EAORC BULLETIN 860 – 8 December 2019

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.

SCIENCE NEWS – Early humans domesticated themselves, new genetic evidence suggests

When humans started to tame dogs, cats, sheep, and cattle, they may have continued a tradition that started with a completely different animal: us. A new study—citing genetic evidence from a disorder that in some ways mirrors elements of domestication—suggests modern humans domesticated themselves after they split from their extinct relatives, Neanderthals and Denisovans, approximately 600,000 years ago.
https://www.sciencemag.org/news/2019/12/early-humans-domesticated-themselves-new-genetic-evidence-suggests?utm_campaign=news_daily_2019-12-04&et_rid=17774313&et_cid=3110212

SCIENCE NEWS – Dogs hear words the same way we do

Say "sit!" to your dog, and—if he's a good boy—he'll likely plant his rump on the floor. But would he respond correctly if the word were spoken by a stranger, or someone with a thick accent? A new study shows he will, suggesting dogs perceive spoken words in a sophisticated way long thought unique to humans.
https://www.sciencemag.org/news/2019/12/dogs-hear-words-same-way-we-do?utm_campaign=news_daily_2019-12-04&et_rid=17774313&et_cid=3110212

SOCIETY FOR SCIENCE – A gene tied to facial development hints humans domesticated themselves

Scientists may have identified a gene that ties together ideas about human evolution and animal domestication.
http://click.societyforscience-email.com/?qs=603a3ed6d380dd6792ab84f715d2465277474e37495021f343052371900a28080c1718a384c7181e27da4f9950e9e60e3bbb5b97886b3495

BREAKING SCIENCE – Were Neanderthals, Denisovans and Others Victims of Sixth Mass Extinction?

Nine human species walked the Earth 300,000 years ago. Now there is just one. Neanderthals were stocky hunters adapted to Europe's cold steppes, their enigmatic cousins Denisovans inhabited Asia, while the more primitive Homo erectus lived in Indonesia, and Homo rhodesiensis in central Africa.
http://feedproxy.google.com/~r/BreakingScienceNews/~3/vswQdfZP6kU/neanderthals-denisovans-archaic-humans-victims-sixth-mass-extinction-07858.html?utm_source=feedburner&utm_medium=email

BREAKING SCIENCE – Humans and Climate Change Drove Australian Megafauna to Extinction

Ancient Australia's super-sized animals, the megafauna, became extinct about 42,000 years ago, but the role of humans in their demise has been debated for decades. New research challenges the notion built from previous studies that our species was the principal driver of extinctions in Australia, and that climate change was at best a secondary contributor.
http://feedproxy.google.com/~r/BreakingScienceNews/~3/IqaR5QsfCzA/humans-climate-change-australian-megafauna-extinction-07861.html?utm_source=feedburner&utm_medium=email

SCIENCE DAILY – A method with roots in AI uncovers how humans make choices in groups & social media

Using a mathematical framework with roots in artificial intelligence and robotics, researchers were able to uncover the process for how a person makes choices in groups. And, they also found they were able to predict a person's choice more often than more traditional descriptive methods.
https://www.sciencedaily.com/releases/2019/11/191127161239.htm

SCIENCE DAILY – How does language emerge?

How did the almost 6,000 languages of the world come into being? Researchers have tried to simulate the process of developing a new communication system in an experiment -- with surprising results: even preschool children can spontaneously develop communication systems that exhibit core properties of natural language.
https://www.sciencedaily.com/releases/2019/12/191203102033.htm

SCIENCE DAILY – Monkeys inform group members about threats -- following principles of cooperation

Humans are often faced with the choice of investing in the greater good or being selfish and letting others do the work. Animals that live in groups often encounter threats, and informing others could potentially save lives. Researchers show that wild sooty mangabeys, when facing dangerous vipers, do not just call out of fear or to warn their family, but will call when the information about the threat might otherwise not reach all group members.
https://www.sciencedaily.com/releases/2019/12/191202105819.htm

SCIENCE DAILY – Rats exchange information about danger in a reciprocal fashion

Rats exchange information about danger in a reciprocal fashion, and this information transfer is at least partially mediated by a brain region called the anterior cingulate cortex.
https://www.sciencedaily.com/releases/2019/12/191205141803.htm

NATURE BRIEFING – Words matter in research evaluation

Impact factors and other metrics offer a misleading simplicity, and terms such as 'high impact' or 'world-class' are so ambiguous that they can't be applied judiciously, argues Anna Hatch. Hatch, the programme director for the Declaration on Research Assessment (DORA), says that to move forward on evaluation reforms we must ditch feel-good slogans that lack any fixed meaning in favour of clearly defined terms.
https://nature.us17.list-manage.com/track/click?u=2c6057c528fdc6f73fa196d9d&id=871db58eac&e=1db4b9a19b

ACADEMIA.EDU – Chomsky's Cartesianism

DAVID GOLUMBIA – The Language of Science and the Science of Language: Chomsky's Cartesianism
diacritics, Volume 43, Number 1, 2015, pp. 38-62 (Article)
Almost from its inception, among the most notable features of Noam Chomsky's "revolution in linguistics" has been his insistence that linguistics, or language itself, or at least the most interesting and important aspects of linguistics, must be understood as parts of natural science. Its status as natural science is frequently posited as a critical distinction between Chomskyan linguistics and all (or almost all) other approaches to the subject. Much of the seriousness of the reception of Chomsky's work can be attributed to this claim, and one finds frequent reference to it in Chomsky's writings and those of his more ardent supporters. The implied, though rarely stated, assumption appears to be that for linguistics to be serious or truthful it must be "scientific."
https://www.academia.edu/17808815/The_Language_of_Science_and_the_Science_of_Language_Chomsky_s_Cartesianism?auto=download

SAPIENS – What Does It Mean to be Human? Your Questions, Answered

The podcast's season 2 finale takes on some difficult, and sometimes funny, listener questions.
https://sapiens.us11.list-manage.com/track/click?u=80f6cf678900daf984bf763b7&id=73167052da&e=dc0eff6180

SAPIENS – Restoring Dignity to Stolen Ancestors

In the first effort of its kind, a team at a South African university not only returns human remains to families but also provides a window into the world of ancestral San and Khoe people.
https://sapiens.us11.list-manage.com/track/click?u=80f6cf678900daf984bf763b7&id=dc9ea578ee&e=dc0eff6180

PUBLICATIONS

American Journal of Human Genetics

PAPERS

JEFFREY D. WALL, AAKROSH RATAN & ERIC STAWISKI – Identification of African-Specific Admixture between Modern and Archaic Humans

Recent work has demonstrated that two archaic human groups (Neanderthals and Denisovans) interbred with modern humans and contributed to the contemporary human gene pool. These findings relied on the availability of high-coverage genomes from both Neanderthals and Denisovans. Here we search for evidence of archaic admixture from a worldwide panel of 1,667 individuals using an approach that does not require the presence of an archaic human reference genome. We find no evidence for archaic admixture in the Andaman Islands, as previously claimed, or on the island of Flores, where Homo floresiensis fossils have been found. However, we do find evidence for at least one archaic admixture event in sub-Saharan Africa, with the strongest signal in Khoesan and Pygmy individuals from Southern and Central Africa. The locations of these putative archaic admixture tracts are weighted against functional regions of the genome, consistent with the long-term effects of purifying selection against introgressed genetic material.

https://www.cell.com/ajhg/fulltext/S0002-9297(19)30426-4?dgcid=raven_jbs_etoc_email

American Journal of Physical Anthropology

PAPERS

SUZANNA WHITE et al – Taxonomic variation in the supraorbital region of catarrhine primates

230 3D coordinates were used to record the supraorbital morphology of two datasets: one containing 460 non-hominin catarrhine primates from species and subspecies of Gorilla, Pan, Papio, and Macaca; and the other containing 55 Pleistocene hominins from Homo, Australopithecus, and Paranthropus. Principal component analyses in tangent, form, and allometry-free shape space were used to assess differentiation of taxa, with biological distinctiveness of taxa being established using step-wise discriminant analysis with subsampling.

Results indicated that the recorded supraorbital morphology could be used to separate non-hominin catarrhine primate genera, species, and subspecies, although accuracy was found to decrease with decreasing Linnaean rank. In addition, analyses in tangent space were found to produce the highest accuracy when classifying primates of known taxonomy. Biological distinctiveness of the middle and later Homo species was comparable to or higher than that of the non-hominin primates, and relatively lower for the earlier groups of Homo.

https://onlinelibrary.wiley.com/doi/full/10.1002/ajpa.23975?campaign=wolearlyview

MATT CARTMILL et al with ERICA A. CARTMILL – The gaits of marsupials and the evolution of diagonal-sequence walking in primates

Video records of koalas, ringtail possums, tree kangaroos, sugar gliders, squirrel gliders, wombats, numbats, quolls, a thylacine, and an opossum walking on a variety of substrates were made and analyzed to derive duty factors and diagonalities for symmetrical walking gaits. The resulting distributions of data points were compared with published data and theories.

Quadrupeds avoid gaits lying exactly on the (theoretically optimum) horse line, to avoid fore/hind limb interference ("forging"). This can be accomplished by either a slight reduction in diagonality ("downshifting") or a more decisive increase ("upshifting"). Tree-dwellers adopt the second option to eliminate unilateral bipods of support from the gait cycle. The upshifted horse line represents an early phase in the evolution of primate-like diagonal-sequence gaits.

https://onlinelibrary.wiley.com/doi/full/10.1002/ajpa.23959?campaign=wolearlyview

Animal Behaviour

PAPERS

BENJAMIN J. ASHTON, ALEX THORNTON & AMANDA R. RIDLEY – Larger group sizes facilitate the emergence and spread of innovations in a group-living bird

The benefits of group living have traditionally been attributed to risk dilution or the efficient exploitation of resources; individuals in social groups may therefore benefit from access to valuable information. If sociality facilitates access to information, then individuals in larger groups may be predicted to solve novel problems faster than individuals in smaller groups. Additionally, larger group sizes may facilitate the subsequent spread of innovations within animal groups, as has been proposed for human societies. We presented a novel foraging task (where a food reward could be accessed by pushing a self-shutting sliding door) to 16 groups of wild, cooperatively breeding Australian magpies, Cracticus tibicen dorsalis, ranging in size from two to 11 individuals. We found a nonlinear decline in the time taken for the innovative behaviour to emerge with increasing group size, and social information use facilitated the transmission of novel behaviour, with it spreading more quickly in larger than smaller groups. This study provides important evidence for a nonlinear relationship between group size and the emergence of innovation (and its subsequent transmission) in a wild population of animals. Further work investigating the scope and strength of group size–innovation relationships, and the mechanisms underpinning them, will help us understand the potential advantages of living in larger social groups.

https://www.sciencedirect.com/science/article/pii/S0003347219303240?dgcid=raven_sd_via_email

JOHN B. KELLEY et al – Mechanism for establishing and maintaining the reproductive hierarchy in a eusocial mammal, the Damaraland mole-rat

Eusociality is exhibited by colonial-living organisms where only a few individuals within a colony reproduce; the remaining members are nonbreeders and support reproduction of the breeders. Damaraland mole-rats, Fukomys damarensis, are one of two mammal species considered eusocial. Colonies include a breeding pair and their offspring. Unusual aspects of reproductive behaviour include the observation that both sexes display all components of mating even after long-term absence of gonadal hormones. Mating does not occur between siblings or offspring and parents, but nonbreeders from one colony will mate with individuals from other colonies. However, following 5 weeks of separation from each other, siblings will exhibit mutual sexual behaviour. Thus, familiarity through frequent proximity, rather than genetic identity, mediates inbreeding avoidance. One caveat is that breeding pairs maintain a mating relationship for years, although they obviously become familiar with each other. Among Damaraland mole-rats that are familiar with each other, two types of relationships can form, a mating relationship or a 'sibling-like' relationship marked by inbreeding avoidance. The factors determining the relationship between pairs of Damaraland mole-rats remain undefined. This experiment tested the hypothesis that the behaviour during the initial meeting of a pair of Damaraland mole-rats determines which relationship forms, i.e. mating versus 'sibling-like'. The initial pairing occurred either with unrestrained physical contact (allowing for mating behaviours) or with the two animals separated from each other by a mesh barrier (no mating could occur). This initial pairing was followed by daily 20 min pairings with the barrier in place for 2 weeks and then a final pairing without any restraint. Results indicate that the nature of the interaction within the first 20 min of meeting determines the long-term sexual relationship between pairs of Damaraland mole-rats. The results suggest a mechanistic basis for establishment and maintenance of the reproductive hierarchy in this eusocial species.
https://www.sciencedirect.com/science/article/pii/S000334721930332X?dgcid=raven_sd_via_email

ALEXANDER MIELKE, CATHERINE CROCKFORD & ROMAN M. WITTIG – Snake alarm calls as a public good in sooty mangabeys

Transmitting information about the location of a predator in social animal species can be seen as an investment in a public good, where information is the resource and group members benefit from reduced fatalities of kin and cooperation partners in their community. As few empirical tests of this idea exist in natural settings, we conducted a field experiment using snake models in wild sooty mangabeys, Cercocebus atys atys. We tested sooty mangabey alarm-calling patterns when exposed to viper models, investigating whether individuals called to signal fitness, to warn specific group members, or when information about the threat is not public, as would be predicted by public goods games. Strong interindividual differences in the likelihood of alarm calling existed. We found that overlap between callers was rare. Individuals were more likely to call if fewer individuals were present at the encounter site and if they had not heard other alarm calls before arriving at the site, indicating that alarm calls extended the information about the threat to following group members. This group size effect is in line with predictions of the volunteer's dilemma, a public goods game. We found no indications that individuals called specifically to warn ignorant individuals, kin or cooperation partners. Calling when information about the threat was not public allowed individuals to warn following group members while avoiding redundancy. Public goods games have not been employed widely in studies of the evolution of primate cooperation and animal communication in general but may provide useful models for understanding group level cooperation.
https://www.sciencedirect.com/science/article/pii/S0003347219303215?dgcid=raven_sd_via_email

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Current Biology

ARTICLES

WILLIAM A. SEARCY & STEPHEN NOWICKI – Animal Behavior: The Raised-by-Wolves Predicament

Social learning poses a particular problem for brood parasites, which are raised by adults of another species. Brood-parasitic cowbirds use a password, a simple signal that aids the young in identifying appropriate models for learning of their species' behaviors.
https://www.cell.com/current-biology/fulltext/S0960-9822(19)31255-2?dgcid=raven_jbs_etoc_email

PAPERS

MATTHEW I.M. LOUDER et al – An Acoustic Password Enhances Auditory Learning in Juvenile Brood Parasitic Cowbirds

How does a naive, young animal decide from which adults to learn behavior? Obligate brood parasitic birds, including brown-headed cowbirds (Molothrus ater), face a particular challenge in learning species-specific behaviors; they lay their eggs in the nest of another species, and juveniles are raised without exposure to adult conspecifics. Nevertheless, male cowbirds need to learn a conspecific song to attract appropriate mates, and female cowbirds need to learn to identify conspecific males for mating. Traditionally, it was thought that parasitic bird species rely purely on instinctual species recognition, but an alternative is that a species-specific trait serves as a "password", a non-learned cue for naive animals that guides decisions regarding from whom to learn. Here, we tested the hypothesis that the adult "chatter call" enhances the learning of specific songs in juvenile cowbirds. We exposed acoustically naive juvenile male and female cowbirds to songs paired with chatter calls and found that the chatter call enhanced song production learning in males and induced a neurogenomic profile of song

familiarity in females, even for heterospecific songs. Thus, a combination of experience-independent and -dependent mechanisms converges to explain how young cowbirds emerge from another species' nest yet learn behaviors from conspecifics. Identifying whether such password-based mechanisms relate to perceptual and behavioral learning in non-parasitic taxa will contribute to our general understanding of the development of social recognition systems.
https://www.cell.com/current-biology/fulltext/S0960-9822(19)31237-0?dgcid=raven_jbs_etoc_email

MATTHEW P.H. GARDNER et al – Real-Time Value Integration during Economic Choice Is Regulated by Orbitofrontal Cortex
Neural correlates implicate the orbitofrontal cortex (OFC) in value-based or economic decision making. Yet inactivation of OFC in rats performing a rodent version of the standard economic choice task is without effect, a finding more in accord with ideas that the OFC is primarily necessary for behavior when new information must be taken into account. Neural activity in the OFC spontaneously updates to reflect new information, particularly about outcomes, and the OFC is necessary for adjustments to learned behavior only under these conditions. Here, we merge these two independent lines of research by inactivating lateral OFC during an economic choice that requires new information about the value of the predicted outcomes to be incorporated into an already established choice. Outcome value was changed by pre-feeding the rats one of two food options before testing. In control rats, this pre-feeding resulted in divergent changes in choice behavior that depended on the rats' prior preference for the pre-fed food. Optogenetic inactivation of the OFC disrupted this bi-directional effect of pre-feeding without affecting other measures that describe the underlying choice behavior. This finding unifies the role of the OFC in economic choice with its role in a host of other behaviors, causally demonstrating that the OFC is not necessary for economic choice per se—unless that choice incorporates new information about the outcomes.
https://www.cell.com/current-biology/fulltext/S0960-9822(19)31430-7?dgcid=raven_jbs_aip_email

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Mind & Language

PAPERS

JONATHAN PHILLIPS & AARON NORBY – Factive theory of mind
Research on theory of mind has primarily focused on demonstrating and understanding the ability to represent others' non-factive mental states, for example, others' beliefs in the false-belief task. This requirement confuses the ability to represent a particular kind of non-factive content (e.g., a false belief) with the more general capacity to represent others' understanding of the world even when it differs from one's own. We provide a way of correcting this. We first offer a simple and theoretically motivated account on which tracking another agent's understanding of the world and keeping that representation separate from one's own are the essential features of a capacity for theory of mind. We then show how these criteria can be operationalized in a new experimental paradigm: the "diverse-knowledge task."
https://onlinelibrary.wiley.com/doi/full/10.1111/mila.12267?campaign=wolearlyview

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Nature Communications

PAPERS

PHILIPP SCHUSTEK, ALEXANDRE HYAFIL & RUBÉN MORENO-BOTE – Human confidence judgments reflect reliability-based hierarchical integration of contextual information
Our immediate observations must be supplemented with contextual information to resolve ambiguities. However, the context is often ambiguous too, and thus it should be inferred itself to guide behavior. Here, we introduce a novel hierarchical task (airplane task) in which participants should infer a higher-level, contextual variable to inform probabilistic inference about a hidden dependent variable at a lower level. By controlling the reliability of past sensory evidence through varying the sample size of the observations, we find that humans estimate the reliability of the context and combine it with current sensory uncertainty to inform their confidence reports. Behavior closely follows inference by probabilistic message passing between latent variables across hierarchical state representations. Commonly reported inferential fallacies, such as sample size insensitivity, are not present, and neither did participants appear to rely on simple heuristics. Our results reveal uncertainty-sensitive integration of information at different hierarchical levels and temporal scales.
https://www.nature.com/articles/s41467-019-13472-z

NICOLÒ PAGAN & FLORIAN DÖRFLER – Game theoretical inference of human behavior in social networks
Social networks emerge as a result of actors' linking decisions. We propose a game-theoretical model of socio-strategic network formation on directed weighted graphs, in which every actors' benefit is a parametric trade-off between centrality measure, brokerage opportunities, clustering coefficient, and sociological network patterns. We use two different stability definitions to infer individual behavior of homogeneous, rational agents from network structure, and to quantify the impact of cooperation. Our theoretical analysis confirms results known for specific network motifs studied previously in isolation, yet enables us to precisely quantify the trade-offs in the space of user preferences. To deal with complex networks of heterogeneous and irrational actors, we construct a statistical behavior estimation method using Nash equilibrium conditions. We provide evidence that our results are consistent with empirical, historical, and sociological observations on real-world data-sets. Furthermore, our method offers sociological and strategic interpretations of random networks models, such as preferential attachment and small-world networks.

https://www.nature.com/articles/s41467-019-13148-8

Nature Scientific Reports

PAPERS

SOHEIL KESHMIRI et al – Information Content of Prefrontal Cortex Activity Quantifies the Difficulty of Narrated Stories

The ability to realize the individuals' impressions during the verbal communication allows social robots to significantly facilitate their social interactions in such areas as child education and elderly care. However, such impressions are highly subjective and internalized and therefore cannot be easily comprehended through behavioural observations. Although brain-machine interface suggests the utility of the brain information in human-robot interaction, previous studies did not consider its potential for estimating the internal impressions during verbal communication. In this article, we introduce a novel approach to estimation of the individuals' perceived difficulty of stories using the quantified information content of their prefrontal cortex activity. We demonstrate the robustness of our approach by showing its comparable performance in face-to-face, humanoid, speaker, and video-chat settings. Our results contribute to the field of socially assistive robotics by taking a step toward enabling robots determine their human companions' perceived difficulty of conversations, thereby enabling these media to sustain their communication with humans by adapting to individuals' pace and interest in response to conversational nuances and complexity.
https://www.nature.com/articles/s41598-019-54280-1

SUSANNA TIMEO et al – Exposure to linguistic labels during childhood modulates the neural architecture of race categorical perception

Perceptually categorizing a face to its racial belonging may have important consequences on interacting with people. However, race categorical perception (CP) has been scarcely investigated nor its developmental pathway. In this study, we tested the neurolinguistics rewiring hypothesis, stating that language acquisition modulates the brain processing of social perceptual categories. Accordingly, we investigated the electrophysiological correlates of race CP in a group of adults and children between 3 and 5 years of age. For both groups we found a greater modulation of the N400 connected with the processing of between category boundaries (i.e., faces belonging to different race groups) than within-category boundaries (i.e., different faces belonging to the same race group). This effect was the same in both adults and children, as shown by the comparable between-group amplitude of the differential wave (DW) elicited by the between-category faces. Remarkably, this effect was positively correlated with racial-labels acquisition, but not with age, in children. Finally, brain source analysis revealed the activation of a more modularized cortical network in adults than in children, with unique activation of the left superior temporal gyrus (STG) and the inferior frontal gyrus (IFG), which are areas connected to language processing. These are the first results accounting for an effect of language in rewiring brain connectedness when processing racial categories.
https://www.nature.com/articles/s41598-019-54394-6

THIBAUD GRUBER et al – Spontaneous categorization of tools based on observation in children and chimpanzees

The acquisition of the concept of 'tool' remains intriguing from both developmental and comparative perspectives. Our current model of tool use development in children is based on humans' supposedly unique ability to adopt a teleological stance: the understanding of a demonstrator's goal-based intentions when using a tool. It is however unclear how children and chimpanzees, our closest relatives, combine their knowledge of different objects whose function is to act on other parts of the environment, and assign them to a single category of 'tools'. Here, we used a function-based approach to address this question. We exposed 7 to 11-year-old children and adult chimpanzees to a Matching-to-Function (MTF) task to explore whether they would sort tools and non-tools separately after demonstration of their function by an experimenter. MTF is a variant of Matching-to-Sample where the sample and the target are from the same category/kind rather than identical. Around 40% of children paired objects according to their function in the MTF task, with only one child younger than 8 years doing so. Moreover, when verbally questioned, these children offered a function-based answer to explain their choices. One of six chimpanzees also successfully paired objects according to function. Children and at least one chimpanzee can thus spontaneously sort tools into functional categories based on observing a demonstrator. The success of a single chimpanzee in our task suggests that teleological reasoning might already have been present in our last common ancestor but also shows that human children more readily conceptualize tools in a spontaneous fashion.
https://www.nature.com/articles/s41598-019-54345-1

TSEGAI MEDIN et al with DAVID LORDKIPANIDZE – The bears from Dmanisi and the first dispersal of early Homo out of Africa

We report on the taxonomy and paleodiet of the bear population that inhabited the emblematic palaeoanthropological Early Pleistocene (1.8 Ma) site of Dmanisi (Georgia), based on a dual approach combining morphometrics and microwear of upper and lower teeth. Given that the teeth of Ursus etruscus Cuvier, 1823 from Dmanisi show considerable size variability, their systematic position has been debated. However, a comparative study of the coefficients of variation for tooth size measurements in several modern bear species shows that the variability in tooth size of the ursid population from Dmanisi could result from sexual dimorphism. The analysis of tooth microwear indicates that these bears inhabited a mixed environment of open plain with forest patches, where they had a browsing diet with a substantial contribution of meat and/or fish. Comparative tooth morphometric analyses of modern ursids and fossil U. etruscus indicate that this extinct

species had an omnivorous behavior similar to that of extant brown bears. The ecological interactions of the Dmanisi bears with other members of the large mammals community, including the first hominins that dispersed out of Africa, are discussed in the light of this new evidence.
https://www.nature.com/articles/s41598-019-54138-6

PeerJ

PAPERS

XINMIAO LIU et al – Sentence comprehension in patients with dementia of the Alzheimer's type
Sentence comprehension is diminished in patients with dementia of the Alzheimer's type (DAT). However, the underlying reason for such deficits is still not entirely clear. The Syntactic Deficit Hypothesis attributes sentence comprehension deficits in DAT patients to the impairment in syntactic ability, whereas the Processing Resource Deficit Hypothesis proposes that sentence comprehension deficits are the result of working memory deficiency. This study investigated the deficits in sentence comprehension in Chinese-speaking DAT patients with different degrees of severity using sentence-picture matching tasks. The study revealed a significant effect of syntactic complexity in patients and healthy controls, but the effect was stronger in patients than in healthy controls. When working memory demand was minimized, the effect of syntactic complexity was only significant in patients with moderate DAT, but not in healthy controls or those with mild DAT. The findings suggest that in patients with mild DAT, working memory decline was the major source of sentence comprehension difficulty and in patients with moderate DAT, working memory decline and syntactic impairment jointly contributed to the impairments in sentence comprehension. The source of sentence comprehension deficits varied with degree of dementia severity.
https://peerj.com/articles/8181/

PLoS One

PAPERS

BRIANNA L. VERIGIN et al – Lie prevalence, lie characteristics and strategies of self-reported good liars
Meta-analytic findings indicate that the success of unmasking a deceptive interaction relies more on the performance of the liar than on that of the lie detector. Despite this finding, the lie characteristics and strategies of deception that enable good liars to evade detection are largely unknown. We conducted a survey (n = 194) to explore the association between laypeople's self-reported ability to deceive on the one hand, and their lie prevalence, characteristics, and deception strategies in daily life on the other. Higher self-reported ratings of deception ability were positively correlated with self-reports of telling more lies per day, telling inconsequential lies, lying to colleagues and friends, and communicating lies via face-to-face interactions. We also observed that self-reported good liars highly relied on verbal strategies of deception and they most commonly reported to i) embed their lies into truthful information, ii) keep the statement clear and simple, and iii) provide a plausible account. This study provides a starting point for future research exploring the meta-cognitions and patterns of skilled liars who may be most likely to evade detection.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0225566

PNAS

PAPERS

MANUEL BOHN, GREGOR KACHEL & MICHAEL TOMASELLO – Young children spontaneously recreate core properties of language in a new modality
Human social and cultural life rests on a unique set of communicative abilities. Newly emerging communication systems provide a window into the cognitive and interactional basis of these skills. In a muted video call setup, children were required to convey meaning to a partner while being unable to use spoken language. The gestural code systems that children created ad hoc within a 30-min test session exhibited core features of natural language and emergent sign languages: referential signals for objects, actions, and abstract concepts, conventional use of these signals, and grammatical structure. These results demonstrate that language-like communication systems can emerge rapidly out of social interaction.
https://www.pnas.org/content/early/2019/11/26/1904871116.abstract?etoc

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Science Advances

PAPERS

MATTEO ZANELLA et al with CEDRIC BOECKX – Dosage analysis of the 7q11.23 Williams region identifies BAZ1B as a major human gene patterning the modern human face and underlying self-domestication
We undertook a functional dissection of chromatin remodeler BAZ1B in neural crest (NC) stem cells (NCSCs) from a uniquely informative cohort of typical and atypical patients harboring 7q11.23 copy number variants. Our results reveal a key contribution of BAZ1B to NCSC in vitro induction and migration, coupled with a crucial involvement in NC-specific transcriptional circuits and distal regulation. By intersecting our experimental data with new paleogenetic analyses comparing modern and archaic humans, we found a modern-specific enrichment for regulatory changes both in BAZ1B and its experimentally defined downstream targets, thereby providing the first empirical validation of the human self-domestication hypothesis and positioning BAZ1B as a master regulator of the modern human face. In so doing, we provide

experimental evidence that the craniofacial and cognitive/behavioral phenotypes caused by alterations of the Williams-Beuren syndrome critical region can serve as a powerful entry point into the evolution of the modern human face and prosociality.
https://advances.sciencemag.org/content/5/12/eaaw7908?utm_campaign=toc_advances_2019-12-06&et_rid=17774313&et_cid=3113139

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