

EAORC BULLETIN 1,043 – 11 June 2023

CONTENTS

NOTICES	2
PUBLICATION ALERTS.....	2
EDITORIAL INTERJECTIONS.....	2
NEWS	2
JOHN TEMPLETON FOUNDATION – Three Ways Music Fosters Social Change.....	2
LIVESCIENCE – Oldest evidence of humans in Greece is 700,000 years old.....	2
NATURE BRIEFING – Europe ponders ‘no pay’ open-access plan.....	3
NATURE BRIEFING – Moral decline is an illusion.....	3
SCIENCE.ORG NEWS – Was a small-brained human relative the world’s first gravedigger—and artist?.....	3
THE CONVERSATION – Language isn’t ‘alive’ – why this metaphor can be misleading.....	3
THE CONVERSATION – Why we’re searching for the evolutionary origins of masturbation.....	3
PUBLICATIONS	3
Biolinguistics.....	3
PAPERS	3
ISA KEREM BAYIRLI – Lambda Abstraction as a Factor in Human Uniqueness.....	3
eLife.....	3
NEWS	3
Learning through language.....	3
PAPERS	4
XIAOSHA WANG, BIJUN WANG & YANCHA O BI – Early language exposure affects neural mechanisms of semantic representations.....	4
Evolutionary Anthropology.....	4
ARTICLES	4
RENATA P. ARAUJO et al – Benchmarking methods and data for the whole-outline geometric morphometric analysis of lithic tools.....	4
PAPERS	4
AARON A. SANDEL – Male–male relationships in chimpanzees and the evolution of human pair bonds.....	4
AMÉLIE BEAUDET – The Australopithecus assemblage from Sterkfontein Member 4 (South Africa) and the concept of variation in palaeontology.....	4
Nature.....	4
NEWS	4
The human brain’s characteristic wrinkles help to drive how it works.....	4
ARTICLES	5
LOUISE HUMPHREY & ABDELJALIL BOUZOU GGAR – Ancient DNA reveals how farming spread into northwest Africa.....	5
PAPERS	5
LUCIANA G. SIMÕES et al – Northwest African Neolithic initiated by migrants from Iberia and Levant.....	5
ADAM M. MASTROIANNI & DANIEL T. GILBERT – The illusion of moral decline.....	5
Nature Communications.....	5
PAPERS	5
LOÏC LABACHE et al – Language network lateralization is reflected throughout the macroscale functional organization of cortex.....	5
Nature Ecology & Evolution.....	6
ARTICLES	6
MAXIME ROTIVAL – Archaic hominin traits through the splicing lens.....	6
PAPERS	6
LUUK A. BROEILS et al – Evolution and implications of de novo genes in humans.....	6
MANUEL BOHN et al with JOHANNA ECKERT – Great ape cognition is structured by stable cognitive abilities and predicted by developmental conditions.....	6
COLIN M. BRAND, LAURA L. COLBRAN & JOHN A. CAPRA – Resurrecting the alternative splicing landscape of archaic hominins using machine learning.....	6
Nature Scientific Reports.....	6
PAPERS	6
JUN YAN – Personal sustained cooperation based on networked evolutionary game theory.....	6
New Scientist.....	7
ARTICLES	7
KAYT SUKEL – People with synaesthesia blend their senses - now we know why.....	7

ALISON GEORGE – Homo naledi may have made etchings on cave walls and buried its dead	7
Philosophical Transactions of the Royal Society A	7
PAPERS	7
ELLIE PAVLICK – Symbols and grounding in large language models	7
ULRIKE HAHN & MARKO TEŠIĆ – Argument and explanation	7
SEAN DAE HOULIHAN et al with REBECCA SAXE – Emotion prediction as computation over a generative theory of mind	7
BRUCE J. WEST et al with ROBIN I. M. DUNBAR – Fractal structure of human and primate social networks optimizes information flow	7
Philosophical Transactions of the Royal Society B	8
PAPERS	8
MATILDA BRINDLE et al with VOLKER SOMMER – The evolution of masturbation is associated with postcopulatory selection and pathogen avoidance in primates	8
VELISAR MANEA et al – An initial but receding altercentric bias in preverbal infants' memory	8
PLoS Biology	8
PAPERS	8
VINAY S RAGHAVAN et al – Distinct neural encoding of glimpsed and masked speech in multitalker situations	8
Research on Language and Social Interaction	9
PAPERS	9
BEATRICE SZCZEPEK REED – Designing Talk for Humans and Horses: Prosody as a Resource for Parallel Recipient Design	9
Science	9
NEWS	9
Was a small-brained human relative the world's first gravedigger—and artist?	9
Trends in Cognitive Sciences	9
PAPERS	9
DAWOON CHOI, H. HENNY YEUNG & JANET F. WERKER – Sensorimotor foundations of speech perception in infancy	9
SUBSCRIBE to the EAORC Bulletin	9
UNSUBSCRIBE from the EAORC Bulletin	9
PRODUCED BY AND FOR THE EAORC EMAIL GROUP	9

NOTICES

PUBLICATION ALERTS

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

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

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

EDITORIAL INTERJECTIONS

Comments in curly brackets are editorial interjections. The Editor reserves the right to be wrong.

NEWS

JOHN TEMPLETON FOUNDATION – Three Ways Music Fosters Social Change

Plato, in the Republic, gives the best-known explanation of the Greek theory of musical modes: “The musical modes differ essentially from one another, and those who hear them are differently affected by each. Some of them make men sad and grave,” he wrote, “another, again, produces a moderate or settled temper.” Today, as ever, we perceive music as having psychological and social effects. We describe songs as happy or sad, and note their effects on us alone and in groups, both as music-listeners and music-makers. In the journal Music and Science, Tal-Chen Rabinowitch, an assistant professor at the University of Haifa’s School of Creative Arts Therapies, offers a helpful overview of the history of musical-social theories, and the current state of research, including several compelling observations about how music can change how people relate to one other.

<https://www.templeton.org/news/call-and-response>

LIVESCIENCE – Oldest evidence of humans in Greece is 700,000 years old

Several prehistoric sites in Greece reveal that our human ancestors hunted hippos and elephants between 280,000 and 700,000 years ago. The oldest site pushes back the earliest known hominin presence in the region by up to 250,000 years.

<https://www.livescience.com/archaeology/oldest-evidence-of-humans-in-greece-is-700000-years-old-a-quarter-of-a-million-years-older-than-previously-thought>

NATURE BRIEFING – Europe ponders ‘no pay’ open-access plan

The Council of the European Union has recommended a ‘no pay’ academic-publishing model in which neither readers nor authors are billed for academic papers. Critics say that the plan could usher in a state-defined system that might stymie academic freedom and abolish an industry without considering who would pay for the alternative. Supporters, such as the German Research Federation, say the principles would lower the barriers to participation in academic discourse. “There’s a recognition that we need to move beyond the [article processing charge] APC,” says publishing consultant Rob Johnson. “The question is: just how is that done?”

<https://nature.us17.list-manage.com/track/click?u=2c6057c528fdc6f73fa196d9d&id=414924ccb9&e=1db4b9a19b>

NATURE BRIEFING – Moral decline is an illusion

There’s no evidence that people are not as kind, respectful and trustworthy as they used to be. Decades’ worth of survey results show that people in 60 countries have perceived a general moral decline for at least the past 70 years. But individuals’ evaluation of their contemporaries’ morality has remained largely unchanged. Biased memory could be a factor in maintaining the illusion: negative memories tend to fade faster than positive ones, which might help to explain why people believe that past morality was relatively high.

<https://nature.us17.list-manage.com/track/click?u=2c6057c528fdc6f73fa196d9d&id=60ba2d1826&e=1db4b9a19b>

SCIENCE.ORG NEWS – Was a small-brained human relative the world’s first gravedigger—and artist?

Anthropologists praise Homo naledi fossils but doubt spectacular claims of intentional burial and art.

<https://www.science.org/content/article/was-small-brained-human-relative-world-s-first-gravedigger-and-artist>

THE CONVERSATION – Language isn’t ‘alive’ – why this metaphor can be misleading

Languages don’t have a beginning that can be compared to the birth of a living being.

<https://theconversationuk.cmail20.com/t/r-l-tttijhd-khhiliah-a/>

THE CONVERSATION – Why we’re searching for the evolutionary origins of masturbation

Masturbation seems like an evolutionary conundrum. New research has found an explanation.

<https://theconversationuk.cmail19.com/t/r-l-ttddkiy-khhiliah-b/>

PUBLICATIONS**Biolinguistics****PAPERS****ISA KEREM BAYIRLI – Lambda Abstraction as a Factor In Human Uniqueness**

There appear to be some qualitative differences between the conceptual repertoire of humans and that of other animals. We propose that the mental operation of Lambda Abstraction may shed some light on this distinction. More specifically, we claim that humans and only humans make use of mental representations constructed with the rule of Lambda Abstraction, which enables them to entertain concepts that can be used for entities that are not necessarily within their domain of experience. In addition to defining new types of concepts, Lambda Abstraction has played a crucial role in unlocking the potential for semantically consequential Internal Merge and quantification. This paper highlights the fact that research on language evolution should focus more on the transformative cognitive consequences of the interface between syntax and thought systems.

{But we have to remember that any innate capacity or strategy makes use of concepts not necessarily within the subject’s domain of experience – that’s why they work. Lambda abstraction is a product of lambda calculus, which is itself a product of a capacity to embed functions within functions. So, if lambda abstraction is both the product and the cause of embedding, then calling one of them Merge isn’t going to solve the circularity of the argument.}

<https://bioling.psychopen.eu/index.php/bioling/article/view/11205>

eLife**NEWS****Learning through language**

Early childhood exposure to language affects how the brain represents knowledge in adulthood.

<https://elifesciences.org/digests/81681/learning-through-language>

PAPERS**XIAOSHA WANG, BIJUN WANG & YANCHA0 BI – Early language exposure affects neural mechanisms of semantic representations**

One signature of the human brain is its ability to derive knowledge from language inputs, in addition to nonlinguistic sensory channels such as vision and touch. How does human language experience modulate the mechanism by which semantic knowledge is stored in the human brain? We investigated this question using a unique human model with varying amounts and qualities of early language exposure: early deaf adults who were born to hearing parents and had reduced early exposure and delayed acquisition of any natural human language (speech or sign), with early deaf adults who acquired sign language from birth as the control group that matches on nonlinguistic sensory experiences. Neural responses in a semantic judgment task with 90 written words that were familiar to both groups were measured using fMRI. The deaf group with reduced early language exposure, compared with the deaf control group, showed reduced semantic sensitivity, in both multivariate pattern (semantic structure encoding) and univariate (abstractness effect) analyses, in the left dorsal anterior temporal lobe (dATL). These results provide positive, causal evidence that language experience drives the neural semantic representation in the dATL, highlighting the roles of language in forming human neural semantic structures beyond nonverbal sensory experiences.

<https://elifesciences.org/articles/81681>

Evolutionary Anthropology**ARTICLES****RENATA P. ARAUJO et al – Benchmarking methods and data for the whole-outline geometric morphometric analysis of lithic tools**

Originally developed for the quantitative analysis of organismal shapes, both two-dimensional (2D) and 3D geometric morphometric methods (GMMs) have recently gained some prominence in archaeology for the analysis of stone tools— unquestionably the primary deep-time data source for the earliest periods of human cultural evolution. The key strength of GMM rests in its ability to statistically quantify and hence qualify complex shapes, which in turn can be used to infer social interaction, function, reduction, as well as to assess classification systems and cultural relatedness.

<https://onlinelibrary.wiley.com/doi/full/10.1002/evan.21981>

PAPERS**AARON A. SANDEL – Male–male relationships in chimpanzees and the evolution of human pair bonds**

The evolution of monogamy has been a central question in biological anthropology. An important avenue of research has been comparisons across “socially monogamous” mammals, but such comparisons are inappropriate for understanding human behavior because humans are not “pair living” and are only sometimes “monogamous.” It is the “pair bond” between reproductive partners that is characteristic of humans and has been considered unique to our lineage. I argue that pair bonds have been overlooked in one of our closest living relatives, chimpanzees. These pair bonds are not between mates but between male “friends” who exhibit enduring and emotional social bonds. The presence of such bonds in male–male chimpanzees raises the possibility that pair bonds emerged earlier in our evolutionary history. I suggest pair bonds first arose as “friendships” and only later, in the human lineage, were present between mates. The mechanisms for these bonds were co-opted for male–female bonds in humans.

<https://onlinelibrary.wiley.com/doi/abs/10.1002/evan.21986>

AMÉLIE BEAUDET – The Australopithecus assemblage from Sterkfontein Member 4 (South Africa) and the concept of variation in palaeontology

Interpreting morphological variation within the early hominin fossil record is particularly challenging. Apart from the fact that there is no absolute threshold for defining species boundaries in palaeontology, the degree of variation related to sexual dimorphism, temporal depth, geographic variation or ontogeny is difficult to appreciate in a fossil taxon mainly represented by fragmentary specimens, and such variation could easily be conflated with taxonomic diversity. One of the most emblematic examples in paleoanthropology is the Australopithecus assemblage from the Sterkfontein Caves in South Africa. Whereas some studies support the presence of multiple Australopithecus species at Sterkfontein, others explore alternative hypotheses to explain the morphological variation within the hominin assemblage. In this review, I briefly summarize the ongoing debates surrounding the interpretation of morphological variation at Sterkfontein Member 4 before exploring two promising avenues that would deserve specific attention in the future, that is, temporal depth and nonhuman primate diversity.

<https://onlinelibrary.wiley.com/doi/full/10.1002/evan.21972>

Nature**NEWS****The human brain’s characteristic wrinkles help to drive how it works**

A model of the brain’s geometry better explains neuronal activity than a model based on the ‘connectome’.

<https://www.nature.com/articles/d41586-023-01774-8>

ARTICLES

LOUISE HUMPHREY & ABDELJALIL BOUZOUGGAR – Ancient DNA reveals how farming spread into northwest Africa

Genomic data from bones and teeth found at archaeological sites across Morocco paint a picture of how Neolithic farmers and pastoralists spread into northwest Africa that is more complex than previously thought.

<https://www.nature.com/articles/d41586-023-01768-6>

PAPERS

LUCIANA G. SIMÕES et al – Northwest African Neolithic initiated by migrants from Iberia and Levant

In northwestern Africa, lifestyle transitioned from foraging to food production around 7,400 years ago but what sparked that change remains unclear. Archaeological data support conflicting views: (1) that migrant European Neolithic farmers brought the new way of life to North Africa^{1,2,3} or (2) that local hunter-gatherers adopted technological innovations^{4,5}. The latter view is also supported by archaeogenetic data⁶. Here we fill key chronological and archaeogenetic gaps for the Maghreb, from Epipalaeolithic to Middle Neolithic, by sequencing the genomes of nine individuals (to between 45.8- and 0.2-fold genome coverage). Notably, we trace 8,000 years of population continuity and isolation from the Upper Palaeolithic, via the Epipalaeolithic, to some Maghrebi Neolithic farming groups. However, remains from the earliest Neolithic contexts showed mostly European Neolithic ancestry. We suggest that farming was introduced by European migrants and was then rapidly adopted by local groups. During the Middle Neolithic a new ancestry from the Levant appears in the Maghreb, coinciding with the arrival of pastoralism in the region, and all three ancestries blend together during the Late Neolithic. Our results show ancestry shifts in the Neolithization of northwestern Africa that probably mirrored a heterogeneous economic and cultural landscape, in a more multifaceted process than observed in other regions.

<https://www.nature.com/articles/s41586-023-06166-6>

ADAM M. MASTROIANNI & DANIEL T. GILBERT – The illusion of moral decline

Anecdotal evidence indicates that people believe that morality is declining. In a series of studies using both archival and original data ($n = 12,492,983$), we show that people in at least 60 nations around the world believe that morality is declining, that they have believed this for at least 70 years and that they attribute this decline both to the decreasing morality of individuals as they age and to the decreasing morality of successive generations. Next, we show that people's reports of the morality of their contemporaries have not declined over time, suggesting that the perception of moral decline is an illusion. Finally, we show how a simple mechanism based on two well-established psychological phenomena (biased exposure to information and biased memory for information) can produce an illusion of moral decline, and we report studies that confirm two of its predictions about the circumstances under which the perception of moral decline is attenuated, eliminated or reversed (that is, when respondents are asked about the morality of people they know well or people who lived before the respondent was born). Together, our studies show that the perception of moral decline is pervasive, perdurable, unfounded and easily produced. This illusion has implications for research on the misallocation of scarce resources, the underuse of social support and social influence.

<https://www.nature.com/articles/s41586-023-06137-x>

Nature Communications

PAPERS

LOÏC LABACHE et al – Language network lateralization is reflected throughout the macroscale functional organization of cortex

Hemispheric specialization is a fundamental feature of human brain organization. However, it is not yet clear to what extent the lateralization of specific cognitive processes may be evident throughout the broad functional architecture of cortex. While the majority of people exhibit left-hemispheric language dominance, a substantial minority of the population shows reverse lateralization. Using twin and family data from the Human Connectome Project, we provide evidence that atypical language dominance is associated with global shifts in cortical organization. Individuals with atypical language organization exhibit corresponding hemispheric differences in the macroscale functional gradients that situate discrete large-scale networks along a continuous spectrum, extending from unimodal through association territories. Analyses reveal that both language lateralization and gradient asymmetries are, in part, driven by genetic factors. These findings pave the way for a deeper understanding of the origins and relationships linking population-level variability in hemispheric specialization and global properties of cortical organization.

<https://www.nature.com/articles/s41467-023-39131-y>

Nature Ecology & Evolution

ARTICLES

MAXIME ROTIVAL – Archaic hominin traits through the splicing lens

Machine-learning-based prediction of splicing in extinct hominin species highlights the effect of natural selection on splice-altering variants and reveals phenotypic differences with modern humans.

<https://www.nature.com/articles/s41559-023-02045-5>

PAPERS

LUUK A. BROEILS et al – Evolution and implications of de novo genes in humans

Genes and translated open reading frames (ORFs) that emerged de novo from previously non-coding sequences provide species with opportunities for adaptation. When aberrantly activated, some human-specific de novo genes and ORFs have disease-promoting properties—for instance, driving tumour growth. Thousands of putative de novo coding sequences have been described in humans, but we still do not know what fraction of those ORFs has readily acquired a function. Here, we discuss the challenges and controversies surrounding the detection, mechanisms of origin, annotation, validation and characterization of de novo genes and ORFs. Through manual curation of literature and databases, we provide a thorough table with most de novo genes reported for humans to date. We re-evaluate each locus by tracing the enabling mutations and list proposed disease associations, protein characteristics and supporting evidence for translation and protein detection. This work will support future explorations of de novo genes and ORFs in humans.

<https://www.nature.com/articles/s41559-023-02014-y>

MANUEL BOHN et al with JOHANNA ECKERT – Great ape cognition is structured by stable cognitive abilities and predicted by developmental conditions

Great ape cognition is used as a reference point to specify the evolutionary origins of complex cognitive abilities, including in humans. This research often assumes that great ape cognition consists of cognitive abilities (traits) that account for stable differences between individuals, which change and develop in response to experience. Here, we test the validity of these assumptions by assessing repeatability of cognitive performance among captive great apes (Gorilla gorilla, Pongo abelii, Pan paniscus, Pan troglodytes) in five tasks covering a range of cognitive domains. We examine whether individual characteristics (age, group, test experience) or transient situational factors (life events, testing arrangements or sociality) influence cognitive performance. Our results show that task-level performance is generally stable over time; four of the five tasks were reliable measurement tools. Performance in the tasks was best explained by stable differences in cognitive abilities (traits) between individuals. Cognitive abilities were further correlated, suggesting shared cognitive processes. Finally, when predicting cognitive performance, we found stable individual characteristics to be more important than variables capturing transient experience. Taken together, this study shows that great ape cognition is structured by stable cognitive abilities that respond to different developmental conditions.

<https://www.nature.com/articles/s41559-023-02050-8>

COLIN M. BRAND, LAURA L. COLBRAN & JOHN A. CAPRA – Resurrecting the alternative splicing landscape of archaic hominins using machine learning

Alternative splicing contributes to adaptation and divergence in many species. However, it has not been possible to directly compare splicing between modern and archaic hominins. Here, we unmask the recent evolution of this previously unobservable regulatory mechanism by applying SpliceAI, a machine-learning algorithm that identifies splice-altering variants (SAVs), to high-coverage genomes from three Neanderthals and a Denisovan. We discover 5,950 putative archaic SAVs, of which 2,186 are archaic-specific and 3,607 also occur in modern humans via introgression (244) or shared ancestry (3,520). Archaic-specific SAVs are enriched in genes that contribute to traits potentially relevant to hominin phenotypic divergence, such as the epidermis, respiration and spinal rigidity. Compared to shared SAVs, archaic-specific SAVs occur in sites under weaker selection and are more common in genes with tissue-specific expression. Further underscoring the importance of negative selection on SAVs, Neanderthal lineages with low effective population sizes are enriched for SAVs compared to Denisovan and shared SAVs. Finally, we find that nearly all introgressed SAVs in humans were shared across the three Neanderthals, suggesting that older SAVs were more tolerated in human genomes. Our results reveal the splicing landscape of archaic hominins and identify potential contributions of splicing to phenotypic differences among hominins.

<https://www.nature.com/articles/s41559-023-02053-5>

Nature Scientific Reports

PAPERS

JUN YAN – Personal sustained cooperation based on networked evolutionary game theory

Evolutionary game theory on complex networks provides an effective theoretical tool to explain the emergence of sustained cooperative behavior. Human society has formed various organizational networks. The network structure and individual behavior take on a variety of forms. This diversity provides the basis for choice, so it is crucial for the emergence of cooperation. This article provides a dynamic algorithm for individual network evolution, and calculates the importance of

different nodes in the network evolution process. In the dynamic evolution simulation, the probability of the cooperation strategy and betrayal strategy is described. In the individual interaction network, cooperative behavior will promote the continuous evolution of individual relationships and form a better aggregative interpersonal network. The interpersonal network of betrayal has been in a relatively loose state, and its continuity must rely on the participation of new nodes, but there will be certain "weak links" in the existing nodes of the network.

<https://www.nature.com/articles/s41598-023-36318-7>

New Scientist

ARTICLES

KAYT SUKEL – People with synaesthesia blend their senses - now we know why

Synaesthesia is sometimes called an 'extra ability' that means some people mix colours and words or other sensory inputs. Now, it is becoming clear that it emerges in childhood to help us learn.

<https://www.newscientist.com/article/mg25834423-100-people-with-synaesthesia-blend-their-senses-now-we-know-why/>

ALISON GEORGE – Homo naledi may have made etchings on cave walls and buried its dead

New discoveries suggest that Homo naledi, an ancient and primitive hominin, may have displayed complex behaviour despite its small brain.

<https://www.newscientist.com/article/2376824-homo-naledi-may-have-made-etchings-on-cave-walls-and-buried-its-dead/>

Philosophical Transactions of the Royal Society A

PAPERS

ELLIE PAVLICK – Symbols and grounding in large language models

Large language models (LLMs) are one of the most impressive achievements of artificial intelligence in recent years. However, their relevance to the study of language more broadly remains unclear. This article considers the potential of LLMs to serve as models of language understanding in humans. While debate on this question typically centres around models' performance on challenging language understanding tasks, this article argues that the answer depends on models' underlying competence, and thus that the focus of the debate should be on empirical work which seeks to characterize the representations and processing algorithms that underlie model behaviour. From this perspective, the article offers counterarguments to two commonly cited reasons why LLMs cannot serve as plausible models of language in humans: their lack of symbolic structure and their lack of grounding. For each, a case is made that recent empirical trends undermine the common assumptions about LLMs, and thus that it is premature to draw conclusions about LLMs' ability (or lack thereof) to offer insights on human language representation and understanding.

<https://royalsocietypublishing.org/doi/10.1098/rsta.2022.0041>

ULRIKE HAHN & MARKO TEŠIĆ – Argument and explanation

In this paper, we bring together two closely related, but distinct, notions: argument and explanation. We clarify their relationship. We then provide an integrative review of relevant research on these notions, drawn both from the cognitive science and the artificial intelligence (AI) literatures. We then use this material to identify key directions for future research, indicating areas where bringing together cognitive science and AI perspectives would be mutually beneficial.

<https://royalsocietypublishing.org/doi/10.1098/rsta.2022.0043>

SEAN DAE HOULIHAN et al with REBECCA SAXE – Emotion prediction as computation over a generative theory of mind

From sparse descriptions of events, observers can make systematic and nuanced predictions of what emotions the people involved will experience. We propose a formal model of emotion prediction in the context of a public high-stakes social dilemma. This model uses inverse planning to infer a person's beliefs and preferences, including social preferences for equity and for maintaining a good reputation. The model then combines these inferred mental contents with the event to compute 'appraisals': whether the situation conformed to the expectations and fulfilled the preferences. We learn functions mapping computed appraisals to emotion labels, allowing the model to match human observers' quantitative predictions of 20 emotions, including joy, relief, guilt and envy. Model comparison indicates that inferred monetary preferences are not sufficient to explain observers' emotion predictions; inferred social preferences are factored into predictions for nearly every emotion. Human observers and the model both use minimal individualizing information to adjust predictions of how different people will respond to the same event. Thus, our framework integrates inverse planning, event appraisals and emotion concepts in a single computational model to reverse-engineer people's intuitive theory of emotions.

<https://royalsocietypublishing.org/doi/10.1098/rsta.2022.0047>

BRUCE J. WEST et al with ROBIN I. M. DUNBAR – Fractal structure of human and primate social networks optimizes information flow

Primate and human social groups exhibit a fractal structure that has a very limited range of preferred layer sizes, with groups of 5, 15, 50 and (in humans) 150 and 500 predominating. In non-human primates, this same fractal distribution is also

observed in the distribution of species mean group sizes and in the internal network structure of their groups. Here we demonstrate that this preferential numbering arises because of the critical nature of dynamic self-organization within complex social networks. We calculate the size dependence of the scaling properties of complex social network models and argue that this aggregate behaviour exhibits a form of collective intelligence. Direct calculation establishes that the complexity of social networks as measured by their scaling behaviour is non-monotonic, peaking globally around 150 with a secondary peak at 500 and tertiary peaks at 5, 15 and 50. This provides a theory-based rationale for the fractal layering of primate and human social groups.

<https://royalsocietypublishing.org/doi/10.1098/rspa.2023.0028>

Philosophical Transactions of the Royal Society B

PAPERS

MATILDA BRINDLE et al with VOLKER SOMMER – The evolution of masturbation is associated with postcopulatory selection and pathogen avoidance in primates

Masturbation occurs throughout the animal kingdom. At first glance, however, the fitness benefits of this self-directed behaviour are unclear. Regardless, several drivers have been proposed. Non-functional hypotheses posit that masturbation is either a pathology, or a byproduct of high underlying sexual arousal, whereas functional hypotheses argue an adaptive benefit. The Postcopulatory Selection Hypothesis states that masturbation aids the chances of fertilization, while the Pathogen Avoidance Hypothesis states that masturbation helps reduce host infection by flushing pathogens from the genital tract. Here, we present comprehensive new data documenting masturbation across the primate order and use these, in conjunction with phylogenetic comparative methods, to reconstruct the evolutionary pathways and correlates of masturbation. We find that masturbation is an ancient trait within the primate order, becoming a more common aspect of the haplorrhine behavioural repertoire after the split from tarsiers. Our analyses provide support for both the Postcopulatory Selection and Pathogen Avoidance Hypotheses in male primates, suggesting that masturbation may be an adaptive trait, functioning at a macroevolutionary scale.

<https://royalsocietypublishing.org/doi/10.1098/rspb.2023.0061>

VELISAR MANEA et al – An initial but receding altercentric bias in preverbal infants' memory

Young learners would seem to face a daunting challenge in selecting to what they should attend, a problem that may have been exacerbated in human infants by changes in carrying practices during human evolution. A novel theory proposes that human infant cognition has an altercentric bias whereby early in life, infants prioritize encoding events that are the targets of others' attention. We tested for this bias by asking whether, when the infant and an observing agent have a conflicting perspective on an object's location, the co-witnessed location is better remembered. We found that 8- but not 12-month-olds expected the object to be at the location where the agent had seen it. These findings suggest that in the first year of life, infants may prioritize the encoding of events to which others attend, even though it may sometimes result in memory errors. However, the disappearance of this bias by 12 months suggests that altercentricism is a feature of very early cognition. We propose that it facilitates learning at a unique stage in the life history when motoric immaturity limits infants' interaction with the environment; at this stage, observing others could maximally leverage the information selection process.

<https://royalsocietypublishing.org/doi/10.1098/rspb.2023.0738>

PLoS Biology

PAPERS

VINAY S RAGHAVAN et al – Distinct neural encoding of glimpsed and masked speech in multitalker situations

Humans can easily tune in to one talker in a multitalker environment while still picking up bits of background speech; however, it remains unclear how we perceive speech that is masked and to what degree non-target speech is processed. Some models suggest that perception can be achieved through glimpses, which are spectrotemporal regions where a talker has more energy than the background. Other models, however, require the recovery of the masked regions. To clarify this issue, we directly recorded from primary and non-primary auditory cortex (AC) in neurosurgical patients as they attended to one talker in multitalker speech and trained temporal response function models to predict high-gamma neural activity from glimpsed and masked stimulus features. We found that glimpsed speech is encoded at the level of phonetic features for target and non-target talkers, with enhanced encoding of target speech in non-primary AC. In contrast, encoding of masked phonetic features was found only for the target, with a greater response latency and distinct anatomical organization compared to glimpsed phonetic features. These findings suggest separate mechanisms for encoding glimpsed and masked speech and provide neural evidence for the glimpsing model of speech perception.

<https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3002128>

Research on Language and Social Interaction

PAPERS

BEATRICE SZCZEPEK REED – Designing Talk for Humans and Horses: Prosody as a Resource for Parallel Recipient Design

This analysis shows how, in horse-riding lessons, riding instructors use prosody and other sound patterns to design their talk for human and equine recipients at the same time, while orienting to distinct contributions from each. Practices for doing so include nonlexical vocalizations, marked prosodic delivery, and conventionalized lexical-prosodic bundles. Parallel recipient design allows turn-holders to pursue a single activity that is to be performed jointly by the recipient pair. Parallel recipient design is shown to be distinct from alternating recipient design, to be found during multiactivity. Parallel recipient design can be delivered consecutively, with talk designed to mobilize the rider followed by talk designed to mobilize the horse; or simultaneously, with lexical items performing one action to the rider and their prosodic delivery performing another action to the horse. The data are recordings of naturally occurring horse-riding lessons, mostly in English; some data are in German, with English translations.

<https://www.tandfonline.com/doi/full/10.1080/08351813.2023.2170638>

Science

NEWS

Was a small-brained human relative the world's first gravedigger—and artist?

Anthropologists praise Homo naledi fossils but doubt spectacular claims of intentional burial and art.

<https://www.science.org/content/article/was-small-brained-human-relative-world-s-first-gravedigger-and-artist>

Trends in Cognitive Sciences

PAPERS

DAWOON CHOI, H. HENNY YEUNG & JANET F. WERKER – Sensorimotor foundations of speech perception in infancy

The perceptual system for speech is highly organized from early infancy. This organization bootstraps young human learners' ability to acquire their native speech and language from speech input. Here, we review behavioral and neuroimaging evidence that perceptual systems beyond the auditory modality are also specialized for speech in infancy, and that motor and sensorimotor systems can influence speech perception even in infants too young to produce speech-like vocalizations. These investigations complement existing literature on infant vocal development and on the interplay between speech perception and production systems in adults. We conclude that a multimodal speech and language network is present before speech-like vocalizations emerge.

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(23\)00124-9](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(23)00124-9)

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