EAORC BULLETIN 1,144 – 18 May 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.

NEWS

NATURE BRIEFING – Chimps got rhythm

Wild chimpanzees drum on tree roots in specific rhythms to communicate across long distances. These rhythms differ between populations — western chimps (Pan troglodytes verus) thump in evenly spaced beats, while their eastern counterparts (Pan troglodytes schweinfurthii) take alternating long and short pauses after beats. A separate study explored how Western chimps drum by throwing stones against trees. Researchers suggest the behaviours are influenced by the social dynamics of the animals' groups, and could hint at the evolutionary origins of musicality.
https://www.science.org/content/article/chimpanzee-drumming-may-give-clues-roots-rhythm

NATURE BRIEFING – Human DNA snippet gives mice mega-brains

Inserting a snippet of genetic code unique to humans into mice helps the animals grow bigger brains than usual. The stretch of DNA, called HARE5, acts like a dial to turn up the expression of certain genes, expanding the outer layer of the mouse brain by increasing the production of cells that become neurons. The finding could help to explain how humans evolved such large brains compared with their primate relatives.
https://www.nature.com/articles/d41586-025-01515-z

NEWS FROM SCIENCE – Neanderthals made mysterious horse-hunting spears, new dates reveal

Ancient amino acids suggest German weapons are some 100,000 years younger than once thought.
https://www.science.org/content/article/neanderthals-made-mysterious-horse-hunting-spears-new-dates-reveal

NEWS FROM SCIENCE – Watch cuttlefish communicate—with enthusiastic gestures

By moving their arms, these smart cephalopods seem to send signals via visual cues and pressure waves.
https://www.science.org/content/article/watch-cuttlefish-communicate-enthusiastic-gestures

NEWS FROM SCIENCE – Chimpanzee drumming may give clues to the roots of rhythm

Behavior is more complex than scientists realized, could reveal origins of musicality.
https://www.science.org/content/article/chimpanzee-drumming-may-give-clues-roots-rhythm

NEWS FROM SCIENCE – 'About as close to aliens as we'll ever get.' Can AI crack animal language?

Dolittle Prize recognizes breakthroughs in translating "speech" of dolphins, cuttlefish, and other creatures.
https://www.science.org/content/article/about-close-aliens-we-ll-ever-get-can-ai-crack-animal-language

SAPIENS – Monogamy. Grandmas. Milk. The Evolution of Childhood Is Very Strange.

In a new book, Growing Up Human, a bioarchaeologist chronicles some of the most surprising evolutionary adaptations of babies, parents, and grandparents.
https://www.sapiens.org/biology/strangest-things-evolution-childhood/

SAPIENS – Ancient Tools in East Asia Reveal Middle Paleolithic Innovation

"New technologies today often involve electronic devices that are smaller and smarter than before. During the Middle Paleolithic, when Neanderthals were modern humans' neighbors, new technologies meant something quite different: new kinds of stone tools that were smaller but could be used for many tasks and lasted for a long time.
https://www.sapiens.org/archaeology/ancient-tools-china-innovation-archaeology/

SCIENCEADVISER – Neanderthals made mysterious German horse-hunting spears

The Schöningen spears, found preserved in an open-pit coal mine in Germany, have long captivated archaeologists. When they were first excavated, they were initially dated to between 300,000 and 400,000 years old—a strange time in Europe before Neanderthals came on the scene but seemingly too late for another hominin species, Homo heidelbergensis, to have been their maker. Which species fashioned these wooden spears with fire-hardened tips and used them to hunt horses was an enduring mystery.

Perhaps until now. Researchers reported last week in Science Advances that the initial dates for the Schöningen were simply wrong. They redated the spears based on a method known as amino acid dating: By crushing the shells of tiny freshwater snail fossils found alongside the spears and dissolving their calcium, the researchers could measure the predictable breakdown of amino acids over time, giving them an estimated age when they were deposited.

With this technique, the scientists found the site was much younger than previously thought—around 200,000 years old. That puts it squarely in the time of the Neanderthals. "It's a bit disappointing when you make sites younger rather than older," says geochemist and study co-author Kirsty Penkman, "but being 200,000 years old makes more sense from an archaeological perspective."
https://www.science.org/doi/10.1126/sciadv.adv0752

SCIENCEADVISER – Chimpanzees have rhythm—and they know how to use it

Deep in the African rainforest, chimps aren't just making noise—they're drumming to the beat of their own communities. Two new studies reveal that chimpanzees drum with distinct, consistent rhythms that differ between groups, hinting at the roots of human musicality.

In one study, a team analyzed 370 drumming bouts from wild chimps from two subspecies over 25 years. The researchers found that western chimpanzees (Pan troglodytes verus) tend to drum in even beats, "like the ticking of a clock," says Vesta Eleuteri, a behavioral biologist at the University of Vienna who led the study, published in Current Biology. However, eastern chimps (P.t. schweinfurthii) use a more varied rhythm, alternating short and long pauses. These patterns, paired with pant-hoots and body swaying suggesting deep-rooted social or cultural influences.

Meanwhile, another study in Biology Letters uncovered a rare twist: Some western chimps drum with stones. In Guinea-Bissau, researchers analyzed chimps throwing rocks at resonant tree trunks—often at trees where stones were already stockpiled—suggesting a socially learned, possibly cultural behavior.

The fact that chimps not only drum rhythmically but also vary how they do it raises questions about the evolutionary origins of music. It's not just random noise—it's a structured communication signal.
https://www.science.org/content/article/chimpanzee-drumming-may-give-clues-roots-rhythm

SCIENCEADVISER – Brain boost

Inserting a unique stretch of human DNA into mice increases their brain size by about 6.5%, a finding that could help explain how humans became so much brainier than our primate relatives.
https://www.nature.com/articles/s41586-025-09002-1

SCIENCEADVISER – Chimp first aid

Wild chimpanzees treat each other's injuries by licking and dabbing them with leaves, according to a new study based on 30 years of observations in Uganda's Budongo Forest.
https://www.frontiersin.org/journals/ecology-and-evolution/articles/10.3389/fevo.2025.1540922/full

SCIENCE DAILY – The world's wealthiest 10% caused two thirds of global warming since 1990

Wealthy individuals have a higher carbon footprint. A new study quantifies the climate outcomes of these inequalities. It finds that the world's wealthiest 10% are responsible for two thirds of observed global warming since 1990 and the resulting increases in climate extremes such as heatwaves and droughts.

{Yet another way in which excess personal wealth accumulation is problematic.}

https://www.sciencedaily.com/releases/2025/05/250507130519.htm

SCIENCE DAILY – The origins of language

Wild chimpanzees alter the meaning of single calls when embedding them into diverse call combinations, mirroring linguistic operations in human language. Human language, however, allows an infinite generation of meaning by combining phonemes into words and words into sentences. This contrasts with the very few meaningful combinations reported in animals, leaving the mystery of human language evolution unresolved.

https://www.sciencedaily.com/releases/2025/05/250509154213.htm

SCIENCE DAILY – Chimpanzee groups drum with distinct rhythms

New research from a team of cognitive scientists and evolutionary biologists finds that chimpanzees drum rhythmically, using regular spacing between drum hits. Their results show that eastern and western chimpanzees -- two distinct subspecies -- drum with distinguishable rhythms. The researchers say these findings suggest that the building blocks of human musicality arose in a common ancestor of chimpanzees and humans.

https://www.sciencedaily.com/releases/2025/05/250509121903.htm

SCIENCE DAILY – Birds form bonds that look a lot like friendship

A study of starlings in Africa shows that they form long-term social bonds similar to human friendships.

https://www.sciencedaily.com/releases/2025/05/250507125846.htm

SCIENCE DAILY – More social parrots have a better vocabulary

For social animals, communication is a key that unlocks the benefits of group living. It's well known that animals with more complex social lives tend to have more intricate ways of communicating, from the clicks and whistles of dolphins to the calls of primates. While this pattern is found broadly in many species, a new study on wild parrots drills deep into the social and vocal lives of individual birds. Researchers analyzing the social networks of monk parakeets in Spain have uncovered how an individual's social ties shapes the calls these birds make.

https://www.sciencedaily.com/releases/2025/05/250506224421.htm

SCIENCE DAILY – Study suggests we don't just hear music, but 'become it'

Psychologists suggest our brains and bodies don't just understand music, they physically resonate with it. These discoveries, based on findings in neuroscience, music, and psychology, support Neural Resonance Theory (NRT).

https://www.sciencedaily.com/releases/2025/05/250506170920.htm

SCIENCENEWS – Wild chimpanzees give first aid to each other

In the Budongo Forest of Uganda, researchers have seen chimpanzees not only treating themselves when they get hurt, but also tending to each other's wounds. The extraordinary behavior, including licking wounds or dabbing them with leaves, has been documented in the forest over the past 30 years. As Martin J. Kernan reports, it's possible this form of first aid is common among chimps – and it may offer a glimpse at the origins of human health care.

How do licks and leaves help? Saliva and some plants may contain antimicrobial compounds that can help prevent infection, the researchers told Kernan. They observed other altruistic acts, too, including a male chimp who freed an unrelated female from a hunting snare set by humans.

What does this tell us about humans? Chimps and Homo sapiens are connected by a deep evolutionary heritage, notes Harvard primatologist Christine Webb. So seeing these kinds of acts in modern chimps hints at a shared impulse to care for others.

https://www.sciencenews.org/article/wild-chimpanzees-first-aid-health-care

PUBLICATIONS

Academia Biology

PAPERS

ROBERT A. DIELENBERG – The biological foundations of fixation: a general theory

This article attempts to develop a generalized theory of fixations. A literature survey reveals three levels of description: physiological, systemic, and cognitive-behavioral. Examples of each level are provided, followed by a focus on cognitive-

behavioral fixations. A cognitive-behavioral fixation is typically an obsessive preoccupation with a single idea, impulse, or aim that interferes with normal behavior. However, this definition is argued to be too narrow, as fixations are fundamental to all biological systems and only become maladaptive when something goes wrong. Fixations form the basis of stable cognition and behavior through projection, where the organism imposes cognitive content on itself and the world to form stable percepts. This leads to the idea that the brain functions as a fixation-projection machine. The second half of this article briefly examines religious fixations, the most pervasive in terms of cognition and behavior, focusing on how children give up belief in Santa Claus but retain belief in God into adulthood. The concept of a fixation network is used to explain the mechanism behind this phenomenon. This article concludes with the hypothesis that a fixation network can only be weakened by first dissolving the auxiliary fixations that have accrued to core fixations in the network.
https://www.academia.edu/2837-4010/2/3/10.20935/AcadBiol7360

Biology Letters

PAPERS

MELQUISEDEC GAMBA-RIOS, GARY F. MCCRACKEN & GLORIANA CHAVERRI – Recognition of predator cues hinders social communication

Anti-predator defences often rely on perception and discrimination of cues from predators, and alteration of behaviour by potential prey. The characteristics of acoustic signals allow eavesdropping on calls of predators, permitting listeners to gauge predation risk by assessing the location and identity of the signaller. We tested the ability of bats that are preyed upon by other bats to discriminate between echolocation calls of predators and non-predators and the impact of risk reduction strategies on communication. Bats distinguished between echolocation calls of predators and non-predators, recognizing predator calls with high accuracy. However, bats were more cautious when the structure of non-predator calls was similar to predator calls. In the presence of predator calls, bats ceased social communication, which could impact sociality and disrupt group cohesion.
https://royalsocietypublishing.org/doi/10.1098/rsbl.2025.0042

Developmental Cell

PAPERS

DUOYUAN CHEN et mul – Genomic evolution reshapes cell-type diversification in the amniote brain

Over 320 million years of evolution, amniotes have developed complex brains and cognition through largely unexplored genetic and gene expression mechanisms. We created a comprehensive single-cell atlas of over 1.3 million cells from the telencephalon and cerebellum of turtles, zebra finches, pigeons, mice, and macaques, employing single-cell resolution spatial transcriptomics to validate gene expression patterns across species. Our study identifies significant species-specific variations in cell types, highlighting their conservation and diversification in evolution. We found pronounced differences in telencephalon excitatory neurons (EXs) and cerebellar cell types between birds and mammals. Birds predominantly express SLC17A6 in EX, whereas mammals express SLC17A7 in the neocortex and SLC17A6 elsewhere, possibly due to loss of function of SLC17A7 in birds. Additionally, we identified a bird-specific Purkinje cell subtype (SVIL+), implicating the lysine-specific demethylase 11 (LSD1)/KDM1A pathway in learning and circadian rhythms and containing numerous positively selected genes, which suggests an evolutionary optimization of cerebellar functions for ecological and behavioral adaptation. Our findings elucidate the complex interplay between genetic evolution and environmental adaptation, underscoring the role of genetic diversification in the development of specialized cell types across amniotes.
https://www.cell.com/developmental-cell/abstract/S1534-5807(25)00252-7

eLife

PAPERS

ISAÏH SCHWAB-MOHAMED et al – Bridging verbal coordination and neural dynamics

Our use of language, which is profoundly social in nature, essentially takes place in interactive contexts and is shaped by precise coordination dynamics that interlocutors must observe. Thus, language interaction is highly demanding on fast adjustment of speech production. Here, we developed a real-time coupled-oscillators virtual partner that allows - by changing the coupling strength parameters - to modulate the ability to synchronise speech with a virtual speaker. Then, we recorded the intracranial brain activity of 16 patients with drug-resistant epilepsy while they performed a verbal coordination task with the virtual partner (VP). More precisely, patients had to repeat short sentences synchronously with the VP. This synchronous speech task is efficient to highlight both the dorsal and ventral language pathways. Importantly, combining time-resolved verbal coordination and neural activity shows more spatially differentiated patterns and different types of neural sensitivity along the dorsal pathway. More precisely, high-frequency activity in left secondary auditory regions is highly sensitive to verbal coordinative dynamics, while primary regions are not. Finally, the high-frequency activity of the IFG BA44 (bilaterally) seems to specifically index the online coordinative adjustments that are continuously required to compensate deviation from synchronisation. These findings illustrate the possibility and value of using a fully dynamic, adaptive and interactive language task to gather deeper understanding of the subtending neural dynamics involved in speech perception, production as well as their interaction.

https://elifesciences.org/reviewed-preprints/99547

Evolutionary Anthropology

PAPERS

JAMES F. O'CONNELL, KRISTEN HAWKES & NICHOLAS BLURTON JONES – Targeting the Hunting Hypothesis: Review of Evidence From the Hadza

The hunting hypothesis holds that ancestral human males favored their own mates and children in sharing meat gained from big game hunting, a practice said to have led to the origin of nuclear families and related changes in life history. Data from East African Hadza hunter-gatherers operating in an environment like that prevalent when and where Homo evolved contradict key elements of this idea. An alternative model, the grandmother hypothesis, holds that senior women's foraging and food sharing led to life history changes that favored mate guarding, not paternal provisioning, in the formation of nuclear family-like social units. Relevant data and theory are reviewed and evaluated.
https://onlinelibrary.wiley.com/doi/full/10.1002/evan.70002

Frontiers in Ecology and Evolution

PAPERS

ELODIE FREYMANN et al with CATHERINE HOBAITER, KLAUS ZUBERBÜHLER & SUSANA CARVALHO – Self-directed and prosocial wound care, snare removal, and hygiene behaviors amongst the Budongo chimpanzees

Understanding the cognitive and social foundations of healthcare behaviors in humans requires examining their evolutionary precursors in our closest living relatives. Investigating self-directed and other-directed healthcare in chimpanzees provides crucial insights into the origins of medicinal knowledge, identification of specific medicinal resources used for health maintenance, and the emergence of prosocial healthcare capacities. Here we document and analyze both previously reported and newly observed instances of self-directed and other-directed wound care, snare removal, and putatively medicinal hygiene behaviors in the Sonso and Waibira chimpanzee communities of the Budongo Forest in Uganda. Reports of these behaviors come from archival records collected from over thirty years of observation at the Budongo Conservation Field Station (BCFS), videos recorded by researchers at the site, and all-occurrence behavioral data collected over two 4-month periods of direct observation. We describe self-directed wound care behaviors such as wound licking, leaf-dabbing, pressing fingers to wounds, and the application of chewed plant material to wounds, as well as a successful self-directed snare removal. We also document self-directed hygiene behaviors including postcoital genital leaf wiping and post-defecation leaf wiping. For the first time in Budongo, we report the presence of prosocial wound care, adding to similar observations documented at other chimpanzee field sites. We present cases of individuals licking, finger pressing, and applying chewed plant material to the wounds of others. We also establish the presence of prosocial postcoital hygiene behaviors, specifically postcoital leaf wiping. Lastly, we report an additional unpublished case of prosocial snare removal. The presence of prosocial-care behaviors between both kin and non-kin individuals at Budongo adds another site to the growing list of locations where such behaviors have been documented, suggesting prosocial healthcare is more widespread across chimpanzee populations than previously recognized.
https://www.frontiersin.org/journals/ecology-and-evolution/articles/10.3389/fevo.2025.1540922/full

Frontiers in Nutrition

PAPERS

MIKI BEN-DOR & RAN BARKAI – A bioenergetic approach favors the preservation and protection of prey, not cooking, as the drivers of early fire

The use of fire marks a critical milestone in human evolution, with its initial purposes debated among scholars. While cooking is often cited as the primary driver, this study proposes that meat and fat preservation, and predator protection were more likely the initial motivations for fire use by Homo erectus during the Lower Paleolithic (1.9–0.78 Ma).
Employing a bioenergetic approach, we compared the energetic returns of hunting versus plant gathering using ethnographic data, adjusted for Lower Paleolithic conditions. Caloric content of East African prey was calculated to assess consumption duration. Archeological evidence from early fire sites was analyzed for associations with large fauna.
Hunting large prey (>100 kg) yielded significantly higher energetic returns (16,269 ca/h) than plant gathering (1,443 ca/h), with megaherbivores like hippopotamus providing sustenance for up to 22 days for a group of 25. Early fire sites consistently contained large fauna remains, suggesting prolonged prey consumption. Cooking offered modest energetic gains (e.g., ~1,200 ca/h for meat), insufficient to offset fire maintenance costs, unlike preservation and protection.
The substantial energetic disparity supports hunting as a dominant subsistence strategy, with fire enhancing efficiency by preserving meat and deterring predators. The prevalence of megaherbivores in Lower Paleolithic sites and heightened predation risks underscore these priorities over cooking, which likely emerged as a secondary benefit. Ethnographic analogies underrepresent these dynamics due to megafaunal extinctions altering the environment and prey availability.
Meat preservation and predator protection, rather than cooking, were likely the primary drivers of early fire use, aligning with Homo erectus' specialization in large prey acquisition. This reframes fire's role in human evolution, suggesting it supported a hypercarnivorous lifestyle and potentially influenced cognitive development.

https://www.frontiersin.org/journals/nutrition/articles/10.3389/fnut.2025.1585182/full

iScience

PAPERS

HONGHUA CHEN et al – Low-frequency Cortical Activity Reflects Context-dependent Parsing of Word Sequences

During speech listening, it has been hypothesized that the brain builds representations of linguistic structures like sentences, which are tracked by neural activity entrained to the rhythm of these structures. Alternatively, others proposed that these sentence-tracking neural activities may reflect the predictability or syntactic properties of individual words. Here, to disentangle the neural responses to sentences and words, we design word sequences that are parsed into different sentences in different contexts. By analyzing neural activity recorded by magnetoencephalography, we find that low-frequency neural activity strongly depends on context – the difference between MEG responses to the same word sequence in two contexts yields a low-frequency signal, which precisely tracks sentences. The predictability and syntactic properties of words can partly explain the neural response in each context but not the difference between contexts. In summary, low-frequency neural activity encodes sentences and can reliably reflect how same-word sequences are parsed in different contexts.

https://www.cell.com/iscience/fulltext/S2589-0042(25)00911-3

LINOY SCHWARTZ et al – Empathy Aligns Brains in Synchrony

Empathy is a core human capacity that underpins social life. Utilizing hyperscanning EEG, we tested how empathy to others' distress synchronizes brains without social cues. Mothers and adolescents (Study 1, N=100) underwent empathy-to-distress paradigm in separate rooms. Event-related interbrain connectivity was computed in four 500 ms time-windows following exposure to empathy-to-distress and control stimuli. Interbrain synchrony of fronto-temporal regions emerged throughout (0-2000 ms) in alpha and beta bands following empathy-to-distress relative to control. Beta interbrain synchrony increased at 1000-1500 post-stimuli, indicating neural coupling of higher-order cognitive empathy. Oxytocin and behavioral synchrony correlated with enhanced interbrain synchrony. Study 2 replicated the paradigm with unacquainted adults (N=44) and found interbrain beta synchrony for empathy stimuli at 1000-1500 ms post-stimulus. Exposure to others' distress aligns brains in synchrony. Such alignment may have supported the consolidation of humans into social groups, increased affiliation and trust, and improved joint action to threats, enhancing survival and thriving.

https://www.cell.com/iscience/fulltext/S2589-0042(25)00903-4

Nature

NEWS

Mice grow bigger brains when given this stretch of human DNA

Finding adds to the bigger picture of how humans developed such large brains.

https://www.nature.com/articles/d41586-025-01515-z

ARTICLES

TUULI TOIVONEN – Why you should write your PhD thesis backwards

By considering the central statement of your entire PhD, you can structure your writing around it.

{I've been saying something like this to my students for years – as I suspect, have most supervisors. Write the key research question, then the data analysis, then the discussion, then the conclusion. Then write the methodology as a description of what you did, not what you hoped to do; and write the literature review as a list of relevant sources and what makes them relevant. Then write the introduction and finally the abstract. Never use the future tense except for things which are still in the future for the reader; the default temporal position for the writer is "what I did" – because, for the reader the whole dissertation is in the past. Too many dissertations are written for the writer, not the reader – which is why they are seldom read.}

https://www.nature.com/articles/d41586-025-01061-8

PAPERS

JING LIU et al – A human-specific enhancer fine-tunes radial glia potency and corticogenesis

Humans have evolved an extraordinarily expanded and complex cerebral cortex associated with developmental and gene regulatory modifications. Human accelerated regions (HARs) are highly conserved DNA sequences with human-specific nucleotide substitutions. Although there are thousands of annotated HARs, their functional contribution to species-specific cortical development remains largely unknown. HARE5 is a HAR transcriptional enhancer of the WNT signalling receptor Frizzled8 that is active during brain development. Here, using genome-edited mouse (Mus musculus, Mm) and primate models, we demonstrated that human (Homo sapiens, Hs) HARE5 fine-tunes cortical development and connectivity by controlling the proliferative and neurogenic capacities of neural progenitor cells. Hs-HARE5 knock-in mice have significantly enlarged neocortices, containing more excitatory neurons. By measuring neural dynamics in vivo, we showed that these anatomical features result in increased functional independence between cortical regions. We assessed underlying

developmental mechanisms using fixed and live imaging, lineage analysis and single-cell RNA sequencing. We discovered that Hs-HARE5 modifies radial glial cell behaviour, with increased self-renewal at early developmental stages, followed by expanded neurogenic potential. Using genome-edited human and chimpanzee (Pan troglodytes, Pt) neural progenitor cells and cortical organoids, we showed that four human-specific variants of Hs-HARE5 drive increased enhancer activity that promotes progenitor proliferation. Finally, we showed that Hs-HARE5 increased progenitor proliferation by amplifying canonical WNT signalling. These findings illustrate how small changes in regulatory DNA can directly affect critical signalling pathways to modulate brain development. Our study uncovered new functions of HARs as key regulatory elements crucial for the expansion and complexity of the human cerebral cortex.
https://www.nature.com/articles/s41586-025-09002-1

JIAXUAN QI et al – Dual neuromodulatory dynamics underlie birdsong learning

Although learning in response to extrinsic reinforcement is theorized to be driven by dopamine signals that encode the difference between expected and experienced rewards, skills that enable verbal or musical expression can be learned without extrinsic reinforcement. Instead, spontaneous execution of these skills is thought to be intrinsically reinforcing. Whether dopamine signals similarly guide learning of these intrinsically reinforced behaviours is unknown. In juvenile zebra finches learning from an adult tutor, dopamine signalling in a song-specialized basal ganglia region is required for successful song copying, a spontaneous, intrinsically reinforced process. Here we show that dopamine dynamics in the song basal ganglia faithfully track the learned quality of juvenile song performance on a rendition-by-rendition basis. Furthermore, dopamine release in the basal ganglia is driven not only by inputs from midbrain dopamine neurons classically associated with reinforcement learning but also by song premotor inputs, which act by means of local cholinergic signalling to elevate dopamine during singing. Although both cholinergic and dopaminergic signalling are necessary for juvenile song learning, only dopamine tracks the learned quality of song performance. Therefore, dopamine dynamics in the basal ganglia encode performance quality during self-directed, long-term learning of natural behaviours.
https://www.nature.com/articles/s41586-025-08694-9

JONATHAN KASDIN et al – Natural behaviour is learned through dopamine-mediated reinforcement

Many natural motor skills, such as speaking or locomotion, are acquired through a process of trial-and-error learning over the course of development. It has long been hypothesized, motivated by observations in artificial learning experiments, that dopamine has a crucial role in this process. Dopamine in the basal ganglia is thought to guide reward-based trial-and-error learning by encoding reward prediction errors, decreasing after worse-than-predicted reward outcomes and increasing after better-than-predicted ones. Our previous work in adult zebra finches—in which we changed the perceived song quality with distorted auditory feedback—showed that dopamine in Area X, the singing-related basal ganglia, encodes performance prediction error: dopamine is suppressed after worse-than-predicted (distorted syllables) and activated after better-than-predicted (undistorted syllables) performance. However, it remains unknown whether the learning of natural behaviours, such as developmental vocal learning, occurs through dopamine-based reinforcement. Here we tracked song learning trajectories in juvenile zebra finches and used fibre photometry to monitor concurrent dopamine activity in Area X. We found that dopamine was activated after syllable renditions that were closer to the eventual adult version of the song, compared with recent renditions, and suppressed after renditions that were further away. Furthermore, the relationship between dopamine and song fluctuations revealed that dopamine predicted the future evolution of song, suggesting that dopamine drives behaviour. Finally, dopamine activity was explained by the contrast between the quality of the current rendition and the recent history of renditions—consistent with dopamine's hypothesized role in encoding prediction errors in an actor–critic reinforcement-learning model. Reinforcement-learning algorithms have emerged as a powerful class of model to explain learning in reward-based laboratory tasks, as well as for driving autonomous learning in artificial intelligence. Our results suggest that complex natural behaviours in biological systems can also be acquired through dopamine-mediated reinforcement learning.
https://www.nature.com/articles/s41586-025-08729-1

MARCO K. WITTMANN et al – Basis functions for complex social decisions in dorsomedial frontal cortex

Navigating social environments is a fundamental challenge for the brain. It has been established that the brain solves this problem, in part, by representing social information in an agent-centric manner; knowledge about others' abilities or attitudes is tagged to individuals such as 'oneself' or the 'other'. This intuitive approach has informed the understanding of key nodes in the social parts of the brain, the dorsomedial prefrontal cortex (dmPFC) and the anterior cingulate cortex (ACC). However, the patterns or combinations in which individuals might interact with one another is as important as the identities of the individuals. Here, in four studies using functional magnetic resonance imaging, behavioural experiments and a social group decision-making task, we show that the dmPFC and ACC represent the combinatorial possibilities for social interaction afforded by a given situation, and that they do so in a compressed format resembling the basis functions used in spatial, visual and motor domains. The basis functions align with social interaction types, as opposed to individual identities. Our results indicate that there are deep analogies between abstract neural coding schemes in the visual and motor domain and the construction of our sense of social identity.
https://www.nature.com/articles/s41586-025-08705-9

Nature Communications

PAPERS

YANNICK BECKER et al with EBC CONSORTIUM, CATHERINE CROCKFORD & ANGELA D. FRIEDERICI – Long arcuate fascicle in wild and captive chimpanzees as a potential structural precursor of the language network

The arcuate fascicle (AF) is the main fibre tract in the brain for human language. It connects frontal and temporal language areas in the superior and middle temporal gyrus (MTG). The AF's connection to the MTG was considered unique to humans and has influenced theories of the evolution of language. Here, using high-resolution diffusion MRI of post-mortem brains, we demonstrate that both wild and captive chimpanzees have a direct AF connection into the MTG, albeit weaker than in humans. This finding challenges the notion of a strictly human-specific AF morphology and suggests that language-related neural specialisation in humans likely evolved through gradual evolutionary strengthening of a pre-existing connection, rather than arising de novo. It is likely that this neural architecture supporting complex communication was already present in the last common ancestor of hominins and chimpanzees 7 million years ago, enabling the evolution of language processes in the human lineage.

https://www.nature.com/articles/s41467-025-59254-8

Nature Communications Psychology

PAPERS

AMY LOUISE PAINE et al – Humorous peer play and social understanding in childhood

Humour plays a crucial role in children's early interactions, likely promoting the development of social understanding and fostering positive social relationships. To date, the connection between humour production in peer play and the development of social understanding skills in middle childhood has received limited attention. In a community sample of 130 children residing in the UK (M = 6.16 years old, range 5–7; 67 [51.5%] girls, 62 [47.7%] boys, and 1 [0.8%] non-binary child; 95 [73.1%] mothers and 85 [65.4%] fathers identified as Welsh, English, Scottish, or Irish), we tested our prediction that children's use of humour in play with peers would be positively associated with children's ability to understand the minds of others. We conducted detailed observational coding of children's humour production during peer play and examined associations with children's performance on a battery of social understanding assessments. Multilevel models showed that 42.8% of the variance in children's humour production was explained by play partner effects. When controlling for the effect of play partner and other individual child characteristics (age, gender, receptive vocabulary) children's spontaneous attributions of mental states were associated with humour production. Results are discussed considering how these playful exchanges reflect and influence the development of children's socio-cognitive competencies.

https://www.nature.com/articles/s44271-025-00252-3

Nature Genetics

ARTICLES

WEI LI – Complete genomes of six ape species

Living ape species are close evolutionary relatives of humans and their genomes are essential for human genomic and evolutionary studies. Yoo et al. generated complete genome assemblies of six ape species: chimpanzee (Pan troglodytes), bonobo (Pan paniscus), gorilla (Gorilla gorilla), Bornean orangutan (Pongo pygmaeus), Sumatran orangutan (Pongo abelii) and siamang (Symphalangus syndactylus). For diploid genomes, 74% of all chromosomes were assembled telomere-to-telomere. Based on the complete ape genome sequences, the authors cataloged all structurally divergent regions and identified previously unknown candidate regions for selective sweeps, as well as regions that overlapped with sweeps found in humans. A considerable number of serial inversions and evolutionary rearrangements were found in apes. Importantly, this study accessed complex regions such as immunoglobulin loci, acrocentric chromosomes, centromeres, subterminal heterochromatic caps and gene-rich segmental duplication regions. Using the assemblies of five non-human primates, the authors identified contiguous centromeres and key characteristics specific to each species based on α-satellite higher-order repeat arrays. The sequencing effort of complete ape genomes yields valuable insights into previously inaccessible genomic regions and enables comprehensive evolutionary analyses in humans and the living apes.

https://www.nature.com/articles/s41588-025-02214-1

Nature Human Behaviour

ARTICLES

ANNA TRUZZI – Infant attachment in chimpanzees

A negative relationship with caregivers early in life known as 'disorganized attachment' has disruptive long-term consequences in humans. Rolland et al. find no evidence for this relationship pattern in free (that is, wild) chimpanzees in their natural environment, which underscores its maladaptive nature and indicates the role of context in shaping caregiver–infant relations.

https://www.nature.com/articles/s41562-025-02177-7

PAPERS

ELÉONORE ROLLAND et al with CATHERINE CROCKFORD & ROMAN M. WITTIG – Evidence of organized but not disorganized attachment in wild Western chimpanzee offspring (Pan troglodytes verus)

Human attachment theory outlines three organized types: secure, insecure avoidant and insecure resistant, all considered adaptive responses to maternal care for offspring survival. In contrast, disorganized attachment is hypothesized to be maladaptive and therefore uncommon in wild mammals, though this remains untested. We assessed attachment types in 50 wild chimpanzees (ages 0–10 years) in Taï National Park, Côte d'Ivoire. Using 3,795 h of mother and offspring focal observations, we found no behaviours indicative of disorganized attachment. To explore organized attachment, we analysed a subset of 18 immature chimpanzees and their behavioural responses to 309 natural threatening events. Their responses showed organized attachment patterns: some sought maternal closeness (secure-like), while others displayed independence (insecure avoidant-like). Our study supports the hypothesis that organized attachment types are adaptive and have a long evolutionary history.

https://www.nature.com/articles/s41562-025-02176-8

Nature Humanities & Social Sciences Communications

PAPERS

ALEXEI S. KASSIAN & GEORGE STAROSTIN – Do 'language trees with sampled ancestors' really support a 'hybrid model' for the origin of Indo-European? Thoughts on the most recent attempt at yet another IE phylogeny

In this paper, we present a brief critical analysis of the data, methodology, and results of the most recent publication on the computational phylogeny of the Indo-European family (Heggarty et al. 2023), comparing them to previous efforts in this area carried out by (roughly) the same team of scholars (informally designated as the "New Zealand school"), as well as concurrent research by scholars belonging to the "Moscow school" of historical linguistics. We show that the general quality of the lexical data used as the basis for classification has significantly improved from earlier studies, reflecting a more careful curation process on the part of qualified historical linguists involved in the project; however, there remain serious issues when it comes to marking cognation between different characters, such as failure (in many cases) to distinguish between true cognacy and areal diffusion and the inability to take into account the influence of the so-called derivational drift (independent morphological formations from the same root in languages belonging to different branches). Considering that both the topological features of the resulting consensus tree and the established datings contradict historical evidence in several major aspects, these shortcomings may partially be responsible for the results. Our principal conclusion is that the correlation between the number of included languages and the size of the list may simply be insufficient for a guaranteed robust topology; either the list should be drastically expanded (not a realistic option for various practical reasons) or the number of compared taxa be reduced, possibly by means of using intermediate reconstructions for ancestral stages instead of multiple languages (the principle advocated by the Moscow school).

https://www.nature.com/articles/s41599-025-04986-7

TAHIR SALEEM & SHUMAILA AHMAD – From structure to meaning: a lexical semantic framework for Urdu compounding

Urdu, a rich Indo-Aryan language, relies extensively on derivational and inflectional processes for lexical expansion. Compounding, a pivotal word-formation process, has received a limited scholarly focus despite its central role in Urdu's linguistic complexity. This study investigates compounding in Urdu by employing Lieber's Lexical Semantic Framework (LSF) to examine its semantic and morphological dimensions. Employing a qualitative descriptive design, the study analyzes 30 purposively sampled compounds from The Express newspaper and Feroz-ul-Lughat dictionary, representing prevalent morphological patterns such as noun-noun (N + N), noun-adjective (N + Adj), and noun-verb (N + V) structures. The findings demonstrate LSF's adaptability to Urdu, uncovering transparency and opacity in semantic relationships. A unique pattern of argumental compounding emerges, where constituent elements interact to create culturally resonant meanings. Furthermore, the analysis reveals compound-specific innovations in Urdu, diverging from conventional typologies, and enriching the theoretical understanding of lexical semantics. These findings have significant implications for natural language processing (NLP), especially in enhancing machine translation and text analysis tools for Urdu. This study contributes to the broader linguistic discourse by showcasing the complex interaction of morphology and semantics in Urdu, while also providing a methodological model for analyzing resource-poor languages. Future research could explore the role of sociolinguistic factors and regional influences in compounding processes, deepening the understanding of word formation in Urdu and related languages.

https://www.nature.com/articles/s41599-025-04982-x

Nature Scientific Reports

PAPERS

JINGTAO ZHU & ANNA GAVARRÓ – Early acquisition of complex syntax in Mandarin-speaking infants

Although Mandarin is an S(ubject)V(erb)O(bject) language, other non-canonical sentences with the object marker ba are also possible, yet their comprehension in child Mandarin is underexplored. This study uses eye-tracking and the intermodal preferential looking paradigm, as well as the use of pseudo-verbs, to explore how 24 Mandarin infants (mean age: 17.5 months) and 48 adults process these structures. The results of our experiments show that both infants and adults looked longer at the target scenes for the three grammatical sentence types tested: SVO, SbaOV and O, SbaOV. While comprehension of SVO and SbaOV could be achieved with an agent-first parsing strategy, the fact that patient-first O, SbaOV constructions were also parsed by infants suggests access to grammatical, language-specific knowledge.
https://www.nature.com/articles/s41598-025-01096-x

LORENZO FERRUCCI et al – Reward monitoring in the frontopolar cortex of macaques

Reward processing involves several prefrontal cortex areas, enabling individuals to learn from behavioral outcomes and shape decisions. However, the role of the frontopolar cortex (FPC) in these processes remains unclear due to limited single-neuron research. In this study, we recorded neural activity from the FPC of two macaques performing a fast-learning task, the object-in-place reward task, which examined how reward size affects learning. Results showed that FPC feedback monitoring activity extends to the value of specific choices. Moreover, once the association between scenes and reward had been learned, FPC neural activity before choice reflected the future animal's behavior to stay or to switch on their previous behavioral strategy, i.e., to choose the same target or the other one. These results suggest that FPC neurons integrated information for action monitoring and later reprocessed it to decide the best behavioral strategy to adopt, determining whether to maintain or change the action plan.
https://www.nature.com/articles/s41598-025-99019-3

New Scientist

NEWS

How ancient humans survived a global climate disaster 8200 years ago

Plummeting temperatures forced some human populations to adapt to the new conditions thousands of years ago, but the changes they made varied widely.
https://www.newscientist.com/article/2479668-how-ancient-humans-survived-a-global-climate-disaster-8200-years-ago/

The birds upending our idea of shared parenting

Superb starlings appear to swap between parent and 'nanny' roles to help raise chicks over their lifetimes, even when they aren't related to them.
https://www.newscientist.com/article/2479275-the-birds-upending-our-idea-of-shared-parenting/

Chimps share 'building blocks of musical rhythm' with humans

Just like humans, chimps have rhythm when drumming, which suggests that the trait evolved in our common ancestor.
https://www.newscientist.com/article/2479462-chimps-share-building-blocks-of-musical-rhythm-with-humans/

Philosophical Transactions of the Royal Society B

PAPERS

ROBERT N. SPENGLER et al – Seeking consensus on the domestication concept

The domestication of plants and animals permitted the development of cities and social hierarchies, as well as fostering cultural changes that ultimately led humanity into the modern world. Despite the importance of this set of related evolutionary phenomena, scholars have not reached a consensus on what the earliest steps in the domestication process looked like, how long the seminal portions of the process took to unfold, or whether humans played a conscious role in parts or all of it. Likewise, many scholars find it difficult to disentangle the cultural processes of cultivation from the biological processes of domestication. Over the past decade, the prevailing views among scholars have begun to shift towards unconscious and protracted models of early domestication; however, the nomenclature used to discuss these changes has been stagnant. Discussions of early domestication remain bound up in prevailing definitions and preconceived ideas of what the process looked like. In this paper, we seek to break down definitions of domestication and to construct a definition that serves equal utility regardless of the views that researchers hold about the process.
https://royalsocietypublishing.org/doi/full/10.1098/rstb.2024.0188

Physics of Life Reviews

COMMENTARIES

GEORG NORTHOFF, FEDERICO ZILIO & JIANFENG ZHANG – From pre-stimulus activity to the contents of consciousness – A spatiotemporal view: Reply to comments on "Beyond task response-Pre-stimulus activity modulates contents of consciousness"

What are the exact neuronal mechanisms of pre-post-stimulus interaction and how can that account for the intrinsically subjective nature of the contents of consciousness? This is the key question lurking behind the various excellent and very thoughtful commentaries to our target article which we group along four main topics and questions. (i) What is the role of neural features like alpha power, phase dynamics, trial-to-trial variability and fractal scale-free dynamics in yielding pre-post-stimulus interaction and its conscious contents. (ii) What do we mean by 'content' of consciousness? This concerns its meaning, its characterization as internal or external, and its relation to the basic subjectivity of consciousness. (iii) How does our approach stand to other theories of consciousness like the Dendritic Integration Theory (DIT), GNWT and IIT? This concerns the convergence among the different theories that highlight distinct aspects. (iv) How can we detail the spatiotemporal shaping of the contents of consciousness including their intrinsically subjective nature through pre-post-stimulus interaction? This concerns the details of how the non-additive pre-post-stimulus interaction shapes the subjective nature of our experience of conscious contents, that is, how the neuronal activity connects to the phenomenal features of consciousness. Together, we conclude that the contents of consciousness are shaped primarily in a temporal-dynamic and spatial-topographic way through the non-additive pre-post-stimulus interaction. Such spatiotemporal shaping of the contents in our consciousness constitutes their intrinsically subjective nature which must be distinguished from their (more objective) modulation by cognitive, sensory, affective, and motor functions.

[Original Article: see EAORC Bulletin 1,126, https://www.sciencedirect.com/science/article/pii/S1571064524001787]

https://www.sciencedirect.com/science/article/abs/pii/S1571064525000223

TUDOR POPESCU & W. TECUMSEH FITCH – Music and animal song follow a mode of extra-genomic evolution similar to that of language

Although we applaud Bickel, Giraud, Zuberbühler, and van Schaik's (2024; hereafter: BGZS) comparison of language and technological evolution, we take issue with their argument that language change entails a "unique" mode of evolution. Other forms of cultural evolution, most notably music, exhibit non-cumulative, ergodic change similar to language. This pattern extends beyond humans: culturally evolving systems in e.g. birdsong and whale song share these properties of non-cumulative cultural evolution. While both music and language may follow similar evolutionary principles, they differ in key aspects: music lacks intrinsic meaning, while language's lexicon remains partially constrained by local conditions such as technological vocabulary. Both systems evolve along cyclical trajectories driven by ergodic mechanisms, affording constant potential for reinvention. Music may, however, serve more as a "uniter" across groups, fostering social bonds with lower barriers to cultural assimilation.

https://www.sciencedirect.com/science/article/abs/pii/S1571064525000260

Original Paper: BALTHASAR BICKEL, ANNE-LISE GIRAUD, KLAUS ZUBERBÜHLER & CAREL P. VAN SCHAIK – Language follows a distinct mode of extra-genomic evolution

[See EAORC Bulletin 1,122.]

https://www.sciencedirect.com/science/article/pii/S1571064524000939

CHRIS FIELDS – Paradox or illusion? A comment on "The paradox of the self-studying brain" by Battaglia, Servajean, and Friston

No summary available.

https://www.sciencedirect.com/science/article/abs/pii/S1571064525000600

THOMAS PARR & SANJAY G. MANOHAR – Constrained confabulation: Comment on "The paradox of the self-studying brain" by Battaglia, Servajean, and Friston

No summary available.

https://www.sciencedirect.com/science/article/abs/pii/S1571064525000570

Original Paper: SIMONE BATTAGLIA, PHILIPPE SERVAJEAN & KARL J. FRISTON – The Paradox of the Self-Studying Brain

[See EAORC Bulletin 1,126.]

https://www.sciencedirect.com/science/article/pii/S1571064524001787

PLoS One

PAPERS

LUCA PEDRUZZI et al – Wild gelada monkeys detect emotional and prosocial cues in vocal exchanges during aggression

Recognizing vocal behaviours intended to benefit others is a crucial yet understudied social skill. Primates with rich vocal repertoires and complex societies are excellent models to track the evolution of such capacity. Here, we exposed wild geladas (Theropithecus gelada) to vocal exchanges between unfamiliar female victim screams and male affiliative calls. The stimuli were arranged in sequences either simulating vocal affiliation towards victims (scream-affiliative call) or violating such order (affiliative call-scream), with varying emotional arousal conveyed by the affiliative call type. Measuring gazing activity towards the loudspeaker and the interruptions of feeding, we show that monkeys were sensitive to the sequential order in vocal exchanges as well as to the emotional arousal conveyed by affiliative calls. Our field study suggests a prosocial use of vocalizations in wild monkeys and reveals that foundational cognitive elements for processing vocal exchanges as meaningful third-party interactions may have existed in our common ancestors with monkeys.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0323295

ANNAMARIA PORRU et al – Symbolic and non-symbolic numbers differently affect center identification in a number-line bisection task

Numerical and spatial representations are intertwined as in the Mental Number Line, where smaller numbers are on the left and larger numbers on the right. This relationship has been repeatedly demonstrated with various experimental approaches, such as the line bisection task. Spatial accuracy appears to be systematically distorted leftward for smaller digits by elaboration of spatial codes during number processing. Other studies have investigated perceptual and visuo-spatial attention bias using the digit line bisection task, suggesting that these effects may be related to a cognitive illusion in which the reference numbers project their values onto the straight line, creating an illusory lateral disparity. On the other hand, both dot arrays (non-symbolic stimuli) and arabic numbers (symbolic stimuli) demonstrate a privileged relation between spatial and numerical elaboration. The bias toward the larger numerosity flanker was attributed to a length illusion. There is, however, no consensus regarding whether physical features and symbolic and non-symbolic numerical representations exert the same influence over spatial ones. In the present study, we carried out a series of 4 Experiments to provide further evidence for a better understanding of the nature of this differential influence. All experiments presented the numbers in both symbolic and non-symbolic formats. In Experiment 1, the numbers “2-8” were presented in a variety of left-right orientations. In Experiment 2, the flankers were identical, “2-2” or “8-8”, and symmetrically displaced with respect to the line. In Experiment 3, we employed asymmetrically distributed eight dots, or font sizes in “8-8” numerals, to create a perceptual imbalance. In Experiment 4, we replicated the manipulation used in Experiment 3, but with two dots and “2-2” numerals. The Non-Symbolic format induced stronger leftward biases, particularly when the larger numerosity (Experiment 1) or the denser stimuli near the line (Experiments 3 and 4) were on the left, while no bias emerged when flankers were numerically equivalent and symmetrical (Experiment 2). The left bias may result from a tendency to estimate the influence of stimulus perception associated with participants’ scanning direction, similar to the direction of pseudoneglect. Conversely, the Symbolic format induced mostly right bias, possibly due to left-lateralized processing and a tendency to use a common strategy involving scanning from left to right. Altogether our data support the view that abstract numbers and non-symbolic magnitude affect perceptual and attentional biases, yet in distinctive ways.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0315654

ROMANE PHELIPON et al – Characterisation of facial expressions and behaviours of horses in response to positive and negative emotional anticipation using network analysis

The welfare of an animal is closely linked to their emotional experiences, making it essential to identify reliable indicators of these emotions. This study aimed to identify behaviours and facial movements in horses experiencing contrasting emotional valence, triggered by the anticipation of a positive condition (going to pasture) or a negative condition (going alone to a novel environment). Twenty horses were daily trained to wait in a starting box before being exposed to these two conditions. After one week of positive training or negative training, we analysed horses’ behaviours, cortisol variations, and facial movements while they waited in their starting box. First, we confirmed that the two conditions induced contrasting emotional valence, as evidenced by the shorter time taken to approach in the positive condition compared to the negative, and by the higher maximal heart rate and cortisol variation in the negative condition. Then using the Equine Facial Action Coding System (EquiFACS) and network analysis (NetFACS) we revealed distinct behaviours and facial expression profiles. In positive anticipation, the horses exhibited a greater range of behaviours, including shaking their heads from side to side, stepping back, sniffing, and pawing at the ground. Additionally, two distinct facial expression profiles were identified as specific to positive and negative anticipation. In positive anticipation, the horses displayed a higher neck, accompanied by a greater frequency of half-blinks and mouth movements. Conversely, in negative anticipation, the horses exhibited a medium neck, with ears backward accompanied by more flattened ears and expressed more nostril movements. The findings highlight the importance of these indicators in characterising horses’ emotions and emphasise their significance for assessing equine welfare.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0319315

Science Advances

PAPERS

SAMAR M. SYEDA et al with LEE R. BERGER – Phalangeal cortical bone distribution reveals different dexterous and climbing behaviors in Australopithecus sediba and Homo naledi

The evolution of the human hand is marked by a transition from a hand primarily used for locomotion to one primarily used for dexterous manipulation. The hand skeletons of Plio-Pleistocene hominins have different mosaics of human-like features associated with enhanced dexterity and ape-like features associated with locomotor hand use. However, the functional relevance of the ape-like features is debated, particularly due to a lack of complete and associated hand remains. Here, we investigate the internal phalangeal cortical structure of the nearly complete Australopithecus sediba MH2 hand and Homo naledi hand 1 to provide both insight into the manual behaviors of these fossil hominins and functional clarity regarding the mosaic features found within their hands. The phalangeal cortical structure demonstrates diversity in Plio-Pleistocene hand use, with A. sediba and H. naledi each indicating different dexterous abilities and different climbing strategies, supporting the functional importance of the ape-like features.
https://www.science.org/doi/10.1126/sciadv.adt1201

Trends in Cognitive Sciences

PAPERS

ANTONIA DÜFELD et al – Social odor as a source of learning in human infants

Maternal odor has recently emerged as an important but ill-understood factor in sociocognitive learning in early human development. We propose that social odor plays its unique role in the first year of life through dissociable affective and perceptual mechanisms. These mechanisms yield distinct predictions for future studies of social odor.
https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(25)00089-0

MATTHEW D. LIEBERMAN – Synchrony and subjective experience: the neural correlates of the stream of consciousness

Human subjectivity, our first-person conscious experience of the world, is among the deepest scientific mysteries. This opinion article lays out an approach to examining the neural correlates of subjectivity as it unfolds over time. Subjective experience is inherently idiosyncratic, arising from effortless interpretations that feel like perceived facts (p-interpretations), and integrative, with past and expected future moments influencing the current experience. Differential synchrony effects (i.e., neural synchrony that differs between groups) suggest that parts of gestalt cortex (inferior parietal lobule and posterior temporal cortex) and posterior medial cortex track p-interpretations. Differential synchrony may result from each person's preexisting idiosyncratic non-sensory representations (e.g., expectations, memories, motivations) being integrated with sensory inputs to yield unique meaning-infused immediate experiences across the stream of consciousness.
https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(25)00086-5

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