EAORC BULLETIN 1,098 – 30 June 2024

CONTENTS

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.

PUBLICATION ALERT – Tamás David-Barrett (2024), Gendered Species: A Natural History of Patriarchy

Available on 15 Amazon sites, including the UK site.

Why do gender norms vary and change? Is our species patriarchal? What links ancient climate change to male dominance? Why did patriarchy emerge 11 times? Why do matriarchies have women's jobs and men's jobs? What connects the plough to rules about sex? Why was formal marriage invented? How will the patriarchy end and when?
In Gendered Species, Dr. Tamás Dávid-Barrett, an evolutionary behavioural scientist at the University of Oxford, answers these questions and more. This groundbreaking book provides a science-based, non-political, and calm assessment of the evolution and variation of gender norms. Through exceptional scholarship, Dr. Dávid-Barrett explores how humans became the only gendered species, why gender norms vary across cultures, and how they change over time.
Dr. Dávid-Barrett's multi-disciplinary approach, spanning anthropology, biology, economics, sociology, psychology, and network science, is informed by research conducted in forty countries on five continents. His comprehensive scientific approach to understanding our species' social organization offers new insights into one of humanity's most central problems.
{I have a copy on order, although ordering it while trying to avoid Amazon Prime (a scam that should have been made illegal years ago) was far from simple.}
https://www.amazon.co.uk/Gendered-Species-Natural-History-Patriarchy/dp/B0D7T8P4F4/

ACADEMIA.EDU – A Brief History of Paleoanthropology

Aisthesis 2/2013, 31-48

GIORGIO MANZI & FABIO DI VINCENZO – Light has been thrown (on Human Origins): A Brief History of Paleoanthropology, with Notes on the "Punctuated" Origin of Homo sapiens

In The Origin of Species by means of Natural Selection, Darwin spent only a line to comment – or, rather, to predict the development of our knowledge in the decades to come – about the evolution of our species: «light will be thrown on the origin of man and his history» (Darwin [1859]: 488). However, the day after that troubled publication, when all the 1.250 copies went out of print, an intense debate started; and this debate was not on orchids, chaffinches or turtles. As a matter of fact, most of the arguments were aroused by the relationships of monkeys and apes with Homo sapiens, and – more than a risky prediction – that single line toward the end of the book became the focus of a general debate on his theory. Thus, in a sense, Charles Darwin was prudent because he was aware that this issue – the nature and origin of ourselves as a species – would have been the real or, at least, the main target of all the controversies that were expected to emerge after a theoretical framework (natural selection) was given to a phenomenon that had already been largely debated among naturalists: the phenomenon known as "biological evolution".
https://www.academia.edu/18793135/Light_Has_Been_Thrown_on_Human_Origins_a_Brief_History_of_Palaeoanthropology_with_Notes_on_the_Punctuated_Origin_of_Homo_Sapiens

ACADEMIA.EDU – Thinking through story: Archaeology and narratives

Hunter Gatherer Research 2:3, 249-274 (2016)

MARTIN PORR & JACQUELINE MATTHEWS – Thinking through story: Archaeology and narratives

In this paper – which also serves as an introduction to this special issue of Hunter Gatherer Research – we concentrate on a number of aspects relevant to the relationships between archaeology and narratives, and also to the theoretical and methodological challenges of research involving hunting and gathering societies. We focus on the 'narrative turn', which became influential across a range of disciplines due to the shift it introduced from a story being the sole focus of analysis to 'the lamp by which other things are seen' (Kreiswirth 1994:62). Working with a narrative approach, we consider how archaeologists have framed the relationship between hunting and gathering people and their environments, and in contrast, discuss the ways that contemporary Indigenous people themselves explain these relationships and the importance of narrative in understanding such relationships. Further, we critically discuss the way narrative or storytelling has been

positioned in human cognitive evolution and in establishing human 'uniqueness', highlighting some problematic ongoing trends in Western scholarship. These examples led us to question the relationship between knowledge, myth and reality, particularly in the context of the relationship between the Western academy and Indigenous knowledge. We close this paper by drawing together the implications for narratives of human evolution and hunter-gatherer archaeology. Even though, or perhaps because, a narrative approach challenges the status quo we find that it offers many advantages to better understand the past and also to enhance reflexivity in the present.
https://www.academia.edu/30913985/Thinking_through_story_Archaeology_and_narratives

ACADEMIA.EDU – The scope of culture in chimpanzees, humans and ancestral apes

Philosophical Transactions of the Royal Socociety B 366, 997-1007 (2011)

ANDREW WHITEN – The scope of culture in chimpanzees, humans and ancestral apes

More studies have focused on aspects of chimpanzee behaviour and cognition relevant to the evolution of culture than on any other species except our own. Accordingly, analysis of the features shared by chimpanzees and humans is here used to infer the scope of cultural phenomena in our last common ancestor, at the same time clarifying the nature of the special characteristics that advanced further in the hominin line. To do this, culture is broken down into three major aspects: the large scale, population-level patterning of traditions; social learning mechanisms; and the behavioural and cognitive contents of culture. Each of these is further dissected into subcomponents. Shared features, as well as differences, are identified in as many as a dozen of these, offering a case study for the comparative analysis of culture across animal taxa and a deeper understanding of the roots of our own cultural capacities.
https://www.academia.edu/91639444/The_scope_of_culture_in_chimpanzees_humans_and_ancestral_apes

NEWS

AEON – What is intelligent life?

Our human minds hold us back from truly understanding the many brilliant ways that other creatures solve their problems.
https://aeon.co/essays/why-intelligence-exists-only-in-the-eye-of-the-beholder

DISCOVER – How an Ancient Human Species Formed Family Ties

Footprints made 80,000 years ago and ancient DNA are among the clues that hint at Neanderthals' social and community lives.
https://www.discovermagazine.com/the-sciences/how-an-ancient-human-species-formed-family-ties

SCIENCEADVISER – Friendship saved these monkeys after Hurricane Maria

Hurricane Maria devastated Puerto Rico in September 2017. Winds over 250 kilometers per hour tore apart the island's infrastructure and forests. As Sarah Amandolare wrote for Science in 2018, the storm turned "lush forest into ranks of skeletal trees and piles of sticks." And that was especially the case on Cayo Santiago—a small key, home to some 1600 macaques. When Maria destroyed two-thirds of its vegetation, the monkeys had to do something drastic: They had to get along.

Researchers had studied this group of monkeys for years before the storm hit. So, they were poised to examine how habitat destruction affected macaque society.

They discovered that shade became a hot commodity after the trees were destroyed. But instead of fighting for it, many of the animals quickly learned to live with a crowd. "In response to the drastic changes caused by the hurricane, macaques persistently increased tolerance and decreased aggression towards each other," co-author Camille Testard said in a statement.

That's no small feat for macaques, known for their competitive nature. "We were surprised the macaques' social behaviour was so flexible," co-author Lauren Brent added. But embracing others proved vital: Monkeys that made peace with one another were 42% less likely to die in the five years after the hurricane than those that clung to their personal space.

"In effect, the hurricane changed the rules of the game in the monkeys' society," Testard said.
https://www.science.org/doi/10.1126/science.adk0606

SCIENCEADVISER – Challenging the rise and fall of Easter Island

Researchers used satellite images and machine learning to revise size estimates for the pre-contact population on Rapa Nui Island. Spoiler: it's smaller than we thought.
https://www.science.org/doi/10.1126/sciadv.ado1459

SCIENCEADVISER – Neanderthal child is the oldest known case of Down Syndrome

More than 146,000 years ago, Neanderthals hunted birds and other game while staying at a Spanish cave called Cova Negra. Anthropologists studying the bones they left behind came across one that stood out: Part of the skull that houses the inner

ear bones, from a young child. The bones had a handful of tiny anomalies most commonly found in people with Down syndrome today.
The child likely had the condition, caused by an extra copy of chromosome 21. The child also likely had hearing loss, impairing their ability to communicate, and could have had trouble walking because of balance issues. But the individual lived to age 6, showing that the Cova Negra Neanderthals devoted extra resources and time to caring for the youngster. The finding also adds to the considerable evidence of Neanderthals' sophisticated minds. "The ability to provide care is an indicator for a whole lot of skills—to assess a situation, to plan for care, to figure out what tasks they can undertake and what tasks others have to take on," says archaeologist Lorna Tilley, an independent researcher in Australia. "It shows an immense amount of cognitive planning and forward-thinking ability."
https://www.science.org/content/article/bones-reveal-first-evidence-down-syndrome-neanderthals

SCIENCE DAILY – Origins of cumulative culture in human evolution

Cumulative culture -- the accumulation of technological modifications and improvements over generations -- allowed humans to adapt to a diversity of environments and challenges. But, it is unclear when cumulative culture first developed during hominin evolution. A new study concludes that humans began to rapidly accumulate technological knowledge through social learning around 600,000 years ago.
https://www.sciencedaily.com/releases/2024/06/240617173730.htm

SCIENCE DAILY – Study challenges popular idea that Easter islanders committed 'ecocide'

Some 1,000 years ago, a small band of Polynesians sailed thousands of miles across the Pacific to settle one of the world's most isolated places -- a small, previously uninhabited island they named Rapa Nui. Eventually, their numbers ballooned to unsustainable levels, they wrecked the environment, and their civilization collapsed. At least that is the longtime story, told in academic studies and popular books. A new study challenges this narrative of 'ecocide' saying that Rapa Nui's population never spiraled to unsustainable levels.
https://www.sciencedaily.com/releases/2024/06/240621172346.htm

SCIENCE DAILY – Fishy parenting? Punishing offspring encourages cooperation

Scientists discovered that Neolamprologus savoryi fish use punishment to encourage offspring to cooperate in brood care, revealing advanced cognitive abilities previously thought unique to higher vertebrates. This study highlights that punishment for promoting cooperation exists beyond human societies, prompting a reevaluation of animal intelligence.
https://www.sciencedaily.com/releases/2024/06/240618115647.htm

SCIENCE.ORG NEWS – World's oldest stone needles unearthed on Tibetan Plateau

Objects may have been used for sewing tough fabrics—or possibly as ornaments.
https://www.science.org/content/article/world-s-oldest-stone-needles-unearthed-tibetan-plateau

SCIENCE.ORG NEWS – Bones reveal first evidence of Down syndrome in Neanderthals

Individual's survival into early childhood suggests a high level of community care.
https://www.science.org/content/article/bones-reveal-first-evidence-down-syndrome-neanderthals

PUBLICATIONS

Biology Letters

COMMENTARIES

JONATHAN REDSHAW & THOMAS SUDDENDORF – Can chimpanzees conceive of mutually exclusive future possibilities? A Comment on: 'Chimpanzees prepare for alternative possible outcomes' (2023), by Engelmann et al.
The ability to think about future events and consider mutually exclusive possibilities is a bedrock of human cognition—essential for adaptive contingency planning, logical analysis and moral reasoning—and the nature, development and evolution of this ability have recently attracted considerable attention. In their Biology Letters article, Engelmann et al. report evidence that chimpanzees also prepare for multiple possible outcomes and suggest that they too represent exclusive-OR relations. Here, we point out critical concerns with their study and caution against such a rich interpretation of their findings: leaner explanations are available.
https://royalsocietypublishing.org/doi/full/10.1098/rsbl.2023.0409

JAN M. ENGELMANN et al with JOSEP CALL – Invited Reply: Modal reasoning in non-human animals: possible ways forward
We thank Redshaw & Suddendorf for their thoughtful comments on our recent study. We agree that there is no straightforward litmus test of the ability to represent alternative possibilities in non-verbal populations such as chimpanzees.

Each individual task is more or less convincing, and most, if not all, tasks are open to potential lower-level alternative interpretations. Redshaw & Suddendorf developed the 'forked-tube task' (based on earlier work by Robinson et al. and Beck et al.) to investigate modal thought in non-human primates. This task poses two main cognitive challenges: (i) subjects must represent alternative possibilities (i.e. realize that the reward may emerge from the left tube or the right tube) and (ii) subjects must figure out how to act adaptively in light of these possibilities (i.e. determine that covering both tube openings guarantees success). Given these two challenges, it is possible that non-human primates' failure in Redshaw & Suddendorf's original 'forked-tube task' was not owing to problems with challenge 1 (which is dependent on modal cognition), but rather owing to problems with solving challenge 2 (which is not dependent on modal cognition).
https://royalsocietypublishing.org/doi/full/10.1098/rsbl.2024.0080
Original Paper: EAORC Bulletin 1,045, https://royalsocietypublishing.org/doi/10.1098/rsbl.2023.0179

Cell Genomics

PAPERS

ALEX R. DECASIEN et al with CAYO BIOBANK RESEARCH UNIT & CHET C. SHERWOOD – Evolutionary and biomedical implications of sex differences in the primate brain transcriptome
Humans exhibit sex differences in the prevalence of many neurodevelopmental disorders and neurodegenerative diseases. Here, we generated one of the largest multi-brain-region bulk transcriptional datasets for the rhesus macaque and characterized sex-biased gene expression patterns to investigate the translatability of this species for sex-biased neurological conditions. We identify patterns similar to those in humans, which are associated with overlapping regulatory mechanisms, biological processes, and genes implicated in sex-biased human disorders, including autism. We also show that sex-biased genes exhibit greater genetic variance for expression and more tissue-specific expression patterns, which may facilitate rapid evolution of sex-biased genes. Our findings provide insights into the biological mechanisms underlying sex-biased disease and support the rhesus macaque model for the translational study of these conditions.
https://www.cell.com/cell-genomics/fulltext/S2666-979X(24)00173-3

eLife

PAPERS

GURUESWAR NAGARAJAN et al – Cingulate cortex shapes early postnatal development of social vocalizations
The social dynamics of vocal behavior has major implications for social development in humans. We asked whether early life damage to the anterior cingulate cortex (ACC), which is closely associated with socioemotional regulation more broadly, impacts the normal development of vocal expression. The common marmoset provides a unique opportunity to study the developmental trajectory of vocal behavior, and to track the consequences of early brain damage on aspects of social vocalizations. We created ACC lesions in neonatal marmosets and compared their pattern of vocalization to that of age-matched controls throughout the first 6 weeks of life. We found that while early life ACC lesions had little influence on the production of vocal calls, developmental changes to the quality of social contact calls and their associated syntactical and acoustic characteristics were compromised. These animals made fewer social contact calls, and when they did, they were short, loud and monotonic. We further determined that damage to ACC in infancy results in a permanent alteration in downstream brain areas known to be involved in social vocalizations, such as the amygdala and periaqueductal gray. Namely, in the adult, these structures exhibited diminished GABA-immunoreactivity relative to control animals, likely reflecting disruption of the normal inhibitory balance following ACC deafferentation. Together, these data indicate that the normal development of social vocal behavior depends on the ACC and its interaction with other areas in the vocal network during early life.
https://elifesciences.org/reviewed-preprints/97125

Frontiers in Behavioral Economics

PAPERS

ZEESHAN SAMAD – Conveniently pessimistic: manipulating beliefs to excuse selfishness in charitable giving
This paper demonstrates how people can manipulate their beliefs in order to obtain the self-image of an altruistic person. I present an online experiment in which subjects need to decide whether to behave altruistically or selfishly in an ambiguous environment. Due to the nature of ambiguity in this environment, those who are pessimistic have a legitimate reason to behave selfishly. Thus, subjects who are selfish but like to think of themselves as altruistic have an incentive to overstate their pessimism. In the experiment, I ask subjects how optimistic or pessimistic they feel about an ambiguous probability and then, through a separate task, I elicit their true beliefs about the same probability. I find that selfish subjects claim to be systematically more pessimistic than they truly are whereas altruistic subjects report their pessimism (or optimism) truthfully. Given the experiment design, the only plausible explanation for this discrepancy is that selfish subjects deliberately overstate their pessimism in order to maintain the self-image of an altruistic person. Altruistic subjects, whose behavior has already proven their altruism, have no such need for belief manipulation.
https://www.frontiersin.org/journals/behavioral-economics/articles/10.3389/frbhe.2024.1412437/full

Frontiers in Neurology

PAPERS

YI YIN et al – Cerebral cortex functional reorganization in preschool children with congenital sensorineural hearing loss: a resting-state fMRI study

How cortical functional reorganization occurs after hearing loss in preschool children with congenital sensorineural hearing loss (CSNHL) is poorly understood. Therefore, we used resting-state functional MRI (rs-fMRI) to explore the characteristics of cortical reorganization in these patents.

Sixty-three preschool children with CSNHL and 32 healthy controls (HCs) were recruited, and the Categories of Auditory Performance (CAP) scores were determined at the 6-month follow-up after cochlear implantation (CI). First, rs-fMRI data were preprocessed, and amplitude of low-frequency fluctuation (ALFF) and regional homogeneity (ReHo) were calculated. Second, whole-brain functional connectivity (FC) analysis was performed using bilateral primary auditory cortex as seed points. Finally, Spearman correlation analysis was performed between the differential ALFF, ReHo and FC values and the CAP score.

ALFF analysis showed that preschool children with CSNHL had lower ALFF values in the bilateral prefrontal cortex and superior temporal gyrus than HCs, but higher ALFF values in the bilateral thalamus and calcarine gyrus. And correlation analysis showed that some abnormal brain regions were weak negatively correlated with CAP score ($p < 0.05$). The ReHo values in the bilateral superior temporal gyrus, part of the prefrontal cortex and left insular gyrus were lower, whereas ReHo values in the bilateral thalamus, right caudate nucleus and right precentral gyrus were higher, in children with CSNHL than HCs. However, there was no correlation between ReHo values and the CAP scores ($p < 0.05$). Using primary auditory cortex (PAC) as seed-based FC further analysis revealed enhanced FC in the visual cortex, proprioceptive cortex and motor cortex. And there were weak negative correlations between the FC values in the bilateral superior temporal gyrus, occipital lobe, left postcentral gyrus and right thalamus were weakly negatively correlated and the CAP score ($p < 0.05$).

After auditory deprivation in preschool children with CSNHL, the local functions of auditory cortex, visual cortex, prefrontal cortex and somatic motor cortex are changed, and the prefrontal cortex plays a regulatory role in this process. There is functional reorganization or compensation between children's hearing and these areas, which may not be conducive to auditory language recovery after CI in deaf children.

https://www.frontiersin.org/journals/neurology/articles/10.3389/fneur.2024.1423956/full

Frontiers in Psychology

PAPERS

IOANNIS KATSANTONIS – Exploring age-related differences in metacognitive self-regulation: the influence of motivational factors in secondary school students

Metacognitive self-regulation is a crucial factor that promotes students' learning and achievement. However, the evidence regarding age differences in metacognitive skills is rather mixed, with some evidence pointing toward further refinement and development and other evidence suggesting declining levels. Academic motivation, an important antecedent of metacognitive self-regulation, has also been reported to decline steeply in adolescence. Hence, this raises the question whether there are any age-related differences in academic motivation and metacognitive self-regulation of adolescents and whether age differences in academic motivation drive decreases in metacognitive self-regulation.

A large sample size of 1,027 Greek adolescents (ages 12–16, Mage = 13.95, SD = 0.78) was utilized in the present study. Multigroup measurement invariance analyses were deployed to compare the latent means of motivational factors (self-efficacy, task value, mastery, and performance goals) and metacognitive self-regulation across age groups. Cholesky decomposition was applied to test the independent contribution of motivational factors to and the indirect effects of age on metacognitive self-regulation.

Invariance analyses revealed scalar invariance for metacognitive self-regulation, language self-efficacy, mastery and performance goal orientations and partially scalar invariance for task value. Older adolescents scored lower on metacognitive self-regulation, mastery and performance goals, and self-efficacy. Older students scored lower on metacognitive self-regulation via indirect effects through Cholesky decomposed motivational factors.

Self-efficacy, mastery and performance goals, and task value are similarly understood across adolescents in different age groups. Decreased mastery and performance goals and task value can lead to reduced metacognitive self-regulation in adolescents. The implications of the findings underscore the key role of making students more engaged with lessons' content in order to promote greater academic motivation and prevent decreases in metacognitive self-regulation.

https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2024.1383118/full

G. LOGAN PELFREY et al – Evaluating the accuracy of automated processing of child and adult language production in preschool classrooms

Young children's language and social development is influenced by the linguistic environment of their classrooms, including their interactions with teachers and peers. Measurement of the classroom linguistic environment typically relies on observational methods, often providing limited 'snapshots' of children's interactions, from which broad generalizations are made. Recent technological advances, including artificial intelligence, provide opportunities to capture children's interactions using continuous recordings representing much longer durations of time. The goal of the present study was to evaluate the

accuracy of the Interaction Detection in Early Childhood Settings (IDEAS) system on 13 automated indices of language output using recordings collected from 19 children and three teachers over two weeks in an urban preschool classroom. The accuracy of language outputs processed via IDEAS were compared to ground truth via linear correlations and median absolute relative error. Findings indicate high correlations between IDEAS and ground truth data on measures of teacher and child speech, and relatively low error rates on the majority of IDEAS language output measures. Study findings indicate that IDEAS may provide a useful measurement tool for advancing knowledge about children's classroom experiences and their role in shaping development.
https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2024.1322665/full

Frontiers in Research Metrics and Analytics

PAPERS

JAMES E. KENNEDY – Addressing researcher fraud: retrospective, real-time, and preventive strategies–including legal points and data management that prevents fraud

Researcher fraud is often easy and enticing in academic research, with little risk of detection. Cases of extensive fraud continue to occur. The amount of fraud that goes undetected is unknown and may be substantial. Three strategies for addressing researcher fraud are (a) retrospective investigations after allegations of fraud have been made, (b) sting operations that provide conclusive evidence of fraud as it occurs, and (c) data management practices that prevent the occurrence of fraud. Institutional and regulatory efforts to address researcher fraud have focused almost exclusively on the retrospective strategy. The retrospective approach is subject to controversy due to the limitations of post-hoc evidence in science, the difficulty in establishing who actually committed the fraud in some cases, the application of a legal standard of evidence that is much lower than the usual standards of evidence in science, and the lack of legal expertise by scientists investigating fraud. The retrospective strategy may be reliably effective primarily in cases of extensive, careless fraud. Sting operations can overcome these limitations and controversies, but are not feasible in many situations. Data management practices that are effective at preventing researcher fraud and unintentional errors are well-established in clinical trials regulated by government agencies, but appear to be largely unknown or unimplemented in most academic research. Established data management practices include: archiving secure copies of the raw data, audit trails, restricted access to the data and data collection processes, software validation, quality control checks, blinding, preregistration of data processing and analysis programs, and research audits that directly address fraud. Current discussions about data management in academic research focus on sharing data with little attention to practices that prevent intentional and unintentional errors. A designation or badge such as error-controlled data management could be established to indicate research that was conducted with data management practices that effectively address intentional and unintentional errors.
https://www.frontiersin.org/journals/research-metrics-and-analytics/articles/10.3389/frma.2024.1397649/full

Heliyon

PAPERS

NURIA MARTÍN-POZUELO et al – Measuring spatial navigation during locomotion in children: a systematic review

Spatial navigation allows us to move around our environment, walking being the most advanced form of human locomotion. Over the years, a range of tools has been developed to study spatial navigation in children. Aim. To describe the role of locomotion during the assessment of spatial navigation in children, providing an overview of the instruments available for assessing spatial navigation in typically developing children and those with neurodevelopmental disorders. Methods and Procedures. A systematic search was performed in six electronic databases between December 2022 and February 2023, then updated in July 2023. Cross-sectional and observational studies were included. Outcomes and results. Of the 3,385 studies screened, 47 were selected for this review. Five studies described the influence of locomotion on spatial navigation, and seven studies included locomotion as an explanatory variable in this area. Most studies focused on children from five to twelve years old, whereas only nine were centred on infants and preschoolers. Just eight assessed spatial abilities in individuals with neurodevelopmental disorders. Conclusions and implications. Children with or at risk of neurodevelopmental impairments show poorer spatial navigation skills. Having the choice to actively explore the space is more important than the way they locomote. It is necessary to have tools to assess spatial navigation during locomotion early in infancy.
https://www.cell.com/heliyon/fulltext/S2405-8440(24)09848-7

MUHAMMAD HARIS SAEED et al – Renewable energy resource management using an integrated robust decision making model under entropy and similarity measures of fuzzy hypersoft set

The demand for renewable energy has significantly increased over the last decade with increased attention to the preservation of the environment and sustainable, optimal resource management. As traditional sources of energy production are depleting at an alarming rate and causing long-lasting environmental damage, it is essential to explore green and cost-effective methodologies for meeting energy demand. With each country having different geographical, political, social, and natural factors, the problem arises of which renewable energy should be utilized for optimal resource management. This multi-criteria decision making (MCDM) challenge is tackled by applying a dynamic fuzzy hypersoft set-based Method for the evaluation of currently deployed Renewable Energy systems and providing a decision support system for the installation of

new ones based on the factors mentioned above for Turkey. As the installation of new renewable energy projects and the evaluation of old ones is significantly influenced by human judgment, it leaves great room for uncertainty primarily because of the psychological factors of the expert. The novel concept of Fuzzy Hypersoft Sets (FHSs) and their Entropy (EN) and TOPSIS-based operations are first discussed with reference to the problem at hand. The presented structure is superior to the ones in the literature by allowing access to data parameters as sub-parametric values while utilizing the versatility of Fuzzy structures to deal with uncertainty. The technique has great potential to serve as a potential decision support system in any setting. For now, hypothetical expert ratings are used to illustrate the working of the dynamic structure along with a sensitivity analysis to investigate the primary criterion weights in sorting. The evaluation of currently deployed renewable energy systems using our methodology revealed an average improvement in system performance compared to traditional methods. Furthermore, the decision support system for the installation of new projects based on geographical, political, social, and natural factors exhibited a potential increase in overall system efficiency. These numeric outcomes highlight the effectiveness and practical applicability of our approach in optimizing resource management and fostering sustainable energy practices.
https://www.cell.com/heliyon/fulltext/S2405-8440(24)09495-7

WALTER MARCELO BERNAL ARELLANO et al – A Study on Academic Dishonesty among English as a Foreign Language Students

Academic dishonesty is prevalent and has unfortunately become normalized in post-secondary institutions worldwide. The COVID-19 pandemic more than two years ago led to an increase in cheating and confrontation of instructors with academic honesty. The main objective of this study was to create an explicative model according to the levels of morality, pragmatism, and gender. Researchers applied an online questionnaire to 735 anonymous university students. Analysis showed that participants were less honest in morality than in pragmatism, but the average value was very close for both dimensions. A substantial number of students with low and moderate levels of dishonesty were observed in both moral and pragmatic contexts. The initial hypothesis was partially validated, as the level of morality was associated with the level of pragmatism rather than gender, indicating a direct albeit moderate impact of pragmatism on morality. We confirmed the second hypothesis, showing the influence of gender and morality on the level of pragmatism. Participants suggested that English as a Foreign Language instructors should modify their approach, account for ethical considerations, offer extra classes, revise teaching and evaluation methods, and sanction students who cheat. Surprisingly, results show a slight tendency for lower honesty in morality compared to pragmatism. Despite honest behaviors, it is essential to address gender differences and promote academic honesty through education, policies, and a culture of honesty.
https://www.cell.com/heliyon/fulltext/S2405-8440(24)09907-9

iScience

PAPERS

ALICIA VON SCHENK et al – Lie detection algorithms disrupt the social dynamics of accusation behavior

Humans, aware of the social costs associated with false accusations, are generally hesitant to accuse others of lying. Our study shows how lie detection algorithms disrupt this social dynamic. We develop a supervised machine-learning classifier that surpasses human accuracy and conduct a large-scale incentivized experiment manipulating the availability of this lie-detection algorithm. In the absence of algorithmic support, people are reluctant to accuse others of lying, but when the algorithm becomes available, a minority actively seeks its prediction and consistently relies on it for accusations. Although those who request machine predictions are not inherently more prone to accuse, they more willingly follow predictions that suggest accusation than those who receive such predictions without actively seeking them.
https://www.cell.com/iscience/fulltext/S2589-0042(24)01426-3

CHUNMIAN ZHANG et al – Do bats' social vocalizations conform to Zipf's law and the Menzerath-Altmann law?

The study of vocal communication in non-human animals can uncover the roots of human languages. Recent studies of language have focused on two linguistic laws: Zipf's law and the Menzerath-Altmann law. However, whether bats' social vocalizations follow these linguistic laws, especially Menzerath's law, has largely been unexplored. Here, we used Asian particoloured bats, Vespertilio sinensis, to examine whether aggressive vocalizations conform to Zipf's and Menzerath's laws. Aggressive vocalizations of V. sinensis adhere to Zipf's law, with the most frequent syllables being the shortest in duration. There was a negative association between syllable number within a call and the average syllable duration, in agreement with Menzerath's law. A decrease in the proportion of some long syllables and a decrease in the duration of several syllable types in long duration calls explains the occurrence of this law. Our results indicate that a general compression principle organizes aspects of bat vocal communication systems.
https://www.cell.com/iscience/fulltext/S2589-0042(24)01626-2

Nature Geoscience

ARTICLES

UDARA AMARATHUNGA & DAVID HUTCHINSON – An extended pan-North African humid period within the warm Pliocene

Climate models and paleoclimate proxy records indicate that the absence of preserved eastern Mediterranean organic-rich layers preceding mid-Pliocene glaciation is linked to a pan-North African humid period caused by a more northerly African monsoon front relative to subsequent glacials. The vegetation expansion caused by this humid phase might have influenced early hominin dispersal.

https://www.nature.com/articles/s41561-024-01481-7

PAPERS

UDARA AMARATHUNGA et al – Mid-Pliocene glaciation preceded by a 0.5-million-year North African humid period

Past North African humid periods caused expanded vegetation over the Sahara, due to northward tropical African rainbelt displacement, opening migration pathways for hominins. Commonly, these precession-timed humid periods ended within 15,000 years due to rainbelt retreat. During North African humid periods, eastern Mediterranean organic-rich layers called sapropels were deposited at least since 8 Myr. Here we combine climate modelling with palaeoclimate proxy data to show that weakened sapropel preservation during the 5.3–3.3 Myr period resulted from nutrient runoff limitation associated with enhanced North African vegetation cover due to a persistently more northward-located African monsoon front, relative to the mid-Pliocene (3.3–3.0 Myr, when glacial intensity increased). Moreover, sapropel absence within the 3.8–3.3 Myr period coincided with maximum monsoon runoff and extensively humid, vegetated conditions throughout North Africa. Our model results indicate that this 0.5-Myr-long pan-North African humid period ended at ~3.3 Myr because of southward monsoon front displacement with Northern Hemisphere glacial intensification. The 3.8–3.3 Myr humid period coincided with the earliest known evidence for hominin coexistence over eastern and central North Africa. We posit that persistent green corridors during this humid phase facilitated early hominin connectivity and migration, expanding their habitat range over the wider North African territory.

https://www.nature.com/articles/s41561-024-01472-8

Nature Neuroscience

PAPERS

RAJESH P. N. RAO – A sensory–motor theory of the neocortex

Recent neurophysiological and neuroanatomical studies suggest a close interaction between sensory and motor processes across the neocortex. Here, I propose that the neocortex implements active predictive coding (APC): each cortical area estimates both latent sensory states and actions (including potentially abstract actions internal to the cortex), and the cortex as a whole predicts the consequences of actions at multiple hierarchical levels. Feedback from higher areas modulates the dynamics of state and action networks in lower areas. I show how the same APC architecture can explain (1) how we recognize an object and its parts using eye movements, (2) why perception seems stable despite eye movements, (3) how we learn compositional representations, for example, part–whole hierarchies, (4) how complex actions can be planned using simpler actions, and (5) how we form episodic memories of sensory–motor experiences and learn abstract concepts such as a family tree. I postulate a mapping of the APC model to the laminar architecture of the cortex and suggest possible roles for cortico–cortical and cortico–subcortical pathways.

https://www.nature.com/articles/s41593-024-01673-9

Nature Reviews Neuroscience

PAPERS

JACOB A. MILLER & CHRISTOS CONSTANTINIDIS – Timescales of learning in prefrontal cortex

The lateral prefrontal cortex (PFC) in humans and other primates is critical for immediate, goal-directed behaviour and working memory, which are classically considered distinct from the cognitive and neural circuits that support long-term learning and memory. Over the past few years, a reconsideration of this textbook perspective has emerged, in that different timescales of memory-guided behaviour are in constant interaction during the pursuit of immediate goals. Here, we will first detail how neural activity related to the shortest timescales of goal-directed behaviour (which requires maintenance of current states and goals in working memory) is sculpted by long-term knowledge and learning — that is, how the past informs present behaviour. Then, we will outline how learning across different timescales (from seconds to years) drives plasticity in the primate lateral PFC, from single neuron firing rates to mesoscale neuroimaging activity patterns. Finally, we will review how, over days and months of learning, dense local and long-range connectivity patterns in PFC facilitate longer-lasting changes in population activity by changing synaptic weights and recruiting additional neural resources to inform future behaviour. Our Review sheds light on how the machinery of plasticity in PFC circuits facilitates the integration of learned experiences across time to best guide adaptive behaviour.

https://www.nature.com/articles/s41583-024-00836-8

Nature Reviews Psychology

PAPERS

CONSTANTINE SEDIKIDES & REBECCA J. SCHLEGEL – Distilling the concept of authenticity

Authenticity has long captured the imagination of literary figures, philosophers and scientists. The construct originated in Aristotelian thinking and serves as an injunctive societal norm in contemporary society. Although people have been fascinated with authenticity since at least the time of the ancient Greeks, the concept remains elusive. In this Review, we aim to clarify the construct of authenticity. First, we consider the evidence for conceptualizations of authenticity as self-accuracy, self-consistency, self-ownership and self-enhancement. We then differentiate between trait authenticity and state authenticity and highlight pertinent theoretical models and measurement approaches. Authenticity is relevant to psychological functioning, and we describe its associations with self-regulation, behaviour regulation, interpersonal relations, psychological health and consumer behaviour. Although authenticity has beneficial effects in these domains, it also has drawbacks such as the potential for hypocrisy, off-putting positive self-presentation and conflict in the workplace. We conclude by pinpointing empirical lacunae and proposing future research directions.
https://www.nature.com/articles/s44159-024-00323-y

Nature Scientific Reports

PAPERS

MOLLIE GERVER, SANCHAYAN BANERJEE & PETER JOHN – Nudging against consent is effective but lowers welfare

Behavioural nudges are often criticised because they "work best in the dark". However, recent experimental evidence suggests that the effectiveness of nudges is not reduced when they are delivered transparently. Most people also endorse transparent nudges. Yet, transparent nudging may undermine human autonomy—a minority may oppose to being nudged and feel manipulated, even if they know what is happening. We propose an alternative way of maintaining autonomy that is not reducible to transparency: individuals can be asked if they consent in advance to being nudged. To assess whether consensual nudges are effective, we ask consent from 1518 UK citizens to be nudged. Subsequently, we default all participants into donating to a charity of their choice, irrespective of self-reported consent. We find that the default nudge is equally effective for both consenting and non-consenting individuals, with negligible difference in average donations. However, non-consenting individuals report higher levels of resentment and regret and lower levels of happiness and support compared to the consenting group. Based on these findings, we argue that ignoring consent can have serious ethical ramifications for policy-making with nudges.
https://www.nature.com/articles/s41598-024-65122-0

New Scientist

NEWS

Sick chimpanzees seek out range of plants with medicinal properties

Chimpanzees with wounds or gut infections seem to add unusual plants to their diet, and tests show that many of these plants have antibacterial or anti-inflammatory effects.
https://www.newscientist.com/article/2435647-sick-chimpanzees-seek-out-range-of-plants-with-medicinal-properties/

Easter Island's legendary societal collapse didn't actually happen

Historians have claimed the people of Easter Island overexploited natural resources, causing a population crash, but new evidence suggests they lived sustainably for centuries.
https://www.newscientist.com/article/2436416-easter-islands-legendary-societal-collapse-didnt-actually-happen/

PeerJ

PAPERS

WENJING YU et al – Combined uranium-series and electron spin resonance dating from the Pliocene fossil sites of Aves and Milo's palaeocaves, Bolt's Farm, Cradle of Humankind, South Africa

Bolt's Farm is the name given to a series of non-hominin bearing fossil sites that have often been suggested to be some of the oldest Pliocene sites in the Cradle of Humankind, South Africa. This article reports the results of the first combined Uranium-Series and Electron Spin Resonance (US-ESR) dating of bovid teeth at Milo's Cave and Aves Cave at Bolt's Farm. Both tooth enamel fragments and tooth enamel powder ages were presented for comparison. US-ESR, EU and LU models are calculated. Overall, the powder ages are consistent with previous uranium-lead and palaeomagnetic age estimates for the Aves Cave deposit, which suggest an age between ~3.15 and 2.61 Ma and provide the first ages for Milo's Cave dates to between ~3.1 and 2.7 Ma. The final ages were not overly dependent on the models used (US-ESR, LU or EU), which all overlap within error. These ages are all consistent with the biochronological age estimate (<3.4–>2.6 Ma) based on the occurrence of Stage I Metridiochoerus andrewsi. Preliminary palaeomagnetic analysis from Milo's Cave indicates a reversal takes place at the site with predominantly intermediate directions, suggesting the deposit may date to the period between ~3.03 and 3.11 Ma within error of the ESR ages. This further suggests that there are no definitive examples of palaeocave

deposits at Bolt's Farm older than 3.2 Ma. This research indicates that US-ESR dating has the potential to date fossil sites in the Cradle of Humankind to over 3 Ma. However, bulk sample analysis for US-ESR dating is recommended for sites over 3 Ma.
https://peerj.com/articles/17478/

SIMO SUN, MAN WANG & YI LEI – Analyzing reciprocity dynamics in supply chains of public goods: a stochastic evolutionary game approach

To start with an infinitely repeated game of supply chains of public goods, a stout reciprocity mechanism is introduced into income games to build a matric dynamic equation. The conventional evolutionary game method is employed to propose a model called the evolutionary game for the cooperative strategy of both the manufacturer and the seller groups in the supply chain of public goods. Also, white Gaussian noise (WGN) is added to reflect random interference in the evolution process. Then, a stochastic dynamic system is established, and Ito's differential equation is used to analyze both sides' strategy evolution in a game, interpret changes in system stability when random disturbance is added, and finally test the influence of different situations on the system stability by running a numerical simulation. The research shows that the stronger the reciprocity coefficient is, and the system is subjected to random interference, the greater the strategy choice change in players' decision-making procedures when the repeated game of public goods is conducted.
https://peerj.com/articles/cs-2118/

Philosophical Transactions of the Royal Society B

PAPERS

EMANUEL A. FRONHOFER et al – Evolutionary ecology of dispersal in biodiverse spatially structured systems: what is old and what is new?

Dispersal is a well-recognized driver of ecological and evolutionary dynamics, and simultaneously an evolving trait. Dispersal evolution has traditionally been studied in single-species metapopulations so that it remains unclear how dispersal evolves in metacommunities and metafoodwebs, which are characterized by a multitude of species interactions. Since most natural systems are both species-rich and spatially structured, this knowledge gap should be bridged. Here, we discuss whether knowledge from dispersal evolutionary ecology established in single-species systems holds in metacommunities and metafoodwebs and we highlight generally valid and fundamental principles. Most biotic interactions form the backdrop to the ecological theatre for the evolutionary dispersal play because interactions mediate patterns of fitness expectations across space and time. While this allows for a simple transposition of certain known principles to a multispecies context, other drivers may require more complex transpositions, or might not be transferred. We discuss an important quantitative modulator of dispersal evolution—increased trait dimensionality of biodiverse meta-systems—and an additional driver: co-dispersal. We speculate that scale and selection pressure mismatches owing to co-dispersal, together with increased trait dimensionality, may lead to a slower and more 'diffuse' evolution in biodiverse meta-systems. Open questions and potential consequences in both ecological and evolutionary terms call for more investigation.
https://royalsocietypublishing.org/doi/full/10.1098/rstb.2023.0142

PLoS One

PAPERS

DORI E. KENESSEY, CHRISTOPHER M. STOJANOWSKI & KATHLEEN S. PAUL – Evaluating predictions of the patterning cascade model of crown morphogenesis in the human lower mixed and permanent dentition

The patterning cascade model of crown morphogenesis has been studied extensively in a variety of organisms to elucidate the evolutionary history surrounding postcanine tooth form. The current research is the first to use a large modern human sample to examine whether the crown configuration of lower deciduous and permanent molars aligns with expectations derived from the model. This study has two main goals: 1) to determine if metameric and antimeric pairs significantly differ in size, accessory trait expression, and relative intercusp spacing, and 2) assess whether the relative distance among early-forming cusps accounts for observed variation in accessory cusp expression.

Tooth size, intercusp distance, and morphological trait expression data were collected from 3D scans of mandibular dental casts representing participants of the Harvard Solomon Islands Project. Paired tests were utilized to compare tooth size, accessory trait expression, and relative intercusp distance between diphyodont metameres and permanent antimeres. Proportional odds logistic regression was implemented to investigate how the odds of greater accessory cusp expression vary as a function of the distance between early-developing cusps.

Comparing paired molars, significant differences were identified for tooth size and cusp 5 expression. Several relative intercusp distances emerged as important predictors of cusp 6 expression, however, results for cusp 5 and cusp 7 did not match expected patterns. These findings support previous quantitative genetic results and suggest the development of neighboring crown structures represents a zero-sum partitioning of cellular territory and resources. As such, this study contributes to a better understanding of the foundations of deciduous and permanent molar crown variation in humans.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0304455

Proceedings of the Royal Society B

PAPERS

TALIA L. RETTER, LUCAS ERAßMY & CHRISTINE SCHILTZ – Identifying conceptual neural responses to symbolic numerals

The goal of measuring conceptual processing in numerical cognition is distanced by the possibility that neural responses to symbolic numerals are influenced by physical stimulus confounds. Here, we targeted conceptual responses to parity (even versus odd), using electroencephalogram (EEG) frequency-tagging with a symmetry/asymmetry design. Arabic numerals (2–9) were presented at 7.5 Hz in 50 s sequences; odd and even numbers were alternated to target differential, 'asymmetry' responses to parity at 3.75 Hz (7.5 Hz/2). Parity responses were probed with four different stimulus sets, increasing in intra-numeral stimulus variability, and with two control conditions composed of non-conceptual numeral alternations. Significant asymmetry responses were found over the occipitotemporal cortex to all conditions, even for the arbitrary controls. The large physical-differences control condition elicited the largest response in the stimulus set with the lowest variability (one font). Only in the stimulus set with the highest variability (20 drawn, coloured exemplars/numeral) did the response to parity surpass both control conditions. These findings show that physical differences across small sets of Arabic numerals can strongly influence, and even account for, automatic brain responses. However, carefully designed control conditions and highly variable stimulus sets may be used towards identifying truly conceptual neural responses.
https://royalsocietypublishing.org/doi/full/10.1098/rspb.2024.0589

Royal Society Open Science

PAPERS

A. GREENBURGH et al – Social identification and paranoia

Paranoia is associated with variation in social behaviour, such as lower inclination to trust others or to behave generously in economic game settings. Such variation may stem, in part, from a reduced tendency to socially identify with others, although previous studies have reported mixed results. We tested whether paranoia involves altered social identification in a pre-registered online study investigating the relationship between a measure of social identification, paranoia, and social behaviours in economic games. We successfully manipulated social identification, but paranoia was associated with slightly increased social identification overall. Neither paranoia nor social identification predicted behaviour in the economic games, and there was no interaction between paranoia and social identification regarding trusting and cooperative behaviours. Our results converge with recent work suggesting that more paranoid individuals may harbour a higher tendency to perceive themselves as having similar beliefs to others. We discuss some key areas for future research to progress understanding in this area.
https://royalsocietypublishing.org/doi/full/10.1098/rsos.231961

OLIVIA MACMILLAN-SCOTT & MIRCO MUSOLESI – (Ir)rationality and cognitive biases in large language models

Do large language models (LLMs) display rational reasoning? LLMs have been shown to contain human biases due to the data they have been trained on; whether this is reflected in rational reasoning remains less clear. In this paper, we answer this question by evaluating seven language models using tasks from the cognitive psychology literature. We find that, like humans, LLMs display irrationality in these tasks. However, the way this irrationality is displayed does not reflect that shown by humans. When incorrect answers are given by LLMs to these tasks, they are often incorrect in ways that differ from human-like biases. On top of this, the LLMs reveal an additional layer of irrationality in the significant inconsistency of the responses. Aside from the experimental results, this paper seeks to make a methodological contribution by showing how we can assess and compare different capabilities of these types of models, in this case with respect to rational reasoning.
{In other words, when their rational training data gives unclear results, LLMs resort to their irrational training data – which is usually the product of common irrational human biases. However, as most irrational human biases have many opposing viewpoints, they vacillate between adopting a single one. LLMs base their irrationality on pre-existing human irrationalities; but, unlike humans, they do not "believe" their irrationalities.}
https://royalsocietypublishing.org/doi/full/10.1098/rsos.240255

OLGA SOLAJA & DAVIDE CREPALDI – The role of morphology in novel word learning: a registered report

The majority of the new words that we learn every day as adults are morphologically complex; yet, we do not know much about the role of morphology in novel word learning. In this study, we tackle this issue by comparing the learning of: (i) suffixed novel words (e.g. flibness); (ii) novel words that end in non-morphological, but frequent letter chunks (e.g. fliban); and (iii) novel words with non-morphological, low-frequency endings (e.g. flibov). Words are learned incidentally through sentence reading, while the participants' eye movements are monitored. We show that morphology has a facilitatory role compared with the other two types of novel words, both during learning and in a post-learning recognition memory task. We also showed that participants attributed meaning to word parts (if flibness is a state of happiness, then flib must mean happy), but this process was not specifically triggered by the presence of a suffix (flib must also mean happy in fliban and flibov), thus suggesting that the brain tends to assume similar meanings for similar words and word parts.
https://royalsocietypublishing.org/doi/10.1098/rsos.230094

Science Advances

PAPERS

IAN GILLIGAN et al with FRANCESCO D'ERRICO – Paleolithic eyed needles and the evolution of dress

Eyed needles are among the most iconic of Paleolithic artifacts, traditionally seen as rare indicators of prehistoric clothing, particularly tailoring. However, recent finds across Africa and Eurasia show that other technologies like bone awls also facilitated the creation of fitted garments. Nonetheless, the advent of delicate eyed needles suggests a demand for more refined, efficient sewing. This refinement may signify two major developments: the emergence of underwear in layered garment assemblages, and/or a transition in adornment from body modification to decorating clothes, as humans covered themselves more completely for thermal protection. Archaeological evidence for underwear is limited, but the Upper Paleolithic saw an increase in personal ornaments, some sewn onto clothing. Eyed needles may mark a pivotal shift as clothes acquired the social functions of dress, decoupling clothing from climate and ensuring its enduring presence.
https://www.science.org/doi/10.1126/sciadv.adp2887

NOHEMI SALA et mul – Nobody's land? The oldest evidence of early Upper Paleolithic settlements in inland Iberia

The Iberian Peninsula is a key region for unraveling human settlement histories of Eurasia during the period spanning the decline of Neandertals and the emergence of anatomically modern humans (AMH). There is no evidence of human occupation in central Iberia after the disappearance of Neandertals ~42,000 years ago until approximately 26,000 years ago, rendering the region "nobody's land" during the Aurignacian period. The Abrigo de la Malia provides irrefutable evidence of human settlements dating back to 36,200 to 31,760 calibrated years before the present (cal B.P.) This site also records additional levels of occupation around 32,420 to 26,260 cal B.P., suggesting repeated settlement of this territory. Our multiproxy examination identifies a change in climate trending toward colder and more arid conditions. However, this climatic deterioration does not appear to have affected AMH subsistence strategies or their capacity to inhabit this region. These findings reveal the ability of AMH groups to colonize regions hitherto considered uninhabitable, reopening the debate on early Upper Paleolithic population dynamics of southwestern Europe.
https://www.science.org/doi/10.1126/sciadv.ado3807

ANGELO ROMANO, JÖRG GROSS & CARSTEN K. W. DE DREU – The nasty neighbor effect in humans

Like other group-living species, humans often cooperate more with an in-group member than with out-group members and strangers. Greater in-group favoritism should imply that people also compete less with in-group members than with out-group members and strangers. However, in situations where people could invest to take other's resources and invest to protect against exploitation, we observed the opposite. Akin to what in other species is known as the "nasty neighbor effect," people invested more when facing an in-group rather than out-group member or stranger across 51 nations, in different communities in Kenya, and in representative samples from the United Kingdom. This "nasty neighbor" behavior is independent of in-group favoritism in trust and emerges when people perceive within-group resource scarcity. We discuss how to reconcile that humans exhibit nastiness and favoritism toward in-group members with existing theory on in-group favoritism.
https://www.science.org/doi/10.1126/sciadv.adm7968

DAVID T. SCHULTNER et al – Transmission of social bias through observational learning

People often rely on social learning—learning by observing others' actions and outcomes—to form preferences in advance of their own direct experiences. Although typically adaptive, we investigated whether social learning may also contribute to the formation and spread of prejudice. In six experiments (n = 1550), we demonstrate that by merely observing interactions between a prejudiced actor and social group members, observers acquired the prejudices of the actor. Moreover, observers were unaware of the actors' bias, misattributing their acquired group preferences to the behavior of group members, despite identical behavior between groups. Computational modeling revealed that this effect was due to value shaping, whereby one's preferences are shaped by another's actions toward a target, in addition to the target's reward feedback. These findings identify social learning as a potent mechanism of prejudice formation that operates implicitly and supports the transmission of intergroup bias.
https://www.science.org/doi/10.1126/sciadv.adk2030

MERCEDES CONDE-VALVERDE et al – The child who lived: Down syndrome among Neanderthals?

Caregiving for disabled individuals among Neanderthals has been known for a long time, and there is a debate about the implications of this behavior. Some authors believe that caregiving took place between individuals able to reciprocate the favor, while others argue that caregiving was produced by a feeling of compassion related to other highly adaptive prosocial behaviors. The study of children with severe pathologies is particularly interesting, as children have a very limited possibility to reciprocate the assistance. We present the case of a Neanderthal child who suffered from a congenital pathology of the inner ear, probably debilitating, and associated with Down syndrome. This child would have required care for at least 6 years, likely necessitating other group members to assist the mother in childcare.
https://www.science.org/doi/10.1126/sciadv.adn9310

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