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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, please send me a publication alert so that I can include it in the newsletter. Many thanks to those who have already sent in alerts.

If there is a journal you feel I should be tracking on a regular basis, let me know.

And if you have any other ideas for extending the "EAORC experience", please contact me.

ACADEMIA.EDU – Lower/early Middle Pleistocene small debitage productions in Western Europe

In Quaternary International 357, 264-281 (2015).

ROSALIA GALLOTTI & CARLO PERETTO – The Lower/early Middle Pleistocene small debitage productions in Western Europe: New data from Isernia La Pineta t.3c (Upper Volturno Basin, Italy)

Isernia La Pineta archaeological site in Central Italy, dated to about 0.6 Ma, is one of the earliest archaeological sites of the Italian peninsula and one of the key sites for the knowledge of human behaviour during the early Middle Pleistocene in Western Europe. Several archaeostratigraphic units have been recognized and systematically excavated. Core and flake assemblages were studied as a bulk in the Eighties of last century with a typo-metrical approach, not taking into account a precise stratigraphic provenance. Here we present a review of the lithic collection from the lowermost archaeostratigraphic unit (t.3c) which is the first techno-economic analysis based on the concept of chaîne opératoire. Our results contrast with those from previous studies. Our analysis demonstrates that the technical criteria employed in small debitage are not opportunistic and unstructured as previously inferred. By contrast, they correspond to well-established mental templates that led knappers (1) to use mainly a discoid method; (2) to apply this debitage method regardless of the size and shape of the original matrix; (2) to maintain a high productivity; and (3) to produce medium-sized flakes to be turned into small tools. The new data are discussed in the framework of the Lower/early Middle Pleistocene technological complexes of Western Europe, calling into question a number of allegations about the first technical traditions that have been previously accepted without reservation.

https://www.academia.edu/7819574/The_Lower_early_Middle_Pleistocene_small_d%CA9bitage_productions_in_Wester_n_Europe_New_data_from_Isernia_La_Pineta_t_3c_Upper_Volturno_Basin_Italy

ACADEMIA.EDU – Early Evidence of Acheulean Settlement in Northwestern Europe

In PLOS ONE 8:11, e75529 (2013).

MARIE-HÉLÈNE MONCEL et al – Early Evidence of Acheulean Settlement in Northwestern Europe - La Noira Site, a 700 000 Year-Old Occupation in the Center of France

The human settlement of Europe during Pleistocene times was sporadic and several stages have been recognized, both from paleoanthropological and archaeological records. If the first phase of hominin occupation (as early as 1.4 Ma) seems mainly restricted to the southern part of the continent, the second phase, characterized by specific lithic tools (handaxes), is linked to Acheulean settlements and to the emergence of *Homo heidelbergensis*, the ancestor of Neanderthals. This phase reached northwestern Europe and is documented in numerous sites in Germany, Great Britain and northern France, generally after 600 ka. At la Noira (Brinay, Central France), the Middle Pleistocene alluvial formation of the Cher River covers an archaeological level associated with a slope deposit (diamicton). The lithic assemblage from this level includes Large Cutting Tools (LCTs), flakes and cores, associated with numerous millstone slabs. The lithic series is classified as Acheulean on the basis of both technological and typological analyses. Cryoturbation features indicate that the slope deposits and associated archaeological level were strongly frozen and disturbed after hominin occupation and before fluvial deposition. Eight sediment samples were dated by the electron spin resonance (ESR) method and the weighted average age obtained for the fluvial sands overlying the slope deposits is 665+/-55 ka. This age is older than previous chronological data placing the first European Acheulean assemblages north of 45th parallel north at around 500 ka and modifies our current vision of the initial peopling of northern Europe. Acheulean settlements are older than previously assumed and the oldest evidences are not only located in southern Europe. La Noira is the oldest evidence of Acheulean presence in north-western Europe and attests to the possibility of pioneering phases of Acheulean settlement which would have taken place on a Mode 1-type substratum as early as 700 ka. The lithic assemblage from la Noira thus provides behavioral and technological data on early Acheulean occupation in Europe and contributes to our understanding of the diffusion of this tradition.

[https://www.academia.edu/5181150/Early Evidence of Acheulean Settlement in Northwestern Europe La Noira Site a 700 000 Year Old Occupation in the Center of France](https://www.academia.edu/5181150/Early_Evidence_of_Acheulean_Settlement_in_Northwestern_Europe_La_Noira_Site_a_700_000_Year_Old_Occupation_in_the_Center_of_France)

ACADEMIA.EDU – The assemblages with bifacial tools in Eurasia (first part)

Comptes Rendus Palevol 17:1-2, 45-60 (2018).

MARIE-HÉLÈNE MONCEL et al – The assemblages with bifacial tools in Eurasia (first part). What is going on in the West? Data on western and southern Europe and the Levant

Assemblages with bifacial tools cover large areas of the Eurasian continent from the Middle Pleistocene to the Upper Pleistocene. These encompass varied technological strategies although the morphological results are often similar. Consequently, bifacial technology is diversified in Eurasia and cannot be correlated to "Acheulean-type behaviour" everywhere, or for all time periods. While early lithic assemblages with bifacial technology appeared in Africa as early as 1.8 Ma, this technology is observed in Eurasia from 1.5 Ma for the earliest evidence, and particularly from 1 Ma onwards. Our purpose here is to focus on Eurasian patterns. This presentation will be divided into three parts in order to describe, clarify and compare the bifacial phenomenon regarding its chronological and geographical extension, based on examples of key sites in diverse Eurasian areas. This first paper presents a review of detailed data from western and southern Europe and the Levant. The second focuses on the East, India, south-eastern Asia and eastern Asia (China). The third and final paper is a comparative analysis of Eurasian areas with occurrences of bifacial technology in relation to paleoanthropological remains in order to clarify the diversity of the bifacial technological phenomenon over time and space. Major European and Levantine sites are described in this first paper. For Europe, the bifacial component is divided into two main currents; before and after the major glacial event of MIS 12. Before MIS 12, sites such as la Noira, Notarchirico, Caune de l'Arago, Galeria II, Cagny-la-Garenne I-II or Boxgrove are taken into consideration. After MIS 12, sites are more numerous and have been widely reviewed (for instance Terra Amata, Guado San Nicolas, Cagny l'Epinette, Soucy...). For the Levant, sites such as Ubeidiya, GBY, Nadaouiyeh and El Meirah are presented. Data from the Arabian Peninsula are also taken into account.

[https://www.academia.edu/25293765/The assemblages with bifacial tools in Eurasia first part What is going on in the West Data on western and southern Europe and the Levant](https://www.academia.edu/25293765/The_assemblages_with_bifacial_tools_in_Eurasia_first_part_What_is_going_on_in_the_West_Data_on_western_and_southern_Europe_and_the_Levant)

RESEARCHGATE – The assemblages with bifacial tools in Eurasia (second part)

Comptes Rendus Palevol 17:1-2, 61-76 (2018).

MARIE-HÉLÈNE MONCEL et al – Assemblages with bifacial tools in Eurasia (second part). What is going on in the East? Data from India, Eastern Asia and Southeast Asia

This second paper is part of a wider review of lithic complexes with bifacial technology, and is devoted to the Asian sector, from India to the south-eastern mainland and the archipelagos and China. For India, sites such as Attirampakkam, Isampur, Morgaon and Singi-Talav are described in detail. For China, sites in the Bose Basin, but also Liangshan, Longgangsi and Houfang are included in discussions of technological strategies that are found a long way from East African roots. For the Southeast, discoveries from Thailand and Cambodia are presented, as are some major Indonesian sites (for instance Nebung and the Sangiran dome).

[https://www.researchgate.net/publication/302870488 Assemblages with bifacial tools in Eurasia second part What is going on in the East Data from India Eastern Asia and Southeast Asia](https://www.researchgate.net/publication/302870488_Assemblages_with_bifacial_tools_in_Eurasia_second_part_What_is_going_on_in_the_East_Data_from_India_Eastern_Asia_and_Southeast_Asia)

ECLECTICS – The 2021 prize for the best opening sentence in a published academic paper

“Readability is an active field of research in the late nineteenth century and vigorously persuaded to date.”

<https://peerj.com/articles/cs-818/>

NEWS

BREAKING SCIENCE – Archaeologists Unearth Earliest Evidence of Multi-Cropping

Archaeologists have unearthed the earliest micro-botanical evidence of the summer grain broomcorn millet (*Panicum miliaceum*) in Mesopotamia, identified using phytoliths (microscopic plant remains) in dung-rich sediments from Khani Masi, a mid-second millennium BCE site located in northern Iraq.

http://www.sci-news.com/archaeology/earliest-multi-cropping-10456.html?utm_source=feedburner&utm_medium=email

SAPIENS – Remembering Richard Leakey

The world-famous paleoanthropologist Richard Leakey passed away in early January. A close friend and colleague remembers his contributions and legacies.

<https://sapiens.us11.list-manage.com/track/click?u=80f6cf678900daf984bf763b7&id=017fd9981&e=dc0eff6180>

SAPIENS – Stone Age geniuses

A series of Stone Age geniuses invented a range of technologies that shaped human evolution and laid the foundation for our world.

<https://sapiens.us11.list-manage.com/track/click?u=80f6cf678900daf984bf763b7&id=27e1c37173&e=dc0eff6180>

SCIENCE DAILY – Novel brainstem circuit gives rise to the rhythms of vocalization

The vocal sounds of humans -- laughing, crying, and the babbling of babies -- have the same rhythmic quality as the sounds made by many mammals, songbirds, and even some species of fish. Researchers have discovered that a small cluster of neurons in the brain stem not only regulates tempo but also coordinates vocalization with breathing.

<https://www.sciencedaily.com/releases/2022/01/220107152108.htm>

SCIENCE DAILY – Study challenges evolutionary theory that DNA mutations are random

Researchers have found that DNA mutations are not random. This changes our understanding of evolution and could one day help researchers breed better crops or even help humans fight cancer.

<https://www.sciencedaily.com/releases/2022/01/220112121512.htm>

SCIENCE DAILY – Earliest human remains in eastern Africa dated to more than 230,000 years ago

The age of the oldest fossils in eastern Africa widely recognized as representing our species, *Homo sapiens*, has long been uncertain. Now, dating of a massive volcanic eruption in Ethiopia reveals they are much older than previously thought.

<https://www.sciencedaily.com/releases/2022/01/220112121507.htm>

SCIENCE DAILY – Why we feel confident about decisions we make

A team of researchers has shown for the first time that decisions feel right to us if we have compared the options as attentively as possible -- and if we are conscious of having done so. This requires a capacity for introspection.

<https://www.sciencedaily.com/releases/2022/01/220112105650.htm>

SCIENCE DAILY – Decoding inner language to treat speech disorders

What if it were possible to decode the internal language of individuals deprived of the ability to express themselves? Researchers have now managed to identify promising neural signals to capture our internal monologues. They were also able to identify the brain areas to be observed to try to decipher them in the future.

<https://www.sciencedaily.com/releases/2022/01/220112093712.htm>

SCIENCE DAILY – Ancient Mesopotamian discovery transforms knowledge of early farming

Researchers have unearthed the earliest definitive evidence of broomcorn millet (*Panicum miliaceum*) in ancient Iraq, challenging our understanding of humanity's earliest agricultural practices.

<https://www.sciencedaily.com/releases/2022/01/220111153706.htm>

SCIENCE DAILY – Under a moon spell: Shark attacks related to lunar phases

New research suggests that more shark attacks occur during fuller phases of the moon. While the exact cause remains unclear, the researchers found that more shark attacks than average occur during periods of higher lunar illumination and

fewer attacks than average occur during periods of lower illumination. Many different types of animals show behaviors that are linked to moon phases yet few studies to date have looked at the connections between lunar phases and shark attacks.
<https://www.sciencedaily.com/releases/2022/01/220112145113.htm>

SCIENCE DAILY – Unlocking the mysteries of the pecking order

Dominance hierarchies were first described in chickens a century ago by a Norwegian zoologist who coined the term 'pecking order.' Since then researchers have examined the intricacies of conflict and competition in species as diverse as primates, whales, birds and insects.

<https://www.sciencedaily.com/releases/2022/01/220113151428.htm>

SCIENCE DAILY – Why do we forget? New theory proposes 'forgetting' is actually a form of learning

We create countless memories as we live our lives but many of these we forget. Why? Counter to the general assumption that memories simply decay with time, 'forgetting' might not be a bad thing -- that is according to scientists who believe it may represent a form of learning.

<https://www.sciencedaily.com/releases/2022/01/220113111421.htm>

SOCIETY FOR SCIENCE – Homo sapiens bones in East Africa are at least 36,000 years older than thought

Analyses of remnants of a volcanic blast push the age of East Africa's oldest known H. sapiens fossils at Ethiopia's Omo site to 233,000 years or more.

<http://click.societyforscience-email.com/?qs=e5ae26d99c0dbe51834aaf05b8089b3aaf706a3cb91f1cc6dbbb7367ab2716cb80e983bf41e33235b0ecf40a1a382b47c7d91fc662e21ca7b867add557e02c5>

SOCIETY FOR SCIENCE – Clovis hunters' reputation as mammoth killers takes a hit

Early Americans' stone points were best suited to butchering the huge beasts' carcasses, scientists contend.

<http://click.societyforscience-email.com/?qs=e5ae26d99c0dbe5178a6388ba328c220b6ad780c5f37492c93489212a8a1fb894e8c318041c02f0b238762457020b18a2e53996048bda0f5ec4cf76a52b908fd>

SOCIETY FOR SCIENCE – 'Feeling & Knowing' explores the origin and evolution of consciousness

In the book *Feeling & Knowing*, neuroscientist Antonio Damasio suggests that consciousness evolved as a way to keep essential bodily systems steady.

<http://click.societyforscience-email.com/?qs=e5ae26d99c0dbe51fb2a85eb46f86cee0c8e28ec9dde7279dc2f6d32df2cb7bd6b6b4e198833c8696635ed1886acb64e3067a5ef874ba7aeae941f40bf3a69>

PUBLICATIONS

Frontiers in Psychology

PAPERS

VANJA KLJAJEVIC – Verbal Learning and Hemispheric Asymmetry

Cognitive sex differences have been the focus of much research in psychology since the 1960s. The idea that women outperform men in some aspects of verbal learning (e.g., Bleecker et al., 1988; Kramer et al., 1997; Ragland et al., 2000; Sundermann et al., 2016), whereas men outperform women in math and spatial reasoning (e.g., Meinz and Salthouse, 1998; Maguire et al., 1999) has been a matter of debate, in which an opposing stance is formulated as the gender similarity hypothesis (Hyde, 2005, 2016). According to this hypothesis, men and women perform at comparable levels in most cognitive tasks, with major differences arising in their motor abilities, sexual behavior, and aggression.

A recent meta-analysis of 617 studies involving 1,233,921 participants suggests an overall female advantage for episodic memory, including verbal tasks at the levels of word, sentence and discourse, retrieval of names for images and locations, as well as recognition of faces, odors, colors, and tastes, and a male advantage in spatial tasks, including remembering of abstract images and routes (Asperholm et al., 2019a). The observed sex differences were smaller in childhood and old age than in other ages. The female advantage in verbal and other episodic memory tests, which was observed in a sample that was followed for over 40 years, has been related to the fact that, overall, women benefit more than men from societal improvements, such as better education, employment opportunities, and cognitively more stimulating environments, because women might have been at a more disadvantageous level at start (Asperholm et al., 2019b). This view is supported by the findings from a large scale study with 34,300 individuals between 50 and 84 years of age that were recruited across Europe: the Flynn effect, i.e., improvement over time in cognitive performance in people of the same age in new generations, was greater in women than in men for both episodic and semantic memory, although the magnitude of the effect varied across regions (Weber et al., 2017).

<https://www.frontiersin.org/articles/10.3389/fpsyg.2021.809192/full>

Language and Cognition

PAPERS

KENSY COOPERRIDER, JAMES SLOTTA & RAFAEL NÚÑEZ – The ups and downs of space and time: topography in Yupno language, culture, and cognition

Much prior research has investigated how humans understand time using body-based contrasts like front/back and left/right. It has recently come to light, however, that some communities instead understand time using environment-based contrasts. Here, we present the richest portrait yet of one such case: the topographic system used by the Yupno of Papua New Guinea, in which the past is construed as downhill and the future as uphill. We first survey topographic concepts in Yupno language and culture, showing how they constitute a privileged resource for communicating about space. Next, we survey time concepts in Yupno, focusing on how topographic concepts are used to construe past, present, and future. We then illustrate how this topographic understanding of time comes to life in the words, hands, and minds of Yupno speakers. Drawing on informal interviews, we offer a view of the topographic system that goes beyond a community-level summary, and offers a glimpse of its individual-level and moment-to-moment texture. Finally, we step back to account for how this topographic understanding of time is embedded within a rich cognitive ecology of linguistic, cultural, gestural, and architectural practices. We close by discussing an elusive question: Why is the future uphill?

<https://www.cambridge.org/core/journals/language-and-cognition/article/abs/ups-and-downs-of-space-and-time-topography-in-yupno-language-culture-and-cognition/0EE97976755AF989C9333E621558C199>

Nature

ARTICLES

BENJAMIN R. COLLINS & AMY HATTON – Beads reveal long-distance connections in early Africa

Beads made from ostrich eggshells, produced by people over the past 50,000 years, provide evidence for a long period of social connection between eastern and southern Africa, followed by isolation and then reconnection.

<https://www.nature.com/articles/d41586-021-03681-2>

PAPERS

CÉLINE M. VIDAL et al – Age of the oldest known Homo sapiens from eastern Africa

Efforts to date the oldest modern human fossils in eastern Africa, from Omo-Kibish and Herto in Ethiopia, have drawn on a variety of chronometric evidence, including $^{40}\text{Ar}/^{39}\text{Ar}$ ages of stratigraphically associated tuffs. The ages that are generally reported for these fossils are around 197 thousand years (kyr) for the Kibish Omo I, and around 160–155 kyr for the Herto hominins. However, the stratigraphic relationships and tephra correlations that underpin these estimates have been challenged. Here we report geochemical analyses that link the Kamoya's Hominid Site (KHS) Tuff, which conclusively overlies the member of the Omo-Kibish Formation that contains Omo I, with a major explosive eruption of Shala volcano in the Main Ethiopian Rift. By dating the proximal deposits of this eruption, we obtain a new minimum age for the Omo fossils of 233 ± 22 kyr. Contrary to previous arguments, we also show that the KHS Tuff does not correlate with another widespread tephra layer, the Waideido Vitric Tuff, and therefore cannot anchor a minimum age for the Herto fossils. Shifting the age of the oldest known Homo sapiens fossils in eastern Africa to before around 200 thousand years ago is consistent with independent evidence for greater antiquity of the modern human lineage.

<https://www.nature.com/articles/s41586-021-04275-8>

JENNIFER M. MILLER & YIMING V. WANG – Ostrich eggshell beads reveal 50,000-year-old social network in Africa

Humans evolved in a patchwork of semi-connected populations across Africa; understanding when and how these groups connected is critical to interpreting our present-day biological and cultural diversity. Genetic analyses reveal that eastern and southern African lineages diverged sometime in the Pleistocene epoch, approximately 350–70 thousand years ago (ka); however, little is known about the exact timing of these interactions, the cultural context of these exchanges or the mechanisms that drove their separation. Here we compare ostrich eggshell bead variations between eastern and southern Africa to explore population dynamics over the past 50,000 years. We found that ostrich eggshell bead technology probably originated in eastern Africa and spread southward approximately 50–33 ka via a regional network. This connection breaks down approximately 33 ka, with populations remaining isolated until herders entered southern Africa after 2 ka. The timing of this disconnection broadly corresponds with the southward shift of the Intertropical Convergence Zone, which caused periodic flooding of the Zambezi River catchment (an area that connects eastern and southern Africa). This suggests that climate exerted some influence in shaping human social contact. Our study implies a later regional divergence than predicted by genetic analyses, identifies an approximately 3,000-kilometre stylistic connection and offers important new insights into the social dimension of ancient interactions.

<https://www.nature.com/articles/s41586-021-04227-2>

Nature Scientific Data

PAPERS

JIN WANG et al – A longitudinal neuroimaging dataset on language processing in children ages 5, 7, and 9 years old

This dataset examines language development with a longitudinal design and includes diffusion- and T1-weighted structural magnetic resonance imaging (MRI), task-based functional MRI (fMRI), and a battery of psycho-educational assessments and parental questionnaires. We collected data from 5.5-6.5-year-old children (ses-5) and followed them up when they were 7-8 years old (ses-7) and then again at 8.5-10 years old (ses-9). To increase the sample size at the older time points, another cohort of 7-8-year-old children (ses-7) were recruited and followed up when they were 8.5–10 years old (ses-9). In total, 322 children who completed at least one structural and functional scan were included. Children performed four fMRI tasks consisting of two word-level tasks examining phonological and semantic processing and two sentence-level tasks investigating semantic and syntactic processing. The MRI data is valuable for examining changes over time in interactive specialization due to the use of multiple imaging modalities and tasks in this longitudinal design. In addition, the extensive psycho-educational assessments and questionnaires provide opportunities to explore brain-behavior and brain-environment associations.

<https://www.nature.com/articles/s41597-021-01106-3>

Nature Scientific Reports

PAPERS

ZACHARY WITKOWER et al – Is a downwards head tilt a cross-cultural signal of dominance? Evidence for a universal visual illusion

The present pre-registered research provides the first evidence that a downwards head tilt is sufficient to communicate dominance from a neutral facial expression among the Mayangna, members of an unindustrialized, small-scale traditional society in Nicaragua who have had minimal exposure to North American culture. Consistent with the Action Unit imposter effect observed in North American populations (Witkower and Tracy in *Psychol Sci* 30:893–906, 2019), changes to the appearance of the upper face caused by a downwards head tilt were sufficient to elicit perceptions of dominance among this population. Given that the Mayangna are unlikely to associate a downwards head tilt or related apparent facial changes with dominance as a result of cross-cultural learning, the present results suggest that perceptions of dominance formed from a downwards head tilt, and the visual illusion shaping these perceptions, are a widely generalizable, and possibly universal, feature of human psychology.

<https://www.nature.com/articles/s41598-021-04370-w>

TABEA J. KOCH & PATRICK SCHMIDT – A new method for birch tar making with materials available in the Stone Age

The use of birch tar can be traced back to the European Middle Palaeolithic and is relevant for our understanding of the technical skills and cognitive abilities of Neanderthals. Due to the lack of archaeological evidence, it remains unknown what techniques were used for birch tar making. Efficiency was recently used as a proxy to determine the method most likely used in the Middle Palaeolithic. Todtenhaupt et al. have proposed a technique employing a groove-like structure that is comparable with the recently presented condensation method. The groove method resulted in higher tar yields compared to other experimental aceramic production processes. However, the implications for Palaeolithic tar making remain unclear because some of the materials used in the experiment were not available then (polished granite slabs). To approach this problem, we replicated the groove with river cobbles and, in a second experiment with flint fragments, to evaluate whether similar results can be obtained. We were successful in producing birch tar in multiple runs with the cobble- and flint-grooves, which, in addition, proved to be more efficient than the condensation method in terms of tar yield per bark input. Our experimental study provides an additional possibility to make prehistoric birch tar.

<https://www.nature.com/articles/s41598-021-04161-3>

MARIE-THÉRÈSE LE NORMAND & HUNG THAI-VAN – The role of Function Words to build syntactic knowledge in French-speaking children

The question of how children learn Function Words (FWs) is still a matter of debate among child language researchers. Are early multiword utterances based on lexically specific patterns or rather abstract grammatical relations? In this corpus study, we analyzed FWs having a highly predictable distribution in relation to Mean Length Utterance (MLU) an index of syntactic complexity in a large naturalistic sample of 315 monolingual French children aged 2 to 4 year-old. The data was annotated with a Part Of Speech Tagger (POS-T), belonging to computational tools from CHILDES. While eighteen FWs strongly correlated with MLU expressed either in word or in morpheme, stepwise regression analyses showed that subject pronouns predicted MLU. Factor analysis yielded a bifactor hierarchical model: The first factor loaded sixteen FWs among which eight had a strong developmental weight (third person singular verbs, subject pronouns, articles, auxiliary verbs, prepositions, modals, demonstrative pronouns and plural markers), whereas the second factor loaded complex FWs (possessive verbs and object pronouns). These findings challenge the lexicalist account and support the view that children learn grammatical forms as a complex system based on early instead of late structure building. Children may acquire FWs as combining words and build syntactic knowledge as a complex abstract system which is not innate but learned from multiple word input sentences

context. Notably, FWs were found to predict syntactic development and sentence complexity. These results open up new perspectives for clinical assessment and intervention.

<https://www.nature.com/articles/s41598-021-04536-6>

IZZY GAINSBURG et al – Distanced self-talk increases rational self-interest

Does stepping back to evaluate a situation from a distanced perspective lead us to be selfish or fair? This question has been of philosophical interest for centuries, and, more recently, the focus of extensive empirical inquiry. Yet, extant research reveals a puzzle: some studies suggest that adopting a distanced perspective will produce more rationally self-interested behavior, whereas others suggest that it will produce more impartial behavior. Here we adjudicate between these perspectives by testing the effects of adopting a third-person perspective on decision making in a task that pits rational self-interest against impartiality: the dictator game. Aggregating across three experiments ($N = 774$), participants who used third-person (i.e., distanced) vs. first-person (i.e., immersed) self-talk during the dictator game kept more money for themselves. We discuss these results in light of prior research showing that psychological distance can promote cooperation and fairmindedness and how the effect of psychological distance on moral decision-making may be sensitive to social context.

<https://www.nature.com/articles/s41598-021-04010-3>

New Scientist

NEWS

Ancient humans may have started hunting 2 million years ago

Cut marks on animal bones suggest ancient hominins butchered them for their meat, and that they were first on the scene instead of having to scavenge from carnivores like big cats.

<https://www.newscientist.com/article/2303888-ancient-humans-may-have-started-hunting-2-million-years-ago/#ixzz7HtBurAge>

ARTICLES

JESSICA HAMZELOU – What dolphins reveal about the evolution of the clitoris

Patricia Brennan's latest research suggests that bottlenose dolphins have clitorises that evolved for pleasure. She tells New Scientist why it's important to study animal genitalia.

<https://www.newscientist.com/article/2303662-what-dolphins-reveal-about-the-evolution-of-the-clitoris/#ixzz7HtCB2GOM>

MIRIAM FRANKEL – How to alter your personality: why your character isn't fixed in stone

Traits like conscientiousness or extroversion might seem to define your character, but these aren't set in stone and new research reveals how anyone can change their personality - if they really want to.

<https://www.newscientist.com/article/mg25333690-900-how-to-alter-your-personality-why-your-character-isnt-fixed-in-stone/#ixzz7HtCflvx4>

Philosophical Transactions of the Royal Society B

PAPERS

TIAN CHEN ZENG, JOEY T. CHENG & JOSEPH HENRICH – Dominance in humans

Dominance captures behavioural patterns found in social hierarchies that arise from agonistic interactions in which some individuals coercively exploit their control over costs and benefits to extract deference from others, often through aggression, threats and/or intimidation. Accumulating evidence points to its importance in humans and its separation from prestige—an alternate avenue to high status in which status arises from information (e.g. knowledge, skill, etc.) or other non-rival goods. In this review, we provide an overview of the theoretical underpinnings of dominance as a concept within evolutionary biology, discuss the challenges of applying it to humans and consider alternative theoretical accounts which assert that dominance is relevant to understanding status in humans. We then review empirical evidence for its continued importance in human groups, including the effects of dominance—Independently of prestige—on measurable outcomes such as social influence and reproductive fitness, evidence for specialized dominance psychology, and evidence for gender-specific effects. Finally, because human-specific factors such as norms and coalitions may place bounds on purely coercive status-attainment strategies, we end by considering key situations and contexts that increase the likelihood for dominance status to coexist alongside prestige status within the same individual, including how: (i) institutional power and authority tend to elicit dominance; (ii) dominance-enhancing traits can at times generate benefits for others (prestige); and (iii) certain dominance cues and ethology may lead to mis-attributions of prestige.

<https://royalsocietypublishing.org/doi/full/10.1098/rstb.2020.0451>

HIROYUKI SHIMOJI & SHIGETO DOBATA – The build-up of dominance hierarchies in eusocial insects

Reproductive division of labour is a hallmark of eusocial insects. However, its stability can often be hampered by the potential for reproduction by otherwise sterile nest-mates. Dominance hierarchy has a crucial role in some species in regulating which individuals reproduce. Compared with those in vertebrates, the dominance hierarchies in eusocial insects tend to involve many more individuals, and should require additional selective forces unique to them. Here, we provide an

overview of a series of studies on dominance hierarchies in eusocial insects. Although reported from diverse eusocial taxa, dominance hierarchies have been extensively studied in paper wasps and ponerine ants. Starting from molecular physiological attributes of individuals, we describe how the emergence of dominance hierarchies can be understood as a kind of self-organizing process through individual memory and local behavioural interactions. The resulting global structures can be captured by using network analyses. Lastly, we argue the adaptive significance of dominance hierarchies from the standpoint of sterile subordinates. Kin selection, underpinned by relatedness between nest-mates, is key to the subordinates' acceptance of their positions in the hierarchies.

<https://royalsocietypublishing.org/doi/full/10.1098/rstb.2020.0437>

DANIEL REDHEAD & ELEANOR A. POWER – Social hierarchies and social networks in humans

Across species, social hierarchies are often governed by dominance relations. In humans, where there are multiple culturally valued axes of distinction, social hierarchies can take a variety of forms and need not rest on dominance relations. Consequently, humans navigate multiple domains of status, i.e. relative standing. Importantly, while these hierarchies may be constructed from dyadic interactions, they are often more fundamentally guided by subjective peer evaluations and group perceptions. Researchers have typically focused on the distinct elements that shape individuals' relative standing, with some emphasizing individual-level attributes and others outlining emergent macro-level structural outcomes. Here, we synthesize work across the social sciences to suggest that the dynamic interplay between individual-level and meso-level properties of the social networks in which individuals are embedded are crucial for understanding the diverse processes of status differentiation across groups. More specifically, we observe that humans not only navigate multiple social hierarchies at any given time but also simultaneously operate within multiple, overlapping social networks. There are important dynamic feedbacks between social hierarchies and the characteristics of social networks, as the types of social relationships, their structural properties, and the relative position of individuals within them both influence and are influenced by status differentiation.

<https://royalsocietypublishing.org/doi/full/10.1098/rstb.2020.0440>

TOBIT DEHNEN et al – Costs dictate strategic investment in dominance interactions

Dominance is important for access to resources. As dominance interactions are costly, individuals should be strategic in whom they interact with. One hypothesis is that individuals should direct costly interactions towards those closest in rank, as they have most to gain—in terms of attaining or maintaining dominance—from winning such interactions. Here, we show that male vulturine guineafowl (*Acryllium vulturinum*), a gregarious species with steep dominance hierarchies, strategically express higher-cost aggressive interactions towards males occupying ranks immediately below themselves in their group's hierarchy. By contrast, lower-cost aggressive interactions are expressed towards group members further down the hierarchy. By directly evaluating differences in the strategic use of higher- and lower-cost aggressive interactions towards competitors, we show that individuals disproportionately use highest-cost interactions—such as chases—towards males found one to three ranks below themselves. Our results support the hypothesis that the costs associated with different interaction types can determine their expression in social groups with steep dominance hierarchies.

<https://royalsocietypublishing.org/doi/full/10.1098/rstb.2020.0447>

ELIZABETH A. TIBBETTS, JUANITA PARDO-SANCHEZ & CHLOE WEISE – The establishment and maintenance of dominance hierarchies

Animal groups are often organized hierarchically, with dominant individuals gaining priority access to resources and reproduction over subordinate individuals. Initial dominance hierarchy formation may be influenced by multiple interacting factors, including an animal's individual attributes, conventions and self-organizing social dynamics. After establishment, hierarchies are typically maintained over the long-term because individuals save time, energy and reduce the risk of injury by recognizing and abiding by established dominance relationships. A separate set of behaviours are used to maintain dominance relationships within groups, including behaviours that stabilize ranks (punishment, threats, behavioural asymmetry), as well as signals that provide information about dominance rank (individual identity signals, signals of dominance). In this review, we describe the behaviours used to establish and maintain dominance hierarchies across different taxa and types of societies. We also review opportunities for future research including: testing how self-organizing behavioural dynamics interact with other factors to mediate dominance hierarchy formation, measuring the long-term stability of social hierarchies and the factors that disrupt hierarchy stability, incorporating phenotypic plasticity into our understanding of the behavioural dynamics of hierarchies and considering how cognition coevolves with the behaviours used to establish and maintain hierarchies.

<https://royalsocietypublishing.org/doi/full/10.1098/rstb.2020.0450>

PLoS One

PAPERS

NOORA TAIPALE, LAURENT CHIOTTI & VEERLE ROTS – Why did hunting weapon design change at Abri Pataud? Lithic use-wear data on armature use and hafting around 24,000–22,000 BP

Projectile technology is commonly viewed as a significant contributor to past human subsistence and, consequently, to our evolution. Due to the allegedly central role of projectile weapons in the food-getting strategies of Upper Palaeolithic people,

typo-technological changes in the European lithic record have often been linked to supposed developments in hunting weaponry. Yet, relatively little reliable functional data is currently available that would aid the detailed reconstruction of past weapon designs. In this paper, we take a use-wear approach to the backed tool assemblages from the Recent and Final Gravettian layers (Levels 3 and 2) of Abri Pataud (Dordogne, France). Our use of strict projectile identification criteria relying on combinations of low and high magnification features and our critical view of the overlap between production and use-related fractures permitted us to confidently identify a large number of used armatures in both collections. By isolating lithic projectiles with the strongest evidence of impact and by recording wear attributes on them in detail, we could establish that the hunting equipment used during the Level 3 occupations involved both lithic weapon tips and composite points armed with lithic inserts. By contrast, the Level 2 assemblage reflects a heavy reliance on composite points in hunting reindeer and other game. Instead of an entirely new weapon design, the Level 2 collection therefore marks a shift in weapon preferences. Using recent faunal data, we discuss the significance of the observed diachronic change from the point of view of prey choice, seasonality, and social organisation of hunting activities. Our analysis shows that to understand their behavioural significance, typo-technological changes in the lithic record must be viewed in the light of functional data and detailed contextual information.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0262185>

PNAS

PAPERS

ELEONORE H. M. SMALL & al – **Unlocking adults' implicit statistical learning by cognitive depletion**

Human learning is supported by multiple neural mechanisms that mature at different rates and interact in mostly cooperative but also sometimes competitive ways. We tested the hypothesis that mature cognitive mechanisms constrain implicit statistical learning mechanisms that contribute to early language acquisition. Specifically, we tested the prediction that depleting cognitive control mechanisms in adults enhances their implicit, auditory word-segmentation abilities. Young adults were exposed to continuous streams of syllables that repeated into hidden novel words while watching a silent film. Afterward, learning was measured in a forced-choice test that contrasted hidden words with nonwords. The participants also had to indicate whether they explicitly recalled the word or not in order to dissociate explicit versus implicit knowledge. We additionally measured electroencephalography during exposure to measure neural entrainment to the repeating words. Engagement of the cognitive mechanisms was manipulated by using two methods. In experiment 1 ($n = 36$), inhibitory theta-burst stimulation (TBS) was applied to the left dorsolateral prefrontal cortex or to a control region. In experiment 2 ($n = 60$), participants performed a dual working-memory task that induced high or low levels of cognitive fatigue. In both experiments, cognitive depletion enhanced word recognition, especially when participants reported low confidence in remembering the words (i.e., when their knowledge was implicit). TBS additionally modulated neural entrainment to the words and syllables. These findings suggest that cognitive depletion improves the acquisition of linguistic knowledge in adults by unlocking implicit statistical learning mechanisms and support the hypothesis that adult language learning is antagonized by higher cognitive mechanisms.

<https://www.pnas.org/content/119/2/e202601119.abstract>

Proceedings of the Royal Society B

PAPERS

TOMMASO BATISTONI, PAT BARCLAY & NICHOLA J. RAIHANI – **Third-party punishers do not compete to be chosen as partners in an experimental game**

Third-party punishment is thought to act as an honest signal of cooperative intent and such signals might escalate when competing to be chosen as a partner. Here, we investigate whether partner choice competition prompts escalating investment in third-party punishment. We also consider the case of signalling via helpful acts to provide a direct test of the relative strength of the two types of signals. Individuals invested more in third-party helping than third-party punishment and invested more in both signals when observed compared to when investments would be unseen. We found no clear effect of partner choice (over and above mere observation) on investments in either punishment or helping. Third-parties who invested more than a partner were preferentially chosen for a subsequent Trust Game although the preference to interact with the higher investor was more pronounced in the help than in the punishment condition. Third-parties who invested more were entrusted with more money and investments in third-party punishment or helping reliably signalled trustworthiness. Individuals who did not invest in third-party helping were more likely to be untrustworthy than those who did not invest in third-party punishment. This supports the conception of punishment as a more ambiguous signal of cooperative intent compared to help.

<https://royalsocietypublishing.org/doi/full/10.1098/rspb.2021.1773>

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