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CONTENTS

NOTICES **2**
FORMATTED VERSION OF THIS BULLETIN 2
PUBLICATION ALERTS 2
EDITORIAL INTERJECTIONS 2
CONFERENCE ALERT – Cognition & Behavior Evolution Network (CBEN) Conference 2025 2
CONFERENCE ALERT – Evolang XVI 2nd Call for Papers 3
CONFERENCE ALERT – 10th International Conference: Scandinavian Association for Language & Cognition 4
NEWS **4**
NATIONAL GEOGRAPHIC NEWS – The Life and Legacy of Dr. Jane Goodall 4
SCIENCEADVISER – Birds of different feathers sound the alarm together 5
SCIENCENEWS – What Jane Goodall taught me about bones, loss and not wasting anything 5
THE CONVERSATION – Why we need more Jane Goodalls 5
THE CONVERSATION – When chimps helped cool the planet 5
PUBLICATIONS **5**
Behavioral and Brain Sciences 5
PAPERS **5**
DAWEI BAI et al – "Core Perception": Re-imagining Precocious Reasoning as Sophisticated Perceiving 5
Cell Genomics 6
ARTICLES **6**
LARISA OKOROKOVA & GAEL CRISTOFARI – Hominoid-specific retrotransposons fuel regulatory novelty in early brain development 6
PAPERS **6**
ANITA ADAMI et al – LINE-1 retrotransposons mediate cis-acting transcriptional control in human pluripotent stem cells and regulate early brain development 6
Current Biology 6
ARTICLES **6**
MICHAEL GROSS – Finding Denisovans 6
PAPERS **6**
SONYA PASHCHEVSKAYA et al with BARBARA FRUTH – Coalitionary intra-group aggression by wild female bonobos 6
PATRICK BRUNS, KAZUHISA SHIBATA & TAKEO WATANABE – Conscious awareness determines whether a second learning session disrupts or facilitates earlier learning 6
Developmental Cell 7
PAPERS **7**
AURÉLIE LARDENOIS et al – Single-cell exploration of gonadal somatic cell lineage specification during human sex determination 7
eLife 7
PAPERS **7**
THERESE M.I. KOCH, ETHAN S. MARKS & TODD F. ROBERTS – AVN: A Deep Learning Approach for the Analysis of Birdsong 7
Frontiers in Education 7
PAPERS **7**
HESHAM ABDEL KARIM ALDAMEN et al – Testing Krashen's Input Hypothesis with AI: A Mixed-methods Study on Reading Input and Oral Proficiency in EFL 7
Frontiers in Psychology 8
PAPERS **8**
JULIA KREBS et al – Sign language encodes event structure through neuromotor dynamics: motion, muscle, and meaning 8
Nature 8
PAPERS **8**
BUDIANTO HAKIM et al – Hominins on Sulawesi during the Early Pleistocene 8
OBITUARIES **8**
RICHARD WRANGHAM – Jane Goodall obituary: pioneer primatologist who inspired generations of scientists 8
Nature Communications Biology 8
PAPERS **8**
YINGYING SUN et al – Neural representation of mixed feelings during real-time processing of negative words in pun-humor 8

Nature Computational Science 9
ARTICLES 9
SOPHIE SLAATS – How neural rhythms can guide word recognition 9
Nature Ecology & Evolution 9
PAPERS 9
WILLIAM E. FEENEY et al with CLAIRE N. SPOTTISWOODE – Learned use of an innate sound-meaning association in birds 9
New Scientist 9
ARTICLES 9
PETER ROWLETT – Learning to play nice with other people 9
OBITUARIES 9
ROWAN HOOPER – How Jane Goodall changed the way we see animals – and the world 9
Patterns 9
PAPERS 9
FENGLI XU et al – Toward large reasoning models: A survey of reinforced reasoning with large language models 9
PLoS Biology 10
PAPERS 10
SONJA WILD, GUSTAVO ALARCÓN-NIETO & LUCY M. APLIN – Siblings and nonparental adults provide alternative pathways to cultural inheritance in juvenile great tits 10
THOMAS J. STOLL et al – The auditory brainstem response to natural speech is not affected by selective attention 10
PLoS One 10
PAPERS 10
GEORGE MURĂTOREANU & MARIAN COSAC – Tracing Neanderthal mobility through the Romanian Carpathians: A GIS-based least-cost connectivity model 10
BENIAMINO MECOZZI et al – From meat to raw material: the Middle Pleistocene elephant butchery site of Casal Lumbroso (Rome, central Italy) 10
Science Advances 11
PAPERS 11
MASANORI YAMAKAWA et al – Quantitative and systematic behavioral profiling reveals social complexity in eusocial naked mole-rats 11
Trends in Cognitive Sciences 11
ARTICLES 11
SUSAN HESPOS, ANTONIA GÖTZ & TIJL GROOTSWAGERS – A world of things and stuff 11
AENNE A. BRIELMANN – How do we see style? 11
LINDA KERBL et al – More than incurious: the development of deliberate ignorance 11
PABLO BARTTFELD et al – Pre- and post-decision signals of certainty in changing minds 11
PAPERS 12
NED BLOCK – Can only meat machines be conscious? 12
SUBSCRIBE to the EAORC Bulletin 12
UNSUBSCRIBE from the EAORC Bulletin 12
PRODUCED BY AND FOR THE EAORC EMAIL GROUP 12

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.

CONFERENCE ALERT – Cognition & Behavior Evolution Network (CBEN) Conference 2025

Next year, the annual meeting of the Cognition, Behavior and Evolution Network (CBEN) will take place on April the 14th, 2026, at Leiden University, as a preconference of the EHBEA conference (April 15-16-17). CBEN brings together researchers

from across the evolutionary and behavioral sciences to explore how ecological variation—whether environmental, cultural, demographic, or institutional—relates to social behavior in humans and non-human animals alike.

The 2026 CBEN topic is Socio-ecological variation in conflict and cooperation: How do different social and ecological environments shape cooperation and conflict across species?

Understanding the roots of cooperation and conflict requires moving beyond single-population models. Socio-ecological factors can co-vary with how individuals coordinate, compete, and share in ever-changing environments: from shifting climatic conditions to variation in norms, group structure, and resource distributions. These dynamics are increasingly studied in diverse human societies as well as taxa in the natural world.

This preconference is organized in substitution of the CBEN annual meeting (so there will be no CBEN meeting in the fall of 2026). It aims to foster dialogue between research communities interested in ecological and evolutionary approaches to social behavior. We welcome submissions from psychologists, experimental and behavioral economists, evolutionary biologists, anthropologists, animal behavior researchers, and scientists from related disciplines, that examine how social behaviors emerge, persist, or vary in relation to ecological and cultural contexts.

Topics of interest include (but are not limited to):

Socio-ecological drivers of cooperation, punishment, or conflict
Cross-cultural or cross-species variation in norms and social preferences
Environmental uncertainty and inequality, and their impact on coordination and sharing
Cultural evolution and adaptation to local (social) ecologies
Comparative or experimental studies that link ecological context to behavior

Submission Details

We welcome abstracts for talks or posters presenting original research (empirical or theoretical). Please include a title, author list, affiliation(s), and a 250-word abstract. We look forward to receiving your abstract by November 30th.
Further information on submission format, deadlines, and registration is at https://forms.gle/v7CPm8Nq9tZwW11k9

The Organizing team (Laura Hoenig, Leticia Micheli, Angelo Romano, Giuliana Spadaro)
Contact and information: a.romano@fsw.leidenuniv.nl

CONFERENCE ALERT – Evolang XVI 2nd Call for Papers

We are pleased to announce the second call for papers for the 2026 edition of the Evolution of Language (EVOLANG) conference, to be held in Plovdiv, Bulgaria, 7-10 April 2026. https://evolang2026.org

1. About the Conference

The Evolution of Language (EVOLANG) conference series is the leading international forum for researchers investigating the origins and evolution of language. Contributions are invited from all relevant disciplines, including—but not limited to—anthropology, archaeology, biology, cognitive science, genetics, linguistics, computational modelling (mathematical, agent-based, and neural-network approaches), palaeontology, physiology, primatology, philosophy, semiotics, and psychology.

The 2026 edition of EVOLANG will feature invited talks by Gary Lupyan (University of Wisconsin, USA), Katie Slocombe (University of York, UK) and Alessandro Treves (SISSA, Italy). Full details:
https://sites.google.com/york.ac.uk/evolang2026/invited-speakers
EVOLANG 2026 will also host six thematic workshops: Primary Iconic Coinage in Spoken Languages • AI in Language Evolution • Great-Ape Pragmatics • Swarm Robotics for the Study of Language Emergence • Triangulating Human Diversity through Linguistic, Biological and Socio-Cultural Differences • The Geography of Linguistic Evolution
Details: https://sites.google.com/york.ac.uk/evolang2026/workshops.
The conference will take place in Plovdiv, Bulgaria—often described as Europe's oldest continuously inhabited city, renowned for its rich historical layers and lively cultural scene. Plovdiv offers affordable accommodation and excellent transport links by land and air, including daily low-cost flights to nearby Sofia and direct flights from London, Milan, and Bratislava. Bulgaria is an EU member state, part of the Schengen Area, and is expected to have joined the Eurozone by the time of the conference.

2. Submission Link and Deadline

The deadline for submissions to EvoLang XVI (Plovdiv, Bulgaria, 7–10 April 2026) is 26 October 2025 (Anywhere on Earth).
Submit via OpenReview: https://openreview.net/group?id=EVOLANG.org/2026/Conference

3. Submission Guidance

Submissions must meet normal standards of academic excellence. Papers should clearly state how they advance the study of language evolution and relate their findings to up-to-date scientific literature. Each submission should articulate:
- the substantive claim being made,

- the method by which that claim is supported, and
- the nature of the relevant data and/or theoretical argument.

Empirical studies should be based on completed analyses, not preliminary results. All submissions are peer-reviewed by at least three experts, and acceptance decisions are based on a scoring scheme that aggregates reviewers' reports.
In recent conferences, the acceptance rate has been around 50%. EVOLANG features both oral and poster presentations. Please read the submission guidelines and consult the templates provided before uploading your paper. Alongside your submission, you will be asked to supply a 150-word summary of your contribution. Submissions that lack clear relevance to the field or that fail to adhere to the formatting requirements may be rejected without review. If you experience any difficulties with the submission system, please contact: scientific-committee@evolang.org
The conference language will be English, with additional accessibility support in the form of captions. All submission information and templates are available here: https://sites.google.com/york.ac.uk/evolang2026/submission

The Evolang 2026 team: evolang2026@gmail.com

CONFERENCE ALERT – 10th International Conference: Scandinavian Association for Language & Cognition

We invite proposals for oral presentation sessions (https://www.salc-sssk.org/(SALC10, https://www.salc10.com/) at Umeå University, June 23-25, 2026.

The conference theme is Language, Cognition, and Learning.
Topics for oral presentations may include (but are not limited to):
Language acquisition and cognition
Cognitive perspectives on education and learning practices
Discourse, metaphor, and learning
Language and cognitive development and evolution
Embodied cognition
Neuro- and psycholinguistic approaches to language and cognition
Language and cognition
Discourse and cognition
Metaphor, metonymy and cognition
Language change and cognition
Multicultural communication and cognition
Perception, cognition and language
Language and consciousness
Language and gesture
Linguistic typology and cognition
Translation and cognition
Cognitive impairment and language use

The conference will include plenary talks by Lars Nyberg, Marianne Gullberg, Mikkel Wallentin, and Reyes Llopis-García and the following theme sessions:
Cognitive Aesthetics, Poetics, and Multimodal Creativity – organized by Lacey Okonski and Ljiliana Saric.
Learning new languages changes the way we think: evidence from categorisation, judgment and decision-making - organized by Alexandra Dylman and Panos Athanasopoulos.
Metaphorical competence in multicultural educational contexts – organized by Ana M. Piquer- Píriz.
Metaphor and Learning: Conceptualization and Cognitive Dynamics – organized by Misuzu Shimotori and Niamh Anna O'Dowd.
Motion events in focus: Encoding strategies, conceptual modelling and variation across and within languages - organized by Rickard Nilsson and Andrea C. Schalley

The local organizing committee: Marlene Johansson Falck, Per Boström, Kajsa Törmä. In collaboration with: Lacey Okonski, Anders Steinvall, Heli Tissari, Yulia Kashevarova, Maria Rosenberg, Linda Sandström, Qiujun Zhang

Read the full call for papers: https://mcusercontent.com/867e87d0a4dca6e145161a142/files/708fc523-8669-11ea-7655-69f0ec3c5466/CfP_SALC10.pdf.

NEWS

NATIONAL GEOGRAPHIC NEWS – The Life and Legacy of Dr. Jane Goodall

"What you do makes a difference, and you have to decide what kind of difference you want to make." - Jane Goodall

We wanted to take a moment to celebrate Dr. Jane Goodall DBE, world-renowned ethologist, zoologist and anthropologist, and a beloved member of the National Geographic community.
From a young age, Jane exemplified the Explorer Mindset, leading with curiosity and empathy, and inspiring others to make a difference. A powerful voice for the natural world and a tireless humanitarian, Jane's groundbreaking discovery that chimpanzees make and use tools fundamentally redefined what it means to be human.
Through more than 60 years of trailblazing work, Jane has not only shown us the urgent need to protect chimpanzees from extinction, but also highlighted the need to take action for conservation on behalf of all living things and the planet we share. Jane's legacy in expanding the world of animal research, cognition and behavior is unmatched and will continue to inspire generations to come.
Beyond her scientific contributions, her greatest gift was her boundless compassion. She transitioned from a field scientist to a global advocate, dedicating the latter half of her life to conservation, animal welfare and empowering young people through the Jane Goodall Institute. Her work left an enduring legacy worldwide, encouraging people to choose hope over despair.
We will greatly miss her curious nature and inspirational mind.
https://education.nationalgeographic.org/resource/jane-goodall/

SCIENCEADVISER – Birds of different feathers sound the alarm together

More than 20 species of bird can understand one another when they tell others a cuckoo is trying to place its egg in their nest. "All of these different birds from all around the world seem to have converged on using this same vocalization to denote their respective brood parasites," said one of the researchers. "The birds adapting these innate calls to another purpose could be the first stepping stone towards language."
https://www.nature.com/articles/s41559-025-02855-9

SCIENCENEWS – What Jane Goodall taught me about bones, loss and not wasting anything

Her legacy rests not just in stories of living chimps, but in the skeletons that endure.
https://www.sciencenews.org/article/jane-goodall-death-chimpanzee-skeletons

THE CONVERSATION – Why we need more Jane Goodalls

Her ability to move between academia, media and policy was almost unique.
https://theconversation.com/why-we-need-more-jane-goodalls-266709

THE CONVERSATION – When chimps helped cool the planet

What chimpanzees can teach us about climate change.
https://theconversation.com/when-chimps-helped-cool-the-planet-267043

PUBLICATIONS

Behavioral and Brain Sciences

PAPERS

DAWEI BAI et al – "Core Perception": Re-imagining Precocious Reasoning as Sophisticated Perceiving

"Core knowledge" refers to a set of cognitive systems that underwrite early representations of the physical and social world, appear universally across cultures, and likely result from our genetic endowment. Although this framework is canonically considered as a hypothesis about early-emerging conception — how we think and reason about the world — here we present an alternative view: that many such representations are inherently perceptual in nature. This "core perception" view explains an intriguing (and otherwise mysterious) aspect of core-knowledge processes and representations: that they also operate in adults, where they display key empirical signatures of perceptual processing. We first illustrate this overlap using recent work on "core physics", the domain of core knowledge concerned with physical objects, representing properties such as persistence through time, cohesion, solidity, and causal interactions. We review evidence that adult vision incorporates exactly these representations of core physics, while also displaying empirical signatures of genuinely perceptual mechanisms, such as rapid and automatic operation on the basis of specific sensory inputs, informational encapsulation, and interaction with other perceptual processes. We further argue that the same pattern holds for other areas of core knowledge, including geometrical, numerical, and social domains. In light of this evidence, we conclude that many infant results appealing to precocious reasoning abilities are better explained by sophisticated perceptual mechanisms shared by infants and adults. Our core-perception view elevates the status of perception in accounting for the origins of conceptual knowledge, and generates a range of ready-to-test hypotheses in developmental psychology, vision science, and more.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/core-perception-reimagining-precocious-reasoning-as-sophisticated-perceiving/65A25BFCF7B68C6431D609572EE1BA11

Cell Genomics

ARTICLES

LARISA OKOROKOVA & GAEL CRISTOFARI – Hominoid-specific retrotransposons fuel regulatory novelty in early brain development

Transposable elements can drive genetic innovation. In this issue of Cell Genomics, Adami et al. investigate the impact of hominoid-specific L1 retrotransposons on early embryonic and brain development. Using induced pluripotent stem cells and cerebral organoid models, multi-omics, and CRISPRi-mediated silencing, they uncover a cis-regulatory role for these young retrotransposons in early human brain development.

https://www.cell.com/cell-genomics/fulltext/S2666-979X(25)00294-0

PAPERS

ANITA ADAMI et al – LINE-1 retrotransposons mediate cis-acting transcriptional control in human pluripotent stem cells and regulate early brain development

Long interspersed nuclear element 1 (L1) retrotransposons represent a vast source of genetic variability. However, mechanistic analysis of whether and how L1s contribute to human developmental programs is lacking, in part due to the challenges associated with specific profiling and manipulation of human L1 expression. Here, we show that thousands of hominoid-specific L1 integrants are expressed in human induced pluripotent stem cells and cerebral organoids. The activity levels of individual L1 promoters vary widely and correlate with an active epigenetic state. Efficient on-target CRISPR interference (CRISPRi) silencing of L1s revealed nearly a hundred co-opted L1-derived chimeric transcripts, and L1 silencing resulted in changes in neural differentiation programs and reduced cerebral organoid size. Together, these data implicate L1s and L1-derived transcripts in hominoid-specific CNS developmental processes.

https://www.cell.com/cell-genomics/fulltext/S2666-979X(25)00235-6

Current Biology

ARTICLES

MICHAEL GROSS – Finding Denisovans

The ancient hominin group of Denisovans has been defined by its genome sequences, without any knowledge about the appearance of these cousins of Neanderthals. A new approach at predicting phenotypes, together with new sequences of ancient genomes and proteomes, may now enable researchers to link genetic and morphological evidence to create a comprehensive image of Denisovans.

https://www.cell.com/current-biology/abstract/S0960-9822(25)01244-8

PAPERS

SONYA PASHCHEVSKAYA et al with BARBARA FRUTH – Coalitionary intra-group aggression by wild female bonobos

In humans and non-human primates, male aggression and physical violence are common strategies in the struggle over power and are efficient in exerting control over individuals and groups. In contrast, our close relative, the bonobo (Pan paniscus) is often described as an exceptionally peaceful primate due to the lack of lethal aggression or infanticide and the tendency for individuals to reconcile after conflicts. Nonetheless, rates of male aggression are high, but, atypically for primates, bonobo females are observed to confront males without support from others. Despite female exogamy, forming coalitions of unrelated females in response to male aggression appears to be a common strategy, mostly involving charging or chasing and, in some cases, escalating to physical attacks. Here, we report on a violent coalitionary attack by resident females against an adult male in a well-studied group of wild bonobos habituated to observation, detailing participants' violent actions and the victim's responses. The assault involved a fraction of the group, while almost everybody was present, and bystanders, including some close maternal kin, did not support the victim. Our observations detail a rare behavior that is not easy to reconcile with the assumed peaceful nature of bonobo society, but which contributes to evolutionary models of aggression.

https://www.cell.com/current-biology/fulltext/S0960-9822(25)01041-3

PATRICK BRUNS, KAZUHISA SHIBATA & TAKEO WATANABE – Conscious awareness determines whether a second learning session disrupts or facilitates earlier learning

Across various types of learning and memory, when a new training session follows a previous one after a certain temporal interval, the previously acquired learning can be disrupted—an effect known as retrograde interference (RI) or catastrophic forgetting. This disruption is thought to result from disrupting interactions between the learning of the first-trained task and the learning of the second-trained task while the former has not yet stabilized. Such destructive interactions have been considered characteristic not only of RI but also of related phenomena. However, we found that when the trained feature was subthreshold, the new learning session unexpectedly improved—rather than impaired—performance on the first-trained task, indicating a retrograde facilitation (RF) effect. We demonstrated this in visual perceptual learning (VPL) by conducting two successive training sessions on different coherent motion directions without any temporal gap. Consistent with previous research, when these directions were suprathreshold (10% coherent motion), the second session disrupted improvements

from the first, reflecting RI. By contrast, when the trained directions were subthreshold (5% coherent motion), performance improvement on the first-trained direction was greater with a second session than without—indicating RF. Notably, RF was not observed when a 1-h interval separated the two subthreshold training sessions. This finding suggests that facilitative interactions occur only before the learning of the first-trained direction is stabilized. These results provide a new insight: a stimulus detection system related to conscious awareness transforms what would otherwise be facilitative interactions between successive VPL sessions into disruptive ones.
https://www.cell.com/current-biology/fulltext/S0960-9822(25)01040-1

Developmental Cell

PAPERS

AURÉLIE LARDENOIS et al – Single-cell exploration of gonadal somatic cell lineage specification during human sex determination

Gonad development is an exciting model to study cell fate commitment. A better understanding of sex determination requires the identification of all involved cell types and their dynamic expression programs. Here, we present an atlas of 128,000 single cells from human gonads between 5 and 12 post-conceptional weeks. A focused analysis of somatic cells uncovered a population of bipotential progenitors derived from the coelomic epithelium of both testes and ovaries, which may have the capacity to commit to either a steroidogenic or a supporting fate. Moreover, our analyses suggest that early supporting cells, prior to differentiation into Sertoli or pre-granulosa cells, also give rise to the rete testis/ovarii and that the ovary retains the capacity to feed the supporting cell pool for an extended period of time, directly from the surface epithelium. Finally, the potential involvement of the gonadotropin releasing hormone (GnRH) signaling pathway in regulating testis differentiation was assessed ex vivo.
https://www.cell.com/developmental-cell/abstract/S1534-5807(25)00571-4

eLife

PAPERS

THERESE M.I. KOCH, ETHAN S. MARKS & TODD F. ROBERTS – AVN: A Deep Learning Approach for the Analysis of Birdsong

Deep learning tools for behavior analysis have enabled important new insights and discoveries in neuroscience. Yet, they often compromise interpretability and generalizability for performance, making it difficult to quantitively compare phenotypes across datasets and research groups. We developed a novel deep learning-based behavior analysis pipeline, Avian Vocalization Network (AVN), for the learned vocalizations of the most extensively studied vocal learning model species – the zebra finch. AVN annotates songs with high accuracy across multiple animal colonies without the need for any additional training data and generates a comprehensive set of interpretable features to describe the syntax, timing, and acoustic properties of song. We use this feature set to compare song phenotypes across multiple research groups and experiments, and to predict a bird's stage in song development. Additionally, we have developed a novel method to measure song imitation that requires no additional training data for new comparisons or recording environments and outperforms existing similarity scoring methods in its sensitivity and agreement with expert human judgements of song similarity. These tools are available through the open-source AVN Python package and graphical application, which makes them accessible to researchers without any prior coding experience. Altogether, this behavior analysis toolkit stands to facilitate and accelerate the study of vocal behavior by enabling a standardized mapping of phenotypes and learning outcomes, thus helping scientists better link behavior to the underlying neural processes.
https://elifesciences.org/reviewed-preprints/101111

Frontiers in Education

PAPERS

HESHAM ABDEL KARIM ALDAMEN et al – Testing Krashen's Input Hypothesis with AI: A Mixed-methods Study on Reading Input and Oral Proficiency in EFL

Provisionally accepted

This study investigated the impact of AI-generated graded reading materials on the oral proficiency of adult EFL learners in a six-month intervention. Ninety participants generated weekly texts using proficiency-aligned prompts and were assessed through pre-and post-intervention ACTFL Oral Proficiency Interviews, complemented by learner reflective journals. Quantitative results suggested significant proficiency gains across all initial levels, while thematic analysis of journals highlighted perceived benefits in vocabulary development, autonomy, and fluency. Together, these findings provide preliminary evidence consistent with Krashen's Input Hypothesis, while also linking AI-mediated reading to broader frameworks of scaffolding, vocabulary acquisition, and cognitive load management. At the same time, important limitations must be noted. The study relied on a single non-certified rater, lacked a control group, and did not systematically monitor the linguistic properties of AI-generated texts. Attrition was concentrated among Novice High learners, raising concerns about bias in proficiency outcomes. These constraints require cautious interpretation, and the results should be viewed as suggestive rather than definitive. Despite these limitations, the study contributes to current discussions on AI in language

education by illustrating how generative tools can provide scalable, proficiency-aligned input. It offers preliminary insights into the potential of AI-mediated reading to support oral proficiency development, while underscoring the need for more rigorous designs in future research.
https://www.frontiersin.org/journals/education/articles/10.3389/feduc.2025.1614680/abstract

Frontiers in Psychology

PAPERS

JULIA KREBS et al – Sign language encodes event structure through neuromotor dynamics: motion, muscle, and meaning

This study provides neuromotor evidence for the embodied kinematic encoding of grammatical event structure in sign language, using time-locked motion capture and surface electromyography (EMG) recordings from fluent Deaf ÖGS signers. Drawing on the Event Visibility Hypothesis, we examine how Austrian Sign Language (ÖGS) systematically distinguishes telic and atelic verbs through both visible kinematic parameters, as well as underlying muscle activation patterns.
We show that telic signs (those denoting bounded, goal-directed events) have shorter duration, later deceleration, lower movement variability, and distinct spectral activation in forearm and upper-arm muscles, as compared to atelic verb signs. Telic signs showed greater EMG co-contraction but lower cross-correlation than atelic verb signs, reflecting temporally precise antagonistic muscle coordination, and suggesting that grammatical contrasts in sign language are produced based on finely tuned motor control schemas.
These results directly address current challenges in embodiment research by demonstrating replicable, interpretable neuromotor correlates of linguistic structure in a visual-manual modality. By capturing how grammatical distinctions are produced by manual articulators, we contribute high-resolution empirical data and analysis methods toward understanding embodied language and linguistic motor control. In addition, our results support the linguistic interpretation that telic verb signs are morphologically marked in a way that atelic verb signs are not.
https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2025.1689676/full

Nature

PAPERS

BUDIANTO HAKIM et al – Hominins on Sulawesi during the Early Pleistocene

The dispersal of archaic hominins beyond mainland Southeast Asia (Sunda) represents the earliest evidence for humans crossing ocean barriers to reach isolated landmasses. Previously, the oldest indication of hominins in Wallacea, the oceanic island zone east of Sunda, comprised flaked stone artefacts deposited at least 1.02 ± 0.02 million years ago (Ma) at Wolo Sege on Flores. Early hominins were also established on the oceanic island of Luzon (Philippines), as indicated by both stone artefacts and cut marks on faunal remains dating to between 777 and 631 thousand years ago (ka) at Kalinga. Moreover, fossils of extinct, small-bodied hominins occur on Flores (Homo floresiensis) and Luzon (Homo luzonensis). On Sulawesi, the largest Wallacean island, previous excavations revealed stone artefacts with a minimum age of 194 ka at the open site of Talepu in the Walanae Depression, long preceding the earliest known presence of modern humans (Homo sapiens) in the region (73–63 ka in Sunda). Here we show that stone artefacts also occur at the nearby site of Calio in fossiliferous layers dated to at least 1.04 Ma and possibly up to 1.48 Ma, using palaeomagnetic dating of sedimentary rocks and coupled Uranium-series (U-series) and electron-spin resonance (US–ESR) dating of fossil teeth. The discovery of Early Pleistocene artefacts at Calio suggests that Sulawesi was populated by hominins at around the same time as Flores, if not earlier.
https://www.nature.com/articles/s41586-025-09348-6

OBITUARIES

RICHARD WRANGHAM – Jane Goodall obituary: pioneer primatologist who inspired generations of scientists

She was a tireless advocate for conservation, the welfare of captive chimpanzees and the protection of habitats.
https://www.nature.com/articles/d41586-025-03227-w

Nature Communications Biology

PAPERS

YINGYING SUN et al – Neural representation of mixed feelings during real-time processing of negative words in pun-humor

People commonly experience mixed feelings in everyday life. However, whether and to what extent mixed feelings represent a truly simultaneous experience of ambivalent emotional states remains elusive. This electroencephalogram (EEG) study aimed to investigate how mixed feelings blending amusement and negativity are dynamically experienced over time. Specifically, the neural representations of negativity and amusement were quantified during the real-time processing of negative words in pun-humor sentences. The results showed that, compared to non-humor and nonsensical sentences, pun-humor sentences with negative words received higher ratings of both amusement and negativity, indicating that such material can effectively elicit mixed feelings at the level of explicit behavior. Moreover, within the dynamic representation of mixed feelings, negativity was experienced first, whereas amusement was subsequently felt within a brief period, during

which negativity was not offset but rather continued to be represented over a longer time span, resulting in the simultaneous presence of both amused and negative feelings. These findings revealed that mixed feelings can be dynamically experienced in the highly simultaneous pattern, offering insights into the genuine blend of conflicting emotional states at the level of neural representation.
https://www.nature.com/articles/s42003-025-08857-4

Nature Computational Science

ARTICLES

SOPHIE SLAATS – How neural rhythms can guide word recognition
The recent computational model 'BRyBI' proposes that gamma, theta, and delta neural oscillations can guide the process of word recognition by providing temporal windows for the integration of bottom-up input with top-down information.
https://www.nature.com/articles/s43588-025-00888-5

Nature Ecology & Evolution

PAPERS

WILLIAM E. FEENEY et al with CLAIRE N. SPOTTISWOODE – Learned use of an innate sound-meaning association in birds
Signals in vocal communication systems range from innate to learned. Although innate and learned signals are often assumed to be independent, Darwin speculated that they could be evolutionarily related, with the former being the foundation of the latter even in our own communication system, language. Here we test this hypothesis by studying the vocal communication systems of avian hosts of brood parasites. First, we show that 21 bird species separated by approximately 53 million years of evolution produce structurally similar 'whining' vocalizations towards their respective brood parasites. Exploring the social correlates of whining vocalization production, we find that species that produce this vocalization often exist in areas with dense parasite–host networks, suggesting that its production facilitates interactions among host species. Experiments across three continents show that this vocalization is referential towards brood parasites in multiple host species, that hearing them elicits an innate rapid recruiting response, and that host species from different continents respond equally to the whining vocalizations of each other, indicating that convergent use facilitates cooperative defences across species. Our results provide an example of a referential animal vocalization for which sound production in the correct context is learned but for which hearing it elicits an innate response, representing an intermediate between innate and learned signals.
https://www.nature.com/articles/s41559-025-02855-9

New Scientist

ARTICLES

PETER ROWLETT – Learning to play nice with other people
How did cooperation emerge in a cut-throat world? There are clues in the prisoner's dilemma experiment.
https://www.newscientist.com/article/mg26735641-000-learning-to-play-nice-with-other-people/

OBITUARIES

ROWAN HOOPER – How Jane Goodall changed the way we see animals – and the world
Jane Goodall, who chronicled the social lives of chimps, has died, but she leaves a lasting legacy on how we view the natural world.
https://www.newscientist.com/article/2498651-how-jane-goodall-changed-the-way-we-see-animals-and-the-world/

Patterns

PAPERS

FENGLI XU et al – Toward large reasoning models: A survey of reinforced reasoning with large language models
Language has long been an essential tool for human reasoning. The rise of large language models (LLMs) has led to research on their application in complex reasoning tasks. Researchers are exploring the concept of "thought," which represents intermediate reasoning steps, allowing LLMs to emulate humanlike reasoning processes. Recent work has applied reinforcement learning (RL) to train LLMs by searching for high-quality reasoning trajectories through trial-and-error exploration. In parallel, studies also demonstrate that allowing LLMs to "think" with longer chains of intermediate tokens at test time can also substantially improve reasoning accuracy. The combination of training and test-time advancements outlines a path toward large reasoning models. This survey reviews recent progress in LLM reasoning. It covers foundational concepts behind LLMs and the key technical components that contribute to the development of large reasoning models, and it highlights popular open-source projects for building these models. The survey concludes by discussing ongoing challenges and future research directions in this field.
https://www.cell.com/patterns/fulltext/S2666-3899(25)00218-1

PLoS Biology

PAPERS

SONJA WILD, GUSTAVO ALARCÓN-NIETO & LUCY M. APLIN – Siblings and nonparental adults provide alternative pathways to cultural inheritance in juvenile great tits

In many animal species, the juvenile period is under strong selection, leading to a concentration of social learning during this stage as an efficient strategy for young individuals to acquire skills essential for survival. However, as social learning is not always adaptive, juveniles need to be strategic in when, who, and what to copy. In species with extended parental care, parents are often preferred sources of information, leading to stable intergenerational transmission of knowledge. However, little is known about transmission pathways in species with limited periods of parental care, and their implication for cultural inheritance. Here, we investigate social learning strategies during development in a model species with a dependence period of a few weeks, the great tit (Parus major). Using fully automated two-option foraging puzzles, we diffused knowledge about the puzzle through breeding populations and then constrained parental individuals' choices such that parents either (1) both had knowledge of the same option, (2) had conflicting knowledge of the two options, or (3) had no knowledge of how to solve the puzzle. We then tracked solving behavior of 229 newly fledged juveniles over 10 weeks. Parental solving frequency during dependence strongly predicted knowledge acquisition by offspring, suggesting intergenerational cultural inheritance. However, detailed investigation of learning pathways revealed siblings as the most important role models for social learning, followed by nonparental adults and parents. Furthermore, offsprings' option choices were not predicted by parental choices, but instead influenced by the broader social environment, with evidence for a conformist learning bias. Overall, by using large-scale experimental manipulation of parental behavior, our study offers new insights into social learning pathways and mechanisms of cultural inheritance in r-selected species with limited parental care and multiple offspring. Our findings provide a stark contrast to most previously studied systems exhibiting multigenerational cultures, where cultural transmission overwhelmingly occurs from parents to offspring, and give insights into the more variable transmission routes that might occur across socially learning species.
https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3003401

THOMAS J. STOLL et al – The auditory brainstem response to natural speech is not affected by selective attention

The ability to pick out and attend to one sound in a noisy mixture underpins successful communication in many natural scenarios. Selective attention has been shown to drastically alter sound encoding in the cortex and has been hypothesized to modulate subcortical processing via an extensive efferent network. The body of work investigating this possibility in humans has not resulted in a clear consensus, possibly owing to limitations in the available methodologies. Here, we used new experimental tools that allowed distinct neural responses from across the auditory pathway to be simultaneously acquired from human listeners attending to the sound of one person talking while ignoring a second. Our series of experiments provide convergent evidence that selective attention does not influence sound encoding in the auditory periphery or brainstem, with an effect first appearing in the cortex. Humans' ability to focus their attention on a single sound even in the presence of many others is as remarkable as it is essential. These findings add needed clarity regarding the mechanisms that make this feat possible.
https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3003407

PLoS One

PAPERS

GEORGE MURĂTOREANU & MARIAN COSAC – Tracing Neanderthal mobility through the Romanian Carpathians: A GIS-based least-cost connectivity model

Out of the 12,300 known caves within the Romanian Carpathian and Dobrudja mountain area, only 16 have been the focus of consistent archaeological researches which revealed traces of human activity (lithic artefacts, faunal material, combustion areas), roughly consistent with a Middle Palaeolithic technological and/or chronological background. Establishing natural areas connected in terms of accessibility to these caves may offer a different perspective for future researches and, above all, may increase the chances of discovering new caves with traces of human activity. The present study aims to integrate advanced spatial analysis methods, such as Linkage Mapper and Circuitscape, to assess the potential connectivity of these sites. The two models were developed by researchers in the field of biology and belong to the field of deterministic spatial modeling and algorithm-based geospatial analysis. Following the application of these models, we identified the areas of influence of the 16 caves, determined the least-cost paths between them and the main natural obstacles, in order to model spatial connectivity and identify new possible sites along these routes.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0334149

BENIAMINO MECOZZI et al – From meat to raw material: the Middle Pleistocene elephant butchery site of Casal Lumbroso (Rome, central Italy)

The site of Casal Lumbroso is located in the north-west sector of Rome (central Italy). Stratigraphic and geochemical data presented here evidence that the archaeological and paleontological horizon lies at the top of the Tiber River aggradational succession related to the MIS 11c sea level highstand (dated at ca. 404 ka), and that the paleohabitat was characterised by

wooded environments and humid climatic conditions. Paleontological analysis allows attributing most of the remains to an adult individual of straight-tusked elephant, Palaeoloxodon antiquus, with sporadic elements referred to Stephanorhinus sp., Bovinae, Cervinae, Cervus elaphus, Dama sp., Canis sp., Oryctolagus sp., Talpa sp., Testudines, and Amphibia. Two bird remains are referred to Anatidae and Strigiformes. A rich lithic assemblage, mainly made of flint, was also found associated with the fossil remains. Taphonomic, technological and functional analyses indicate that the P. antiquus carcass was probably exploited by humans not only as a food source, but also as a source of raw material, as documented by the presence of several intentionally fractured elephant bone fragments, some of them also with flake removals, with localized use wear traces. The findings at Casal Lumbroso highlight once again the importance of the territory around the city of Rome for Middle Pleistocene studies. The northwestern sector of the city, where other important sites such as Castel di Guido and La Polledrara di Cecanibbio have also been discovered, is therefore crucial for understanding human strategies for exploiting elephant carcasses.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0328840

Science Advances

PAPERS

MASANORI YAMAKAWA et al – Quantitative and systematic behavioral profiling reveals social complexity in eusocial naked mole-rats

In highly organized animal societies, individual behavioral differences and close social relationships are crucial for group success and cohesion. However, in naked mole-rats, a eusocial mammal, these factors remain poorly understood because monitoring all colony members simultaneously is challenging. We developed an automated radio frequency identification (RFID) tracking system to continuously collect behavioral data from entire colonies, monitoring 102 individuals from five colonies for 30 days. Based on behavioral parameters, we statistically identified distinct behavioral phenotypes, comprising one cluster for breeders and six clusters for nonbreeders. Breeders formed strong social bonds, consistently remaining close in activity rhythm synchrony, spatial proximity, and directional following. In contrast, nonbreeders exhibited behavioral heterogeneity according to their cluster: One cluster avoided other active nonbreeders, whereas another cluster attracted frequent following. Our study highlights social complexity in this eusocial mammal and establishes a robust platform for further investigations into naked mole-rat social dynamics.
https://www.science.org/doi/10.1126/sciadv.ady0481

Trends in Cognitive Sciences

ARTICLES

SUSAN HESPOS, ANTONIA GÖTZ & TIJL GROOTSWAGERS – A world of things and stuff

It appears simple that every entity in our perceptual array is a thing (object) or stuff (substance). Yet, a recent article by Paulun and colleagues reveals that there are many puzzles to be solved about how we perform this seemingly simple perception.
https://www.cell.com/trends/cognitive-sciences/abstract/S1364-6613(25)00272-4

AENNE A. BRIELMANN – How do we see style?

In a recent series of experiments, Boger and Firestone ask: How do we perceive style?'. Their findings suggest that style perception relies on basic perceptual processes involved in differentiating image content from its context. Their research highlights that we need to understand both content and style processing to fully understand perception.
https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(25)00275-X

LINDA KERBL et al – More than incurious: the development of deliberate ignorance

In an information-rich world the ability to choose not to know is an important cognitive tool. But what are the developmental origins of deliberate ignorance? We identify a selection of cognitive capacities and changes in children's information ecology that make deliberate ignorance increasingly possible – and desirable – across development.
https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(25)00254-2

PABLO BARTTFELD et al – Pre- and post-decision signals of certainty in changing minds

In a recent study, Goueytes and colleagues combined computational modeling with intracranial recordings to dissect the neural basis of confidence and changes of mind. They reveal a temporally organized, spatially distributed hierarchy of evidence accumulation, with pre-decisional signals in the pre-supplementary motor area (preSMA) and post-decisional signals in the insula. This reframes metacognition as a distributed and dynamic process.
https://www.cell.com/trends/neurosciences/abstract/S0166-2236(25)00196-1

PAPERS

NED BLOCK – Can only meat machines be conscious?

Computational functionalism claims that executing certain computations is sufficient for consciousness, regardless of the physical mechanisms implementing those computations. This view neglects a compelling alternative: that subcomputational biological mechanisms, which realize computational processes, are necessary for consciousness. By contrasting computational roles with their subcomputational biological realizers, I show that there is a systematic tension in our criteria for consciousness: prioritizing computational roles favors consciousness in AI, while prioritizing subcomputational biological realizers favors consciousness in simpler animals. Current theories of consciousness are 'meat-neutral', but if specific physical substrates are necessary, AI may never achieve consciousness. Understanding whether consciousness depends on computational roles, biological realizers, or both, is crucial for assessing the prospects of consciousness in AI and less complex animals.
https://www.cell.com/trends/cognitive-sciences/abstract/S1364-6613(25)00234-7

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