

EAORC BULLETIN 864 – 5 January 2020

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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.

SOCIETY FOR SCIENCE – Stick-toting puffins offer the first evidence of tool use in seabirds

Puffins join the ranks of tool-using birds after researchers document two birds using sticks to groom, a first for seabirds.

<http://click.societyforscience-.email.com/?qs=e290f2016a496ba24c3c9c7355a71bb4f0595f725b29b443a538e3585e3dfd9ffd932910a17d386d730651ad93eadee492213d2d3de41172>

SOCIETY FOR SCIENCE – Russian foxes bred for tameness may not be the domestication story we thought

Foxes bred for tameness also developed floppy ears and curly tails, known as "domestication syndrome." But what if the story isn't what it seems?

<http://click.societyforscience-.email.com/?qs=4871df59b815f754c6229bfd87c75c95ce4c877ccb888b7a84c215e693c85bfe1298e1c97115791368413708a8b199c43c040822893d7e7>

ACADEMIA.EDU – Late Pleistocene Osseous Projectile Technology and Cultural Variability

2016. *Osseous Projectile Weaponry: Towards an Understanding of Pleistocene Cultural Variability.*

MICHELLE C. LANGLEY – Late Pleistocene Osseous Projectile Technology and Cultural Variability

Modern human evolution and the development of cultural complexity and variability during the Pleistocene have long been central issues in archaeology. This chapter situates the study of osseous projectile weaponry in this wider context of archaeological research, before outlining the challenges that this field currently faces. A brief overview of the evidence for Pleistocene osseous projectile weaponry is then presented in order to demonstrate the temporal and spatial breadth of these material culture items, as well as their ability to contribute to wider anthropological debates about human uniqueness and cultural variability.

https://www.academia.edu/28999106/Late_Pleistocene_Osseous_Projectile_Technology_and_Cultural_Variability?email_work_card=view-paper

PUBLICATIONS

Australian Journal of Linguistics

PAPERS

ZYGMUNT FRAJZYNGIER, MEICHUN LIU & YINGYING YE – Reference system In modern Mandarin Chinese

The present study is an attempt at a comprehensive presentation of various functions in the reference system of Mandarin Chinese. The study demonstrates that the reference system of Mandarin consists of a finite number of functions, some of which have not been identified as such, namely: absence of instructions to identify the referent, marked by bare nouns (sometimes analyzed as ‘indetermined’); presentation of an entity as not requiring identification (sometimes wrongly analyzed as ‘indefinite’); co-reference with the last coded participant in the event or a participant in the speech situation (not identified as such in the literature so far); obviative reference with respect to the last coded participant in the event (not identified as such in the previous literature); a referent that is located within the space and time of the environment of speech; and a referent within the domain of speech. The importance of this study lies in demonstrating that the analysis of forms and functions in a given language, as opposed to checking if and how categories observed in other languages are coded, allows for the discovery of categories that are encoded in the grammatical system and whose existence explains the forms of utterances in the language.

<https://www.tandfonline.com/doi/abs/10.1080/07268602.2019.1698512>

Current Biology

PAPERS

SYLVAIN LEMOINE et al with CHRISTOPHE BOESCH & CATHERINE CROCKFORD – Between-Group Competition Impacts Reproductive Success in Wild Chimpanzees

Between-group competition in social animals appears to be a prominent selective pressure shaping the evolution of territoriality and cooperation. Evidence for an effect of between-group competition on fitness in territorial species, however, is mostly lacking because of difficulty in measuring between-group competition and its long-term impact. Between-group competition corresponds to a complex set of interactions between neighboring groups, and its intensity seems to depend on the competitive abilities of each interacting group. We tested whether the competitive ability of groups and the pressure exerted by neighboring groups affected the reproductive success of wild female chimpanzees (*Pan troglodytes verus*). Using long-term data on four neighboring groups in the Taï National Park, Côte d'Ivoire, collected over the course of 54 observation years, we measured the competitive ability of habituated groups using the number of mature males and the pressure exerted by non-habituated neighbors with an index of neighbor pressure that combined the frequency of neighboring encounters and related spatial information. Importantly, we found that experiencing low neighbor pressure provides fitness benefits through increased offspring survival and shorter inter-birth intervals. Also, many males in a group are associated with shorter inter-birth intervals. We conclude that high between-group competition hampers fast reproduction and offspring survival when exposure is during the prenatal period. Our findings suggest that having many males in a group results in fitness benefits and that between-group competition should be considered as a potential selective pressure that shaped key social adaptations in the hominoid lineage.

[https://www.cell.com/current-biology/fulltext/S0960-9822\(19\)31509-X?dgcid=raven_jbs_aip_email](https://www.cell.com/current-biology/fulltext/S0960-9822(19)31509-X?dgcid=raven_jbs_aip_email)

PLoS One

PAPERS

JAMES STACK & CARLOS ROMERO-RIVAS – Merit overrules theory of mind when young children share resources with others

Non-windfall approaches to sharing demonstrate pre-schoolers' sensitivity to merit-based distributions of resources. However, such studies have not considered (1) whether epistemic aspects of task performance, such as the relative accuracy of a co-worker, influences pre-schoolers' rates of sharing; and (2) how children's emerging social understanding may impact resource allocations in high- and low-merit situations. These issues are of theoretical importance as they may provide new information about the scope of pre-schooler's merit-based sharing behaviours. Moreover, as social understanding has been

related to both increases and decreases in pre-schoolers' levels of sharing, providing a merit-based assessment of this relationship would allow for a concurrent assessment of recent conflicting findings. In this study, three- and four-year-olds ($N = 131$) participated in an unexpected transfer task which was followed by a resource generation picture card naming task with a reliable or unreliable (high- or low-merit) co-worker (a hand puppet). The results showed that children engage in more generous rates of sharing with a high-merit co-worker. This suggests that merit-based sharing is apparent in young children and extends to epistemic aspects of task performance. However, such sharing was constrained by a self-serving bias. Finally, we were not able to detect an effect of children's performance on the false belief task on sharing behaviours in the high- or low-merit trials, suggesting that these behaviours may not be modulated by social understanding during early childhood.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0227375>

PNAS

PAPERS

YILU WANG et al – Altruistic behaviors relieve physical pain

Engaging in altruistic behaviors is costly, but it contributes to the health and well-being of the performer of such behaviors. The present research offers a take on how this paradox can be understood. Across 2 pilot studies and 3 experiments, we showed a pain-relieving effect of performing altruistic behaviors. Acting altruistically relieved not only acutely induced physical pain among healthy adults but also chronic pain among cancer patients. Using functional MRI, we found that after individuals performed altruistic actions brain activity in the dorsal anterior cingulate cortex and bilateral insula in response to a painful shock was significantly reduced. This reduced pain-induced activation in the right insula was mediated by the neural activity in the ventral medial prefrontal cortex (VMPFC), while the activation of the VMPFC was positively correlated with the performer's experienced meaningfulness from his or her altruistic behavior. Our findings suggest that incurring personal costs to help others may buffer the performers from unpleasant conditions.

<https://www.pnas.org/content/early/2019/12/26/1911861117.abstract?etoc>

ANNETTE L. FAYET, ERPUR SNÆR HANSEN & DORA BIRO – Evidence of tool use in a seabird

Documenting novel cases of tool use in wild animals can inform our understanding of the evolutionary drivers of the behavior's emergence in the natural world. We describe a previously unknown tool-use behavior for wild birds, so far only documented in the wild in primates and elephants. We observed 2 Atlantic puffins at their breeding colonies, one in Wales and the other in Iceland (the latter captured on camera), spontaneously using a small wooden stick to scratch their bodies. The importance of these observations is 3-fold. First, while to date only a single form of body-care-related tool use has been recorded in wild birds (anting), our finding shows that the wild avian tool-use repertoire is wider than previously thought and extends to contexts other than food extraction. Second, we expand the taxonomic breadth of tool use to include another group of birds, seabirds, and a different suborder (Lari). Third, our independent observations span a distance of more than 1,700 km, suggesting that occasional tool use may be widespread in this group, and that seabirds' physical cognition may have been underestimated.

<https://www.pnas.org/content/early/2019/12/24/1918060117.abstract?etoc>

Science Advances

PAPERS

MIN WU et al – The genetic mechanism of selfishness and altruism in parent-offspring coadaptation

The social bond between parents and offspring is characterized by coadaptation and balance between altruistic and selfish tendencies. However, its underlying genetic mechanism remains poorly understood. Using transcriptomic screens in the subsocial European earwig, *Forficula auricularia*, we found the expression of more than 1600 genes associated with experimentally manipulated parenting. We identified two genes, *Th* and *Pebiii*, each showing evidence of differential coexpression between treatments in mothers and their offspring. *In vivo* RNAi experiments confirmed direct and indirect genetic effects of *Th* and *Pebiii* on behavior and fitness, including maternal food provisioning and reproduction, and offspring development and survival. The direction of the effects consistently indicated a reciprocally altruistic function for *Th* and a reciprocally selfish function for *Pebiii*. Further metabolic pathway analyses suggested roles for *Th*-restricted endogenous dopaminergic reward, *Pebiii*-mediated chemical communication and a link to insulin signaling, juvenile hormone, and vitellogenin in parent-offspring coadaptation and social evolution.

https://advances.sciencemag.org/content/6/1/eaaw0070?utm_campaign=toc_advances_2020-01-03&et_rid=17774313&et_cid=3149388

Trends in Cognitive Sciences

PAPERS

BRIAN P. LEAHY & SUSAN E. CAREY – The Acquisition of Modal Concepts

Sometimes we accept propositions, sometimes we reject them, and sometimes we take propositions to be worth considering but not yet established, as merely possible. The result is a complex representation with logical structure. Is the ability to mark propositions as merely possible part of our innate representational toolbox or does it await development, perhaps relying on language acquisition? Several lines of inquiry show that preverbal infants manage possibilities in complex ways, while others

find that preschoolers manage possibilities poorly. Here, we discuss how this apparent conflict can be resolved by distinguishing modal representations of possibility, which mark possibility symbolically, from minimal representations of possibility, which do not encode any modal status and need not have a logical structure.

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(19\)30262-1?dgcid=raven_jbs_etoc_email](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(19)30262-1?dgcid=raven_jbs_etoc_email)

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