EAORC BULLETIN 1,159 – 31 August 2025

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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.

CONFERENCE ALERT – Cognition & Behavior Evolution Network (CBEN) Conference 2025

September 18–19 in Antwerp

Registration is open until September 1st and can be done via https://forms.uantwerpen.be/en/facsw/cognition-behavior-evolution-network/?_gl=1*1py6gte*_gcl_au*ODIyMDYyOS4xNzQ5ODkxNDQz*_ga*MTE4MjMzMjIyNS4xNzAyNDYwMzU0*_ga_WVC36ZPB1Y*czE3NTU2NzU2NjQkbzMyNyRnMSR0MTc1NTY3NTY2NCRqNjAkbDAkaDE3NTE3Mjg3NDQ

The Conference Dinner is a set menu, vegetarian for all. If you have specific dietary requests, you must notify Charlotte via charlotte.debacker@uantwerpen.be before September 1st. No amendments can be made to the menu on the day of the dinner.

Visit to ZOO Planckendael – September 17th

The pre-conference visit will start at 16:00 and includes exclusive behind-the-scenes access to the bonobo research unit and the team studying black vultures.
The visit is completely free of charge, thanks to the generosity of ZOO Planckendael — you only need to cover your train ride from Antwerp to Mechelen and back (+/- 15 euros round trip, 45min travel time one-way)

On behalf of the organizing committee,

Charlotte De Backer, Professor Communication Sciences, and Carolyn Declerck
Sint-Jacobstraat 2, 2000 Antwerpen, Belgium
https://www.cognitionbehaviorevolution.nl/?p=1102

CONFERENCE ALERT – The Science of Consciousness Conference

April 6-11, 2026, Loews Ventana Canyon Resort, Tucson Arizona

The Science of Consciousness ('TSC') is an interdisciplinary conference emphasizing rigorous approaches to the study of consciousness and its place in the universe. Topical areas include neuroscience, philosophy, psychology, cognitive science, biology, quantum physics and quantum brain biology, cosmology, meditation, altered states, artificial intelligence/machine consciousness, the nature of reality, culture and experiential phenomenology. Held annually since 1994, the TSC conference is now hosted by The Arizona Astrobiology Center, University of Arizona, and alternates yearly between Tucson, Arizona and held at various locations in Italy, Denmark, Japan, Sweden, Czech Republic, Hungary, Hong Kong, India, Finland, San Diego, Switzerland and Barcelona. The 32nd annual TSC will be held April 6-11, 2026, in Tucson Arizona. The conference is planned for in-person participation with online livestreaming. Live participation and broadcast will take place at the Loews Ventana Canyon Resort, a beautiful eco-lodge in the hills above Tucson, Arizona.
https://consciousness.arizona.edu/

NEWS

NATURE BRIEFING – The rule of thumb for primate brains

Primates with relatively long thumbs — including humans — tend to have larger brains than those with shorter thumbs, suggesting that the brain might have co-evolved with manual dexterity. In particular, the neocortex — a brain area involved

in cognition and planning — is larger in primates with long thumbs relative to their hand size. But, just because a species has long thumbs, doesn't mean they use their full potential — the 'longer thumb/bigger brain' trend holds true across primates, regardless of whether they use tools or not.
https://www.theguardian.com/science/2025/aug/26/primates-with-longer-thumbs-tend-to-have-bigger-brains-research-finds

NATURE BRIEFING – Research seems to do better on Bluesky

Posts about research on the nascent social network Bluesky receive substantially more attention than similar posts on X, formerly called Twitter. Researchers looked at hundreds of thousands of posts that linked to academic articles and found that those on Bluesky had much higher levels of interaction (such as likes and replies) than those on X, and tended to summarize research articles rather than just stating the name of the paper. "While X has primarily served as a dissemination tool, Bluesky may support a more interpretive, reflective mode of science communication," says information scientist and study co-author Er-Te Zheng.
https://www.nature.com/articles/d41586-025-02741-1

NATURE BRIEFING – The perfect pelvis for bipedalism

Two key structural changes to the ilium — a bone in the pelvis — during embryonic development allow humans to walk upright on two legs and accommodate giving birth to a big-brained baby. The first change rotates the ilium cartilage 90 degrees compared to that of other primates, which makes the pelvis short and broad. The second change is a delayed 'ossification' — replacement of the cartilage with bone cells — compared to other primates, which allows the cartilage to hold the shape of the pelvis as it grows.
https://www.nature.com/articles/d41586-025-02734-0

NEWS FROM SCIENCE – DNA from ancient bones reveals how Indigenous Americans got their mucus

Neanderthals and Denisovans passed along gene that provides a sticky shield against germs.
https://www.science.org/content/article/dna-ancient-bones-reveals-how-indigenous-americans-got-their-mucus

NEWS FROM SCIENCE – Study shows how the human pelvis was reshaped for upright walking

Comparisons of pelvic development in human and primate embryos reveals key steps in human evolution.
https://www.science.org/content/article/study-shows-how-human-pelvis-was-reshaped-upright-walking

SCIENCEADVISER – A snotty inheritance

Snot's nothing to sneeze at. The mucosal lining inside our bodies acts as a first line of defense against invading pathogens, and the genes that code for our mucus vary from people to people. Indigenous Americans, for example, have a specific variant of a key mucus-producing gene known as MUC19. In a recent paper in Science, researchers tracked the winding evolutionary path this variant took from its origins in Denisovans, to our close cousins the Neanderthals, and finally to modern humans.

Scientists discovered this gene through two different databases: one in which researchers screened genomes of our archaic ancestors for signals of gene "introgression"—when a gene jumps from one species or subspecies into another—and another in which they highlighted genes in Indigenous Americans that looked like they had undergone natural selection. They found that Indigenous people were far more likely than other groups to share this version of MUC19 with Neanderthals and Denisovans.

The scientists also noticed that in modern people with the borrowed gene, "there's this sort of Oreo cookie of Neanderthal pieces on the outside and a Denisovan core on the inside," according to the study's lead author, population geneticist Fernando Villanea. The simplest explanation, he says, is that Denisovans passed this gene to Neanderthals, who then passed it to modern humans.

The researchers don't know precisely what this variant does, but there's a good chance it affects some properties of mucus—its stickiness, or the cocktail of enzymes within it, perhaps—that made it especially beneficial for people as they first migrated into the Americas and encountered new diseases.
https://www.science.org/doi/10.1126/science.adl0882

SCIENCEADVISER – A big thumbs up

Primates with longer thumbs tend to have bigger brains—predominately because of an increase in the size of the neocortex, the seat of planning. "The fact that it isn't one of the other very important parts of the brain associated with motor control [such as the cerebellum] was really surprising," said one expert.
https://www.nature.com/articles/s42003-025-08686-5

SCIENCEADVISER – Lessons from Honeybees

Teamwork really does make the dream work, even when the logistics are a nightmare.
https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3003253

SCIENCEADVISER – Step by step toward bipedalism

Bipedalism is one of the defining features of humans. Our pelvises—and those of other extinct, upright-walking hominins—underwent quite a drastic evolutionary change from our arboreal forebears. A new study catalogues those changes at a granular genetic and anatomical level, shedding light on how and when this transformation happened and the forces that drove it.

Most primate pelvises feature a pair of tall, narrow bones that flank the spine and lie flat against the back. Human pelvic bones are much shorter and broader, wrapping around the side of the body above the hip joint. Our pelvic bones also form a basin at the bottom of the torso, cradling the internal organs and, during pregnancy, the weight of the developing fetus.

Studying gene activity from donated human embryos and the anatomical development of human and nonhuman primates during the embryonic and fetal stages, the researchers noticed something curious: About 7 weeks into development, before the pelvic blades have turned to bone and are still in a cartilaginous form, a growth zone appears in the cartilage. In nonhuman primates, this zone is oriented parallel to the developing spine, helping the blades to grow tall. In humans, however, the growth zone rotates to become perpendicular to the spine, allowing the blades to grow broad and form the basin-shaped pelvis.

This change occurred sometime between 5 million and 8 million years ago, and may have also paved the way for a broader birth canal, allowing humans to give birth to larger-headed babies. “It’s speculative, but changes to the pelvis might have accommodated later brain size increases,” says lead author and evolutionary biologist Terence Capellini.
https://www.science.org/content/article/study-shows-how-human-pelvis-was-reshaped-upright-walking

SCIENCEADVISER – Early life crisis

Middle-aged people no longer score lower on measures of happiness—because younger folks’ mental health has steadily declined. “We find stress has been rising amongst most people under about the age of 40, and rising much more quickly the lower down the age range you go,” one researcher explained. “So we see a tilting of distress over time, with the younger getting more and more distressed.”
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0327858

THE CONVERSATION – How we move, gesture and use facial expressions: as unique as a fingerprint?

Research has shown that the way a person moves helps us recognise their identity.
https://theconversation.com/movement-signatures-how-we-move-gesture-and-use-facial-expressions-could-be-as-unique-as-a-fingerprint-262893

THE CONVERSATION – Can AI teach us how animals think?

The surprising ways in which machine learning is decoding the animal mind.
https://theconversation.com/can-ai-teach-us-how-animals-think-263545

THE CONVERSATION – Tiny Bookshop: why gamers are choosing to spend their free time simulating work

Philosophers have been trying to explain for decades why people like to simulate work in their free time.
https://theconversation.com/tiny-bookshop-why-gamers-are-choosing-to-spend-their-free-time-simulating-work-according-to-philosophy-263646

PUBLICATIONS

American Journal of Biological Anthropology

PAPERS

STEPHANIE L. CANINGTON et al – Ontogenetic Changes in Feeding Behaviors in Tufted Capuchins

Wild juvenile capuchins exhibit lower feeding success than adults, particularly for mechanically challenging foods, but ontogenetic changes in oral food processing behaviors related to this reduced success are unknown. We test how oral food processing efficiency varies across development in an experimental setting in tufted capuchins (Sapajus spp.). Further, we simulate discontinuous feeding observations to test the comparability of behaviors measured in wild and captive settings. Twenty-nine captive and semi-wild infants (n = 2), juveniles (n = 12), older juveniles (n = 4), and subadults-adults (n = 11) were video recorded while feeding at the Núcleo de Procriação de Macacos-Prego Research Center (Araçatuba, Brazil). Each animal was offered a series of five foods ranging in volume, toughness, and elastic modulus.

Measures of oral food processing inconsistently varied with sex; however, younger animals were less efficient in food processing than older individuals. Larger and more mechanically challenging foods were associated with longer feeding

sequence durations and an increased frequency of anterior ingestion, posterior ingestion, and chewing during a feeding sequence. Simulated discontinuous data from the first and last halves of the feeding sequences closely replicated continuous results.
Our results indicate younger capuchins have reduced oral food processing efficiency compared to adults through increased duration, behavioral frequencies, number of chews, and behavioral patterns. Further, our continuous and discontinuous comparisons support the use of discontinuous feeding behaviors from the first and last halves of the feeding sequence. We caution that researchers should be careful to capture infrequent behaviors when using discontinuous data.
https://onlinelibrary.wiley.com/doi/full/10.1002/ajpa.70108?campaign=woletoc

LYNN LEWIS-BEVAN, PHILIPPA HAMMOND, SUSANA CARVALHO & DORA BIRO – Predictors of Baboon Sleep Site Selection in Gorongosa National Park
This research aimed to understand how sleep site selection compared to other study sites in baboons living in a low-predator density, highly seasonal environment. We compared baboon troops in two distinct habitat types with different seasonal influences within the park, one that flooded annually and one that did not. We compared their sleep site use, reuse, and location relative to home range boundaries and areas of interest (AOIs) with each other and baboons in other areas to understand whether season, habitat familiarity, or position in the home range influenced sleep site choice.
Using GPS collar data taken at 15-min intervals from four gray-footed chacma baboons (Papio ursinus griseipes) in Gorongosa National Park, Mozambique, we established the location of sleep sites, home range boundaries, and AOIs, or places where the baboons repeatedly stopped for more than 15 min. Study subjects ranged either in dense woodland or in a seasonally flooded alluvial floodplain. We used a linear mixed-effects model to predict sleep site reuse based on distance to the habitat edge and AOIs, and Wilcoxon signed-rank tests to determine if morning or evening AOIs influenced sleep site location. We counted the number of reuses of each sleep site before and after the flooding period and compared this data to data in other baboon study sites.
We found that, as in other study sites with less seasonality and higher predation risk, baboons in Gorongosa change sleep site frequently and utilize multiple sleep sites throughout their home range, although they more often use sleep sites closer to the center of their home ranges. However, unlike other studies, we found that the location of the last AOI of the day more strongly predicted sleep site location than the first AOI of the next day in one troop, with baboons traveling further from their sleep site to their first AOI in the morning than from their last evening AOI to the sleep site.
Despite high seasonality and low predator density, baboons in Gorongosa National Park changed sleep sites frequently, as do other studied baboon troops in areas with high nocturnal predation rates. In addition, their propensity to sleep closer to the last AOI of the day may imply that they plan their daily paths toward their chosen sleep site, or that they sleep opportunistically at the end of the day. This study provides a baseline of behavioral data for comparison to other sites and future work in Gorongosa, where predator density continues to rise since the time of the study.
https://onlinelibrary.wiley.com/doi/full/10.1002/ajpa.70095

Biology Letters

PAPERS

SARAH M. KEESOM et al – Hidden in plain sound: the scientific potential of house mouse squeaks
The house mouse (Mus musculus) is an emerging model organism for the study of vocal communication. While mice emit a diversity of calls, most publications on adult mouse vocalizations primarily focus on ultrasonic vocalizations and only a small proportion include other vocalizations, like squeaks. The representation of squeaks in the literature is not an accurate reflection of their behavioural prevalence, however. Squeaks are common features of the mouse vocal repertoire, emitted under a range of circumstances. In this review, we synthesize the available evidence on mouse squeaks, demonstrating that squeaks are social vocalizations. Although their presence in social situations is evident, the extent to which squeaks convey information about the vocalizer and affect listener behaviour across different social contexts has yet to be thoroughly studied. Exploring the nuanced social functions of squeaks and correcting the publication bias that favours ultrasonic vocalizations will require a coordinated research effort, and we provide several recommendations for meeting these goals. Finally, we highlight the potential of the mouse squeak as an instrument for research beyond ethology, including to investigate the neural basis of vocal communication and conditions that impact communication in humans.
https://royalsocietypublishing.org/doi/10.1098/rsbl.2025.0333

Current Biology

PAPERS

OLIVIA C. MEISNER et al – Diverse and flexible strategies enable successful cooperation in marmoset dyads
In humans, cooperation relies on advanced social cognition, but the extent to which these mechanisms support cooperation in nonhuman primates remains unclear. To investigate this, we examined freely moving marmoset dyads in a cooperative lever-pulling task. Marmosets successfully coordinated actions, relying on social vision rather than environmental cues. Blocking visual access or replacing the partner with an automated agent disrupted coordination. Causal relationships between social gaze-and-pull actions revealed both gaze-dependent and gaze-independent strategies. Cooperation

depended on social relationships, including dominance, kinship, and sex. Remarkably, marmosets adapted strategies based on partner identity, indicating rapid social learning and memory. Altogether, these findings show that flexible, cognitively driven cooperation extends more broadly across primates than previously recognized, informing our understanding of cooperative behavior's mechanisms and evolution.
https://www.cell.com/current-biology/abstract/S0960-9822(25)01036-X

eLife

PAPERS

RICK A. ADAMS et al – Computational neurodevelopment: infant decision-making in changing environments

In recognition of the fact that most psychiatric conditions have neurodevelopmental origins, there is an increasing interest in applying the methodological and conceptual approaches from computational psychiatry to developmental cohorts. However, the challenge of acquiring and modelling behavioural responses in very young infants has thus far proven difficult to overcome. To address this we developed a novel gaze-contingent, cued-reversal paradigm that allowed 6-10 month old infants to make overt behavioural responses to assess learning of expectations and updating of behaviour in response to change. We then fit computational models to infant behaviour and, for the first time, were able to validate the winning model to the same standards as would be expected of adults (e.g. good parameter recoverability, model identifiability and simulated behavioural responses). Similar to prior findings in adults, model-based prediction error measures correlated with post-switch increases in pupil size; consistent with noradrenaline's hypothesised role in learning about change. Data-driven clustering based on model parameters revealed two infant behavioural subtypes hidden within the data; one with a perseverating profile and the other with a more exploratory decision-making pattern. This approach sheds new light on the 'classic' finding that all infants under 12 months tend to perseverate. Crucially, there were no significant differences in age between the clusters, but differences in terms of adaptive skills and temperament measured via gold-standard developmental assessments. These results prime the field for infant computational psychiatry, demonstrating that we can reliably fit models to infant data and that the parameters from such models can identify subgroups with distinct cognitive profiles that are superior to those derived from the behavioural data alone.
{Either this is an important leap forward in our understanding of the effect of neurodevelopment on individual psychology, or there is going to be a big, messy retraction coming. I can't work out which it will be.}
https://elifesciences.org/reviewed-preprints/106725

Frontiers in Ecology and Evolution

PAPERS

ÁNGELES OSSORIO et al with SUSANA CARVALHO – Evolution of craniofacial shape in relation to sexual dimorphism in Theropithecus and Papio

Sexual dimorphism in cranial morphology is a significant aspect of primate evolution, providing insights into evolutionary pressures and mating systems in different species. This study focuses on cranial sexual dimorphism in Papio and Theropithecus, two closely related genera within the tribe Papionini.
Using geometric morphometric techniques, we analyzed 570 cranial specimens from both genera, with data sourced from various studies and repositories. Thirty craniofacial landmarks were defined and analyzed through Geometric Morphometrics tools to evaluate shape variation.
Our findings reveal distinct morphological clusters for each genus and sex, with Papio and Theropithecus exhibiting significant sexual dimorphism. The results distinguish genera and sex-based groups, indicating differential impacts of size on shape across groups. The findings suggest that while sexual dimorphism is stable in magnitude within each genus, the specific morphological manifestations differ.
This research advances our understanding of the evolutionary mechanisms driving sexual dimorphism and emphasizes the need for further studies to explore the genetic and environmental factors influencing these differences. The innovative approach and comprehensive dataset provide a robust framework for future investigations into primate cranial morphology and its evolutionary implications.
https://www.frontiersin.org/journals/ecology-and-evolution/articles/10.3389/fevo.2025.1537474/full

Frontiers in Psychology

PAPERS

LING PU, SERGEY KISELEV & NINGKUN XIAO – Language and cognitive function in children: a narrative review of neural, behavioral, and developmental evidence

Language is not merely a conduit for thought-it plays an active, constitutive role in shaping cognitive development. This narrative review synthesizes interdisciplinary findings across bilingualism, theory of mind, developmental disorders (DLD and ASD), and cross-cultural studies to propose a dynamic, context-sensitive model of the language-cognition relationship. We argue that language functions not only as a cognitive tool but as a cognitive architect, influencing the structure and function of neural networks supporting executive function and social cognition. Evidence from behavioral and neuroimaging studies reveals bidirectional and developmentally contingent interactions between language and cognition, moderated by linguistic

structure, developmental timing, and sociocultural context. By examining both typical and atypical populations, we challenge modular and unidirectional models, advocating instead for integrative frameworks that capture the diversity and plasticity of human cognition. We conclude with a roadmap for future research, emphasizing longitudinal, cross-linguistic, and translational approaches. This work calls for a rethinking of language's role-not as a passive reflection of mind, but as its formative force.
https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2025.1666719/full

Nature

NEWS

Research posts on Bluesky are more original — and get better engagement
Bluesky posts about science garner more likes and reposts than similar ones on X.
https://www.nature.com/articles/d41586-025-02741-1

How humans became upright: key changes to our pelvis found
Genetic and anatomical data reveal how the human pelvis acquired its unique shape, enabling our ancestors to walk on two legs.
https://www.nature.com/articles/d41586-025-02734-0

ARTICLES

CAMILLE BERTHELOT – How the pelvis evolved to enable human bipedalism
Analyses of pelvis development in humans and other primates reveal how changes in bone-patterning processes helped humans to gain the ability to walk upright.
https://www.nature.com/articles/d41586-025-02424-x

PAPERS

GAYANI SENEVIRATHNE et al – The evolution of hominin bipedalism in two steps
Bipedalism is a human-defining trait. It is made possible by the familiar, bowl-shaped pelvis, whose short, wide iliac blades curve along the sides of the body to stabilize walking and support internal organs and a large-brained, broad-shouldered baby. The ilium changes compared with living primates are an evolutionary novelty. However, how this evolution came about remains unknown. Here, using a multifaceted histological, comparative genomic and functional genomic approach, we identified the developmental bases of the morphogenetic shifts in the human pelvis that made bipedalism possible. First, we observe that the human ilium cartilage growth plate underwent a heterotopic shift, residing perpendicular to the orientation present in other primate (and mouse) ilia. Second, we observe heterochronic and heterotopic shifts in ossification that are unlike those in non-human primate ilia or human long bones. Ossification initiates posteriorly, resides externally with fibroblast (and perichondral) cells contributing to osteoblasts, and is delayed compared with other bones in humans and with primate ilia. Underlying these two shifts are regulatory changes in an integrated chondrocyte–perichondral–osteoblast pathway, involving complex hierarchical interactions between SOX9–ZNF521–PTH1R and RUNX2–FOXP1/2. These innovations facilitated further growth of the human pelvis and the unique formation of the ilium among primates.
https://www.nature.com/articles/s41586-025-09399-9

Nature Communications

PAPERS

TROY M. LAPOLICE, MATTHEW P. WILLIAMS & CHRISTIAN D. HUBER – Modeling the European Neolithic expansion suggests predominant within-group mating and limited cultural transmission
The Neolithic Revolution initiated a pivotal change in human society, marking the shift from foraging to farming. Historically, the underlying mechanisms of agricultural expansion have been a topic of debate, centered around two primary models: cultural diffusion, involving the transfer of knowledge and practices, and demic diffusion, characterized by the migration and replacement of populations. More recently, ancient DNA analyses have revealed significant ancestry changes during Europe's Neolithic transition, suggesting a primarily demic expansion. Nonetheless, the presence of 10-15% hunter-gatherer ancestry in modern Europeans indicates cultural transmission and between-group mating were additional contributing factors. Here, we integrate mathematical models, agent-based simulations, and ancient DNA analysis to dissect and quantify the roles of cultural diffusion and between-group mating in farming's expansion. Our findings indicate limited cultural transmission and predominantly within-group mating. Additionally, we challenge the assumption that demic expansion always leads to ancestry turnover. These results offer insights into early agricultural society through the integration of ancient DNA with archaeological models.
https://www.nature.com/articles/s41467-025-63172-0

Nature Communications Biology

PAPERS

JOANNA BAKER, ROBERT A. BARTON & CHRIS VENDITTI – Human dexterity and brains evolved hand in hand

Large brains and dexterous hands are considered pivotal in human evolution, together making possible technology, culture and colonisation of diverse environments. Despite suggestions that hands and brains coevolved, evidence remains circumstantial. Here, we reveal a significant relationship between relatively longer thumbs – a key feature of precision grasping - and larger brains across 95 fossil and extant primates using Bayesian phylogenetic methods. Most hominins, including Homo sapiens, have uniquely long thumbs, yet they and other tool-using primates conform to the broader primate relationship with brain size. Within the brain, we surprisingly find no link with cerebellum size, but a strong relationship with neocortex size, perhaps reflecting the role of motor and parietal cortices in sensorimotor skills associated with fine manipulation. Our results emphasise the role of manipulative abilities in brain evolution and reveal how neural and bodily adaptations are interconnected in primate evolution.

https://www.nature.com/articles/s42003-025-08686-5

Nature Neuroscience

PAPERS

MATS W. J. VAN ES et al – Large-scale cortical functional networks are organized in structured cycles

The brain seamlessly performs a diverse set of cognitive functions like attention, memory and sensory processing, yet it is unclear how it ensures that each of these is fulfilled within a reasonable period. One way in which this requirement can be met is if each of these cognitive functions occurs as part of a repeated cycle. Here we studied the temporal evolution of canonical, large-scale, cortical functional networks that are thought to underlie cognition. We showed that, although network dynamics are stochastic, the overall ordering of their activity forms a robust cyclical pattern. This cyclical structure groups states with similar function and spectral content at specific phases of the cycle and occurs at timescales of 300–1,000 ms. These results are reproduced in five large magnetoencephalography datasets. Moreover, we show that metrics that characterize the cycle strength and speed are heritable and relate to age, cognition and behavioral performance. These results show that the activations of a canonical set of large-scale cortical functional networks are organized in an inherently cyclical manner, ensuring periodic activation of essential cognitive functions.

https://www.nature.com/articles/s41593-025-02052-8

NPJ Artificial Intelligence

PAPERS

YUHENG WU et al – How large language models encode theory-of-mind: a study on sparse parameter patterns

This paper investigates the emergence of Theory-of-Mind (ToM) capabilities in large language models (LLMs) from a mechanistic perspective, focusing on the role of extremely sparse parameter patterns. We introduce a novel method to identify ToM-sensitive parameters and reveal that perturbing as little as 0.001% of these parameters significantly degrades ToM performance while also impairing contextual localization and language understanding. To understand this effect, we analyze their interactions with core architectural components of LLMs. Our findings demonstrate that these sensitive parameters are closely linked to the positional encoding module, particularly in models using Rotary Position Embedding (RoPE), where perturbations disrupt dominant frequency activations critical for contextual processing. Furthermore, we show that perturbing ToM-sensitive parameters affects LLMs' attention mechanism by modulating the angle between queries and keys under positional encoding. These insights provide a deeper understanding of how LLMs acquire social reasoning abilities, bridging AI interpretability with cognitive science.

https://www.nature.com/articles/s44387-025-00031-9

CORRECTIONS

ANDREA L. PERMANA et al with CAREL P. VAN SCHAIK & CAROLINE SCHUPPLI – Publisher Correction: Observational social learning of "know-how" and "know-what" in wild orangutans: evidence from nest-building skill acquisition

In the version of the article initially published, three references were missing that should have been cited in the sixth and seventh paragraphs of the Introduction (Whiten, A. https://doi.org/10.1016/j.plrev.2022.10.003 (2022); Tennie, C. et al. https://doi.org/10.1007/s10539-020-09769-9 (2020); and Tennie, C. The earliest tools and cultures of hominins. in Oxford Handbook of Cultural Evolution (Oxford University Press, 2023). The references have been inserted in the HTML and PDF versions of the article.

https://www.nature.com/articles/s42003-025-08665-w

ORIGINAL ARTICLE: ANDREA L. PERMANA et al with CAREL P. VAN SCHAIK & CAROLINE SCHUPPLI – Observational social learning of "know-how" and "know-what" in wild orangutans: evidence from nest-building skill acquisition [EAORC BULLETIN 1,147]

https://www.nature.com/articles/s42003-025-08217-2

Nature Scientific Data

PAPERS

YUE WANG et al – Single-neuron datasets for linguistic and semantic processing in the human amygdala and hippocampus

Understanding linguistic and semantic processing in the human brain involves exploring intricate neural networks. However, it remains unclear whether and how the amygdala and hippocampus are involved in these processes. Here, we recorded single-neuron activity from the human amygdala and hippocampus while neurosurgical patients with intractable epilepsy performed various language tasks. Specifically, we recorded from 68 neurons in 7 patients for the visual language localizer task, 115 neurons in 12 patients for the auditory language localizer task, 88 neurons in 9 patients for the TIMIT task, and 51 neurons in 4 patients for the natural story task. Together, our comprehensive dataset with a considerable population of neurons can facilitate multifaceted investigation of language and semantic processing with the highest spatial and temporal resolution currently available in humans.
https://www.nature.com/articles/s41597-025-05839-3

Nature Scientific Reports

PAPERS

TAMÁS KELLER & PÉTER SZAKÁL – The positive effect of moral self-concept on fraudulent behavior and the need for moral cleansing

Both moral cleansing and moral licensing theories suggest that moral self-concept positively influences subsequent engagement in fraudulent behavior. Specifically, a decrease in moral self-concept reduces dishonesty (moral cleansing), while an increase promotes it (moral licensing). However, within these theoretical frameworks, prior research has rarely measured moral self-concept directly, and even fewer studies have manipulated it experimentally. As a result, a direct test of the role of self-concept in these theories is still lacking. This study addresses this gap by experimentally manipulating and directly measuring moral self-concept to examine its relation to subsequent fraudulent behavior. A large-scale randomized experiment was conducted among Hungarian university students, using a subtle priming intervention that urged participants to recall their past moral transgressions. This manipulation effectively lowered moral self-concept, which in turn reduced dishonest behavior, as measured by the fraudulent misreporting of numbers rolled in a monetarily incentivized "die-under-the-cup" task. This causal chain aligns with the theory of moral cleansing. Using the randomized treatment as an instrument, the study has identified a positive causal effect of moral self-concept on fraudulent behavior, indicating that a decrease in moral self-concept reduces fraudulent behavior.
https://www.nature.com/articles/s41598-025-16403-9

KAYLA KOLFF et al with SIMONE PIKA – Insect applications to open wounds by chimpanzees in the wild: first insights from East African chimpanzees

Medicative behaviours are widespread among animals, and chimpanzees in the wild may exhibit a newly identified form involving the application of insects to open wounds. To date, insect applications to wounds have only been reported in a single community of Central chimpanzees (Pan troglodytes troglodytes). Thus, we report observations of similar behaviours in Eastern chimpanzees (P. t. schweinfurthii) of the Ngogo chimpanzee population, in Kibale National Park, Uganda. Between November 2021 and July 2022, we observed six individuals (three males, three females) applying flying insects to their own wounds (N = 5) and, in one instance, to the wound of a conspecific. These observations demonstrate a generally consistent sequential pattern of insect applications in both Eastern and Central chimpanzees. Although the extent and potential medicinal function of this behaviour remain unclear, we propose three hypotheses to inform future research, focusing on insect selectivity, social transmission, and prosociality. In conclusion, the findings suggest that insect applications are more widespread than currently documented, and provide a basis for investigating their acquisition, social dynamics, and potential relevance to the evolution of human medicinal behaviours.
https://www.nature.com/articles/s41598-025-16582-5

ANDREW W. LO, RUIXUN ZHANG & CHAOYI ZHAO – The evolution of discrimination under finite memory constraints

We develop an evolutionary model for individual discriminatory behavior that emerges naturally in a mixed population as an adaptive strategy. Our findings show that, when individuals have finite memory and face uncertain environments, they may rely on prior biases and observable group traits to make decisions, changing their discriminatory practices. We also demonstrate that a finite memory is a consequence of natural selection because it leads to higher fitness in dynamic environments with mutations. This adaptability allows individuals with finite memory to better respond to environmental variability, offering a potential evolutionary advantage. Our study suggests that memory constraints and environmental changes are critical factors in sustaining biased behavior, suggesting insights into the persistence of discrimination in real-world settings and possible mitigation strategies across fields, including education, policymaking, and artificial intelligence.
https://www.nature.com/articles/s41598-025-17089-9

New Scientist

NEWS

Our brain doesn't actually reorganise itself after an amputation
Previous research in macaques suggests that part of the brain reorganises itself when a limb is removed, but now a study in people has turned that idea on its head.
https://www.newscientist.com/article/2493367-our-brain-doesnt-actually-reorganise-itself-after-an-amputation/

ARTICLES

COLIN BARRAS – An incredible Denisovan skull is upending the story of human evolution
An ancient skull has finally shown us what the Denisovans looked like. Now it turns out they, not Neanderthals, might be our closest relatives, redrawing our family tree and transforming the hunt for Ancestor X
https://www.newscientist.com/article/2492337-an-incredible-denisovan-skull-is-upending-the-story-of-human-evolution/

CHRIS SIMMS – We will soon be able to talk with other species. Which will be first?
Scientists have long and studiously avoided claiming that other animals have language. Now, using the power of AI, they are on the verge of deciphering one
https://www.newscientist.com/article/2492442-we-will-soon-be-able-to-talk-with-other-species-which-will-be-first/

PLoS Biology

PAPERS

GOLNAR GHAROONI-FARD et al – Honeybees adapt to a range of comb cell sizes by merging, tilting, and layering their construction
Honeybees are renowned for their skills in building intricate and adaptive combs that display notable variation in cell size. However, the extent of their adaptability in constructing honeycombs with varied cell sizes has not been thoroughly investigated. We use 3D-printing and X-ray microscopy to quantify honeybees' capacity in adjusting the comb to different initial conditions. Our findings suggest three distinct comb construction modes in response to foundations with varying sizes of 3D-printed cells. For smaller foundations, bees occasionally merge adjacent cells to compensate for the reduced space. However, for larger cell sizes, the hive uses adaptive strategies such as tilting for foundations with cells up to twice the reference size and layering for cells that are three times larger than the reference cell. Our findings shed light on honeybees adaptive comb construction abilities, significant for the biology of self-organized collective behavior, as well as for bio-inspired engineered systems.
https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3003253

PLoS One

PAPERS

DAVID G. BLANCHFLOWER, ALEX BRYSON & XIAOWEI XU – The declining mental health of the young and the global disappearance of the unhappiness hump shape in age
Across many studies subjective well-being has followed a U-shape in age, declining until people reach middle-age, only to rebound subsequently. Ill-being has followed a mirror-imaged hump-shape. Using graphical and regression analyses of repeat cross-sectional micro-data from the United States and the United Kingdom, we show this empirical regularity has been replaced by a monotonic decrease in ill-being by age. The reason for the change is the deterioration in young people's mental health both absolutely and relative to older people. Pooling Global Minds data across 44 countries, including the United States and the United Kingdom, over the period 2020–2025 we confirm that ill-being is no longer hump-shaped in age but now decreases in age. JEL Codes: I31; I38
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0327858

RYOKO UNO & SHU IMAIZUMI – Sensing minimal self in sentences involving the speaker
The role of language in the narrative self is well-known, but does it also affect the minimal self? We investigated whether variations in sentence structure affect the speaker's sense of the minimal self. Previous research has examined how third-person subject expressions influence interpretations of agency, particularly in causal contexts. We examined whether expressing the first-person subject's involvement in causation or perception events influences the speaker's sense of agency and ownership, key components of the minimal self. Participants completed an online experiment using psychological rating scales to evaluate Japanese sentences with varying degrees of speaker involvement, as if they had uttered them. Each sentence varied in whether and how it encoded causation or perception. We analyzed Japanese data since, in addition to perceiver-prominent sentences (e.g., [watashi ga] hoshi o mita, "I saw a star"), Japanese has perceiver-stimulus-prominent sentences (e.g., [watashi ni] hoshi ga mieta, "A star was visible to me"/ "I could see a star"), which also foreground the first-person perceiver in a double subject construction. We found that the speaker's sense of agency was significantly lower in sentences where either causation or perception was absent (e.g., hoshi ga deteita, "A star was out") compared to sentences where either was present. Agency was also significantly higher for perceiver-prominent sentences than for perceiver-

stimulus-prominent sentences. Regarding ownership, it was also significantly higher for perceiver-prominent sentences. Whether ownership was significantly higher for perceiver-stimulus-prominent sentences than for those lacking causation or perception varied with the perceived stimulus. These results suggest that variations in linguistic structure can distinctly impact the senses of agency and ownership. In cognitive linguistics, certain sentence structures are analyzed to reflect how subjectively the speaker is construed. Our findings suggest that differences in agency and ownership provide an empirical basis for this argument, grounded in embodied experience.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0330620

TUUKKA TÖRÖ, ANTTI SUNI & JURAJ ŠIMKO – Neighbors and relatives: How do speech embeddings reflect linguistic connections across the world?

Investigating linguistic relationships on a global scale requires analyzing diverse features such as syntax, phonology and prosody, which evolve at varying rates influenced by internal diversification, language contact, and sociolinguistic factors. Recent advances in machine learning (ML) offer complementary alternatives to traditional historical and typological approaches. Instead of relying on expert labor in analyzing specific linguistic features, these new methods enable the exploration of linguistic variation through embeddings derived directly from speech, opening new avenues for large-scale, data-driven analyses.

This study employs embeddings from the fine-tuned XLS-R self-supervised language identification model voxlingua107-xls-r-300m-wav2vec, to analyze relationships between 106 world languages based on speech recordings. Using linear discriminant analysis (LDA), language embeddings are clustered and compared with genealogical, lexical, and geographical distances. The results demonstrate that embedding-based distances align closely with traditional measures, effectively capturing both global and local typological patterns. Challenges in visualizing relationships, particularly with hierarchical clustering and network-based methods, highlight the dynamic nature of language change.

The findings show potential for scalable analyses of language variation based on speech embeddings, providing new perspectives on relationships among languages. By addressing methodological considerations such as corpus size and latent space dimensionality, this approach opens avenues for studying low-resource languages and bridging macro- and micro-level linguistic variation. Future work aims to extend these methods to underrepresented languages and integrate sociolinguistic variation for a more comprehensive understanding of linguistic diversity.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0330755

DAVIDE TANASI et al – Unearthing prehistoric diets: First evidence of horse meat consumption in Early Bronze Age Sicily

This paper presents the earliest documented evidence for the presence and consumption of horse meat in Early Bronze Age Sicily, significantly revising previous understandings of equid use on the island. Multidisciplinary analyses involving proteomics and lipidomics were performed on ceramic vessels from the Castelluccian settlement at Polizzello Mountain (Caltanissetta), revealing residues consistent with equine-derived substances. Proteomic data unequivocally identified equine serum albumin in multiple pottery fragments, demonstrating active consumption or processing of horse-derived substances within a ceremonial or dietary context. Lipid residues further supported this interpretation, indicating the presence of animal fats and vegetable-derived substances within the pottery. These findings substantially alter existing models of horse domestication, utilization, and dietary practices in prehistoric Sicily, suggesting a far earlier and more complex human-equid relationship. Furthermore, the integration of biomolecular data enhances our understanding of intercultural interactions, ritual behaviors, and economic strategies in the central Mediterranean during the third millennium BCE.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0330772

OLIVIER TOUZÉ & VEERLE ROTS – When the hammer drops: Identification of knapping techniques in blade production based on a multi-scale study of knapping traces

As defined by J. Tixier, a knapping technique corresponds to the concrete means used to detach a flake. It involves three essential parameters: the tool(s) used, the mode of force application and the behaviour of the body which includes the knapping gesture. In order to identify the knapping techniques used in prehistory, previous studies have mainly focused on macroscopic features on the blanks, but difficulties have often been encountered, leading to mixed results. We present the results of an experimental study that incorporates the macroscopic and microscopic level to examine and characterize knapping traces and integrates a hierarchical cluster analysis to refine identifications. Microscopic traces prove to be complementary to macroscopic traces and to constitute a key aspect for the identification of prehistoric knapping techniques. By focusing on the mode of force application and the contact tool, we show that each parameter of the knapping technique needs to be identified separately. Based on this principle, we demonstrate that it is possible, on the basis of specific sets of attributes, to identify blades produced by direct and indirect percussion and pressure, as well as to differentiate between the use of harder and softer contact tools, although further characterization of the latter does not seem possible without the identification and analysis of knapping-related residues.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0329848

BORJA GONZÁLEZ-RABANAL et al – Sulfur as a proxy for identifying coast-inland human mobility in Northern Iberia during Late Prehistory

Population movements constitute a significant driver of cultural change in prehistoric societies. In recent years, sulfur isotopes have emerged as a valuable approach for distinguishing human/animal provenance. However, the scarcity of sulfur isotope studies and the lack of baseline maps predicting their variations in the landscape limit our current knowledge about mobility behaviours. Here, we first present the δ34S isotope values of 142 human and animal bone collagen samples from coastal and inland funerary sites located in northern Iberia. Second, to apply a multivariate machine-learning regression and a random forest model to predict sulfur isotope variations across Iberia, we compiled the sulfur isotope data from 554 specimens of 41 archaeological locations from Holocene contexts. Our research demonstrated that population movement between coastal and inland locations is observable through differences in the δ34S isotope values of individuals linked to their respective environments, suggesting migrations on both sides of the Cantabrian mountain range. The resulting isoscape model demonstrates that sulfur isotope patterns are highly predictable, with 82% of the sulfur isotope variation explained by only four variables: elevation, Bouguer anomaly, distance from the coast, and strontium isotope values. While the model is highly accurate for regions with large amounts of data, such as northern Iberia, Central and Eastern Iberia still require more sulfur isotope data to predict isoscapes.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0330249

SAMI ÇOKSAN & AHMED FARUK SAĞLAMÖZ – Egalitarian norms can deflate identity-bias link in real-life groups

Social identity theory posits that group membership influences individual behavior by fostering a sense of belonging and promoting normative conformity within groups. While much research has shown a link between ingroup identification and ingroup bias, the role of ingroup norms in moderating this association remains less explored. Specifically, how varying norms (egalitarianism vs. favoritism) affect bias in individuals with high ingroup identification requires further investigation. To address this gap, we examined whether ingroup norms alter the strength of the identification-bias relationship in two studies (N = 322). We investigated how non-WEIRD real-life group members' ingroup bias was driven by their identification levels and perceived ingroup norm in Study 1 with a correlational design, and we experimentally manipulated ingroup norms in a simulated group discussion in Study 2. Both studies demonstrated that under a favoritism norm, participants with high ingroup identification showed greater ingroup bias, whereas this bias was deflated under an egalitarianism norm. However, contrary to our hypothesis, we did not find evidence that participants with high ingroup identification showed lower ingroup bias under the egalitarianism norm. We discuss these findings and suggest that fostering egalitarian norms within groups may reduce ingroup bias and discrimination, offering insight for interventions aimed at promoting intergroup harmony.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0330484

CORRECTIONS

RAMON GUEVARA ERRA & JUDIT GERVAIN – Correction: The Efficient Coding of Speech: Cross-Linguistic Differences

In the Stimuli subsection of the Analysis 1, a reference is omitted from the first sentence of the first paragraph.
The correct sentence is: The speech samples consisted of sentences recorded by female native speakers in Dutch, English, Japanese, Marathi, Polish, Spanish and Turkish, all obtained from previous studies on the prosodic and rhythmic properties of these languages [Dutch, English, Japanese, Polish, Turkish (Nazzi et al., 1998); Marathi [22]; Spanish [23].
The reference is: Nazzi, T., Bertoncini, J., & Mehler, J. (1998). Language discrimination by newborns: Towards an understanding of the role of rhythm. Journal of Experimental Psychology: Human Perception and Performance, 24, 756–766.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0331147
ORIGINAL PAPER: RAMON GUEVARA ERRA & JUDIT GERVAIN – The Efficient Coding of Speech: Cross-Linguistic Differences [EAORC BULLETIN 663]
http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0148861

Proceedings of the Prehistoric Society

PAPERS

JUDITH M. GRÜNBERG et al – The Use of Roots and Burrs for Hafting Non-Shaft-Hole Adzeheads by Mesolithic and Neolithic Hunter-Fisher-Gatherers in Europe

Mesolithic hunter-fisher-gatherers manufactured many kinds of composite tools, among them a variety of adzes and axes with antler, bone, stone or wood heads and other insets. The adzes and axes were constructed from two or three parts, sometimes including a fixed or a separate one- or two-part intermediate piece between handle and blade. These sleeves were made of different raw materials and shapes. This paper presents new results on wooden sleeves, especially the one-part sockets, which seem to have been used exclusively by the Mesolithic and Neolithic foraging cultures in Europe. Sleeves from 15 sites in Germany, Latvia, Poland and Russia are described and discussed. Attention is drawn to the use of roots and burrs (burls) which were utilised for the sleeves, illustrating the detailed technical and material knowledge of these post-glacial populations.
https://www.cambridge.org/core/journals/proceedings-of-the-prehistoric-society/article/abs/use-of-roots-and-burrs-for-hafting-nonshafthole-adzeheads-by-mesolithic-and-neolithic-hunterfishergatherers-in-europe/6B84EE382B1EC69A0D7594C224CD2CFF

CLIVE GAMBLE – Why Africa has no Houses and Other Questions for Deep History

Africa has the oldest artefacts and evidence for fire. It is where Homo sapiens evolved and developed novel technologies before dispersing into the rest of the world some 70ka ago. There is, however, no reliable evidence in Africa for artificial shelters and dwellings older than 20ka. This paper sets out to understand why such basic architecture appears so late in a continent with great environmental variation and a deep history of innovation. The approach combines evidence from micro and macro scales of analysis. The micro scale uses ethnoarchaeological studies of Africa's small circular houses to examine how and why gender separates their occupants both spatially and through their access to food stores. At the macro scale, the absence of food stores among Africa's extant hunters and gatherers is predicted from environmental factors that apply to the whole continent. Without food storage there are no significant dwellings. I then turn to the archaeological evidence for the appearance of dwellings and storage from Africa and the Levant, a contiguous region where huts are known at 23ka. The evidence for dwellings in Europe is then considered. While dwellings are earlier here than in Africa and the Levant none are reliably older than 32ka. They are found with evidence for food storage. The paper explores the implications of this chronological framework for a major transition in hominin evolution that, before agriculture, involved intensification in subsistence combined with storage, and a novel architecture of gendered spaces now found worldwide.
https://www.cambridge.org/core/journals/proceedings-of-the-prehistoric-society/article/why-africa-has-no-houses-and-other-questions-for-deep-history/F7FDE6DB62059212A353FE78916868CE

Science

PAPERS

FERNANDO A. VILLANEA et al – The MUC19 gene: An evolutionary history of recurrent introgression and natural selection

Modern human genomes contain a small number of archaic variants, the legacy of past interbreeding events with Neanderthals and Denisovans. Most of these variants are putatively neutral, but some archaic variants found in modern humans have been targets of positive natural selection and may have been pivotal for adapting to new environments as humans populated the world. American populations encountered a myriad of novel environments, providing the opportunity for natural selection to favor archaic variants in these new environmental contexts. Indigenous and admixed American populations have been understudied in this regard but present great potential for studying the underlying evolutionary processes of local adaptation.

Previous studies identified the gene MUC19—which codes for a mucin involved in immunity—as a candidate for introgression from Denisovans as well as a candidate for positive natural selection in present-day Indigenous and admixed American populations. Therefore, we sought to confirm and further characterize signatures of both archaic introgression and positive selection at MUC19, with particular interest in modern and ancient American populations.

We identify an archaic haplotype segregating at high frequency in most admixed American populations, and among ancient genomes from 23 ancient Indigenous American individuals who predate admixture with Europeans and Africans. We conclude that the archaic haplotype has undergone positive natural selection in these populations, which is tied to their Indigenous components of ancestry. We also find that modern admixed American individuals exhibit an elevated number of variable number tandem repeats (VNTRs) at MUC19, which codes for the functional domain of the MUC19 protein, where it binds to oligosaccharides to form a glycoprotein, a characteristic of the mucins. Remarkably, we find an association between the number of VNTRs and the number of introgressed haplotypes; individuals harboring introgressed haplotypes tend to have a higher number of VNTRs. In addition to the differences in VNTRs, we find that the archaic MUC19 haplotype contains nine Denisovan-specific, nonsynonymous variants found at high frequencies in American populations. Finally, we observed that the Denisovan-specific variants are contained in a 72-kb region of the MUC19 gene, but that region is embedded in a larger 742-kb region that contains Neanderthal-specific variants. When we studied MUC19 in three high-coverage Neanderthal individuals, we found that the Chagyrskaya and Vindija Neanderthals carry the Denisovan-like haplotype in its heterozygous form. These two Neanderthals also carry another haplotype that is shared with the Altai Neanderthals.

Our study identifies several aspects of the gene MUC19 that highlight its importance for studying adaptive introgression: One of the haplotypes that span this gene in modern humans is of archaic origin, and modern humans inherited this haplotype from Neanderthals who likely inherited it from Denisovans. Then, as modern human populations expanded into the Americas, our results suggest that they experienced a massive coding VNTR expansion, which occurred on an archaic haplotype background in MUC19. The functional impact of the variation at this gene may help explain how mainland Indigenous Americans adapted to their environments, which remains underexplored. Our results point to a complex pattern of multiple introgression events, from Denisovans to Neanderthals and Neanderthals to modern humans, which may have later played a distinct role in the evolutionary history of Indigenous American populations.
https://www.science.org/doi/10.1126/science.adl0882

Science Advances

PAPERS

MARGHERITA GIAMUNDO et al with PASCAL BELIN - Voice identity invariance by anterior temporal lobe neurons

The ability to recognize speakers by their voice despite acoustical variation plays a substantial role in primate social interactions. Although neurons in the macaque anterior temporal lobe (ATL) show invariance to face viewpoint, whether they also encode abstract representations of caller identity is not known. Here, we demonstrate that neurons in the voice-selective ATL of two macaques support invariant voice identity representations through dynamic population-level coding. These representations minimize neural distances across different vocalizations from the same individual while preserving distinct trajectories for different callers. This structure emerged from the coordinated activity of the broader neuronal ensemble, although a small subset of highly identity-selective neurons carried high identity information. Our findings provide a neural basis for voice identity recognition in primates and highlight the ATL as a key hub for integrating perceptual voice features into higher-level identity representations.
https://www.science.org/doi/10.1126/sciadv.adv7033

ANNA GRAFF et al with BALTHASAR BICKEL – Patterns of genetic admixture reveal similar rates of borrowing across diverse scenarios of language contact

When speakers of different languages are in contact, they often borrow features like sounds, words, or syntactic patterns from one language to the other. However, the lack of historical data has hampered estimation of this effect at a global scale. We overcome this hurdle by using genetic admixture and shared geohistorical location as a proxy for population contact. We find that language pairs whose speaker populations underwent genetic admixture or that are located in the same geohistorical area exhibit notable similar increases in shared linguistic patterns across world regions and different demographic relationships, suggesting a consistent trend in borrowing rates. At the same time, the effect varies strongly across specific linguistic features. This variation is only partly explained by cognitive differences in lifelong learnability and by social functions of signaling assimilation through borrowing, leaving much randomness in which specific features are borrowed. Additionally, we find that, for some features, admixture decreases sharing, likely reflecting signals of divergence (schismogenesis) under contact.
https://www.science.org/doi/10.1126/sciadv.adv7521

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