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NOTICES

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.

EAORC NEWS – Correspondence with PeerJ – A problem with a very satisfactory conclusion

martin.edwardes@btopenworld.com wrote (Wednesday):

How do I list publications in publication date order so I can identify relevant papers published in the last week?

Martin P.J. Edwardes, Editor, EAORC Bulletin, martinedwardes.me.uk/eaorc/eaorc_bulletins.html

support@peerj.com wrote (Wednesday):

Dear Martin,

Thank you for your email. To search publications by publication data order please do the following.

1. Go to the journal you are wanting to view. For example: <https://peerj.com/computer-science/>.
2. Scroll down to the "Editor Pick Across the Years" section.
3. Click on "View all"
4. Click on the "More Filters" in the sidebar. This will open more filter options.
5. Scroll down under "Recency" and choose "Past Week". This will allow you to sort by date.

Hope this helps!

Publishing Operations Assistant, PeerJ

martin.edwardes@btopenworld.com wrote (Thursday):

So I have to search each journal separately rather than searching PeerJ as a whole? Not really an improvement. Perhaps you would be better off going back to the Springer/Nature model that you previously used? Modern information technology has shown us that a journal is not a sovereign entity, it is an arbitrary subdivision of the database - which is useful for journal-sellers like S/N, but pointless for article-providers like PLoS, Frontiers and PeerJ.

When I was young and working in the IT industry, we had two sayings: "If it ain't broke, don't mend it"; and "systems must change slowly so customers can change quickly". I will do my best to make this new system work, but I will necessarily give less attention to PeerJ than I used to.

Martin P.J. Edwardes

support@peerj.com wrote (Friday):

Dear Martin,

My apologies! I inadvertently gave you the wrong instructions. Please follow the below instructions to search all the PeerJ journals.

1. Go to the search page (at <https://peerj.com/search/>) (accessed via the Search icon in the top right of every page)

2. Select Research Articles (<https://peerj.com/search/?type=articles>) Or whatever other filter you want from the options below the search bar.

This will give you all results for all journals, ordered by most recent first. The various facets/filters on the right allow you to narrow it down to a journal and a time frame. You can search for specific words via the Search Bar. If you hover over "?" this explains how you can add logical qualifiers to your search terms.

Regards,

Publishing Operations Assistant, PeerJ

martin.edwardes@btopenworld.com wrote (Saturday):

Heidi,

Thanks, that's the search I want. I have added it to my list of Saturday tasks.

Martin

ACADEMIA.EDU – The earliest modern humans outside Africa

Science 359, 456-459 (2018).

ISRAEL HERSHKOVITZ et al with JOSÉ MARÍA BERMÚDEZ DE CASTRO – The earliest modern humans outside Africa

To date, the earliest modern human fossils found outside of Africa are dated to around 90,000 to 120,000 years ago at the Levantine sites of Skhul and Qafzeh. A maxilla and associated dentition recently discovered at Misliya Cave, Israel, was dated to 177,000 to 194,000 years ago, suggesting that members of the Homo sapiens clade left Africa earlier than previously thought. This finding changes our view on modern human dispersal and is consistent with recent genetic studies, which have posited the possibility of an earlier dispersal of Homo sapiens around 220,000 years ago. The Misliya maxilla is associated with full-fledged Levallois technology in the Levant, suggesting that the emergence of this technology is linked to the appearance of Homo sapiens in the region, as has been documented in Africa.

https://www.academia.edu/35789230/The_earliest_modern_humans_outside_Africa

CONFERENCE ALERT – Call for ABS 2023 Proposals

The ABS 2023 Conference is now accepting proposals for symposia and workshops. Please submit a proposal using the form found in the button below.

The deadline to submit is October 21, 2022.

Workshops and symposia may either be organized by self-organized groups of ABS members, or sponsored by a standing committee as part of their programming. Please indicate in your submission whether your proposal is self-organized or sponsored by a standing committee.

We encourage workshops that will take place in-person but exceptions will be considered for topics that would blend well and benefit from taking place in a virtual environment. For the symposia it is expected that all speakers will present in-person to promote the invigorating interactions characteristic of these events.

Please also note that ABS expects organizers to explicitly consider how their event and selection of speakers enhances diversity and representation at the meeting. The Program Officers request that all events, including those from standing committees that have already been approved by the Executive Committee, submit a proposal to aid in meeting planning.

CLICK HERE TO SUBMIT A PROPOSAL: <https://fs10.formsite.com/spltrak/uxr2ai1vpq/index.html>

NEWS

NATURE BRIEFING – Birds and humans battle over bins

Cockatoos and humans are locked in an 'interspecies innovation arms race' over rubbish bins. Researchers in Australia had previously reported that sulphur-crested cockatoos (*Cacatua galerita*) use clever means to open and raid suburban wheelie

bins, and that they learn the behaviour from each other in a form of 'cultural transmission'. A new survey shows that the birds are now driving changes in human behaviour, as people devise sophisticated ways to stop break-ins. People are learning the best techniques from their neighbours, too. "Bricks seemed to work for a while, but cockies got too clever," one survey respondent said. "Neighbours on other side of highway suggested sticks. They work."

<https://nature.us17.list-manage.com/track/click?u=2c6057c528fdc6f73fa196d9d&id=a0d4b15218&e=1db4b9a19b>

SOCIETY FOR SCIENCE – Humans may have started tending animals almost 13,000 years ago

Remnants from an ancient fire pit in Syria suggest that hunter-gatherers were burning dung as fuel by the end of the Old Stone Age.

<http://click.societyforscience->

email.com/?qs=9f343a55dee6b7f9b3ced5ccfc715c12df9d1fa7d75f1b740400d7eb9401fe5015d11b36de5de9a85b94beddffe1e211b714e812a985dc9fa4a4d73d590ebdf7

PUBLICATIONS

American Journal of Biological Anthropology

PAPERS

DUNCAN N.E. STIBBARD-HAWKES & COREN L. APICELLA – Myopia rates among Hadza hunter-gatherers are low but not exceptional

Myopia rates are increasing globally. This epidemic is linked to increased school participation, decreased outdoor activity and the proliferation of near-work occupations. The Tanzanian Hadza have traditionally subsisted as hunter-gatherers. School participation has historically been low and near-work otherwise minimal. Previous studies have reported exceptionally low myopia rates among hunter-gatherers, though such studies are few. The present study aims to expand this dataset. We report Hadza myopia rates and compare them to those from other economic/subsistence niches. We look for temporal changes in eyesight, in line with changing Hadza subsistence. Further, we assess the impact two known myopia risk factors, gender and educational participation, on Hadza eyesight.

<https://onlinelibrary.wiley.com/doi/full/10.1002/ajpa.24611>

Animal Behaviour

PAPERS

SUSAN PETERS et al with STEPHEN NOWICKI – Are song sequencing rules learned by song sparrows?

Although the effects of learning on song structure have been extensively studied in songbirds, little attention has been given to the learning of syntax at the level of song sequences. Here we investigate song syntax learning in two cohorts of hand-reared song sparrows, *Melospiza melodia*: an isolate group, consisting of four males raised with no exposure to external song models, and a trained group, consisting of 17 males exposed to recorded song sequences during the sensitive period for song learning. The isolate males followed three syntactical rules previously described for field-recorded song sparrows: (1) they produced their song type repertoires with eventual variety, repeating a song type multiple times before switching to another; (2) they cycled through their repertoires using close to the minimum number of bouts; and (3) they showed consistent preferences for singing certain of their song types more than others. The trained males were tutored with sequences with exaggerated eventual variety and cycling patterns and no usage preferences, but their syntax was little affected by any of these training features. One syntactical pattern that was affected by external experience was the rule that long bouts of a song type are followed by long recurrence intervals before that type is produced again. Isolate males showed no bout length/recurrence interval correlations while trained males showed reduced correlations relative to field-recorded males, implicating learning in the development of the normal pattern. Other songbird species have been found to preferentially use song type transitions as adults that they were tutored with as juveniles, but the trained song sparrows in this study showed no evidence of such effects.

<https://www.sciencedirect.com/science/article/abs/pii/S000334722200210X>

BENJAMIN COBB et al with ANDREW N. RADFORD – Factors affecting follower responses to movement calls in cooperatively breeding dwarf mongooses

In social species, individuals maximize the benefits of group living by remaining cohesive and coordinating their actions. Communication is key to collective action, including ensuring that group members move together; individuals often produce signals when attempting to lead a group to a new area. However, the function of these signals, and how responses to them are affected by intrinsic characteristics of the caller and extrinsic factors, has rarely been experimentally tested. We conducted a series of field-based playback experiments with habituated wild dwarf mongooses, *Helogale parvula*, a cooperatively breeding and territorial species, to investigate follower responses to movement calls. In our first experiment, we found that focal individuals were more likely to respond to playback of 'movement calls' than control 'close calls', indicating movement calls function as recruitment signals. In a second experiment, we found that focal individuals responded similarly to the movement calls of dominant and subordinate groupmates, suggesting that dominance status (an intrinsic factor) does not influence receiver responses. In a final experiment, we found that individuals responded to the simulated

presence of a rival group, but that this outgroup conflict (an extrinsic factor) did not affect responses to movement calls compared to a control situation. This may be because attention is instead focused on the potential presence of an imminent threat. By using playbacks to isolate the acoustic signal from physical movement cues, our results provide experimental evidence of how movement calls help leaders to attract followers and thus adds to our understanding of recruitment signals more generally.

<https://www.sciencedirect.com/science/article/pii/S0003347222001993>

VESTA ELEUTERI et al with KLAUS ZUBERBÜHLER & CATHERINE HOBAITER – The form and function of chimpanzee buttress drumming

Many animal species use vocal and nonvocal acoustic signals to communicate over large distances. Wild chimpanzees, *Pan troglodytes*, drum on the buttress roots of trees, generating low-frequency sounds that can reach distances of over 1 km. Buttress drumming is produced in bouts of beats and is often accompanied by pant hoots, the species-typical long-distance vocalization. We investigated whether individual differences exist in the acoustic structure of drumming bouts produced by male chimpanzees of the Waibira community in the Budongo Forest in Uganda, and whether individual, contextual and social factors affected their use of drumming. We found individual differences in drumming bouts produced by seven male chimpanzees during travel events as well as in their timing within the pant hoot, and discriminated specific patterns of beats for some chimpanzees. In contrast, we found no evidence for individual differences in the acoustic structure of drumming bouts produced by four males during displays. Together these findings suggest that chimpanzees may be able to choose to encode identity within individual drumming ‘signatures’. Chimpanzees drummed less frequently as their party size increased. We found no evidence that the age of the signaller or the presence of preferred social partners, higher-ranking males or females in oestrus affected the use of drumming. These findings suggest there may be flexibility in buttress drumming across social and behavioural contexts and provide support for the hypothesis that, by encoding individual identity, long-distance drumming may be used to facilitate chimpanzee fission–fusion social dynamics.

<https://www.sciencedirect.com/science/article/pii/S0003347222002081>

Current Biology

ARTICLES

BARBARA C. KLUMP et al – Is bin-opening in cockatoos leading to an innovation arms race with humans?

Foraging innovations can give wild animals access to human-derived food sources. If these innovations spread, they can enable adaptive flexibility but also lead to human-wildlife conflicts. Examples include crop-raiding elephants and long-tailed macaques that steal items from people to trade them back for food. Behavioural responses by humans might act as a further driver on animal innovation, even potentially leading to an inter-species ‘innovation arms-race’, yet this is almost entirely unexplored. Here, we report a potential case in wild, urban-living, sulphur-crested cockatoos (*Cacatua galerita*; henceforth cockatoos), where the socially-learned behaviour of opening and raiding of household bins by cockatoos is met with increasingly effective and socially-learned bin-protection measures by human residents.

[https://www.cell.com/current-biology/fulltext/S0960-9822\(22\)01285-4](https://www.cell.com/current-biology/fulltext/S0960-9822(22)01285-4)

PAPERS

JONATHON D. CRYSTAL – Memory: Dolphins remember incidental events

A fundamental problem in the evolution of cognition is the search for complex memory systems given the longstanding belief that complex cognition is unique to humans. Along these lines, new research suggests that bottlenose dolphins can answer unexpected questions after encoding information that was seemingly unimportant when it was encountered.

[https://www.cell.com/current-biology/fulltext/S0960-9822\(22\)01239-8](https://www.cell.com/current-biology/fulltext/S0960-9822(22)01239-8)

eLife

PAPERS

CENDRI A HUTCHERSON & ANITA TUSCHE – Evidence accumulation, not ‘self-control’, explains dorsolateral prefrontal activation during normative choice

What role do regions like the dorsolateral prefrontal cortex (dlPFC) play in normative behavior (e.g., generosity, healthy eating)? Some models suggest that dlPFC activation during normative choice reflects controlled inhibition or modulation of default hedonistic preferences. Here, we develop an alternative account, showing that evidence accumulation models predict trial-by-trial variation in dlPFC response across three fMRI paradigms and two self-control contexts (altruistic sacrifice and healthy eating). Using these models to simulate a variety of self-control dilemmas generated a novel prediction: although dlPFC activity might typically increase for norm-consistent choices, deliberate self-regulation focused on normative goals should decrease or even reverse this pattern (i.e., greater dlPFC response for hedonistic, self-interested choices). We confirmed these predictions in both altruistic and dietary choice contexts. Our results suggest that dlPFC response during normative choice may depend more on value-based evidence accumulation than inhibition of our baser instincts.

<https://elifesciences.org/articles/65661>

Evolutionary Anthropology

PAPERS

CHRISTINA M. BALENTINE & DEBORAH A. BOLNICK – Parallel evolution in human populations: A biocultural perspective

Parallel evolution—where different populations evolve similar traits in response to similar environments—has been a topic of growing interest to biologists and biological anthropologists for decades. Parallel evolution occurs in human populations thanks to myriad biological and cultural mechanisms that permit humans to survive and thrive in diverse environments worldwide. Because humans shape and are shaped by their environments, biocultural approaches that emphasize the interconnections between biology and culture are key to understanding parallel evolution in human populations as well as the nuances of human biological variation and adaptation. In this review, we discuss how biocultural theory has been and can be applied to studies of parallel evolution and adaptation more broadly. We illustrate this through four examples of parallel evolution in humans: malaria resistance, lactase persistence, cold tolerance, and high-altitude adaptation.

<https://onlinelibrary.wiley.com/doi/abs/10.1002/evan.21956>

Mind & Language

PAPERS

LU TENG – A metacognitive account of phenomenal force

According to phenomenal conservatism or dogmatism, perceptual experiences can give us immediate justification for beliefs about the external world in virtue of having a distinctive kind of phenomenal character—namely phenomenal force. I present three cases to show that phenomenal force is neither pervasive among nor exclusive to perceptual experiences. The plausibility of such cases calls out for explanation. I argue that contrary to a long-held assumption, phenomenal force is a separate, non-perceptual state generated by some metacognitive mechanisms that monitor one's first-order mental processes and states. This new account advances our understanding of the nature of phenomenal force.

<https://onlinelibrary.wiley.com/doi/full/10.1111/mila.12442>

Nature

NEWS

Five-year campaign breaks science's citation paywall

Reference lists for more than 60 million journal studies in Crossref are now free to view and reuse.

<https://www.nature.com/articles/d41586-022-02926-y>

Prehistoric child's amputation is oldest surgery of its kind

Skeleton missing lower left leg and dated to 31,000 years ago provides the earliest known evidence for surgical limb removal.

<https://www.nature.com/articles/d41586-022-02849-8>

The fraught quest to account for sex in biology research

Funders and publishers are increasingly asking researchers to account for the role of sex in experiments — a requirement that's contentious and hard to get right.

<https://www.nature.com/articles/d41586-022-02919-x>

ARTICLES

CHARLOTTE ANN ROBERTS – Earliest known surgery was of a child in Borneo 31,000 years ago

Evidence that a child in a hunter-gatherer society survived amputation offers a remarkable insight into the origins of surgery. It challenges the current view that such procedures emerged alongside farming some 10,000 years ago.

<https://www.nature.com/articles/d41586-022-02340-4>

PAPERS

TIM RYAN MALONEY et al – Surgical amputation of a limb 31,000 years ago in Borneo

The prevailing view regarding the evolution of medicine is that the emergence of settled agricultural societies around 10,000 years ago (the Neolithic Revolution) gave rise to a host of health problems that had previously been unknown among non-sedentary foraging populations, stimulating the first major innovations in prehistoric medical practices. Such changes included the development of more advanced surgical procedures, with the oldest known indication of an 'operation' formerly thought to have consisted of the skeletal remains of a European Neolithic farmer (found in Buthiers-Boulancourt, France) whose left forearm had been surgically removed and then partially healed. Dating to around 7,000 years ago, this accepted case of amputation would have required comprehensive knowledge of human anatomy and considerable technical skill, and has thus been viewed as the earliest evidence of a complex medical act. Here, however, we report the discovery of skeletal remains of a young individual from Borneo who had the distal third of their left lower leg surgically amputated, probably as a child, at least 31,000 years ago. The individual survived the procedure and lived for another 6–9 years, before their remains were intentionally buried in Liang Tebo cave, which is located in East Kalimantan, Indonesian Borneo, in a limestone karst

area that contains some of the world's earliest dated rock art. This unexpectedly early evidence of a successful limb amputation suggests that at least some modern human foraging groups in tropical Asia had developed sophisticated medical knowledge and skills long before the Neolithic farming transition.

<https://www.nature.com/articles/s41586-022-05160-8>

Nature Communications

PAPERS

DAVID J. SCHAEFFER et al – Frontoparietal connectivity as a product of convergent evolution in rodents and primates: functional connectivity topologies in grey squirrels, rats, and marmosets

Robust frontoparietal connectivity is a defining feature of primate cortical organization. Whether mammals outside the primate order, such as rodents, possess similar frontoparietal functional connectivity organization is a controversial topic. Previous work has primarily focused on comparing mice and rats to primates. However, as these rodents are nocturnal and terrestrial, they rely much less on visual input than primates. Here, we investigated the functional cortical organization of grey squirrels which are diurnal and arboreal, thereby better resembling primate ecology. We used ultra-high field resting-state fMRI data to compute and compare the functional connectivity patterns of frontal regions in grey squirrels (*Sciurus carolinensis*), rats (*Rattus norvegicus*), and marmosets (*Callithrix jacchus*). We utilized a fingerprinting analysis to compare interareal patterns of functional connectivity from seeds across frontal cortex in all three species. The results show that grey squirrels, but not rats, possess a frontoparietal connectivity organization that resembles the connectivity pattern of marmoset lateral prefrontal cortical areas. Since grey squirrels and marmosets have acquired an arboreal way of life but show no common arboreal ancestor, the expansion of the visual system and the formation of a frontoparietal connectivity architecture might reflect convergent evolution driven by similar ecological niches in primates and tree squirrels.

<https://www.nature.com/articles/s42003-022-03949-x>

Nature Humanities & Social Sciences Communications

PAPERS

YING SOPHIE HUANG & MOEKI NEMOTO – Communication tool in management accounting: adapting Jakobson's (1960) communication model

Cognition is often a problem in management accounting communication. A gap arises between the sender and receiver of management accounting information, leading to miscommunication. A semiotic approach is a practical tool to decrease such miscommunication in management accounting. Jakobson's communication model helps decrease such miscommunication. This study examines how Jakobson's communication model is helpful for management accounting communication and our proposed communication model is intended to support management by providing relevant and timely information for planning, controlling, and decision-making. Additionally, our communication model is designed to decrease miscommunication.

<https://www.nature.com/articles/s41599-022-01339-6>

Nature Scientific Data

PAPERS

COHEN R. SIMPSON – Social Support and Network Formation in a Small-Scale Horticulturalist Population

Evolutionary studies of cooperation in traditional human societies suggest that helping family and responding in kind when helped are the primary mechanisms for informally distributing resources vital to day-to-day survival (e.g., food, knowledge, money, childcare). However, these studies generally rely on forms of regression analysis that disregard complex interdependences between aid, resulting in the implicit assumption that kinship and reciprocity drive the emergence of entire networks of supportive social bonds. Here I evaluate this assumption using individual-oriented simulations of network formation (i.e., Stochastic Actor-Oriented Models). Specifically, I test standard predictions of cooperation derived from the evolutionary theories of kin selection and reciprocal altruism alongside well-established sociological predictions around the self-organisation of asymmetric relationships. Simulations are calibrated to exceptional public data on genetic relatedness and the provision of tangible aid amongst all 108 adult residents of a village of indigenous horticulturalists in Nicaragua (11,556 ordered dyads). Results indicate that relatedness and reciprocity are markedly less important to whom one helps compared to the supra-dyadic arrangement of the tangible aid network itself.

<https://www.nature.com/articles/s41597-022-01516-x>

New Scientist

NEWS

A single gene mutation may have made us smarter than Neanderthals

Modern humans have a gene mutation that boosts the growth of neurons in the brain neocortex, a brain region associated with higher intelligence.

<https://www.newscientist.com/article/2337133-a-single-gene-mutation-may-have-made-us-smarter-than-neanderthals/>

Child's foot was removed 31,000 years ago in earliest known amputation

A 31,000-year-old Stone Age skeleton has been found with the lower part of its leg cleanly removed, and the bones reveal that the child survived for several years after it happened.

<https://www.newscientist.com/article/2336768-childs-foot-was-removed-31000-years-ago-in-earliest-known-amputation/>

The sex of the researcher can influence results of mouse experiments

Ketamine appears to be more effective as an antidepressant in mouse experiments if they are conducted by a male researcher, raising questions about other studies in mice.

<https://www.newscientist.com/article/2337160-the-sex-of-the-researcher-can-influence-results-of-mouse-experiments/>

ARTICLES

ALISON GEORGE – Simple puzzles are revealing why humans are the only talking apes

Cognitive scientist Gillian Forrester is challenging chimps and gorillas to solve puzzles in an attempt to address the long-standing mystery of how humans evolved the ability to speak.

<https://www.newscientist.com/article/mg25534041-300-simple-puzzles-are-revealing-why-humans-are-the-only-talking-apes/>

PLoS One

PAPERS

LUCIE MÉNARD et al – Intelligibility of speech produced by sighted and blind adults

It is well known that speech uses both the auditory and visual modalities to convey information. In cases of congenital sensory deprivation, the feedback language learners have access to for mapping visible and invisible orofacial articulation is impoverished. Although the effects of blindness on the movements of the lips, jaw, and tongue have been documented in francophone adults, not much is known about their consequences for speech intelligibility. The objective of this study is to investigate the effects of congenital visual deprivation on vowel intelligibility in adult speakers of Canadian French.

Twenty adult listeners performed two perceptual identification tasks in which vowels produced by congenitally blind adults and sighted adults were used as stimuli. The vowels were presented in the auditory, visual, and audiovisual modalities (experiment 1) and at different signal-to-noise ratios in the audiovisual modality (experiment 2). Correct identification scores were calculated. Sequential information analyses were also conducted to assess the amount of information transmitted to the listeners along the three vowel features of height, place of articulation, and rounding.

The results showed that, although blind speakers did not differ from their sighted peers in the auditory modality, they had lower scores in the audiovisual and visual modalities. Some vowels produced by blind speakers are also less robust in noise than those produced by sighted speakers.

Together, the results suggest that adult blind speakers have learned to adapt to their sensory loss so that they can successfully achieve intelligible vowel targets in non-noisy conditions but that they produce less intelligible speech in noisy conditions. Thus, the trade-off between visible (lips) and invisible (tongue) articulatory cues observed between vowels produced by blind and sighted speakers is not equivalent in terms of perceptual efficiency.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0272127>

ALEXIA SMITH et al – Epipalaeolithic animal tending to Neolithic herding at Abu Hureyra, Syria (12,800–7,800 calBP): Deciphering dung spherulites

Excavations at Abu Hureyra, Syria, during the 1970s exposed a long sequence of occupation spanning the transition from hunting-and-gathering to agriculture. Dung spherulites preserved within curated flotation samples from Epipalaeolithic (ca. 13,300–11,400 calBP) and Neolithic (ca. 10,600–7,800 calBP) occupations are examined here alongside archaeological, archaeobotanical, and zooarchaeological data to consider animal management, fuel selection, and various uses of dung. Spherulites were present throughout the entire sequence in varying concentrations. Using a new method to quantify spherulites, exclusion criteria were developed to eliminate samples possibly contaminated with modern dung, strengthening observations of ancient human behavior. Darkened spherulites within an Epipalaeolithic 1B firepit (12,800–12,300 calBP) indicate burning between 500–700°C, documenting early use of dung fuel by hunter-gatherers as a supplement to wood, coeval with a dramatic shift to rectilinear architecture, increasing proportions of wild sheep and aurochs, reduced emphasis on small game, and elevated dung concentrations immediately outside the 1B dwelling. Combined, these observations suggest that small numbers of live animals (possibly wild sheep) were tended on-site by Epipalaeolithic hunter-gatherers to supplement gazelle hunting, raising the question of whether early experiments in animal management emerged contemporaneously with, or pre-date, cultivation. Dung was used to prepare plaster floors during the Neolithic and continued to be burned as a supplemental fuel, indicating that spherulites were deposited via multiple human- and animal-related pathways. This has important implications for interpretations of archaeobotanical assemblages across the region. Spherulite concentrations dropped abruptly during Neolithic 2B (9,300–8,000 calBP) and 2C (8,000–7,800 calBP), when sheep/goat herding surpassed gazelle hunting, possibly corresponding with movement of animals away from the site as herd sizes increased. As hunter-gatherers at Abu Hureyra began interacting with wild taxa in different ways, they set in motion a remarkable transformation in the ways people interacted with animals, plants, and their environment.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0272947>

Proceedings of the Royal Society B

PAPERS

MARIUS FAIß, TOBIAS RIEDE & FRANZ GOLLER – Tonality over a broad frequency range is linked to vocal learning in birds

Many birds emit tonal song syllables even though the sound sources generate sound with rich upper harmonic energy content. This tonality is thought to arise in part from dynamically adjusted filtering of harmonic content. Here, we compare tonality of song syllables between vocal learners and non-learners to assess whether this characteristic is linked to the increased neural substrate that evolved with vocal learning. We hypothesize that vocal learning ability is correlated with enhanced ability for generating tonal sounds, because vocal production learners might also have an enhanced ability to articulate their vocal tracts and sound source for producing tonality. To test this hypothesis, we compared vocal learners and non-learners from two groups (186 passerines and 42 hummingbirds) by assessing tonality of song syllables. The data suggest that vocal learners in both clades have evolved to sing songs with higher tonality than the related, non-vocal learning clades, which is consistent with stronger roles for broadband dynamic filtering and adjustments to the sound source. In addition, oscine songs display higher tonality than those of hummingbirds. A complex interplay of vocal tract biomechanics, anatomical differences of the sound source as well as increased motor control through vocal learning facilitates generation of broad tonality.

<https://royalsocietypublishing.org/doi/abs/10.1098/rspb.2022.0792>

NICHOLAS KERRY et al – Experimental and cross-cultural evidence that parenthood and parental care motives increase social conservatism

Differences in attitudes on social issues such as abortion, immigration and sex are hugely divisive, and understanding their origins is among the most important tasks facing human behavioural sciences. Despite the clear psychological importance of parenthood and the motivation to provide care for children, researchers have only recently begun investigating their influence on social and political attitudes. Because socially conservative values ostensibly prioritize safety, stability and family values, we hypothesized that being more invested in parental care might make socially conservative policies more appealing. Studies 1 (preregistered; n = 376) and 2 (n = 1924) find novel evidence of conditional experimental effects of a parenthood prime, such that people who engaged strongly with a childcare manipulation showed an increase in social conservatism. Studies 3 (n = 2610, novel data from 10 countries) and 4 (n = 426 444, World Values Survey data) find evidence that both parenthood and parental care motivation are associated with increased social conservatism around the globe. Further, most of the positive association globally between age and social conservatism is accounted for by parenthood. These findings support the hypothesis that parenthood and parental care motivation increase social conservatism.

<https://royalsocietypublishing.org/doi/abs/10.1098/rspb.2022.0978>

Prospect

ARTICLES

NICOLA CLAYTON – The Bird Nerd

“I loved birds and I wanted to move like one” – The corvid expert on how she noticed the birds’ unique intelligence and memory skills.

<https://www.prospectmagazine.co.uk/society-and-culture/ornithologist-nicola-clayton-i-loved-birds-and-i-wanted-to-move-like-one>

Science Advances

PAPERS

YONGHUA WU et al – Ambush predation and the origin of euprimates

Primates of modern aspect (euprimates) are characterized by a suite of characteristics (e.g., convergent orbits, grasping hands and feet, reduced claws, and leaping), but the selective pressures responsible for the evolution of these euprimate characteristics have long remained controversial. Here, we used a molecular phyloecological approach to determine the diet of the common ancestor of living primates (CALP), and the results showed that the CALP had increased carnivory. Given the carnivory of the CALP, along with the general observation that orbital convergence is largely restricted to ambush predators, our study suggests that the euprimate characteristics could have been more specifically adapted for ambush predation. In particular, our behavior experiment further shows that nonclaw climbing can significantly reduce noises, which could benefit the ancestral euprimates’ stalking to ambush their prey in trees. Therefore, our study suggests that the distinctive euprimate characteristics may have evolved as their specialized adaptation for ambush predation in arboreal environments.

<https://www.science.org/doi/full/10.1126/sciadv.abn6248>

PAPERS

ANNIE REGAN, NINA RADOŠIĆ & SONJA LYUBOMIRSKY – Experimental effects of social behavior on well-being

Subjective well-being is characterized by relatively frequent positive emotions, relatively infrequent negative emotions, and high life satisfaction. Although myriad research topics related to subjective well-being have been explored – from how it should be measured to how it affects physical health – a key finding is that social connections are crucial. Researchers are therefore increasingly exploring whether subjective well-being can be improved through interventions that encourage specific types of social behaviors, including prosociality, gratitude, extraversion, and brief social interactions. We review this recent work, highlighting potential behavioral and psychological mechanisms underlying the effectiveness of such interventions, along with their boundary conditions.

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(22\)00202-9](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(22)00202-9)

M. GABRIELA NAVAS-ZULOAGA, THEODORE P. PAVLIC & BRIAN H. SMITH – Alternative model systems for cognitive variation: eusocial-insect colonies

Understanding the origins and maintenance of cognitive variation in animal populations is central to the study of the evolution of cognition. However, the brain is itself a complex, hierarchical network of heterogeneous components, from diverse cell types to diverse neuropils, each of which may be of limited use to study in isolation or prohibitively challenging to manipulate in situ. Consequently, highly tractable alternative model systems may be valuable tools. Eusocial-insect colonies display emergent cognitive-like properties from relatively simple social interactions between diverse subunits that can be observed and manipulated while operating collectively. Here, we review the individual-scale mechanisms that cause group-level variation in how colonies solve problems analogous to cognitive challenges faced by brains, like decision-making, attention, and search.

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(22\)00142-5](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(22)00142-5)

WENJING YANG et al – Creative problem solving in knowledge-rich contexts

Creative problem solving (CPS) in real-world contexts often relies on reorganization of existing knowledge to serve new, problem-relevant functions. However, classic creativity paradigms that minimize knowledge content are generally used to investigate creativity, including CPS. We argue that CPS research should expand consideration of knowledge-rich problem contexts, both in novices and experts within specific domains. In particular, paradigms focusing on creative analogical transfer of knowledge may reflect CPS skills that are applicable to real-world problem solving. Such paradigms have begun to provide process-level insights into cognitive and neural characteristics of knowledge-rich CPS and point to multiple avenues for fruitfully expanding inquiry into the role of crystallized knowledge in creativity.

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(22\)00156-5](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(22)00156-5)

CAROLYN BAER & CELESTE KIDD – Learning with certainty in childhood

Learners use certainty to guide learning. They maintain existing beliefs when certain, but seek further information when they feel uninformed. Here, we review developmental evidence that this metacognitive strategy does not require reportable processing. Uncertainty prompts nonverbal human infants and nonhuman animals to engage in strategies like seeking help, searching for additional information, or opting out. Certainty directs children's attention and active learning strategies and provides a common metric for comparing and integrating conflicting beliefs across people. We conclude that certainty is a continuous, domain-general signal of belief quality even early in life.

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(22\)00167-X](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(22)00167-X)

A.A. GALAKHOVA et al – Evolution of cortical neurons supporting human cognition

Human cognitive abilities are generally thought to arise from cortical expansion over the course of human brain evolution. In addition to increased neuron numbers, this cortical expansion might be driven by adaptations in the properties of single neurons and their local circuits. We review recent findings on the distinct structural, functional, and transcriptomic features of human cortical neurons and their organization in cortical microstructure. We focus on the supragranular cortical layers, which showed the most prominent expansion during human brain evolution, and the properties of their principal cells: pyramidal neurons. We argue that the evolutionary adaptations in neuronal features that accompany the expansion of the human cortex partially underlie interindividual variability in human cognitive abilities.

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(22\)00208-X](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(22)00208-X)

COMMENTARIES

SHANE STEINERT-THRELKELD – Explaining semantic typology, forms and all

By modeling both meaning and form in terms of efficient communication, Mollica et al. advance the state of the art in explaining the restricted variation exhibited in the world's languages. This opens an exciting path towards explanations of linguistic typology capturing the full richness of the form-meaning mappings in the world's languages.

[F. Mollica et al (2021). The forms and meanings of grammatical markers support efficient communication. PNAS 118:49, e2025993118. EAORC BULLETIN 977 – 6 March 2022.]

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(22\)00037-7](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(22)00037-7)

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