

CONTENTS

NOTICES	2
PUBLICATION ALERTS.....	2
NEWS	2
GUARDIAN SCIENCE – Bees ‘count’ from left to right, study finds	2
NATURE BRIEFING – More than small robotic beings	2
SAPIENS – Paleo Diet Facts.....	2
SCIENCE NEWS – Oldest British DNA reveals mass immigrations after last ice age	2
SCIENCE NEWS – Animals may have begun to vocalize before anyone had ears to hear them	3
SCIENCE NEWS – Are these bumble bees playing with toys?	3
PUBLICATIONS	3
Biolinguistics	3
PAPERS	3
AMY NIEGO & ANTONIO BENÍTEZ-BURRACO – Revisiting the Case for ‘Feral’ Humans Under the Light of the Human Self-Domestication Hypothesis: Focusing on Language	3
CHRIS COLLINS – The Complexity of Trees, Universal Grammar and Economy Conditions	3
COMMENTARIES	3
EDWARD RUOYANG SHI & ELIZABETH QING ZHANG – Subcortical Contributions to the Uniqueness of Human Cognition: A Commentary on Laland & Seed (2021)	3
Current Biology	3
ARTICLES	3
KATHELIJNE KOOPS – Animal behavior: Monkeys use tools for diet quality, not quantity	3
EMILY DOOLITTLE – Birdsong and music.....	4
JONAS ROSE – The avian brain	4
RICHARD MOONEY – Birdsong	4
LUCY APLIN – Culture in birds.....	4
DAMIEN R. FARINE – Collective action in birds	4
PAPERS	4
DAVID WHEATCROFT et al – Species-specific song responses emerge as a by-product of tuning to the local dialect.....	4
eLife.....	5
PAPERS	5
JOANA B VIEIRA & ANDREAS OLSSON – Neural defensive circuits underlie helping under threat in humans.....	5
GUANGYAO QI et al – Neural dynamics of causal inference in the macaque frontoparietal circuit	5
Frontiers in Ecology and Evolution	5
PAPERS	5
LEOMA WILLIAMS, SUSANNE SHULTZ & KEITH JENSEN – The primate workplace: Cooperative decision-making in human and non-human primates.....	5
Language and Cognition.....	6
PAPERS	6
EMANUELA PICIUCCO et al – Information structure effects on the processing of nouns and verbs: evidence from event-related brain potentials ..	6
ANA WERKMANN HORVAT et al with JEANNETTE LITTLEMORE – Comprehension of different types of novel metaphors in monolinguals and multilinguals	6
Nature Communications	6
PAPERS	6
KASPER OTTEN et al – Human cooperation in changing groups in a large-scale public goods game.....	6
GABRIEL JORGEWICH-COHEN et al – Common evolutionary origin of acoustic communication in choanate vertebrates	6
Nature Ecology & Evolution.....	7
ARTICLES	7
CHANTAL CONNELLER – The view at the end of the Palaeolithic world	7
PAPERS	7
SOPHY CHARLTON et al with CHRIS STRINGER & PONTUS SKOGLUND – Dual ancestries and ecologies of the Late Glacial Palaeolithic in Britain	7
Nature Neuroscience	7
ARTICLES	7
HEE-SUP SHIN – Altruism and social rewards.....	7
PAPERS	7

DIEGO SCHEGGIA et al – Reciprocal cortico-amygdala connections regulate prosocial and selfish choices in mice.....	7
Nature Scientific Reports.....	7
PAPERS	7
CORRADO MONTI et al – The language of opinion change on social media under the lens of communicative action	7
FRANCO AGUSTÍN BERNAL et al – Top-down modulation impairs priming susceptibility in complex decision-making with social implications	8
New Scientist	8
NEWS	8
Vocal communication recorded in 53 animals we thought were silent.....	8
PLoS One.....	8
PAPERS	8
CAMILLE L. GRASSO et al – Embodied time: Effect of reading expertise on the spatial representation of past and future.....	8
ZOLTÁN BARTA – Publication games: In the web of reciprocity	8
INES SCHINDLER et al – Lay conceptions of “being moved” (“bewegt sein”) include a joyful and a sad type: Implications for theory and research ..	9
Proceedings of the Royal Society B.....	9
PAPERS	9
JOHN M. MCNAMARA & MAX WOLF – Social interaction can select for reduced ability	9
Trends in Cognitive Sciences	9
PAPERS	9
FRANÇOIS OSIURAK, NICOLAS CLAUDIÈRE & GIOVANNI FEDERICO – Bringing cumulative technological culture beyond copying versus reasoning ..	9
Trends in Neurosciences	9
PAPERS	9
STEPHANIE L. KING, RICHARD C. CONNOR & STEPHEN H. MONTGOMERY – Social and vocal complexity in bottlenose dolphins.....	9
SUBSCRIBE to the EAORC Bulletin	10
UNSUBSCRIBE from the EAORC Bulletin	10
PRODUCED BY AND FOR THE EAORC EMAIL GROUP	10

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.

NEWS

GUARDIAN SCIENCE – Bees ‘count’ from left to right, study finds

Latest finding adds to theory that animals, including humans, naturally arrange things in a certain order, even without being able to count.

<https://www.theguardian.com/environment/2022/oct/27/bees-count-from-left-to-right-study-finds>

NATURE BRIEFING – More than small robotic beings

PhD student Samadi Galpayage is part of a team that has observed bumblebees playing with small wooden balls for fun. The finding suggests that some insects’ minds are more complex than researchers had thought. “It goes to show that, despite their little size and tiny brains, they are more than small robotic beings.”

<https://nature.us17.list-manage.com/track/click?u=2c6057c528fdc6f73fa196d9d&id=f9a2edfe8e&e=1db4b9a19b>

SAPIENS – Paleo Diet Facts

An evolutionary anthropologist argues Paleolithic diets were much more varied than people think based on his research with the Hadza, a contemporary hunter-gatherer community in Tanzania.

<https://sapiens.us11.list-manage.com/track/click?u=80f6cf678900daf984bf763b7&id=9a8d4637e9&e=dc0eff6180>

SCIENCE NEWS – Oldest British DNA reveals mass immigrations after last ice age

It’s a tale of two ancient British caves: In Cheddar Gorge, just outside of Bristol, England, reindeer hunters etched designs onto human bones and drank out of carved human skulls about 15,000 years ago. A few hundred kilometers to the north, people living just a few hundred years later lived on freshwater fish and marine animals, laying their dead to rest in a cavern with decorated horse bones and bear-tooth pendants.

Archaeologists had long thought these cultural shifts reflected people developing new tools and beliefs after the last ice age 18,000 years ago. But new evidence from the oldest known DNA from the British Isles shows the two sets of cave dwellers

had dramatically different ancestry. These sweeping cultural changes weren't signs of Great Britain's first postglacial people adapting—they were signs of entirely new people altogether.

<https://www.science.org/content/article/oldest-british-dna-reveals-mass-immigrations-after-last-ice-age>

SCIENCE NEWS – Animals may have begun to vocalize before anyone had ears to hear them

Think of the chattiest creatures in the animal kingdom and songbirds, dolphins, and—yes—humans probably come to mind. Turtles probably don't register. But these charismatic reptiles also communicate using a large repertoire of clicks, snorts, and chortles. Now, by recording the "voices" of turtles and other supposedly quiet animals, scientists have concluded that all land vertebrate vocalizations—from the canary's song to the lion's roar—have a common root that dates back more than 400 million years.

<https://www.science.org/content/article/animals-may-have-begun-vocalize-anyone-had-ears-hear-them>

SCIENCE NEWS – Are these bumble bees playing with toys?

First example of insects seemingly having fun with objects adds to evidence for emotions.

<https://www.science.org/content/article/are-these-bumble-bees-playing-toys>

PUBLICATIONS

Biolinguistics

PAPERS

AMY NIEGO & ANTONIO BENÍTEZ-BURRACO – Revisiting the Case for 'Feral' Humans Under the Light of the Human Self-Domestication Hypothesis: Focusing on Language

Contemporary descriptions of 'feral' children generally preclude any insightful inference about the language deficits exhibited by these children, as well as the ultimate causes of their problems with language. However, they have been regularly used to support the view that language acquisition requires a proper social environment in order to occur. In this paper, we revisit the case for 'feral' children with the viewpoint that human evolution entailed a process of self-domestication that parallels what we find in domesticated animals. Because feralization commonly occurs in nature and because it entails a partial reversion of features of domestication, this self-domestication approach to the evolution of language reassesses the case for 'feral' children, particularly when compared with present-day conditions involving abnormal patterns of socialization, whether they are genetically-triggered as in autism spectrum disorder, or environmentally-triggered, as in reactive attachment disorder.

<https://bioling.psychopen.eu/index.php/bioling/article/view/9319/9319.pdf>

CHRIS COLLINS – The Complexity of Trees, Universal Grammar and Economy Conditions

In this squib, I argue that the child faces a severe computational complexity problem in parsing even the simplest of trees: the number of possible trees consistent with UG grows exponentially as a function of the number of lexical items. Economy conditions have the result of drastically decreasing the complexity of the parsing task. I also discuss the relationship between UG, I-language, economy conditions and explanatory adequacy.

<https://bioling.psychopen.eu/index.php/bioling/article/view/9573/9573.pdf>

COMMENTARIES

EDWARD RUOYANG SHI & ELIZABETH QING ZHANG – Subcortical Contributions to the Uniqueness of Human Cognition: A Commentary on Laland & Seed (2021)

Laland and Seed (2021) address the issue of the evolution of human unique cognition. Having reviewed comparative evidence on five candidate traits—mental time travel, tool use, problem solving, social cognition, and communication—the authors conclude that no single trait could explain human superior cognition, and humans are probably cross-domain/modality/modular thinkers leading to a high-level intelligence which underlies human cognitive uniqueness. Such a comprehensively theoretical review attracts multidisciplinary readers, and the attempt to answer the question of whether human cognition is unique or not is highly significant in cognitive science. However, although the target paper provides numerous comparative data, we think that the continuous view of human cognition is not novel.

<https://bioling.psychopen.eu/index.php/bioling/article/view/9189/8395>

Current Biology

ARTICLES

KATHELIJNE KOOPS – Animal behavior: Monkeys use tools for diet quality, not quantity

An enduring question in the study of human evolution is why tool use evolved. A new study has found that stone tools improve diet quality in wild capuchin monkeys. Tools may have similarly increased the nutritional security in ancestral hominins.

[https://www.cell.com/current-biology/fulltext/S0960-9822\(22\)01397-5](https://www.cell.com/current-biology/fulltext/S0960-9822(22)01397-5)

EMILY DOOLITTLE – Birdsong and music

Emily Doolittle introduces the many connections between bird song and human music.

[https://www.cell.com/current-biology/fulltext/S0960-9822\(22\)01462-2](https://www.cell.com/current-biology/fulltext/S0960-9822(22)01462-2)

JONAS ROSE – The avian brain

There is a reason this primer is called ‘The avian brain’ and not ‘The birdbrain’ even though the latter term might be more accessible. The term birdbrain was long used as a derogative, yet I hope that this primer will inspire you to see it more as I do — as a compliment. This primer will take you on a short tour. First, I will explore superficial differences between birds and mammals. Then I will briefly mention the behavioral capabilities of birds and explain why the bird brain has the neural makeup to generate these behaviors. This will lead me to briefly describe some key neural circuits and structures and to conclude with the ongoing challenge to identify functional differences in the neural substrates of avian and mammalian cognition. The aim of this short article, therefore, is not to give a full review of the avian brain but rather to highlight important aspects with a focus on the comparison to the mammalian brain and cognition.

[https://www.cell.com/current-biology/fulltext/S0960-9822\(22\)01221-0](https://www.cell.com/current-biology/fulltext/S0960-9822(22)01221-0)

RICHARD MOONEY – Birdsong

Have you ever felt as happy as a lark, feathered your nest or taken someone under your wing? As we watch birds, we cannot help but be struck by their uncannily familiar behaviors — singing, nest building, caring for their young — to name just a few. Songbirds — the oscine suborder of perching birds that constitute roughly half (~4,000) of all known avian species — are noted for the songs that males and sometimes both sexes in this group sing to court mates and defend territory from rivals. Birdsongs contain several to many acoustically distinct syllables, typically organized into a stereotyped phrase, and span the same audio bandwidth that we exploit for speech and music, making them easy for us to hear and appreciate. Consequently, eavesdropping humans long ago detected the most striking parallel between songbirds and humans: juvenile songbirds learn to sing in a manner similar to a child learning to speak.

[https://www.cell.com/current-biology/fulltext/S0960-9822\(22\)01107-1](https://www.cell.com/current-biology/fulltext/S0960-9822(22)01107-1)

LUCY APLIN – Culture in birds

In humans, culture can have a variety of meanings, from trends in music or art, to technological advances, to the ideologies and values that underpin a society. What all these meanings all have in common is that they encompass behaviours, skills and ideas that are not genetically determined, but rather learned from those around us, and shared in a group or society. Human societies also exhibit what is termed ‘cumulative cultural evolution’, when cultures build on themselves over generations of learners to exhibit more complex or effective behaviours, allowing us to go from a sled to a high-speed train, or from counting to calculus. But what about other species — do they also exhibit cultures?

[https://www.cell.com/current-biology/fulltext/S0960-9822\(22\)01392-6](https://www.cell.com/current-biology/fulltext/S0960-9822(22)01392-6)

DAMIEN R. FARINE – Collective action in birds

Observing the behaviour of others is a cheap and effective way of acquiring up-to-date information about the environment. Further, an animal that changes its behaviour in response to acquiring social information effectively propagates that information forwards. Although the rules that govern how individual birds detect and respond to social cues are often very simple, they are able to produce a diverse range of collective actions from which individuals can reap benefits that include predator avoidance and more accurate estimations of the environment. Understanding how and why individual-level rules that favour the emergence of collective behaviour have evolved therefore requires knowledge of the ecological and social contexts in which they are expressed. The breadth of research on social behaviours in birds is an unparalleled window into the ecology of collective behaviour and provides many opportunities to test whether different species overcome different ecological challenges using similar social rules and whether the collective behaviours of birds can act as sensors for the environment.

[https://www.cell.com/current-biology/fulltext/S0960-9822\(22\)01312-4](https://www.cell.com/current-biology/fulltext/S0960-9822(22)01312-4)

PAPERS

DAVID WHEATCROFT et al – Species-specific song responses emerge as a by-product of tuning to the local dialect

Oscine birds preferentially respond to certain sounds over others from an early age, which focuses subsequent learning onto sexually relevant songs. Songs vary both across species and, due to cultural evolution, among populations of the same species. As a result, early song responses are expected to be shaped by selection both to avoid the fitness costs of cross-species learning and to promote learning of population-typical songs. These sources of selection are not mutually exclusive but can result in distinct geographic patterns of song responses in juvenile birds: if the risks of interspecific mating are the main driver of early song discrimination, then discrimination should be strongest where closely related species co-occur. In contrast, if early discrimination primarily facilitates learning local songs, then it should be tuned to songs typical of the local dialect. Here, we experimentally assess the drivers of song discrimination in nestling pied flycatchers (*Ficedula hypoleuca*). We first demonstrate that early discrimination against the songs of the closely related collared flycatcher (*F. albicollis*) is not strongly affected by co-occurrence. Second, across six European populations, we show that nestlings’ early song responses are tuned to their local song dialect and that responses to the songs of collared flycatchers are similarly weak as to those of

other conspecific dialects. Taken together, these findings provide clear experimental support for the hypothesis that cultural evolution, in conjunction with associated learning predispositions, drives the emergence of pre-mating reproductive barriers. [https://www.cell.com/current-biology/fulltext/S0960-9822\(22\)01605-0](https://www.cell.com/current-biology/fulltext/S0960-9822(22)01605-0)

eLife

PAPERS

JOANA B VIEIRA & ANDREAS OLSSON – Neural defensive circuits underlie helping under threat in humans

Empathy for others' distress has long been considered the driving force of helping. However, when deciding to help others in danger, one must consider not only their distress, but also the risk to oneself. Whereas the role of self-defense in helping has been overlooked in human research, studies in other animals indicate defensive responses are necessary for the protection of conspecifics. In this pre-registered study (N=49), we demonstrate that human defensive neural circuits are implicated in helping others under threat. Participants underwent fMRI scanning while deciding whether to help another participant avoid aversive electrical shocks, at the risk of also being shocked. We found that higher engagement of neural circuits that coordinate fast escape from self-directed danger (including the insula, PAG, and ACC) facilitated decisions to help others. Importantly, using representational similarity analysis, we found that the strength with which the amygdala and insula uniquely represented the threat to oneself (and not the other's distress) predicted helping. Our findings indicate that in humans, as other mammals, defensive mechanisms play a greater role in helping behavior than previously understood.

<https://elifesciences.org/articles/78162>

GUANGYAO QI et al – Neural dynamics of causal inference in the macaque frontoparietal circuit

Natural perception relies inherently on inferring causal structure in the environment. However, the neural mechanisms and functional circuits essential for representing and updating the hidden causal structure and corresponding sensory representations during multisensory processing are unknown. To address this, monkeys were trained to infer the probability of a potential common source from visual and proprioceptive signals based on their spatial disparity in a virtual reality system. The proprioceptive drift reported by monkeys demonstrated that they combined previous experience and current multisensory signals to estimate the hidden common source and subsequently updated the causal structure and sensory representation. Single-unit recordings in premotor and parietal cortices revealed that neural activity in the premotor cortex represents the core computation of causal inference, characterizing the estimation and update of the likelihood of integrating multiple sensory inputs at a trial-by-trial level. In response to signals from the premotor cortex, neural activity in the parietal cortex also represents the causal structure and further dynamically updates the sensory representation to maintain consistency with the causal inference structure. Thus, our results indicate how the premotor cortex integrates previous experience and sensory inputs to infer hidden variables and selectively updates sensory representations in the parietal cortex to support behavior. This dynamic loop of frontal-parietal interactions in the causal inference framework may provide the neural mechanism to answer long-standing questions regarding how neural circuits represent hidden structures for body awareness and agency.

<https://elifesciences.org/articles/76145>

Frontiers in Ecology and Evolution

PAPERS

LEOMA WILLIAMS, SUSANNE SHULTZ & KEITH JENSEN – The primate workplace: Cooperative decision-making in human and non-human primates

The success of group foraging in primates is not only determined by ecological and social factors. It is also influenced by cognition. Group foraging success is constrained, for instance, by the challenges of coordination, synchrony and decision-making, and it is enhanced by the ability to share, learn from others and coordinate actions. However, what we currently know about the cognition of individuals in groups comes primarily from experiments on dyads, and what we know of the effect of ecological factors on group dynamics comes from larger wild groups. Our current knowledge of primate group behaviour is thus incomplete. In this review, we identify a gap in our knowledge of primate group dynamics between the dyadic studies on primate cooperation and the large group observational studies of behavioural ecology. We highlight the potential for controlled experimental studies on coordination and cooperation in primate groups. Currently, these exist primarily as studies of dyads, and these do not go far enough in testing limits of group-level behaviours. Controlled studies on primate groups beyond the dyad would be highly informative regarding the bounds of non-human primate collaboration. We look to the literature on how humans behave in groups, specifically from organisational psychology, draw parallels between human and non-human group dynamics and highlight approaches that could be applied across disciplines. Organisational psychology is explicitly concerned with the interactions between individuals in a group and the emergent properties at the group-level of these decisions. We propose that some of the major shortfalls in our understanding of primate social cognition and group dynamics can be filled by using approaches developed by organisational psychologists, particularly regarding the effects of group size and composition on group-level cooperation. To illustrate the potential applications, we provide a list of research questions drawn from organisational psychology that could be applied to non-human primates.

<https://www.frontiersin.org/articles/10.3389/fevo.2022.887187/full>

Language and Cognition

PAPERS

EMANUELA PICIUCCO et al – Information structure effects on the processing of nouns and verbs: evidence from event-related brain potentials

Electroencephalographic (EEG) signals can reveal the cost required to deal with information structure mismatches in speech or in text contexts. The present study investigates the costs related to the processing of different associations between the syntactic categories of Noun and Verb and the information categories of Topic and Focus. It is hypothesized that – due to the very nature (respectively, predicative and non-predicative) of verbal and nominal reference – sentences with Topics realized by verbs, and Focuses realized by nouns, should impose greater processing demands, compared to the decoding of nominal Topics and verbal Focuses. Data from event-related potential (ERP) measurements revealed an N400 effect in response to both nouns encoded as Focus and verbs packaged as Topic, confirming that the cost associated with information structure processing follows discourse-driven expectations also with respect to the word-class level.

<https://www.cambridge.org/core/journals/language-and-cognition/article/information-structure-effects-on-the-processing-of-nouns-and-verbs-evidence-from-eventrelated-brain-potentials/7FA05F6271D9204645F5B86E0E627F8C#>

ANA WERKMANN HORVAT et al with JEANNETTE LITTLEMORE – Comprehension of different types of novel metaphors in monolinguals and multilinguals

It has been suggested that multilingualism can lead to increased cognitive flexibility and creativity. No studies to date, however, have investigated whether this advantage leads to a greater propensity to find meaning in different kinds of novel metaphors. This article reports a self-paced reading study that focuses on whether such an increased propensity is displayed by multilingual English speakers, as opposed to monolingual English speakers. The article explores the difference between two broad types of novelty in metaphorical expressions, which are distinguished by how readily they conform to existing metaphorical schemata. The results indicate that both monolinguals and multilinguals find novel metaphors that conform readily to an existing schema easier to comprehend those that do not. They also take longer to seek meaning in metaphors that conform readily to an existing schema. Multilinguals are more likely than monolinguals to find meaning in both types of novel metaphor. The theoretical distinction drawn between metaphors that conform readily to an existing schema and those that do not highlights the variability of meaning in novel metaphors. It also focuses attention on the different extents to which hearers seek rich meanings as opposed to less rich but more easily derived ones.

<https://www.cambridge.org/core/journals/language-and-cognition/article/comprehension-of-different-types-of-novel-metaphors-in-monolinguals-and-multilinguals/A8251264BA9288143F95BB84723D06AB>

Nature Communications

PAPERS

KASPER OTTEN et al – Human cooperation in changing groups in a large-scale public goods game

How people cooperate to provide public goods is an important scientific question and relates to many societal problems. Previous research studied how people cooperate in stable groups in repeated or one-time-only encounters. However, most real-world public good problems occur in groups with a gradually changing composition due to old members leaving and new members arriving. How group changes are related to cooperation in public good provision is not well understood. To address this issue, we analyze a dataset from an online public goods game comprising approximately 1.5 million contribution decisions made by about 135 thousand players in about 11.3 thousand groups with about 234 thousand changes in group composition. We find that changes in group composition negatively relate to cooperation. Our results suggest that this is related to individuals contributing less in the role of newcomers than in the role of incumbents. During the process of moving from newcomer status to incumbent status, individuals cooperate more and more in line with incumbents.

<https://www.nature.com/articles/s41467-022-34160-5>

GABRIEL JORGEWICH-COHEN et al – Common evolutionary origin of acoustic communication in choanate vertebrates

Acoustic communication, broadly distributed along the vertebrate phylogeny, plays a fundamental role in parental care, mate attraction and various other behaviours. Despite its importance, comparatively less is known about the evolutionary roots of acoustic communication. Phylogenetic comparative analyses can provide insights into the deep time evolutionary origin of acoustic communication, but they are often plagued by missing data from key species. Here we present evidence for 53 species of four major clades (turtles, tuatara, caecilian and lungfish) in the form of vocal recordings and contextual behavioural information accompanying sound production. This and a broad literature-based dataset evidence acoustic abilities in several groups previously considered non-vocal. Critically, phylogenetic analyses encompassing 1800 species of choanate vertebrates reconstructs acoustic communication as a homologous trait, and suggests that it is at least as old as the last common ancestor of all choanate vertebrates, that lived approx. 407 million years before present.

<https://www.nature.com/articles/s41467-022-33741-8>

Nature Ecology & Evolution

ARTICLES

CHANTAL CONNELLER – The view at the end of the Palaeolithic world

Two Palaeolithic genomes from Britain provide the oldest currently available genetic data from the region and appear to map on to wider European patterns of genetic ancestry and associated archaeology. However, with sparse samples and wide temporal gaps between them, it might be premature to draw wider conclusions about the consistency of these patterns.

<https://www.nature.com/articles/s41559-022-01899-5>

PAPERS

SOPHY CHARLTON et al with CHRIS STRINGER & PONTUS SKOGLUND – Dual ancestries and ecologies of the Late Glacial Palaeolithic in Britain

Genetic investigations of Upper Palaeolithic Europe have revealed a complex and transformative history of human population movements and ancestries, with evidence of several instances of genetic change across the European continent in the period following the Last Glacial Maximum (LGM). Concurrent with these genetic shifts, the post-LGM period is characterized by a series of significant climatic changes, population expansions and cultural diversification. Britain lies at the extreme northwest corner of post-LGM expansion and its earliest Late Glacial human occupation remains unclear. Here we present genetic data from Palaeolithic human individuals in the United Kingdom and the oldest human DNA thus far obtained from Britain or Ireland. We determine that a Late Upper Palaeolithic individual from Gough's Cave probably traced all its ancestry to Magdalenian-associated individuals closely related to those from sites such as El Mirón Cave, Spain, and Troisième Caverne in Goyet, Belgium. However, an individual from Kendrick's Cave shows no evidence of having ancestry related to the Gough's Cave individual. Instead, the Kendrick's Cave individual traces its ancestry to groups who expanded across Europe during the Late Glacial and are represented at sites such as Villabruna, Italy. Furthermore, the individuals differ not only in their genetic ancestry profiles but also in their mortuary practices and their diets and ecologies, as evidenced through stable isotope analyses. This finding mirrors patterns of dual genetic ancestry and admixture previously detected in Iberia but may suggest a more drastic genetic turnover in northwestern Europe than in the southwest.

<https://www.nature.com/articles/s41559-022-01883-z>

Nature Neuroscience

ARTICLES

HEE-SUP SHIN – Altruism and social rewards

Scheggia et al. have established a behavioral paradigm to explore preferences for 'altruistic' or 'selfish' choice behavior in mice. The results suggest that altruistic behavior develops through reinforcement learning driven by social rewards, which is controlled by interactions between the basolateral amygdala and prelimbic cortex.

<https://www.nature.com/articles/s41593-022-01190-7>

PAPERS

DIEGO SCHEGGIA et al – Reciprocal cortico-amygdala connections regulate prosocial and selfish choices in mice

Decisions that favor one's own interest versus the interest of another individual depend on context and the relationships between individuals. The neurobiology underlying selfish choices or choices that benefit others is not understood. We developed a two-choice social decision-making task in which mice can decide whether to share a reward with their conspecifics. Preference for altruistic choices was modulated by familiarity, sex, social contact, hunger, hierarchical status and emotional state matching. Fiber photometry recordings and chemogenetic manipulations demonstrated that basolateral amygdala (BLA) neurons are involved in the establishment of prosocial decisions. In particular, BLA neurons projecting to the prelimbic (PL) region of the prefrontal cortex mediated the development of a preference for altruistic choices, whereas PL projections to the BLA modulated self-interest motives for decision-making. This provides a neurobiological model of altruistic and selfish choices with relevance to pathologies associated with dysfunctions in social decision-making.

<https://www.nature.com/articles/s41593-022-01179-2>

Nature Scientific Reports

PAPERS

CORRADO MONTI et al – The language of opinion change on social media under the lens of communicative action

Which messages are more effective at inducing a change of opinion in the listener? We approach this question within the frame of Habermas' theory of communicative action, which posits that the illocutionary intent of the message (its pragmatic meaning) is the key. Thanks to recent advances in natural language processing, we are able to operationalize this theory by extracting the latent social dimensions of a message, namely archetypes of social intent of language, that come from social exchange theory. We identify key ingredients to opinion change by looking at more than 46k posts and more than 3.5M comments on Reddit's r/ChangeMyView, a debate forum where people try to change each other's opinion and explicitly mark opinion-changing comments with a special flag called delta. Comments that express no intent are about 77% less likely to change the mind of the recipient, compared to comments that convey at least one social dimension. Among the various social dimensions, the ones that are most likely to produce an opinion change are knowledge, similarity, and trust, which

resonates with Habermas' theory of communicative action. We also find other new important dimensions, such as appeals to power or empathetic expressions of support. Finally, in line with theories of constructive conflict, yet contrary to the popular characterization of conflict as the bane of modern social media, our findings show that voicing conflict in the context of a structured public debate can promote integration, especially when it is used to counter another conflictive stance. By leveraging recent advances in natural language processing, our work provides an empirical framework for Habermas' theory, finds concrete examples of its effects in the wild, and suggests its possible extension with a more faceted understanding of intent interpreted as social dimensions of language.

<https://www.nature.com/articles/s41598-022-21720-4>

FRANCO AGUSTÍN BERNAL et al – Top-down modulation impairs priming susceptibility in complex decision-making with social implications

Could social context variables prime complex decisions? Could top-down processes impair this priming susceptibility? Complex decisions have been mainly studied from economic and moral perspectives, and Dual Process Theories provide evidence of how these processes could be affected. To address these issues from a political perspective, online experiments were conducted. Participants (n = 252) were asked to choose a face from 4 options, each associated with different frequencies (repetition priming) or with phrases with different emotional valence (emotional priming), for an unspecified task (UST group) or an important task (IMT group). The most repeated face was chosen most in the UST group, and was associated with lower response times. Positive faces were equally chosen by both groups. To compare results in a more ecological situation, a social study was conducted during the 2019 Argentine Presidential Election, including online surveys (n = 3673) and analysis of news media mentioning candidates. The familiarity and trust to each candidate explained the voting-probability for most of them, as well as correlated with their frequency of mentions in the news, their positive associations, and election results. Our results suggest complex decision-making is susceptible to priming, depending on top-down modulation.

<https://www.nature.com/articles/s41598-022-22707-x>

New Scientist

NEWS

Vocal communication recorded in 53 animals we thought were silent

New recordings of sounds made by reptiles, amphibians and fish suggest that vocal communication has a common evolutionary origin in vertebrates.

<https://www.newscientist.com/article/2343954-vocal-communication-recorded-in-53-animals-we-thought-were-silent/>

PLoS One

PAPERS

CAMILLE L. GRASSO et al – Embodied time: Effect of reading expertise on the spatial representation of past and future

How do people grasp the abstract concept of time? It has been argued that abstract concepts, such as future and past, are grounded in sensorimotor experience. When responses to words that refer to the past or the future are either spatially compatible or incompatible with a left-to-right timeline, a space-time congruency effect is observed. In the present study, we investigated whether reading expertise determines the strength of the space-time congruency effect, which would suggest that learning to read and write drives the effect. Using a temporal categorization task, we compared two types of space-time congruency effects, one where spatial incongruency was generated by the location of the stimuli on the screen and one where it was generated by the location of the responses on the keyboard. While the first type of incongruency was visuo-spatial only, the second involved the motor system. Results showed stronger space-time congruency effects for the second type of incongruency (i.e., when the motor system was involved) than for the first type (visuo-spatial). Crucially, reading expertise, as measured by a standardized reading test, predicted the size of the space-time congruency effects. Altogether, these results reinforce the claim that the spatial representation of time is partially mediated by the motor system and partially grounded in spatially-directed movement, such as reading or writing.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0276273>

ZOLTÁN BARTA – Publication games: In the web of reciprocity

The present processes of research assessment, i.e. focusing on one or a few, related, scientometrics, foster questionable authorship practices, like gifting authorship to non-contributing people. An especially harmful one of these unethical practices is the formation of publication cartels, where authors offer gift authorship to each other reciprocally. Here, by developing a simple model and a simulation of the publication process I investigate how beneficial cartels can be and what measure can be used to restrict them. My results indicate that publication cartels can significantly boost members' productivity even if paper counts are weighted by the inverse of author number (the 1/n rule). Nevertheless, applying the 1/n rule generates conflicts of interest both among cartel members themselves and between cartel members and non-members which might lead to the self-purification of the academic publishing industry.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0270618>

INES SCHINDLER et al – Lay conceptions of “being moved” (“bewegt sein”) include a joyful and a sad type: Implications for theory and research

Being moved has received increased attention in emotion psychology as a social emotion that fosters bonds between individuals and within communities. This increased attention, however, has also sparked debates about whether the term “being moved” refers to a single distinct profile of emotion components or rather to a range of different emotion profiles. We addressed this question by investigating lay conceptions of the emotion components (i.e., elicitors, cognitive appraisals, subjective feelings, bodily symptoms, and consequences for thought/action) of “bewegt sein” (the German term for “being moved”). Participants (N = 106) provided written descriptions of both a moving personal experience and their conceptual prototype of “being moved,” which were subjected to content analysis to obtain quantitative data for statistical analyses. Based on latent class analyses, we identified two classes for both the personal experiences (joyfully-moved and sadly-moved classes) and the being-moved prototype (basic-description and extended-description classes). Being joyfully moved occurred when social values and positive relationship experiences were salient. Being sadly moved was elicited by predominantly negative relationship experiences and negatively salient social values. For both classes, the most frequently reported consequences for thought/action were continued cognitive engagement, finding meaning, and increased valuation of and striving for connectedness/prosociality. Basic descriptions of the prototype included “being moved” by positive or negative events as instances of the same emotion, with participants in the extended-description class also reporting joy and sadness as associated emotions. Based on our findings and additional theoretical considerations, we propose that the term “being moved” designates an emotion with an overall positive valence that typically includes blends of positively and negatively valenced emotion components, in which especially the weight of the negative components varies. The emotion’s unifying core is that it involves feeling the importance of individuals, social entities, and abstract social values as sources of meaning in one’s life.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0276808>

Proceedings of the Royal Society B

PAPERS

JOHN M. MCNAMARA & MAX WOLF – Social interaction can select for reduced ability

Animals, including humans, differ in a wide range of physical and cognitive abilities ranging from measures of running speed and physical strength to learning ability and intelligence. We consider the evolution of ability when individuals interact pairwise over their contribution to a common good. In this interaction, the contribution of each is assumed to be the best given their own ability and the contribution of their partner. Since there is a tendency for individuals to partially compensate for a low contribution by their partner, low-ability individuals can do well. As a consequence, for benefit and cost structures for which individuals have a strong response to partner’s contribution, there can be selection for reduced ability. Furthermore, there can be disruptive selection on ability, leading to a bimodal distribution of ability under some modes of inheritance.

{I suppose it could explain the almost-universal rise of the swivel-eyed Conselfservative Farquhars, but it kind of misses the point. If a fast runner/low learning ability person teams with a slow runner/high learning ability person then you have the traditional brains-plus-brawn combination which seems to benefit both parties. When it’s a real-life process and not a mathematical model, (+1,-2)+(-2,+1) doesn’t need to equal -2, and may even equal +2.}

<https://royalsocietypublishing.org/doi/full/10.1098/rspb.2022.1788>

Trends in Cognitive Sciences

PAPERS

FRANÇOIS OSIURAK, NICOLAS CLAUDIÈRE & GIOVANNI FEDERICO – Bringing cumulative technological culture beyond copying versus reasoning

The dominant view of cumulative technological culture suggests that high-fidelity transmission rests upon a high-fidelity copying ability, which allows individuals to reproduce the tool-use actions performed by others without needing to understand them (i.e., without causal reasoning). The opposition between copying versus reasoning is well accepted but with little supporting evidence. In this article, we investigate this distinction by examining the cognitive science literature on tool use. Evidence indicates that the ability to reproduce others’ tool-use actions requires causal understanding, which questions the copying versus reasoning distinction and the cognitive reality of the so-called copying ability. We conclude that new insights might be gained by considering causal understanding as a key driver of cumulative technological culture.

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(22\)00245-5](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(22)00245-5)

Trends in Neurosciences

PAPERS

STEPHANIE L. KING, RICHARD C. CONNOR & STEPHEN H. MONTGOMERY – Social and vocal complexity in bottlenose dolphins

The complex societies of dolphins are based on highly individual and varied social relationships, which require sophisticated ways of communicating and monitoring the relationships among conspecifics. The cognitive abilities required for navigating a maze of social relationships in complex societies are considerable, and indeed, are one explanation for peaks in mammalian

brain size, most notably in anthropoid primates, elephants, and toothed whales. Social groups in these taxa are often characterized by multilevel societies, flexible communication systems, and long-term social memory. Bottlenose dolphins are among the species of particular interest, because they possess one of the largest brains relative to body size.

[https://www.cell.com/trends/neurosciences/fulltext/S0166-2236\(22\)00185-0](https://www.cell.com/trends/neurosciences/fulltext/S0166-2236(22)00185-0)

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