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CONTENTS

NOTICES **3**
FORMATTED VERSION OF THIS BULLETIN 3
PUBLICATION ALERTS 3
EDITORIAL INTERJECTIONS 3
NEWS **3**
NATURE BRIEFING – 50 years on, go beyond The Selfish Gene 3
NATURE BRIEFING – How women started the first conversation 3
NATURE BRIEFING – Why people didn't fill 'Green Arabia' 3
NATURE BRIEFING – The three red flags of suspect journals 4
NEWS FROM SCIENCE – Who wrote that paper? AI use spurs debate over scientific authorship 4
SCIENCEADVISER – Delicious after death 4
SCIENCEADVISER – Where monkey minds meandered from ours 4
SCIENCENEWS – Why did humans' brains surpass chimps'? A tiny foe might help explain it 4
THE CONVERSATION – CHRIS STRINGER – Unlocking the secrets of the 'Dragon Man' skull 4
THE CONVERSATION – DAVID KAPOSI – Stanford prison experiment: why does it still have a hold on us? 4
PUBLICATIONS **5**
Academia Neuroscience and Brain Research 5
PAPERS **5**
RÜDIGER J. SEITZ et al – Perceptuo-cognitive development in infancy and childhood 5
American Journal of Biological Anthropology 5
ARTICLES **5**
RACHEL VOYT – Of Monsters and Monkeys: Queering the Study of Genetic Chimerism in Primates 5
PAPERS **5**
TRAVIS RAYNE PICKERING et al – First Primate Clavicles From Swartkrans Cave: Further Indications of Habitual Arboreal Behavior in Some Early Pleistocene South African Hominins 5
Animal Behaviour 6
PAPERS **6**
MARIE-LAURE VEYS et al – Female-centred decision making and social interactions in killer whales revealed by drone-based observations 6
CHLOÉ COUTURIER et al with ROMAN M. WITTIG – Arboreal stone tool use in wild chimpanzees 6
British Journal of Social Psychology 6
PAPERS **6**
KEVIN DURRHEIM – The social origins of identity and bias: Language models, accumulated meaning and positioning 6
Current Biology 7
PAPERS **7**
MARGHERITA BELIA et al – Infants respond to alterations in their own voice months before they recognize themselves in the mirror 7
eLife 7
PAPERS **7**
VALENTINA MIONE et al – Cognitive control networks in human and macaque 7
BENJY BARNETT & STEPHEN M FLEMING – Distinct neural representations of perceptual and numerical absence in the human brain 7
KRISTOPHER T JENSEN et al – A mechanistic theory of planning in prefrontal cortex 7
Evolutionary Anthropology 8
PAPERS **8**
RAN BARKAI et al – Homo Memorabiliaxis: Souvenirs and the Evolution of Autobiographical Memory and Self 8
Frontiers in Education 8
PAPERS **8**
PAULO BARRAZA & IGOR PARRA – The evolution of shared worlds: teaching and the origins of cumulative culture 8
Frontiers in Language Sciences 8
PAPERS **8**
PRAKASH MONDAL – What compositionality reveals about meaning, cognition, and machines 8
iScience 9
PAPERS **9**

JAIME VIGIL-ESCALERA et al – Adolescents infer latent motives to build generalizable models of others' behavior 9
Journal of Archaeological Science....9
PAPERS....**9**
PALMIRA SALADIÉ et al – Multiphase human cannibalism in Neolithic southern Iberia: Chronological and taphonomic evidence from Malalmuerzo, Carigüela, and Majolicas Caves....9
Language Sciences....9
PAPERS....**9**
JOSÉ MANUEL UREÑA GÓMEZ-MORENO & FRANCISCO JOSÉ RUIZ DE MENDOZA IBÁÑEZ – Beyond reported speech, hyperbole, and irony: the hidden complexity and functional diversity of echoic language....9
Nature....10
ARTICLES....**10**
EMANUELE CANCELLIERI – Tethered to stone: how rock and water availability shaped early desert occupation....10
PAPERS....**10**
RUDOLF W. DELLMOUR et al with METIN I. EREN – Stone and water governed early human settlement of the desert....10
REVIEWS....**10**
ANDREW ROBINSON – Women might have invented language — but not alone....10
Nature Communications....10
PAPERS....**10**
XINJUN ZHANG et al – Neanderthal introgressed ancestry reveals human genomic regions enriched with recessive deleterious mutations....10
Nature Communications Earth & Environment....11
PAPERS....**11**
MICHAELA ECKER et al – Non-analog environments supported early Homo sapiens in southern Africa 200 000 years ago....11
Nature Communications Psychology....11
PAPERS....**11**
YIZHOU FAN et al – A metacognitive approach to learning and performance in human-AI interaction....11
JIE HU et al – A continuous appraisal account of gratitude dynamics in social interactions....11
Nature Human Behaviour....11
PAPERS....**11**
MENGMI ZHANG et al – Turing-like tests for language and vision demonstrate a narrowing gap between humans and AI....11
Nature Humanities & Social Sciences Communications....12
PAPERS....**12**
PATRÍCIA FRANTZ, FRANCISCA REGO & STELA BARBAS – The contemporary dispute over personhood: ontological roots and ethical implications....12
Nature Scientific Reports....12
PAPERS....**12**
KEYI LI & JINHUA YANG – Valenced moral contagion affects adolescents' self-reported prosocial tendencies in a guided imagery experiment....12
New Scientist....12
ARTICLES....**12**
JAMIE DUCHARME – Your brain's unexpected ability to regenerate and how to harness it....12
ROWAN HOOPER – The understanding that even bees have feelings is changing our view of consciousness....12
CARISSA WONG – Adults may be more creative than children – but less confident about it....13
JO MARCHANT – Bottlenose whales may look after each other when they're sick....13
NPJ Heritage Science....13
PAPERS....**13**
RUY FERNANDEZ et al – First U-Pb dating of Kromdraai cave in the Cradle of Humankind UNESCO World Heritage Site....13
Physics of Life Reviews....13
PAPERS....**13**
GEORGIOS PAPAGEORGIOU et al – Specific language process or repurposed sensorimotor mechanism? Hypotheses on the evolution of language syntax....13
PLoS One....13
PAPERS....**13**
SHALINI BANERJEE & ISHANTI GANGOPADHYAY – The role of speaker accuracy and mutual exclusivity in children's novel word learning....13
Royal Society Open Science....14
PAPERS....**14**
SHENG-FENG SHEN, DUSTIN R. RUBENSTEIN & MING LIU – The evolution of group size and kin structure in complex societies....14
NATALIA ZARZECZNA et al – Can you feel meaning? Spirituality involves stronger sensorimotor associations with abstract concepts....14
Science....14
NEWS....**14**
Flickering signals in monkey brains hint at how we become conscious of what we see....14

ARTICLES 14
KAZUO OKANOYA – How comparable are bird and human sounds? 14
PAPERS 15
LOGAN S. JAMES et al – Pervasive patterns in bird songs resemble those in human speech and song and are independent of vocal learning 15
Science Advances 15
PAPERS 15
CECILIA PADILLA-IGLESIAS et al – Cultural norms of exogamy and mobility shape genetic evolution of Central African hunter-gatherers 15
World Journal of English Languages 15
PAPERS 15
XENIYA SELEZNEVA et al – Linguocultural Construction of Archetypal Characters in English Fairy Tale Discourse: A Discourse-Analytic and Cognitive-Linguistic Perspective 15
SUBSCRIBE to the EAORC Bulletin 15
UNSUBSCRIBE from the EAORC Bulletin 16
PRODUCED BY AND FOR THE EAORC EMAIL GROUP 16

NOTICES

FORMATTED VERSION OF THIS BULLETIN

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

PUBLICATION ALERTS

If you have had a paper or book published, or you see something which would be of interest to the group, please send me a publication alert so that I can include it in the newsletter. Many thanks to those who have already sent in alerts.
If there is a journal you feel I should be tracking on a regular basis, let me know.
And if you have any other ideas for extending the "EAORC experience", please contact me.

EDITORIAL INTERJECTIONS

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

NEWS

NATURE BRIEFING – 50 years on, go beyond The Selfish Gene

The idea set out in Richard Dawkins's 1976 book The Selfish Gene — that bodies are just genes' way of making more of themselves — "seemed pretty harmless", writes historian of science Nathaniel Comfort. Today, "the determinism baked into the 'gene's-eye view' in the book troubles me, as does the passivity of the organism in Dawkins's telling". Comfort dives into modern efforts to synthesize ecology, evolution, genetics and developmental biology to create "a less gene-centred view" that "is more accurate — and infinitely more satisfying".
https://www.nature.com/articles/d41586-026-03393-5

NATURE BRIEFING – How women started the first conversation

In The Revolutionary Origins of Language, anthropologists Chris Knight and Jerome Lewis argue that social cohesion, not conflict, was the catalyst for human speech. The authors offer a complex mixture of evidence, mostly drawn from prehistoric and present-day Africa, to support their own theory. They suggest that women probably had a key role in inventing language through the "subtle work of maintaining group cohesion". The pair's hypothesis seems reasonable, but "the origins of language continue to be a tantalizing enigma", says science writer Andrew Robinson in his review.
Review of 'The Revolutionary Origins of Language' by Chris Knight & Jerome Lewis, Yale University Press (2026).
https://www.nature.com/articles/d41586-026-03392-6

NATURE BRIEFING – Why people didn't fill 'Green Arabia'

The Rub' al Khali, the world's largest sand sea, was once part of the lush savannah known as 'Green Arabia'. Evidence of ancient humans abounds in the regions around the desert, but an expedition into its interior has returned empty-handed. This has led archaeologists to suggest that ancient peoples needed not just water to settle, but stone as well. "It's really kind of turned our thinking about migration on its head," archaeologist Jeff Rose tells the Nature Podcast. Ancient humans weren't "opportunistically filling out this entire landscape. They're specifically going to distinct locations where there's rich raw material sources".
https://www.nature.com/articles/d41586-026-03486-1

NATURE BRIEFING – The three red flags of suspect journals

Researchers have identified three warning signs that suggest journals might be engaging in suspicious publishing activities. These red flags are, for any given journal in a single year: a doubling of publication output; having more than 70% of published articles originating from a single country; and having at least 15% of articles flagged by the Problematic Paper Screener, a free online tool. Using titles on the database OpenAlex, the team identified 3,753 journals that met at least one of these criteria. These signals can help to identify journals that merit further investigation — but do not prove that titles are problematic, say the study authors.
https://www.nature.com/articles/d41586-026-03325-3

NEWS FROM SCIENCE – Who wrote that paper? AI use spurs debate over scientific authorship

Rules governing credit and responsibility for machine-written papers may need a reboot.
https://www.science.org/content/article/ai-generates-findings-authorship-and-disclosure-rules-draw-fresh-scrutiny

SCIENCEADVISER – Delicious after death

A series of caves in Spain reveal a gruesome Stone Age tradition that carried on for centuries: consuming dead people. Bones from dozens of individuals show the telltale marks of meat being cut away with tools, and some even appeared boiled. This cannibalism likely wasn't intended as an offense or declaration of triumph. "It's not a war; it's not a conflict," said one anthropologist. "They just ate cadavers after they died," much like people have long scavenged wild carcasses.
https://www.sciencedirect.com/science/article/pii/S0305440326001962

SCIENCEADVISER – Where monkey minds meandered from ours

We humans share nearly 99% of our DNA with chimpanzees—yet our brains are three times larger. To figure out where our brains diverged from those of our closest living kin, researchers looked for clues in our genes.
They found that, sometime between 5 and 7 million years ago, an African ape got a viral infection. Occasionally, as in this ape's case, a virus inserts some of its own DNA into its host's genome to tell it to produce more virus. That DNA can stick around long after the infection, get replicated across the genome, and be passed down to future generations—and that's exactly what appears to have happened. The researchers found that, while the ancient viral DNA showed up in 158 locations across the chimpanzee genome, it's absent in the human genome.
So, the researchers removed the viral DNA from chimp stem cells using the gene editing platform CRISPR. The removals caused a gene called LINC00662 to turn on; it is normally activated in humans but not chimpanzees. The activation amped up the activity of genes involved in neuron development. Similarly, when the researchers turned off LINC0062 in human cells, the neuron development genes got no boost.
"Our findings show one way an ancient viral insertion could create a lasting difference in how a gene is regulated in humans and chimpanzees," study author Johan Jakobsson told Science News. In turn, that change might have helped human brains outpace the processing power of our closest relatives.
https://www.science.org/doi/10.1126/sciadv.aeg5791

SCIENCENEWS – Why did humans' brains surpass chimps'? A tiny foe might help explain it

Ancient viral DNA bits are still in chimp genomes, possibly affecting brain genes.
https://www.sciencenews.org/article/human-chimp-brains-different-virus-dna

THE CONVERSATION – CHRIS STRINGER – Unlocking the secrets of the 'Dragon Man' skull

Most of what we knew about early modern humans has been turned upside down in the past two decades – and many more questions remain.
https://theconversation.com/unlocking-the-secrets-of-the-dragon-man-skull-and-what-it-reveals-about-human-evolution-291321

THE CONVERSATION – DAVID KAPOSI – Stanford prison experiment: why does it still have a hold on us?

A new Netflix series has revived interest in the Stanford prison experiment. Zimbardo and Milgram's flawed studies still leave a question unanswered.
https://theconversation.com/stanford-prison-experiment-why-do-controversial-psychology-studies-still-have-such-a-hold-on-us-294814

PUBLICATIONS

Academia Neuroscience and Brain Research

PAPERS

RÜDIGER J. SEITZ et al – Perceptuo-cognitive development in infancy and childhood

This paper reviews the development of perceptual and cognitive abilities during infancy and childhood as reported in the literature to connect them with the same in adults. First, infants are engaged with encoding perceptual information about objects and events in memory. When they acquire language skills, they begin to associate words with these perceptual representations and to encode narratives they have heard. This enables them to communicate to others what they have encoded and to reflect on it. Integrating perceptual encounters with emotional loading renders them personally relevant and enforces their encoding. However, the encounters experienced before the age of four years can rarely be recalled in adolescence or adulthood. Thus, beliefs formed during infancy remain largely inaccessible to memory recall later in life, although they are fundamental for individuals' behavior and the development of a person's perspective.
https://www.academia.edu/3071-4087/2/3/10.20935/AcadNeurosci8401

American Journal of Biological Anthropology

ARTICLES

RACHEL VOYT – Of Monsters and Monkeys: Queering the Study of Genetic Chimerism in Primates

Scientific research is a political enterprise, and is therefore susceptible to cultural biases. With its central role in understanding humans as a species, primatology is particularly vulnerable to this dynamic, requiring researchers to carefully assess both the influences shaping their work and the implications of their results. Here, I engage in this practice by critically examining the study of chimerism in callitrichid primates, a prominent model taxon in studies of human health and evolution. Chimerism, which refers to cells derived from two or more zygotic lineages within a single organism, is a defining feature of callitrichid biology. Chimerism also challenges the boundaries by which many biological categories are defined. Using the lens of queer monster theory, I investigate the relationship between the study of callitrichid chimerism and the conceptualization of callitrichid and human bodies, with particular attention to the role of "queer" sex and reproduction. I first discuss the origins of chimerism within biological discourse, showing how the biological chimera inherited "unnatural" connotations that continue to shape scientific research. I then examine how similar monster-making practices surface in studies of callitrichids, arguing that patterns of omission and claims of exceptionalism serve to manage chimerism as a categorical threat. Finally, I explore the promises that callitrichid chimeras present as monstrous informants. I show that callitrichid chimeras can be used not only to expose the cultural boundary-work structuring sex and reproduction, but to invite research practices that treat categorical deviation not as abnormal, but as evidence that these categories must be changed.
https://onlinelibrary.wiley.com/doi/full/10.1002/ajpa.70362

PAPERS

TRAVIS RAYNE PICKERING et al – First Primate Clavicles From Swartkrans Cave: Further Indications of Habitual Arboreal Behavior in Some Early Pleistocene South African Hominins

We provide descriptions and taphonomic and functional interpretations of two hominin clavicles, SWT1/HR-5 and SWT1/HR-6, from Swartkrans Member 1. We explore the possibility that one of the clavicles derives from the same Paranthropus robustus individual as SWT1/HR-2, an articulating os coxae and partial lower limb from Swartkrans Member 1.
We employed taphonomic methods to describe damage on SWT1/HR-5 and SWT1/HR-6. Complementing the qualitative descriptions, we used osteometric tools and micro-CT scanning to generate quantitative data on external shape, cross-sectional geometry, and trabecular structure of the fossils. Observations were interpreted through comparative analyses. To explore a possible individual association of one of the new Swartkrans clavicles with the SWT1/HR-2 fossil-set, we developed linear regression models, fitted to extant hominoid samples. We then applied these models to each of the Swartkrans clavicles and to the SWT1/HR-2b femur.
Periosteal surfaces of the Swartkrans clavicles retain important anatomical and taphonomic details. Their external shapes do not ally them exclusively with the clavicles of any comparative hominoid taxon. However, their cross-sectional geometries and trabecular structures are ultimately consistent with apelike arboreality. Results fail to clarify whether the SWT1/HR-5 and SWT1/HR-6 individuals derived from the same taxon. Association of SWT1/HR-2 with either clavicle could not be reliably determined, although such an association is more likely with SWT1/HR-6.
The finding that SWT1/HR-5 and SWT1/HR-6 derived from arboreally active individuals concords with analyses of the SWT1/HR-2 fossil-set, strengthening the idea that arborealism was an important adaptation for some South African Pleistocene hominins.
https://onlinelibrary.wiley.com/doi/abs/10.1002/ajpa.70367

Animal Behaviour

PAPERS

MARIE-LAURE VEYS et al – Female-centred decision making and social interactions in killer whales revealed by drone-based observations

Understanding how group decisions are made and how individuals coordinate their behaviour is key to interpreting the social dynamics of cetaceans. Using drone-based observations, we quantified leadership during group deep dives and examined two forms of social interactions, synchronized surfacing and physical contact, in killer whales, Orcinus orca, in Hardangerfjord, Norway. Adult females initiated the majority of the dives, significantly more than males or juveniles. This female bias supports the presence of unshared decision making and suggests that leadership is linked to age–sex class. Dive initiators typically occupied peripheral positions but were not necessarily at the front. A right-skewed distribution of dive lags indicates rapid follower responses by group members to a single initiator. Group size and behaviour context (travelling versus resting) did not affect mean dive lags or interindividual dive intervals, suggesting stable group cohesion. Social interactions, in the form of synchronized surfacing and physical contact, were most common in adult female–calf dyads. These interactions were context dependent, rarely occurring during foraging. Despite the limited number of killer whale groups covered, our findings demonstrate the value of drone-based observations for uncovering fine-scale social behaviour and highlight the central role of adult females in structuring collective behaviour and maintaining social bonds in killer whales.
https://www.sciencedirect.com/science/article/pii/S0003347226002708

CHLOÉ COUTURIER et al with ROMAN M. WITTIG – Arboreal stone tool use in wild chimpanzees

The transition from an arboreal to a terrestrial lifestyle drove significant changes in hominin evolution including the development of complex technologies. Nonhuman primates reveal a similar trend, where more terrestrial species exhibit greater technological complexity. Percussive stone tool use, such as nut cracking, is known across several primate species as a complex, terrestrial activity. However, western chimpanzees, Pan troglodytes verus, also perform arboreal nut cracking, a behaviour so far described only in the North group of the Taï Chimpanzee Project (TCP) and still understudied. Here, we investigated how chimpanzees' efficiency at nut cracking is affected in arboreal settings in comparison to terrestrial settings, and how seasonality, sex and hammerstone weight influence Coula edulis arboreal nut-cracking likelihood. We monitored the Djouroutou community in the Taï National Park over 10 months and compared their behaviour to existing data from the nonadjacent South TCP group. Our results show that, in arboreal settings, chimpanzees across groups required more strikes to open a nut, indicating lower efficiency compared to terrestrial nut cracking. However, they did not open fewer nuts per minute in trees. As expected, this behaviour occurred mainly at the beginning of the C. edulis season when nuts are still attached to branches. Although females tended to crack more frequently in trees compared to males, chimpanzees of the same group used hammerstones of similar weight in both contexts. Cultural differences emerged between groups, as Djouroutou chimpanzees consistently selected heavier hammerstones than South TCP individuals, despite similar local stone availability. Contrasting partially with previous reports from the North TCP group, these findings suggest that arboreal nut cracking, while less efficient than terrestrial nut cracking, enables earlier access to high-value food resources, potentially offsetting the costs of transporting stone tools into trees. This study contributes to understanding the cognitive, ecological and evolutionary dimensions of arboreal tool use in wild chimpanzees and its relevance for interpreting early hominin technology.
https://www.sciencedirect.com/science/article/pii/S0003347226002691

British Journal of Social Psychology

PAPERS

KEVIN DURRHEIM – The social origins of identity and bias: Language models, accumulated meaning and positioning

This paper develops a social psychological interpretation of distributional language models, algorithmically learned representations of natural language. Within these models, words are positioned according to patterns of usage, and the resulting embeddings can be interpreted as maps of cultural associations available for learning. This cultural-learning account explains how patterned meanings become available to individual cognition but leaves open how those meanings are socially produced. Drawing on social identity theory, discursive psychology and a stigmergic–dialogical model of communication, the paper argues that identity and bias emerge through social interaction and the accumulation of linguistic traces. As people take positions, respond to others and circulate formulations, they produce patterns of meaning that locate actors relationally and make alignments and differences recognizable. Bias emerges when this accumulation is uneven, making associations, evaluations and distinctions differentially available across communities. From this perspective, embeddings map patterns accumulated through social activity. Their geometry captures relations through which identities become recognizable and groups distinguishable. The paper extends this approach with speaker landscapes, which locate speakers by their language use and show how groups become differentiated. The result is a framework for studying how meaning, identity, bias and group differentiation are socially produced at scale.
https://bpspsychub.onlinelibrary.wiley.com/doi/10.1111/bjso.70146

Current Biology

PAPERS

MARGHERITA BELIA et al – Infants respond to alterations in their own voice months before they recognize themselves in the mirror

Recognizing our body as our own grounds our perceptions, actions, and social interactions. Even newborns detect cross-modal links between self-related perceptions, considered necessary for body ownership. Yet, clear evidence for a sense of ownership only appears once children not simply detect but also correct mismatches between predicted and perceived self-related sensorimotor inputs. So far, this has mostly been measured using mirror self-recognition, which revealed that children typically do not start recognizing themselves before 18 months of age. Infants rarely see their own face, however, and mirror self-recognition has been related to sensorimotor and social experiences. We therefore hypothesized that a sense of ownership over the voice might develop earlier, because most infants routinely perceive themselves vocalizing from birth. This might allow them to build sensorimotor models supporting the identification of self-generated signals earlier in this modality. Related research with adults has used the altered auditory feedback paradigm to show that they respond to transpositions of the fundamental frequency (f0) of their voice by restoring the alignment between predicted and perceived feedback. Crucially, these compensatory changes depend on the voice being perceived as self-generated. Using an adaptation of this paradigm with 5-month-old infants, we found that they can already perceive and correct upward transpositions of their f0, at an age when they remain unable to recognize themselves in the mirror. This suggests that hearing ourselves routinely allows us to learn what we sound like months before we recognize what we look like, which might be especially crucial for speech acquisition.
https://www.cell.com/current-biology/abstract/S0960-9822(26)01332-1

eLife

PAPERS

VALENTINA MIONE et al – Cognitive control networks in human and macaque

A much-replicated finding in human brain imaging is a distributed “multiple-demand” or MD system, increasing in activity for many kinds of cognitive demand, and centrally involved in cognitive control. MD regions are proposed to encode a distributed mental model of critical task events, bound together in the roles and relationships needed to direct action selection. Though previous data hint at a corresponding network in the macaque, there has been no direct comparison to human data. Here we used functional magnetic resonance imaging to measure whole brain activation in a multi-step saccadic maze task, compared to a control requiring similar moves but without goal-based decisions. Human data were a close match to the canonical MD network, extended to include adjacent regions and in particular much of the canonical dorsal attention network. Data from two monkeys suggested correspondences in dorsomedial frontal, insula/orbitofrontal and posterior temporal cortex. In lateral frontal cortex there was just a single, largely dorsal activation patch, in contrast to multiple distinct human patches. In one animal, as in human, there was accompanying activation of dorsal and medial parietal cortex. In macaque as in human, together with previous data, our findings suggest an extended and strongly interconnected brain network recruited by increased cognitive challenge.
https://elifesciences.org/reviewed-preprints/111502

BENJY BARNETT & STEPHEN M FLEMING – Distinct neural representations of perceptual and numerical absence in the human brain

The ability to represent absences is fundamental to human perception and cognition. Sensitivity to non-numerical absences depends on inferring a lack of sensory evidence, enabling the recognition of a lack of environmental resources or other objects. In turn, encoding numerical absence as a concept – in the form of the number zero – has enabled a multitude of technological and mathematical advances. Whether perceptual and conceptual absences rely on overlapping or distinct neural representations in the human brain, however, remains unknown. We employed three different tasks together with magnetoencephalography (MEG) to characterise neural representations of absence evoked within perceptual and numerical domains. Using multivariate decoding and Bayes factor analyses, we replicate previous findings of shared representations of numerical absence across symbolic and non-symbolic formats. In contrast, we show that these representations of numerical absence are distinct to those evoked by non-numerical absences. This result held even after controlling for stimulus-level confounds which generate surface-level similarities between perceptual absences and non-symbolic empty sets. Our results extend a boundary between perception and cognition to the domain of absence and provide insight into the different mechanisms employed by the human brain to both perceive and conceive of absences.
https://elifesciences.org/reviewed-preprints/112088

KRISTOPHER T JENSEN et al – A mechanistic theory of planning in prefrontal cortex

Planning is critical for adaptive behaviour in a changing world, because it lets us anticipate the future and adjust our actions accordingly. While prefrontal cortex is crucial for this process, it remains unknown how planning is implemented in neural circuits. Prefrontal representations were recently discovered in simpler sequence memory tasks, where different populations of neurons represent different future time points. We demonstrate that combining such representations with the ubiquitous

principle of neural attractor dynamics allows circuits to solve much richer problems, including planning. This is achieved by embedding the environment structure directly in synaptic connections to implement an attractor network that infers desirable futures. The resulting 'spacetime attractor' excels at planning in challenging tasks known to depend on the prefrontal cortex. Recurrent neural networks trained by gradient descent on such tasks learn a solution that precisely recapitulates the spacetime attractor – in representation, in dynamics, and in connectivity. Analyses of networks trained across different environment structures reveal a generalisation mechanism that rapidly reconfigures the world model used for planning, without the need for synaptic plasticity. The spacetime attractor is a testable mechanistic theory of planning. If true, it would provide a path towards detailed mechanistic understanding of how prefrontal cortex structures adaptive behaviour.
https://elifesciences.org/articles/109757

Evolutionary Anthropology

PAPERS

RAN BARKAI et al – Homo Memorabiliaxis: Souvenirs and the Evolution of Autobiographical Memory and Self

Humans routinely keep souvenirs objects retained for the memories they evoke, yet the evolutionary and cognitive consequences of mnemonic collecting remain unclear. Existing discussions of curated objects concentrate on later prehistory and modern humans and view such objects at the social level, as carriers of shared cultural meaning or as markers of status. Here, we address an earlier time period and locate the phenomenon at the personal rather than the social level. By integrating archaeology with theories of extended memory and niche construction, we synthesize evidence consistent with systematic curation of items beyond purely utilitarian needs from the terminal Lower Palaeolithic (~500 kya) onward, including transported distinctive stones, fossils, and the prolonged retention of patinated "old" stone tools whose earlier surfaces were deliberately preserved. We propose that curated keepsakes functioned as portable external memory devices. Beyond cueing recall, they may have helped authenticate self-relevant past events by providing durable material traces that support source monitoring—distinguishing experienced from imagined events. As such practices became routine, they could have created a "souvenir niche" in which individuals who better integrated internal recollection with external tokens gained fitness benefits. The token's reference is personal, but its consequences can be social, supporting tasks like tracking alliances, reciprocity, and place-based obligations. These benefits may have strengthened selection on neural systems facilitating the development of autobiographical memory and sense of self via gene–culture coevolution. We outline archaeological, developmental, and experimental predictions that distinguish this mnemonic-authentication account from aesthetic or economic explanations and suggest approaches for testing them. Viewing curated objects as memory technology links early material culture to the evolutionary shaping of human autobiographical memory.
https://onlinelibrary.wiley.com/doi/full/10.1002/evan.70051

Frontiers in Education

PAPERS

PAULO BARRAZA & IGOR PARRA – The evolution of shared worlds: teaching and the origins of cumulative culture

The emergence of cumulative culture marks a fundamental transformation in the history of human living. Through cultural practices, ways of doing, making, and relating persist across generations and become progressively transformed. Yet culture does not persist because knowledge or representations are transmitted from one individual to another. It persists because human beings participate in recurrent forms of coordination that become part of their histories of living together. In this perspective, we propose teaching as a historically specialized organization of interpersonal coordination that contributes to the conservation of such cultural practices. We understand teaching not as the transfer of information, but as the generation of a domain of consensual coordination in which teacher and learner recursively transform their ways of perceiving and acting together. From this view, cumulative culture is not the accumulation of invariant representations, but the historical stabilization and conservation-through-transformation of viable patterns of participation. Hence, technological artifacts are not repositories of information, but material evidence of repeated patterns of living and coordinating actions together. This shift changes the study of cultural evolution from a focus on high-fidelity transmission to the relational dynamics through which practices are constantly re-enacted. Finally, we propose a multilevel neurodynamic framework in which these relational dynamics are expressed across behavioral, temporal, and neural levels, positioning interbrain coupling as a non-reductive empirical window onto an organism–organism coordination process, thereby offering a novel approach to the evolutionary origins of cumulative culture.
https://www.frontiersin.org/journals/education/articles/10.3389/feduc.2026.1977228/full

Frontiers in Language Sciences

PAPERS

PRAKASH MONDAL – What compositionality reveals about meaning, cognition, and machines

This perspective article discusses the nature of linguistic computation in cognition vis-à-vis linguistic meaning. In particular, this article explores the computational basis of linguistic meaning from a compositional computability perspective and then shows that linguistic meaning is not computable under certain conditions of compositionality, which requires the

dependence of the meaning of a whole expression on the meanings of the parts. In other words, compositionality does not guarantee the computability of linguistic meanings. This is also partly governed by the syntactic underdetermination of linguistic meanings as conceived of within syntactic theories assuming computability of structural operations for compositional mapping. So, syntax, understood in a purely computational sense, does not guarantee computability of semantic composition when understood in the context of a cognitive mechanism of understanding linguistic meaning. The limits of computability of linguistic meaning are then indicated. This is investigated from the vantage point of unification of cognitive and formal aspects of linguistic meaning in brain dynamics. This turns out to have serious consequences for Large Language Models (LLMs)/Generative AI that appear(s) to stumble over linguistically deep or pragmatically rich aspects of meaning. Thus, this article projects insights into the limits of computational basis of linguistic meaning in humans and machines.
https://www.frontiersin.org/journals/language-sciences/articles/10.3389/flang.2026.1979638/full

iScience

PAPERS

JAIME VIGIL-ESCALERA et al – Adolescents infer latent motives to build generalizable models of others' behavior
Understanding and predicting others' behavior is a key developmental task in adolescence as social interactions become more complex. Because social situations rarely repeat exactly, accurate prediction requires generalization beyond past actions. We examined how adolescents (n = 127; ages 10–20) predicted others' behavior across a series of economic games. Prediction accuracy improved with age. Computational modeling showed that this improvement was driven by an increasing tendency to infer unobservable motives underlying behavior (e.g., greed and risk aversion), with older adolescents more likely to infer multiple motives. In particular, inferring risk aversion became more common from early to mid-adolescence. These results suggest that adolescents increasingly build abstract, generalizable models of others' behavior, supporting flexible social reasoning in novel contexts.
https://www.cell.com/iscience/fulltext/S2589-0042(26)03422-X

Journal of Archaeological Science

PAPERS

PALMIRA SALADIÉ et al – Multiphase human cannibalism in Neolithic southern Iberia: Chronological and taphonomic evidence from Malalmuerzo, Carigüela, and Majolicas Caves
Human cannibalism is a behaviour with diverse social and symbolic meanings. Although it has been the focus of much interest, it remains difficult to investigate. The southern Iberian Peninsula is a key region for research into this behaviour, as remains from several classic Neolithic sites, such as Malalmuerzo, Carigüela and Majolicas Caves (Granada, Spain), have long been cited as examples of cannibalism. However, the human remains recovered from these sites lack direct radiocarbon dates and standardized taphonomic studies. To clarify the nature, timing and variability of these practices, we combined standardized taphonomic and demographic analyses with AMS radiocarbon dating of selected individuals from all three assemblages.
Remains from all three sites exhibit signs of systematic perimortem manipulation compatible with cannibalism, including cut marks related to the butchery of corpses, deliberate cranial breakage, marrow extraction, boiling and human tooth marks. However, each assemblage presents specific taphonomic and chronological signatures. Malalmuerzo Cave shows a life-like demographic profile, evidence of blunt-force cranial trauma and tightly clustered Early Neolithic dates (~5300–4950 cal BC), consistent with a short, concentrated episode that may have involved interpersonal violence. Carigüela Cave documents repeated body processing, including skull-cup manufacture, within a depositional sequence spanning different phases of the Neolithic. Two radiocarbon dates suggest recurrence, whereas a third, markedly older determination remains difficult to interpret. Majolicas Cave, dated to the Late Neolithic (~3950–3760 cal BC), shows a less intensive long-bone fragmentation pattern together with cinnabar-stained human remains.
Taken together, these data indicate that Neolithic cannibalism in the southern Iberian Peninsula was neither uniform nor synchronous but expressed through recurrent and context-dependent episodes of human body processing.
https://www.sciencedirect.com/science/article/pii/S0305440326001962

Language Sciences

PAPERS

JOSÉ MANUEL UREÑA GÓMEZ-MORENO & FRANCISCO JOSÉ RUIZ DE MENDOZA IBÁÑEZ – Beyond reported speech, hyperbole, and irony: the hidden complexity and functional diversity of echoic language
This paper advances the study of echoic language by demonstrating its greater structural complexity and functional breadth than is commonly recognized. Based on examples found in a naturally occurring exchange of comments on an online blog about the strangler fig, we analyse a text underpinning a multilayered network of echoes. The productivity of these novel echoic categories is validated through additional naturally running examples from diverse Internet sources. While commonly associated with reported speech and irony, echoes also facilitate discourse cohesion, assert stance, and bolster persuasive arguments. Our conceptual framework expands upon existing typologies of echoic configurations by positing two further

patterns: dual-source echoic compounding, whereby two dissimilar echoes—one denotational and the other attitudinal—are integrated within a single syntagmatic slot; and echoic amalgams, which entail the convergence of two related, implicit echoes into one inferentially rich unit. A new category of hyperbole, the compound hyperbolic construction, is also proposed. Finally, our analysis empirically substantiates the existence of a multifunctional echo governing the interplay of five distinct phenomena (fictive motion, metonymy, metaphor, irony, and oxymoron), thereby surpassing the complexity of previously documented composites. The present findings motivate a more comprehensive framework capable of encompassing the pervasive implicitness, structural heterogeneity, and functional versatility of echoing. We present echoic amalgams, dual-source compounded echoes, and compound hyperbolic constructions as productive typological categories, providing complementary replicable diagnostic criteria and explicit predictions to assist in identifying potential instances in large-scale corpus studies across genres and languages.
https://www.sciencedirect.com/science/article/pii/S038800012600094X

Nature

ARTICLES

EMANUELE CANCELLIERI – Tethered to stone: how rock and water availability shaped early desert occupation
Fresh water in deserts often points to sites with signs of early humans and stone tools. But, in Arabia's Rub' al Khali region, water alone does not predict occupation.
https://www.nature.com/articles/d41586-026-03263-0

PAPERS

RUDOLF W. DELLMOUR et al with METIN I. EREN – Stone and water governed early human settlement of the desert
Models of early human dispersal rely on climate to predict where populations could settle, with freshwater assumed to govern the timing and geography, particularly across the Saharo-Arabian arid belt, where humid windows episodically opened corridors into the desert interior. Yet Pleistocene dispersals into 'Green Arabia' were brief and geographically constrained, a pattern not explained by water availability alone. Here we show, from an approximately 1,500-km geoarchaeological survey through the Rub' al Khali of Arabia, the largest sand sea in the world, that the availability of stone for tool manufacture operated as an independent factor on early human settlement. Palaeolake deposits were recorded at 55 of 125 localities investigated, yet no lithic artefacts and no knappable raw materials were found along the transect, with ground-surface visibility exceeding 95%, despite abundant freshwater and contemporary occupation at the desert margins. Spatial modelling of the Peninsula supports the inference that settlement tracked the co-occurrence of water and lithic raw materials rather than water alone. Across the Peninsula, 57% of water-accessible terrain lies on formations that lack knappable stone and adding raw-material availability raises discrimination of known site locations from an area under the curve of 0.695 to 0.768. Convergent patterns from Africa, North America and Asia indicate that the constraint is not peculiar to Arabia. Dispersal models that omit raw-material geology may systematically overestimate the habitable range of stone-tool-dependent populations.
https://www.nature.com/articles/s41586-026-11180-5

REVIEWS

ANDREW ROBINSON – Women might have invented language — but not alone
An eloquent analysis of the origins of human speech suggests that social cohesion, not conflict, drove our use of words. Review of 'The Revolutionary Origins of Language' by Chris Knight & Jerome Lewis, Yale University Press (2026).
https://www.nature.com/articles/d41586-026-03392-6

Nature Communications

PAPERS

XINJUN ZHANG et al – Neanderthal introgressed ancestry reveals human genomic regions enriched with recessive deleterious mutations
We're sharing this article early to provide faster access to peer-reviewed, accepted research. It is citable and carries a permanent DOI. This version is subject to further edits and will be replaced automatically by the final Version of Record. All legal disclaimers apply.
Negative selection on deleterious mutations plays a key role in shaping human genetic variation, yet the dominance effects of these mutations remain poorly understood because existing statistical methods often cannot distinguish dominance effects from the overall selective effects. In this work, we take a fundamentally different approach by leveraging the distribution of Neanderthal ancestry across the human genome. Simulations show that recessive deleterious mutations can increase archaic introgressed ancestry through heterosis in the absence of positive selection, in contrast to the depletion expected under additive effects. We use this signal to develop DominL, a machine learning classifier trained on simulations of human demography with Neanderthal introgression to identify megabase-scale genomic windows enriched with recessive mutations. DominL demonstrates robust accuracy, with particularly high power in exon-dense regions. Applied to 7 non-African populations from the 1000 Genomes Project, DominL identifies approximately 3-9% of the genome as enriched for

recessive mutations, with most high-confidence regions shared across populations. Predicted regions show patterns consistent with expected signatures from recessive mutations, including weakened background selection, depletion of runs of homozygosity, and enrichment of non-additive trait-associated variants. These regions also contain genes associated with metabolic and immune-related functions.
https://www.nature.com/articles/s41467-026-78708-1

Nature Communications Earth & Environment

PAPERS

MICHAELA ECKER et al – Non-analog environments supported early Homo sapiens in southern Africa 200 000 years ago

In our species' evolutionary history, the type of environments in which we evolved can provide crucial details about early human adaptive capacities. Such environments might not exist under current climatic and ecological conditions. Reconstructing palaeohydrology and vegetation using multiple proxies at human fossil sites in South Africa provides insights into local conditions at a high level of detail. This paper presents a plant n-alkane stable isotope record for Florisbad and Lombard's Drift, which is anchored by new luminescence ages that revise the age for the Florisbad human cranium. We observe contrasting, non-analog plant environments during the Middle and Late Pleistocene by combining multiple lines of evidence to better understand the different environments that early Homo sapiens experienced. It also provides the foundation to evaluate their cultural adaptation strategies through time.
https://www.nature.com/articles/s43247-026-04116-4

Nature Communications Psychology

PAPERS

YIZHOU FAN et al – A metacognitive approach to learning and performance in human-AI interaction

Generative artificial intelligence (GenAI) is rapidly becoming a pervasive technology across education, work, research, and everyday life. Yet growing evidence suggests that fluent, coherent, and seemingly transparent AI assistance can improve task performance while weakening the metacognitive engagement and deeper processing required for durable learning. This tension raises a central question about how does offloading to AI reshape human learning, and under what conditions do performance and learning decouple? In this Perspective, we introduce the Synergetic Notion of Human-AI Skills and Knowledge Construction (SYNC) model. The model offers a metacognitive account of human-AI interaction by conceptualising metacognitive offloading and metacognitive onloading. The SYNC model aims to explain how human-AI interaction unfolds across learning and performance dimensions, clarifying how learners may drift into overreliant AI-supported performance or move toward human-AI synergy. We further identify key pitfalls in ineffective human-AI interaction and outline strategies to address them through metacognitive onloading and support human-AI synergy.
https://www.nature.com/articles/s44271-026-00548-y

JIE HU et al – A continuous appraisal account of gratitude dynamics in social interactions

Gratitude is a fundamental social emotion for interpersonal interaction. Previous studies have identified appraisals of benefactor's behavior and intention, and recipient's benefit as crucial determinants of interpersonal gratitude. However, they largely ignored the continuous appraisal nature of gratitude and left unclear how integrative evaluation of different determinants unfold when a beneficial outcome is not guaranteed. Here we developed an interpersonal interactive paradigm and asked participants to report their feelings at different appraisal stages of the interaction. In Experiment 1 (N = 52 participants), we demonstrated that this paradigm could effectively capture interactions between appraisals of benefactors' behavior and intention, and appraisals of recipients' benefit. In Experiment 2 (Experiment 2a: N = 61; Experiment 2b: N = 150; Experiment 2c: N = 72), we examined the continuous appraisal processes by showing that benefactors' help could substantially elicit recipients' gratitude without the evaluation of benefit, and that the outcome of help decision further interacts with the initial decision to affect recipients' gratitude towards benefactors. In Experiment 3 (Experiment 3a: N = 62; Experiment 3b: N = 150), we generalized the continuous appraisal approach to a more sophisticated context and examined the impact of help efficacy (helpful vs. useless vs. harmful help) on gratitude. Our findings suggest that benefactors' decision to help can elicit gratitude without outcome evaluation, the outcome that is decisively determined by benefactors' help has a strong effect on gratitude, and the outcome that is not directly affected by the help could nevertheless promote or dampen gratitude. Together, the current study advances our understandings of integrative evaluation of different determinants underlying interpersonal gratitude via a continuous appraisal framework.
https://www.nature.com/articles/s44271-026-00526-4

Nature Human Behaviour

PAPERS

MENGMI ZHANG et al – Turing-like tests for language and vision demonstrate a narrowing gap between humans and AI

As artificial intelligence (AI) becomes increasingly embedded in daily life, ascertaining whether an agent is human is critical. Here we systematically benchmark AI's ability to imitate humans in three language tasks (image captioning, word association

and conversation) and three vision tasks (colour estimation, object detection and attention prediction), collecting data from n = 636 humans and 37 AI agents. We also conducted 72,191 Turing-like tests with 1,916 human judges and 10 AI judges. Current AIs are approaching the ability to convincingly impersonate humans and deceive human judges in both language and vision. Even simple AI judges outperformed humans in distinguishing AI from human responses. Imitation ability showed minimal correlation with conventional AI performance metrics, suggesting that passing as human is an important independent evaluation criterion. The large-scale Turing-like datasets and metrics introduced here offer valuable benchmarks for assessing human-likeness in AI and highlight the importance of rigorous, quantitative imitation tests for AI development.
https://www.nature.com/articles/s41562-026-02590-6

Nature Humanities & Social Sciences Communications

PAPERS

PATRÍCIA FRANTZ, FRANCISCA REGO & STELA BARBAS – The contemporary dispute over personhood: ontological roots and ethical implications

The concept of person holds a pivotal role in contemporary ethical, legal, and philosophical debates, yet its meaning has become increasingly fragmented. A notable feature of this fragmentation is the conceptual separation between "human being" and "person," particularly in bioethical and legal contexts, where personhood is often defined in functionalist or psychological terms—such as self-awareness, autonomy, or relational capacity. These redefinitions resonate with broader cultural currents, including posthumanist tendencies that challenge the boundaries and identity of the human itself. This article argues that such views reflect a deeper philosophical rupture: the weakening of realist ontological accounts of the person. As a result, dignity is no longer viewed as intrinsic, but as contingent and variable, undermining moral protections for the most vulnerable human beings. In response, this study advocates a return to an ontologically grounded account of the person. Building upon the classical tradition of Boethius and Thomas Aquinas, and enriched by Leonardo Polo's notion of the personal act of being, it proposes a framework in which personhood is understood as a subsistent reality rooted in being—not in capacities or social recognition. Polo's metaphysical approach deepens the classical view by highlighting the structural link between being, freedom, and transcendence. The article defends the thesis that human dignity presupposes being: personhood is grounded in what a human being is rather than in what a human being is capable of doing. It argues that a realist metaphysical anthropology offers a stable and inclusive foundation for human dignity in contemporary bioethical discourse.
https://www.nature.com/articles/s41599-026-09198-1

Nature Scientific Reports

PAPERS

KEYI LI & JINHUA YANG – Valenced moral contagion affects adolescents' self-reported prosocial tendencies in a guided imagery experiment

Using a three-condition, class-based guided-imagery experiment, this study examined associations between contact-based moral contagion valence and self-reported prosocial tendencies among 207 Grade 7 students (106 boys and 101 girls) from six intact classes. Two classes completed each condition: positive moral contagion (n = 66), negative moral contagion (n = 82), or neutral control (n = 59). Welch's ANOVA showed significant differences across conditions, $F(2, 110.61) = 30.49$, $p < 0.001$, $\eta^2 = 0.19$, with scores highest in the positive condition, followed by the negative and control conditions. Relative to control, positive moral contagion showed a significant statistical indirect effect through moral elevation, effect = 6.73, 95% CI [3.92, 10.07], whereas the indirect effect for negative moral contagion was not significant, effect = − 2.13, 95% CI [− 5.22, 0.61]. Junzi personality negatively moderated the positive-versus-control contrast, $\Delta R^2 = 0.0465$, b = − 0.3085, p = 0.0023; the conditional effect decreased from 22.02 at low Junzi personality to 7.96 at high Junzi personality. These findings indicate valence-specific pathways and suggest that external positive moral cues have larger incremental associations among adolescents with lower Junzi personality.
https://www.nature.com/articles/s41598-026-69437-y

New Scientist

ARTICLES

JAMIE DUCHARME – Your brain's unexpected ability to regenerate and how to harness it

The controversial discovery that our brains can generate new neurons surprisingly late in life is now prompting a rethink of adult brain health, pointing the way to better treatments for stroke, dementia and depression.
https://www.newscientist.com/article/2594221-your-brains-unexpected-ability-to-regenerate-and-how-to-harness-it/

ROWAN HOOPER – The understanding that even bees have feelings is changing our view of consciousness

From jays that seem to say "sorry" to insects that play, signs of emotional inner life across the animal kingdom are giving us new perspectives on what consciousness is, and how we might pin it down.
https://www.newscientist.com/article/2593034-the-understanding-that-even-bees-have-feelings-is-changing-our-view-of-consciousness/

CARISSA WONG – Adults may be more creative than children – but less confident about it
We often associate children with creativity, but adults actually performed better on inventive tasks, despite being less sure of themselves.
https://www.newscientist.com/article/2595359-adults-may-be-more-creative-than-children-but-less-confident-about-it/

JO MARCHANT – Bottlenose whales may look after each other when they're sick
Northern bottlenose whales are more likely to stick together when individuals are poorly or emaciated.
https://www.newscientist.com/article/2594663-bottlenose-whales-may-look-after-each-other-when-theyre-sick/

NPJ Heritage Science

PAPERS

RUY FERNANDEZ et al – First U-Pb dating of Kromdraai cave in the Cradle of Humankind UNESCO World Heritage Site
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Kromdraai, a fossil-bearing site within the UNESCO World Heritage area known as the "Cradle of Humankind" (Gauteng, South Africa), has yielded numerous hominin remains, including the Paranthropus robustus holotype. Yet, it remains the only major site in the Cradle of Humankind lacking absolute dating. We obtained the first absolute dates for a key breccia block from Kromdraai, using uranium-lead geochronology. Uranium-lead methods have been applied across the Cradle of Humankind, typically yielding high-precision ages. However, their accuracy can be questioned when regression models provide a poor fit to isotopic data. By integrating multiple mathematical approaches, we derive age constraints for the block from 1.94 ± 0.08 to 2.67 ± 0.17 Ma, thus providing an initial chronological framework for future interpretations of the Kromdraai fossil record. Furthermore, we demonstrate that applying alternative mathematical approaches enables individual speleothems to be dated according to their best-fitting models, improving the robustness of chronological interpretations.
https://www.nature.com/articles/s40494-026-03075-5

Physics of Life Reviews

PAPERS

GEORGIOS PAPAGEORGIOU et al – Specific language process or repurposed sensorimotor mechanism? Hypotheses on the evolution of language syntax
The origin of language syntax remains one of the central open questions in neuroscience. Two competing views dominate the debate: that syntax emerged as a discrete, species-specific novelty (the saltationist view), or that it arose gradually through the repurposing of pre-existing sensorimotor circuits. Here we review evidence in favor of the gradualist hypothesis and propose that three convergent elements, rooted in the sensorimotor brain, provided the evolutionary substrate for language syntax. First, the progressive expansion of direct cortico-motoneuronal (CM) projections from primary motor cortex to spinal motoneurons freed motor control from the rigidity of prewired synergies, enabling flexible, hierarchically nested action sequences. Second, the premotor system — particularly monkey area F5, the homologue of human Broca's area — implements a goal-directed motor lexicon with mirror properties constituting a precondition for intentional communication. Third, during observation of others' actions, the mirror system must simultaneously maintain competing goal hypotheses and resolve them incrementally — a process we term "hyperprediction" — that is computationally analogous to syntactic parsing. We further argue that Broca's area is not a dedicated language hub but one node within a broader cortico-subcortical network: the basal ganglia implement hierarchical chunking and rule learning across motor and linguistic domains, as evidenced by shared neural substrates for tool use and language syntax. Finally, we propose that recursion is not language-specific, and that the co-evolution of hand morphology and cortico-basal ganglia circuits provides a mechanistically grounded account of how syntactic capacities emerged from sensorimotor precursors, with five falsifiable predictions testable by current methods.
https://www.sciencedirect.com/science/article/pii/S1571064526000874

PLoS One

PAPERS

SHALINI BANERJEE & ISHANTI GANGOPADHYAY – The role of speaker accuracy and mutual exclusivity in children's novel word learning
Children draw on multiple sources of information during word learning, including speaker testimony and lexical expectations. Yet, little is known about how these cues jointly influence children's ability to learn new words. The present study examined the combined effect of speaker accuracy and mutual exclusivity (ME) on short-term retention of label-object associations in 4- to 7-year-old monolingual English speaking children. Children were presented novel and familiar object pairs, and were taught novel labels by either an accurate speaker (one who previously labeled familiar objects correctly) or an inaccurate speaker (one who previously labeled familiar objects incorrectly). Novel labels were introduced under two conditions: Align-

with-ME (speakers labeled the novel object with novel names) and Conflict-with-ME (speakers labeled the familiar object with novel names, conflicting with ME). Results showed that children retained novel labels for novel objects from both accurate and inaccurate speakers when speaker testimony aligned with ME expectations. This suggests that children are open to learning novel words from speakers regardless of their prior accuracy and may also draw on other available cues, such as label–object co-occurrences, during learning. However, when speaker testimony violated ME expectations, children performed poorly, possibly due to difficulty disambiguating between speaker testimony and their existing lexical knowledge. Together, these findings suggest that children's short-term retention of label–object associations is supported when available cues align, irrespective of speaker accuracy status. These associations, however, become less robust when ME and speaker cues provide conflicting information.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0361483

Royal Society Open Science

PAPERS

SHENG-FENG SHEN, DUSTIN R. RUBENSTEIN & MING LIU – The evolution of group size and kin structure in complex societies

Molecular and pedigree data reveal substantial variation in genetic relatedness within social groups across animals. Yet kin selection theory typically treats relatedness as a fixed parameter rather than an emergent property of group dynamics. We develop a demographically explicit model in which group size fluctuates through births, dispersal, mortality and floater immigration. Residents and potential joiners resolve conflict over membership, with joining probabilities set by inclusive-fitness effects at demographic equilibrium. Membership control jointly shapes group size distributions, stability and relatedness. Under insider control, unrelated outsiders are admitted primarily to small, low-productivity groups, so mean relatedness rises with group size and stays high in larger groups. Groups are most stable near the per capita productivity optimum, with equilibrium sizes slightly above it. Low fecundity relative to resident mortality increases floater reliance, promoting mixed-kin groups and reducing relatedness. Under outsider control, groups grow larger by admitting unrelated floaters, and relatedness remains low. By treating kin structure as an emergent outcome of demographic processes and membership decisions rather than a fixed parameter, our framework links relatedness to the processes that form and regulate social groups, offering new insight into the evolution of sociality.
https://royalsocietypublishing.org/rsos/article/13/10/260096/483921/The-evolution-of-group-size-and-kin-structure-in

NATALIA ZARZECZNA et al – Can you feel meaning? Spirituality involves stronger sensorimotor associations with abstract concepts

Understanding abstract phenomena is a fundamental human need. Emerging evidence increasingly points to the multidimensionality of abstract knowledge representations, with theories emphasizing the importance of both embodied and linguistic influences. In the present paper, we argue that the strength with which embodiment is associated with abstract concepts is moderated by cultural beliefs about ontological meaning. Specifically, we predicted that self-identified spirituality—a belief system guided by an experiential approach to understanding reality—contributes to greater sensorimotor associations with abstract concepts. As hypothesized, across four studies (n = 729; in the USA and the UK), Western spiritual beliefs involved stronger sensorimotor associations for highly abstract compared to concrete concepts. Importantly, religious beliefs that conceptually overlap with spirituality did not contribute to these associations. Altogether, individual differences in belief systems guide people's conscious attendance to sensorimotor features when thinking about abstract concepts, with spiritual individuals likely feeling the meaning of words through linking abstract thought with bodily experiences.
https://royalsocietypublishing.org/rsos/article/13/10/260997/483949/Can-you-feel-meaning-Spirituality-involves

Science

NEWS

Flickering signals in monkey brains hint at how we become conscious of what we see

Detailed recordings reveal an unexpected way neurons represent perceived and unnoticed images.
https://www.science.org/content/article/flickering-signals-monkey-brains-hint-how-we-become-conscious-what-we-see

ARTICLES

KAZUO OKANOYA – How comparable are bird and human sounds?

Many features of bird and human vocalizations are comparable—but some analogies lack evidence.
https://www.science.org/doi/10.1126/science.aem2333

PAPERS

LOGAN S. JAMES et al – Pervasive patterns in bird songs resemble those in human speech and song and are independent of vocal learning

Bird songs are often described as analogs to human speech and songs, but expansive comparisons are necessary to determine analogy and mechanistic substrates. By analyzing global corpora consisting of 367 bird species (>74,500 vocal elements from ~5900 songs) within two clades of vocal learners (oscines and hummingbirds) and related nonlearners (suboscines and nightjars) and 52 human languages (>15,000 elements in >800 speech or song phrases), we revealed common patterns in bird songs that resemble prevalent patterns in human speech and song with variation in resemblance to speech or song. Vocal learning did not systematically affect acoustic patterning or similarity to human vocalizations. These data underscore the deep analogies between bird and human vocalizations and convergent motor mechanisms shaping communication.
https://www.science.org/doi/10.1126/science.adr9983

Science Advances

PAPERS

CECILIA PADILLA-IGLESIAS et al – Cultural norms of exogamy and mobility shape genetic evolution of Central African hunter-gatherers

Through a hunting and gathering lifestyle, humans have managed to thrive across all terrestrial ecosystems. A key adaptive feature enabling this ecological success is the ability of hunter-gatherer societies to maintain high levels of genetic diversity despite ecological and demographic shocks, but the mechanisms underlying this resilience are poorly understood. Here, we integrate genomic, demographic, mobility, and ethnographic data from two Central African hunter-gatherer populations to show that genetic diversity emerges from interacting effects of population size, mobility, and cultural norms governing marriage. We first demonstrate direct selection against background homozygosity: Even modest increases in runs of homozygosity, in the near absence of close-kin marriages, are associated with reduced reproductive success. Despite regional differences in effective population size, clustering of relatives, sedentism, and exogamy rules, overall levels of homozygosity are similarly low in both populations. These shared genetic outcomes are achieved through distinct strategies: In one region, strict exogamy combined with high lifetime mobility limits local relatedness, whereas in the other, more relaxed exogamy norms are offset by increased male mate-search distances that reduce offspring homozygosity. Together, our results show that human populations flexibly adjust mobility and social norms to demographic constraints to preserve genetic diversity and avoid fitness costs, revealing culture as a central component of human adaptation.
https://www.science.org/doi/10.1126/sciadv.aeh1658

World Journal of English Languages

PAPERS

XENIYA SELEZNEVA et al – Linguocultural Construction of Archetypal Characters in English Fairy Tale Discourse: A Discourse-Analytic and Cognitive-Linguistic Perspective

While character archetypes in fairy-tale discourse have been extensively studied from folkloristic and psychological perspectives, limited attention has been paid to their linguocultural realization, the specific linguistic means through which these archetypal images are linguistically constructed in English fairy-tale discourse. This article addresses this gap by examining the linguocultural representation of recurrent character archetypes, namely the Mother/Stepmother, the Sage/Wise Old Man, and the Trickster, in English fairy-tale discourse through the analysis of folk tales. It analyzes the linguistic, behavioral, and communicative mechanisms that construct these characters. The empirical base is drawn from a 100-text corpus (189,467 tokens) of authoritative British folklore collections (Jacobs, Briggs), enabling the identification of recurrent lexical patterns associated with archetypal representation. Using a multidisciplinary methodological approach, the study applies discourse analysis, content analysis, and cognitive-linguistic methodologies to investigate the intricate relationship between narrative structures and cultural meanings. Integrating discourse analysis with cognitive linguistics, the research reveals that archetypes operate as cognitive-pragmatic constructs. They contribute to social integration and the transmission of cultural values by being systemically encoded through specific lexical, syntactic, and stylistic elements. Each character uses linguistic tools inherent to its status to achieve pragmatic purposes. Additionally, the research emphasizes the dual role of these characters as mediators between storytelling and pragmatics, since they participate in narrative by developing plot and creating characters, but also mediate social values, morals, and culture through pragmatics. Through their linguistic embodiment, archetypes function as mediators in the process of socialization, providing cultural models for listeners and readers. Ultimately, this study contributes to a deeper understanding of how folklore discourse functions as a dynamic vehicle for preserving and transmitting cultural identity across generations.
https://www.sciedupress.com/journal/index.php/wjel/article/view/30685

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