EAORC BULLETIN 1,196 – 17 May 2026

CONTENTS

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

GUARDIAN SCIENCE – French professor accused of 'gigantic hoax' after inventing Nobel-style prize

Authorities investigate Florent Montaclair over award given to himself and others including Noam Chomsky.
https://www.theguardian.com/world/2026/may/07/french-professor-florent-montaclair-accused-award-prize

NATURE BRIEFING – Mum's a Denisovan, Dad's a Homo erectus

Ancient proteins extracted from the teeth of Homo erectus individuals that lived in China suggest that the group might have interbred with Denisovans, another archaic human species. Researchers used enamel proteins from six H. erectus individuals and identified an amino-acid variant that's previously been seen in Denisovans. The group also identified two amino-acid sequence variants shared by all six individuals that set H. erectus apart from humans and other human relatives — something that has proved hard to find in the past.
https://www.nature.com/articles/d41586-026-01532-6

NATURE BRIEFING – Why humans sleep so little

On the basis of the sleeping habits of closely related animals, biological anthropologist David Samson estimates that humans require roughly 2.5 hours more sleep than we tend to get each day. This "human sleep paradox" is the focus of his book, The Sleepless Ape. Using ethnography, neurobiology and primatology, Samson argues that the amount of sleep our species gets reflects an evolutionary trade-off. Short, high-quality bouts of sleep helped our ground-sleeping ancestors to stay alert to predators, with the bonus of more waking hours for social interaction and learning — something that reshaped the trajectory of our evolution.
https://www.nature.com/articles/d41586-026-01478-9

NEW SCIENTIST HUMAN STORY – Human heads have changed shape a lot in the past 100 years

Since the early 20th century, people's skulls have got rounder and their jaws have got wider, probably because of changes in health, diet and environment.

https://www.newscientist.com/article/2524895-human-heads-have-changed-shape-a-lot-in-the-past-100-years/

NEW SCIENTIST HUMAN STORY – Neanderthal infants were enormous compared with modern humans

A detailed analysis of the best-preserved Neanderthal infant skeleton ever found suggests that our ancient relatives grew much faster as young children.
https://www.newscientist.com/article/2523132-neanderthal-infants-were-enormous-compared-with-modern-humans/

NEW SCIENTIST HUMAN STORY – We might be wrong about humanity's near extinction

Today there are more than 8 billion humans on Earth. But according to a recent genetic study, there may have been a moment in our past when the entire human population dropped to just 1,280 adults. That is a number small enough for every single human alive to fit inside one large school building, or just a small section of a sports stadium.
https://www.newscientist.com/video/2522085-we-might-be-wrong-about-humanitys-near-extinction/

NEW SCIENTIST HUMAN STORY – Neanderthal 'kneeprint' found next to mysterious stalagmite circle

An impression made in clay around 175,000 years ago could be a kneeprint left by one of the builders of a strange stalagmite circle found deep inside Bruniquel cave in south-west France.
https://www.newscientist.com/article/2525539-neanderthal-kneeprint-found-next-to-mysterious-stalagmite-circle/

NEW SCIENTIST HUMAN STORY – Why early humans radically changed their toolkits 200,000 years ago

A decline in ancient megafauna in the Middle East coincided with a shift towards smaller, lighter toolkits in the archaeological record – though scientists are still in debate about why.
https://www.newscientist.com/article/2522425-why-early-humans-radically-changed-their-toolkits-200000-years-ago/

NEWS FROM SCIENCE – Gotcha! Odd language mistakes may help identify fake papers

A small investigation found identical errors and phrases across more than 200 papers, suggesting they were produced by paper mills.
https://www.science.org/content/article/gotcha-odd-language-mistakes-may-help-identify-fake-papers

NEWS FROM SCIENCE – Ghost of long-extinct ancestor lives on in people today

Ancient Homo erectus teeth from China yield protein variants seen in Denisovans—and us.
https://www.science.org/content/article/ghost-long-extinct-ancestor-lives-people-today

SCIENCEADVISER – Identical errors in more than 200 papers raise red flags

Last year, a colleague sent forensic metascientist James Heathers of the Medical Evidence Project a dozen papers that seemed weirdly similar to one another, hoping Heathers could identify the problem. Heathers noticed that all the papers shared some odd typos, spelling mistakes, and phrases, such as "Kolmogorovor information complexity," which misspells the last name of mathematician Andrey Kolmogorov.

When Heathers searched for these phrases in Google Scholar, he found about 200 more papers that shared multiple features with the original 12 he analyzed. That's statistically improbable, unless they all have the same source, says Heathers, who presented the findings last week at the World Conference on Research Integrity in Vancouver. He suspects they're all variants of the same paper, churned out and sold by a paper mill—an organization that produces fabricated papers and sells them to scientists eager to boost their publication record. Further investigation is required to determine whether the "accidental watermarks," as Heathers calls the errors, represent intentional misconduct, as the errors could also arise through legitimate use of the same translation software or editorial service.

Searching for other accidental watermarks—a process that could be automated using simple tools, such as spelling and grammar checkers and search engines—could help flag additional potentially problematic papers, Heathers said, and journals could screen submissions so they aren't published in the first place. The approach is probably catching human mistakes that will become less common amid the rise of generative AI. Still, it's worthwhile, Heathers said: "You find the bug, you kill the bug."
https://www.science.org/content/article/gotcha-odd-language-mistakes-may-help-identify-fake-papers

SCIENCEADVISER – Ghost of long-extinct ancestor lives on in people today

Homo erectus may be dead and gone, but these extinct human relatives live on in the popular imagination. According to new research, some of their protein variants may also persist, passed down to people alive today via another human ancestor.
https://www.science.org/content/article/ghost-long-extinct-ancestor-lives-people-today

SCIENCENEWS – Territorial conflict may explain male primates' large size

The latent threat of rival groups may select for larger males, even without frequent fights.

https://www.sciencenews.org/article/primate-male-large-size-territorial-conflict

PUBLICATIONS

American Journal of Biological Anthropology

PAPERS

SUNGUI LIN, YUHAO ZHAO & SONG XING – Cranial Morphology of a 21,000-Year-Old Homo sapiens From Southwest China

[Either they mean "Cranial Morphology of the 21,000-Year-Old remains of a Homo sapiens From Southwest China", or they've got something much more sensational than they're letting on.]

This study reports a new hominin cranium, dated to 21,000 years ago, offering novel insights into the evolutionary pattern of the cranial morphology of the East Asian Homo sapiens over the past 40,000 years.

The cranium (22IVPP-H-Cr01) was scanned and virtually reconstructed. Its morphology was described and compared primarily with other fossil H. sapiens. To better contextualize cranial variation, specimens of Homo heidelbergensis, East Asian late Middle Pleistocene archaic Homo, Homo neanderthalensis, and recent H. sapiens were also added to the comparative sample. Additionally, cranial measurements were conducted on the 22IVPP-H-Cr01 and compared with those of other taxonomic groups to assess its evolutionary status through principal component analysis.

The 22IVPP-H-Cr01 cranium represents a female aged ~35–40 years. It exhibits typical H. sapiens morphology while retaining ancestral traits, including pronounced prognathism, a broad interorbital region, and wide nasal aperture. Overall, the cranial configuration of 22IVPP-H-Cr01 appears more derived than pre-LGM (Last Glacial Maximum) H. sapiens yet more primitive than post-LGM H. sapiens in East Asia.

Compared to East Asian pre-LGM H. sapiens, post-LGM populations exhibit significant morphological variability. The 22IVPP-H-Cr01 specimen from Southwest China, dated to the LGM, may represent a candidate link between these two chronological groups. This finding supports population continuity at least in southern East Asia over the past 40,000 years, contrasting with the local population replacement documented in northern East Asia.

https://onlinelibrary.wiley.com/doi/abs/10.1002/ajpa.70265

Biology Letters

PAPERS

CYRIL C. GRUETER, XIAOGUANG QI & STEFAN LÜPOLD – Effects of between-group competition on sexual size dimorphism in primates

Sexual selection acting on males through intrasexual competition for mates is a well-established driver of sexual size dimorphism (SSD) in primates. However, studies typically focus on within-group competition, overlooking the potential significance of competition arising from interactions between neighbouring social groups, particularly when home ranges overlap. Here, we analysed the relationships between SSD, mating system and different proxies of range use across up to 143 species of anthropoid and strepsirrhine primates. Contrary to expectations, mating system—a commonly used proxy for male competition—did not significantly predict SSD. Instead, male-biased SSD increased with home range overlap and encounter rate between social groups, even after accounting for mating system and body size allometry. This suggests that spatial pressures, such as the latent threat of competition from rival groups, impose stronger selection on male compared with female size. Home range overlap may select for larger males to deter rivals, defend resources or monopolize females across shared territories, potentially without frequent physical contests. Our work calls for renewed attention to how spatial competition, including resource defence and mate guarding across overlapping territories, influences trait evolution in primates and other social vertebrates and to re-evaluate proxies of sexual selection.

https://royalsocietypublishing.org/rsbl/article/22/5/20250680/481650/Effects-of-between-group-competition-on-sexual

Current Anthropology

PAPERS

AGUSTÍN FUENTES, GREG DOWNEY & ALEXANDER J. GILLETT – More than "Information in the Head": Culture, Cultural Evolution, and Concepts in Dynamic Assemblages

Humans engage the world, not just through organic evolutionary processes but also through innovation, technology, communication, social organization, environmental exploitation and alteration, and developing complex skills passed on within and between social groups. Evolutionary theorists recognize our species' distinctive capacity to learn across generations and share that knowledge in dynamic and cumulative ways. However, much theorizing in evolutionary approaches is too reductive for most sociocultural anthropologists. We argue that approaches to culture in cultural evolutionary theory can be augmented by envisioning culture as a niche, a suite of dynamic assemblages of entangled processes, not necessarily reducible to constituent parts. Using such a framework, more anthropologists would be able to engage constructively with cultural evolutionary theory, and evolutionary theorists would have access to a wider range of anthropological resources. We offer "concepts in dynamic assemblages" as one such approach. We argue that focusing on concepts and the dynamic assemblages within which they interface can augment exchange between cultural evolutionary

theory and anthropology. Our goal is to foster dialogue, centering the nuance that anthropologists require in evolutionary approaches and encouraging recognition by evolutionary scholars that the cultural resources they are modeling can be more complex yet tractable in an anthropological sense.
https://www.journals.uchicago.edu/doi/abs/10.1086/740965

eLife

PAPERS

THOMAS CHERIAN, GEORGIN JACOB & S.P. ARUN – Do monkeys see the way we do? Qualitative similarities and differences between monkey and human perception

Reviewed Preprint

Monkeys are widely used as model organisms for human vision and cognition. While their anatomy and physiology strongly correspond to humans, it is unclear to what extent their perception matches with ours. Previous studies have evaluated specific aspects of perception, after extensive training on customized tasks that could have altered their perception. To resolve these issues, we trained monkeys to perform an oddball visual search task on natural images, tested them on carefully controlled images to detect a variety of perceptual phenomena, and compared them with humans. This revealed a number of qualitative similarities and differences. Like humans, monkeys showed similar object relations, Weber's law and amodal completion. However, unlike humans, monkeys did not show mirror confusion or a global advantage. These findings represent a first comprehensive evaluation of visual perception in monkeys and humans, revealing the limitations of monkeys as a model organism for human vision.
https://elifesciences.org/reviewed-preprints/110743

iScience

PAPERS

YU XU et al – Reconstructing the west-east genetic division in Indonesia using ancient genomes

The deep-water Wallace's line marks a major biogeographic boundary separating western and eastern Indonesia, yet the origin of this genetic divide remains unresolved due to limited ancient genomic data from western Indonesia. In this study, we report two Late Neolithic genomic data from western Indonesia, integrated with 19 published ancient genomes from Island Southeast Asia (7,000 to 200 BP). Our analyses suggest a dual-phase formation of the west-east genetic structure: an Early Holocene west-east divergence, with western forager-related ancestry closer to Hòabìnhian-associated groups and eastern forager-related ancestry closer to Papuan-related groups; and later Neolithic and post-Neolithic demographic processes, including the Austronesian expansion, additional Mainland Southeast Asian gene flow into western Wallacea, and Papuan-associated back-migration into eastern Wallacea, reinforced and reshaped this earlier structure. We therefore propose a revised demographic model in which repeated Holocene migrations acted on pre-existing regional differences to generate the genetic landscape of present-day Indonesian populations.
https://www.cell.com/iscience/fulltext/S2589-0042(26)01349-0

Nature

NEWS

Did Homo erectus and Denisovans mate? Tooth proteins hint at ancient trysts

Genetic analysis suggests interbreeding between two groups of human relatives.
https://www.nature.com/articles/d41586-026-01532-6

PAPERS

AWAIS JAVED et al – Developmental gene expression patterns driving species-specific cortical features

The cerebral cortex shows species-specific variations in size and organization, which probably account for distinct behavioural abilities1. These structural differences may reflect evolutionary changes in the developmental expression of shared genes. Here, to investigate this possibility, we used machine vision to identify and compare cell-type-specific gene expression patterns in the developing mouse and human neocortex, and in human cortical organoids. Using this approach, we identified genes with evolutionarily conserved or divergent transcriptional regulation, revealing species-specific cyto-temporal gene expression patterns. Among such genes, the transcription factor gene JUNB showed mutually exclusive expression in human progenitors and mouse neurons. Through cell-type-specific gain- and loss-of-function experiments in mice and human cortical organoids, we show that JUNB bidirectionally controls human cortical features, including progenitor proliferation rates, neuronal production timing and total neuronal output. We identify IRF1 as a human radial glia-specific regulator that, when expressed in mouse radial glia, activates JUNB and recruits human-like gene regulatory networks, demonstrating cross-species activation of poised developmental programmes. Together, these findings reveal how cyto-temporal regulation of shared genes drives species-specific cortical features, and provide a molecular framework for understanding and manipulating these evolutionary programmes.
https://www.nature.com/articles/s41586-026-10491-x

QIAOMEI FU et al – Enamel proteins from six Homo erectus specimens across China

Homo erectus remains have been found in Africa, Eurasia and Southeast Asia1,2,3, dating back around two million years; however, owing to their age and state of preservation, obtaining informative molecular data from them has proved challenging. Here we successfully extracted and analysed ancient enamel proteins from five male and one female Middle Pleistocene H. erectus specimens from approximately 0.4 million years ago, from the Zhoukoudian, Hexian and Sunjiadong sites. All specimens from all three sites share two amino acid variants. Of these, A253G in AMBN is previously unknown and has not been identified in other human lineages, including H. erectus from Dmanisi (Georgia), Homo antecessor from Atapuerca (Spain), Denisovans, Neanderthals and modern humans. The other variant, AMBN(M273V), has previously been identified in Denisovans, and our evidence now indicates it may have been introduced through populations related to these Middle Pleistocene H. erectus. The regions in the Denisovan genome attributed to super-archaic introgression, some of which later passed to modern humans, are likely to have originated from H. erectus. Late Middle Pleistocene H. erectus may have coexisted with Denisovans in parts of East Asia, where these interactions are presumed to have occurred.
https://www.nature.com/articles/s41586-026-10478-8

REVIEWS

NATHANIEL J. DOMINY – The sleep paradox: why do humans sleep so little when we need it so much?

A new book brings together ethnography, neurobiology and primatology to argue that how much our species sleeps is an evolutionary trade-off, with lessons for how each of us can sleep better.
Review of 'The Sleepless Ape: The Story of Sleep in Human Evolution' by David R. Samson, Princeton Univ. Press (2026).
https://www.nature.com/articles/d41586-026-01478-9

Nature Communications

PAPERS

OLA OZERNOV-PALCHIK et al with EVELINA FEDORENKO – Precision fMRI reveals that the language network exhibits adult-like left-hemispheric lateralization by 4 years of age

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.

In adults, left hemisphere (LH) damage often leads to aphasia, but many cases of early damage leave linguistic processing intact, with a functional language system developing in the right hemisphere. To explain this early apparent equipotentiality of the two hemispheres for language, some have proposed that the language system is more bilateral during early development and becomes increasingly left-lateralized with age. We examined language lateralization using fMRI in two large developmental cohorts (total n = 273 children aged 4-16 years; n = 107 adults). Strong, adult-like LH lateralization (in response magnitude and activation volume) was evident by age 4, although other features of the LH language network showed protracted development, including the magnitude of language response and the strength of functional connectivity. Thus, although the RH can take over language function in some cases of early brain damage, this plasticity occurs in spite of adult-level LH bias present by age 4 years.
https://www.nature.com/articles/s41467-026-72916-5

AIKATERINA MANOLI et al – Cerebellar growth is associated with domain-specific cerebral maturation and socio-linguistic behavior

The cerebellum's involvement in cognitive functions is increasingly recognized, yet its developmental contribution to cognition remains poorly understood. The cerebellum undergoes rapid development in early life, paralleling major cognitive and behavioral changes. Although clinical studies have linked early cerebellar disruptions to profound developmental deficits, it remains largely unclear how typical cerebellar maturation supports the development of cognitive functions and how it interacts with broader cerebral development. Here, we apply a normative modeling framework to map cerebellar volumetric growth from age one to young adulthood (N = 751; ages 1–21 years). Using both lobular and functional cerebellar parcellations, we characterize typical cerebellar development from late infancy and its relationship to cerebral development and behavioral performance in childhood through adulthood. Across parcellations, association areas consistently show steeper growth trajectories than sensorimotor areas. Cerebellar and cerebral areas with similar functional roles demonstrate coordinated maturation, and volumetric growth in the posterior cerebellum relates to individual differences in socio-linguistic behaviors. These findings establish a comprehensive reference for typical cerebellar development, highlight cerebellar co-maturation with the cerebral cortex, and underscore the cerebellum's role in supporting the development of cognitive functions.
https://www.nature.com/articles/s41467-026-72940-5

LAURA E. SEIDLER, STEPHANIE WESTENDORFF & ANDREAS NIEDER – Sensorimotor transformation of number in the primate parietal cortex

The neuronal mechanisms by which the brain flexibly transforms perceived numerical values into corresponding numbers of self-generated actions remain poorly understood. Here, we investigated this sensorimotor transformation process in the

parietal cortex of two male rhesus macaques performing a manual counting task. Monkeys viewed visual numerical cues and produced a corresponding number of hand movements. Single-neuron recordings from the ventral intraparietal area (VIP)—a region known to represent perceived numerosity—revealed tuning to the number of intended actions during motor planning. These neurons showed both sustained and transient activity patterns, reflecting static and dynamic codes that support numerical sensorimotor transformation. Population decoding confirmed that VIP encoded intended action number and reflected systematic over- and underestimation errors. Our findings reveal a neural mechanism by which the primate brain converts abstract numerical input into goal-directed motor output, providing insight into the sensorimotor foundations of numerical cognition.
https://www.nature.com/articles/s41467-026-73037-9

Nature Humanities & Social Sciences Communications

PAPERS

JOANNA ZHUOAN CHEN & KATHLEEN AHRENS – Spotting hyperbole in communication: building a scalable framework with linguistic evidence

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.
Although the Hyperbole Identification Procedure (HIP) offers operational definitions and procedural guidelines on hyperbole identification, suggesting that hyperbole occurs when the literal meaning of an expression is more extreme than what the context warrants, it does not provide concrete instructions for determining when such a disparity can be considered to occur. This operational ambiguity has hindered the development of clear, replicable criteria. The article proposes an approach that supplements the HIP by constructing linguistic scales from corpus-based lexicographic resources to determine the degree of intensification in lexical items. Building on Peña-Cervel and Ruiz de Mendoza Ibáñez (2017), we operationalise three conditions under which an expression's meaning can be treated as intensified and, therefore, hyperbolic within HIP. We also recommend triangulation with psycholinguistic databases to evaluate emotional intensity, and conducting contextual verification using domain-specific sources to account for specialized usages of the lexical unit. A reliability test shows that integrating HIP with linguistically derived scales yields consistent and reproducible annotations. We also address the challenges HIP faces with multiword expressions and propose a non-compositional procedure for detecting idiomatic hyperboles. The study concludes by applying the extended HIP to a real-world corpus and presenting detailed case studies that illustrate the analytical and methodological payoffs of the proposed extension. This paper lays a foundation for further research on hyperbole by providing systematic yet flexible guidelines for its identification and emphasizing its role as a key rhetorical device across diverse communicative contexts.
https://www.nature.com/articles/s41599-026-07529-w

Nature Neuroscience

PAPERS

VISHAL CHOUDHARI et al – Real-time brain-controlled selective hearing enhances speech perception in multi-talker environments

Understanding speech in noisy environments is difficult for many people, and current hearing aids often fail because they amplify all sounds rather than the talker of interest. Auditory attention decoding (AAD) offers a potential solution by using the listener's brain signals to identify and enhance the attended speaker, but it has been unclear whether this can provide real-time perceptual benefits. Here we used high-resolution intracranial electroencephalography in patients undergoing neurosurgical procedures to implement a closed-loop system that achieves the decoding fidelity necessary to dynamically amplify the attended talker. Across multiple experiments, the system improved speech intelligibility, reduced listening effort and was consistently preferred by subjects. It also tracked both instructed and self-initiated attention shifts. By providing direct evidence that a real-time, brain-controlled hearing system can enhance perception, this work establishes a key performance benchmark for future auditory brain–computer interfaces and advances AAD from a theoretical concept to a validated solution for personalized assistive hearing.
https://www.nature.com/articles/s41593-026-02281-5

Nature Reviews Neuroscience

PAPERS

RONGZHEN YAN & DAYU LIN – Neural basis of social hierarchy across species

A social hierarchy is an ordered ranking of individuals that arises through their interactions and governs relative access to resources and social influence. This form of social organization is pervasive across animal species and has a crucial role in shaping survival and reproductive outcomes. Across species, the routes to high status vary widely. As social groups become more complex, the basis of hierarchy shifts from simple residency rules to fighting-based dominance and finally to alliance-based systems. In this Review, we first examine the neuroendocrine and subcortical mechanisms that support status transitions in residency-based hierarchies. We then discuss plasticity within hypothalamic and mesolimbic circuits that

underlie fighting-outcome-based social learning, through which fighting-based hierarchies emerge. Finally, we explore alliance-based hierarchies in cognitively complex species, in which individuals attain status through coalition formation, cooperation and reputation. We review evidence that cortical regions encode information about the strengths, emotions, experiences and intentions of other individuals and use this to navigate complex social interactions and attain status. As social hierarchies have shifted from primarily fighting-based to increasingly alliance-based strategies over evolutionary time, neural control of status has, thus, transitioned from subcortical social behaviour circuits to a more elaborated cortical network in humans.
https://www.nature.com/articles/s41583-026-01047-z

Nature Scientific Reports

PAPERS

KELSEY N. MORELAND et al with NICHOLAS J. CONARD – Ancient DNA from the Upper Paleolithic mammoth ivory of Hohle Fels, Germany

Hohle Fels, a cave in southwestern Germany, hosts one of the richest and best-preserved Upper Paleolithic ivory assemblages, with some of the earliest examples of figurative art, musical instruments, and personal ornamentation. Despite this, its ivory had never been tested for ancient DNA (aDNA). Here, we genetically analyze 25 anthropogenic ivory fragments from Upper Paleolithic archaeological layers and demonstrate the feasibility of aDNA recovery from non-permafrost ivory. We show that cementum yields significantly more and higher-quality aDNA than dentin, making it the preferred ivory material for paleogenetic investigations. Low-coverage genome-wide data revealed a female bias, potentially reflecting either natural herd structure or biases in the procurement of ivory material. Mitochondrial DNA enrichment allowed the reconstruction of twelve complete mtDNAs, revealing that the specimens were sourced from multiple distinct mammoth lineages. Together, these results demonstrate that archaeological ivory can provide unprecedented insights into both mammoth biology and Upper Paleolithic human behavior, including hunting strategies, raw material selection, and symbolic practices of European hunter-gatherers.
https://www.nature.com/articles/s41598-026-46761-x

L. ROTENSTREICH et al – Decoding the baboon's expressive capacity: facial microanatomy and the development of a PapioFACS

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.

Facial mobility in primates reflects a dynamic interplay between anatomy and behavior, yet comparative data remain limited for many cercopithecines. Here, we present the first integrated anatomical and behavioral analysis of the facial mask in Papio hamadryas, combining gross dissection, histological analysis, and behavioral coding to develop a species-specific Facial Action Coding System (PapioFACS). Gross and histological analyses of five adult craniofacial specimens (10 hemifaces) identified 15 facial muscles, 3 extrinsic auricular muscles, and 4 intrinsic auricular muscles, and revealed a distinctive combination of anatomical features in this species. The auricular region was particularly well developed, whereas the perioral region showed a less differentiated organization: the nasolabial region consisted of a continuous maxillonasolabialis, the labial commissure lacked a discrete modiolus, and the platysma showed specialized integration with the cheek pouch. Histological analysis further demonstrated a dense, fibrotic superficial musculoaponeurotic system that differs markedly from the human condition. Guided by these anatomical findings, PapioFACS identified 20 Action Units, 12 Action Descriptors, and 3 Ear Action Descriptors, with final inter-coder agreement exceeding 90%. Together, these findings provide a species-specific framework for linking facial anatomy and facial movement in P. hamadryas and broaden the comparative basis for studying primate facial communication.
https://www.nature.com/articles/s41598-026-52599-0

Neuron

PAPERS

WEIKANG SHI et al – Canonical decision computations underlie behavioral and neural signatures of cooperation in primates

Successful cooperation requires the dynamic integration of social cues. However, the neural mechanisms supporting this complex process remain unknown. Here, we reveal that the primate dorsomedial prefrontal cortex (dmPFC) implements a gaze-dependent social evidence accumulation process to guide cooperative decisions in freely moving marmoset dyads. A drift-diffusion process in which the partner's action variability is accumulated through social gaze best explains the cooperative actions of the actor. Single-neuron recordings in the dmPFC revealed a direct neural correlate: the slope of predictive ramping activity mapped directly onto the rate of evidence accumulation, while baseline firing, modulated by prior outcomes, mapped onto the initial bias. At the population level, the geometry of dmPFC neural trajectories reflected the strength of social evidence and was linked to cooperative success. Together, these findings establish a multi-level neural mechanism for transforming active sensing into a decision variable, linking a canonical computation to cooperative behavior in a naturalistic setting.

https://www.cell.com/neuron/abstract/S0896-6273(26)00317-X

New Scientist

ARTICLES

THOMAS LEWTON – Why autism pioneer Uta Frith wants to dismantle the spectrum
After a career spent grappling with the neural underpinnings of autism, Uta Frith is unwavering in her controversial call to scrap the view of the condition as a spectrum and start again.
https://www.newscientist.com/article/2525037-why-autism-pioneer-uta-frith-wants-to-dismantle-the-spectrum/

CHRISTA LESTÉ-LASSERRE – Neanderthals treated a dental cavity by drilling into the tooth
A Neanderthal tooth shows clear signs of human intervention to treat bacterial decay, revealing that the earliest dentistry began at least 59,000 years ago.
https://www.newscientist.com/article/2526440-neanderthals-treated-a-dental-cavity-by-drilling-into-the-tooth/

MICHAEL LE PAGE – Neanderthal 'kneeprint' found next to mysterious stalagmite circle
An impression made in clay around 175,000 years ago could be a kneeprint left by one of the builders of a strange stalagmite circle found deep inside Bruniquel cave in south-west France.
https://www.newscientist.com/article/2525539-neanderthal-kneeprint-found-next-to-mysterious-stalagmite-circle/

REVIEWS

SIMON INGS – New Scientist recommends a smart new account of human exceptionalism
Why did humans decide they weren't like other animals, or animals at all? Has this exceptionalism twisted us out of shape? Michael Bond's book Animate offers a page-turning account of where we are now.
Review of ‘Animate’ by Michael Bond, Pan Macmillan UK, 2026.
https://www.newscientist.com/article/mg27035950-400-new-scientist-recommends-a-smart-new-account-of-human-exceptionalism/

NPJ Heritage Science

PAPERS

SI-QI LU et al – Lithic raw material economy in the Hailang River Basin, Northeast China during Marine Isotope Stage 2
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.
Studies of lithic raw material economies yield crucial insights into prehistoric human adaptive strategies. This paper presents an integrated analysis of lithic raw material economy at three newly excavated sites (Dalongtoushan, Xiaolongtoushan, and Yanglin Xishan) in the Hailang River Basin, which date to Marine Isotope Stage 2 (MIS 2) and are situated on the northern margin of the Changbai Mountains in Northeast China. By integrating petrographic identification, provenance tracing, and techno-typological characterization, we reveal a flexible ternary exploitation strategy shaped by raw material quality, abundance, and accessibility. This strategy balanced expedient use of local basalt, curated use of non-local obsidian, and flexible exploitation of local tuff and rhyolite. At the intra- and inter-regional scales, we further identified multi-level interactions between raw material exploitation, lithic technology, and environmental context across the Changbai Mountains and its vicinity. Collectively, this study offers empirical insights into hunter-gatherers’ adaptive flexibility in MIS 2 Northeast Asia.
https://www.nature.com/articles/s40494-026-02620-6

Philosophical Transactions of the Royal Society A

PAPERS

EVELINA LEIVADA et al – A sentence is worth a thousand pictures: can large language models understand hum4n L4ngu4ge and the W0rld behind W0rds?
The current generation of large language models (LLMs) has been linked to claims about human-like linguistic performance, and their applications are hailed both as a step towards artificial general intelligence and as a major advance in understanding the cognitive and even neural basis of human language. To assess these claims, first, we analysed the contribution of LLMs as theoretically informative representations of a target cognitive system versus atheoretical mechanistic tools. Second, we evaluated the models’ ability to see the bigger picture through top-down feedback from higher levels of processing, which requires grounding in previous expectations and past world experience. We hypothesize that since models lack grounded cognition, they cannot take advantage of these features and instead solely rely on fixed associations between represented words and word vectors. To assess this, we ran a novel leet task (l33t t4sk), which requires decoding sentences in which letters are systematically replaced by numbers. In line with our hypothesis, the results suggest that humans excel in

this task, whereas models struggle. We interpret these results by identifying the key abilities that are still missing from the current state of development of these models, which require solutions that go beyond increased system scaling.
https://royalsocietypublishing.org/rsta/article/384/2320/20250008/481681/A-sentence-is-worth-a-thousand-pictures-can-large

EUNICE YIU et al with ALISON GOPNIK – Empowerment gain and causal model construction: children and adults are sensitive to controllability and variability in their causal interventions

Learning about the causal structure of the world is a fundamental problem for human cognition. Causal models and especially causal learning have proved to be difficult for large pretrained models using standard techniques of deep learning. In contrast, cognitive scientists have applied advances in our formal understanding of causation in computer science, particularly within the causal Bayes net formalism, to understand human causal learning. In the very different tradition of reinforcement learning (RL), researchers have described an intrinsic reward signal called 'empowerment' which maximizes mutual information between actions and their outcomes. Empowerment may be an important bridge between classical Bayesian causal learning and RL and may help to characterize causal learning in humans and enable it in machines. If an agent learns an accurate causal world model, they will necessarily increase their empowerment, and increasing empowerment will lead to a more accurate causal world model. Empowerment may also explain distinctive features of children's causal learning, as well as providing a more tractable computational account of how that learning is possible. In an empirical study, we systematically test how children and adults use cues to empowerment to infer causal relations and design effective causal interventions.
https://royalsocietypublishing.org/rsta/article/384/2320/20250003/481680/Empowerment-gain-and-causal-model-construction

VICKRAM PREMAKUMAR et al with MICHAEL S. A. GRAZIANO – Unexpected benefits of self-modelling in neural systems

Self-models have been a topic of interest for decades in human cognition and more recently in machine learning. Yet what benefits do self-models confer? Here we show that when an artificial network learns to predict its internal states as an auxiliary task, the network becomes simpler, more regularized and more parameter efficient. To test the hypothesis of self-regularizing through self-modelling, we used a range of network architectures performing three classification tasks across two modalities. In all cases, adding self-modelling caused a significant reduction in network complexity. The reduction was observed in two ways. First, the distribution of weights was narrower when self-modelling was present. Second, a measure of network complexity, the real log canonical threshold (RLCT), was smaller when self-modelling was present. These results support the hypothesis that self-modelling has a restructuring effect, reducing complexity and increasing parameter efficiency. This self-regularization may help explain some of the benefits of self-models reported in recent machine learning literature, as well as the adaptive value of self-models to biological systems. In particular, these findings may shed light on the possible interaction between the ability to model oneself and the ability to be more easily modelled by others in a social or cooperative context.
https://royalsocietypublishing.org/rsta/article/384/2320/20240531/481682/Unexpected-benefits-of-self-modelling-in-neural

NICOLAS ROULEAU & MICHAEL LEVIN – Brains and where else? Mapping theories of consciousness to unconventional embodiments

It is assumed that a useful theory of consciousness (ToC) will explain why consciousness is associated with brains. However, the findings of evolutionary biology, developmental bioelectricity and synthetic bioengineering reveal ancient pre-neural roots of many mechanisms and algorithms occurring in brains: minds may have preceded brains. Most work in the emerging field of diverse intelligence emphasizes externally observable problem-solving competencies in unconventional media, such as cells, tissues and life-technology chimeras. Here, we inquire about the implications of these developments for ToCs. Specifically, we analyse popular current ToCs to ask: What features of each theory specifically pick out brains as a privileged substrate of inner perspective, or do the features emphasized by the theory occur elsewhere? We find that the operations and functional principles of most ToCs are not confined to neural substrates, and that the focus on brains is more driven by convention than by the specific content of existing ToCs. Encouragingly, several contemporary theorists have made explicit efforts to apply their theories to synthetic systems in light of recent technological developments in artificial intelligence and organoid bioengineering. We suggest that the science of consciousness should remain open to minds in unconventional embodiments.
https://royalsocietypublishing.org/rsta/article/384/2320/20250082/481686/Brains-and-where-else-Mapping-theories-of

MICHAEL LEVIN & BENJAMIN LYONS – Cognitive glues are shared models of relative scarcities: the economics of collective intelligence

Collective intelligence has emergent problem-solving capacities that are different than those of its subunits. The plethora of multi-scale systems within nature and society makes it imperative to understand the interaction policies necessary and sufficient for emergence of collective intelligences. The economy is a complex system consisting of autonomous elements at multiple scales and which exhibits adaptive problem-solving capabilities, suggesting that the economy offers an interesting,

important example of collective intelligence. We identify the price system as the cognitive glue of the economy by acting as a coordinating affordance that enables members to form plans that are mutually compatible. Using the collective intelligence framework of Technological Approach to Mind Everywhere, we elaborate on various aspects of the economy that make it useful to model the economy as a collective intelligence. We argue that any cognitive glue must solve the same kind of problem that the price system solves in broadly the same way that the price system solves it, and thus the price system serves as a generic template or abstract model for all cognitive glues. Finally, we describe some research ideas that combine concepts from biology and economics in the hopes of inspiring interdisciplinary collaboration.
https://royalsocietypublishing.org/rsta/article/384/2320/20240528/481688/Cognitive-glues-are-shared-models-of-relative

DOUGLAS HOFSTADTER – Is there an 'I' in AI?
Here, in a nutshell, is the thesis of this essay: When words 'act like' things in the world, then they refer to those things; then they mean those things. If and when that happens, then thinking is taking place behind the scenes of those words. And where there is thinking, there is consciousness and a genuine, full-fledged 'I'. That, in a nutshell, is my thesis.
To be more specific, the words thrown about by today's large language models (LLMs) mean something—exactly to the extent that their behaviour matches with, or meshes with, the world's behaviour. Let me offer a provocative example—namely, the response by GPT-4 to a prompt asking it to explain how to make a stable pile out of a book, a laptop computer, nine eggs, a bottle and a nail. (I suggest you think about this small challenge yourself before reading on.)
https://royalsocietypublishing.org/rsta/article/384/2320/20240527/481691/Is-there-an-I-in-AI

Philosophical Transactions of the Royal Society B

COMMENTARIES

GLEB YU KOSOVSKY, GALINA GLAZKO & TATIANA T. GLAZKO – A Comment on: 'Towards a universal definition of 'domestication'' (2025), by Lord et al.
[Lord et al in EAORC BULLETIN 1,176]
Debates concerning domestication and its mechanisms have a long history, extending from antiquity to the present. Despite their persistence, domestication is too consequential an event in the evolution of humanity and the biosphere to be treated primarily as a matter of formal definition. Understanding its specific mechanisms must precede definitional consensus. In recent decades, attention has increasingly focused on agricultural intensification under rapid global environmental change and, consequently, on identifying the genetic foundations of domestication. As early as the twentieth century, V. I. Vernadsky argued that the possibilities of extensive agrarian civilization had been exhausted and that further development would require intensification. This challenge is now compounded by biodiversity loss, ecological degradation and growing awareness of the links between human health and environmental interactions. At the same time, advances in molecular biology have transformed our understanding of genome organization and regulation, providing new tools for addressing domestication as an evolutionary process.
https://royalsocietypublishing.org/rstb/article/381/1950/20260094/481556/A-Comment-on-Towards-a-universal-definition-of

ROBERT SPENGLER & HUGO RAFAEL CARDOSO OLIVEIRA – Invited reply: Response to: Towards a universal definition of 'domestication'
[Spengler et al in EAORC BULLETIN 1,144]
Kosovsky et al. have responded to two recent attempts at unifying the scientific community under one definition for domestication—Spengler et al. titled: Seeking consensus on the domestication concept and Lord et al.'s [2] recent paper, titled: A universally applicable definition of domestication. We will quickly comment on the main critiques raised by Kosovsky et al. [3], which seem focused more on the proposal from Lord et al. In both cases, these groups of scholars draw awareness to important issues, but ultimately, we read both of their discussions as demonstrations for the need to unify the multidisciplinary array of scholars currently studying domestication. Without a consensus on the definition, we are all trapped in a semantics skirmish that impedes scientific progress.
https://royalsocietypublishing.org/rstb/article/381/1950/20260095/481557/Invited-reply-Response-to-Towards-a-universal

Physics of Life Reviews

COMMENTARIES

BALTHASAR BICKEL et al with KLAUS ZUBERBÜHLER & CAREL P. VAN SCHAIK – Languages evolve ergodically: Clarifications and responses
[ORIGINAL PAPER: BALTHASAR BICKEL et al with KLAUS ZUBERBÜHLER & CAREL P. VAN SCHAIK – Language follows a distinct mode of extra-genomic evolution, https://pdf.sciencedirectassets.com/273140/1-s2.0-S1571064524X00032/1-s2.0-S1571064524000939/main.pdf]
We thank the commenters for their thoughtful and helpful suggestions, and their generally positive reception of our framework. Our focus here will be on where they do not agree with our claims. We respond first to issues raised by more than one comment and then address more specific issues.

https://www.sciencedirect.com/science/article/abs/pii/S1571064526000278

PLoS One

PAPERS

EVIE A. MALAIA et al – Age and language experience modulate predictive processing in the visual modality

Human language processing relies on the brain's ability to predict structured input rapidly in time. While predictive coding has been widely studied in auditory language users, less is known about how visual language experience influences these mechanisms across their lifetime. We used electroencephalography (EEG) to examine how age and lifelong use of a signed language modulate neural prediction in the visual modality. We recorded EEG from Deaf signers of Austrian Sign Language (ÖGS) while they viewed videos of linguistic and non-linguistic biological motion. Signal complexity and neural coherence to optical flow in the stimuli were computed, and multivariate feature selection was applied to identify age-related patterns. Our results show that neural responses to linguistic motion are characterized by age-dependent increases in coherence to stimuli and changes in signal entropy, suggesting that visual linguistic experience refines predictive mechanisms over time. These effects were strongest in fronto-central and parietal regions, consistent with hierarchical sensory integration for language processing. This study demonstrates that predictive coding in the brain is shaped by modality-specific language experience and continues to evolve with age. The findings offer a new perspective on how sensory and linguistic systems interact to support inference in real-time visual processing.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0346695

ELENA CAPELLI et al – Developmental changes in audio-visual speech integration during the first year of life in infants at elevated and typical likelihood of autism

Infants' ability to integrate auditory and visual information, i.e., audiovisual integration (AVI), emerges during the first year and is crucial for effective communication and early development. However, there is limited longitudinal research on how AVI develops across the first year of life, particularly in infants at elevated likelihood of autism (EL). This study aimed to investigate the developmental trajectories of AVI in response to congruent and incongruent speech stimuli in EL and typical likelihood (TL) infants at 6, 9, and 12 months. Using eye-tracking techniques and the McGurk effect paradigm, we explored infants' preferential looking behavior towards facial features (eyes vs. mouth) and their response to audiovisual congruence. EL infants were then evaluated at 24 months to explore the associations between AVI and later autism-related traits. Across likelihood groups, infants showed a robust developmental shift from greater attention to the eyes at 6 months toward increased attention to the mouth at 9 and 12 months, consistent with expected developmental changes in audiovisual speech processing. Infants also displayed higher mouth preference in the non-fusible mismatch condition at 6 months, suggesting early sensitivity to audiovisual incongruence. Interestingly, EL infants showed a delayed developmental shift toward mouth-looking across the first year of life. Exploratory outcome analyses revealed that infants showing clinical signs of autism at 24 months displayed a flatter developmental trajectory in eyes-to-mouth preference. The present study emphasizes the importance of examining sensory processing trajectories in EL infants, as delayed shifts in attention to the mouth could signal subtle developmental differences that may have long-term implications for subsequent communication skills.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0347046

ALISA V. ZUBOVA, et al – Earliest evidence for invasive mitigation of dental caries by Neanderthals

Neanderthal medical knowledge has long attracted scholarly interest. Evidence suggests they cared for sick, injured, and elderly group members, with possible use of medicinal plants. However, it remains uncertain whether such practices reflect deliberate medical strategies or instinctive self-medication akin to that observed in non-human primates. Here, we analyze and interpret traces of deliberate artificial manipulation of Chagyrskaya 64, a Neanderthal lower left second molar found in Chagyrskaya Cave (Altai Krai, Russia). The tooth exhibits a large human-generated concavity on the occlusal surface, created during the lifetime of the individual. Traceological and microtomographic analyses of the observed modifications, combined with experimental verification, reveal that the concavity in Chagyrskaya 64 is indicative of the earliest documented instance of caries treatment involving the drilling/rotating with a lithic perforator, ca. 59 ka. Evidence of two distinct types of manipulations requiring different tools, in addition to the drilling/rotating technique, necessitating complex finger movements, indicates that the Chagyrskaya Cave Neanderthals possessed the cognitive capacity to intuit the source of pain, comprehend the feasibility of its elimination, and deliberately select the most efficacious dental intervention. These patterns bring Neanderthal behavior closer to modern humans and differentiate that behavior from the instinctive actions of other primates.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0347662

MATHIAS BOYER-BROSSEAU, SIMON RIGOULOT & SÉBASTIEN HÉTU – Scleral exposure influences social judgments of trustworthiness, attractiveness, sociability, and social rank in White faces

Faces are powerful sources of social information, and the eye region plays a central role in shaping first impressions. While prior studies have suggested that scleral exposure may influence social judgments, findings remain inconsistent, and experimental approaches, nonexistent. The present study employed a controlled experimental design to explore how scleral

exposure might influence judgments of trustworthiness, attractiveness, sociability, and perceived social rank in peer-related facial perception. A total of 162 participants rated 50 neutral faces twice, each digitally manipulated to display small and large scleral exposure. Results showed a consistent "scleral exposure effect": across all measured social judgments, faces with larger scleral exposure were rated more favorably than the same faces with smaller scleral exposure. No interactions emerged between scleral exposure and sex of the raters or sex of the presented faces, indicating that these scleral exposure effects may reflect general sex-independent mechanisms. These findings provide the first experimental evidence that scleral exposure shapes multiple dimensions of social judgment, favoring greater exposure.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0348193

DANIEL GROß et al – Fishing for millennia: Effects and impacts of prehistoric fishing in the Sylthoim Fjord, Denmark
This study investigates the long-term impacts of human subsistence strategies on the fauna and ecosystem of Sylthoim Fjord, Denmark, from the Late Mesolithic to the Bronze Age (c. 4500–800 cal BCE). Drawing on data from 17 archaeological excavations, we examine how long-term stationary wooden fishing structures in a lagoon-like environment and terrestrial resource exploitation influenced species composition, biodiversity, and human subsistence strategies at coastal settlements on a relatively small island (c. 1200 km2). Faunal analyses reveal that while dominant fish species remained consistent across periods, terrestrial fauna exhibited shifts, particularly around 3000 cal BCE, with an increased reliance on wild game coinciding with a decline in the use of fish weirs. Diversity indices indicate a significant reduction in species richness from the Early Neolithic to the Bronze Age, suggesting a more homogeneous ecosystem potentially reflecting intensified anthropogenic influence and perhaps increased social complexity. Salinity and sediment reconstructions, together with prey choice models (PCM), highlight the persistence of aquatic resources in the diet and suggest that human foraging strategies continued to optimize energetic returns without substantially altering fishing practices. Our findings challenge the notion of an abrupt Neolithic dietary transition toward domesticates' dominance, illustrating instead a mosaic subsistence pattern that integrates wild aquatic and terrestrial resources over millennia. The diachronic stability of the faunal composition, coupled with reduced but persistent biodiversity, implies a long-term anthropogenic shaping of the landscape, possibly linked to communal management and later hierarchical structures. This case study underscores the importance of integrating archaeological, ecological, and theoretical perspectives to understand local trajectories of human-environment interaction and social change in prehistoric southern Scandinavia.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0347863

PNAS

ARTICLES

MARÍA FERNANDA SÁNCHEZ GOÑI & FRANCESCO D'ERRICO – Climatic mechanisms underlying a southwestern French Neanderthal refugium at the onset of the last glaciation
Fotiadou et al. present compelling archaeogenetic evidence for a major demographic contraction of Neanderthals followed by a re-expansion across Europe originating from a refugium in southwestern France around ~65 ka. This result significantly advances our understanding of Late Neanderthal population dynamics. However, the study leaves unresolved a key question: Why did a refugium emerge at relatively high latitude in southwestern France, rather than in the southern European peninsulas that acted as refugia during the Last Glacial Maximum (LGM) and later served as sources for the recolonization of Europe? We suggest that this apparent paradox can be explained by the specific climatic configuration affecting the western European margin during the onset of glaciation (~76 to 68 ka), as documented by multiproxy paleoclimatic records from the Bay of Biscay.
https://www.pnas.org/doi/full/10.1073/pnas.2610884123

BEVIL R. CONWAY & SPENCER R. LOGGIA – The cortical canvas
If you peel off the gray matter of the cerebral cortex, like the rind from an orange, you will recover a sheet of tissue. This sheet contains the neuron cell bodies responsible for sensory perception, long-term memory, problem solving, and decision-making. Understanding how it works is daunting because science typically assumes that we begin with a question, a hypothesis, which implies we can already imagine how the system might work. But our imaginations may not suffice for a theory of something as complex as the organ responsible for perception and thought. Hypothesis-free, data-driven approaches are less constrained but promise to expand our imagination. In this issue of PNAS, Pennock et al. adopt a data-driven approach, treating the cortex like a sheet of photographic film to be developed in some way, to see what you see. In this case, the authors "develop" the cortical canvas by painting each location with the average image (from many thousands) that activated it. What makes the cortical paintings compelling is that they point, surprisingly, to color as a tag for functional distinctions in high-level cortical areas, opening many questions.
https://www.pnas.org/doi/full/10.1073/pnas.2610120123

Proceedings of the Royal Society B

PAPERS

SHANNON C. MCFARLIN et al – Variation in body size growth trajectories between ecologically distinct mountain gorilla populations

Body size is a fundamental feature of an organism's biology, and studies of body size growth can yield insights into factors that shape evolutionary change within and between species. However, apart from humans, variability in body size growth within primate species across environments remains poorly known. We used non-invasive parallel-laser photogrammetry to compare body size growth of two ecologically distinct populations of mountain gorillas, from Bwindi Impenetrable National Park, Uganda and Volcanoes National Park, Rwanda, in the Virunga Massif (n = 197, aged 0.3–42.7 years). Bwindi females attained a smaller adult size than Virunga females, despite continuing their growth over a longer duration. Population differences in male adult size were minimal, although Bwindi males continued growth in back breadth over a longer duration. For both sexes, Bwindi gorillas were smaller than Virunga gorillas as young infants, and these size differences decreased over ontogeny. This study provides the first evidence of within-species variation in body size growth among living wild apes between populations that exhibit ecological and life-history differences. This variation could be due to genetic variation, phenotypic plasticity, reproductive trade-offs and/or ecological constraints and have implications for understanding body size growth variation in humans and other species.
https://royalsocietypublishing.org/rspb/article/293/2070/20252227/481615/Variation-in-body-size-growth-trajectories-between

Science

NEWS

Ghost of long-extinct ancestor lives on in people today

Ancient Homo erectus teeth from China yield protein variants seen in Denisovans—and us.
https://www.science.org/content/article/ghost-long-extinct-ancestor-lives-people-today

CORRECTIONS

MARIA LOCONSOLE, SILVIA BENAVIDES-VARELA & LUCIA REGOLIN – Erratum for the Research Article "Matching sounds to shapes: Evidence of the bouba-kiki effect in naïve baby chicks"

[EAORC BULLETIN 1,184]

In the Research Article "Matching sounds to shapes: Evidence of the bouba-kiki effect in naïve baby chicks" by M. Loconsole et al. (19 February 2026, 10.1126/science.adq7188), errors were present in Fig. 3, panels A and C. For Fig. 3A, an earlier version of the visualization was inadvertently uploaded during the initial submission process and carried forward into production; however, the underlying dataset and analyses were correct. For Fig. 3C, an earlier version of the figure was also mistakenly used, and in this case it displayed an incorrect dataset. During peer review, these discrepancies were identified and corrected versions of both figures (reflecting the validated datasets used in the analyses) were provided. However, due to a production error, the earlier versions were mistakenly retained in the final published article. The figures have now been replaced with the correct versions. The updated Fig. 3A accurately reflects the intended visualization of the original dataset, and the corrected Fig. 3C now displays the appropriate dataset consistent with the analyses described in the manuscript. These errors do not affect the results, interpretations, or conclusions of the paper. Figure 3B is unchanged.
https://www.science.org/doi/10.1126/science.adq7188

Science Advances

PAPERS

DAVID ANTHONY, MARTIN TRAUTMANN & VOLKER HEYD – Horse genetics, archaeology, and the beginning of riding

Recent papers argued that the domestication of horses can be equated with the appearance of favorable genetic mutations that are first evident in individuals in the DOM2 clade dated about ~2200–2100 BCE. We challenge the idea that this genetic shift alone defines domestication. Evidence from archaeology, ancient DNA, osteology, and other disciplines shows that horses from multiple genetic backgrounds (DOM1, DOM2, and, as we suggest here, DOM3) were managed, milked, and ridden long before 2200 BCE. Yamnaya groups (~3200–2600 BCE) rode DOM2 horses—the direct ancestors of modern domestic stock—while incorporating them into diets, rituals, and mobility systems. Selection for traits linked to endurance and temperament began centuries earlier. Rather than a sudden breakthrough, domestication was a protracted, regionally varied process whose transformative effects on human mobility and social organization began as early as the fourth, if not the fifth millennium BCE, and set the stage for later DOM2 dominance.
https://www.science.org/doi/10.1126/sciadv.ady7336

Trends in Cognitive Sciences

PAPERS

KAYSON FAKHAR & DUNCAN E. ASTLE – Embracing the suboptimal organization of the human brain

Human brain architecture is guiding brain-inspired artificial intelligence (AI) and has been treated as an optimal template, whose deviations could mark different psychiatric and neurological conditions. We argue this premise is wrong: under any single goal (e.g., minimal wiring cost or maximal communication efficiency), the human connectome is suboptimal. Instead, its organization reflects multi-objective trade-offs navigated over evolution and development under biological and environmental constraints. For psychopathology, atypical trajectories are not distances from an ideal brain but reweighted compromises in the same trade-off space. For neuro-AI, directly duplicating the brain's connectivity risks copying its irrelevant compromises. Treating brains and models as products of multi-objective optimization and co-tuning relevant objectives offers a more powerful framework for interpreting clinical phenotypes and designing next-generation AI.
https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(26)00092-6

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