EAORC BULLETIN 1,180 – 25 January 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

JOHN TEMPLETON FOUNDATION – Free Will Breaks Free

In 2000, psychologist Eric Turkheimer codified the First Law of Behavior Genetics: "All human behavioral traits are heritable." It was a bracing conclusion, particularly in light of ages of the back-and-forth nature versus nurture debate. Now, a new study led by Emily Willoughby of the University of Minnesota Twin Cities surfaces an important and ironic exception to the rule. The team found that people's beliefs about free will seemed basically unconnected with those of their biological or adoptive parents.

{True, but there is a very simple explanation: belief or disbelief in free will is not a behavioural trait. It is a cognitive choice which has no useful effect on behaviour. Just like favourite colour or star sign, free will is an artificial thought-game, although with less relationship to actuality than either of the other two. Human beings are happy thinking about six impossible things before breakfast; this just happens to be one of them.}

https://www.templeton.org/news/free-will-breaks-free

NATURE BRIEFING – Dogs can learn new words by overhearing

Some gifted dogs can learn words for hundreds of objects and pick up new ones just by listening in to the conversations of human family members — abilities that put them on a par with infants at about 18 months old. Only a few animals, including bonobos (Pan paniscus) and an African grey parrot (Psittacus erithacus), have been observed to recognize objects through unique names. Learning words indirectly through watching human interactions is even harder because it requires following a person's gaze and, to some extent, understanding their intentions.
https://www.npr.org/2026/01/08/nx-s1-5667604/genius-dogs-learn-new-words-eavesdropping

NATURE BRIEFING – Clever cow uses tools for the best scratch

Veronika, a pet cow (Bos taurus) that lives on an Austrian farm, can use a utensil to scratch and groom parts of her body — the first documented instance of tool use in cattle. Over the years, she's advanced from sticks to implements as large and heavy as brooms, and swaps between using the handle and the bristles to scratch different areas of her body. The use of a single tool for more than one purpose has only been seen before in chimpanzees and humans, says cognitive biologist and study co-author Alice Auersperg.
https://www.cell.com/current-biology/fulltext/S0960-9822(25)01597-0

NATURE BRIEFING – Can 'toxic masculinity' be measured?

Researchers have attempted to put a number on the concept of 'toxic masculinity' — the idea that some stereotypically 'masculine' traits, such as dominance and aggression, can have damaging social impacts. Researchers defined eight indicators of toxic masculinity and applied them to the results of a large survey in New Zealand. Of more than 15,000 participants that identified as heterosexual males, the smallest group, at just 3.2%, held 'hostile toxic' views, such as that women seek to gain control over men and that "inferior groups should stay in their place". The group was made up mainly of marginalized, disadvantaged men.
https://psycnet.apa.org/fulltext/2027-02373-001.html

NATURE BRIEFING – Stencilled hand painting is oldest-known art

The outline of a hand discovered in an Indonesian cave has been dated to at least 67,800 years ago — the oldest known example of cave art in the world. The researchers who discovered the painting suggest that it was made using a stencil that was altered to give the shape a claw-like appearance. The finding provides circumstantial backing for a controversial theory that early humans had arrived in Sahul — the landmass that once encompassed modern-day Australia and New Guinea — by 65,000 years ago, around 15,000 years earlier than previously thought.
https://www.nature.com/articles/s41586-025-09968-y

NEWS FROM SCIENCE – No bull: This Austrian cow has learned to use tools

First evidence for tool use in cattle includes a skill previously seen only in humans and chimpanzees.
https://www.science.org/content/article/no-bull-austrian-cow-has-learned-use-tools

NEWS FROM SCIENCE – Ice age Europeans imported tools from distant lands, perhaps as souvenirs

Mementos may have reinforced vast social networks during turbulent times.
https://www.science.org/content/article/ice-age-europeans-imported-tools-distant-lands-perhaps-souvenirs

NEWS FROM SCIENCE – These ancient handprints may represent some of the world's first rock art

Hand stencils from a Southeast Asian cave predate Neanderthal cave art from Europe.
https://www.science.org/content/article/these-ancient-handprints-may-represent-some-world-s-first-rock-art

NEWS FROM SCIENCE – Flaw in brain-mapping technique may undercut neuroscience findings

Method used to probe link between brain circuits and disorders is unreliable, new study argue.
https://www.science.org/content/article/flaw-brain-mapping-technique-may-undercut-neuroscience-findings

NEWS FROM SCIENCE – Nearly one-third of social media research has undisclosed ties to industry

Industry-linked studies were also more likely to focus on particular topics, suggesting these ties may be skewing the field.
https://www.science.org/content/article/nearly-third-social-media-research-has-undisclosed-ties-industry-preprint-claims

NEWS FROM SCIENCE – Some guest editors pack special issues with their own articles

Thousands have penned more than one-third of a journal issue, raising conflict-of-interest concerns.

https://www.science.org/content/article/some-guest-editors-pack-special-issues-their-own-articles

SCIAM NEWS – Why consciousness is the hardest problem in science

Will brain science deliver answers about consciousness or hit another wall?
https://www.scientificamerican.com/article/what-is-consciousness-science-faces-its-hardest-problem-yet/

SCIAM NEWS – Your guide to 29 wildly different theories of consciousness

The many, many ways researchers hope to solve the toughest mystery in science.
https://www.scientificamerican.com/article/your-guide-to-29-wildly-different-theories-of-consciousness/

SCIENCEADVISER – Where did the human brain get its interneurons?

As the human brain evolved, its outermost layer—the cerebral cortex—accumulated a wealth of neurons unmatched by any other species. This expansion evolved an increase in the number of excitatory neurons, which have long been viewed as a major driver of primate brain evolution. But the human brain also possesses a vast repository of inhibitory interneurons, which repress the activity of other neurons. This key class helps shape brain circuits, potentially contributing to humans' impressive cognitive capacity.

But where did all these interneurons come from? Most originate from a part of the brain known as the subventricular zone, specifically a structure called the medial ganglionic eminence, which forms while the brain is still developing and vanishes during early childhood. In a new study, scientists identified a novel kind of progenitor cell that resides in this transitory region and is responsible for producing multiple types of interneurons. These progenitor cells appear to be evolutionary distinct, as they are abundant in humans but are absent in mice.

"Understanding how diverse interneurons arise from a shared progenitor pool and the extent to which fate plasticity is retained in immature migrating interneurons is critical," neuroscientists Antonela Bonafina and Laurent Nguyen noted in a related Science Perspective, since disruptions in these cells has been linked to neurodevelopment disorders like epilepsy, schizophrenia, and autism.

https://www.science.org/doi/10.1126/science.adw1803

SCIENCEADVISER – Watch the first evidence of cows using tools

If you think cattle aren't smart, Veronika the cow has one word for you: Moo. She'll also show you a skill so clever, only chimpanzees rival it in the animal kingdom. In a study published this week in Current Biology, researchers report that this Austrian bovine can use tools—and in a more complex way than most animals do.

Intrigued by a video of Veronika using a broom and rake to scratch herself, scientists traveled to the cow's home in southern Austria. There, they placed a heavy-duty deck brush in front of her in various orientations and recorded what happened. Over 70 trials, the cow almost always used the sweeper as a tool. She wrapped her long tongue around the handle, flipped it so the brush faced her body, and changed the length of the broom so the rough bristles scratched various hard-to-reach areas of her back.

In some cases, Veronika flipped the broom the other way, so the blunt handle end made contact with her body, allowing her to scratch more sensitive regions like her udder. Apart from humans, this ability to use a single tool for multiple purposes has only been seen in chimpanzees.

"I'm fully convinced that this is an outstanding example of tool use in cattle," said Jan Langbein, an applied ethologist. He hopes the work will inspire better living conditions for cows and other livestock. "These are clever and emotional animals," he said. "They deserve better than what we give them."

Co-author Antonio Osuna-Mascaró hopes the work will inspire scientists to pay more attention to livestock. "I think most animals are living a rich life and have something really interesting to tell us," he said. "We just have to ask the right questions."

https://www.science.org/content/article/no-bull-austrian-cow-has-learned-use-tools

SCIENCEADVISER – Researchers get a little too social

Researchers studying the impact of social media on society—everything from effects on teenagers' mental health to the spread of misinformation—often work with the companies that run these platforms. But these ties evidently run much deeper than the scientific record acknowledges. The extent of this lack of disclosure is "really shocking and completely unacceptable," one expert said.

https://www.science.org/content/article/nearly-third-social-media-research-has-undisclosed-ties-industry-preprint-claims

SCIENCEADVISER – Definitely a special issue

Guest editors of special journal issues have been abusing their powers by publishing an excessive number of their own papers, a study has found. "It's a landmark paper," said one expert. "It's showing that publishers are being negligent in not

enforcing their own rules on this. And this has created an opportunity for somebody who is unscrupulous and wants to boost their publication profile."
https://www.science.org/content/article/some-guest-editors-pack-special-issues-their-own-articles

SCIENCEADVISER – Beluga whales are into free love, baby!

The private lives of beluga whales are more private than most. These stocky cetaceans inhabit icy Arctic waters, so little is known about how they mate and raise their young in the wild. Scientists have long assumed that male belugas, which are bigger than females, spend much of their time competing for mates, with a few dominant males fathering most calves—a system known as polygyny. But new DNA analyses, combined with years of careful observations, tell a very different story. Researchers spent more than 13 years monitoring a population of beluga whales in Alaska's frigid Bristol Bay, ultimately collecting tissue samples from 623 individuals for genetic testing. That work revealed that male and female belugas mate with multiple different partners over the years, with both sexes producing only a few offspring at a time. As a result, half-siblings are more common than full siblings, which may reduce the risk of inbreeding and help maintain genetic diversity in this relatively small and isolated population.
Belugas are extraordinarily long-lived, lead study author Greg O'Corry-Crowe explained in a statement, so males can afford to "play the long game" instead of trying to compete for mates during a single breeding season. For females, switching partners could serve as a form of risk management: If one male turns out to be a dud, there's always next year. "It's a striking reminder that female choice can be just as influential in shaping reproductive success as the often-highlighted battles of male-male competition," said O'Corry-Crowe. "Such strategies highlight the subtle, yet powerful ways in which females exert control over the next generation, shaping the evolutionary trajectory of the species."
https://www.frontiersin.org/journals/marine-science/articles/10.3389/fmars.2025.1707758/full

SCIENCEADVISER – This bit of bone was a prized and rare piece of equipment for ancient toolmakers

This ancient hunk of bone, unearthed in southern England, might not seem remarkable at first glance. But from the marks on this 480,000-year-old fragment, scientists have inferred that it was used as a soft hammer to hone other tools, making it the oldest elephant-bone tool known from Europe—and one that wasn't crafted by modern human hands. Instead, it was likely forged by a Neanderthal or Homo heidelbergensis and highlights the sophistication of their toolmaking.
"Collecting and shaping an elephant bone fragment and then using it on multiple occasions to shape and sharpen stone tools shows an advanced level of complex thinking and abstract thought ," said co-author Silvia Bello in a statement. It's unclear whether the bone itself was scavenged or taken from a hunted animal, but it was initially shaped when somewhat fresh, the team noted. "Elephant bone would have been a rare but highly useful resource, and it's likely this was a tool of considerable value," added lead author Simon Parfitt.
The find underscores ancient humans' adaptability and ingenuity, said Bello. "Our ancient ancestors were sophisticated in their use of tools … They were resourceful gatherers of available materials, and savvy about how best to use them."
https://www.science.org/doi/10.1126/sciadv.ady1390

SCIENCEADVISER – A spot of language

Scans of the cerebellum, often referred to as the "little brain," have revealed a small region tuned to language that only lights up when a person reads or listens to a story.
https://www.cell.com/neuron/fulltext/S0896-6273(25)00986-9

SCIENCEADVISER – Ice age mementos

Stone tools found at the Peña Capón rock shelter in Spain were traced to far-off outcrops in France. Manuel Castaño-Alcaraz
When you go on a trip, do you bring back a souvenir keyring? Maybe a pressed penny? If you were a hunter-gatherer living in Europe some 25,000 years ago, you might have kept a bit of sharpened stone to remind you of your voyages.
Researchers report this week in Science Advances that people living in what today is central Spain kept flat, partially formed blades made of a yellowish stone called jasperoid chert that chemical and textural analysis revealed originated almost 800 kilometers away in France. It's unclear whether these people traded for these blades—which were found in multiple layers spanning a period between 26,000 and 22,000 years ago—or brought them back from their travels, but either way, it underscores the vast networks utilized by hunter-gatherers during a bitterly cold ice age.
The raw material for these blades was no better than the chert at home, leading researchers to conclude that the stones may have served as tangible reminders of the group's connections to a wider social world. "These stone tools weren't just technical objects," said archaeologist Solange Rigaud, who wasn't involved with the work. "When people exchanged an item like this, it came with a story."
https://www.science.org/doi/10.1126/sciadv.adz7697

SCIENCENEWS – Animals experience joy. Scientists want to measure it

Beethoven's "Ode to Joy." The Joy of Cooking. Taking a joy ride. Expressions of joy abound in the human experience. But do other animals feel this exuberant emotion? Of course they do, according to researchers (and basically every pet person). The

trick is measuring joy in a scientific way. For a long time, research on animal emotions focused on behaviors that could be counted up objectively, in particular, negative responses linked to fear and pain. Now, as Amber Dance reports, we're seeing a much-needed surge of interest in studying positive emotions as well.
Why is joy hard to measure? Emotions in general can be tricky to study since animals can't tell us what they are feeling. What's more, human researchers are at risk of anthropomorphism and misinterpretation. So a team of researchers worked together to develop a set of happiness metrics that could be used when observing a variety of species. They also narrowed down a strict definition of joy that would be easier to assess.
And why do we need to know this? Humans interact with animals in so many ways, from pets to farms to captive breeding programs. Better understanding when they feel all kinds of emotions, including the positive ones, can improve the ways we manage these interactions and enhance animal well-being. A related effort to study animal personalities similarly aims to help with conservation. As Darren Incorvaia reports, research increasingly shows that an individual critter's personality can influence a group's survival in the wild.
https://www.sciencenews.org/article/scientists-measure-animal-joy-emotions

SCIENCENEWS – This tool-using cow defies expectations for bovine braininess

Veronika uses a long-handled brush to scratch her back and other out-of-reach body parts.
https://www.sciencenews.org/article/tool-using-cow-cognition-scratch

SCIENCENEWS – This hand stencil in Indonesia is now the oldest known rock art

The cave art was made more than 67,000 years ago.
https://www.sciencenews.org/article/hand-stencil-indonesia-oldest-rock-art

THE CONVERSATION – Humans returned to British Isles earlier than thought at the end of the last ice age

Humans hunting reindeer reappeared in what is now the British Isles much earlier than previously thought.
https://theconversation.com/humans-returned-to-british-isles-earlier-than-previously-thought-at-the-end-of-the-last-ice-age-271242

THE CONVERSATION – Horses really can smell fear, new study claims, and it changes their behaviour

Science now suggests this may be closer to the truth than researchers originally thought.
https://theconversation.com/horses-really-can-smell-fear-new-study-claims-and-it-changes-their-behaviour-273652

THE CONVERSATION – Deep in the Amazon, I discovered this monkey's ingenious survival tactic

The red-nosed cuxiu monkey is like no other on the planet.
https://theconversation.com/deep-in-the-amazon-i-discovered-this-monkeys-ingenious-survival-tactic-271995

THE CONVERSATION – Some dogs can pick up hundreds of words – do they learn like children?

Some dogs can remember the names of hundreds of objects.
https://theconversation.com/some-dogs-can-pick-up-hundreds-of-words-do-they-learn-like-children-273620

PUBLICATIONS

Anthropological Review

PAPERS

JACOB SEVASTIDIS et al with GARY CLARK & MACIEJ HENNEBERG – Predicting Prosociality in Primates: Socio-Ecological Influences and a Framework of Inter-Brain Neural Synchronization

Prosocial co-operation is critical for evolution and survival on Earth and has crucially shaped the development of Homo sapiens. Inter-brain neural synchronization (IBNS) has been shown to enhance prosocial co-operation in mammals and avians. The selection pressures which led to the development of IBNS throughout primate evolution are currently unknown. This paper aims to expand the understanding of IBNS in non-human primates by reviewing the literature on various primate populations that display prosocial behaviors that could correlate with IBNS. Binary logit modelling using machine learning methods was applied to social, ecological, morphological, and biological (SEMB) variables correlated with prosocial behaviors to obtain probabilities of prosociality. Our results suggest that select SEMB variables such as daily socialisation, food-sharing and hierarchy structure are strong predictors of prosocial behaviors in primates. We provide a framework that offers testable hypotheses for the existence of IBNS in primates based on the correlations between SEMB variables and prosocial behaviors. We also offer ideas of the ecological/behavioral forces that may correlate with neural activation patterns of primate IBNS. Through comparison to Homo sapiens models, these findings suggest IBNS in primates may exist beyond cercopithecids and may be evoked by similar socio-ecological contexts. However, some key neurological distinctions between the two groups exist, influencing which distinct patterns of behavior may evoke IBNS (relative to their socio-ecological context).

https://czasopisma.uni.lodz.pl/ar/article/view/25398

Current Anthropology

PAPERS

CLIFF GODDARD & ANNA WIERZBICKA – Anchoring Anthropological Categories in Simple, Translatable Words: The Case of "Art" and "Religion"

"Art" and "religion" are classic categories of anthropological discourse. Both words can be seen as designating distinctive and profound categories of human action and experience and hold special significance not only for anthropology but also for sociology, history, archeology, and adjacent disciplines. Problematically, however, both words are untranslatable into many languages, and even within European languages, they have been subject to endless definitional debates. Many scholars have given up on definitions altogether. Swimming against the tide, we demonstrate that clear, coherent, and translatable definitions can be achieved using a defining methodology based on simple, cross-translatable words and show that this methodology allows us to shed light on the history and present-day polysemy of both concepts. Of course, for anthropological purposes, "art" and "religion" need to be given stipulative definitions to distance them from their everyday English senses. We further demonstrate, however, that anthropological definitions can also be cast in simple, translatable words and that there are multiple benefits from doing so. In wider perspective, we contend that if anthropologists are to use broad but abstract terms like "art" and "religion" (or "emotion," "power," "economics") on a comparative scale, they need better semantic tools to define these as analytic concepts.
https://www.journals.uchicago.edu/doi/abs/10.1086/739001

CONSTANTINE V. NAKASSIS – Voicing, Looking, Perspective

What, semiotically speaking, is a perspective? Synthesizing the notions of voicing in linguistic anthropology and looking in film and visual studies with Fanon's phenomenology of racialized perception, this article situates perspective as a constitutive feature of semiosis and, vice versa, sign activity as constitutive of how perspectives evenementially and historically emerge in and circulate across events. To exemplify this process, I analyze select aspects of the 2018 trial of Chicago police officer Jason Van Dyke for the murder of a Black teenager, Laquan McDonald. I focus in particular on the contextualized courtroom use of a forensic digital animation created by the defense to provide the perspective of Van Dyke in the event of his murder of McDonald.
https://www.journals.uchicago.edu/doi/abs/10.1086/738977

Current Biology

PAPERS

ANTONIO J. OSUNA-MASCARÓ & ALICE M.I. AUERSPERG – Flexible use of a multi-purpose tool by a cow

Imagine the tools a cow would make. This idea, humorously illustrated in Gary Larson's Far Side cartoon, captures a widespread assumption: cows are neither problem-solvers nor tool users. In science, as in culture, livestock species are often cognitively underestimated, reinforced by their utilitarian role and persistent mind-denial biases associated with meat consumption1. Despite over 10,000 years of domestication, research on cattle cognition remains scarce and confined to applied contexts such as productivity and welfare2. Tool use, while rarely observed, offers a stringent test of cognitive flexibility. Defined as the manipulation of an external object to achieve a goal via a mechanical interface3, tooling ranges from species-typical routines to innovative, problem-specific acts4,5. We report here our experimental demonstration of flexible egocentric tooling in a pet cow (Bos taurus), Veronika, who uses a deck brush to self-scratch. Across randomized trials, she preferred the bristled end but switched to the stick end when targeting softer lower-body areas. This adaptive deployment of tool features reveals multi-purpose tool use not previously reported in non-primate mammals. Our findings broaden the taxonomic scope of flexible tool use and invite a reassessment of livestock cognition.
https://www.cell.com/current-biology/fulltext/S0960-9822(25)01597-0

eLife

PAPERS

TOM WILLEMS et al – Neural Traces of Forgotten Memories Persist in Humans and are Behaviorally Relevant

For a long time, forgetting has been taken as the dissipation of the neural memory traces (engrams). However, recent engram research in mice suggests that the engrams of forgotten memories do persist. This raises the question of whether engrams underlying human episodic memories also persist despite forgetting? And do forgotten memories influence human behavior implicitly? To address these questions, we used high-resolution functional magnetic resonance imaging at 7 Tesla to map the fate of 96 associative memories at the systems level from learning to a 30-minute and onward to a 24-hour memory test. Upon each retrieval attempt, participants indicated whether they remembered or forgot the memory. Univariate and multivariate analyses of the functional brain data revealed that the engrams of forgotten memories remain implemented in the episodic memory network and continue to influence the accuracy of guessing responses at the memory test. Overnight, the engrams of forgotten memories became implemented more deeply within bilateral hippocampus, while consciously accessible memories were neocorticalized overnight. The engrams of both consciously accessible and inaccessible (forgotten)

memories shifted from the 30-minute to the 24-hour memory test within the right hippocampus and anterior cingulate gyrus as evidenced by the occurrence of pattern dissimilarities that supported correct retrieval responses at 24 hours. Hence, forgotten human episodic memories remain implemented in the episodic memory system and continue to influence decisions.
https://elifesciences.org/reviewed-preprints/109530

Frontiers in Cognition

PAPERS

JEFFERY R. L. PENDLETON & NICOLA S. CLAYTON – Time in mind: a multidisciplinary review on temporal perception, cognition, and memory

This review examines temporal cognition through the lens of Mental Time Travel (MTT): the subjective experience of recalling past events and using them to construct future scenarios. The analysis specifically addresses how language and cultural context affect these abilities, integrating psychology, linguistics, cognitive neuroscience, and anthropology. Findings from comparative cognition challenge whether they are uniquely human. Although such an approach was traditionally taken in non-human primates, the field of comparative cognition has become much more diverse. Comparative insights derived from studies of corvid and cephalopod cognition are particularly pertinent, as they suggest these abilities have evolved more widely within the animal kingdom, especially in groups with very different neural architectures, raising questions about whether these abilities have evolved convergently in species undergoing similar selection pressures or independently in those subject to different selection pressures, as opposed to homologous evolution widespread amongst these animal taxa. These evolutionary perspectives inform theories of human temporal cognition and Mental Time Travel, influencing memory encoding and retrieval processes, false memory production, as well as the mechanisms underlying temporal cognition, such as episodic memory formation, interval timing, and circadian modulation of memory consolidation. Additionally, the review evaluates evidence on the cognitive impact of technological tools (calendars, clocks, and other technologies) used to externalize and standardize temporal frameworks, including implications for subjective perception and memory accuracy, and identifies directions for future interdisciplinary research. Building on this synthesis, we advance five core claims: that elements of temporal cognition likely arise under convergent evolutionary pressures; that language, culture, and social organization tune how people represent and use time; that technologies which externalize time can reshape behavior by aligning with or pulling against internally constructed event time; that memory is adaptively biased toward flexible, future-oriented construction rather than veridical record; and that these processes are structured by “mind time” and extended via transpersonal extended mental time travel, whereby shared representations support the projection and coordination of futures across individuals and generations.
https://www.frontiersin.org/journals/cognition/articles/10.3389/fcogn.2025.1688754/full

Frontiers in Language Sciences

PAPERS

DIETER HILLERT – Language as a mental capacity

While bonding and stress signals are widespread across species, symbolic computation is a uniquely human capacity. This article examines the intricate relationship between the evolving primate brain and the emergence of the mental language capacity in the human lineage, focusing on the neural circuits instantiated by mental agents. By integrating neurobiological and eco-cultural evidence, we identify a punctuated step at around 1.8 Ma with the appearance of Homo erectus and propose a corresponding neural threshold for symbolic representations and processes. The critical increase in internal computational capacity may reflect interactions between behavioral dynamics and neurogenetic properties. We argue, in particular, that the rise in social interactions and learning, the adoption of an energetically richer diet, and increased mobility exerted mutually reinforcing effects on cortical reorganization, enhancing neural connectivity and ultimately supporting symbolic language processing. We therefore suggest a scaled mental capacity for language and emphasize the importance of incorporating neurobiological factors when defining the evolution of the language capacity and its functions.
https://www.frontiersin.org/journals/language-sciences/articles/10.3389/flang.2025.1710323/full

Frontiers in Psychiatry

PAPERS

ALEŠ OBLAK et al – From self-narration to a worldview: a phenomenological, narratological, and linguistic case study of a patient with a complex clinical picture of bipolar disorder

Comorbidity of bipolar disorder and aspects of neurodevelopmental disorders present unique challenges and opportunities in understanding the formation and maintenance of selfhood and worldview in psychopathology. Traditional cognitive models often overlook the narrative and phenomenological dimensions of patient experience, particularly how autobiographical narration and emotionally charged worldviews mediate lived experience.
This study aims to explore (i) how worldviews are shaped by emotion and memory in psychiatric illness, and (ii) how narrative forms provide existential coherence in psychopathology. The research adopts a multidisciplinary approach integrating psychiatric, phenomenological, linguistic, narratological, and hermeneutic perspectives, through an in-depth case study.

A single-case study design was employed, focusing on "Benjamin," a 60-year-old male with a lifelong history of bipolar disorder type I and suspected Asperger's syndrome. Data sources included clinical interviews, autobiographical writings (five book-length texts), and clinical observation. Analyses were conducted using phenomenological, narratological, and linguistic frameworks to trace the evolution from self-narration to worldview construction.
Benjamin's case illustrates a transition from immediate self-description to the development of a coherent, philosophy-like worldview. His autobiographical narratives reveal the interplay between minimal and narrative self, with mood episodes influencing both self-experience and identity coherence. Emotional memories—regardless of factual accuracy—serve as organizing phenomena, providing existential structure and meaning. The study highlights the limitations of cognitive schema theory and underscores the importance of narrative scaffolding and affect-logic in shaping worldviews.
The study demonstrates how a multidisciplinary analysis of autobiographical narration can be useful for characterizing emotionally charged worldviews when working with individuals with complex, comorbid and chronic psychiatric disorders. Integrating phenomenological and narratological approaches yields a deeper understanding of selfhood and meaning-making in psychopathology, with implications for clinical assessment and intervention.
https://www.frontiersin.org/journals/psychiatry/articles/10.3389/fpsyt.2025.1648141/full

National Geographic

ARTICLES

Geomythology: Where Stories Meet Science – How have volcanoes influenced cultures around the world?
In this guided lesson, use National Geographic MapMaker to explore how civilizations across the world incorporated volcanic activity into their culture or religion. Learners use data on volcanoes, tectonic plates, traditions and folktales to learn more about how these explosive landforms shape human lives. The included teacher guide provides step-by-step instructions for students, questions for reading comprehension, and ideas for additional exploration.
https://education.nationalgeographic.org/resource/geomythology-where-stories-meet-science/

Nature

ARTICLES

ADRIAN BARNETT – I'm going to halve my publication output. You should consider slow science, too
If we don't slow down, the research enterprise is going to crash.
https://www.nature.com/articles/d41586-025-04061-w

ADHI AGUS OKTAVIANA – Hand stencils in Indonesian cave are world's oldest known artworks
Rock art found in Indonesia dates to at least 67,800 years ago, representing the earliest known cave art made by humans. These findings provide insights into the movement and cultural lives of populations that contributed to the ancestry of Indigenous Australian and Papuan people.
https://www.nature.com/articles/d41586-026-00018-9

CAROL V. WARD – A variety of early hominin species shared the Afar region of Ethiopia
Fossils reveal that at least four types of hominin, including Paranthropus, were present in northern Ethiopia between 3 million and 2.4 million years ago.
https://www.nature.com/articles/d41586-025-03727-9

PAPERS

ZERESENAY ALEMSEGED et al – Afar fossil shows broad distribution and versatility of Paranthropus
The Afar depression in northeastern Ethiopia contains a rich palaeontological and archaeological record, which documents 6 million years of human evolution. Abundant faunal evidence links evolutionary patterns with palaeoenvironmental change as a principal underlying force1. Many of the earlier hominin taxa recognized today are found in the Afar, but Paranthropus has been conspicuously absent from the region. Here we report on the discovery, in the Mille-Logya research area, of a partial mandible that we attribute to Paranthropus, dated to between 2.5 and 2.9 million years ago and found in a well-understood chronological and faunal context. The find is among the oldest fossils attributable to Paranthropus and indicates that this genus, from its earliest known appearance, had a greater geographic distribution than previously documented2. Often seen as a dietary specialist feeding on tough food, the range of diverse habitats with which eastern African Paranthropus can now be associated shows that this suggested adaptive niche did not restrict its ability to disperse as widely as species of Australopithecus and early Homo. The discovery of Paranthropus in the Afar emphasizes how little is known about hominin evolution in eastern Africa during the crucial period between 3 and 2.5 million years ago, when this genus and the Homo lineage presumably emerged.
https://www.nature.com/articles/s41586-025-09826-x

ADHI AGUS OKTAVIANA et mul – Rock art from at least 67,800 years ago in Sulawesi

The Indonesian archipelago is host to some of the earliest known rock art in the world. Previously, secure Pleistocene dates were reported for figurative cave art and stencils of human hands in two areas in Indonesia—the Maros-Pangkep karsts in the southwestern peninsula of the island of Sulawesi and the Sangkulirang-Mangkalihat region of eastern Kalimantan, Borneo. Here we describe a series of early dated rock art motifs from the southeastern portion of Sulawesi. Among this assemblage of Pleistocene (and possibly more recent) motifs, laser-ablation U-series (LA-U-series) dating of calcite overlying a hand stencil from Liang Metanduno on Muna Island yielded a U-series date of 71.6 ± 3.8 thousand years ago (ka), providing a minimum-age constraint of 67.8 ka for the underlying motif. The Muna minimum (67.8 ± 3.8 ka) exceeds the published minimum for rock art in Maros-Pangkep by 16.6 thousand years (kyr) and is 1.1 kyr greater than the published minimum for a hand stencil from Spain attributed to Neanderthals, which until now represented the oldest demonstrated minimum-age constraint for cave art worldwide. Moreover, the presence of this extremely old art in Sulawesi suggests that the initial peopling of Sahul about 65 ka involved maritime journeys between Borneo and Papua, a region that remains poorly explored from an archaeological perspective.
https://www.nature.com/articles/s41586-025-09968-y

JEAN-JACQUES HUBLIN et al with DAVID LEFÈVRE & PHILIPP GUNZ – Early hominins from Morocco basal to the Homo sapiens lineage

Palaeogenetic evidence suggests that the last common ancestor of present-day humans, Neanderthals and Denisovans lived around 765–550 thousand years ago (ka). However, both the geographical distribution and the morphology of these ancestral humans remain uncertain. The Homo antecessor fossils from the TD6 layer of Gran Dolina at Atapuerca, Spain, dated between 950 ka and 770 ka, have been proposed as potential candidates for this ancestral population. However, all securely dated Homo sapiens fossils before 90 ka were found either in Africa or at the gateway to Asia, strongly suggesting an African rather than a Eurasian origin of our species. Here we describe new hominin fossils from the Grotte à Hominidés at Thomas Quarry I (ThI-GH) in Casablanca, Morocco, dated to around 773 ka. These fossils are similar in age to H. antecessor, yet are morphologically distinct, displaying a combination of primitive traits and of derived features reminiscent of later H. sapiens and Eurasian archaic hominins. The ThI-GH hominins provide insights into African populations predating the earliest H. sapiens individuals discovered at Jebel Irhoud in Morocco and provide strong evidence for an African lineage ancestral to our species. These fossils offer clues about the last common ancestor shared with Neanderthals and Denisovans.
https://www.nature.com/articles/s41586-025-09914-y

Nature Communications

PAPERS

CRISTINA ROTUNNO et al – Pragmatic representations of self- and others' action in the monkey putamen

Social coordination in primates relies on parieto-frontal networks encoding self- and others' actions. These areas send convergent projections to the putamen, but its role in representing self- and others' actions remains unknown. We recorded neuronal activity from anatomically characterized putamen regions of two male macaques during a Mutual Action Task (MAT), where a monkey and a human took turns grasping a multi-affordance object based on sensory cues. Cortico-striatal synaptic input, indexed by local field potentials, mirrored known cortical dynamics during sensory instructions and movement, while single neurons selectively encoded the monkey's action, the human's action, or both. Grip type was encoded only during the monkey's trials. Viewing the partner's action was neither necessary nor sufficient, as neurons fired even when it occurred in darkness but not when viewed through a transparent barrier. Thus, the possibility for actual interaction characterizes the pragmatic role of the putamen in gating cortical representations of self- and other's actions in social contexts.
https://www.nature.com/articles/s41467-026-68403-6

Nature Communications Biology

PAPERS

CHANTAL ODERBOLZ, JOAN ORPELLA & MARTIN MEYER – Linguistic pitch is hierarchically encoded in the right ventral stream

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.

A challenge for speech perception research is to explain how listeners transform speech sounds into meaning. Using MEG and complementary analytical methods, we expose the neural dynamics that generate meaningful linguistic units (e.g., sentence type: question, statement) that are abstracted from lower-level perceptual cues (fundamental frequency (f0) modulations). In analogy to the well-established left-lateralized hierarchical organization of a ventral stream in the domains of vision and auditory processing, we show that the emergence of abstract f0 representations is supported by a right-lateralized progression that starts in early auditory areas and advances along the posterior-anterior axis of the superior temporal gyrus (STG). Furthermore, our data indicate that the accumulation and integration of sensory information is supported by fast (gamma) and slow (alpha) interhemispheric oscillatory dynamics in a more distributed, bilateral network

that informs the decision processes that drive participants' behavior. In short, hierarchical processing of f0 in the right ventral stream gives rise to abstract neural representations of linguistic pitch critical for speech perception and behavior.
https://www.nature.com/articles/s42003-026-09545-7

Nature Human Behaviour

PAPERS

YNGWIE A. NIELSEN & MORTEN H. CHRISTIANSEN – Evidence for the representation of non-hierarchical structures in language

A long-standing assumption in the language sciences is that the mental representation of language is based on constituents—that is, hierarchical structures rooted in grammar. We provide evidence from English for a more basic kind of linguistic representation involving smaller, linear chunks of structure akin to sequences of parts-of-speech elements—such as verb preposition determiner shared between the strings added to a and defined by the. Across four preregistered phrasal decision experiments (total N = 497), we show that it is possible to prime such linear structures, even in the absence of constituents. In two additional corpus analyses of eye-tracked reading (N = 68) and conversation (N = 358), we establish the external validity of the effect. These results provide evidence of multiword language structures that are not explainable in terms of constituents as traditionally construed. This poses a challenge for accounts of linguistic representation, including generative and constructionist approaches.
https://www.nature.com/articles/s41562-025-02387-z

Nature Reviews Psychology

PAPERS

I. BERTELETTI et al – Influences of spoken and signed language on numerical cognition

Language conveys the cultural symbols and concepts of number. The specific way that numerical information is expressed in language shapes the mental processes that underlie numerical reasoning. These influences can occur across multiple levels, including phonological, morphological, syntactic, lexical, semantic, conceptual and visuo-spatial. In this Review, we explore the interactions between language and the development of numerical cognition, contrasting two language modalities. We examine how signed languages — which are expressed manually and perceived visually — and spoken languages — which are expressed orally and perceived aurally — influence numerical processing. By synthesizing multidisciplinary evidence from children and adults, we highlight how signed languages provide insights into how language shapes the acquisition of numerical concepts and skills. Finally, we detail open questions in the study of signed languages to guide a more comprehensive investigation of numerical cognition and the human mind.
https://www.nature.com/articles/s44159-025-00530-1

Nature Scientific Reports

PAPERS

YICHENG QIU et al – Lexical alignment persists across a 12 h interval but is unaffected by sleep versus wake

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.

Sleep may play a key role in consolidating social interactions by transforming brief communicative experiences into stable social memories. In this paper, we used the lexical alignment task to investigate whether sleep enhances the consolidation of shared linguistic representations between partners. Lexical alignment, where participants converge their word choices with those produced by a partner, served as a marker of successful communication and shared understanding. Eighty-two participants completed a picture-matching and picture-naming task before and after 12 h of sleep or wake. Results showed the lexical alignment effect persisted 12 h after the initial picture-matching interaction. However, this effect was not influenced by whether participants slept or remained awake during the retention interval. These findings suggest that while participants encoded enduring representations of partner-specific lexical information during interaction, sleep-based consolidation did not confer an additional benefit. One possibility is that a higher level of social relevance is needed for these memories to be susceptible to sleep consolidation. Alternatively, limited hippocampal involvement during encoding may have reduced the extent to which information was reactivated during sleep. Future research should employ richer and more interactive tasks to clarify how sleep supports the consolidation of social experiences and relationship perceptions.
https://www.nature.com/articles/s41598-025-33541-2

ANTOINE BELLEMARE-PEPIN et al – Divergent creativity in humans and large language models

The recent surge of Large Language Models (LLMs) has led to claims that they are approaching a level of creativity akin to human capabilities. This idea has sparked a blend of excitement and apprehension. However, a critical piece that has been missing in this discourse is a systematic evaluation of LLMs' semantic diversity, particularly in comparison to human divergent thinking. To bridge this gap, we leverage recent advances in computational creativity to analyze semantic divergence in both state-of-the-art LLMs and a substantial dataset of 100,000 humans. These divergence-based measures index associative

thinking—the ability to access and combine remote concepts in semantic space—an established facet of creative cognition. We benchmark performance on the Divergent Association Task (DAT) and across multiple creative-writing tasks (haiku, story synopses, and flash fiction), using identical, objective scoring. We found evidence that LLMs can surpass average human performance on the DAT, and approach human creative writing abilities, yet they remain below the mean creativity scores observed among the more creative segment of human participants. Notably, even the top performing LLMs are still largely surpassed by the aggregated top half of human participants, underscoring a ceiling that current LLMs still fail to surpass. We also systematically varied linguistic strategy prompts and temperature, observing reliable gains in semantic divergence for several models. Our human-machine benchmarking framework addresses the polemic surrounding the imminent replacement of human creative labor by AI, disentangling the quality of the respective creative linguistic outputs using established objective measures. While prompting deeper exploration of the distinctive elements of human inventive thought compared to those of AI systems, we lay out a series of techniques to improve their outputs with respect to semantic diversity, such as prompt design and hyper-parameter tuning.
https://www.nature.com/articles/s41598-025-25157-3

Neuron

PAPERS

COLTON CASTO et al with EVELINA FEDORENKO – The cerebellar components of the human language network
Despite ample evidence of cerebellar contributions to cognition, including language, its precise role remains debated. We systematically characterize cerebellar language-responsive regions using precision fMRI. We identify four cerebellar regions that respond to language across modalities (experiments 1a and 1b, n = 754). One region—spanning Crus I/II/lobule VIIb—is selective for language relative to diverse non-linguistic tasks (experiments 2a–2f, n = 732), and the rest exhibit mixed selectivity. Similar to the neocortical language system, the language-selective region is engaged during comprehension and production (experiments 3a and 3b, n = 100), shows sensitivity to linguistic difficulty (experiment 3c, n = 5), and responds to both social and nonsocial sentences (experiment 3d, n = 10). Finally, all four regions, but especially Crus I/II/VIIb, are functionally connected to the neocortical language system (experiment 4, n = 85). We propose that these cerebellar regions constitute components of the extended language network, with one region closely mirroring the neocortical network and the rest plausibly integrating information from diverse neocortical regions.
https://www.cell.com/neuron/fulltext/S0896-6273(25)00986-9

CHUAN NING et al – Macaque prefrontal cortex integrates multiple components for metacognitive judgments of working memory
The ability to evaluate one's own memory is known as metamemory. Whether metamemory is inherent to memory strength or requires additional computation in the brain remains largely unknown. We investigated the metacognitive mechanism of working memory (WM) using two-photon calcium imaging in the prefrontal cortex (PFC) of macaque monkeys, memorizing spatial sequences of varying difficulties. In some trials, after viewing the sequence, monkeys could opt out of retrieval for a smaller reward, reflecting their confidence in WM (meta-WM). We discovered that PFC neurons encoded WM strength by jointly representing the remembered locations and their associated uncertainties. Additional factors—trial history and arousal—encoded in baseline activity also predicted opt-out decisions, serving as cues for meta-WM. We further identified a code for meta-WM itself that integrated WM strength with these cues. Thus, the PFC neural geometry implements metacognitive computations, integrating WM strength with cues into a meta-WM signal to guide behavior.
https://www.cell.com/neuron/abstract/S0896-6273(25)00887-6

New Scientist

ARTICLES

CAROLINE WILLIAMS – There's no such thing as a normal brain: Best ideas of the century
Neurodiversity research has reshaped how we think about autism and ADHD, revealing that a "normal" brain doesn't exist – and that unusual brains also come with unique strengths.
https://www.newscientist.com/article/2508317-theres-no-such-thing-as-a-normal-brain-best-ideas-of-the-century/

MICHAEL MARSHALL – Ape-like hominin Paranthropus was more adaptable than we thought
A fossil discovery in northern Ethiopia expands the known range of Paranthropus, a genus of strong-jawed hominins that lived around 2 million years ago, and suggests they lived in a range of habitats.
https://www.newscientist.com/article/2512373-ape-like-hominin-paranthropus-was-more-adaptable-than-we-thought/

MICHAEL MARSHALL – Revealing the epic story of ancient humans: Best ideas of the century
Since the turn of the millennium, our understanding of our ancestors and extended cousins has shifted dramatically, thanks to a swathe of surprising archaeological discoveries.
https://www.newscientist.com/article/2508854-revealing-the-epic-story-of-ancient-humans-best-ideas-of-the-century/

REVIEWS

CHRISTA LESTÉ-LASSERRE – A fascinating book reveals the ancient story of horses and humans

Ludovic Orlando's Horses is an enthralling account by one of the main players, detailing how genetics has rewritten what we know about the intertwined story of horses and humans, now spanning over 4000 years.

Review of 'Horses: A 4,000-Year Genetic Journey Across the World' by Ludovic Orlando, Princeton University Press (2025)

https://www.newscientist.com/article/mg26935790-300-a-fascinating-book-reveals-the-ancient-story-of-horses-and-humans/

NPJ Complexity

PAPERS

JULIA K. BRYNILDSEN et al – Habit learning is associated with efficiently controlled network dynamics in naive macaque monkeys

Primates utilize distributed neural circuits to learn habits in uncertain environments, but the underlying mechanisms remain poorly understood. We propose a formal theory of network energetics explaining how brain states influence sequential behavior. We test our theory on multi-unit recordings from the caudate nucleus and cortical regions of macaques performing a motor habit task. The theory predicts the energy required to transition between brain states represented by trial-specific firing rates across channels, assuming activity spreads through effective connections. We hypothesized that habit formation would correlate with lower control energy. Consistent with this, we observed smaller energy requirements for transitions between similar saccade patterns and those of intermediate complexity, and sessions exploiting fewer patterns. Simulations ruled out confounds from neurons' directional tuning. Finally, virtual lesioning demonstrated the robustness of observed relationships between control energy and behavior. This work paves the way for examining how behavior arises from changing activity in distributed circuitry.

https://www.nature.com/articles/s44260-025-00066-8

PLoS Biology

PAPERS

YUE WANG et al – Characterization of the spatiotemporal representations of visual, semantic, and memorability features in the human brain

This is an uncorrected proof.

Object recognition requires integrated processing that extends beyond the visual cortex, incorporating semantic and memory-related processes. However, it remains unclear how different attributes, such as visual, semantic, and memorability features, are encoded and interact during perception. Here, we recorded intracranial electroencephalography from 5,143 channels while participants viewed natural object images. We systematically characterized the spatiotemporal patterns of neural encoding for visual, semantic, and memorability attributes and showed that memorability was encoded in a distributed manner, which can be dissociated from visual and semantic coding. While the ventral temporal cortex (VTC) was engaged in encoding all three attributes, the representations were dissociable. Interestingly, memorability representations in the prefrontal cortex appeared to arise from integrated visual and semantic signals from the VTC; and memorability influenced early stages of visual and semantic processing. Our results were corroborated by high-resolution 7T fMRI, which revealed continuous encoding across the brain, and further validated using a separate dataset featuring within-category object variability. Lastly, single-neuron recordings confirmed semantic and memorability coding in the medial temporal lobe. Together, these findings provide a comprehensive view of how visual, semantic, and memorability attributes are dynamically encoded across the brain, highlighting the complex interplay between these attributes that collectively shape object recognition and memory formation.

https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3003614

WOO-TEK LEE, ELIOT HAZELTINE & JIEFENG JIANG – Neural traces of composite tasks in complex task representation in the human brain reflects learning performance

Task knowledge can be encoded hierarchically such that complex tasks can be built by associating simpler tasks. This associative organization supports generalization to facilitate learning of related but novel complex tasks. To study how the brain implements generalization in hierarchical task learning, we trained human participants on two complex tasks that shared a simple task and tested them on novel complex tasks whose association could be inferred via the shared simple task. Behaviorally, we observed faster learning of the novel complex tasks than control tasks. Using electroencephalogram (EEG) data, we decoded constituent simple tasks when performing a complex task (i.e., EEG association effect). Crucially, the shared simple task, although not part of the novel complex task, could be reliably decoded from the novel complex task. This decoding strength was correlated with the EEG association effect and the behavioral generalization effect. The findings demonstrate how task learning can be accelerated by associative inference.

https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3003613

UPAMA AICH et al – Experimental evidence that penis size, height, and body shape influence assessment of male sexual attractiveness and fighting ability in humans

Why the human penis is unusually large compared to that of other primates is a long-standing evolutionary question. Sexual selection, through female mate choice and male-male competition, is a likely driver, but confirming this is difficult due to natural covariation among traits. The solution is to experimentally manipulate focal traits to identify targets of selection. Using 343 computer-generated male figures that varied in penis size, height and body shape, we experimentally tested how these traits influence perceived attractiveness and fighting ability. Over 800 participants—both male and female—viewed either life-sized (in-person) or scaled (online) animations and rated the figures. Across both settings, selection analyses revealed consistent directional selection favoring taller men with a more V-shaped body and a larger penis. In both surveys, male participants rated rivals with a larger penis as more sexually competitive and physically threatening. To our knowledge, this is the first experimental evidence that males assess rivals' fighting ability and attractiveness to females based partly on a rival's penis size. Our findings suggest that female choice and male-male competition have jointly favored larger penis size, greater height, and more V-shaped bodies in men.
https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3003595

PLoS One

PAPERS

RAFAEL ARNAY et al – Improving micromorphological analysis with CNN-based segmentation of flint/obsidian, bone and charcoal

The quantification and identification of components in archaeological micromorphology remain subjective and challenging, particularly for early-career researchers. To address this, we developed a deep learning tool for the automatic segmentation of three materials commonly found in Palaeolithic contexts and thin sections: bone, charcoal, and lithic fine-grained debitage (flint and obsidian). Using high-resolution photomicrographs of 57 thin sections in plane-polarised and cross-polarised light, we trained and evaluated state-of-the-art convolutional neural networks (CNNs) for material segmentation. The best-performing configuration, a U-Net with an InceptionV4 encoder, achieved mean intersection over union (IoU) scores of 0.96 for flint/obsidian, 0.80 for bone, and 0.82 for charcoal. The models also classified the relative abundance of each material with balanced accuracies of 0.99 for flint/obsidian, 0.92 for bone, and 0.85 for charcoal. These results demonstrate the potential of deep learning to enhance objectivity, accuracy, and reproducibility in archaeological micromorphology, providing a valuable resource for future geoarchaeological research.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0340353

JIAYU CHENG et al – Intuitive or deliberative dishonesty: The effect of abstract versus concrete victim

There has been ongoing debate over whether people are intuitively honest or intuitively dishonest. A recent social harm account was proposed to address this debate: dishonesty is intuitive when cheating inflicts harm on an abstract other while honesty is intuitive when cheating inflicts harm on a concrete other. This pre-registered and well-powered study (n = 764) aims to directly test this account by using a time pressure manipulation. Specifically, we examined whether time pressure (versus self-paced conditions) would lead to increased cheating depending on whether the harmed party was concrete or abstract. The results showed no significant effect of time pressure on cheating behavior. However, the harm-type manipulation produced findings that contradicted those reported in previous studies. Given the low replication rates and reliance on controversial experimental manipulations in this area, our findings underscore the importance of further pre-registered research to rigorously evaluate the roles of time pressure and social harm in shaping intuitive (dis)honesty.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0340083

Proceedings of the Royal Society B

PAPERS

ADRIAN SOLDATI et al with KLAUS ZUBERBÜHLER & JOSEP CALL – Local specialists' experience and skills in animal behaviour studies: insights from wild chimpanzee field assistants

The study of wild animal behaviour and cognition has greatly benefited from the foundational work of local specialists (LSs), particularly field assistants. In primate research, long-term studies rely on accurate identification and tracking of individuals—a skill often honed by LSs and passed on to international specialists (ISs). Despite growing recognition in publications, LSs' scientific contributions often remain undervalued. Here, we show that LSs at the Budongo Conservation Field Station (Uganda) reliably extract acoustic information (caller identity, sex and age, call components and production context) from long-distance pant hoot calls produced by wild chimpanzees. Importantly, LSs significantly outperform ISs at identifying individuals (LS accuracy = 50% (95% confidence interval (CI): 45–56%); IS accuracy = 8% (95% CI: 5–11%)), an important skill for recognizing and locating individuals in dense forests. LSs' performance was positively associated with duration of working experience. Given the limited field time of ISs (typically 1–2 years), LSs' expertise and longer commitment (mean 16.75 years) represent an essential yet underacknowledged scientific resource. Our study highlights LSs' critical role in ethological research—not only enhancing skills and data quality, but also potentially helping address both ethical (e.g. community involvement) and environmental (e.g. travel carbon footprint) challenges linked to fieldwork in remote locations.

https://royalsocietypublishing.org/rspb/article/293/2063/20250997/479603/Local-specialists-experience-and-skills-in-animal

Royal Society Open Science

PAPERS

JANIS H. ZICKFELD et al – The effect of individual and group punishment on individual and group-based dishonesty

Economic dishonesty is widespread and affects organizations and societies. Prior work suggests that group decision-making or commitments to others may increase dishonest behaviour compared with individual choices. Although various interventions aim to curb dishonesty, classical economic approaches stress punishment by increasing the perceived risk of detection. Yet, evidence on the effectiveness of punishment is mixed, and it remains unclear whether it works in collaborative settings. We conducted an online experiment (n = 702) with UK-based Prolific participants who played a five-round tax-evasion game. We manipulated (i) payoff type (dishonesty benefiting the individual versus a three-person group), (ii) punishment risk (no audit versus 30% audit chance), and (iii) punishment target (punishing only the individual versus the entire group when caught). Contrary to our prediction, group-based payoffs did not increase dishonesty in no-punishment conditions; instead, they led to higher compliance. As expected, introducing punishment risk reduced dishonesty and increased compliance by 14.2 percentage points (Cohen's d = 0.32). Moreover, contrary to utility-based predictions, group punishment was more effective than individual punishment, increasing compliance by an additional 5.6 percentage points (d = 0.13), with similar effects across payoff types. Overall, our findings show that punishment effectively reduces dishonesty across individual and collaborative contexts.
https://royalsocietypublishing.org/rsos/article/13/1/252225/479593/The-effect-of-individual-and-group-punishment-on

FRANCESCA TALAMINI et al – Musical expertise and cognitive abilities: no advantage for professionals over amateurs

Cognitive advantages in musicians are often attributed to far transfer from music training. If this causal interpretation is correct, greater musical expertise should generally predict larger cognitive gains. To test this prediction, we reanalysed data from the Music Ensemble project—a large-scale initiative including 33 laboratories across 15 countries. We compared 608 nonmusicians, 289 amateur musicians, and 352 professional musicians on measures of musical ability, cognition, and personality, controlling for demographic differences. As expected, musical abilities increased with expertise: professionals outperformed amateurs, who outperformed nonmusicians. Cognitive performance, however, showed a different pattern. Only short-term memory (STM) for melodies increased monotonically with expertise. Verbal STM was similar across groups. Other domains revealed nonlinear associations: both musician groups outperformed nonmusicians in visuospatial STM, vocabulary, and executive functions, but professionals did not exceed amateurs in any domain and even performed worse in nonverbal reasoning. Personality also differed: professionals scored higher on open-mindedness than both other groups, but lower on agreeableness than amateurs. Thus, despite superior musical abilities and distinctive personalities, professional musicians showed no cognitive advantage over amateurs. This dissociation questions the assumption that musicians' cognitive differences stem from training and points to alternative explanations such as selection effects.
https://royalsocietypublishing.org/rsos/article/13/1/251613/479653/Musical-expertise-and-cognitive-abilities-no

Science

NEWS

Some guest editors pack special issues with their own articles

Thousands have penned more than one-third of a journal issue, raising conflict-of-interest concerns.
https://www.science.org/content/article/some-guest-editors-pack-special-issues-their-own-articles

Nearly one-third of social media research has undisclosed ties to industry, preprint claims

Industry-linked studies were also more likely to focus on particular topics, suggesting these ties may be skewing the field.
https://www.science.org/content/article/nearly-third-social-media-research-has-undisclosed-ties-industry-preprint-claims

Science Advances

PAPERS

SIMON A. PARFITT & SILVIA M. BELLO – The earliest elephant-bone tool from Europe: An unexpected raw material for precision knapping of Acheulean handaxes

Organic knapping tools made from bone, antler, and wood were essential to early human toolkits but are rarely preserved in the archeological record. The earliest known soft hammers, dating to ~480,000 years ago, come from Boxgrove (UK), where modified antlers and large mammal bones were used alongside flint hard hammers. These tools facilitated complex knapping techniques, such as platform preparation and tranchet flake removal, contributing to the production of finely worked ovate handaxes typical of the Boxgrove Acheulean industry. This study presents a cortical bone fragment from an elephant, deliberately shaped into a percussor for resharpening flint tools. It represents the earliest known use of elephant bone in Europe and the first documented case of its use as a knapping hammer. Reconstructing its life history offers further insights into Middle Pleistocene hominin technological adaptations, resourcefulness, and survival strategies that enabled humans to endure harsh northern environments.

https://www.science.org/doi/10.1126/sciadv.ady1390

MARTA SÁNCHEZ DE LA TORRE et al – Far-reaching hunter-gatherer networks during the Last Glacial Maximum in Western Europe

Social networking is an essential feature of hunter-gatherer societies. It fosters the circulation of goods and information and enables kinship ties across different scales, including long-distance contacts. While such behaviors are known since at least the Upper Palaeolithic, evidence for geographically extensive social networks remains scarce. This evidence is limited to indirect inferences based on shared cultural traits, "art" styles, and symbolic items, while lithic raw material movements are mostly local and regional, with few cases exceeding 300 kilometers. We provide geochemical evidence for the largest confirmed distance between the source and discard location of a knapped lithic object in Palaeolithic Europe. Solutrean artifacts discarded at Peña Capón, Central Iberia, were sourced in Southwest France, 600 to 700 kilometers away. This demonstrates social networks of unprecedented geographic scale maintained during ~1400 years during the Last Glacial Maximum. It also suggests that stone tools were exchanged as symbolic items to solidify social contacts and sustain far-reaching networks as risk-buffering mechanisms among widely dispersed hunter-gatherers.
https://www.science.org/content/article/ice-age-europeans-imported-tools-distant-lands-perhaps-souvenirs

Trends in Cognitive Sciences

ARTICLES

TOAN NONG, JUN FENG & JEAN-CLAUDE DREHER – Neurocomputational mechanisms of adaptive mentalization in humans

'Theory of mind' (ToM) is classically investigated with 'static' inference tasks, which miss the dynamic nature of social interactions. In a recent article, Buergi, Aydogan, and colleagues combined computational modeling and neuroimaging to study the adaptive nature of mentalization (i.e., the ability to infer the continuous change of others' thoughts and intentions).
https://www.cell.com/trends/cognitive-sciences/abstract/S1364-6613(25)00317-1

Trends in Neurosciences

PAPERS

ANASTASIA KLIMOVICH-GRAY et al – Dyslexia: a window into the cortical mechanisms of adaptive speech analysis

Atypical phonological processing is at the core of developmental dyslexia and is linked to aberrant tracking and analysis of auditory information in the cortex. Despite the importance of these mechanisms for speech processing and linguistic development, oral language comprehension in dyslexia remains largely intact. Recent findings suggest that dyslexia-linked atypical cortical processing patterns reflect both underlying deficits and compensatory strategies. This review synthesizes recent evidence linking atypical cortical tracking of auditory information in dyslexia, language development, and neurocognitive mechanisms of adaptive and resilient speech comprehension. We propose hemispheric rebalancing of linguistic analysis as a key compensatory mechanism in dyslexia, supported by interhemispheric connectivity within the distributed bilateral language network and greater reliance on lexico-semantic features during speech processing.
https://www.cell.com/trends/neurosciences/fulltext/S0166-2236(25)00261-9

SUBSCRIBE to the EAORC Bulletin

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

UNSUBSCRIBE from the EAORC Bulletin

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

PRODUCED BY AND FOR THE EAORC EMAIL GROUP

EAORC is a fee-free academic internet news service and has no commercial sponsorship or other commercial interests.
EAORC website information is at http://martinedwardes.me.uk/eaorc/
If you have received this bulletin, and are unhappy about receiving it, please contact martin.edwardes@btopenworld.com.