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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 – This 1.4-million-year-old hand ax adds to Homo erectus' known toolkit

A newly described East African find, among the oldest bone tools found, shows the ancient hominids crafted a range of simple and more complex tools.

<http://click.societyforscience->

[email.com/?qs=9d20543d09b6496b8bf6bf4a801db89a0b070249c6af135c3382707074fae6efae8e7c17075e9f8208e811b6a42d1c8b5e8a827e488eb4ee](http://click.societyforscience-email.com/?qs=9d20543d09b6496b8bf6bf4a801db89a0b070249c6af135c3382707074fae6efae8e7c17075e9f8208e811b6a42d1c8b5e8a827e488eb4ee)

BREAKING SCIENCE – Beluga Whales Form Complex Societies

Beluga whales (*Delphinapterus leucas*) have social systems to rival our own, according to new research led by marine biologists from the Harbor Branch Oceanographic Institute at Florida Atlantic University. The beluga is a species of toothed whale that lives in Arctic and subarctic waters and occupies a wide range of habitats.

http://feedproxy.google.com/~r/BreakingScienceNews/~3/GQIVHfDaBc/beluga-complex-societies-08631.html?utm_source=feedburner&utm_medium=email

BREAKING SCIENCE – 1.4-Million-Year-Old Handaxe Unearthed in Ethiopia

Paleoanthropologists working at the Konso research area in Ethiopia have found a 1.4-million-year-old large bone fragment shaped into handaxe-like form. The newly-discovered handaxe is a bifacially flaked fragment of a hippopotamus femur (thigh bone). The superbly-preserved tool, which measures 12.8 by 7.5 by 4.6 cm, was found in the Konso Formation in southern Ethiopia.

http://feedproxy.google.com/~r/BreakingScienceNews/~3/TDxvTw-oE48/konso-handaxe-08636.html?utm_source=feedburner&utm_medium=email

SCIENCE DAILY – Like humans, beluga whales form social networks beyond family ties

A groundbreaking study is the first to analyze the relationship between group behaviors, group type, group dynamics, and kinship of beluga whales in 10 locations across the Arctic. Results show that not only do beluga whales regularly interact with close kin, including close maternal kin, they also frequently associate with more distantly related and unrelated individuals. Findings will improve the understanding of why some species are social, how individuals learn from group members and how animal cultures emerge.

<https://www.sciencedaily.com/releases/2020/07/200710212233.htm>

SCIENCE DAILY – More than one cognition: A call for change in the field of comparative psychology

Researchers argue that cognitive studies in comparative psychology often wrongly take an anthropocentric approach, resulting in an over-valuation of human-like abilities and the assumption that cognitive skills cluster in animals as they do in humans. The authors advocate for philosophical and procedural changes to the discipline that would lead to a better understanding of animal minds and the evolution of multiple forms of cognition.

<https://www.sciencedaily.com/releases/2020/07/200714101224.htm>

SCIENCE DAILY – For chimpanzees, salt and pepper hair not a marker of old age

Silver strands and graying hair is a sign of aging in humans, but things aren't so simple for our closest ape relatives --the chimpanzee. A new study found graying hair is not indicative of a chimpanzee's age.

<https://www.sciencedaily.com/releases/2020/07/200714182154.htm>

ACADEMIA.EDU – The archeology of cognitive evolution

(2010). *WIREs Cognitive Science* 1, 214-229.

IAIN DAVIDSON – The archeology of cognitive evolution

This discussion of archeology of cognition is concerned primarily with the evolutionary emergence of the cognition particular to modern humans but there is an implication for the evolution of cognition among modern humans. Archeological evidence can provide important insights into the evolutionary emergence of human cognition, but theoretical considerations are fundamental in understanding what sorts of cognition there might have been between the ape-like common ancestor and modern humans. Archeology is the only source of evidence for the behavior associated with such theoretical stages.

Cognitive archeology, therefore, involves an iterative interaction between theory from outside archeology and more or less

direct evidence from the past. This review considers the range of possible evidence from archeology and genetics and summarizes some of the results of analysis of nonhuman primates particularly to assess characteristics of the last common ancestor (LCA) of apes and humans. The history of changes in size and shape of the brain since separation from other apes introduces the need to assess the appropriate cognitive theories to interpret such evidence. The review concentrates on two such approaches: Baddeley's working memory model as interpreted by Coolidge and Wynn, and Barnard's interacting cognitive subsystems as it has been elaborated to define the cognitive conditions for hominins between the LCA and modern people. Most of the rest of the review considers how the evidence from stone tools might be consistent with such theoretical models of cognition. This evidence is consistent with views that modern human behavior only emerged in the last 100,000 years (or so) but it gives an explanation for that in terms of cognition.

[https://www.academia.edu/16793661/The archeology of cognitive evolution?email work card=minimal-title](https://www.academia.edu/16793661/The_archeology_of_cognitive_evolution?email_work_card=minimal-title)

ACADEMIA.EDU – Alternative Pathways to Complexity

Kuhn S.L. and E. Hovers (eds.) (2013). *Alternative Pathways to Complexity: Evolutionary Trajectories in the Middle Paleolithic and Middle Stone Age*. *Current Anthropology* 58.

The Wenner-Gren Foundation for Anthropological Research has a long tradition of organizing symposia that deal with the "big" questions in contemporary anthropology. *Alternative Pathways to Complexity: Evolutionary Trajectories in the Middle Paleolithic and Middle Stone Age* is the 145th in the symposium series and the eighth to be published as an open-access supplement of *Current Anthropology* (see <http://www.wennergren.org/history/conferences-seminars-symposia/wenner-gren-symposia> for a complete list of symposia and the history of the symposium program). The *Alternative Pathways* symposium was organized by Steven L. Kuhn (University of Arizona, U.S.A.) and Erella Hovers (Hebrew University, Israel) and was held at Häringe Slott, Stockholm, Sweden, June 1–8, 2012.

[https://www.academia.edu/6958989/Kuhn S.L. and E. Hovers eds. . 2013. Alternative Pathways to Complexity Evolutionary Trajectories in the Middle Paleolithic and Middle Stone Age. Current Anthropology 58](https://www.academia.edu/6958989/Kuhn_S.L._and_E._Hovers_eds._.2013._Alternative_Pathways_to_Complexity_Evolutionary_Trajectories_in_the_Middle_Paleolithic_and_Middle_Stone_Age._Current_Anthropology_58)

PUBLICATIONS

American Journal of Physical Anthropology

PAPERS

ALEXANDRA COUTINHO et al – The Neolithic Pitted Ware culture foragers were culturally but not genetically influenced by the Battle Axe culture herders

In order to understand contacts between cultural spheres in the third millennium BC, we investigated the impact of a new herder culture, the Battle Axe culture, arriving to Scandinavia on the people of the sub-Neolithic hunter-gatherer Pitted Ware culture. By investigating the genetic make-up of Pitted Ware culture people from two types of burials (typical Pitted Ware culture burials and Battle Axe culture-influenced burials), we could determine the impact of migration and the impact of cultural influences. We sequenced and analyzed the genomes of 25 individuals from typical Pitted Ware culture burials and from Pitted Ware culture burials with Battle Axe culture influences in order to determine if the different burial types were associated with different gene-pools. The genomic data show that all individuals belonged to one genetic population—a population associated with the Pitted Ware culture—irrespective of the burial style.

<https://onlinelibrary.wiley.com/doi/full/10.1002/ajpa.24079?campaign=wolletoc>

Evolutionary Anthropology

PAPERS

EMMA POMEROY et al with CURTIS MAREAN & CHRIS STRINGER – Issues of theory and method in the analysis of Paleolithic mortuary behavior: A view from Shanidar Cave

Mortuary behavior (activities concerning dead conspecifics) is one of many traits that were previously widely considered to have been uniquely human, but on which perspectives have changed markedly in recent years. Theoretical approaches to hominin mortuary activity and its evolution have undergone major revision, and advances in diverse archeological and paleoanthropological methods have brought new ways of identifying behaviors such as intentional burial. Despite these advances, debates concerning the nature of hominin mortuary activity, particularly among the Neanderthals, rely heavily on the rereading of old excavations as new finds are relatively rare, limiting the extent to which such debates can benefit from advances in the field. The recent discovery of in situ articulated Neanderthal remains at Shanidar Cave offers a rare opportunity to take full advantage of these methodological and theoretical developments to understand Neanderthal mortuary activity, making a review of these advances relevant and timely.

<https://onlinelibrary.wiley.com/doi/full/10.1002/evan.21854?campaign=wolearlyview>

Nature Communications

PAPERS

DANIEL L. KIMMEL et al – Value and choice as separable and stable representations in orbitofrontal cortex

Value-based decision-making requires different variables—including offer value, choice, expected outcome, and recent history—at different times in the decision process. Orbitofrontal cortex (OFC) is implicated in value-based decision-making,

but it is unclear how downstream circuits read out complex OFC responses into separate representations of the relevant variables to support distinct functions at specific times. We recorded from single OFC neurons while macaque monkeys made cost-benefit decisions. Using a novel analysis, we find separable neural dimensions that selectively represent the value, choice, and expected reward of the present and previous offers. The representations are generally stable during periods of behavioral relevance, then transition abruptly at key task events and between trials. Applying new statistical methods, we show that the sensitivity, specificity and stability of the representations are greater than expected from the population's low-level features—dimensionality and temporal smoothness—alone. The separability and stability suggest a mechanism—linear summation over static synaptic weights—by which downstream circuits can select for specific variables at specific times.

<https://www.nature.com/articles/s41467-020-17058-y>

Nature Scientific Reports

PAPERS

GREG O’CORRY-CROWE et al – Group structure and kinship in beluga whale societies

Evolutionary explanations for mammalian sociality typically center on inclusive-fitness benefits of associating and cooperating with close kin, or close maternal kin as in some whale societies, including killer and sperm whales. Their matrilineal structure has strongly influenced the thinking about social structure in less well-studied cetaceans, including beluga whales. In a cross-sectional study of group structure and kinship we found that belugas formed a limited number of distinct group types, consistently observed across populations and habitats. Certain behaviours were associated with group type, but group membership was often dynamic. MtDNA-microsatellite profiling combined with relatedness and network analysis revealed, contrary to predictions, that most social groupings were not predominantly organized around close maternal relatives. They comprised both kin and non-kin, many group members were paternal rather than maternal relatives, and unrelated adult males often traveled together. The evolutionary mechanisms that shape beluga societies are likely complex; fitness benefits may be achieved through reciprocity, mutualism and kin selection. At the largest scales these societies are communities comprising all ages and both sexes where multiple social learning pathways involving kin and non-kin can foster the emergence of cultures. We explore the implications of these findings for species management and the evolution of menopause.

<https://www.nature.com/articles/s41598-020-67314-w>

FLÓRA SAMU, SZABOLCS SZÁMADÓ & KÁROLY TAKÁCS – Scarce and directly beneficial reputations support cooperation

A human solution to the problem of cooperation is the maintenance of informal reputation hierarchies. Reputational information contributes to cooperation by providing guidelines about previous group-beneficial or free-rider behaviour in social dilemma interactions. How reputation information could be credible, however, remains a puzzle. We test two potential safeguards to ensure credibility: (i) reputation is a scarce resource and (ii) it is not earned for direct benefits. We test these solutions in a laboratory experiment in which participants played two-person Prisoner’s Dilemma games without partner selection, could observe some other interactions, and could communicate reputational information about possible opponents to each other. Reputational information clearly influenced cooperation decisions. Although cooperation was not sustained at a high level in any of the conditions, the possibility of exchanging third-party information was able to temporarily increase the level of strategic cooperation when reputation was a scarce resource and reputational scores were directly translated into monetary benefits. We found that competition for monetary rewards or unrestricted non-monetary reputational rewards helped the reputation system to be informative. Finally, we found that high reputational scores are reinforced further as they are rewarded with positive messages, and positive gossip was leading to higher reputations.

<https://www.nature.com/articles/s41598-020-68123-x>

PLoS One

PAPERS

ELIZABETH TAPANES et al – Does facial hair greying in chimpanzees provide a salient progressive cue of aging?

The greying of human head hair is arguably the most salient marker of human aging. In wild mammal populations, greying can change with life history or environmental factors (e.g., sexual maturity in silverback gorillas). Yet, whether humans are unique in our pattern of age-related hair depigmentation is unclear. We examined the relationship between pigmentation loss in facial hair (greying) to age, population, and sex in wild and captive chimpanzees (*Pan troglodytes*). Digital facial photographs representing three chimpanzee populations (N = 145; ages 1–60 years) were scored for hair greying on a scale of one [~100% pigmented] to six [~0% pigmented]. Our data suggest that chimpanzee head and facial hair generally greys with age prior to mid-life (~30 years old), but afterwards, greying ceases to increase incrementally. Our results highlight that chimpanzee pigmentation likely exhibits substantial variation between populations, and that both 'grey' and pigmented phenotypes exist across various age classes. Thus, chimpanzee facial hair greying is unlikely a progressive indicator of age beyond mid-life, and thus facial greying in chimpanzees seems different from the pattern observed in humans. Whether this reflects neutral differences in senescence, or potential differences in selection pressures (e.g. related to conspecific communication), is unclear and worthy of more detailed examination across populations and taxa.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0235610>

MIKAEL KÅGEBÄCK et al – A reinforcement-learning approach to efficient communication

We present a multi-agent computational approach to partitioning semantic spaces using reinforcement-learning (RL). Two agents communicate using a finite linguistic vocabulary in order to convey a concept. This is tested in the color domain, and a natural reinforcement learning mechanism is shown to converge to a scheme that achieves a near-optimal trade-off of simplicity versus communication efficiency. Results are presented both on the communication efficiency as well as on analyses of the resulting partitions of the color space. The effect of varying environmental factors such as noise is also studied. These results suggest that RL offers a powerful and flexible computational framework that can contribute to the development of communication schemes for color names that are near-optimal in an information-theoretic sense and may shape color-naming systems across languages. Our approach is not specific to color and can be used to explore cross-language variation in other semantic domains.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0234894>

PNAS

PAPERS

ALICE PAILHÈS & GUSTAV KUHN – Influencing choices with conversational primes: How a magic trick unconsciously influences card choices

Past research demonstrates that unconscious primes can affect people's decisions. However, these free choice priming paradigms present participants with very few alternatives. Magicians' forcing techniques provide a powerful tool to investigate how natural implicit primes can unconsciously influence decisions with multiple alternatives. We used video and live performances of the mental priming force. This technique uses subtle nonverbal and verbal conversational primes to influence spectators to choose the three of diamonds. Our results show that a large number of participants chose the target card while reporting feeling free and in control of their choice. Even when they were influenced by the primes, participants typically failed to give the reason for their choice. These results show that naturally embedding primes within a person's speech and gestures effectively influenced people's decision making. This raises the possibility that this form of mind control could be used to effectively manipulate other mental processes.

<https://www.pnas.org/content/early/2020/07/09/2000682117.abstract?etoc>

KATSUHIRO SANO et al – A 1.4-million-year-old bone handaxe from Konso, Ethiopia, shows advanced tool technology in the early Acheulean

In the past decade, the early Acheulean before 1 Mya has been a focus of active research. Acheulean lithic assemblages have been shown to extend back to ~1.75 Mya, and considerable advances in core reduction technologies are seen by 1.5 to 1.4 Mya. Here we report a bifacially flaked bone fragment (maximum dimension ~13 cm) of a hippopotamus femur from the ~1.4 Mya sediments of the Konso Formation in southern Ethiopia. The large number of flake scars and their distribution pattern, together with the high frequency of cone fractures, indicate anthropogenic flaking into handaxe-like form. Use-wear analyses show quasi-continuous alternate microflake scars, wear polish, edge rounding, and striae patches along an ~5-cm-long edge toward the handaxe tip. The striae run predominantly oblique to the edge, with some perpendicular, on both the cortical and inner faces. The combined evidence is consistent with the use of this bone artifact in longitudinal motions, such as in cutting and/or sawing. This bone handaxe is the oldest known extensively flaked example from the Early Pleistocene. Despite scarcity of well-shaped bone tools, its presence at Konso shows that sophisticated flaking was practiced by ~1.4 Mya, not only on a range of lithic materials, but also occasionally on bone, thus expanding the documented technological repertoire of African Early Pleistocene Homo.

<https://www.pnas.org/content/early/2020/07/09/2006370117.abstract?etoc>

Science Advances

PAPERS

ALAN N. TUMP, TIMOTHY J. PLESKAC & RALF H. J. M. KURVERS – Wise or mad crowds? The cognitive mechanisms underlying information cascades

Whether getting vaccinated, buying stocks, or crossing streets, people rarely make decisions alone. Rather, multiple people decide sequentially, setting the stage for information cascades whereby early-deciding individuals can influence others' choices. To understand how information cascades through social systems, it is essential to capture the dynamics of the decision-making process. We introduce the social drift-diffusion model to capture these dynamics. We tested our model using a sequential choice task. The model was able to recover the dynamics of the social decision-making process, accurately capturing how individuals integrate personal and social information dynamically over time and when their decisions were timed. Our results show the importance of the interrelationships between accuracy, confidence, and response time in shaping the quality of information cascades. The model reveals the importance of capturing the dynamics of decision processes to understand how information cascades in social systems, paving the way for applications in other social systems.

https://advances.sciencemag.org/content/6/29/eabb0266?utm_campaign=toc_advances_2020-07-17&et rid=17774313&et cid=3411729

LISA-MARIE SHILLITO et al – Pre-Clovis occupation of the Americas identified by human fecal biomarkers in coprolites from Paisley Caves, Oregon

When and how people first settled in the Americas is an ongoing area of research and debate. The earliest sites typically only contain lithic artifacts that cannot be directly dated. The lack of human skeletal remains in these early contexts means that alternative sources of evidence are needed. Coprolites, and the DNA contained within them, are one such source, but unresolved issues concerning ancient DNA taphonomy and potential for contamination make this approach problematic. Here, we use fecal lipid biomarkers to demonstrate unequivocally that three coprolites dated to pre-Clovis are human, raise questions over the reliance on DNA methods, and present a new radiocarbon date on basketry further supporting pre-Clovis human occupation.

https://advances.sciencemag.org/content/6/29/eaba6404?utm_campaign=toc_advances_2020-07-17&et rid=17774313&et cid=3411729

Trends in Cognitive Sciences

PAPERS

RAJEN A. ANDERSON, MOLLY J. CROCKETT & DAVID A. PIZARRO – A Theory of Moral Praise

How do people judge whether someone deserves moral praise for their actions? In contrast to the large literature on moral blame, work on how people attribute praise has, until recently, been scarce. However, there is a growing body of recent work from a variety of subfields in psychology (including social, cognitive, developmental, and consumer) suggesting that moral praise is a fundamentally unique form of moral attribution and not simply the positive moral analogue of blame attributions. A functional perspective helps explain asymmetries in blame and praise: we propose that while blame is primarily for punishment and signaling one's moral character, praise is primarily for relationship building.

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(20\)30149-2?dgcid=raven_jbs_aip_email](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(20)30149-2?dgcid=raven_jbs_aip_email)

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