EAORC BULLETIN 1,155 – 3 August 2025

CONTENTS

NOTICES

FORMATTED VERSION OF THIS BULLETIN

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

PUBLICATION ALERTS

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

EDITORIAL INTERJECTIONS

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

NEWS

NATURE BRIEFING – Neanderthal cooking had a secret ingredient

Neanderthals (Homo neanderthalensis) might've enjoyed an unusual culinary delight: maggots. The peculiar dietary choice could explain why the bones of some Neanderthals (Homo neanderthalensis) contain an extreme level of a certain isotope of nitrogen. Such levels are normally only seen in animals that eat huge quantities of meat. A new study suggests that our ancestors might've eaten putrefied meats — and the maggots feasting on them. This nitrogen isotope would have accumulated in the maggots as they chowed down on the rotting flesh, then passed on to the hungry Neanderthals.
https://www.nature.com/articles/d41586-025-02334-y

NATURE BRIEFING – The quest to detect consciousness

As advanced neuroimaging technology becomes more widely available, scientists have been developing new, more accurate ways to test for consciousness. Assessing whether an unresponsive person is conscious can guide crucial treatment decisions, such as whether to continue their life support. But the need for better consciousness tests doesn't only apply to humans. Detecting consciousness in other species can have implications for animal-welfare policies. And as artificial intelligence research ploughs forward, researchers are locked in debate as to whether consciousness could emerge from such technologies — and how we would know if it did.
https://www.nature.com/articles/d41586-025-02349-5

NEWS FROM SCIENCE – Genomewide study makes 'quantum leap' in understanding stuttering

Analysis of DNA from 23andMe users points to variants in genes linked to brain function and sense of rhythm.
https://www.science.org/content/article/genome-wide-study-makes-quantum-leap-understanding-stuttering

NEWS FROM SCIENCE – Our ancestors' taste for fermenting fruit paved a boozy evolutionary path

Eating fallen fruit—or "scrumping"—plays a bigger part in many apes' diets than scientists realized.
https://www.science.org/content/article/our-ape-ancestors-taste-fermenting-fruit-may-have-paved-boozy-evolutionary-path

SCIENCEADVISER – Stuttering is genetic

When King George VI took to the microphone in 1939 to announce that Britain was at war with Germany, his speech therapist Lionel Logue was right by his side. The King had severe stuttering since childhood and struggled with the social stigma associated with the disorder. New research published today in Nature Medicine finds 57 unique DNA regions associated with stuttering in the largest and most comprehensive look at genetic stuttering to date.
Researchers looked at 1.1 million 23andMe genetic profiles, of those who self-reported stuttering and those who didn't, and located 57 DNA regions. Variants in these genes have been previously associated with neurodevelopmental disorders and trouble with rhythm. They also found causal links between stuttering, and depression and autism.
The stuttering research community is excited by the findings. While many other biomedical topics have many genetic association studies, stuttering has been left behind. The authors say that the findings add to a growing body of evidence that stuttering is a complex polygenic trait, akin to other complex genetic disorders such as type 2 diabetes—and not the result of trauma or personal failing, as many still assume. "It's time for us to absolutely reconceptualize what stuttering really is," speech researcher Greg Snyder, who himself stutters, told ScienceAdviser.
https://www.science.org/content/article/genome-wide-study-makes-quantum-leap-understanding-stuttering

SCIENCEADVISER – Killer buddy system

Killer whales team up to maximize their catches: One member of the duo stuns herring by hitting them with its powerful tail while the other blocks any fish that try to get away. The creatures then feast on their bounty together. Everything really is better with friends.
https://www.cell.com/current-biology/fulltext/S0960-9822(25)00745-6

SCIENCEADVISER – Forget touching grass—early humans ate it

Fossils are great for revealing how organisms' visible features changed over millions of years of evolution. But when it comes to how they behaved—what they ate, how they socialized, how they moved—researchers need to look beyond bones. An evolutionary theory called "behavioral drive" connects the two worlds by proposing that pivotal changes in animal behavior can actually drive the evolution of new physical attributes.

Researchers have now focused on one strange behavior as a case study of this theory: primates eating grasses and sedges, despite them being tough, fibrous, and relatively low in energy. To determine when primates started eating these carb-y plants, the researchers examined fossil teeth for carbon and oxygen isotopes to shed light on the kinds of foods an animal ate. They also tracked the length of a molar tooth in primate fossils over time to find out when their teeth evolved to better munch on these plants, since longer molars are expected to help animals beneficially chew fibrous grasses and withstand abrasion from tough particles.

Put together, the data suggested that in hominins, dietary shifts preceded dental shifts by about 700,000 years—our ancient human relatives were eating fibrous foods long before they had the teeth for them. Then, around 2.3 million years ago, early humans abruptly stopped eating as much grass and switched to more energy-rich, less seasonal tubers and bulbs. Other groups of primates analyzed in the study stuck with their grassy meals, however, potentially limiting their ability to become as widespread as us, the authors suggest.

https://www.science.org/doi/10.1126/science.ado2359

SCIENCENEWS – Maggots may have been on the Neandertal menu

Maggots on rotting meat may have given Neandertals' a fatty, nitrogen-rich boost, a study of their bones suggests.

https://www.sciencenews.org/article/maggots-neandertal-diet

THE CONVERSATION – English universities now have a duty to uphold freedom of speech

Belonging can also mean being able to challenge dominant norms and discourses.

https://theconversation.com/english-universities-now-have-a-duty-to-uphold-freedom-of-speech-heres-how-it-might-affect-students-sense-of-belonging-260867

PUBLICATIONS

American Journal of Biological Anthropology

PAPERS

MATTEO CALDON et al – Baboons at a Crossroads: Hybridisation Events and Genomic Links of Central Mozambique's Baboons with Papio Neighbors

Hybridisation plays a critical role in species evolution and is widespread among primates, particularly in the genus Papio. Several baboon hybridisation zones have been identified in Africa, with Gorongosa National Park in Mozambique being notable for chacma baboons exhibiting phenotypic and genomic traits of both chacma and yellow baboons. This study builds on earlier research by leveraging new genomic data to refine our understanding of the relationships between Central Mozambique baboons and other baboon populations, focusing on chacma, yellow, and kinda baboons.

We analyzed uniparental genetic markers alongside autosomal and X chromosome variants, incorporating unpublished low-coverage genomes from fecal samples collected in Central Mozambique. These data were compared with the broader genomic landscape of Papio baboons based on recent surveys.

The analysis of uniparental markers suggests a time to the most recent common ancestor of less than 200kya for chacma baboons in Zambia and Gorongosa, with both lineages sharing a node with yellow baboons from Tanzania less than 1 Mya. Genomic analyses indicate introgression in Central Mozambique and Zambia chacmas likely originated from populations closer to eastern rather than western Tanzanian yellow baboons.

Our findings reveal yellow baboon introgression in Central Mozambique chacmas, confirming this being a region hosting baboons with complex ancestry composition. Broader genomic surveys across Mozambique are necessary to uncover the population structure and evolutionary history of chacmas in this area, as well as the role of this region as a biodiversity crossroads for primates.

https://onlinelibrary.wiley.com/doi/full/10.1002/ajpa.70082

Behavioral and Brain Sciences

PAPERS

RICHARD FUTRELL & KYLE MAHOWALD – How Linguistics Learned to Stop Worrying and Love the Language Models

Language models can produce fluent, grammatical text. Nonetheless, some maintain that language models don't really learn language and also that, even if they did, that would not be informative for the study of human learning and processing. On the other side, there have been claims that the success of LMs obviates the need for studying linguistic theory and structure. We argue that both extremes are wrong. LMs can contribute to fundamental questions about linguistic structure, language

processing, and learning. They force us to rethink arguments and ways of thinking that have been foundational in linguistics. While they do not replace linguistic structure and theory, they serve as model systems and working proofs of concept for gradient, usage-based approaches to language. We offer an optimistic take on the relationship between language models and linguistics.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/how-linguistics-learned-to-stop-worrying-and-love-the-language-models/2395C24EB472B60B2514F7D5F93EB9A8

Current Biology

PAPERS

PAOLO DOMENICI et al – Spatially coordinated predation with division of labor increases feeding success in killer whales

Group hunting is widespread among large vertebrates and is known to confer considerable advantages compared with foraging alone. Yet, the mechanisms underlying group hunting, including how social predators are organized during a hunt, are largely unknown for marine predators. Using drone videos, we tracked the predatory behavior of killer whales along the Norwegian coast to test the hypothesis that group hunting is organized in space, both in terms of individual roles and interactions with conspecifics. Taking advantage of shallow water hunts that reduced the interactions to a 2D horizontal plane, we reveal that whales using underwater tail slaps (i.e., "strikers") to stun herring are more likely to hunt near a neighbor (i.e., a "helper") rather than alone, and such "joint slaps" show higher feeding success (measured as feeding bout duration) than "alone slaps." At the onset of a joint slap, the position of the whales follows a specific geometrical pattern. Whales preferentially take roles as strikers or helpers, with division of labor determined by size: larger individuals predominantly act as strikers in line with their higher feeding success compared with smaller whales. Both striking and helping behaviors are more likely to be observed in males than in females. Individuals involved in joint slaps have preferred partners, with whom they share multi-decadal social bonds, likely allowing repeated opportunities to practice and learn to bestow enhanced geometric positioning and hunting success. These findings highlight the importance of social organization, long-term bonding, and developmental learning in the cooperative hunting of marine mammals.
https://www.cell.com/current-biology/fulltext/S0960-9822(25)00745-6

VIVIAN C. PAULUN et al with NANCY KANWISHER – Dissociable cortical regions represent things and stuff in the human brain

Extensive prior work has identified regions of the human brain associated with visual perception of objects (lateral occipital complex [LOC]) and their physical properties and interactions ("frontoparietal physics network" [FPN]). However, this work has nearly exclusively tested the response of these regions to rigid objects. Deformable or nonsolid substances, or "stuff," including liquids such as water or honey and granular materials such as sand or snow, are of similar importance in everyday life but have different physical properties and invite different actions. Little is known about the brain basis of stuff perception. Here, we scan participants with functional MRI (fMRI) while they view videos of rigid and non-rigid objects ("things") and liquid and granular substances (stuff). We find double dissociations between the processing of things and stuff within both the ventral and dorsal visual pathways. These findings suggest that distinct mental algorithms are engaged when we perceive things and stuff, as they are in artificial physics engines.
https://www.cell.com/current-biology/abstract/S0960-9822(25)00893-0

eLife

PAPERS

NIKOLAOS SMIT & MARTHA M ROBBINS – Risk-taking incentives predict aggression heuristics in female gorillas
Reviewed Preprint.

Competition is commonly reflected in aggressive interactions among groupmates, as individuals try to attain or maintain higher social ranks that can offer them better access to critical resources. In this study, we investigate the factors that can shift competitive incentives against higher- or lower-ranking groupmates, that is, more or less powerful individuals. We use a long-term behavioural dataset on five wild groups of the two gorilla species starting in 1998, and we show that most aggression is directed from higher- to lower-ranking adult females close in rank, highlighting rank-reinforcement incentives. Yet, females directed 42% of aggression to higher-ranking females than themselves. Females targeted groupmates of higher rank with increasing number of males in the group, suggesting that males might buffer female-female aggression risk. Contrarily, they targeted females of lower rank with increasing number of females in the group, potentially because this is a low risk option that females prefer when they have access to a larger pool of competitors to choose from. Lactating and pregnant females, especially those in the latest stage of pregnancy, targeted groupmates of higher rank than the groupmates that cycling females targeted, suggesting that energetic needs may motivate females to risk confrontation with more powerful rivals. Our study provides critical insights into the evolution of competitive behaviour, showing that aggression heuristics, the simple rules that animals use to guide their aggressive interactions, are not simply species-specific but also dependent on the conditions that populations and individuals experience.
https://elifesciences.org/reviewed-preprints/107093

LENNART LUETTGAU et al – A neural mechanism for compositional generalization of structure in humans
Reviewed Preprint.
A human ability to adapt to the dynamics of novel environments relies on abstracting and generalizing from past experiences. Previous research has focused on how humans generalize from isolated sequential processes, yet we know little about mechanisms that enable adaptation to more complex dynamics, including those that govern much everyday experience. Here, using a novel sequence learning task based on graph factorization, coupled with simultaneous magnetoencephalography (MEG) recordings, we asked how reuse of experiential "building blocks" enables inference and generalization. Behavioral evidence was consistent with participants decomposing task experience into subprocesses, involving abstracting dynamical subprocess structures away from their sensory specifics and transferring these to a new task environment. Neurally this transfer was underpinned by a representational alignment of abstract subprocesses across task phases, evident in an enhanced neural similarity among stimuli that adhered to the same subprocesses, a temporally evolving mapping between predictive representations of subprocesses and a generalization of the dynamic roles that stimuli occupied within graph structures. Decoding strength for dynamical role representations predicted behavioral success in transfer of subprocess knowledge, consistent with a role in supporting behavioral adaptation in new environments. Our findings reveal neural dynamics that support compositional generalization, consistent with a structural scaffolding mechanism that facilitates efficient adaptation within new contexts.
https://elifesciences.org/reviewed-preprints/107162

Evolutionary Human Sciences

PAPERS

SALOMÉ STRAUCH et al – African harps as units of cultural evolution: a cladistic analysis on their morphology
In Africa, harps exhibit significant morphological diversity, yet their historical trajectory remains largely underexplored. Phylogenetic reconstruction methods offer valuable tools for understanding this diversity and the relationships between groups of harps. This study is among the first to apply one of these methods, cladistics, to the morphology of a musical instrument, analyzing 318 harps and 83 characters. We present a well-resolved phylogenetic tree, which shows several clades corresponding to geo-cultural regions, in alignment with ethnomusicological classifications. We show that this tree robustly represents the patterns of vertical transmission in the cultural evolution of harp morphology across Africa, despite the limited contribution of several tested characters. Additionally, a comparison with previous research reveals that characters coding decorations exert a minimal influence on the vertical evolution of these musical instruments. These findings provide valuable insights into the cultural evolution of harps on a continental scale, offering a clearer understanding of their diversity and revealing major evolutionary mechanisms.
https://www.cambridge.org/core/journals/evolutionary-human-sciences/article/african-harps-as-units-of-cultural-evolution-a-cladistic-analysis-on-their-morphology/56B0F5C50F30AD07C5D7362B7CE43A34

CHRISTOPHER D. BUCKLEY et al – Contrasting modes of cultural evolution: Kra-Dai languages and weaving technologies
We investigate and compare the evolution of two aspects of culture, languages and weaving technologies, amongst the Kra-Dai (Tai-Kadai) peoples of southwest China and southeast Asia, using Bayesian Markov-Chain Monte Carlo methods to uncover phylogenies. The results show that languages and looms evolved in related but different ways, and bring some new insights into the diaspora of the Kra-Dai speakers across southeast Asia. We found that the languages and looms used by Hlai speakers of Hainan are outgroups in both linguistic and loom phylogenies, and that the looms used by speakers of closely related languages tend to belong to similar types. However, we also found discrepancies at a deep level between linguistic subgroups and loom types, in particular among widely dispersed South-Western Tai speakers, and we discuss possible reasons for this.
https://www.cambridge.org/core/journals/evolutionary-human-sciences/article/contrasting-modes-of-cultural-evolution-kradai-languages-and-weaving-technologies/5A71D64485DC03FB5D238DA9789C3E33

Frontiers in Ecology and Evolution

PAPERS

RHIANNA C. DRUMMOND-CLARKE et al with TRACY L. KIVELL – Foraging strategy and tree structure as drivers of arboreality and suspensory behaviour in savannah-dwelling chimpanzees
The association between an open habitat (e.g., savannah-mosaics) and increased terrestriality is central to hypotheses of hominin evolution, especially the emergence and evolution of bipedalism, as well as ape evolution as far back as the early Miocene. However, the selective pressures that act on apes in an open habitat remain poorly understood. Observations of chimpanzees that live in savannah-mosaics, analogous to some reconstructed hominoid palaeohabitats, can provide valuable insight into the behavioural adaptations of a large-bodied, semi-arboreal ape to an open habitat, characterised by sparsely distributed food sources and a broken canopy. We previously showed that savannah-dwelling chimpanzees in the Issa Valley, western Tanzania, maintain a high level of arboreality, and particularly suspensory behaviour, largely associated with

foraging. Here, we investigate how chimpanzee foraging strategy in a savannah-mosaic may drive a high frequency of arboreal behaviours despite reduced arboreal pathways. Specifically, we hypothesized that Issa chimpanzees would spend more time foraging (and moving) per tree to maximize utilization of food in a sparse landscape. This foraging strategy would be facilitated by foraging in trees with large crowns and abundant terminal-branch foods, which are characteristic of miombo woodlands. However, the link between foraging positional behaviour and tree structure remains understudied.
We collected data on arboreal foraging behaviour and corresponding tree structural characteristics over five months in the dry season, and used generalized linear mixed models to test for any effect of food type and tree structural characteristics on (1) duration of foraging bouts, (2) frequency of locomotion, and (3) use of suspensory behaviour.
We found that food types and tree structures found in woodland vegetation are associated with more time spent in foraging trees, a higher rate of locomotion, and the use of suspension in particular.
Our results suggest that arboreal, and especially suspensory, locomotion can be advantageous for foraging in a savannah-mosaic and not just closed forest habitats. These findings have implications for reconstructing hominoid positional behaviour from the fossil record and provide a model for how arboreality, and specifically suspensory behaviour, could have been an important part of the hominoid niche in savannah-mosaic habitats.
https://www.frontiersin.org/journals/ecology-and-evolution/articles/10.3389/fevo.2025.1561078/full

Frontiers in Human Neuroscience

PAPERS

KATHERINE MARIE TRICE & ZHENGHAN QI – From Encoding to Remembering: Pragmatic Inferences Reveal Distinct Routes of Word Learning in Autistic Children

Provisionally accepted - The final, formatted version of the article will be published soon.

Mentalizing skills—the capacity to attribute mental states—play critical roles in word learning during typical language development. In autism, mentalizing difficulties may constrain word-learning pathways, limiting language-acquisition opportunities. We ask how autistic children encode and retrieve novel words and what drives individual differences. We test whether autistic children's word learning benefits from pragmatic inferences, as in non-autistic (Trice et al., 2025). Forty-nine 6-to-9-year-old verbal autistic children participated. During learning, four novel words in the direct-mapping condition (DM) could be uniquely mapped to one novel object and four in the pragmatic-inference condition (PI) required children to assume speaker intent. Immediate recall and retention (15-minute delay) were tested via four-alternative-forced-choice-task. Autistic children showed above-chance PI mapping, no immediate recall differences, and PI retention advantage. However, individual difference analyses suggest a bimodal PI-retention pattern: 55% showed above-chance PI word recognition (PI-Retained) and 45% at-or-below-chance (PI-Limited). Retention profiles don't reflect general memory—most PI-Limited children remembered DM words well. Instead, profile was associated directly with learning success. For PI-Limited specifically, learning performance was at-chance. Eye-movement during learning showed converging evidence: only PI-Retained consistently diverged between looks-to-target and competitor. Only nonverbal IQ in conjunction with initial mapping reliably differentiated groups, not mentalizing or language measures. This suggests distinct pathways of word-meaning acquisition in autistic children with otherwise similar profiles. While PI resolution may facilitate word-meaning acquisition for some, DM better serves others. This underscores the importance of characterizing learning processes as a pathway to understanding the heterogeneity of language in autism.
https://www.frontiersin.org/journals/human-neuroscience/articles/10.3389/fnhum.2025.1633013/abstract

iScience

PAPERS

SARAH PIEPER et al – How do preschoolers and adults ascribe authority?

Determining social hierarchies is an essential part of successful social behavior and already children are aware of hierarchical relationships. However, which cues humans use to determine hierarchies is highly variable, includes behavioral as well as perceptual cues, and changes throughout development. To investigate the interplay between different cues, preschoolers and adults participated in a behavioral paradigm comparing the impact of helping behavior (behavioral cue) and body height (perceptual cue) on the attribution of authority. Results revealed a double dissociation: Children did not use helping behavior as an indicator but attributed more authority to taller individuals. In contrast, adults ascribed more authority to a person who refused to help, but did not consider body height. A helping person was generally judged as nicer, suggesting that both, children and adults, interpreted the depicted situations correctly. Hence, our results suggest that children and adults use different information to attribute authority.
https://www.cell.com/iscience/fulltext/S2589-0042(25)01540-8

Language and Cognition

PAPERS

ANDROMACHI TSOUKALA, MARGREET VOGELZANG & IANTHI MARIA TSIMPLI – The influence of text segmentation on garden path processing: evidence from self-paced reading and eye-tracking

Line breaks are ubiquitous in continuous text, as in this article. Despite this prevalence, their effects on parsing and interpretation have been markedly understudied in previous research on written language processing. To shed light on these effects, we conducted a self-paced reading and an eye-tracking study in which participants read multiline texts that contained direct object–subject ambiguity, a type of temporary clause boundary ambiguity. Within these texts, we manipulated the placement of line breaks so that they either regularly coincided or clashed with clause boundaries. We hypothesised that this manipulation would cause readers to adjust their parsing strategies and interpretative commitments. Results revealed that the way in which text is segmented through line breaks can significantly affect how readers parse syntactically ambiguous structures. While coinciding line breaks and clause boundaries helped readers arrive at the correct analysis of the ambiguous structures, cases of line break and clause boundary clash led readers down the garden path during online processing, and in some cases also impacted their comprehension. Findings are discussed in terms of their implications for the importance of text segmentation in real-world settings, such as books, educational material and digital content.
https://www.cambridge.org/core/journals/language-and-cognition/article/influence-of-text-segmentation-on-garden-path-processing-evidence-from-selfpaced-reading-and-eyetracking/7D73CA431F88F57CE3E5F2368D005354

SARA FERNÁNDEZ SANTOS, MIQUEL LLOMPART & EWA DĄBROWSKA – Predictive processing can override perceptual information: evidence from Spanish object relative clauses

This study examines the role of the timing of obligatory disambiguating information – obligatory cues – and presence/absence of optional morphological markers in resolving temporary syntactic ambiguity in Spanish object relative clauses. Native adult comprehension (Study 1) reveals similar accuracy for clauses with relatively early obligatory cues, regardless of the presence/absence of additional markers, and those with late obligatory cues with additional markers, but reduced accuracy for those with late obligatory cues without additional markers. Given the phonetic resemblance of the late-disambiguated variant with its corresponding subject relative, we conduct two follow-up perceptual identification tasks with the whole relative clause, including the head (Study 2), and relative clause fragments (Study 3). The identification tasks show that, when instructed to attend to the form of the structures, participants perceive acoustic differences but retain a bias towards subject-relative interpretations. Our results suggest that additional markers aid comprehension of non-canonical structures when obligatory cues occur relatively late within the structure and highlight the dominance of predictive processing over perceptual information in such cases of late disambiguation.
https://www.cambridge.org/core/journals/language-and-cognition/article/predictive-processing-can-override-perceptual-information-evidence-from-spanish-object-relative-clauses/3FDE76BD4BA5A1D8DA3B8DF06A79F4DF

Language Sciences

PAPERS

HENRIK BERGQVIST – Four kinds of subjectivity: from speaking to communicating

The aim of the paper is to argue for the utility of subjectivity as a descriptive notion and to support this aim by distinguishing between different levels of linguistic analysis where subjectivity plays a role. The idea behind this is to develop and promote the use of the notion of subjectivity in the framework of descriptive linguistics and cross-linguistic comparison. Subjectivity is conceptualized as the speaker's expression of "self" and the paper identifies four kinds of subjectivity: Subjectivity of speaking – the speaker's choice to say one thing instead of another; Subjectivity of reference – how speaking subjects position themselves with respect to objects, places, times, and other speaking subjects; Subjectivity of stance – how speaking subjects position their attitudes to knowledge of the world with respect to the knowledge-states of other speaking subjects; Subjectivity of communication - how speaking subjects position their utterances with respect to the potential and actual utterances of other speaking subjects. On the communicative level, subjectivity is argued to be a useful notion in the definition of grammatical forms that primarily serve communicative, rather than referential functions. On this level, the speaker's responsibility for an utterance constitutes a subjective orientation that may be contrasted with a non-subjective, public orientation where the speaker shares responsibility with a larger group.
https://www.sciencedirect.com/science/article/pii/S0388000125000403

EUGENIA DEMURO – Language ontologies and the worlding of language(s)/languaging: does language create the world or does worlding create language?

This article argues for the importance of understanding language ontologies in applied linguistics. We draw on a range of related fields to further develop this framework, questioning the notion of a singular and homogeneous understanding of language. We not only move beyond a monolingual focus to embrace a more inclusive understanding of language(s) and their sociocultural underpinnings, but, drawing on the 'ontological turn' and its exploration of diverse worlds, we theorise language as a dynamic assemblage of elements that emerges uniquely in each performance or practice, grounded in specific contexts. Our contribution aims to expand the understanding of language as multifaceted and ever evolving phenomena,

reflecting on a range of themes and questions, including how we might pluralise language within Western modernity. Is language the same across all contexts of contemporary western societies or within Western modernity? Does language apply only to human groups? How do nonhuman others perform language(s)/languaging? In challenging existing assumptions regarding what language is or what it might be, our research invites others to explore new possibilities in their examination of language(s), languaging, and semiotic practices.
https://www.sciencedirect.com/science/article/abs/pii/S0388000125000385

ERIC LAPORTE et al – Support verbs that are not verbs
In support verb constructions (SVC), as have poise, the support verb is explicitly assumed to be a verb, here have. However, during the last 50 years, the notion of SVC has been extended to a large range of new cases. With this new scope, the linguistic form that plays the role of the support verb can also be an expression not classified as a verb, such as be mad with, or an adjective, e.g. 있다 issta 'there is' in Korean.
Calling 'support verb' a non-verb is a terminological issue. Beyond that, this article examines the validity of extending the definition of SVCs. After surveying the linguistic forms at stake and the reactions to such extension, we focus on delimiting the historical, stricto sensu SVCs based on criteria, in a way that matches the traditional intuition. Then, for each type of linguistic form proposed as an extension, we examine how far the extension distorts this notion. We find both SVCs and extensions of SVC to be of interest in a model of syntax and the lexicon. Finally, the 'verb' part of speech is not essential to any of the categories, which suggests adopting the terms of 'support construction' and 'extension of support construction' instead.
https://www.sciencedirect.com/science/article/pii/S0388000125000361

Nature
ARTICLES

MARIANA LENHARO – How to detect consciousness in people, animals and maybe even AI
Insights from human brains could inform how scientists search for awareness in all its possible forms.
https://www.nature.com/articles/d41586-025-02349-5

Nature Communications
PAPERS

KATHRYN M. EVERSON et al – Multiple bursts of speciation in Madagascar's endangered lemurs
Lemurs are often cited as an example of adaptive radiation, as more than 100 extant species have evolved and filled ecological niches on Madagascar. However, recent work suggests that lemurs lack a hallmark of other adaptive radiations: explosive speciation rates that decline over time. Thus, characterizing the tempo and mode of evolution in lemurs can reveal alternative ways that hyperdiverse clades arise over time, which might differ from traditional models. We explore lemur evolution using a phylogenomic dataset with broad taxonomic sampling that includes the lorisiforms of Asia and continental Africa. Our analyses reveal multiple bursts of diversification (without subsequent declines) that explain much of today's lemur diversity. We also find higher rates of speciation in Madagascar's lemurs compared to lorisiforms, and we demonstrate that the lemur clades with high diversification rates also have high rates of genomic introgression. This suggests that hybridization in these primates is not an evolutionary dead-end, but potential fuel for diversification. Considering the conservation crisis affecting strepsirrhine primates, with approximately 95% of species threatened with extinction, this study offers a perspective for explaining Madagascar's primate diversity and reveals patterns of speciation, extinction, and gene flow that will help inform future conservation decisions.
https://www.nature.com/articles/s41467-025-62310-y

Nature Human Behaviour
PAPERS

TIM JOHNSON & NICK OBRADOVICH – Testing for completions that simulate altruism in early language models
Altruism underlies cooperative behaviours that facilitate social complexity. In late 2022 and early 2023, we tested whether particular large language models—then in widespread use—generated completions that simulated altruism when prompted with text inputs similar to those used in 'dictator game' experiments measuring human altruism. Here we report that one model in our initial study set—OpenAI's text-davinci-003—consistently generated completions that simulated payoff maximization in a non-social decision task yet simulated altruism in dictator games. Comparable completions appeared when we replicated our experiments, altered prompt phrasing, varied model parameters, altered currencies described in the prompt and studied a subsequent model, GPT-4. Furthermore, application of explainable artificial intelligence techniques showed that results changed little when instructing the system to ignore past research on the dictator or ultimatum games but changed noticeably when instructing the system to focus on the needs of particular participants in a simulated social encounter.
https://www.nature.com/articles/s41562-025-02258-7

Nature Reviews Psychology

PAPERS

L. REGOLIN et al – Numerical cognition in birds

Avian species are one of the most diverse and adaptable groups of animals: there are far more species of birds than of mammals, and they occupy a broad range of habitats. Birds and mammals split from a common ancestor over 300 million years ago. Yet certain bird species can perform complex mental tasks, including numerical problems, at levels similar to — and in some cases surpassing — primates, including great apes. Birds thus offer a privileged perspective on the cognitive functions underlying numerical abilities and their evolution. Moreover, birds provide excellent models for studying the ontogenetic development and neural mechanisms underlying numerical computations. In this Review, we provide a comprehensive picture of the contribution of avian studies to understanding numerical cognition, including behavioural laboratory studies, field studies and neurobiological investigations. We also critically examine the methodologies, interpretations and limitations of selected key studies. By synthesizing current knowledge and situating it within the broader field of cognitive research, we highlight the importance of a comparative perspective in understanding the role of evolutionary convergence in the emergence of cognitive functions.
https://www.nature.com/articles/s44159-025-00480-8

Nature Scientific Reports

PAPERS

JOSÉ LUIS RAMÍREZ-AMADOR et al – A multi-analytical geoarchaeological study of flint procurement strategies in southern Iberia

The study of lithic raw material procurement strategies provides critical insights into the socio-economic organization and territorial mobility patterns of prehistoric societies. This research applies a pioneering geoarchaeological approach by combining advanced analytical techniques, including polarized optical microscopy (POM), cathodoluminescence microscopy (CL), scanning electron microscopy (SEM), X-ray diffraction (XRD), and X-ray fluorescence (XRF) to characterize archaeological and geological flint samples from Ardales Cave and Sima de las Palomas in southern Iberia. The results reveal a systematic exploitation of secondary deposits in nearby fluvial terraces, within a predominantly local procurement framework, occasionally complemented by supra-regional acquisition episodes. Petrographic analysis, enhanced by cathodoluminescence images, enabled an unprecedented differentiation of flint varieties and identification of their diagenetic processes, significantly refining sourcing and characterization methods in geologically complex regions such as the Betic Cordillera. This study represents a key methodological advance in geoarchaeology, demonstrating the high potential of cathodoluminescence applied to flint analysis and establishing a robust analytical framework to interpret mobility patterns, territorial interaction, and technological resource management in prehistoric contexts.
https://www.nature.com/articles/s41598-025-12977-6

TOMMASO MORI et al – Early European evidence of artificial cranial modification from the Italian Late Upper Palaeolithic Arene Candide Cave

This study reports on early Eurasian evidence of artificial cranial modification (ACM) in a Late Upper Palaeolithic (LUP) individual (AC12) from Arene Candide Cave, Italy (ca. 12,620–12,190 Cal BP). We used virtual anthropology and geometric morphometrics to compare AC12's cranial morphology with LUP, Mesolithic, and Neolithic Italian specimens, pathologically modified individuals, and a global sample of ACM cases. Our analyses consistently demonstrate a strong affinity between AC12 and the ACM group, distinct from other comparative samples. Statistical analyses confirm AC12 as a clear outlier for non-ACM groups, with high probabilities of belonging to the ACM cluster. This discovery provides evidence suggesting an earlier origin of ACM on the continent, confirming that this globally distributed practice has Palaeolithic roots. Situated within a complex LUP funerary site, this finding illuminates the deep antiquity of culturally mediated body modification and its role in signifying ascribed identity within ancient hunter-gatherer societies.
https://www.nature.com/articles/s41598-025-13561-8

New Scientist

NEWS

Neanderthals were probably maggot-munchers, not hyper-carnivores

It has been claimed Neanderthals ate a huge amount of meat based on isotope ratios in their bones – but the explanation could instead be a diet rich in maggots.
https://www.newscientist.com/article/2489838-neanderthals-were-probably-maggot-munchers-not-hyper-carnivores/

Octopuses fall for the rubber hand illusion just like us

Octopuses can be tricked into thinking that a fake arm is part of their body, suggesting they have a sense of body ownership similar to our own.
https://www.newscientist.com/article/2489006-octopuses-fall-for-the-rubber-hand-illusion-just-like-us/

ARTICLES

DANIEL YON – Why living in a volatile age may make our brains truly innovative
The unpredictability of our times isn't all bad, as it may help us think up some genuine new ideas, says Daniel Yon, author of A Trick of the Mind.
https://www.newscientist.com/article/mg26735540-100-why-living-in-a-volatile-age-may-make-our-brains-truly-innovative/

LAURA SPINNEY – Archaeologists are unearthing the most powerful women who ever lived
Astonishing new archaeological finds and ancient DNA analysis leave no doubt that throughout prehistory women were rulers, warriors, hunters and shamans.
https://www.newscientist.com/article/2488813-archaeologists-are-unearthing-the-most-powerful-women-who-ever-lived/

PLoS One

PAPERS

K. DAVID HARRISON et al – "Sun brings all things": Sun and moon lore as biocultural knowledge on Aneityum island, Vanuatu
Across the Pacific, traditional myths and contemporary narratives describe the origins, animacy, and importance to daily human activities of the Sun and Moon. In Vanuatu, Indigenous local knowledge systems interpret ways that the Sun and Moon interact with humans and plants to achieve productive and sustainable lifeways. In this ethnographic study, we explore how residents of Aneityum Island perceive and narrate the Sun and Moon's interactions with animals, humans, and plants. We consider the influence of the Sun and Moon on domains of daily life on Aneityum, including agriculture, architecture, fishing, health care, navigation, time-reckoning, and diverse ritual activities. Aneityum islanders possess generationally accumulated understandings of their relationship to the environment, framed within the local cosmology and communicated orally. Sun and Moon lore—as expressed through myths and stories—directly informs Aneityumese people's actions and efforts at sustainable living, survival technologies, and biodiversity conservation on land and sea. This body of knowledge reveals the causes and manifestations of natural phenomena, and strategies for responding to their impacts. Due to the influences of globalization, many biocultural tools that focus on Sun and Moon lore are at risk of being forgotten. The Aneityumese people—aided by outside experts—are undertaking efforts to document and revitalize this knowledge to ensure the continuity of their resilient and sustainable lifeways.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0327693

GUILLERMO BUSTOS-PÉREZ – Finding the original mass: A machine learning model and its deployment for lithic scrapers
Predicting the original mass of a retouched scraper has long been a major goal in lithic analysis. It is commonly linked to lithic technological organization of past societies along with notions of stone tool general morphology, standardization through the reduction process, use life, and site occupation patterns. In order to obtain a prediction of original stone tool mass, previous studies have focused on attributes that would remain constant or unaltered through retouch episodes. However, these approaches have provided limited success for predictions and have also remained untested in the framework of successive resharpening episodes. In the research presented here, a set of experimentally knapped flint flakes were successively resharpened as scraper types. After each resharpening episode, four attributes were recorded (scraper mass, height of retouch, maximum thickness and the GIUR index). Four machine learning models were trained using these variables in order to estimate the mass of the flake prior to any retouch. A Random Forest model provided the best results with an r2 value of 0.97 when predicting original flake mass, and a r2 value of 0.84 when predicting percentage of mass lost by retouch. The Random Forest model has been integrated into an open source and free to use Shiny app. This allows for the widespread implementation of a highly precise machine learning model for predicting initial mass of flake blanks successively retouched into scrapers.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0327597

STELLA GULDNER et al – Speaker differences in volitional voice modulation reflected in empathy and functional activation patterns
How we use our voice is central to how we express information about ourselves to others. A speaker's dispositional social reactivity might contribute to how well they can volitionally modulate their voice to manage listener impressions. Here, we investigated individual differences in social vocal control performance in relation to social reactivity indices and underlying neural mechanisms. Twenty-four right-handed speakers of British English (twenty females) modulated their voice to communicate social traits (sounding likeable, hostile, intelligent) while undergoing a rapid-sparse fMRI protocol. Performance in social vocal control was operationalized as the specificity with which speakers evoked trait percepts in an independent group of naïve listeners. Speakers' empathy levels, as well as psychopathic and Machiavellian traits, were assessed using self-report questionnaires. The ability to express specific social traits in voices was associated with activation in brain regions involved in vocal motor and social processing (left posterior TPJ, bilateral SMG, premotor cortex). While dispositional cognitive empathy predicted general vocal performance, self-reported levels of Machiavellianism were specifically related to

better performance in expressing likeability. These findings highlight the psychological and neural mechanisms involved in strategic social voice modulation, suggesting differential processing in a combined network of vocal control and social processing streams.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0325207

PABLO MIER, MIGUEL A. ANDRADE-NAVARRO & ENRIQUE MORETT – Apparent differences between human and chimp proteomes are reduced when considering human population: Human specific variants are enriched in disordered and compositionally biased regions
Humans exhibit significant differences from other primates in anatomy, physiology, behavior, and culture, despite having similar genomes. Understanding the genetic basis of these unique human traits has long been a goal of science and philosophy. Previous studies, including the comparison of the reference genomes, showed a high degree of sequence identity between the proteomes of humans and chimpanzees (Pan troglodytes), suggesting that differences may lie in gene regulation rather than protein function. To pinpoint human-specific protein mutations with possible relevance for human-specific traits, we went further in the study of human-chimp proteome differences by taking into account human genetic variation data from the Genome Aggregation Database (gnomAD) at protein-coding genes. We additionally included 11 primate genomes to identify human-specific amino acids. Results showed that human-specific positions were dramatically reduced when considering population diversity. Our analysis identified 6210 human-specific amino acid substitutions across 4475 proteins. Interestingly, these residues are enriched on disordered and compositionally biased regions, suggesting a role in protein regulation instead of a catalytic or structural one. Accordingly, the set of proteins holding them was significantly enriched in proteins with disordered regions and with protein binding functions. We found that a subset of these residues is not only different in humans but also conserved across non-human primates, further supporting their potential importance in making us different from other primates.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0328504

Science

NEWS

Genomewide study makes 'quantum leap' in understanding stuttering
Analysis of DNA from 23andMe users points to variants in genes linked to brain function and sense of rhythm.
https://www.science.org/content/article/genome-wide-study-makes-quantum-leap-understanding-stuttering

PAPERS

LUKE D. FANNIN et al – Behavior drives morphological change during human evolution
Dietary shifts and corresponding morphological changes can sometimes evolve in succession, not concurrently—an evolutionary process called behavioral drive. Detecting behavioral drive in the fossil record is challenging because it is difficult to measure behaviors independently from corresponding morphologies. To solve this problem, we focused on a puzzling behavior in the fossil record of some primates: eating graminoid plants. We report carbon and oxygen isotope ratios from fossil cercopithecid monkeys and integrate the data into a view of hominin dietary evolution, finding that changes in graminivorous behavior preceded corresponding changes in dental morphology by ~700,000 years. Decoupling diets and morphologies in time was conducive to determining when and to exploring why dietary changes helped to propel human evolution.
https://www.science.org/doi/10.1126/science.ado2359

Science Advances

PAPERS

JORDAN S. MARTIN et al with ADRIAN V. JAEGGI – Indirect genetic effects among neighbors promote cooperation and accelerate adaptation in a small-scale human society
Explaining the rapid evolution of human cooperation and its role in our species' biodemographic success remains a major evolutionary puzzle. To address this challenge, we tested a social drive hypothesis, which predicts that social plasticity and social selection in human groups cause indirect genetic effects that accelerate the adaptation of fitness, promoting population growth via feedback between the environmental causes and evolutionary consequences of cooperation. Using Bayesian multilevel models to analyze fertility data from a small-scale society, we demonstrate that density- and frequency-dependent indirect genetic effects on fitness promote the evolution of cooperation among neighboring women, increasing the rate of contemporary adaptation by ~5×. Our results show how interactions between the genetic and socioecological processes shaping cooperation in reproduction can drive rapid growth and social evolution in human populations.
https://www.science.org/doi/10.1126/sciadv.ads3129

Trends in Neurosciences

PAPERS

JUSTINE Y. HANSEN & BRATISLAV MISIC – Integrating and interpreting brain maps

Tangled molecular, cellular, and dynamic undercurrents shape brain organization. An emerging paradigm across neuroscience domains is to comprehensively measure the spatial patterning of multiple biological features, yielding precise brain maps. How can these features be conceptually integrated into a coherent understanding of brain structure and function? Here we review the methodology and practice of interpreting relationships between maps of biological features. We demonstrate how neuroscience can increasingly be approached as a data science, complete with detailed multiomic datasets, tools for representing diverse data types, and an extensive repertoire of analytics. We also outline methodological and conceptual challenges for disentangling relationships among brain maps. Ultimately, studying the brain from an integrative perspective changes the nature of scientific questions that can be asked, as well as the culture and conduct of scientific inquiry.

https://www.cell.com/trends/neurosciences/fulltext/S0166-2236(25)00124-9

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