. EVERETT et al with SCOTT CLAESSENS – Principles for understanding trust in artificial intelligence

Artificial intelligence (AI) increasingly performs tasks once reserved for humans, raising questions about when, why and how people trust machines — and whether they should do so in the first place. In this Review, we identify six principles that help to structure an understanding of trust in AI and highlight its socially embedded nature: that trust in AI is inferred; that trustworthiness, trust and trusting behaviour are distinct; that trust in AI is about both morality and performance; and that trust in AI is agent-specific; individually variable; and strategically motivated. The inferred, multidimensional, dynamic and contextual nature of trust in AI illustrates that ‘trust in AI’ is not one thing, but varies across different systems, individuals and contexts. We end by considering broader ethical implications of studying trust in AI and argue that trust in AI requires both studying how people think and reflecting on the kind of world that trust in AI serves to create.

<https://www.nature.com/articles/s44159-026-00562-1>

Nature Scientific Reports

PAPERS

SVEN BRÖMME et al – Multi-isotope analysis reconstructs termite feeding in chimpanzees

Multi-isotope analyses of extant and extinct animals provide key insights into dietary ecology. Here, we examined mineral-bound nitrogen isotopes alongside carbonate carbon and oxygen stable isotope ratios in tooth enamel from sympatric chimpanzees, other primates (yellow baboons, red-tailed, and red colobus monkeys), herbivores, omnivores, and a radicivore from the miombo woodlands of the Issa Valley, Tanzania. Chimpanzees occupy a distinct isotopic niche characterized by low nitrogen and carbon isotope values and enriched oxygen isotope values relative to other primates. This unique isotopic niche likely reflects their reliance on termites as a major source of dietary protein. Our data indicate that termites contribute substantially to the chimpanzee’s nitrogen intake (at least 50%), consistent with nitrogen isotope values of chimpanzees. These findings from woodland-dwelling primates demonstrate the power of multi-isotope approaches for reconstructing modern and past dietary ecology and highlight their potential for interpreting ancient diets, including those of hominins.

<https://www.nature.com/articles/s41598-026-45049-4>

ANDREU SÁNCHEZ-MEGÍAS et al – Chimpanzee army ant consumption strategies show no habitat-specific pattern

We are providing an unedited version of this manuscript to give early access to its findings. Before final publication, the manuscript will undergo further editing. Please note there may be errors present which affect the content, and all legal disclaimers apply.

Variation in army ant consumption strategies highlights cultural differences between chimpanzee communities in forest habitats. Since these strategies have not been studied in detail in savannas, variation across habitat types remains largely unknown. Here, we report the ant-consumption strategies of savanna chimpanzees at Dindefelo, Senegal. From 2018 to 2022, we collected and measured 151 ant-dipping tools from nine ant nest sites. We assessed tool raw material availability and chimpanzee material selection at four sites. We recorded ant-dipping behaviour at six sites, and examined age, sex, community, individual, and location differences. We collected ants during 47 ant colony encounters and found that all samples belonged to one species closely related to *Dorylus nigricans*. Chimpanzees made tools from eight plant species and mostly selected lianas. They bent vegetation to position themselves while ant-dipping. Chimpanzees in Dindefelo ant-dipped faster than in forest sites. However, all their ant-consumption strategies have been reported for chimpanzees in forest sites. Although ants are scarce and patchily distributed in savannas, this does not seem to influence chimpanzee ant-eating strategies. Ant aggressiveness appears to determine the ant-consumption strategies used by chimpanzees across habitats. These results expand our understanding of the role ecology and culture play in chimpanzee insect-foraging strategies.

<https://www.nature.com/articles/s41598-026-42278-5>

CORRECTIONS

SAMAN H. GURAN et al – Correction: Reconstructing contact and a potential interbreeding geographical zone between Neanderthals and anatomically modern humans

The Original Article was published on 03 September 2024

[See EAORC Bulletin 1,108 – 8 September 2024]

The original version of this Article contained errors.

<https://www.nature.com/articles/s41598-026-50286-8>

New Scientist

ARTICLES

KARMELA PADAVIC-CALLAGHAN – Is consciousness more fundamental to reality than quantum physics?

The idea that everything that exists can be built from the bottom up has long held sway among physicists. Now, a new kind of science is under construction that centres conscious experience – and might unravel the universe's biggest mysteries.

<https://www.newscientist.com/article/2523209-is-consciousness-more-fundamental-to-reality-than-quantum-physics/>

PLoS Biology

PAPERS

THOMAS A. PÜSCHEL, RACHEL M. HURWITZ & CHRIS VENDITTI – Bipedalism and brain expansion explain human handedness

This is an uncorrected proof.

Humans exhibit a striking and near-universal population-level right-hand preference, an evolutionary singularity unmatched among primates. Despite its pervasiveness, the origins of this lateralization remain poorly understood. Here, we combine phylogenetic comparative methods with meta-analysis to investigate manual lateralization across 41 anthropoid species ($n = 2,025$), testing longstanding eco-evolutionary hypotheses for handedness direction (mean handedness index, MHI) and strength (mean absolute handedness index, MABSHI). Our models reveal significant phylogenetic signal for both traits and identify *Homo sapiens* as an evolutionary outlier, exhibiting exceptional rightward bias and strength relative to phylogenetic expectations. However, this outlier status disappears when brain size (endocranial volume) and intermembral index are included, suggesting these factors are central to the emergence of human handedness. We also show that high MABSHI evolved early in hominin evolution, while MHI increased to unparalleled levels with the appearance of the genus *Homo*. Our findings identify bipedalism and neuroanatomical expansion as likely key drivers of uniquely human lateralization, while also revealing broader ecological patterns shaping handedness across primates. This work provides a framework for disentangling human-specific adaptations from general primate trends in the evolution of behavioral asymmetries.

<https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3003771>

JULIA PENNDORF et al – Wild parrots exhibit age-dependent conformity when learning about novel food

There is extensive evidence that the spread of innovation via social learning can facilitate uptake of new foraging behaviours in populations. In comparison, social learning about novel food types has received comparatively little attention. Yet the adoption of novel food is vital to persistence in, or colonisation of, novel environments. Here, we present a novel food (almonds in the shell, coloured either blue or red) in a two-option and control cultural diffusion experiment to five neighbouring roosts of 705 individually-marked sulphur-crested cockatoos (*Cacatua galerita*) living in a highly urbanised environment. From 4 initially trained individuals, a total of 349 individuals across all roosts learned to feed on the novel food within 10 days of first exposure. Using network-based diffusion-analysis ($N = 214$ learners out of 322 individuals with available social information), we demonstrated that this spread occurred almost exclusively through social learning, with information spreading through social network ties. Second, using experience-weighted attraction models, we described age-differences in social learning strategies, with juveniles, but not adults, exhibiting a conformist bias to prefer the most frequently chosen food colour. Third, when analysing 539 opening techniques of the novel food by 147 individuals across the five roosts, we found that opening techniques were more similar between roost communities when the distance between sites was small, or the degree of movement between sites was high. In addition, when focusing on a subset for which social association data were available (273 openings by 78 individuals), techniques tended to be more similar between close associates. Taken together, our study suggests that the adoption of novel food in urban-living sulphur-crested cockatoos is facilitated by social transmission of knowledge through networks, with food choice further influenced in juveniles by a conformist learning bias. Social networks influenced both food choice and acquisition of foraging techniques within and between roosting communities, leading to differences at surprisingly local scales. The utilisation of new food resources is a fundamental component of adaptive behavioural responses to novel environments. Our study demonstrates how cognitive and social influences can be vital determinants of this adaptive flexibility.

<https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3003741>

PLoS One

PAPERS

LI QI & LANLAN ZHAO – Social friction vs. cognitive efficiency: A comparative analysis of help-seeking behaviors in human communities and generative AI

Generative AI agents (e.g., ChatGPT) provide a private, low-latency environment for knowledge acquisition, distinct from public online communities where social evaluation is prevalent. This study investigates how the removal of social evaluation threats in AI interactions alters learners' help-seeking strategies. We analyzed a matched corpus of 30,000 dialogue turns from LMSYS-Chat-1M (Human-AI) and Stack Exchange (Human-Human) using computational linguistic methods (LIWC-22 and RoBERTa). Results show that in AI interactions, learners almost completely abandon defensive impression management

strategies (such as hedges) and politeness markers that are mandatory in human communities. Furthermore, contrary to the expectation that users would “confess” ignorance to AI, we found that learners adopt an authoritative “Director” stance rather than a humble “Petitioner” role. These findings suggest that AI is not merely a social substitute but a functional tool that allows users to bypass the cognitive costs of social negotiation. The shift implies a trade-off: AI maximizes information retrieval efficiency but potentially reduces the ‘desirable difficulties’ associated with problem formulation. This transformation highlights a potential for reduced practice in the cognitive processes traditionally required to structure ambiguity in collaborative settings.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0348441>

YANRAN CHEN et al – Syntactic language change in English and German: Metrics, parsers, and convergences

Syntactic language change has gained increasing attention in recent years. Previous computational work based on dependency relations has focused on diachronic trends in dependency distance, which measures the linear distance between dependent words, using dependency trees automatically predicted by a dependency parser (mostly the Stanford CoreNLP parser). In this work, we introduce a set of 15 syntax metrics that extend the analysis beyond linear distance by incorporating both linear and tree graph properties of dependency trees, such as tree height and degree. Besides, we propose a multi-parser approach to reduce the impact of using specific parsers, thereby increasing the robustness of the detected language changes. Through a cross-lingual investigation of English and German in parliamentary debates from the last 160 years, using 6 different parsers (CoreNLP and five newer alternatives), we demonstrate that: (1) Relying on one single parser can be problematic, as the agreement on predicted trends can be low across parsers. (2) Our set of metrics can capture subtle patterns of syntactic changes. Our analysis shows that syntactic change over the time period inspected is largely similar between English and German, with only 2.2% of cases yielding opposite trends in these metrics. (3) We also show that changes in syntactic metrics seem to be more frequent at the tails of sentence length distributions and often move in opposite directions for short and long sentences. To our best knowledge, ours is the most comprehensive computational analysis of syntactic language change using modern NLP technology in recent corpora of English and German.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0346096>

Royal Society Open Science

PAPERS

THOMAS CUCCHI et al – Brain size reduction in dogs was already established at least by the Late Neolithic of Western Europe, 5000 years ago

The timing and causes of brain size reduction in domestic dogs remain uncertain. Using endocranial volume as a proxy for brain size, this study provides a first insight into long-term brain size evolution in the wolf-dog lineage. We compared endocranial volumes of 185 modern and 22 prehistoric wolves and dogs ranging from Western Europe to Australia, and spanning the Pleniglacial (35 000 yr BP) to the Late Neolithic (5000 yr BP). Our results reveal that Pleistocene so-called ‘protodogs’ show no brain size reduction compared with coeval Pleistocene wolves. Instead, we observed a slightly larger relative endocranial volume in the 35 000-year-old ‘protodog’ from Goyet, which could suggest increased behavioural flexibility in the presence of humans. In contrast, Late Neolithic dogs show a drastic brain size reduction (46%) with endocranial volumes comparable to modern small terrier and toy breeds. We speculate that the anxious and wary temperaments of these Late Neolithic dogs, induced by the brain tissue reorganization associated with such a size reduction, could have served an alerting purpose, among the many other potential roles dogs could have played within these Late Neolithic socio-ecosystems.

<https://royalsocietypublishing.org/rsos/article/13/4/252453/481514/Brain-size-reduction-in-dogs-was-already>

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