EAORC BULLETIN 1,139 – 13 April 2025

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NOTICES

FORMATTED VERSION OF THIS BULLETIN

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

PUBLICATION ALERTS

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

EDITORIAL INTERJECTIONS

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

NEWS

NATURE BRIEFING – Genomes of the apes

After more than two decades of work, researchers have sequenced the complete genomes of six ape species. An understanding of the apes' genomes gives geneticists insights into the genetic factors that differentiate humans from our animal cousins. The results will also be key to analysing the genetic diversity of at-risk ape populations — all six species sequenced are listed as either endangered or critically endangered. "I've never thought that this would be accomplished in my lifetime," says evolutionary geneticist and study co-author Kateryna Makova.
https://www.nature.com/articles/d41586-025-01079-y

NEWS FROM SCIENCE – Early experiences shape the brain's 'communication superhighways' to affect cognition

Massive study links a child's social environment to white matter structure.
https://www.science.org/content/article/early-experiences-shape-brain-s-communication-superhighways-affect-cognition

NEWS FROM SCIENCE – Mediterranean hunter-gatherers voyaged across the open sea 8500 years ago

New discoveries on Malta show people settled remote islands before the rise of farming.
https://www.science.org/content/article/mediterranean-hunter-gatherers-voyaged-across-open-sea-8500-years-ago

NEWS FROM SCIENCE – Fossil jawbone reveals mysterious Denisovans lived in ancient Taiwan

First confirmed fossil found outside Siberia and the Tibetan Plateau shows the archaic human also lived in hot climates.
https://www.science.org/content/article/fossil-jawbone-reveals-mysterious-denisovans-lived-ancient-taiwan

NEWS FROM SCIENCE – Researchers from China and 'countries of concern' barred from NIH databases

Trump administration escalates efforts to keep sensitive data from foreign adversaries.
{Why bother? Who would be interested in what little real data there is left in the NIH databases?}
https://www.science.org/content/article/researchers-china-and-five-other-countries-concern-barred-nih-databases

NEWS FROM SCIENCE – Top Canadian Conservative candidate will end 'woke ideology' in science funding

Pierre Poilievre's Conservative Party is trying to topple Liberal government in 28 April election.
{Why are Neocons so eager to learn from the mistakes of others so they can repeat them exactly? Is it some kind of Reproducibility Testing?}
https://www.science.org/content/article/canadian-election-top-conservative-candidate-vows-end-woke-ideology-science-funding

SAPIENS – Huh? The Valuable Role of Interjections

Listen carefully to a spoken conversation and you'll notice that the speakers use a lot of little quasi-words—'mm-hmm,' 'um,' 'huh?,' and the like—that don't convey any information about the topic of the conversation itself. For many decades, linguists regarded such utterances as largely irrelevant noise, the flotsam and jetsam that accumulate on the margins of language when speakers aren't as articulate as they'd like to be.
But these little words may be much more important than that. A few linguists now think that far from being detritus, they may be crucial traffic signals to regulate the flow of conversation as well as tools to negotiate mutual understanding. That puts them at the heart of language itself—and they may be the hardest part of language for artificial intelligence to master.
https://www.sapiens.org/language/linguistics-interjections-conversation-flow/

SCIENCEADVISER – How early environments shape a kid's brain

A child's early life isn't just about going to school and playing sports—it's shaping their brain's very structure. A new study in PNAS reveals that financial struggles, neighborhood safety, and the community around a kid can influence the brain's white matter: the network of fibers that connects different brain regions. The findings highlight how early adversity can weaken this neural wiring, leading to lower cognitive abilities later in childhood—but also, how social factors can boost resilience in a young brain.
Unlike previous studies that focused on gray matter, this research zeroes in on white matter—the brain's "communication highways." The study analyzed brain scans from over 9000 children in the Adolescent Brain Cognitive Development (ABCD) study, the largest of its kind. Researchers found that nearly every environmental factor—except for birthweight—impacted white matter quality. Trauma and social vulnerability, including poverty and housing conditions, were the biggest threats to a healthy brain development, and also led to difficulties in language and math skills.
But supportive family environments, high household income, and strong community interactions were linked to better white matter integrity. This suggests that positive social factors can help counter adversity's effects. The study suggests that policies that not only focus on individual families, but also on strengthening communities can bolster children's full brain development.
https://www.science.org/content/article/early-experiences-shape-brain-s-communication-superhighways-affect-cognition

SCIENCEADVISER – Mediterranean hunter-gatherers voyaged across the open sea 8500 years ago

New discoveries on Malta show people settled remote islands before the rise of farming.
https://www.science.org/content/article/mediterranean-hunter-gatherers-voyaged-across-open-sea-8500-years-ago

SCIENCEADVISER – Dredging up a Denisovan

You never know what you'll find in an antique shop. Maybe an old record player or grandfather clock—or maybe the jawbone of an enigmatic extinct hominin. The latter is what Kun-Yu Tsai found in a shop in Taiwan in 2008. It had been dredged up by a fishing vessel operating in a nearby channel. After he donated the artifact to a museum, its true nature gradually came to light.

An analysis of the robust mandible's ancient proteins published in Science reveals it belonged to a Denisovan, a close cousin of Neanderthals that lived roughly between 400,000 years to 30,000 years ago. To date, all other Denisovan fossils confirmed using molecular methods—that is, through ancient DNA or ancient protein analysis—came from frigid, high-altitude locations in Siberia and the Tibetan Plateau. The Taiwan mandible confirms Denisovans also lived in hot, humid places, as well.

That tracks with genetic data indicating Denisovans interbred with modern humans, especially those in Island Southeast Asia, given the fact that certain populations there today derive between 1% and 5% of their genomes from those ancient encounters. And now that researchers can confidently match morphology with Denisovan-specific protein sequences, there's hope they'll find even more heretofore unclassified Denisovan fossils in collections, which could reveal even more about their habitats and lifestyles.

https://www.science.org/content/article/fossil-jawbone-reveals-mysterious-denisovans-lived-ancient-taiwan

SCIENCE DAILY – Childhood experiences shape brain's white matter with cognitive effects seen years later

Investigators have linked difficult early life experiences with reduced quality and quantity of the white matter communication highways throughout the adolescent brain. This reduced connectivity is also associated with lower performance on cognitive tasks.

https://www.sciencedaily.com/releases/2025/04/250407172930.htm

SCIENCE DAILY – Fear of rejection influences how children conform to peers

The fear of rejection -- familiar to many children and adults -- can significantly impact how kids behave in their peer groups, according to new research.

https://www.sciencedaily.com/releases/2025/04/250404122432.htm

SCIENCENEWS – Stone Age hunter-gatherers may have been surprisingly skilled seafarers

New archaeological finds in Malta add to an emerging theory that early Stone Age humans cruised the open seas.

https://www.sciencenews.org/article/stone-age-seafarers-hunter-gatherer

THE CONVERSATION – How AI could influence the evolution of humanity – podcast

Evolutionary biologist Rob Brooks talks to The Conversation Weekly about AI's potential to influence our evolution.

https://theconversation.com/how-ai-could-influence-the-evolution-of-humanity-podcast-254163

OTHER NEWS – QUANTA – Intelligence Evolved at Least Twice in Vertebrate Animals

Complex neural circuits likely arose independently in birds and mammals, suggesting that vertebrates evolved intelligence multiple times.

https://www.quantamagazine.org/intelligence-evolved-at-least-twice-in-vertebrate-animals-20250407/

PUBLICATIONS

Behavioral and Brain Sciences

PAPERS

MARK W. MOFFETT – What is a society? Building an interdisciplinary perspective and why that's important

I propose the need to establish a comparative study of societies, conceived of specificially here as bounded groups beyond a simple, immediate family that have the potential to endure for generations, whose constituent individuals recognize one another as members, and that maintain control over a physical space. This definition, with refinements and ramifications I explore, serves for cross-disciplinary research because it applies not just to nations but to diverse hunter–gatherer and tribal groups with a pedigree that likely traces back to the societies of our common ancestor with the chimpanzees. It also applies to groups among other species for which comparison to humans can be instructive. Notably, it describes societies in terms of shared group identification rather than social interactions. An expansive treatment of the topic is overdue given that the concept of a society (even the use of such synonyms as primate "troop") has fallen out of favor among biologists, resulting in a semantic mess; whereas sociologists rarely consider societies beyond nations, and social psychologists predominantly focus on ethnicities and other component groups of societies. I examine the relevance of societies across realms of inquiry, discussing the ways member recognition is achieved; how societies compare to other organizational tiers; and their permeability, territoriality (allowing for mobile territories), relation to social networks and kinship, and impermanence. We have diverged from our ancestors in generating numerous affiliations within and between societies while straining the

expectation of society memberships by assimilating diverse populations. Nevertheless, if, as I propose, societies were the first, and thereafter the primary, ingroups of prehistory, how we came to register society boundaries may be foundational to all human "groupiness." A discipline-spanning approach to societies should further our understanding of what keeps societies together and what tears them apart.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/what-is-a-society-building-an-interdisciplinary-perspective-and-why-thats-important/A5E054A62FBC5440FE314BA6BF9CBE6D

COMMENTARIES

PANAGIOTIS MITKIDIS – How an interdisciplinary study of societies can develop a comprehensive understanding of the function of deceptive behavior
Moffett presents a robust proposal for a comparative study of societies as the basis for studying the human condition and behavior. This theoretical framework has implications for the study of deceptive behavior. I discuss how this framework might describe the adaptation of deceptive behavior within human societies and shed light on the dynamics of collaborative deceptive behavior through interpersonal commitment.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/how-an-interdisciplinary-study-of-societies-can-develop-a-comprehensive-understanding-of-the-function-of-deceptive-behavior/AEF6B21F0F9378CF5BE6B744E94772F8

LAURENT DOUSSET – Society: An anthropological perspective
Moffett's paper is an important contribution to the multidisciplinary discussion of the notion of "society." This comment aims to clarify and nuance some points considered important from an anthropological perspective. In particular, it stresses the importance of controlled social interaction and historical dynamics.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/society-an-anthropological-perspective/7DD0542A416E685B477CEF96CBEB2C98

KRISTIN ANDREWS, CHRISTOPHER KELTY & KULBHUSHANSINGH SURYAWANSHI – Multi-species societies
Research in community ecology, anthropology, and ethnoprimatology has identified mixed-species animal groups, and we argue that Moffett's definition of society allows these groups to qualify as societies. The existence of mixed-species society has two implications – that societies are structured by social norms, and that it may be more common to belong to multiple societies than Moffett suggests.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/multispecies-societies/616EEBBCF66C63420B24C7259E2E0BE5

COLIN A. CHAPMAN – Do boundaries matter so much for societies?
Moffett's definition of society is broadly applicable to all group-living animals from insects to nation states. Presenting examples from primates, I illustrate difficulties in defining boundaries between societies and even what societies defend to demonstrate the complexity of using an understanding of the processes effecting primate societies to understand those effecting human societies. However, finding similarities and differences in processes shaping societies is intriguing and Moffett's definition provides an excellent starting point.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/do-boundaries-matter-so-much-for-societies/78FAEF3A3E58BADCFAC0B3AC68F264C5

JULIET C. BARRY, EDWARD H. HAGEN & SAMUEL A. MEHR – Vocalizations are ideal identity signals
If human societies are understood as identity groups, then our psychology should include design for the production and detection of credible identity signals. We argue that vocalizations are ideal identity signals because the human auditory system is sensitive to subtle acoustic features; vocal signals are efficient; and speech and song are highly complex, enabling the embedding therein of identity signals.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/vocalizations-are-ideal-identity-signals/9A7AAAF86B3EC910A035DCFE126DD61B

GABRIEL RAMOS-FERNANDEZ et al – Group identity without social interactions?
We present several arguments for the preeminence of social interactions in determining and giving shape to societies. In our view, a society can emerge from social interaction and relationship patterns without the need for establishing an a priori limit on who actually belongs to it. Markers of group identity are one element among many that allow societies to persist.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/group-identity-without-social-interactions/36342F9982A16ADE8A2936F10926A368

CYRIL C. GRUETER & LARISSA SWEDELL – What is a society in the case of multilevel societies?
We expand on Moffett's discussion of societies in the context of multilevel social systems, for which Moffett proposes the core unit to constitute a society. Moffett's definition of a society, however, suggests that it is more parsimonious to assign

this label to the upper (band) level. An understanding of multilevel systems is critical for informing discussions about what a society is.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/what-is-a-society-in-the-case-of-multilevel-societies/24264F6238A57ECDEA4695171B6835C2

PÉTER BODOR & DÁNIEL HAVRANCSIK – Beyond biology: A sociological stance on what is society
We discuss some of the most central problems and concepts elaborated within the social sciences, especially sociology, which are not or only tangentially exposed by Moffett. Then, we will exemplify of how identity, which is a central constituent of Moffett's definition of society, cannot be opposed to interaction despite his claims. Rather it is to be studied as interactional achievement.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/beyond-biology-a-sociological-stance-on-what-is-society/EB91C7E28FC3FD9F42F56F9BA61CEA40

KONRAD SZOCIK – Belonging to a community of moral values as a key criterion of society
One of the key features of society is a sense of belonging to the same thing. But what should "what is the same" be? The article points out that categories, social roles, and place in power structures are primary to the sense of belonging, not secondary. And the criterion for belonging in society should be shared moral values.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/belonging-to-a-community-of-moral-values-as-a-key-criterion-of-society/A012834C1F57F78112FE9FBF2095F869

JACK W. KLEIN – The family as the primary social group
Moffett contends that societies should be considered the "primary" group with respect to their social ramifications. Although intriguing, this claim suffers from insufficient clarity and evidence. Rather, if any group is to be crowned supreme it should surely be the family, with its unique capacity to encourage pro-group behavior, shape other groups, and provide meaning.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/family-as-the-primary-social-group/C021EB31C1A20ABBCFD96CE17391344D

MARILYNN B. BREWER & LINNDA R. CAPORAEL – Societies, identities, and macrodemes
We examine the similarities and differences between Moffett's conceptualization of society and the core configuration model of social groupings. Anonymous societies correspond to the macrodeme level of coordination in the core configuration model, and recognizing that identity-based groups are defined by shared distinctiveness rather than territory encourages a more organic understanding of social groups.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/societies-identities-and-macrodemes/1FB87D063CAC16C691E9509FADDA9B73

PAUL E. SMALDINO – Societies have functions for individuals and collectives
The definition of society as identity group is most likely to be useful when combined with the instrumental functions of identity groupings. These take two key forms, with important differences. First, identity groupings are useful for individual decision making. Second, societies can be units of collective behavior and information processing. Disentanglement of these forms is needed.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/societies-have-functions-for-individuals-and-collectives/B7EDE6DD1C242BFE83846606B691B115

JAMES BROOKS & LIRAN SAMUNI – Revisiting the spaces of societies and the cooperation that sustains them
We embrace Moffett's call for more rigorous definitions of social organizations but raise two intersecting critiques: (1) The spaces controlled by societies are not exclusively physical, and (2) cooperation is required to maintain control over spaces, physical or otherwise. We discuss examples of non-physical societal spaces across species and highlight the top-down group cooperation challenge that is maintaining them.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/revisiting-the-spaces-of-societies-and-the-cooperation-that-sustains-them/5E5AD9830022AD1CBD614A362F716AAF

HECTOR QIRKO – Identity is probably too complicated to serve as a useful criterion for defining society
Identity formation and maintenance is a complex process operating at many levels, with identity markers and affiliations often contested, negotiated, rejected, revised, and replaced, both within and between groups, by parties with competing interests. This needs to be considered if identity is to serve as a useful criterion for defining society.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/identity-is-probably-too-complicated-to-serve-as-a-useful-criterion-for-defining-society/E2B4AB92E3BFE203AC740D9B015F33FA

ROY F. BAUMEISTER – Why societies are important and grow so large: Tribes, nations, and teams
Moffett's definition of societies could be augmented by recognizing society's organizing systems that coordinate diverse individuals' behavior for collective good. Viewing humans as cultural animals indicates three reasons for ever larger societies: More shared information, bigger and better marketplace for exchange, and military superiority in numbers. Sports teams are societies offering a promising venue for empirical work.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/why-societies-are-important-and-grow-so-large-tribes-nations-and-teams/F6419AC51AD5FC134FE01B65CD016A47

FABIO SANI – Identity groups, perceived group continuity, and schism
Moffett's outstanding paper offers a thought-provoking definition of a human society as an identity group. This commentary reflects on the centrality of shared group identification in societies, and discusses two important phenomena related to group identity, that is (i) the perceived temporal persistence of the group, and (ii) the processes leading to group fragmentation and schism.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/identity-groups-perceived-group-continuity-and-schism/9C86E3972DC652426FE48EA6789748F5

POLLY WIESSNER – Definitions and cultural dynamics in understanding "societies"
Moffett's definition of societies and fascinating comparisons will help us understand some aspects of societies that apply across species, however, both definitions and the dynamics of deeply rooted cultural institutions that so transformed human communities will be critical to understanding "societies."
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/definitions-and-cultural-dynamics-in-understanding-societies/9B25142EEC618C6A4B0E7D9228B7B5B5

LI LEI & TAO GONG – Understanding the jaggedness in social complexity is more important
A clear definition of society helps prevent conceptual misunderstanding. When making practical measurement of societies, it is worth noting that social complexity is actually a jagged concept that encompasses multiple weakly correlated dimensions. Understanding such jaggedness assists interpretation of the divergence between anonymous societies and the social brain hypothesis.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/understanding-the-jaggedness-in-social-complexity-is-more-important/B1037CD8A493FF4397CF5A85168F88E6

ANA FIGUEIREDO, MAGDALENA BOBOWIK & EMANUELE POLITI – Collective memories and understandings of human societies
Moffett's article asserts that human societies are distinct from other social groups because they must maintain control over specific territories. In our commentary, we challenge this argument, aiming to enrich it by highlighting the pivotal role of history and collective memories and their underestimated significance in shaping societies across time and beyond territorial ownership and resource control.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/collective-memories-and-understandings-of-human-societies/CA97FA5E3B46465439B2A046A87827CC

HENRY CERBONE & ISABELLA TURILLI – A nation by any other name: A failure to focus on function
Moffett's interdisciplinary definition of society seeks to distinguish itself from the prevalent, political understanding of the term. Through engagement with international relations literature, we outline how Moffett's proposed "society" results in a recapitulation of the definition of a nation-state. We suggest that this tension could be addressed by adopting a functional, rather than identity-based, approach.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/nation-by-any-other-name-a-failure-to-focus-on-function/52C12ACB8CE5B389A9E3FEA8E3524A56

RODNEY TOMPKINS, JULIAN JARA-ETTINGER & ADENA SCHACHNER – Societal inferences from the physical world
Moffett points to humans' use of physical markers to signal group identity as crucial to human society. We characterize the developmental and cognitive bases of this capacity, arguing that it is part of an early-emerging, intuitive socio-physical interface which allows the inanimate world to encode rich social meaning about individuals' identities, and the values of the society as a whole.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/societal-inferences-from-the-physical-world/2437413E6C3E85423CC28DDA215C7094

CHRISTOPHER KRUPENYE, LUZ CARVAJAL & AMALIA P. M. BASTOS – Psychological mechanisms for individual recognition- and anonymous-societies in humans and other animals
To understand the nature and evolution of different kinds of societies, we must characterize the psychological mechanisms members use to identify who belongs. Across both individual recognition- and anonymous-societies, these range from

physiological responses to individuals up to powerful conceptual representations of the group that license generalization and novel predictions. Sketching these mechanisms helps us understand the transition from the individual recognition societies of our ape ancestors to uniquely human forms of anonymous society.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/psychological-mechanisms-for-individual-recognition-and-anonymoussocieties-in-humans-and-other-animals/E84D62087EEE47BF2E3A4CE5367844CF

MARION BLUTE – Philosophy or science of societies?
While ambitious, interesting, and generally corresponding to usage in archaeology history, and anthropology, Moffett's paper seems more philosophy of science (conceptual analysis) than science (their use in explanations). It avoids explanations of how "markers of identity" and "their recognition" are acquired (e.g., by biological evolution, individual learning, social learning, or sociocultural evolution) and what the concept of "a society" explains.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/philosophy-or-science-of-societies/A7992B6FBC4A30851032A7F73470E4ED

MARK W. MOFFETT – A society as a clearly membered, enduring, territory-holding group
I have attempted to provide a concept of societies that will foster productive cross-disciplinary discussions, namely one incorporating these three elements: (1) A mechanism for group identification, by which members distinguish those who belong from those who do not; (2) the potential for this membership to last for generations; and (3) control over a shared physical space. Herein, I respond to thoughtful commentaries from academics across the social and biological sciences, addressing their insights on the importance of identity in determining society boundaries, how institutions and nations relate to identity, the complications of territoriality as a definition component, how societies fragment, the workings of multitier sociality, and the significance of cooperation.
https://www.cambridge.org/core/journals/behavioral-and-brain-sciences/article/abs/society-as-a-clearly-membered-enduring-territoryholding-group/6B2AE11B2B45C09EE36782EDE5D30B24

Current Anthropology

PAPERS

MATZ LARSSON & DEAN FALK – Direct Effects of Bipedalism on Early Hominin Fetuses Stimulated Later Musical and Linguistic Evolution
We hypothesize that auditory and motor entrainment evolved in early hominin fetuses in direct response to their mothers' bipedal footsteps and, later, contributed to the evolution of music and language via two related processes. First, selection for bipedalism transformed feet from grasping into weight-bearing organs, which negatively affected infants' ability to cling to their mothers, provoking the emergence of novel affective vocal exchanges between mothers and infants that became building blocks for the emergence of motherese. Second, the derived ability to entrain movements to sound was incorporated during the prehistoric emergence of wide-ranging rhythmic behaviors such as synchronized chanting of nonlexical vocables and coordinated rhythmic clapping and stomping, which became instrumental during the more recent evolution of music. Like the derived ability to keep beat with rhythmic sounds, nascent motherese entailed entrainment of motor behavior (the physical production of pitch, timing, and vocalization rate) with external sources of sound (conversational utterances). If motherese was a precursor for language evolution, as many believe, music and language share phylogenetically derived substrates for auditory and motor entrainment that stemmed directly from bipedalism. If so, bipedalism was more important for serendipitously sculpting advanced cognition in our prehistoric ancestors than previously believed.
https://www.journals.uchicago.edu/doi/abs/10.1086/734554

Current Biology

ARTICLES

FENGJUN MA, HUIXIN LIN & JINGFENG ZHOU – Prediction, inference, and generalization in orbitofrontal cortex
Our understanding of the orbitofrontal cortex (OFC) has significantly evolved over the past few decades. This prefrontal region has been associated with a wide range of cognitive functions, including a popular view that it primarily signals the expected value of each possible option, allowing downstream areas to use these value signals for decision-making. However, the discovery of rich, task-related information within the OFC and its essential role in inference-based behaviors has shifted our perspective and led to the proposal that the OFC holds a cognitive map used by both humans and animals for making predictions and inferences. Recent studies have further shown that these cognitive maps can be abstracted and generalized, serving both immediate and future needs. In this review, we trace the research journey leading to these evolving insights, discuss the potential neural mechanisms supporting the OFC's roles in prediction, inference, and generalization, and compare the OFC with the hippocampus, another critical region for cognitive mapping, while also exploring the interactions between these two areas.
https://www.cell.com/current-biology/fulltext/S0960-9822(25)00155-1

INTERVIEW – Iain Mathieson

Iain Mathieson is an Associate Professor of Genetics at the University of Pennsylvania. Born in London, he studied mathematics at the University of Cambridge and completed a DPhil in Genomic Medicine and Statistics at the University of Oxford with Gil McVean, working on population genetic methods for spatially structured populations. He was a postdoc at Harvard Medical School in David Reich's ancient DNA lab before moving to Penn as faculty in 2017. His lab studies the genetic basis of complex traits in humans and uses ancient DNA to understand recent human evolution — in particular, the way in which human populations have adapted to changes in culture, lifestyle, and environment in the past 10,000 years.
https://www.cell.com/current-biology/fulltext/S0960-9822(25)00290-8

Evolutionary Human Sciences

PAPERS

WATARU NAKAHASHI – Relationship between trackmakers of the Laetoli footprints from gait synchronization

The parallel trails of footprints at Laetoli site G are important fossils for studying the characteristics of Australopithecus afarensis. However, the relationship between the trackmakers – i.e. whether it was that of an adult male–female pair or of parent–offspring – remains unclear. The footprints show that the two individuals walked side by side with a narrow and constant distance between them and synchronized their leg movements and step lengths (gait synchronization), although they had a large height difference. In this study, live camera videos were collected to obtain data on gait synchronization in Homo sapiens, the closest extant species to A. afarensis. The data showed that when two humans with a large height difference walked alongside each other, with (at least) one of the pair having their arm around the other's shoulder or back, adult male–female pairs (couples) frequently synchronized their gait, but parent–offspring pairs did not, whereas both couples and parent–offspring seldom synchronized when they walked side by side without connection or with handholding. Two individuals only maintained a narrow and constant distance like that between the Laetoli footprints when they walked with an arm-around connection. Therefore, assuming that A. afarensis had the same gait synchronization tendency as H. sapiens, the trackmakers were more likely to be an adult male–female pair than a parent–offspring one.
https://www.cambridge.org/core/journals/evolutionary-human-sciences/article/relationship-between-trackmakers-of-the-laetoli-footprints-from-gait-synchronization/D90BD458E36116BAC371606D34760ED2

iScience

PAPERS

ADRIANO R. LAMEIRA et al with JOSEP CALL – Generative vocal plasticity in chimpanzees

Modern theory posits that human-ape differences in voice command account for speech evolution. However, comparison has been indirect and conjectural based on vocal learning taxa far related from Hominids, instead of direct and quantitative based on great ape calls that, like all speech sounds, are local-specific and non-universal to the species. Moreover, the null hypothesis that great ape voice command is purely reflexive has never been directly tested. Here, we show that in controlled, constant experimental settings, captive chimpanzees exhibit high-dimensional dexterity over voice activation and modulation in two atypical vowel-like calls. Subjects made unrestricted, multidimensional and distinct voice changes within and between individuals, inducing parameter changes up to 10,000%, rejecting null hypothesis' predictions. Forecasting models indicated unmitigated voice novelty, altogether demonstrating emancipated and vast real-time voice control. Findings show that, contrary to traditional assumptions, speech and song evolution likely hinged on prolific voice command already available in ancestral ape-like ancestors.
https://www.cell.com/iscience/fulltext/S2589-0042(25)00642-X

Journal of Neuroscience

PAPERS

ELIZABETH JIWON IM, ANGIRA SHIRAHATTI & LEYLA ISIK – Early Neural Development of Social Interaction Perception: Evidence from Voxel-Wise Encoding in Young Children and Adults

From a young age, children have advanced social perceptual and reasoning abilities. However, the neural development of these abilities is still poorly understood. To address this gap, we used fMRI data collected while 122 3–12-year-old children (64 females) and 33 adults (20 females) watched an engaging and socially rich movie to investigate how the cortical basis of social processing changes throughout development. We labeled the movie with visual and social features, including motion energy, presence of a face and a social interaction, theory of mind (ToM) events, valence, and arousal. Using a voxel-wise encoding model trained on these features, we found that models based on visual (motion energy) and social (faces, social interaction, ToM, valence, and arousal) features can both predict brain activity in children as young as 3 years old across the cortex, with particularly high predictivity in motion-selective middle temporal region and the superior temporal sulcus (STS). Furthermore, models based on individual social features showed that while there may be some development throughout childhood, social interaction information in the STS is present in children as young as 3 years old and appears adult-like by age 7. The current study, for the first time, links neural activity in children to predefined social features in a narrative movie and suggests social interaction perception is supported by early developing neural responses in the STS.
https://www.jneurosci.org/content/45/1/e2284232024

Journal of the Royal Society Interface

PAPERS

AGNIESZKA CZAPLICKA, FABIAN BAUMANN & IYAD RAHWAN – Mutual benefits of social learning and algorithmic mediation for cumulative culture

The remarkable ecological success of humans is often attributed to our ability to develop complex cultural artefacts that enable us to cope with environmental challenges. The evolution of complex culture (cumulative cultural evolution) is usually modelled as a collective process in which individuals invent new artefacts (innovation) and copy information from others (social learning). This classic picture overlooks the growing role of intelligent algorithms in the digital age (e.g. search engines, recommender systems and large language models) in mediating information between humans, with potential consequences for cumulative cultural evolution. Building on a previous model, we investigate the combined effects of network-based social learning and a simplistic version of algorithmic mediation on cultural accumulation. We find that algorithmic mediation significantly impacts cultural accumulation and that this impact grows as social networks become less densely connected. Cultural accumulation is most effective when social learning and algorithmic mediation are combined, and the optimal ratio depends on the network's density. This work is an initial step towards formalizing the impact of intelligent algorithms on cumulative cultural evolution within an established framework. Models like ours provide insights into mechanisms of human–machine interaction in cultural contexts, guiding hypotheses for future experimental testing.
https://royalsocietypublishing.org/doi/10.1098/rsif.2024.0686

FLORIAN DIEKERT et al – Do early warning signals of tipping points lead to better decisions?

Abrupt changes in some complex socio-ecological systems can be anticipated by observing their behaviour under increasing stress before they cross a tipping point. Despite notable progress in identifying statistical indicators that can provide early warning signals (EWS) of tipping points, they have yet to find direct application in management. Here, we develop a theoretical model of an early warning system (EWSys) that integrates EWS information into a simple decision-making process. This model consists of a tipping indicator, whose value increases as the system approaches the tipping point, and a trigger value, beyond which a binary EWS is sent. We demonstrate that although EWSys can help balance the risk of tipping by providing information to update the belief about the location of the tipping point, it may also result in more risky behaviour in the case that no EWS is received. This leads to a tension between better information about the location of the tipping point and increased risk of crossing it. Our framework complements the emergence of resilience indicators of complex human–natural systems by providing a better understanding of how, when and why they can be used to improve decision making.
https://royalsocietypublishing.org/doi/10.1098/rsif.2024.0864

Nature

NEWS

What makes us human? Milestone ape genomes promise clues

DNA sequences for the chimpanzee, orangutans and more will help scientists to determine what sets humans apart from other apes.
https://www.nature.com/articles/d41586-025-01079-y

Mysterious human fossil found in Taiwan was a Denisovan

Analysis of ancient proteins identifies jawbone as belonging to archaic human group.
https://www.nature.com/articles/d41586-025-01090-3

ARTICLES

LUKAS KUDERNA – Complete ape genomes offer a close-up view of human evolution

Scientists have fully sequenced the genomes of six living ape species, enabling long-awaited comparisons of hard-to-assemble genomic regions.
https://www.nature.com/articles/d41586-025-00912-8

BENJAMIN THOMPSON & SHAMINI BUNDELL – Long-awaited ape genomes give new insights into their evolution — and ours [PODCAST]

New sequencing analyses fill in long-awaited gaps in the genomes of six ape species — plus, evidence that laser-plasma particle accelerators could work as well as conventional kinds.
https://www.nature.com/articles/d41586-025-01121-z

FAYSAL BIBI – A wetter ancient Arabia could have enabled easier intercontinental species dispersal

Recurrent humid phases in Arabia over the past seven million years could have influenced how species, including human ancestors, moved between continents.

https://www.nature.com/articles/d41586-025-00905-7

PAPERS

ELEANOR M. L. SCERRI et al with JAMES BLINKHORN & HUW S. GROUCUTT – Hunter-gatherer sea voyages extended to remotest Mediterranean islands

The Maltese archipelago is a small island chain that is among the most remote in the Mediterranean. Humans were not thought to have reached and inhabited such small and isolated islands until the regional shift to Neolithic lifeways, around 7.5 thousand years ago (ka)1. In the standard view, the limited resources and ecological vulnerabilities of small islands, coupled with the technological challenges of long-distance seafaring, meant that hunter-gatherers were either unable or unwilling to make these journeys2,3,4. Here we describe chronological, archaeological, faunal and botanical data that support the presence of Holocene hunter-gatherers on the Maltese islands. At this time, Malta's geographical configuration and sea levels approximated those of the present day, necessitating seafaring distances of around 100 km from Sicily, the closest landmass. Occupations began at around 8.5 ka and are likely to have lasted until around 7.5 ka. These hunter-gatherers exploited land animals, but were also able to take advantage of marine resources and avifauna, helping to sustain these groups on a small island. Our discoveries document the longest yet-known hunter-gatherer sea crossings in the Mediterranean, raising the possibility of unknown, precocious connections across the wider region.
https://www.nature.com/articles/s41586-025-08780-y

DONGAHN YOO et mul – Complete sequencing of ape genomes

The most dynamic and repetitive regions of great ape genomes have traditionally been excluded from comparative studies1,2,3. Consequently, our understanding of the evolution of our species is incomplete. Here we present haplotype-resolved reference genomes and comparative analyses of six ape species: chimpanzee, bonobo, gorilla, Bornean orangutan, Sumatran orangutan and siamang. We achieve chromosome-level contiguity with substantial sequence accuracy (<1 error in 2.7 megabases) and completely sequence 215 gapless chromosomes telomere-to-telomere. We resolve challenging regions, such as the major histocompatibility complex and immunoglobulin loci, to provide in-depth evolutionary insights. Comparative analyses enabled investigations of the evolution and diversity of regions previously uncharacterized or incompletely studied without bias from mapping to the human reference genome. Such regions include newly minted gene families in lineage-specific segmental duplications, centromeric DNA, acrocentric chromosomes and subterminal heterochromatin. This resource serves as a comprehensive baseline for future evolutionary studies of humans and our closest living ape relatives.
https://www.nature.com/articles/s41586-025-08816-3

MONIKA MARKOWSKA et mul WITH HUW S. GROUCUTT & MICHAEL D. PETRAGLIA – Recurrent humid phases in Arabia over the past 8 million years

The Saharo-Arabian Desert is one of the largest biogeographical barriers on Earth, impeding dispersals between Africa and Eurasia, including movements of past hominins. Recent research suggests that this barrier has been in place since at least 11 million years ago. In contrast, fossil evidence from the late Miocene epoch and the Pleistocene epoch suggests the episodic presence within the Saharo-Arabian Desert interior of water-dependent fauna (for example, crocodiles, equids, hippopotamids and proboscideans), sustained by rivers and lakes that are largely absent from today's arid landscape. Although numerous humid phases occurred in southern Arabia during the past 1.1 million years, little is known about Arabia's palaeoclimate before this time. Here, based on a climatic record from desert speleothems, we show recurrent humid intervals in the central Arabian interior over the past 8 million years. Precipitation during humid intervals decreased and became more variable over time, as the monsoon's influence weakened, coinciding with enhanced Northern Hemisphere polar ice cover during the Pleistocene. Wetter conditions likely facilitated mammalian dispersals between Africa and Eurasia, with Arabia acting as a key crossroads for continental-scale biogeographic exchanges.
https://www.nature.com/articles/s41586-025-08859-6

Nature Africa

NEWS

Smallest hominin walked upright, fossils reveal

Hip, shin and thigh bones provide clues to life and death of young female Paranthropus robustus.
https://www.nature.com/articles/d44148-025-00102-8

Nature Communications

PAPERS

JING CAI et al – Natural language processing models reveal neural dynamics of human conversation

Through conversation, humans engage in a complex process of alternating speech production and comprehension to communicate. The neural mechanisms that underlie these complementary processes through which information is precisely conveyed by language, however, remain poorly understood. Here, we used pre-trained deep learning natural language

processing models in combination with intracranial neuronal recordings to discover neural signals that reliably reflected speech production, comprehension, and their transitions during natural conversation between individuals. Our findings indicate that the neural activities that reflected speech production and comprehension were broadly distributed throughout frontotemporal areas across multiple frequency bands. We also find that these activities were specific to the words and sentences being conveyed and that they were dependent on the word's specific context and order. Finally, we demonstrate that these neural patterns partially overlapped during language production and comprehension and that listener-speaker transitions were associated with specific, time-aligned changes in neural activity. Collectively, our findings reveal a dynamical organization of neural activities that subserve language production and comprehension during natural conversation and harness the use of deep learning models in understanding the neural mechanisms underlying human language.
https://www.nature.com/articles/s41467-025-58620-w

SHENG-HAO CAO et al – Hand position fields of neurons in the premotor cortex of macaques during natural reaching
While hippocampus represents spatial information through place cells for body navigation, whether motor areas employ a similar framework to guide hand reaching remains unknown. Here, we investigate tuning properties in dorsal premotor cortex (PMd) during naturalistic reach-and-grasp tasks in four monkeys. We find that 22% (132/601) of PMd neurons increase firing rates when the monkey's hand occupies specific positions in space, forming the position fields. These cells represent the hand position highly efficiently, achieving ~80% accuracy for decoding hand trajectories with only 50 most dedicated position tuned cells (~ 10% of all recorded neurons). The hand position is co-represented with hand moving direction, speed, and reward location in the same population of PMd neurons, forming a mixed-selective framework to integrate positional and kinematic information. Our findings suggest field-like positional coding may be a mechanism shared across brain regions for spatial representation in goal-directed movements, including body navigation and forelimb reaching.
https://www.nature.com/articles/s41467-025-58786-3

SAMUEL R. KRIMMEL et al – The human brainstem's red nucleus was upgraded to support goal-directed action
The red nucleus, a large brainstem structure, coordinates limb movement for locomotion in quadrupedal animals. In humans, its pattern of anatomical connectivity differs from that of quadrupeds, suggesting a different purpose. Here, we apply our most advanced resting-state functional connectivity based precision functional mapping in highly sampled individuals (n = 5), resting-state functional connectivity in large group-averaged datasets (combined n ~ 45,000), and task based analysis of reward, motor, and action related contrasts from group-averaged datasets (n > 1000) and meta-analyses (n > 14,000 studies) to precisely examine red nucleus function. Notably, red nucleus functional connectivity with motor-effector networks (somatomotor hand, foot, and mouth) is minimal. Instead, connectivity is strongest to the action-mode and salience networks, which are important for action/cognitive control and reward/motivated behavior. Consistent with this, the red nucleus responds to motor planning more than to actual movement, while also responding to rewards. Our results suggest the human red nucleus implements goal-directed behavior by integrating behavioral valence and action plans instead of serving a pure motor-effector function.
https://www.nature.com/articles/s41467-025-58172-z

CLAIRE B. RUBBELKE et al – Southern Hemisphere subtropical front impacts on Southern African hydroclimate across the Mid-Pleistocene Transition
Southern African (SA) hydroclimate is largely shaped by the interactions of atmospheric circulations, e.g., Hadley Circulation, and oceanic elements, like the Benguela Upwelling System (BUS), Agulhas System, and Antarctic Circumpolar frontal system. Large-scale changes to the Meridional Temperature Gradient (MTG) influence both the atmospheric and oceanic components of the hydroclimate system, and thus impact hydroclimate over SA. We present a leaf wax hydroclimate record from ODP 1084, in the BUS, which reveals that changes in the isotopic signature of precipitation over SA coincide with a strengthening of the MTG across the Mid-Pleistocene Transition (MPT). We use HadCM3 simulations to demonstrate the sensitivity of winter rainfall to shifts in the MTG during the MPT. Given the ongoing impacts of climate change on water resources in SA, awareness of the relationship between rainfall and shifts in Hadley Circulation could provide insight into past water availability and aid regional adaptation efforts.
https://www.nature.com/articles/s41467-025-58792-5

ZACHARY H. GARFIELD & SHEINA LEW-LEVY – Teaching is associated with the transmission of opaque culture and leadership across 23 egalitarian hunter-gatherer societies
Despite extensive work on the evolution of cooperation, the roles of teaching and leadership in transmitting opaque cultural norms—foundations of cooperative behaviors—are underexplored. Similarly, while teaching is well-studied in the evolution of instrumental culture, little attention is given to its role in transmitting opaque culture, such as social values and norms. Transmitting opaque culture often requires teaching, and group leaders are well-positioned to facilitate this process. Using comparative ethnographic data, we explore teaching, leadership, and instrumental versus opaque culture by examining whether opaque culture is primarily transmitted via teaching, which age groups tend to learn these norms, and whether leaders are disproportionately involved in teaching. Drawing on ethnographic data from 23 egalitarian foraging societies, we find teaching is more strongly associated with transmitting cultural values and kinship knowledge than subsistence skills and

is closely linked to opaque culture and leadership. Leader-directed teaching may drive cooperation, suggesting new research avenues.
https://www.nature.com/articles/s41467-025-58764-9

Nature Methods

PAPERS

RICHARD VOGG et al – Computer vision for primate behavior analysis in the wild
Advances in computer vision and increasingly widespread video-based behavioral monitoring are currently transforming how we study animal behavior. However, there is still a gap between the prospects and practical application, especially in videos from the wild. In this Perspective, we aim to present the capabilities of current methods for behavioral analysis, while at the same time highlighting unsolved computer vision problems that are relevant to the study of animal behavior. We survey state-of-the-art methods for computer vision problems relevant to the video-based study of individualized animal behavior, including object detection, multi-animal tracking, individual identification and (inter)action understanding. We then review methods for effort-efficient learning, one of the challenges from a practical perspective. In our outlook on the emerging field of computer vision for animal behavior, we argue that the field should develop approaches to unify detection, tracking, identification and (inter)action understanding in a single, video-based framework.
https://www.nature.com/articles/s41592-025-02653-y

Nature Reviews Biodiversity

ARTICLES

YUNYI SHEN – The concept and quantification of diversity
Biodiversity research and translation into coordinated conservation efforts requires precise and consistent definitions of diversity. Intuitively, biodiversity metrics pertain to the number of species in a community and their relative abundance. The ecological literature features various diversity indices, such as species richness and the Shannon index. Understanding the relationship between these indices (if any) and how they each quantify the concept of diversity is essential to their use and interpretation. In 1982, Patil and Taillie developed a mathematical framework to conceptualize these uncertainties and constrained relationships between different diversity measures, which led to an improved understanding of the diversity concept.
https://www.nature.com/articles/s44358-025-00046-9

Nature Reviews Genetics

ARTICLES

IAN BARNES – A tour de force of ancient DNA analysis
By the mid-1990s, the field of ancient DNA was starting to drift into the doldrums. The Jurassic Park popcorn was going stale, and the difficulties of working at the recovery limits of PCR technology, on genetic material that was preserved unpredictably and often irreproducibly, had taken its toll on public and scientific interest in the field. In particular, the inability to apply ancient DNA technology much beyond the mitochondrial genome meant that, although broad classes of interesting questions could be identified — how have these populations adapted, migrated and mixed over time; what did this person look like; what was this organism most closely related to — most specific problems were intractable.
In their 1997 paper, Krings et al. identified a problem that was not only tractable, but also very important: how was our species (Homo sapiens) related to a similar but recently extinct group of hominids, the Neanderthals? The two groups had overlapped in Europe until around 30,000 years ago. Were Neanderthals, as many suspected, an unrelated group who had little or no input into the European genome? Or had the two groups hybridized? Or was a less popular proposal correct: that Neanderthals were in fact the ancestors of Europeans, challenging the 'out-of-Africa' hypothesis, which holds that all modern humans descend from an ancestral population that migrated from Africa more than 60,000 years ago? In addressing these questions, this publication did much to revive interest in and development of ancient DNA as a field of study.
https://www.nature.com/articles/s41576-025-00838-x

New Scientist

NEWS

The hunt for the birthplace of Indo-European languages
It's incredibly tricky to pin down the origin of the language that led to the words spoken everywhere between Spain and India – and it'll be even harder to be sure we've got it right.
https://www.newscientist.com/article/2475454-the-hunt-for-the-birthplace-of-indo-european-languages/

What the surprising lives of solitary animals reveal about us
A new understanding of why some animals evolved to be loners, and the benefits that brings, shows that a social lifestyle isn't necessarily superior.

https://www.newscientist.com/article/mg26635380-100-what-the-surprising-lives-of-solitary-animals-reveal-about-us/

Bonobos use a kind of syntax once thought to be unique to humans
The way bonobos combine vocal sounds to create new meanings suggests the evolutionary building blocks of human language are shared with our closest relatives.
https://www.newscientist.com/article/2474993-bonobos-use-a-kind-of-syntax-once-thought-to-be-unique-to-humans/

Largest mammalian brain map ever could unpick what makes us human
A map of part of a mouse brain, which is expected to be generalisable to people, could help scientists understand behaviours, consciousness and even what it means to be human.
https://www.newscientist.com/article/2474974-largest-mammalian-brain-map-ever-could-unpick-what-makes-us-human/

ARTICLES

DAVID ROBSON – What the new science of magic reveals about perception and free will
Magicians have long exploited quirks in our perception of the world to make us experience the impossible. Now, cognitive psychology is exploring how they do it and revealing fresh insights into how our minds work.
https://www.newscientist.com/article/mg26635380-200-what-the-new-science-of-magic-reveals-about-perception-and-free-will/

REVIEWS

MICHAEL MARSHALL – Gripping story reveals race to crack world's oldest script, cuneiform
Cuneiform, the oldest identified writing system, defied deciphering – until 1857. What happened then makes a terrific read. Review of 'The Mesopotamian Riddle' by Joshua Hammer, Simon & Schuster (2025).
https://www.newscientist.com/article/mg26635383-700-gripping-story-reveals-race-to-crack-worlds-oldest-script-cuneiform/

PLoS One

PAPERS

TIFFANY MATEJ HRKALOVIC et al – Partner perceptions during brief online interactions shape partner selection and cooperation
Evolutionary theory suggests that partner selection – the ability to identify and preferentially interact with individuals willing (warmth) and able (competence) to work towards mutual benefits – is a key driver of cooperative behavior. However, partner selection is complex, requiring the integration of various information, such as impression formation and task affordances. Despite its importance, there is limited research on the effect of these factors on partner selection for cooperative tasks. Thus, this paper investigates how person perceptions (warmth and competence), task affordances, and facial and acoustic nonverbal behavior inform partner selection for cooperative tasks. For this purpose, we asked participants to select partners for a task that either expressed warmth- or competence-related traits. Participants had a 3-minute (online) conversation with up to five individuals, reported their evaluations, selected partners for the task, and then engaged in the task. Results indicate that person perceptions guide partner selection, with each trait being more predictive in relevant tasks. Additionally, we found that the perceptions of warmth, but not competence, can be predicted by facial and acoustic cues during conversations. Lastly, we find that in the context of online social interactions, individuals were more cooperative towards selected participants than unselected. We discuss these implications in the context of the theory of partner selection and offer insights on how these results can be used in future efforts for designing socially intelligent artificial systems that support partner selection decisions.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0318137

ANITA SCHMALOR et al – When all is unequal, the rich get dominant: Inequality leads to expectations of dominant leadership among those high in SES
People of higher SES have been found to behave more dominantly than people of lower SES. We tested the hypothesis that this difference is exacerbated under conditions of high economic inequality, when the income/wealth difference between those of low and high SES becomes greater. Across four studies (N = 2,739), using both experiments that manipulate perceived inequality (Studies 1a, 1b, and 3) and a correlational study that measures perceived inequality (Study 2), we find evidence that people expect others and themselves to become more dominant if they are of high as opposed to low SES, and this difference is most extreme when economic inequality is perceived to be high.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0321138

PNAS

PAPERS

CORINA E. TARNITA & ARNE TRAULSEN – Reconciling ecology and evolutionary game theory or "When not to think cooperation"

Evolutionary game theory (EGT)—overwhelmingly employed today for the study of cooperation in various systems, from microbes to cancer and from insect to human societies—started with the seminal 1973 paper by Maynard Smith and Price showing that limited animal conflict can be selected at the individual level. Owing to the explanatory potential of this paper and enabled by the powerful machinery of the soon-to-be-developed replicator dynamics, EGT took off at an accelerated pace and began to shape expectations across systems and scales. But, even as EGT has expanded its reach, and even as its mathematical foundations expanded with the development of adaptive dynamics and inclusion of stochastic processes, the replicator equation remains, half a century later, its most widely used equation. Owing to its early development and its staying power, the replicator dynamics has helped set both the baseline expectations and the terminology of the field. However, much like the original 1973 paper, replicator dynamics rests on the assumption that individual differences in reproduction are determined only by the payoff from the game (i.e., in isolation, all individuals, regardless of their strategy, have identical intrinsic growth rates). Here, we argue that this assumption limits the scope of replicator dynamics to such an extent as to warrant not just a more deliberative application process, but also a reconsideration of the broad predictions and terminology that it has generated. Simultaneously, we reestablish a dialog with ecology that can be mutually fruitful, e.g., by providing an explanation for how diverse ecological communities can assemble evolutionarily.
https://www.pnas.org/doi/full/10.1073/pnas.2413847122

Royal Society Open Science

PAPERS

BEYZA GOKCEN CIFTCI, JONATHAN FRANK KOMINSKY & GERGELY CSIBRA – Do infants use cues of saliva-sharing to infer close relationships? A replication of Thomas et al. (2022)

Thomas and colleagues found in 2022 that the observation of saliva-sharing between individuals serves as an indicator of relationship thickness for children, toddlers and infants. Our study sought to replicate their crucial experiment (2B), which was conducted online and reported that 8.5- to 10-month-old infants anticipated that a crying individual would be more likely to be comforted by a person who had been observed to share saliva with her than another person who simply had played with her. With the exception of changing the testing environment from online to laboratory, and using an eye-tracker supplemented by manual video coding, we closely followed the methodology of the original study. Our replication resulted in partial success: we replicated looking-time preference for the saliva-sharer but did not replicate the tendency to look first to the saliva-sharer upon observing the puppet's distress. These findings confirm that infants rely on certain behavioural cues for mapping social relationships among third-party individuals.
https://royalsocietypublishing.org/doi/10.1098/rsos.240229

GUY ITZCHAKOV, GEOFFREY HADDOCK & SARAH SMITH – How do people perceive listeners?

Listening is essential in shaping social interactions, relationships and communication. While listening research has generated significant insights on how speakers benefit from good listening, one fundamental question has been largely overlooked: how do people perceive listeners? This gap is crucial for understanding how perceptions of listeners impact relational dynamics. In three studies (two preregistered; total N = 1509), we assessed the attributes and behaviours associated with good and bad listeners, and whether the favourability of these attributes and behaviours impact downstream consequences. In Study 1, participants identified an acquaintance they judged as a good or bad listener. Good listeners were rated higher in positive listening attributes and behaviours, which mediated their perceived warmth, competence and values. Study 2 replicated this using a reverse correlation technique: one sample generated faces of a good or bad listener, which were then evaluated by a second, naïve sample. Consistent with Study 1, good listener faces were rated higher in positive listening attributes and behaviours, mediating perceptions of warmth, competence, humility and values. Study 3 extended Study 2 by showing that the effects were not due to a general positivity bias, demonstrating the significant interpersonal consequences of being perceived as a good or bad listener.
https://royalsocietypublishing.org/doi/10.1098/rsos.241550

PONTUS STRIMLING et al – Global directions of change in moral norms: a test of the moral argument theory

How and why are moral norms for various issues changing across the globe? Moral argument theory uniquely addresses these questions by positing that moral norm change is driven by 'individualizing' arguments: concerns about harm, fairness and liberty. We test this theory in a preregistered study of the arguments for both sides of 33 moral issues for which the global directions and rates of norm change were estimated in available longitudinal survey data from 94 societies. We also use available cross-national data to estimate the extent to which each society relies more on individualizing arguments than other kinds of arguments. In support of the theory, norms' justifiability by individualizing arguments was found to predict their global change, and the effect of individualizing arguments on norm change is stronger in societies that rely more

strongly on such arguments. These findings demonstrate a fundamental pattern in the contemporary cultural evolution of morality and highlights the key role played by individualizing arguments.
https://royalsocietypublishing.org/doi/10.1098/rsos.241589

Science

PAPERS

TAKUMI TSUTAYA et al – A male Denisovan mandible from Pleistocene Taiwan

Denisovans are an extinct hominin group defined by ancient genomes of Middle to Late Pleistocene fossils from southern Siberia. Although genomic evidence suggests their widespread distribution throughout eastern Asia and possibly Oceania, so far only a few fossils from the Altai and Tibet are confidently identified molecularly as Denisovan. We identified a hominin mandible (Penghu 1) from Taiwan (10,000 to 70,000 years ago or 130,000 to 190,000 years ago) as belonging to a male Denisovan by applying ancient protein analysis. We retrieved 4241 amino acid residues and identified two Denisovan-specific variants. The increased fossil sample of Denisovans demonstrates their wider distribution, including warm and humid regions, as well as their shared distinct robust dentognathic traits that markedly contrast with their sister group, Neanderthals.
https://www.science.org/doi/10.1126/science.ads3888

Science Advances

PAPERS

PHILIPP SCHMIDBAUER, MADITA HAHN & ANDREAS NIEDER – Crows recognize geometric regularity

The perception of geometric regularity in shapes, a form of elementary Euclidean geometry, is a fundamental mathematical intuition in humans. We demonstrate this geometric understanding in an animal, the carrion crow. Crows were trained to detect a visually distinct intruder shape among six concurrent arbitrary shapes. The crows were able to immediately apply this intruder concept to quadrilaterals, identifying the one that exhibited differing geometric properties compared to the others in the set. The crows exhibited a geometric regularity effect, showing better performance with shapes featuring right angles, parallel lines, or symmetry over more irregular shapes. This performance advantage did not require learning. Our findings suggest that geometric intuitions are not specific to humans but are deeply rooted in biological evolution.
https://www.science.org/doi/10.1126/sciadv.adt3718

Trends in Neurosciences

ARTICLES

KAMI KOLDEWYN & HILARY RICHARDSON – Understanding the development of social interaction perception

In a recent study, Im, Shirahatti, and Isik used voxel-wise encoding modelling to show that cues to social interaction predict brain activity in children aged 3–12 years. Their findings have implications for understanding early social development, and their approach holds promise for investigating other domains of cognitive development.
https://www.cell.com/trends/neurosciences/fulltext/S0166-2236(25)00061-X

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