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NOTICES

FORMATTED VERSION OF THIS BULLETIN

A pdf formatted version of this Bulletin is available for download at martinedwardes.me.uk/eaorc/eaorc_bulletins.htm.

PUBLICATION ALERTS

If you have had a paper or book published, or you see something which would be of interest to the group, please send me a publication alert so that I can include it in the newsletter. Many thanks to those who have already sent in alerts.

If there is a journal you feel I should be tracking on a regular basis, let me know.

And if you have any other ideas for extending the “EAORC experience”, please contact me.

EDITORIAL INTERJECTIONS

Comments in curly brackets are editorial interjections. The Editor reserves the right to be wrong, and doesn’t object to being called out on it.

ACADEMIA.EDU – Who Accommodates Meaning? The Privileges of Being Interpreted and Housed

Central and Eastern European Migration Review 15:1, 247-265 (2026)

MARTINA WILSCH et al with HELENA TUŽINSKÁ – Who Accommodates Meaning? The Privileges of Being Interpreted and Housed from the Perspective of Ukrainians in Slovakia

Displaced populations experience heightened levels of inequality and injustice in their access to society, where epistemic dimensions contribute to these injustices. Policies that inadequately address the needs of forced migrants often result in restricted access to translation and interpretation services. By failing to address the lived experiences and voices of these populations, systems further perpetuate social inequalities and obstruct the development of inclusive, equitable practices. This paper argues that epistemic injustices, as a specific, nuanced layer, contribute to the production of vulnerability of refugees. In particular, it examines the systemic disregard for refugees’ lived experiences and the misrecognition of language use in administrative contexts and in interpreting, demonstrating these processes in housing practices towards Ukrainian refugees. The empirical examples are drawn from qualitative research conducted in Slovakia from 2023 to February 2025, involving displaced persons from Ukraine, ad hoc interpreters and institutional actors responsible for refugee integration and support. The analysis is grounded in translation policy studies, the ethnography of communication and the anthropology of housing, providing a multidisciplinary perspective on the challenges faced by displaced populations.

{For tens of thousands of years, probably longer, human societies have been accommodating migratory groups and individuals. This helps to explain why and how.}

https://www.academia.edu/171103837/Who_Accommodates_Meaning_The_Privileges_of_Being_Interpreted_and_Housed_from_the_Perspective_of_Ukrainians_in_Slovakia

OTHER PUBLICATIONS – What Shapes Conflict–Resolution Communication in a Wild Primate

Annals of the New York Academy of Sciences 1562:1, e70352 (2026).

LUCA PEDRUZZI et al – Relationship Value, Emotion, and Uncertainty Shape Conflict–Resolution Communication in a Wild Primate

Studying how nonhuman primates tailor signals and behavioral patterns to resolve ingroup conflicts provides insight into the evolution of communicative and behavioral complexity in conflict management. Here, we explore how, in wild geladas, primates with a uniquely rich vocal–visual repertoire, aggressors and victims take into account relationship value, perceived risk and uncertainty, emotional dynamics, and audience and external factors when producing nonaggressive signals after conflicts. We found that reconciliation in the study groups occurred rapidly, was mainly initiated by aggressors, and was mediated by post-conflict sequences composed of vocalizations, sometimes supplemented with visual signals and tactile patterns. The complexity of post-conflict sequences—indexed by their length, sensory channels, and signal types—was amplified in aggressor–victim dyads with stronger social bonds, following more intense victim distress signals, with dominant aggressors, and between genetically unrelated individuals. These patterns reflect sensitivity to uncertainty, relationship quality, emotional states, and to the external audience. Such behavioral flexibility helps individuals navigate the challenges of complex social life, where multiple relationships must be continuously tracked, thereby supporting social competence and

group cohesion. Post-conflict signaling lies at the intersection of social and cognitive sophistication, revealing evolutionary links to human complex communication.

<https://nyaspubs.onlinelibrary.wiley.com/doi/10.1111/nyas.70352>

NEWS

NATURE BRIEFING – Ice-age art hints at how humans flourished

The newest finds from the Hohle Fels cave — a site in Germany that archaeologists have been exploring for decades — include a pair of tiny bird figurines carved from mammoth ivory, and fragments of a vulture-bone flute. These and other artworks found in the cave provide a window into the minds of some of Europe's earliest Homo sapiens. Archaeologist Nicholas Conard, who leads the excavation, argues that the artistic capabilities of these early humans mark a shift in cognitive and cultural sophistication that might have helped them to flourish in ice-age Europe, when other groups vanished.

<https://www.nature.com/articles/d41586-026-02400-z>

NEWS FROM SCIENCE – Fossil skull flattening suggests ancient origins of infant helplessness

Homo erectus and H. floresiensis skulls both show defects similar to those modern human babies can develop after repeatedly resting on the same side.

<https://www.science.org/content/article/fossil-skull-flattening-suggests-ancient-origins-infant-helplessness>

NEWS FROM SCIENCE – Are dolphins the only animals that call each other by name?

Science chats with cognitive psychologist Kelly Jaakkola about why this complex behavior is so difficult to find in the animal kingdom.

<https://www.science.org/content/article/are-dolphins-only-animals-call-each-other-name>

SCIENCEADVISER – Having helpless babies is part of being human

On a research trip to Indonesia in 2007, Yosuke Kaifu saw the skull of 'Flo'—the skeletal remains of a diminutive human relative called Homo floresiensis, nicknamed "hobbits." The anthropologist was drawn to one particular anatomical peculiarity: The skull's right side was slightly smooshed.

It turned out the asymmetry matched deformational plagiocephaly—a flattening of the head common in babies today. Human babies' skulls are soft for the first few months of life, allowing for brain growth after birth. Because babies can't hold their heads up, they are prone to resting them on one side, and this repeated pressure against the soft skull can cause the deformation. It's nothing serious, and usually resolves with time, but occasionally—as in this apparent case in H. floresiensis—it can persist into adulthood.

Reasoning that these deformations are the consequence of helplessness in early infancy—an underdeveloped brain and an inability to support oneself—Kaifu saw the asymmetry in Flo's skull as evidence that H. floresiensis, like us, had helpless infants. He then turned to investigating the direct ancestor of H. sapiens and Neanderthals, H. erectus, and in two of the five fossilized skulls examined, he saw the same deformation, suggesting our helplessness in early life has deep evolutionary origins.

Anthropologist Jeremy DeSilva said the case for ancient infant helplessness has been building for some time now, and "short of a time machine," it's pretty convincing.

<https://www.science.org/content/article/fossil-skull-flattening-suggests-ancient-origins-infant-helplessness>

SCIENCEADVISER – Birds sing in tune with their environments

When it comes to song, some birds prefer to keep it simple. The tufted titmouse, for example, just repeats its two-note peter-peter whistle over and over again. Others, like the nightingale, are known for their impressively complex melodies. As scientists report on a new study, however, many of these crooners are working with the same material.

Using data collected by the citizen science project Xeno-canto, researchers analyzed recordings of songs from more than 3000 passerine birds around the world. They identified eight distinct acoustic motifs, including various trills and whistles, harmonic stacks, and chaotic notes. Most songs were composed of two to eight motifs, with type and number varying across species.

The team also found that, around the world, a bird's physical environment tended to shape its song. Birds living in tropical rainforests tended to favor flat whistles and slow trills, which are better at penetrating dense vegetation. In more temperate regions, where short breeding seasons lead to more intense sexual selection, birds attempt to impress potential mates with complex motifs.

The study provides "one of the most comprehensive analyses of passerine song evolution to date," animal behavioral scientist Élodie Briefer wrote in a related Science Perspective. "In addition to advancing our understanding of avian communication, their approach could be used to study the evolution of complex acoustic systems across other biological groups."

<https://www.science.org/doi/10.1126/science.aee6239>

SCIENCENEWS – The golden age of language was a few thousand years ago

New research suggests language extinction began with the rise of nation-states not colonialism.

<https://www.sciencenews.org/article/golden-age-language-history-diversity>

THE CONVERSATION – Updating Darwin: biologists are returning to an older theory to explain anomalies

Evolution is a fact of life. So much so that even the theory of evolution is evolving. Lately, a centuries-old discredited idea has been making a strong comeback. It helps us explain scientific observations that according to standard evolutionary theory should be impossible. I'm referring to Lamarckism, named after theoretical proposals from French biologist Jean-Baptiste Lamarck in 1809. Lamarckism stands for the hypothesis that parents of a given organism may acquire or improve certain characteristics during their lifetimes in response to the demands of their environment. And they then somehow transmit those characteristics to their offspring, making those better able to cope with the same demands too.

<https://theconversation.com/updating-darwin-biologists-are-returning-to-an-older-theory-to-explain-anomalies-in-evolution-276549>

THE CONVERSATION – Differences in human and great ape laughter reveal clues to the origin of speech

A new study of great ape laughter also gives clues about how humans' ancient ancestors started speaking.

<https://theconversation.com/differences-in-human-and-great-ape-laughter-reveal-clues-to-the-origin-of-speech-287442>

PUBLICATIONS**Academia Biology****PAPERS****ISABEL M. SMALLEGANGE – From traits to trajectories: development, agency and a phenotypic gap in demography**

Demography links ecology and evolution by connecting population dynamics with variation in fitness and selection. Yet, most demographic models represent phenotypes as fixed traits and environments as static backdrops, overlooking the developmental processes through which phenotypes are constructed. This creates a phenotypic gap in demographic theory: a disconnect between how phenotypes arise through development and how they are represented in demographic models. A development-centric perspective can address this gap by incorporating agency—the capacity of organisms to regulate development, reallocate energy, and modify their environments through feedback—into demographic thinking. State-of-the-art demographic models, including Integral Projection Models (IPMs) and Dynamic Energy Budget (DEB) IPMs, capture phenotypic outcomes and aspects of physiological development, but they do not explicitly represent how agential, feedback-driven developmental processes shape phenotypes and selection. I argue that progress can be made by integrating DEB-based, individual-based models with agent-based and decision-theoretic approaches, such as Markov decision processes, which represent organisms as active developmental systems embedded in feedback-rich environments. Coupling these approaches with evolutionary tools from quantitative and population genetics would yield a unified, development-centric demography. Using examples of context-sensitive developmental trajectories and intraspecific phenotypic diversification, I show how development-centric approaches reveal how energy allocation, developmental plasticity, and feedback shape phenotypic variation and demographic dynamics. A development-centric demography reframes population dynamics as a science of self-directed change and provides a stronger foundation for understanding eco-evolutionary feedback and forecasting population resilience under environmental change.

<https://www.academia.edu/2837-4010/4/1/10.20935/AcadBiol8162>

American Journal of Biological Anthropology**PAPERS****O. A. KUZNETSOVA – Cranial Modularity and Integration in Modern Humans: Evidence for Regional Variability and Evolutionary Flexibility**

This study examines the modular organization of the human skull and variation in cranial integration across Eurasian populations.

The study analyzed 450 male crania from 10 Eurasian populations using 35 craniometric variables. Correlation matrices were constructed and evaluated using EMMLi analysis and the covariance ratio (CR) to test alternative modularity models, while two-block partial least squares (2B-PLS) analysis was used to estimate the strength of cranial integration.

EMMLi and CR analyses supported a highly modular organization of the human skull, with generally weak correlations within and between cranial modules. Viscerocranial modules showed stronger internal integration than neurocranial modules. Asian populations displayed weaker intermodular correlations, especially in the orbital and zygomatic regions, suggesting greater independence of these traits. The Khanty sample occupied an intermediate position between major macroregional groups. Increased cranial integration was observed in island and peripheral populations.

The findings indicate that weak integration among cranial modules may increase the potential for craniofacial variation in humans. Reduced integration of orbital and zygomatic modules in North Asian populations may reflect climatic adaptation

and/or high population mobility. Lower modularity in island populations may result from stronger genetic drift or stabilizing selection, whereas increased modularity may reflect directional selection.

Cranial modularity varies not only among species but also among modern human populations, reflecting microevolutionary processes and environmental influences on morphological diversity.

<https://onlinelibrary.wiley.com/doi/abs/10.1002/ajpa.70313>

JOSEP MARIA POTAU et al – Quantitative Study of Elbow Ligaments in Modern Humans (*Homo sapiens*) and Common Chimpanzees (*Pan troglodytes*)

We have analyzed the elbow ligaments in humans and chimpanzees in order to identify differences that may be related to the use of the upper limbs in these two species. Specifically, we expected to find adaptations to arboreal locomotion and knuckle-walking in chimpanzees and adaptations to non-weight-bearing manual activities in humans.

We dissected seven upper limbs from extant humans and seven from common chimpanzees and performed anatomical and qualitative analyses of the elbow ligaments. Subsequently, we calculated the absolute and relative size of the mass of these ligaments in the two species.

The anatomical description of the elbow ligaments was very similar in the two species. The quantitative analysis found a relatively larger anterior fascicle of the ulnar collateral ligament (UCL) in humans and a relatively larger lateral ulnar collateral ligament (LUCL) in chimpanzees.

The different ways humans and chimpanzees use their upper limbs could explain the quantitative differences we observed in the elbow ligaments. We can thus hypothesize that the more developed anterior fascicle of the UCL in humans may be related to a more pronounced carrying angle in the upper limb and to the valgus forces acting on the elbow during manual tasks. In contrast, the larger LUCL in chimpanzees may help stabilize the elbow during arboreal locomotion and during the support phase of knuckle-walking.

<https://onlinelibrary.wiley.com/doi/full/10.1002/ajpa.70324>

Animal Behaviour

PAPERS

ABIGAIL R. MCCLAIN et al with ANNE E. PUSEY – Drivers of range shifts in female wild eastern chimpanzees, *Pan troglodytes schweinfurthii*, following female death events

Ranging behaviour is often linked to resource availability within a given habitat, and site fidelity to specific ranges is expected to improve foraging efficiency and thus impact fitness. Yet social animals must also navigate affiliative, in addition to competitive, dynamics of a shared environment. The ranging patterns of highly social species should thus reflect the compromise between both foraging and social needs, and range shifts may reveal important information about socioecology. Species with high fission–fusion dynamics present an interesting system to evaluate these factors since individuals often range alone to mitigate feeding competition but seek out social opportunities when advantageous. Here we assess the influence of habitat quality and social bonds on female range shifts after the death (i.e. removal) of other females in a population of eastern chimpanzees. We combine behavioural, ecological and geospatial data from 40 years, 29 death events and 45 female chimpanzees. We found significant differences in the patterning of range overlap following death events depending on the relationship of surviving females to the deceased. Females with strong social ties to a female prior to that female's death significantly decreased range overlap with the dead female's vacated range compared to females with weak associations to the dead female. Furthermore, females that lost maternal kin subsequently lost habitat quality whereas those who lost strong nonkin associates gained habitat quality. Our findings add to the body of work suggesting that female social bonds shape ranging decisions and highlight the complex balance females must strike between their social investments and ability to access high-quality resources.

<https://www.sciencedirect.com/science/article/abs/pii/S0003347226001880>

Animal Cognition

PAPERS

DANIEL LÓPEZ-VALDÉS & DIANA PLATAS-NERI – A systematic review of play invitation signals in great apes: ontogenetic rather than phylogenetic differences structure variation in ludic communicative displays

We are providing an unedited version of this manuscript to give early access to its findings. Before final publication, the manuscript will undergo further editing. Please note there may be errors present which affect the content, and all legal disclaimers apply.

Play invitation signals mark interactions as non-threatening and playful, serving as a key mechanism for coordinating social play among great apes. Within the framework of gestural origins theories, particularly the contrast between genetic codification and ontogenetic ritualization, this systematic review—conducted following PRISMA guidelines—examined empirical evidence on play invitation signals in *Pan troglodytes*, *Pan paniscus*, *Gorilla gorilla*, *Pongo pygmaeus*, and *Pongo abelii*. Studies were included if they provided developmental categorization or detailed age information and an ethogram explicitly describing play invitations. A total of 29 studies met these criteria. Results revealed marked ontogenetic variation across species, with play invitation signals peaking during infancy and juvenility, declining in subadults, and showing a secondary rise among adult females. These findings highlight the importance of developmental trajectories for

understanding cognitive and communicative flexibility in great apes. They suggest that the structure of interspecific variation in play invitation repertoires does not align consistently with phylogenetic relationships, supporting a model in which socio-developmental factors play a substantial role in shaping ludic communicative displays.

<https://link.springer.com/article/10.1007/s10071-026-02081-1>

Biological Theory

PAPERS

PIETRO ALLEGRETTI – Ancestral Mother–Infant Interaction and Its Relevance for the Evolution of Arts

Art making, understood as making music, dancing, and producing visual artworks, has a deep evolutionary history. Traces of musical instruments, figurative arts, and rock art, like engravings and cupules, are found all around Europe, Asia, and Africa since the Pleistocene. The debate about the evolution of art making has produced many theories of how arts evolved in humans' deep past. In this article, I add my contribution to one of the debate's most influential positions, Ellen Dissanayake's account of art making, focusing in particular on her explanation of the antecedents of arts, i.e., mother–infant interaction. I first integrate Dissanayake's account of ape infant behavior with new evidence from comparative studies and develop a new approach to build an account of the hominin suite of behaviors in the context of parental care using evidence from cognitive paleoanthropology and comparative neurobiology. I then propose a novel method to identify, in the fossil record, the evolution of arts as described by Dissanayake. These two lines of research are importantly intertwined: I suggest that changes in hominin parental care may help identify new cognitive skills relevant for tracing the origin and early developments of arts. I conclude that the capacity of art making may have evolved multiple times since the Middle Pliocene (≈ 4 mya) in different hominin lineages.

<https://link.springer.com/article/10.1007/s13752-026-00552-9>

Biology Letters

PAPERS

ADRIANO R. LAMEIRA – Physical constraints, not sociality, shape primate vocal repertoire size

Primate vocal richness and ultimately human language are widely thought to have co-evolved with social scale, as formalized by the social brain/complexity hypothesis, whereby managing increasing numbers of social relationships drives increasingly diverse vocal signals. However, this framework largely overlooks the physical constraints of sound production and transmission—specifically body size and habitat structure—which define the conditions under which communication unfolds on the social stage. Here, using the most comprehensive dataset of primate vocal repertoires assembled to date (77 spp) and phylogenetically controlled analyses, I find that neither brain size nor group size predicts repertoire size, providing no support for socially driven hypotheses. Instead, vocal repertoire size is explained by an interaction between body size and arboreality: across primates ranging from 40 g to 100 kg, each doubling of body size is associated with an approximately 28% increase in repertoire size in arboreal species. By contrast, terrestriality reduces repertoire size relative to expectation (approx. 3%), whereas arboreal (+6%) and mixed (+17%) habitat use increase it. Findings challenge the role of human uber-sociality as a driver of language evolution, highlight arboreality as a potential precondition for vocal richness in large-bodied ancestral hominids and show that primate vocal richness reflects physics more than politics.

<https://royalsocietypublishing.org/rsbl/article/22/7/20260332/482621/Physical-constraints-not-sociality-shape-primate>

Current Anthropology

PAPERS

LUDOVICA OTTAVIANO et al – How Scripts Are Built on Visual Metaphor: The Earliest Writing Systems

The emergence of writing has often been scrutinized through the lens of linguistic notation, while the visual and metaphorical strategies employed in invented scripts are typically sidelined. Being predominantly iconic, ancient, invented scripts offer substantial potential for visual metaphor, a strategy that can operate independently of linguistic coding. Metaphors can operate in multimodal ways, as shown by conceptual metaphor theory, and they play a crucial role in shaping human thought, beyond a language-dominated realm. Here we argue that visual metaphor is also deployed extensively in the invention of writing. We offer a novel comparative outline of the dynamics in script metaphor in the earliest invented scripts: Mesopotamian proto-cuneiform, Egyptian hieroglyphics, and the Chinese oracle bone inscriptions. These scripts rely on specific types of visual metaphor, especially based on metonymy, to convey information. Skirting the traditional view of writing as a primarily language-based phenomenon, we instead focus on the broader visual cognitive mechanisms that influence script evolution. The integration of visual metaphor in script formation is a dynamic process, shaped by selective, yet sometimes cross-culturally convergent, visual strategies that draw on cognitive salient features and categorization strategies.

<https://www.journals.uchicago.edu/doi/abs/10.1086/742105>

eLife

PAPERS

JONAS SIMOENS et al – Two time scales of adaptation in human learning rates

Different situations may require radically different information updating speeds (i.e., learning rates). Some demand fast learning rates while others benefit from using slower ones. To adjust learning rates, decision makers could rely on either global, meta-learned differences between environments, or faster but transient adaptations to locally experienced prediction errors. Here, we introduce a new paradigm that allows researchers to measure and empirically disentangle both forms of adaptation. Participants performed short blocks of trials of a continuous estimation task – fishing for crabs – on six different islands that required different optimal (initial) learning rates. Across two experiments, participants showed fast adaptations in learning rate within a block. Critically, participants also learned global environment-specific learning rates over the time course of the experiment, as evidenced by computational modelling and by the learning rates calculated on the very first trial when revisiting an environment (i.e., unconfounded by transient adaptations). Using representational similarity analyses of fMRI data, we found that differences in voxel pattern responses in the central orbitofrontal cortex (OFC) correlated with differences in these global environment-specific learning rates. Our findings show that humans adapt learning rates at both slow and fast time scales, and that the central OFC may support meta-learning by representing environment-specific task-relevant features such as learning rates.

<https://elifesciences.org/articles/108223>

Evolutionary Anthropology

PAPERS

RACHEL M. HURWITZ et al with SUSANA CARVALHO – Impacted Bones: Can Extant Primates Help Identify Tool Use in Early Hominins?

Despite recent advances pushing back the earliest record of tool use, how and when it first emerged in hominins, and the extent to which it featured amongst the numerous co-existing species, remain critical questions in paleoanthropology. In addition to analyzing fossils and lithic toolkits, novel strides in understanding this might be made by studying the skeletons of the great apes, as well as more distantly related tool-using primates and applying resultant findings to the fossil record via predictive modelling. We review current methods of extrapolating tool-use capabilities in extinct and extant taxa and provide an innovative methodological framework to analyze osteological remains for evidence of percussive tool use, using chimpanzees as a case study. We propose a shift in current methodological practice, wherein both sides of the body, rather than just one, should be routinely scanned to understand of the effect percussive tool use on primate bone. Key species, including long-tailed macaques (*Macaca fascicularis* ssp.), capuchins (*Sapajus* and *Cebus* sp.) and chimpanzees (*Pan troglodytes* ssp.), all of whom engage in lithic percussion, should be the work's focus. Due to bone's dynamic ability to respond to mechanical strain, percussive forms of tool use, like nut-cracking, could cause morphological changes in the dominant hands of tool users as compared to their non-dominant hand, or the hands of primates who do not engage in percussive behaviors. However, this potential “damage signature” has not been quantified. Thus, we propose a methodology for examining the effect of percussive tool use on primate bone by scanning skeletal remains bilaterally, analyzing directional asymmetry, and using machine learning to discern patterns of variation. Long-term, our proposed methodology may be extrapolated to examine the lasting impact of tool use on the bones of extinct hominins.

<https://onlinelibrary.wiley.com/doi/full/10.1002/evan.70042>

Frontiers in Computer Science

PAPERS

GILLIAN W. OAKENFULL – When language feels like recognition: Parasocial Mattering Resonance as a cognitive vulnerability in human–LLM interaction

Large language models generate language that is individually responsive, contextually specific, and continuously available, properties that make such language the most precise and sustained mattering-frequency signal that mediated language has yet produced. This paper argues that for individuals experiencing mattering depletion, the chronic condition in which one or more fundamental dimensions of relational significance are insufficiently fulfilled, this signal produces a predictable and consequential cognitive response. We introduce Parasocial Mattering Resonance (PMR): a cognitive processing state in which the linguistic features of LLM-generated language activate significance-seeking schemas in mattering-depleted individuals, generating a genuine subjective experience of recognition, connection, and mattering provision. This experience is psychologically real on the individual's side but has no reciprocal reality in the system producing it. Drawing on schema accessibility theory, dual-process models of social cognition, and a five-dimension framework of mattering as structured human need, we develop a five-step mechanism connecting mattering depletion to PMR's behavioral consequences, including increased compliance, reduced skepticism, extended engagement, and displaced relational investment. Six formal propositions specify the mechanism, its boundaries, and its heterogeneous distribution across depletion profiles. We establish that PMR is independent of system design intent, that source disclosure is theoretically insufficient to prevent PMR among the most vulnerable populations, and that this vulnerability is not randomly distributed; it concentrates in already-marginalized populations whose structural, organizational, and relational environments have produced the deepest

depletion. For the most isolated individuals, PMR may also constitute a temporary psychological resource, making the distinction between resonance as relief and resonance as displacement a theoretically and clinically consequential one. Implications for cognitive theory, LLM design, and equity are developed alongside an empirical agenda for testing the propositions advanced.

<https://www.frontiersin.org/journals/computer-science/articles/10.3389/fcomp.2026.1829545/full>

Frontiers in Language Sciences

PAPERS

FRANKLIN CHANG & TOMOKO TATSUMI – Lonely wallets: differences in comprehending anthropomorphic language in Japanese and English

Japanese speakers appear to use anthropomorphic language in a way that is different from English speakers (e.g., my wallet is lonely). Some of these expressions are not conventionalized, yet seem to be spontaneously produced. To test whether these types of anthropomorphic forms are readily understood, we presented English and Japanese readers with stories where the fourth sentence was either an anthropomorphic sentence or a literal sentence. In two experiments, English speakers found the anthropomorphic sentences to be more difficult to process than the literal sentences, but there was no difference in difficulty for the Japanese readers. The results are not explained by existing comprehension or personification theories but instead suggest that culture-specific conceptual factors can change comprehension processes in English and Japanese.

<https://www.frontiersin.org/journals/language-sciences/articles/10.3389/flang.2026.1845613/full>

Frontiers in Neuroanatomy

PAPERS

RICHARD E. BROWN – The influence of Cajal and Lorente de Nó on Donald O. Hebb's neuropsychological theory

Donald O. Hebb was born in Chester Nova Scotia on 22 July 1904, attended the Chester school and the Halifax County Academy, and obtained a BA in English and Philosophy from Dalhousie University in 1925. After obtaining a teacher's certificate he taught in his old school in Chester for a year and then in Montreal while attending McGill University to obtain his MA in Psychology as a part-time student. He moved to Chicago to work with Karl Lashley and then completed his PhD with Lashley at Harvard in 1936. He was an instructor for a year at Harvard (1936–37) and then received a Fellowship to work at the Montreal Neurological Institute (1937–39), conducting neuropsychological tests on the patients of Dr. Wilder Penfield. From 1939 to 1942 he was a professor at Queen's University in Kingston, Ontario and then a Research Associate of Professor Lashley, studying emotionality in chimpanzees at the Yerkes Primate Center in Florida (1942–1947). It was there that he began to write his influential book, *The Organization of Behavior*. This book introduced the concepts of synaptic change, cell assemblies, and phase sequences to account for the neural events underlying behavior. Hebb's work revolutionized the study of brain and behavior by establishing a biological basis for psychological phenomena. Hebb became a professor of Psychology at McGill University in 1947 and head of this department in 1948, completing his book at McGill in 1949. The crucial element in Hebb's theory was the concept of reverberatory circuits of Lorente de Nó, based on Cajal's concept of closed circuits. This paper examines the unpublished notes and papers written by Hebb between 1932 and 1947 as he developed his theory of neuropsychological function based on the concept of closed or reverberatory circuits and how this theory was used in psychology, neuroscience and the computer modeling of brain functions.

<https://www.frontiersin.org/journals/neuroanatomy/articles/10.3389/fnana.2026.1861011/full>

Frontiers in Psychology

PAPERS

EVGENY V. LOGINOV et al – Peirce's revenge on the Chinese Room

Since its publication in 1980, John Searle's Chinese Room argument has remained one of the central objections to computational theories of mind and machine understanding. In this paper, we argue that the force of the Chinese Room depends on an implausibly impoverished conception of linguistic interaction: namely, the assumption that a system capable of sustaining unrestricted Turing-level communication could nevertheless remain completely isolated from the pragmatic dimensions of language. Using a Peircean distinction between icons, indices, and symbols, we show that ordinary linguistic interaction involves iconic, indexical, temporal, rule-governed, and pragmatically embedded communicative practices that Searle cannot fully allow inside the Chinese Room without either permitting at least partial semantic understanding or artificially restricting the scope of the test. We then generalize this dilemma beyond classical symbolic AI by introducing the Chinese Token-Training Room, a philosophical analog of recent "stochastic parrot" objections to large language models. We argue that such objections must either restrict the system in ways that make unrestricted linguistic competence doubtful, or allow forms of pragmatic embedding that weaken the intuition of total semantic opacity. We conclude that neither the original Chinese Room nor its token-training analog establishes that functional or computational organization is in principle insufficient for conscious semantic understanding; rather, they show at most that radically impoverished forms of isolated symbol or token manipulation are insufficient.

<https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2026.1900073/full>

iScience**PAPERS****CÉCILE SARABIAN et al – Dissecting disgust and fear in chimpanzees: From facilitation to disruption of cognitive processes**

Disgust and fear are emotions that evolved to address different types of threats: pathogens and predators, respectively. Yet the cognitive mechanisms underlying disgust remain poorly understood, particularly in non-human animals. We investigated how pathogen- and predator-related stimuli influence cognition in captive chimpanzees (*Pan troglodytes*), using touchscreen and eye-tracking tasks. In three experiments, subjects performed a number ordering task while exposed to images (e.g., carcasses, rotten food, invertebrates, snakes) or odors (e.g., of organic decomposition, emesis). Pathogen-related stimuli, particularly those linked to organic decomposition and fermentation, modulated performance in distinct temporal patterns, reducing accuracy and later disrupting efficiency upon re-exposure. In contrast, predator images enhanced performance by reducing response latencies. A fourth eye-tracking experiment further showed that both carcass and snake images captured and held attention. Overall, our results suggest distinct cognitive signatures for pathogen-versus predator-related threats in chimpanzees, offering insight into the evolution of defensive emotions.

[https://www.cell.com/iscience/fulltext/S2589-0042\(26\)02276-5](https://www.cell.com/iscience/fulltext/S2589-0042(26)02276-5)

MILA BERTOLO et al – Humans, but not zebra finches, produce spontaneously isochronous song through the lifespan

Isochrony—the regular beat of a metronome—is cross-culturally ubiquitous in music. Is this ubiquity due to a widespread biological inclination for isochrony in acoustic communication? If so, it should be present in lesser-studied vocal music, in the absence of musical training and early in development, and in comparable non-human species' vocalizations. We quantified isochrony in improvised songs from non-musician adults ($n = 15$, 24–82 years old) and children ($n = 38$, 3–10 years old), and in songs from juvenile and adult zebra finches ($n = 77$, ~50 and >120 days post-hatch). Isochrony was expressed in Western non-musician and children's improvised songs to a comparable degree. In contrast, both juvenile and adult zebra finches produced songs with less isochrony than chance, with no evidence for the learning of isochrony. These data show that spontaneous isochrony in learned vocalizations appears differently in two species. We propose that species variation in chorusing behaviors may explain why.

[https://www.cell.com/iscience/fulltext/S2589-0042\(26\)02129-2](https://www.cell.com/iscience/fulltext/S2589-0042(26)02129-2)

Linguistic Anthropology**ARTICLES****RAFFAELE ANDREA BUONO – Domesticating robots, domesticating language: The hylomorphic paradox of “openness” in large language models**

This article examines how openness is interpreted in human–LLM interaction through an ethnographic study of a robotics experiment. Focusing on an episode in which a robot produced an unexpected utterance, I analyze how engineers classify the output as inconsequential noise. I argue that such dismissal reflects a hylomorphic understanding of language, where form is externally imposed on linguistic matter, by latching onto ideas of alignment and usefulness. I configure such hylomorphic movement as undergirding the semiotic ideology at play in robotics engineering, one which constrains the dynamism and potential of situated interaction, transforming openness into a domesticated variability, and limiting the emergence of forms of coordination and meaning.

<https://anthrosource.onlinelibrary.wiley.com/doi/full/10.1111/jola.70068>

Mind & Language**PAPERS****JINCAI LI & JIANHUA MEI – Current directions in experimental semantics**

What fixes the reference of proper names and kind terms remains contested. Experimental semantics has revived debates between descriptivism and causal-historical accounts and revealed complex patterns. This article reviews the field from early cross-cultural findings to recent developments, including renewed attention to Jonah-style cases, extensions from names to natural kind terms and other predicates, and methodological disputes like alleged “red herrings” and the new meaning hypothesis that prompted refinements. Looking ahead, we propose broadening targets (artifacts, social kinds, disease terms, etc.) and integrating richer methods (Socratic dialogue, online processing techniques like eye-tracking, and corpus-based analysis, etc.) to clarify referential mechanisms.

<https://onlinelibrary.wiley.com/doi/abs/10.1111/mila.70041>

Nature**NEWS****40,000-year-old bird carvings provide clues to how Ice age humans flourished**

Newly discovered figurines point to skills that might have helped shape early humans' expansion across Europe.

<https://www.nature.com/articles/d41586-026-02312-y>

Nature Mental Health

PAPERS

CHASE ANTONACCI et al with JAMES W. PENNEBAKER – Natural language processing of youth speech predicts psychopathology across adolescence

Early life stress is a significant risk factor for psychopathology; however, we lack scalable tools to identify youths who are most vulnerable. Here we tested whether the automated analysis of naturalistic speech can predict future mental health outcomes. We applied a multimodal suite of natural language processing techniques to comprehensive stress interviews with 204 youths (mean age 11.38 years, range 9–13 years; 58% female) to predict internalizing psychopathology up to 6 years later. We found that linguistic features robustly predicted future mental health, explaining more than twice the variance of traditional, human-rated risk factors. Across methods, linguistic style was more predictive than explicit emotional content. Importantly, we introduce a method to interpret transformer-based embeddings that revealed clinically intuitive themes of risk and resilience. Narratives of physical violence and social exclusion emerged as key markers of risk, whereas narratives of structured, routine activities and healthcare access were protective. Moreover, these data-driven semantic dimensions significantly predicted future diagnostic outcomes, outperforming expert ratings of cumulative stress severity. This study computationally analyzes detailed stress narratives to predict the onset of psychopathology across adolescence. Our findings establish a scalable framework to identify objective risk markers and novel intervention targets, demonstrating how artificial intelligence can enrich developmental clinical science.

<https://www.nature.com/articles/s44220-026-00683-9>

Nature Scientific Reports

PAPERS

ANN MARY JOHN, MÔNICA MACEDO-ROUET & HIPPOLYTE GROS – Cross-linguistic evidence challenging linguistic relativism in numerical cognition

We are providing an unedited version of this manuscript to give early access to its findings. Before final publication, the manuscript will undergo further editing. Please note there may be errors present which affect the content, and all legal disclaimers apply.

Representations of order and magnitudes form a shared foundation for temporal and numerical cognition. The extent to which language shapes these representations, as proposed by theories of linguistic relativism, remains a central and debated issue. We examine whether language-specific metaphors for time influence how individuals represent durations and solve arithmetic word problems. Recent research found that semantic content (e.g. mention of weights or durations etc.) determines whether problems are perceived as cardinal or ordinal and directs solving strategies. Another line of research proposes that speakers of languages using different metaphors for time (e.g. distance vs. quantity-metaphors), represent durations differently. To contrast these predictions, we conducted a preregistered cross-linguistic experiment (N = 1200) across 4 languages. Using a strategy-based problem-solving paradigm, we investigated what drives strategy choices and ordinal representations. Results showed that semantic content, and not language-specific temporal metaphors play a decisive role in strategy choices: duration problems consistently elicited ordinal representations and emphasised ordinality regardless of the language spoken by the participant. These findings challenge predictions of linguistic relativism and highlight the importance of semantics in numerical cognition.

<https://www.nature.com/articles/s41598-026-63760-0>

YOEL RAK et al – Neandertal pelvis reveals specialized walking apparatus in human males

We are providing an unedited version of this manuscript to give early access to its findings. Before final publication, the manuscript will undergo further editing. Please note there may be errors present which affect the content, and all legal disclaimers apply.

Surprisingly, the pelvis of Neandertal males shares more features with the human female pelvis than with the human male pelvis. Many of the differences between the Neandertal male pelvis and that of the Homo sapiens male seem to stem from the unusual anterior position of the acetabula (hip joints) in H. sapiens males and the subsequent increase in the horizontal anteroposterior distance between the joint and the line of gravity. We suggest that the forward migration of the hip joints transforms the modern human male pelvis into a shock-absorbing device that cushions the drop of the center of mass with every step and at the same time stores potential energy in the flexor muscles of the thigh, causing the pelvis to bounce back. The thickening of the ramus and the ensuing modifications are a response to the increased adductor force required on the pubic side to counterbalance the larger moment generated by the longer body-weight lever arm on the opposite side of the hip joint fulcrum. The shock-absorbing device seems to benefit modern males, mainly in long-distance walking. Obstetric demands apparently prohibit the modern female pelvis from adopting this specialized device. The H. sapiens females maintain the ancestral (plesiomorphic) configuration still present on the male Neandertal. The Neandertal male pelvis shares the female configuration, suggesting that anterior acetabular migration is a derived (autapomorphic) condition unique to modern human males. The anterior acetabular migration and associated ischiopubic modifications reflect a mechanical

trade-off: adductor reorientation toward greater verticality increases sagittal-plane shock absorption at heel strike while reducing mediolateral stabilizing capacity. Regardless of whether this exchange confers a net advantage in long-distance walking, it requires empirical testing, like everything that we propose here.

<https://www.nature.com/articles/s41598-026-59915-8>

GWENNAN T.L. GIRAUD et al – Network analysis highlights socio-demographic patterns of stone tool-using primates

While the nutritional benefits and social learning of tool use in primates have been widely studied, far less is known about how tool use is associated with social life. We investigated the social aspects of tool use in a hybrid population of long-tailed macaques (*Macaca fascicularis aurea* × *M. f. fascicularis*) on Koram Island, Thailand, comprising both stone tool users and non-users. To assess potential socio-demographic patterns, we examined whether tool use differed between sexes and whether it was related to variation in dominance rank. Using social network analyses, we assessed whether tool users differed in their associations outside foraging contexts by analyzing their grooming interactions and positions within the grooming network. Males were more likely to use tools than females, whereas rank was unrelated to tool use. Tool users and non-users showed similar social connectivity, grooming rates, and numbers of grooming partners. However, grooming networks indicated that non-tool users preferentially associated with other non-users, whereas tool users showed no affiliative bias. By integrating individual characteristics with social network data, this study provides insight into how tool-use behavior integrates into primate social systems, particularly in populations with substantial variation in technological behavior.

<https://www.nature.com/articles/s41598-026-61772-4>

LISA M. BAS et al – Common thought patterns reflect generosity, fairness, and social context

Humans generate thousands of thoughts each day, many of which concern other people. Yet it remains unclear whether these ongoing thoughts vary systematically across social contexts that demand meaningful social behavior, and whether they reflect individual differences in social preferences such as generosity and fairness. To address this question, we combined multidimensional experience sampling (MDES) with an altruism task administered online or in person (total N = 320). Participants made monetary sharing decisions across social contexts that varied in partner cues (distressed, neutral, unidentifiable), while intermittently reporting their ongoing thoughts using MDES. Dimensionality reduction of MDES responses using principal component analysis revealed a small set of common, interpretable, and robust thought patterns characterizing moment-to-moment cognition during social choice. Critically, the expression of these thought patterns tracked variation in social context, generosity, and model-based parameters indexing fairness preferences. Moreover, these patterns generalized to a separate non-social task that did not require social behavior, indicating that they reflect common patterns of cognition rather than task-specific artifacts. Together, these findings provide initial evidence that ongoing thought states offer reliable insights into social preferences, introducing a novel framework for studying the link between ongoing cognition and social behavior in the laboratory and everyday life.

<https://www.nature.com/articles/s41598-026-61078-5>

Nature Translational Psychiatry

PAPERS

NINA MARSH et al – Early life adversity shapes neural and behavioural responses to oxytocin during altruistic decision-making

What makes some people willing to help strangers at a personal cost, while others are more hesitant or selective? Early life adversity - such as neglect or abuse - may shape how we respond to strangers in need later in life, yet the underlying neural mechanisms remain unclear. In this study we tested whether the neuropeptide oxytocin, a key modulator for a rich repertoire of social behaviours, influences altruistic decisions in adults with different childhood experiences. Using functional magnetic resonance imaging (fMRI) and a validated altruistic donation task, the study showed that oxytocin increased donations among individuals with greater childhood adversity, while reducing them in those with lower adversity. These behavioural effects were mirrored by changes in functional connectivity between the medial prefrontal cortex and middle cingulate cortex - core circuits involved in social evaluation and empathy. Our findings suggest that early life experiences sensitize neural pathways for social processing, and that oxytocin dynamically modulates these circuits to influence altruistic behaviour in adulthood.

<https://www.nature.com/articles/s41398-026-04302-0>

New Scientist

ARTICLES

JAMES WOODFORD – Magic rituals took place in an Australian cave for 25,000 years

Preserved plant cells show that grasses were brought into Cloggs cave in Australia and burnt over many millennia, revealing the ancient origins of rituals practised by the GunaiKurnai people.

<https://www.newscientist.com/article/2580559-magic-ceremonies-took-place-in-an-australian-cave-for-25000-years/>

JAMES WOODFORD – Mystery hominin left big footprints at ancient lake in Africa

Over 1.4 million years ago, a group of eight ancient hominins walked across a shallow mudflat, but their footprints don't match those of *Paranthropus boisei* or *Homo erectus*.

<https://www.newscientist.com/article/2581351-mystery-hominin-left-big-footprints-at-ancient-lake-in-africa/>

PLoS One**PAPERS****OVIYA MOHAN & DORA BIRO – Experimental emergence of conventions in human dyads**

Conventions can be defined as arbitrary and self-sustaining practices that emerge in a population and facilitate solving coordination problems. A recent study traced the formation of simple conventions in captive baboons in a touch-screen-based color-matching 'game'. We replicated this task with human pairs under different conditions (with/without visual access to the partner's screen; with/without prior information on the task structure) to assess their effects on the formation and stability of conventions. We found that more information delayed the formation of conventions (arbitrary rankings of colors that determined choices in any given color pairing). Analysis of self-reported strategies did not reveal a clear effect of condition on levels of elicited strategic behavior. Interestingly, pairs maintained their conventions even when given visual access to their partner's screen, despite the availability of an alternative, potentially simpler, cognitive strategy. In a follow-up variant of the task that paired up experienced subjects with a naïve partner, conventions emerged faster but did not replicate the color hierarchy convention of the experienced player, demonstrating the transmission of "know-how" but not "know-what" information. We discuss the implications of our results for understanding the cognitive mechanisms necessary to support the formation, maintenance, and transmission of conventions.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0341532>

ALICE VINET & DENIS GUILBEAU – Intentional incisions on Neolithic Obsidian arrowheads from Central Anatolia: A techno-functional and iconographic approach

Incised obsidian arrowheads form a rare and geographically restricted artifact class, known exclusively from Neolithic Central Anatolia between the late 8th and 7th millennia BCE. These artifacts, marked by deliberate incisions, have been variously interpreted as symbolic or identity-related. This study presents a comprehensive techno-functional and iconographic analysis of eleven newly identified specimens from Tepecik-Çiftlik (Cappadocia, Türkiye), adding to the regional corpus of 43 known examples. The incised arrowheads were found in dwelling sites, a chipped stone workshop, and during surveys. Provenance analysis by macroscopic characterization confirms their production from local Cappadocian obsidian sources (Göllüdağ, Nenezi Dağ). The incisions are highly variable, and show no correlation with raw material, chaîne opératoire, typology, or use-wear. Incisions were executed both before and after final retouching, suggesting no fixed production stage. Comparative analysis reveals parallels between sites, indicating a possible shared but flexible iconographic repertoire. The rarity of these artifacts, their relation to domestic contexts, and their absence beyond Central Anatolia point to the hypothesis of a shared cultural practice. The analysis of these incised arrowheads, along with the limited archaeological and ethnographic comparisons available, calls for a cautious interpretation. While they have been suggested as personal or collective markers (e.g., hunters' marks), this hypothesis requires further evidence. The expanded dataset from Tepecik-Çiftlik refines the understanding of this peculiar practice, highlighting its persistence despite broader cultural change.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0354715>

HIROSHI NONAMI et al – Third- and concerned-party positions in moral dilemmas: Effect of empathy on ethical judgment

The present study proposes a categorization of moral dilemmas into third-party dilemmas in which a judge's choice affects only the life or death of others, and concerned-party dilemmas in which not only others' but also the judge's life or death is altered. While the former requires the judge to make only moral judgments to save others, another rational decision-making process that considers the judge's life and death may also impact the latter. We examined ethical judgments based on these two types of dilemmas with a focus on empathic concern. Participants in Experiment 1 were more ethically permissive to save the many including him/herself at the expense of one person in the concerned-party dilemma than in the third-party dilemma, but empathic concern in both types of dilemmas consistently suppressed such utilitarian choices derived from "instrumental harm" (IH), which permits sacrificing a few necessary when it saves many. In Experiment 2, we also confirmed the suppressive effect of empathic concern for utilitarian choices derived from IH in the Pareto concerned-party dilemma in which the death of one person remains fixed regardless of the judge's choice. We discuss the importance of categorizing these two types of dilemmas in moral dilemmas and demonstrates the public goods dilemma as a Pareto concerned-party dilemma in everyday life.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0354169>

MIGUEL VALÉRIO, FABIO TAMBURINI & MICHELE CORAZZA – Computational analysis reveals historical trajectory of East Polynesian lunar calendars

We investigate a type of lunar calendar known as lists of the 'nights of the moon', found throughout East Polynesia, including Rapa Nui (Easter Island). Using computational methods, we analyzed the lexical and structural divergence of 48 calendrical

lists from all major archipelagos, each containing about 30 night names. Our results, presented as a rooted phylogenetic tree, show a split into two main groups: one including lists from Rapa Nui, Mangareva, and the Marquesas; the other comprising lists from New Zealand, Hawai'i, the Cook Islands, the Austral Islands, Tahiti, and the Tuamotu. This result aligns with a recent alternative classification of East Polynesian languages into 'Distal' (Marquesan, Mangarevan, Rapanui) and 'Proximal' (Māori, Hawaiian, Tahitian, etc.) subgroups. Since both language and lunar calendars are symbolic systems passed down and changed within communities—and given the geographic isolation of many archipelagos—we interpret this correspondence as evidence that the early divergence of East Polynesian lunar calendars mirrors early population movements and language splits in the region.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0353287>

Proceedings of the Royal Society B

PAPERS

YOUSUKE KAIFU et al – Cranial evidence for human-like helpless infancy in *Homo erectus* and *Homo floresiensis*

Unlike other catarrhine primates, modern humans deliver a helpless newborn who requires prolonged extensive care. Such helpless infancy is associated with fetus-like, rapid postnatal brain growth, which is essential to produce the large human brain. In the debate about its evolution, a key question has been whether it emerged in *Homo erectus*, whose brain sizes were approximately 20–40% smaller than *Homo sapiens*. We here show that a type of asymmetric cranial deformity called deformational plagiocephaly can serve as a direct indicator of helpless infancy, regardless of the developmental age of the fossil specimens in question. Because clinical studies have established that such deformation results primarily from an immature state of cranial bones and neck/body muscles, deformational plagiocephaly (or at least its marked condition) must be unique to humans among extant hominids (or more broadly catarrhine primates). Our metric examination based on 1504 cranial specimens (996 great apes and 508 modern humans) supports this working hypothesis. We have found that some cranial fossils of Indonesian *H. erectus* and *Homo floresiensis* also display such deformities. These support a deep evolutionary origin of hominin helpless infancy, and imply both elaborate parental childcare and cooperative social behaviours that could likely have accompanied it.

<https://royalsocietypublishing.org/rspb/article/293/2075/20261055/482651/Cranial-evidence-for-human-like-helpless-infancy>

CALLUM J. KINGWELL et al – A queen pheromone signals the benefits of cooperation in a flexibly social insect

Eusociality, a major transition in evolution, is characterized by reproductive division of labour between queens and workers. Queen pheromones (QPs) maintain this division and inhibit worker reproduction across diverse lineages. Although QPs evolved repeatedly, it is unclear whether they evolved as honest signals of queen fecundity, as manipulative agents of chemical control, or both. If they function as honest signals, QPs may facilitate colony formation by signalling the relative benefits of cooperative versus independent nesting to behaviourally flexible kin when eusociality is facultative. Here, we identify the first QP to our knowledge from a facultatively eusocial species, the sweat bee *Megalopta genalis*, in which solitary nesting, social nesting and worker helping are plastic traits. The QP blend induces subordinate behaviour and inhibits worker investment in reproduction when presented in a natural context. QP levels are elevated in social-nesting queens relative to solitary reproductives; they forecast oviposition rates and worker indirect fitness gains and they predict the retention of female offspring as workers. QP components derive from oogenic nutrients, potentially enforcing signal honesty. Our findings indicate that QPs can mediate cooperative behaviour even when eusociality is incipient and facultative, supporting their origin as honest signals that may stabilize the emergence and elaboration of eusociality.

<https://royalsocietypublishing.org/rsbl/article/22/7/20260332/482621/Physical-constraints-not-sociality-shape-primate>

Royal Society Notes and Records

ARTICLES

BERNARDO URBANI – Between Sussex, Cardiff, and Caracas: Disseminating The Piltdown Man Hoax In The Hispanic World

This article examines the impact of the Piltdown Man hoax in the Hispanic world, focusing on its early dissemination in Venezuela. Although the 1912 'discovery' is renowned as the most significant anthropological fraud in history, its reception in Ibero-America remains largely unexplored. This study highlights a report by Abelardo Aldana, the Consul of Venezuela in Cardiff, who forwarded a complete account of the Piltdown findings to Caracas on 1 January 1913; to our knowledge, Aldana's text likely represents the first full account about this fraud written in Spanish. The analysis reveals that this palaeoanthropological debate reached Venezuela soon after it began. Aldana's report, which preceded the official publication in the Quarterly Journal of the Geological Society, echoed the arguments of Smith Woodward and Charles Dawson while capturing the academic circumstances surrounding the remains. At the time, Venezuela was under the rule of General Juan Vicente Gómez, a period in which the circulation of evolutionary ideas was contextualized within a positivist framework aimed at national 'rejuvenation'. The reporting of this find demonstrates how Venezuelan intellectuals utilized European evolutionary discourses to support their own ideological agendas, reflecting a state-driven impetus for

modernization. Ultimately, this research illustrates the transatlantic flow of scientific information through diplomatic channels in the early twentieth century.

<https://royalsocietypublishing.org/rsnr/article/doi/10.1098/rsnr.2026.0010/482635/Between-Sussex-Cardiff-and-Caracas-Disseminating>

Science

PAPERS

QUENTIN BACQUELÉ et al – The global biogeography of passerine songs

Although bird songs are classic models for understanding the evolution of vocal communication, their global diversity has long made the development of a unifying framework challenging. By analyzing the acoustic architecture of songs from more than 3000 passerine species worldwide, we show that this acoustic space can be structured around eight elemental motifs. The differential use of these motifs is driven by a combination of species' biological traits (social organization, morphology, and mating system) and the physics of sound propagation. In tropical rainforests, environmental filtering for transmission efficiency favors structurally simple motifs, such as flat whistles. Conversely, in temperate regions, where high population densities facilitate close-range communication and short breeding seasons intensify sexual selection, the balance shifts toward complex, information-rich motifs, such as ultrafast trills, despite their susceptibility to acoustic degradation. Ultimately, the global geography of birdsong reflects a spatially varying equilibrium between physical environmental constraints and the biological drive for complex communication.

<https://www.science.org/doi/10.1126/science.aee6239>

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