EAORC BULLETIN 961 – 14 November 2021

CONTENTS

NOTICES

PUBLICATION ALERTS

If you have had a paper or book published, or you see something which would be of interest to the group, do 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, do let me know.
And if you have any other ideas for extending the "EAORC experience", please contact me.

ACADEMIA.EDU – Technological Origins: Primate Perspectives and Early Hominin Tool Use in Africa

In The Oxford Research Encyclopedia, African History (oxfordre.com/africanhistory). University Press USA (2019).

SUSANA CARVALHO & MEGAN BEARDMORE-HERD – Technological Origins: Primate Perspectives and Early Hominin Tool Use in Africa

Technological Origins: Primate Perspectives and Early Hominin Tool Use in Africa The origin of technology is believed to have marked a major adaptive shift in human evolution. Understanding the evolutionary process(es) underlying the first human adaptation to tool use, and the subsequent process(es) that led Homo sapiens to become the only extant primate fully dependent on technology, is one of the most stimulating topics of research of present-day archaeology. New fields of research have been founded (e.g. primate archaeology, Pliocene archaeology) during the quest to find out how old technology is, where it originated, and who were the first tool users. Historically, the vast majority of the information on this topic comes from the study of lithic (stone) tools, tools whose manufacture was generally believed to be a uniquely human characteristic until well into the 1960s. The production of lithic technology was linked first to the origin of the earliest hominins (the taxonomic group comprising modern humans, extinct human species, and all immediate human ancestors), being thought to have co-evolved with traits such as bipedalism or hunting/scavenging, and later to the evolution of the genus Homo and accompanying increases in brain size. As a result of breakthroughs in the field of primatology, and greater interdisciplinary work between archaeologists and primatologists, a paradigm shift in beliefs surrounding the uniqueness of human technology is underway. Following discoveries from the second half of the 20th century and the early 21st century, habitual tool use, tool manufacture, and the production of flakes are now known to occur in extant non-human species, firmly decoupling brain size expansion, bipedalism, and the origins of technology. Knapped stone tools and cut-marked bones have been discovered dating to ca. half a million years before the earliest evidence of Homo, giving rise to the possibility that earlier, previously unconsidered hominins, or even other extinct non-human primates, could have been responsible for the inception of tool use and manufacture. Following these advances, it is reasonable to hypothesize that the origins of technology may lie much further back in time than the earliest discovered modified stone tools—perhaps as far back as the late Miocene with the last common ancestor of Homo and Pan. Moreover, discoveries of lithic technology in more distantly related species, where convergent evolution is the most parsimonious explanation, strongly suggest the existence of multiple evolutionary pathways for technological Technological emergence. While there is still much to unearth, the extension of the antiquity of modified stone tools, combined with the increased focus on interdisciplinary studies between archaeologists, primatologists, and paleoanthropologists, has gone a long way in overturning outdated beliefs by demonstrating that the

development of technology is unlikely to have been a simple, linear process resulting from a single event or factor in the evolutionary history of humans.
https://www.academia.edu/38813235/Technological_Origins_Primate_Perspectives_and_Early_Hominin_Tool_Use_in_Africa_Subject_Archaeology_Online_Publication_Technological_Origins_Primate_Perspectives_and_Early_Hominin_Tool_Use_in_Africa

ACADEMIA.EDU – "An Ape's View of the Oldowan" Revisited

In Evolutionary Anthropology 20, 181-197 (2011).

THOMAS WYNN, et al – "An Ape's View of the Oldowan" Revisited

In 1989, Wynn and McGrew published an explicit comparison between Oldowan technology and what was then known of chimpanzee technology. They compared the range and variety of tools, adaptive role of tools, carrying distances, spatial cognition, manufacturing procedures, and modes of learning. They concluded that everything archeologists had reconstructed about the behavior of Oldowan hominins could be accommodated within the ape adaptive grade; that is, a paraphyletic group united by overall similarities in anatomy and, in this case, behavior. The only Oldowan activities that were almost unknown for modern apes were the long-distance transport of objects and direct competition with carnivores, which was implied by meat acquisition activities. ''In its general features Oldowan culture was ape, not human. Nowhere in this picture need we posit elements such as language, extensive sharing, division of labor, or pair-bonded families, all of which are part of the baggage carried by the term 'human'.
https://www.academia.edu/21924708/_An_apes_view_of_the_Oldowan_revisited

ACADEMIA.EDU – Medical problems resulting from evolutionary processes: bipedalism

In Periodicum Biologorum 117:1, 17-26 (2015)

IVOR JANKOVIĆ – Certain medical problems resulting from evolutionary processes: bipedalism as an example

Humans are primates, and as such, our overall anatomy is very simi-lar to that of other members of this biological order. Yet, there are numerous differences in certain anatomical regions of living humans when compared to our closest living relatives, the African great apes. Many of these, such as our extremely large brains compared to body size (even if all primates have relatively large brains), details in dental anatomy, and so on, appear at different times in our evolutionary past and within the tribe hominini. However, the first, and taxonomically most significant synapomorphy of the hominin clade is a change in locomotory mode, from that of a quadruped (presumably the ancestral state in last common ancestor (LCA) of humans and apes) to biped. In this paper, a brief overview is given of the most important anatomical challenges that these novel locomotory patterns required to be energetically efficient, as seen in the comparison between living African apes and humans. Further, an overview of the fossil record, as related to the issues raised, is given. Lastly, the importance of understanding evolutionary adaptations and changes for the medical profession is discussed.
https://www.academia.edu/12846527/Certain_medical_problems_resulting_from_evolutionary_processes_bipedalism_as_an_example

RESEARCHGATE – Active perception: sensorimotor circuits as a cortical basis for language

In Nature Reviews Neuroscience 11, 351-360 (2010)

FRIEDEMANN PULVERMÜLLER & LUCIANO FADIGA – Active perception: sensorimotor circuits as a cortical basis for language

Action and perception are functionally linked in the brain, but a hotly debated question is whether perception and comprehension of stimuli depend on motor circuits. Brain language mechanisms are ideal for addressing this question. Neuroimaging investigations have found specific motor activations when subjects understand speech sounds, word meanings and sentence structures. Moreover, studies involving transcranial magnetic stimulation and patients with lesions affecting inferior frontal regions of the brain have shown contributions of motor circuits to the comprehension of phonemes, semantic categories and grammar. These data show that language comprehension benefits from frontocentral action systems, indicating that action and perception circuits are interdependent.
https://www.researchgate.net/publication/43100165_Active_perception_Sensorimotor_circuits_as_a_cortical_basis_for_language

NEWS

BREAKING SCIENCE – Human Neurons are Strikingly Different from Those of Other Mammals

Human neurons have a much smaller number of channels that control the flow of ions (such as potassium and sodium) than expected, compared to the neurons of other mammals, according to new research led by MIT neuroscientists; and this reduction in channel density may have helped the human brain evolve to operate more efficiently, allowing it to divert resources to other energy-intensive processes that are required to perform complex cognitive tasks.
http://www.sci-news.com/biology/human-neurons-10262.html

BREAKING SCIENCE – Study: Humans Played Significant Role in Extinction of Woolly Mammoths

New research shows that the role of humans in the extinction dynamics of the woolly mammoth (Mammuthus primigenius) began well before the Holocene epoch, which started 11,700 years ago. “Our research shows that humans were a crucial and chronic driver of population declines of woolly mammoths, having an essential role in the timing and location of their extinction,” said Dr. Damien Fordham, a researcher in the Environment Institute and the School of Biological Sciences at the University of Adelaide and the Center for Macroecology, Evolution, and Climate at the GLOBE Institute at the University of Copenhagen.
http://www.sci-news.com/paleontology/humans-role-extinction-woolly-mammoths-10263.html

SAPIENS – Evolution and human identity

An evolutionary theorist considers how traits we think of as human may have been shared by other hominins.
https://sapiens.us11.list-manage.com/track/click?u=80f6cf678900daf984bf763b7&id=e1163cf99a&e=dc0eff6180

SCIENCE DAILY – Diet restricted size of hunter-gatherer societies

Short growing seasons limited the possible size of hunter-gatherer societies by forcing people to rely on meat, according to a recent study. After looking at population size for the roughly 300 hunter-gatherer societies which existed until quite recently, the researchers found that many of these groups were much smaller than might have been expected from the local ecosystem productivity. In regions with short growing seasons, hunter-gatherer groups had smaller populations per square kilometre than groups who depended on abundant plant foods throughout the year.
https://www.sciencedaily.com/releases/2021/11/211108162208.htm

SCIENCE DAILY – Male and female guinea baboons equally successful as leaders

The sun rises over the Senegalese savannah. The Guinea baboons have spent the night on their sleeping trees and set off together to forage. In order to depart simultaneously as a group and roam together during the day, the animals have to coordinate well. Researchers have studied which animals lead the group and how they decide when and in which direction to set off. They observed Guinea baboons (Papio papio) on their forays for two years. The overarching goal was to elucidate which factors favor despotic versus democratic decisions in groups. The authors found that both males and females initiate group departures and that both sexes are similarly successful in doing so. This pattern distinguishes Guinea baboons from hamadryas baboons (Papio hamadryas), in which group movements are initiated and led exclusively by males.
https://www.sciencedaily.com/releases/2021/11/211109080854.htm

SCIENCE DAILY – Spread of Transeurasian languages was due to agriculture

By triangulating data from linguistics, archaeology and genetics, a new study by an international team of researchers proposes a 'Farming Hypothesis' for the spread of Transeurasian languages, tracing the origins of Japonic, Koreanic, Tungusic, Mongolic and Turkic to the movements of Neolithic millet farmers from the region of the West Liao River.
https://www.sciencedaily.com/releases/2021/11/211110131625.htm

SCIENCE DAILY – Striking difference between neurons of humans and other mammals

Human neurons have a lower density of ion channels than expected, compared to neurons of other mammals, according to a new study. The researchers hypothesize that a lower channel density may have helped the human brain evolve to operate more efficiently.
https://www.sciencedaily.com/releases/2021/11/211110131613.htm

SCIENCE DAILY – Using mechanical tools improves our language skills, study finds

Research has revealed a correlation between being particularly proficient in tool use and having good syntactic ability. A new study has now shown that both skills rely on the same neurological resources, which are located in the same brain region. Furthermore, motor training using a tool improves our ability to understand the syntax of complex sentences and -- vice-versa -- syntactic training improves our proficiency in using tools.
https://www.sciencedaily.com/releases/2021/11/211111154244.htm

SCIENCE NEWS – How agriculture gave rise to one of the world’s most mysterious language families

Transeurasian languages arose in China 9000 years ago, new study claims
https://www.science.org/content/article/how-agriculture-gave-rise-one-world-s-most-mysterious-language-families

SOCIETY FOR SCIENCE – A child’s partial skull adds to the mystery of how Homo naledi treated the dead

The isolated discovery of a Homo naledi child’s skull fragments and teeth plays into the idea that small-brained species ritually placed the dead in caves.

http://click.societyforscience-email.com/?qs=a9f04cc4220ee7b4a9134447560710f2f386c1eeea69f7b0d0927abaf7e5b065fa134b5b461db6578ceb26e0b33eeefe035325062ad13b02

SOCIETY FOR SCIENCE – 'The Dawn of Everything' rewrites 40,000 years of human history

A new book recasts human social evolution as multiple experiments with freedom and domination that started in the Stone Age. (Review of 'The Dawn of Everything' by David Graeber and David Wengrow.)
http://click.societyforscience-email.com/?qs=104e82a9c1deeb6d736e8609020a9c65086cad9eea6cc65b01fcdf4b060bd0497612509d4cd1480e0d3608f989e0b3a42a78f55a4b26a40881a3a3b7bc48a4ad

THE CONVERSATION – Tool use & language skills are linked in the brain – practising one improves other

We used brain imaging techniques to show these two activities engage the same region of the brain. Then we wanted to find out more.
https://theconversationuk.cmail20.com/t/r-l-trtukhtk-khhlilahh-o/

PUBLICATIONS

Current Biology

PAPERS

CLÉMENTINE BODIN – Functionally homologous representation of vocalizations in the auditory cortex of humans and macaques

How the evolution of speech has transformed the human auditory cortex compared to other primates remains largely unknown. While primary auditory cortex is organized largely similarly in humans and macaques, the picture is much less clear at higher levels of the anterior auditory pathway, particularly regarding the processing of conspecific vocalizations (CVs). A "voice region" similar to the human voice-selective areas has been identified in the macaque right anterior temporal lobe with functional MRI; however, its anatomical localization, seemingly inconsistent with that of the human temporal voice areas (TVAs), has suggested a "repositioning of the voice area" in recent human evolution. Here we report a functional homology in the cerebral processing of vocalizations by macaques and humans, using comparative fMRI and a condition-rich auditory stimulation paradigm. We find that the anterior temporal lobe of both species possesses cortical voice areas that are bilateral and not only prefer conspecific vocalizations but also implement a representational geometry categorizing them apart from all other sounds in a species-specific but homologous manner. These results reveal a more similar functional organization of higher-level auditory cortex in macaques and humans than currently known.
https://www.cell.com/current-biology/fulltext/S0960-9822(21)01147-7

Evolutionary Human Sciences

PAPERS

ALBERTO ACERBI et al with THOM SCOTT-PHILLIPS – Culture without copying or selection

Typical examples of cultural phenomena all exhibit a degree of similarity across time and space at the level of the population. As such, a fundamental question for any science of culture is, what ensures this stability in the first place? Here we focus on the evolutionary and stabilizing role of 'convergent transformation', in which one item causes the production of another item whose form tends to deviate from the original in a directed, non-random way. We present a series of stochastic models of cultural evolution investigating its effects. Results show that cultural stability can emerge and be maintained by virtue of convergent transformation alone, in the absence of any form of copying or selection process. We show how high-fidelity copying and convergent transformation need not be opposing forces, and can jointly contribute to cultural stability. We finally analyse how non-random transformation and high-fidelity copying can have different evolutionary signatures at population level, and hence how their distinct effects can be distinguished in empirical records. Collectively, these results supplement existing approaches to cultural evolution based on the Darwinian analogy, while also providing formal support for other frameworks — such as Cultural Attraction Theory — that entail its further loosening.
https://www.cambridge.org/core/journals/evolutionary-human-sciences/article/culture-without-copying-or-selection/4A0AD3781ED1616BD9D9424BD02FDCB4

Frontiers in Communication

PAPERS

OLIVIA H. MARRESE et al – The Grammar of Obviousness: The Palm-Up Gesture in Argument Sequences

This paper investigates the body's role in grammar in argument sequences. Drawing from a database of public disputes on language use, we document the work of the palm-up gesture in action formation. Using conversation analysis and interactional linguistics, we show how this gesture is an interactional resource that indexes a particular epistemic stance—namely to cast the proposition being advanced as obvious. In this report, we focus on instances in which participants reach what we refer to as an 'impasse', at which point the palm up gesture becomes a resource for reasserting and pursuing a prior

position, now laminated with an embodied claim of 'obviousness' that is grounded in the sequentiality of the interaction. As we show, the palm up gesture appears with and in response to a variety of syntactic and grammatical structures, and moreover can also function with no accompanying verbal utterance at all. This empirical observation challenges the assumption that a focus on grammar-in-interaction should begin with, or otherwise be examined in relation to, 'standard' verbal-only grammatical categories (e.g., imperative, declarative). We conclude by considering the gestural practice we focus on alongside verbal grammatical resources (specifically, particles) from typologically distinct languages, which we offer as a contribution to ongoing discussions regarding an embodied conceptualization of grammar—in this case, epistemicity.
https://www.frontiersin.org/articles/10.3389/fcomm.2021.663067/full

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Nature

ARTICLES

PETER BELLWOOD – Tracking the origin of Transeurasian languages
A triangulation of linguistic, archaeological and genetic data suggests that the Transeurasian language family originated in a population of grain farmers in China around 9,000 years ago, and that agriculture underpinned its spread.
https://www.nature.com/articles/d41586-021-03037-w

PAPERS

MARTINE ROBBEETS et al – Triangulation supports agricultural spread of the Transeurasian languages
The origin and early dispersal of speakers of Transeurasian languages—that is, Japanese, Korean, Tungusic, Mongolic and Turkic—is among the most disputed issues of Eurasian population history. A key problem is the relationship between linguistic dispersals, agricultural expansions and population movements. Here we address this question by 'triangulating' genetics, archaeology and linguistics in a unified perspective. We report wide-ranging datasets from these disciplines, including a comprehensive Transeurasian agropastoral and basic vocabulary; an archaeological database of 255 Neolithic–Bronze Age sites from Northeast Asia; and a collection of ancient genomes from Korea, the Ryukyu islands and early cereal farmers in Japan, complementing previously published genomes from East Asia. Challenging the traditional 'pastoralist hypothesis', we show that the common ancestry and primary dispersals of Transeurasian languages can be traced back to the first farmers moving across Northeast Asia from the Early Neolithic onwards, but that this shared heritage has been masked by extensive cultural interaction since the Bronze Age. As well as marking considerable progress in the three individual disciplines, by combining their converging evidence we show that the early spread of Transeurasian speakers was driven by agriculture.
https://www.nature.com/articles/s41586-021-04108-8

Nature Africa

NEWS

Child's skull fossil found in the Cradle of Humankind
Homo Naledi discovery adds to insight about stages of life of human ancestor.
https://www.nature.com/articles/d44148-021-00109-x

Nature Communications

PAPERS

KRISTEL YU TIAMCO BAYANI et al with DIETRICH STOUT – Emergence of perceptuomotor relationships during paleolithic stone toolmaking learning: intersections of observation and practice
Stone toolmaking is a human motor skill which provides the earliest archeological evidence motor skill and social learning. Intentionally shaping a stone into a functional tool relies on the interaction of action observation and practice to support motor skill acquisition. The emergence of adaptive and efficient visuomotor processes during motor learning of such a novel motor skill requiring complex semantic understanding, like stone toolmaking, is not understood. Through the examination of eye movements and motor skill, the current study sought to evaluate the changes and relationship in perceptuomotor processes during motor learning and performance over 90 h of training. Participants' gaze and motor performance were assessed before, during and following training. Gaze patterns reveal a transition from initially high gaze variability during initial observation to lower gaze variability after training. Perceptual changes were strongly associated with motor performance improvements suggesting a coupling of perceptual and motor processes during motor learning.
https://www.nature.com/articles/s42003-021-02768-w

Nature Scientific Reports

PAPERS

DAVIDE MONTANARI et al with JULIA FISCHER – Coordination during group departures and progressions in the tolerant multi-level society of wild Guinea baboons (Papio papio)
Collective movement of social groups requires coordination between individuals. When cohesion is imperative, consensus must be reached, and specific individuals may exert disproportionate influence during decision-making. Animals living in

multi-level societies, however, often split into consistent social subunits during travel, which may impact group coordination processes. We studied collective movement in the socially tolerant multi-level society of Guinea baboons (Papio papio). Using 146 group departures and 100 group progressions from 131 Guinea baboons ranging in Senegal's Niokolo-Koba National Park, we examined individual success at initiating group departures and position within progressions. Two-thirds of attempted departures were initiated by adult males and one third by adult females. Both sexes were equally successful at initiating departures (> 80% of initiations). During group progressions, bachelor males were predominantly found in front, while reproductively active 'primary' males and females were observed with similar frequency across the whole group. The pattern of collective movement in Guinea baboons was more similar to those described for baboons living in uni-level societies than to hamadryas baboons, the only other multi-level baboon species, where males initiate and decide almost all group departures. Social organization alone therefore does not determine which category of individuals influence group coordination.
https://www.nature.com/articles/s41598-021-01356-6

New Scientist

NEWS

Homo naledi infant skull discovery suggests they buried their dead
The partial skull of a Homo naledi child from around 250,000 years ago has been found in a deep, inaccessible cave – suggesting it was placed there by other H. naledi.
https://www.newscientist.com/article/2296360-homo-naledi-infant-skull-discovery-suggests-they-buried-their-dead/#ixzz7Bwo8EsWB

Chimpanzees dislike the smell of death like we do
Some chimpanzees will carry around an infant that did not survive, which made researchers wonder if they are as sensitive to the chemicals that produce odours in dead bodies
https://www.newscientist.com/article/2296831-chimpanzees-dislike-the-smell-of-death-like-we-do/#ixzz7BwoYL4r3

PLoS One

PAPERS

JIN CONG & HAITAO LIU – Linguistic emergence from a networks approach: The case of modern Chinese two-character words
The models of linguistic networks and their analytical tools constitute a potential methodology for investigating the formation of structural patterns in actual language use. Research with this methodology has just started, which can hopefully shed light on the emergent nature of linguistic structure. This study attempts to employ linguistic networks to investigate the formation of modern Chinese two-character words (as structural units based on the chunking of their component characters) in the actual use of modern Chinese, which manifests itself as continuous streams of Chinese characters. Network models were constructed based on authentic Chinese language data, with Chinese characters as nodes, their co-occurrence relations as directed links, and the co-occurrence frequencies as link weights. Quantitative analysis of the network models has shown that a Chinese two-character word can highlight itself as a two-node island, i.e., a cohesive sub-network with its two component characters co-occurring more frequently than they co-occur with the other characters. This highlighting mechanism may play a vital role in the formation and acquisition of two-character words in actual language use. Moreover, this mechanism may also throw some light on the emergence of other structural phenomena (with the chunking of specific linguistic units as their basis).
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0259818

JOSÉ-MIGUEL TEJERO et al with OFER BAR-YOSEF – New insights into the Upper Palaeolithic of the Caucasus through the study of personal ornaments. Teeth and bones pendants from Satsurblia and Dzudzuana caves (Imereti, Georgia)
The region of western Georgia (Imereti) in the Southern Caucasus has been a major geographic corridor for human migrations during the Middle and Upper Paleolithic. Data of recent research and excavations in this region display its importance as a possible route for the dispersal of anatomically modern humans (AMH) into northern Eurasia. Nevertheless, within the local research context, bone-working and personal ornaments have yet contributed but little to the Upper Palaeolithic (UP) regional sequence's characterization. Here we present an archaeozoological, technological and use-wear study of pendants from two local UP assemblages, originating in the Dzudzuana Cave and Satsurblia Cave. The ornaments were made mostly of perforated teeth, though some specimens were made on bone. Both the manufacturing marks made during preparation and use-wear traces indicate that they were personal ornaments, used as pendants or attached to garments. Detailed comparison between ornament assemblages from northern and southern Caucasus reveal that they are quite similar, supporting the observation of cultural bonds between the two regions, demonstrated previously through lithic techno-typological affinities. Furthermore, our study highlights the importance attributed to red deer (Cervus elaphus) by the UP societies of the Caucasus in sharing aesthetic values and/or a symbolic sphere.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0258974

PNAS

PAPERS

MARTIN SCHRIMPF et al with NANCY KANWISHER – The neural architecture of language: Integrative modeling converges on predictive processing

Language is a quintessentially human ability. Research has long probed the functional architecture of language in the mind and brain using diverse neuroimaging, behavioral, and computational modeling approaches. However, adequate neurally-mechanistic accounts of how meaning might be extracted from language are sorely lacking. Here, we report a first step toward addressing this gap by connecting recent artificial neural networks from machine learning to human recordings during language processing. We find that the most powerful models predict neural and behavioral responses across different datasets up to noise levels. Models that perform better at predicting the next word in a sequence also better predict brain measurements—providing computationally explicit evidence that predictive processing fundamentally shapes the language comprehension mechanisms in the brain.
https://www.pnas.org/content/118/45/e2105646118.abstract

Proceedings of the Royal Society B

PAPERS

MAXWELL N. BURTON-CHELLEW & CLAIRE GUÉRIN – Decoupling cooperation and punishment in humans shows that punishment is not an altruistic trait

Economic experiments have suggested that cooperative humans will altruistically match local levels of cooperation (conditional cooperation) and pay to punish non-cooperators (altruistic punishment). Evolutionary models have suggested that if altruists punish non-altruists this could favour the evolution of costly helping behaviours (cooperation) among strangers. An often-key requirement is that helping behaviours and punishing behaviours form one single conjoined trait (strong reciprocity). Previous economics experiments have provided support for the hypothesis that punishment and cooperation form one conjoined, altruistically motivated, trait. However, such a conjoined trait may be evolutionarily unstable, and previous experiments have confounded a fear of being punished with being surrounded by cooperators, two factors that could favour cooperation. Here, we experimentally decouple the fear of punishment from a cooperative environment and allow cooperation and punishment behaviour to freely separate (420 participants). We show, that if a minority of individuals is made immune to punishment, they (i) learn to stop cooperating on average despite being surrounded by high levels of cooperation, contradicting the idea of conditional cooperation and (ii) often continue to punish, 'hypocritically', showing that cooperation and punishment do not form one, altruistically motivated, linked trait.
https://royalsocietypublishing.org/doi/abs/10.1098/rspb.2021.1611

ALEJANDRO SÁNCHEZ-AMARO & FEDERICO ROSSANO – Chimpanzees and bonobos use social leverage in an ultimatum game

The ultimatum game (UG) is widely used to investigate our sense of fairness, a key characteristic that differentiates us from our closest living relatives, bonobos and chimpanzees. Previous studies found that, in general, great apes behave as rational maximizers in the UG. Proposers tend to choose self-maximizing offers, while responders accept most non-zero offers. These studies do not rule out the possibility that apes can behave prosocially to improve the returns for themselves and others. However, this has never been well studied. In this study, we offer chimpanzee and bonobo proposers the possibility of taking into account the leverage of responders over the offers they receive. This leverage takes the form of access to alternatives for responders. We find that proposers tend to propose fairer offers when responders have the option to access alternatives. Furthermore, we find that both species use their leverage to reject unequal offers. Our results suggest that great apes mostly act as rational maximizers in an UG, yet access to alternatives can lead them to change their strategies such as not choosing the self-maximizing offer as proposers and not accepting every offer higher than zero as responders.
https://royalsocietypublishing.org/doi/full/10.1098/rspb.2021.1937

Science

PAPERS

SIMON THIBAULT et al – Tool use and language share syntactic processes and neural patterns in the basal ganglia

Tool use is a hallmark of human evolution. Beyond its sensorimotor components, the complexity of which has been extensively investigated, tool use affects cognition from a different perspective. Indeed, tool use requires integrating an external object as a body part and embedding its functional structure in the motor program. This adds a hierarchical level into the motor plan of manual actions, subtly modifying the relationship between interdependent subcomponents. Embedded structures also exist in language, and syntax is the cognitive function handling these linguistic hierarchies. One example is center-embedded object-relative clauses: "The poet [that the scientist admires] reads the paper." Accordingly, researchers have advanced a role for syntax in action and the existence of similarities between the processes underlying tool use and language, so that shared neural resources for a common cognitive function could be at stake.
https://www.science.org/doi/10.1126/science.abe0874

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