EAORC BULLETIN 1,135 – 16 March 2025

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.

ACADEMIA.EDU – Chimpanzee ethnography reveals unexpected cultural diversity

Nature Human Behaviour 4, 910-916 (2020).

CHRISTOPHE BOESCH et mul with SIMONE PIKA & CRICKETTE SANZ – Chimpanzee ethnography reveals unexpected cultural diversity

Human ethnographic knowledge covers hundreds of societies, whereas chimpanzee ethnography encompasses at most 15 communities. Using termite fishing as a window into the richness of chimpanzee cultural diversity, we address a potential sampling bias with 39 additional communities across Africa. Previously, termite fishing was known from eight locations with two distinguishable techniques observed in only two communities. Here, we add nine termite-fishing communities not studied before, revealing 38 different technical elements, as well as community-specific combinations of three to seven elements. Thirty of those were not ecologically constrained, permitting the investigation of chimpanzee termite-fishing culture. The number and combination of elements shared among individuals were more similar within communities than between them, thus supporting community-majority conformity via social imitation. The variation in community-specific combinations of elements parallels cultural diversity in human greeting norms or chopstick etiquette. We suggest that termite fishing in wild chimpanzees shows some elements of cumulative cultural diversity.
https://www.academia.edu/78804347/Chimpanzee_ethnography_reveals_unexpected_cultural_diversity

ACADEMIA.EDU – Cultural innovation and transmission of tool use in wild chimpanzees

Animal Cognition 6, 213-223 (2003).

DORA BIRO et al with TETSURO MATSUZAWA – Cultural innovation and transmission of tool use in wild chimpanzees: evidence from field experiments

Abstract Chimpanzees (Pan troglodytes) are the most proficient and versatile users of tools in the wild. How such skills become integrated into the behavioural repertoire of wild chimpanzee communities is investigated here by drawing together evidence from three complementary approaches in a group of oil-palm nut- (Elaeis guineensis) cracking chimpanzees at Bossou, Guinea. First, extensive surveys of communities adjacent to Bossou have shown that population-specific details of

tool use, such as the selection of species of nuts as targets for cracking, cannot be explained purely on the basis of ecological differences. Second, a 16-year longitudinal record tracing the development of nutcracking in individual chimpanzees has highlighted the importance of a critical period for learning (3–5 years of age), while the similar learning contexts experienced by siblings have been found to result in near-perfect (13 out of 14 dyads) inter-sibling correspondence in laterality. Third, novel data from field experiments involving the introduction of unfamiliar species of nuts to the Bossou group illuminates key aspects of both cultural innovation and transmission. We show that responses of individuals toward the novel items differ markedly with age, with juveniles being the most likely to explore. Furthermore, subjects are highly specific in their selection of conspecifics as models for observation, attending to the nut-cracking activities of individuals in the same age group or older, but not younger than themselves. Together with the phenomenon of inter-community migration, these results demonstrate a mechanism for the emergence of culture in wild chimpanzees.
https://www.academia.edu/4660841/Cultural_innovation_and_transmission_of_tool_use_in_wild_chimpanzees_evidence_from_field_experiments?email_work_card=view-paper

ACADEMIA.EDU – The knowns and unknowns of chimpanzee culture

Communicative & Integrative Biology 3:3, 1-3 (2010).

THIBAUD GRUBER, VERNON REYNOLDS & KLAUS ZUBERBÜHLER – The knowns and unknowns of chimpanzee culture
Claims of culture in chimpanzees appeared soon after the launch of the first field studies in Africa. The notion of chimpanzee 'material cultures' was coined, and this was followed by a first formal comparison, which revealed an astonishing degree of behavioural diversity between the different study communities, mainly in terms of tool use. Although this behavioural diversity is still undisputed, the question of chimpanzee cultures has remained controversial. The debate has less to do with the definition of culture (most animal behaviour researchers accept the notion for behaviour that is 'transmitted repeatedly through social or observational learning to become a population-level characteristic'), but more with whether some key criteria are met.
https://www.academia.edu/4286932/The_knowns_and_unknowns_of_chimpanzee_culture

ACADEMIA.EDU – Neanderthal language revisited: not only us

Current Opinion in Behavioral Sciences 21, 49-55 (2018).

DAN DEDIU & STEPHEN C LEVINSON – Neanderthal language revisited: not only us
Here we re-evaluate our 2013 paper on the antiquity of language (Dediu and Levinson, 2013) in the light of a surge of new information on human evolution in the last half million years. Although new genetic data suggest the existence of some cognitive differences between Neanderthals and modern humans — fully expected after hundreds of thousands of years of partially separate evolution, overall our claims that Neanderthals were fully articulate beings and that language evolution was gradual are further substantiated by the wealth of new genetic, paleontological and archeological evidence briefly reviewed here.
https://www.academia.edu/97793010/Neanderthal_language_revisited_not_only_us

NEWS

NATURE BRIEFING – Ancient Europeans crossed the sea to Africa

A genomic study of people who lived more than 6,000 years ago hints that ancient European hunter-gatherers might have voyaged across the Mediterranean to Africa. Using DNA from bones or teeth from nine individuals found at archaeological sites in the eastern Maghreb region — present-day Tunisia and northeastern Algeria — researchers found that Stone Age populations who lived there were descended, in part, from Europeans. At that time, there were more islands poking above the waves in the narrow strait between what's now Sicily and Tunisia, which could have eased the journey for ancient voyagers in simple boats.
https://www.nature.com/articles/d41586-025-00764-2

NATURE BRIEFING – Retract the Stanford Prison Experiment?

While researching the infamous Stanford Prison Experiment for a book, social scientist Thibault Le Texier was struck by how quickly it all falls apart under scrutiny. The ethics of the mock jail study — which described undergraduate volunteers descending into sadism and breakdown — are questionable at best. Lead researcher Philip Zimbardo might have pinched the design of the study from junior team members without crediting them, and the results were sent to the media immediately, with no peer review in sight until 1973 — two years after the experiment concluded. The myriad problems Le Texier highlights raise a question, writes sociologist Augustine Brannigan: should the study be retracted? It might not even be possible — the journal that eventually published the paper no longer exists. "If Le Texier's findings are credible, arguably the best outcome we can expect is more responsible reporting in contemporary textbooks," Brannigan writes.
https://retractionwatch.com/2025/03/10/guest-post-should-zimbardos-stanford-prison-experiment-be-retracted/

NATURE BRIEFING – She solved the problem Darwin couldn't

"Elisabeth Vrba's meticulous studies of fossil and living mammals challenged the conventional view of evolution" writes palaeontologist Niles Eldredge. Among the achievements of Vrba, who has died aged 82, was a solution to a problem that Darwin grappled with throughout his career: "how could the great diversity of species over vast stretches on continental areas have occurred in the absence of obvious barriers that would cause reproductive isolation?" Vrba's answer was that cataclysmic environmental changes can fragment and isolate habitats, and cause waves of extinction and evolution.
https://www.nature.com/articles/d41586-025-00778-w

NEWS FROM SCIENCE – Consciousness before birth? Imaging studies explore the possibility

Fetal and infant brains offer clues to when human experience begins.
https://www.science.org/content/article/consciousness-birth-imaging-studies-explore-possibility

NEWS FROM SCIENCE – Farming wasn't a wholesale success when it arrived in North Africa

Unlike many Europeans, Stone Age groups in modern-day Tunisia and Algeria weren't subsumed by the agricultural revolution.
https://www.science.org/content/article/farming-was-not-wholesale-success-when-it-arrived-north-africa

NEWS FROM SCIENCE – Fossil face found in Spanish cave belongs to first known Western European

Ancient remains suggest at least two types of early humans roamed Europe about 1 million years ago.
https://www.science.org/content/article/fossil-face-found-in-spanish-cave-belongs-first-known-western-european

NEWS FROM SCIENCE – Imperfect sounds

Cochlear implants give deaf kids unprecedented access to sound. But insisting they avoid using sign language may be risky.
https://www.science.org/content/article/implants-can-help-deaf-kids-hear-many-still-struggle-spoken-language

SAPIENS – The Perennial Power of Ritual

Rituals soothe, excite, and unite people throughout the world. But how exactly do they work, and what makes them so meaningful?
https://www.sapiens.org/culture/perennial-power-ritual/

SAPIENS – Ritual Sacrifice May Have Shaped Dog Domestication

An ancient Arctic site suggests a complex relationship between humans and dogs.
https://www.sapiens.org/archaeology/dog-domestication-ritual-sacrifice/

SCIENCEADVISER – When does a tiny, developing human become conscious?

A recent meeting on consciousness started from a relatively uncontroversial premise: A newly fertilized human egg isn't conscious, and a preschooler is, so consciousness must emerge somewhere in between. But the gathering, sponsored by New York University, quickly veered into more unsettled territory. At the Infant Consciousness Conference from 28 February to 1 March, researchers explored when and how consciousness might arise, and how to find out.

How to define consciousness is itself the subject of debate, as is the question of where consciousness arises in the brain, which already makes it hard to agree on specific markers of consciousness in beings—like babies—that can't talk about their experience. But recent imaging studies have offered hints that the capacity for consciousness could emerge before birth, toward the end of gestation. The work may have implications for the care of infants born preterm, whose level of consciousness is unclear. And the related question of whether and when a fetus can feel pain intersects with thorny issues such as abortion.

Preliminary results from a survey conducted during the meeting suggest many attendees found the evidence for fetal consciousness compelling: 47% of respondents said consciousness first develops in the "later pre-natal," period, between around 24 weeks gestation and birth. But like many other questions in consciousness research, this one is far from settled.
{I would suggest that the answer to this article's thorny question will not be found from a survey, even a survey of eminent scientists at an academic meeting.}
https://www.science.org/content/article/consciousness-birth-imaging-studies-explore-possibility

SCIENCEADVISER – Face to face with the first Western European

Who were the first humans to occupy Western Europe? It wasn't a member of our own species, Homo sapiens—we didn't reach Europe until sometime around 45,000 years ago, relatively late in the peopling of the continent. Several earlier members of our genus explored Europe beforehand, fashioning tools and hunting animals. A study out this week in Nature reveals the face of the earliest known Western European—or at least a fossilized piece of a face.

Researchers excavating at La Sima del Elefantes cave in a fossil-rich region of Spain called Atapuerca found the fossilized midface bones of a hominin dated to between 1.1 and 1.4 million years ago. Because it's only a partial face, scientists can't be certain about its species, but it looks an awful lot like Homo erectus, an early ancestor of our own species.
Based on its facial features, though, the researchers can rule out the possibility that it was a different ancestor, Homo antecessor, which previous ancient protein analyses suggest may have been a close relative of the most common ancestor of modern humans, Neanderthals and Denisovans. Fossils of H. antecessor dating to around 800,000 years ago have also been found in the region, meaning that at least two species of early humans were exploring Europe around this time. The newfound face, says paleoanthropologist Mirjana Roksandic, "gives us an idea of who moved, where they moved, and what was the result for human evolution in Europe."
https://www.science.org/content/article/fossil-face-found-in-spanish-cave-belongs-first-known-western-european

SCIENCE DAILY – Possible foundations of human intelligence observed for the first time

A study has demonstrated how neurons in the human brain generate memories and establish narratives. Contrary to previous beliefs, individual neurons represent the concepts we learn, regardless of the context in which we encounter them. This allows humans, unlike other animals, to establish higher and more abstract relationships, which lays the foundation of human intelligence.
https://www.sciencedaily.com/releases/2025/03/250306123254.htm

SCIENCE DAILY – Prehistoric bone tool 'factory' hints at early development of ancestral abstract reasoning

The oldest collection of mass-produced prehistoric bone tools reveal that human ancestors were likely capable of more advanced abstract reasoning one million years earlier than thought, finds a new study.
https://www.sciencedaily.com/releases/2025/03/250305134707.htm

THE CONVERSATION – Inside the sex lives of chimpanzees: it's about much more than just reproduction

Any notion of a dominant alpha chimp getting all the action is far from reality.
https://theconversation.com/inside-the-sex-lives-of-chimpanzees-its-about-much-more-than-just-reproduction-251836

THE CONVERSATION – We modelled how early human ancestors ran – surprisingly slowly

There has been much debate over the years as to exactly how "Lucy" walked.
https://theconversation.com/we-modelled-how-early-human-ancestors-ran-and-found-they-were-surprisingly-slow-248964

PUBLICATIONS

Biology Letters

PAPERS

LAUREN ASCAH, BRANISLAV IGIC & ROBERT MAGRATH – Turning the tables: a tiny bird uses alarm calls and mimicry to deceive its nest predator

Animals often eavesdrop on other species' alarm calls to gain information about danger, but this can allow for deception by callers. Such deception often uses 'aerial' alarm calls, which normally warn of airborne predators and prompt immediate fleeing. The calls are deceptive if they are given when no flying predator is present and the caller benefits from the victim's response, typically by gaining food dropped when the listener flees. We studied deceptive alarm calling by brown thornbills, Acanthiza pusilla, defending offspring against predatory pied currawongs, Strepera graculina. Thornbills give their own and mimetic aerial alarm calls when defending nestlings against currawongs, who are fooled into scanning for danger or flying away. We tested whether deception works by exploiting the predator's response to aerial alarm calls, and what role mimicry plays. Currawongs were more likely to flee, and delayed feeding longer, after playback of purely aerial compared with purely mobbing alarm choruses. They responded the same regardless of what type of mimetic alarm followed the thornbill's aerial alarm. We conclude that vocal deception is effective because it exploits currawong response according to call meaning, while mimicry likely creates an illusion of a multi-species alarm chorus.
https://royalsocietypublishing.org/doi/10.1098/rsbl.2024.0710

Current Biology

ARTICLES

DANIEL SOL – Animal behaviour: A taste for elaborate flavours in Goffin's cockatoos

Among nonhuman animals, a preference for cooked food is frequently observed in captivity. New research now suggests that they could also engage in some rudimentary form of food 'cooking' to enhance flavour.
https://www.cell.com/current-biology/abstract/S0960-9822(25)00004-1

PAPERS

OHAD PELED, GILI GREENBAUM & GUY BLOCH – Diversification of social complexity following a major evolutionary transition in bees

How social complexity evolved remains a long-standing enigma. In most animal groups, social complexity is typically classified into a few discrete classes. This approach is oversimplified and constrains our inference of social evolution to a narrow trajectory consisting of transitions between classes. Such categorical classifications also limit quantitative studies on the molecular and environmental drivers of social complexity. The recent accumulation of relevant quantitative data has set the stage to overcome these limitations. Here, we propose a data-driven, high-dimensional approach for studying the full diversity of social phenotypes. We curated and analyzed a comprehensive dataset encompassing 17 social traits across 80 species and studied the evolution of social complexity in bees. We found that honey bees, stingless bees, and bumble bees underwent a major evolutionary transition ~80 mya, inconsistent with the stepwise progression of the social ladder conceptual framework. This major evolutionary transition was followed by a phase of substantial phenotypic diversification of social complexity. Other bee lineages display a continuum of social complexity, ranging from solitary to simple societies, but do not reach the levels of social complexity seen in honey bees, stingless bees, and bumble bees. Bee evolution, therefore, provides a remarkable demonstration of a macroevolutionary process in which a major transition removed biological constraints and opened novel evolutionary opportunities, driving the exploration of the landscape of social phenotypes. Our approach can be extended to incorporate additional data types and readily applied to illuminate the evolution of social complexity in other animal groups.
https://www.cell.com/current-biology/abstract/S0960-9822(25)00009-0

JERRY TANG & ALEXANDER G. HUTH – Semantic language decoding across participants and stimulus modalities

Brain decoders that reconstruct language from semantic representations have the potential to improve communication for people with impaired language production. However, training a semantic decoder for a participant currently requires many hours of brain responses to linguistic stimuli, and people with impaired language production often also have impaired language comprehension. In this study, we tested whether language can be decoded from a goal participant without using any linguistic training data from that participant. We trained semantic decoders on brain responses from separate reference participants and then used functional alignment to transfer the decoders to the goal participant. Cross-participant decoder predictions were semantically related to the stimulus words, even when functional alignment was performed using movies with no linguistic content. To assess how much semantic representations are shared between language and vision, we compared functional alignment accuracy using story and movie stimuli and found that performance was comparable in most cortical regions. Finally, we tested whether cross-participant decoders could be robust to lesions by excluding brain regions from the goal participant prior to functional alignment and found that cross-participant decoders do not depend on data from any single brain region. These results demonstrate that cross-participant decoding can reduce the amount of linguistic training data required from a goal participant and potentially enable language decoding from participants who struggle with both language production and language comprehension.
https://www.cell.com/current-biology/abstract/S0960-9822(25)00054-5

JEROEN STEPHAN ZEWALD & ALICE MARIE ISABEL AUERSPERG – Innovative flavoring behavior in Goffin's cockatoos

Dunking behavior can be a foraging innovation in non-human animals in which food is dipped in a medium prior to consumption. Five functions of this behavior have previously been suggested (soaking, cleaning, flavoring, drowning, and transporting liquid). Although experimental reports exist, most dunking observations are anecdotal, making it hard to infer its function. Previously, we reported innovative dunking behavior in a group of Goffin's cockatoos (Cacatua goffiniana) with the apparent function of soaking dry food. Here, we report cockatoos dunking in soy yogurt with the likely function of flavoring their food, something thus far only observationally reported in Japanese macaques. In an experimental setup with two types of soy yogurt and water, 9 out of 18 cockatoos dragged food through yogurt, with an overall preference for blueberry-flavored yogurt over neutral yogurt, which could not be explained by color preference alone. Furthermore, the cockatoos showed an overall preference for the combination of yogurt and noodles in a separate food preference task. This combination of quantitative and qualitative results indicates that the cockatoos use yogurt to flavor their food, preferring this combination rather than the yogurt flavor alone. Considering that not all cockatoos dunk their food in yogurt, and little overlap in individuals dunking in a previous study, this suggests a second food preparation innovation in this species. Our results thus provide experimental evidence of innovative food flavoring behavior outside the primate lineage, which may supplement our present understanding of the emergence of rare forms of food preparation behaviors in animals.
https://www.cell.com/current-biology/fulltext/S0960-9822(25)00002-8

LAURENT DEMANY, CATHERINE SEMAL & DANIEL PRESSNITZER – Simple frequency ratios naturally make precisely perceived melodies

Almost all human music is built on discrete scales of pitch. Culturally prominent scales, such as the diatonic major scale of Western music, make use of the simple frequency ratios 2:1, 3:2, and 4:3 between notes. It is generally believed that these ratios were chosen to optimize the consonance of simultaneous notes. Alternatively, or in addition, it is conceivable that these ratios are intrinsically advantageous for the perceptual encoding of melodies. Here, we provide behavioral support for

this hypothesis. In three experiments, young Western adults had to detect pitch anomalies ("sour notes") in partly random pure-tone melodies based on various musical scales, including novel ones. The task did not require any musical knowledge. Most importantly, the listeners were extensively trained in order to saturate familiarity with the scales: for a given scale and listener, more than 2,000 (up to 5,280) trials were run. Practice largely improved performance. This occurred even for the diatonic major scale, suggesting that performance in our task was not biased by previous musical enculturation. Frequency ratio simplicity also favored performance. Crucially, its benefit was not smaller in the final test sessions, when performance for each scale was presumably optimal and no longer improvable by practice, than in the initial test sessions. Thus, frequency ratio simplicity appeared to be intrinsically advantageous, rather than advantageous merely due to familiarity. The naturalness of melodic intervals defined by simple frequency ratios is likely to have contributed to the cultural selection of musical scales.
https://www.cell.com/current-biology/abstract/S0960-9822(25)00193-9

eLife

NEWS

Mapping infant brains
Movie watching may provide scientists a window into infant brain activity and organization.
https://elifesciences.org/digests/92119/mapping-infant-brains

PAPERS

XIAOPEI WANG et al – The paradox of extremely fast evolution driven by genetic drift in multi-copy gene systems
Multi-copy gene systems that evolve within, as well as between, individuals are common. They include viruses, mitochondrial DNAs, multi-gene families etc. The paradox is that neutral evolution in two stages should be far slower than single-copy systems but the opposite is often true, thus leading to the suggestion of natural selection. We now apply the new Generalized Haldane (GH) model to quantify genetic drift in the mammalian ribosomal RNA genes (or rDNAs). On average, rDNAs have C ~ 150 - 300 copies. A neutral mutation in rDNA should take 4NC* generations to become fixed (N, the population size; C*, the effective copy number). While C > C* >> 1 is expected, the observed fixation time in mouse and human is < 4N, hence the paradox of C*< 1. Genetic drift thus appears as much as 100 times stronger for rRNA genes as for single-copy genes. The large increases in genetic drift are driven by a host of molecular mechanisms such as gene conversion and unequal crossover. Although each mechanism of drift has been extremely difficult to quantify, the GH model permits the estimation of their total effects on genetic drift. In conclusion, the GH model can be generally applicable to multi-copy gene systems without being burdened by tracking the diverse molecular mechanisms individually.
https://elifesciences.org/reviewed-preprints/99992

ANTONIO LEITAO et al – Evidence of social learning across symbolic cultural barriers in sperm whales
We provide quantitative evidence suggesting social learning in sperm whales across sociocultural boundaries, using acoustic data from the Pacific and Atlantic Oceans. Traditionally, sperm whale populations are categorized into clans based on their vocal repertoire: the rhythmically patterned click sequences (codas) that they use. Among these codas, identity codas function as symbolic markers for each clan, accounting for 35-60% of codas they produce. We introduce a computational method to model whale communication, which encodes rhythmic micro-variations within codas, capturing their vocal style. We find that vocal style-clans closely align with repertoire-clans. However, contrary to vocal repertoire, we show that sympatry increases vocal style similarity between clans for non-identity codas, i.e. most codas, suggesting social learning across cultural boundaries. More broadly, this subcoda structure model offers a framework for comparing communication systems in other species, with potential implications for deeper understanding of vocal and cultural transmission within animal societies.
https://elifesciences.org/reviewed-preprints/96362

SAINAN LIU et al – Multi-dimensional social relationships shape social attention in monkeys
Social relationships guide individual behavior and ultimately shape the fabric of society. Primates exhibit particularly complex, differentiated, and multidimensional social relationships, which form interwoven social networks, reflecting both individual social tendencies and specific dyadic interactions. How the patterns of behavior that underlie these social relationships emerge from moment-to-moment patterns of social information processing remains unclear. Here, we assess social relationships among a group of four monkeys, focusing on aggression, grooming, and proximity. We show that individual differences in social attention vary with individual differences in patterns of general social tendencies and patterns of individual engagement with specific partners. Oxytocin administration altered social attention and its relationship to both social tendencies and dyadic relationships, particularly grooming and aggression. Our findings link the dynamics of visual information sampling to the dynamics of primate social networks.
https://elifesciences.org/articles/104460

Evolutionary Anthropology

PAPERS

MATHILDE LEQUIN et al – Investigating Development in Human Evolution: Specificities, Challenges, and Opportunities

Unlike developmental biologists, paleoanthropologists primarily investigate development using skeletal remains, specifically fossilized and already-formed bones and teeth. Focusing on peri- and/or postnatal growth, they reconstruct development from fragmented "snapshots" of individual trajectories at various ontogenetic stages. These constraints prompt a discussion of what defines development versus growth, and its boundaries in studies of hominin evolution. We explore how paleoanthropologists address the limitations of the fossil record by using diverse methodological and theoretical frameworks to identify developmental markers despite missing data. Finally, we discuss the potential of the "Extended Evolutionary Synthesis," which calls for a greater focus on developmental processes in interpreting phenotypic variation in the fossil record.

https://onlinelibrary.wiley.com/doi/full/10.1002/evan.70001

Frontiers in Psychology

PAPERS

JIEYU LV et al – Imagined eye cue increased altruistic behavior toward charity instead of stranger

Previous research has not established a significant link between imagined eye cue and altruistic behavior, nor has it verified whether a sense of being seen played a role in it. This study employed a between-subjects design with a single factor (Cue Type: Imagined Eye Cue/Imagined Flower Cue/No Cue) to explore the impact of imagined eye cue on individuals' altruistic behavior in two different dictator games, and also assessed the mediating role of a sense of being seen. It revealed that participants who was presented with imagined eye cue acted more altruistically than those who was presented with imagined flower cue or no cue when the recipient of the dictator game was a charity. Although imagined eye cue strengthened participants' a sense of being seen, this sense did not mediate the relationship between cue type and altruistic behavior. The findings suggest that the imagined eye cue may encourage individuals to donate generously by stimulating their internal social norms. This provides a theoretical rationale for the normative mechanisms underlying the watching eyes effect and explores a more cost-effective and accessible approach for interventions aimed at promoting charitable behavior.

https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2025.1503766/full

SHIGERU MIYAGAWA et al with IAN TATTERSALL – Linguistic capacity was present in the Homo sapiens population 135 thousand years ago

Recent genome-level studies on the divergence of early Homo sapiens, based on single nucleotide polymorphisms, suggest that the initial population division within H. sapiens from the original stem occurred approximately 135 thousand years ago. Given that this and all subsequent divisions led to populations with full linguistic capacity, it is reasonable to assume that the potential for language must have been present at the latest by around 135 thousand years ago, before the first division occurred. Had linguistic capacity developed later, we would expect to find some modern human populations without language, or with some fundamentally different mode of communication. Neither is the case. While current evidence does not tell us exactly when language itself appeared, the genomic studies do allow a fairly accurate estimate of the time by which linguistic capacity must have been present in the modern human lineage. Based on the lower boundary of 135 thousand years ago for language, we propose that language may have triggered the widespread appearance of modern human behavior approximately 100 thousand years ago.

https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2025.1503900/full

CORRECTIONS

ANTONIO BENÍTEZ-BURRACO – Corrigendum: How (and why) languages became more complex as we evolved more prosocial: the human self-domestication view

In the published article, there was an error in the Funding statement and some funding information was omitted. Original Funding statement:

The author(s) declare that financial support was received for the research, authorship, and/or publication of this article. This research was supported by grant PID2023-147095NB-I00 funded by MCIN/AEI/10.13039/501100011033.

The correct Funding statement appears below.

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The author apologizes for this error and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2025.1583411/full

Language Sciences

PAPERS

ANDREW J. GUYDISH & JEAN E. FOX TREE – Collateral signals and conversation quality

When we think of the quality of a conversation, what comes to mind? Generally, it is the content that was discussed during the conversation, with uplifting topics leading to positive experiences, and dispiriting topics leading to negative experiences. However, there is also a great deal of information that is exchanged in the process of conveying conversational content, such as how communicators get their words out, how they produce those words, and how they manage the conversations that support the exchange of content information. In this paper, we explore the possible influence of collateral signals on judgements of conversational quality. Specifically, we examine how juxtapositions, concomitants, inserts, and modifications may influence conversational quality. We provide examples of each type of collateral signal from a variety of sources, and we discuss the possible impact each signal may have on conversational quality. Based on our analysis of the examples included, we propose that collateral signals may have a direct influence on conversational quality judgements that are independent of conversational content. That is, the subjective evaluation of conversations by interlocutors may not end simply at what is said, but how it was said.
https://www.sciencedirect.com/science/article/pii/S0388000125000117

Linguistic Anthropology

PAPERS

RICKARD JONSSON & ANNA G. FRANZÉN – Excluding unlaughter: Humor as affective practice in a youth detention center for boys

Ahmed has suggested that refusing to laugh may be used as a political strategy for oppressed groups. But what happens when it becomes a tool of discipline and exclusion? Drawing on a video ethnographic study of incarcerated boys and their staff in detention home treatment, this paper focuses on one of the boy's struggle for inclusion. Despite formal equal treatment, his exclusion was maintained by the others' refusal to laugh at his attempts to be funny. We thus aim to study, in interactional detail, how unlaughter may work as a subtle yet powerful affective practice.
https://anthrosource.onlinelibrary.wiley.com/doi/full/10.1111/jola.70002

Mind & Language

PAPERS

DOMINIC ALFORD-DUGUID – Learning from presupposition

P. F. Strawson famously distinguishes what a speaker presupposes from what she asserts in uttering a sentence like “The present King of France is bald”. This paper defends a claim about presupposition's epistemic significance, namely that presupposition can provide a distinctive testimony-based way for an audience to learn about the world.
https://onlinelibrary.wiley.com/doi/full/10.1111/mila.12549

Nature

ARTICLES

XOSÉ PEDRO RODRÍGUEZ-ÁLVAREZ & MARÍA MARTINÓN-TORRES – An archaic European face more than one million years old

The partial midface of a hominin fossil has been found in the Sima del Elefante cave site near Burgos, northern Spain, and dates to between 1.4 million and 1.1 million years ago. Its discovery enables the exploration of the facial features of early Europeans and enhances our understanding of the evolutionary history of European ancestors.
https://www.nature.com/articles/d41586-025-00678-z

ROSA HUGUET et al with DAVID LORDKIPANIDZE & JOSÉ MARÍA BERMÚDEZ DE CASTRO – The earliest human face of Western Europe

Who the first inhabitants of Western Europe were, what their physical characteristics were, and when and where they lived are some of the pending questions in the study of the settlement of Eurasia during the Early Pleistocene epoch. The available palaeoanthropological information from Western Europe is limited and confined to the Iberian Peninsula. Here we present most of the midface of a hominin found at the TE7 level of the Sima del Elefante site (Sierra de Atapuerca, Spain), dated to between 1.4 million and 1.1 million years ago. This fossil (ATE7-1) represents the earliest human face of Western Europe identified thus far. Most of the morphological features of the midface of this hominin are primitive for the Homo clade and they do not display the modern-like aspect exhibited by Homo antecessor found at the neighbouring Gran Dolina site, also in the Sierra de Atapuerca, and dated to between 900,000 and 800,000 years ago. Furthermore, ATE7-1 is more derived in the nasoalveolar region than the Dmanisi and other roughly contemporaneous hominins. On the basis of the available evidence, it is reasonable to assign the new human remains from TE7 level to Homo aff. erectus. From the archaeological, palaeontological and palaeoanthropological information obtained in the lower levels of the Sima del Elefante and Gran Dolina sites, we suggest a turnover in the human population in Europe at the end of the Early Pleistocene.

https://www.nature.com/articles/s41586-025-08681-0

OBITUARIES

NILES ELDREDGE – Elisabeth Vrba obituary: palaeontologist who solved a problem that vexed Darwin
The biologist's theories about how environments prompt rapid species evolution and extinction propelled her onto the world stage.
https://www.nature.com/articles/d41586-025-00778-w

Nature Communications Psychology

PAPERS

ISABELLE DAUTRICHE & EMMANUEL CHEMLA – Evidence for compositional abilities in one-year-old infants
Compositionality is a means of constructing complex objects through the transformation and combination of simpler elements. While it is common to view compositionality as inherently complex, and thus to assume that compositionality is a byproduct of advanced language expertise, we argue otherwise. We propose that, although compositionality produces complex outcomes, the underlying processes are simple and can often be reduced to the general mechanism of function application. Accordingly, we explore the origins of compositionality not only in compositional language but also, and at an earlier stage, in the development of compositional representations and thoughts in young infants. Infants correctly composed simple noun-verb sentences at 14 months, facial expressions with objects at 12 months, and mental physical transformations at 10 months. This offers evidence for function application, the essence of compositionality, in infancy—emerging well before and outside the development of compositional language.
https://www.nature.com/articles/s44271-025-00222-9

Nature Human Behaviour

PAPERS

YOSSI ZAIDNER et mul – Evidence from Tinshemet Cave in Israel suggests behavioural uniformity across Homo groups in the Levantine mid-Middle Palaeolithic circa 130,000–80,000 years ago
The south Levantine mid-Middle Palaeolithic (mid-MP; ~130–80 thousand years ago (ka)) is remarkable for its exceptional evidence of human morphological variability, with contemporaneous fossils of Homo sapiens and Neanderthal-like hominins. Yet, it remains unclear whether these hominins adhered to discrete behavioural sets or whether regional-scale intergroup interactions could have homogenized mid-MP behaviour. Here we report on our discoveries at Tinshemet Cave, Israel. The site yielded articulated Homo remains in association with rich assemblages of ochre, fauna and stone tools dated to ~100 ka. Viewed from the perspective of other key regional sites of this period, our findings indicate consolidation of a uniform behavioural set in the Levantine mid-MP, consisting of similar lithic technology, an increased reliance on large-game hunting and a range of socially elaborated behaviours, comprising intentional human burial and the use of ochre in burial contexts. We suggest that the development of this behavioural uniformity is due to intensified inter-population interactions and admixture between Homo groups ~130–80 ka.
https://www.nature.com/articles/s41562-025-02110-y

XI CHENG et al – The conceptual structure of human relationships across modern and historical cultures
A defining characteristic of social complexity in Homo sapiens is the diversity of our relationships. We build connections of various types in our families, workplaces, neighbourhoods and online communities. How do we make sense of such complex systems of human relationships? The basic organization of relationships has long been studied in the social sciences, but no consensus has been reached. Here, by using online surveys, laboratory cognitive tasks and natural language processing in diverse modern cultures across the world (n = 20,427) and ancient cultures spanning 3,000 years of history, we examined universality and cultural variability in the ways that people conceptualize relationships. We discovered a universal representational space for relationship concepts, comprising five principal dimensions (formality, activeness, valence, exchange and equality) and three core categories (hostile, public and private relationships). Our work reveals the fundamental cognitive constructs and cultural principles of human relationship knowledge and advances our understanding of human sociality.
https://www.nature.com/articles/s41562-025-02122-8

TIMOTHY DÖRR et al – A research agenda for encouraging prosocial behaviour on social media
Many studies examine antisocial behaviours on social media—such as sharing misinformation or producing hate speech—but far fewer examine how platforms can incentivize more prosocial behaviour. We identify several ways in which social media platforms currently enable such behaviour, including (1) connecting new communities, (2) enabling collective problem-solving and (3) expanding the boundaries of philanthropy. However, we also discuss how some of the factors that enable prosocial behaviour can also empower malicious actors—as well as the challenge of creating prosocial behaviour that is sustainable and impactful offline. We then propose a research agenda to help scholars, policymakers and corporate leaders to identify the causal factors that shape prosocial behaviour on social media. This agenda focuses on (1) the size and shape of

social networks, (2) platform affordances, (3) social norms and (4) how prosocial behaviour can be embedded within existing and future business models of social media.
https://www.nature.com/articles/s41562-025-02102-y

Nature Neuroscience

PAPERS

IIT-CONCERNED et al – What makes a theory of consciousness unscientific?
Theories of consciousness have a long and controversial history. One well-known proposal — integrated information theory — has recently been labeled as 'pseudoscience', which has caused a heated open debate. Here we discuss the case and argue that the theory is indeed unscientific because its core claims are untestable even in principle.
https://www.nature.com/articles/s41593-025-01881-x

Nature Scientific Reports

PAPERS

ADRIAN SOLDATI et al with CATHERINE HOBAITER, KLAUS ZUBERBÜHLER & JOSEP CALL – Social and individual factors mediate chimpanzee vocal ontogeny
Human language develops in social interactions. In other ape species, the role of social learning in vocal ontogeny can be typically underappreciated, mainly because it has received little empirical attention. Here, we examine the development of pant hoot vocalisations during vocal exchanges in immature wild chimpanzees (Pan troglodytes schweinfurthii) of the Sonso community of the Budongo Forest, Uganda. We investigated how maternal gregariousness, age, sex, and social context are associated with behavioural and vocal responses to other group members' calls. We show that the older sons of gregarious mothers are more likely to orient their attention, respond vocally to the calls of others, and are overall more exposed to others' calls compared to other immature individuals. This effect is strongest in the presence of adult males and when their mothers also respond vocally, suggesting that chimpanzee vocal development is enhanced by social and vocal exposure. Our findings are consistent with a more flexible and socially mediated chimpanzee vocal ontogeny than previously assumed and show some parallels with animal vocal learners and children language acquisition.
https://www.nature.com/articles/s41598-025-93207-x

Neuron

PAPERS

EMILY S. CROSS – The neuroscience of dance takes center stage
This paper explores the trajectory and horizons of dance neuroscience. Bridging art and science to reveal neurobiological underpinnings of skilled movement, multisensory integration, social interaction, and aesthetics, researchers in this field are creatively channeling methodological innovation to maximize interdisciplinary impact.
https://www.cell.com/neuron/abstract/S0896-6273(25)00042-X

New Scientist

NEWS

Chimps and bonobos relieve social tension by rubbing their genitals
When competition for food is high, both chimps and bonobos sometimes rub their genitals together to cope.
https://www.newscientist.com/article/2470794-chimps-and-bonobos-relieve-social-tension-by-rubbing-their-genitals/

ARTICLES

LAURA SPINNEY – The epic scientific quest to reveal what makes folktales so compelling
Linguists, psychologists and experts in cultural evolution are discovering why we tell stories, how ancient the oldest ones are and why some tales run and run.
https://www.newscientist.com/article/mg26535340-600-the-epic-scientific-quest-to-reveal-what-makes-folktales-so-compelling/

MICHAEL MARSHALL – The biggest coincidence in human evolution
Farming arose on multiple continents among populations with radically different cultures and environments and with no means of communicating with each other – how did it crop up independently at about the same time?
https://www.newscientist.com/article/2471540-the-biggest-coincidence-in-human-evolution/

ROWAN HOOPER & PENNY SARCHET – Chimp and bonobo sexuality [Podcast]
Chimps are often seen as our hyper-aggressive ancestral cousins, while bonobos are famously more peaceful and caring. But studies of their sexual habits and practices show they are much more alike than we realised.
https://www.newscientist.com/podcasts/

SOPHIE BERDUGO – Do we all see red as the same colour? We finally have an answer
It is impossible for us to know exactly how another person's experience of the world compares to our own, but a new experiment is helping to reveal that colour is indeed a shared phenomenon.
https://www.newscientist.com/article/2470759-do-we-all-see-red-as-the-same-colour-we-finally-have-an-answer/

MICHAEL MARSHALL – Ancient humans used bone tools a million years earlier than we thought
Hominins may have learned how to make bone tools by adapting the techniques they mastered for stone ones.
https://www.newscientist.com/article/2470951-ancient-humans-used-bone-tools-a-million-years-earlier-than-we-thought/

PeerJ

PAPERS

RENEE C. RUSSELL et al – Fairly flexible: brown-tufted capuchins and a squirrel monkey adjust their motor responses in a foraging task
Prior research on non-human primates has produced contradictory results regarding behavioral flexibility and habit formation. Most observational studies of wild primates show flexibility in foraging behavior, whereas experimental data suggest captive primates tend to form habits, thus displaying conservative tendencies. Jacobson and Hopper (2019) proposed and supported the hypothesis that captive apes' conservatism resulted from causally-unclear experimental apparatuses rather than a lack of flexibility as previous studies concluded. We replicated the experiment conducted by Jacobson and Hopper (2019) on apes with 18 brown capuchin monkeys (Cebus [Sapajus] apella) and five squirrel monkeys (Saimiri sciureus). Our goal was to investigate if they showed a similar degree of flexibility to chimpanzees (Pan troglodytes) and western lowland gorillas (Gorilla gorilla gorilla) when presented with a causally-clear task. Thus, the primary aim of this study was to determine whether this task was causally clear to monkeys, and if so, to compare their performance to that of apes. Monkeys were presented with a baited, clear tube where the removal of rods would allow the reward to drop, thus enabling the subject to retrieve said reward. Phase 1 of the study allowed us to determine whether the monkeys had a causal understanding of the task and provided an opportunity for habits to develop. Phase 2 presented the monkeys with a new reward configuration, requiring the removal of fewer rods to retrieve the reward to test if their causal understanding of the task would result in a flexible, more efficient response. The capuchins demonstrated cognitive flexibility and possible causal understanding in a manner similar to that of the apes. However, only one of five squirrel monkeys was efficient, suggesting the majority may not have understood a causal relationship between removing the rods and receiving the reward. Our study supports Jacobson and Hopper's (2019) conclusion that causally-clear tasks reduce habit formation and conservatism in capuchins, but more evidence is needed with respect to squirrel monkeys.
https://peerj.com/articles/19023/

Physics of Life Reviews

COMMENTARIES

GEORG NORTHOFF – Brain paradox – Timescales matter! Comment on "The paradox of the self-studying brain" by S.Battaglia, P. Servajean & K. Friston
No information accessible.
Original Article: see EAORC Bulletin 1,126, https://www.sciencedirect.com/science/article/pii/S1571064524001787
https://www.sciencedirect.com/science/article/abs/pii/S1571064525000314

PLoS One

PAPERS

WENBO LI et al – Reflecting on Dunbar's numbers: Individual differences in energy allocation to personal relationships
Past studies have investigated the variability in how people engage with their personal networks, yet less is known about how people perceive their energy allocation to different ties. Drawing on an online survey sample (N = 906), we tested whether subjective perceptions of energy allocation conform to so-called Dunbar's Number(s). In addition, we evaluated the predictive roles of Big Five personality traits and self-esteem while controlling for differences in network structure. Results revealed significant heterogeneity in perceived energy allocation to different layers of personal networks (i.e., inner 5 vs. middle 15 vs. outer 150 relationships). In contrast to expectations, extraversion was not associated with perceived energy allocation, whereas self-esteem was associated with greater energy allocation to the middle (vs. inner) network layer. Our findings add to our knowledge of how people perceive relationship maintenance across their personal networks, along with the links to key psychological traits. More broadly, the findings suggest that more attention should be paid to psychological implications of the middle layer of personal networks. To conclude, we discuss the importance of studying individual differences in how people prioritize – and reflect on – different relationships in their networks.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0319604

Royal Society Open Science

PAPERS

DHWANI P. SADAPHAL et al with W. TECUMSEH FITCH – Beyond perfect synchrony: shared interpersonal rhythmic timing enhances self-other merging judgements

Perfect synchrony is highly prosocial, yet interpersonal rhythms globally exhibit rich variation. In two online experiments, we tested the effect of varying interpersonal rhythms on self-other merging. First, we hypothesized that shared temporal features, acting as attentional frameworks to track and integrate self-other actions, would drive combined representations. Participants viewed and rated self-other pairs producing simple rhythms, polyrhythms and irregular rhythms, at three complexity levels. Merging was unsurprisingly highest for perfect synchrony and declined with other rhythmic ratios. Crucially, simpler polyrhythms were rated higher than irregular rhythms, supporting our tracking-and-integration hypothesis. Second, we tested whether interpersonal rhythmic variation specifically affected self-other merging versus aesthetic judgements, by collecting liking ratings for the identical stimuli. We hypothesized that liking would be driven by overall perceptual features versus interpersonal features. While ratings were unaffected by simple rhythms' ratios, polyrhythms showed a sharp decrease, suggesting that social individuation inherent in polyrhythms additionally affected aesthetic judgements. The distinct liking pattern suggested that self-other merging judgements were specifically linked to the interpersonal nature of rhythmic variation, and not mere aesthetic preferences. Our data are consistent with the hypothesis that interpersonal rhythmic variation evolved to support prosocial bonds by signalling shared intentions and aiding clear self-other distinctions.
https://royalsocietypublishing.org/doi/10.1098/rsos.241501

PAUL HÖMKE et al with STEPHEN C. LEVINSON – Eyebrow movements as signals of communicative problems in human face-to-face interaction

Repair is a core building block of human communication, allowing us to address problems of understanding in conversation. Past research has uncovered the basic mechanisms by which interactants signal and solve such problems. However, the focus has been on verbal interaction, neglecting the fact that human communication is inherently multimodal. Here, we focus on a visual signal particularly prevalent in signalling problems of understanding: eyebrow furrows and raises. We present, first, a corpus study showing that differences in eyebrow actions (furrows versus raises) were systematically associated with differences in the format of verbal repair initiations. Second, we present a follow-up study using an avatar that allowed us to test the causal consequences of addressee eyebrow movements, zooming into the effect of eyebrow furrows as signals of trouble in understanding in particular. The results revealed that addressees' eyebrow furrows have a striking effect on speakers' speech, leading speakers to produce answers to questions several seconds longer than when not perceiving addressee eyebrow furrows while speaking. Together, the findings demonstrate that eyebrow movements play a communicative role in initiating repair during conversation rather than being merely epiphenomenal and that their occurrence can critically influence linguistic behaviour. Thus, eyebrow movements should be considered core coordination devices in human conversational interaction.
https://royalsocietypublishing.org/doi/10.1098/rsos.241632

Science

NEWS

Consciousness before birth? Imaging studies explore the possibility

Fetal and infant brains offer clues to when human experience begins.
https://www.science.org/content/article/consciousness-birth-imaging-studies-explore-possibility

Fossil face found in Spanish cave belongs to first known Western European

Ancient remains suggest at least two types of early humans roamed Europe about 1 million years ago.
https://www.science.org/content/article/fossil-face-found-in-spanish-cave-belongs-first-known-western-european

Trends in Cognitive Sciences

PAPERS

QI WANG & NAZIKE MERT – Collective future thinking at a time of geopolitical tension

People in many Western countries hold a dim view of their collective future, a negativity bias not universally shared but related to societal factors, such as country well-being, nationalism, and news coverage. An optimistic outlook should be cultivated to promote civic engagement and constructive policymaking at this time of geopolitical tension.
{Or, as I like to express it, in five years' time we can be laughing. We'll be wearing white jackets with our arms strapped across our chests, but we can be laughing.}
https://www.cell.com/trends/cognitive-sciences/abstract/S1364-6613(25)00055-5

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