EAORC BULLETIN 1,025 – 5 February 2023

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, 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 – Stone tool backing and adhesion in hunting weaponry

Journal of Archaeological Science: Reports 45, 103639 (2022).

JUSTIN PARGETER et al – Stone tool backing and adhesion in hunting weaponry: First results of an experimental program

Stone tool backing repeatedly occurred on several continents throughout the Pleistocene and Holocene. Yet, any potential utilitarian advantages or disadvantages of backed stone tools relative to non-backed tools has been experimentally under-explored. Modern engineering experiments involving adhesion mechanics suggest an in-verse relationship between surface area and the strength of a bond, especially on heterogeneous surfaces like stone. Some stone flakes, especially those with longer edges, may have been backed to make them easier to hold and safer to use. Further, Stone Age humans hafted both backed and un-backed tools for millennia in many parts of the world, suggesting effective hafting could occur with or without backing. Backing itself is a relatively simple technique providing toolmakers with an easy way to shape stone flakes. Some archaeologists have even hypothesized backed tool shaping was an end to communicate social information via stone symbols. This is the first pilot in a series of experiments testing a straightforward null and alternative hypothesis assessing the relationship between backing and adhesion and shaft damage with respect to projectile weaponry. Overall, our experimental results suggested two central conclusions with respect to backing. First, backing does not appear to improve adhesion but instead significantly worsens it. Second, laterally backed tools seem to increase the chances of shaft splitting relative to laterally hafted non-backed tools. Assuming for a moment that our results are supported by our future experimental research, our findings suggest that factors other than increased adhesion, such as intentional ‘failure,’ drift, or non-functional bias during social signaling or symbolic communication events, may have been responsible for the adoption and transmission of backed tools.

https://www.academia.edu/96127669/Stone_tool_backing_and_adhesion_in_hunting_weaponry_First_results_of_an_experimental_program

ACADEMIA.EDU – Novel methods in identifying shell taxa from archaeological micro-fragments

Journal of Archaeological Science 147, 105667 (2022).

ANNETTE OERTLE et al – Peering into the unseen: Novel methods in identifying shell taxa from archaeological micro-fragments

Archaeomalacological analysis is generally undertaken on recovered macro-remains to characterize the overall composition of faunal remains in a deposit. Given the susceptibility of shell middens to a variety of taphonomic processes, it is assumed that the prior presence of shell in deposits may therefore occasionally be missed. Deteriorated micro-remains can mix indistinguishably into surrounding sediments and make their analyses and identification difficult, particularly in older deposits and in environments that experience rapid rates of weathering. This paper explores whether microscopic remains of deteriorated molluscs can be distinguished from other microscopic remains at the coastal rock shelter site of Waterfall Bluff in Mpondoland, South Africa. The methodology uses a multi-scalar approach integrating shell mineralogy and microstructure using the taxonomic distinctiveness of these features. The diagnostic features (e.g., morphology, hinges, spires, and apertures) used for identifying macro-remains are absent in micro-remains, therefore unique methods of identification are needed to identify these microscopic mollusc fragments. Through mineralogical analyses and scanning electron microscope (SEM) imaging, the nacreous remains of Mytilidae shell were identified from previously unidentified degraded shell remains as well as sediment samples from Waterfall Bluff. These methods thus recovered 'invisible' evidence of shellfish remains providing further evidence of continued coastal foraging from Marine Isotope Stage 3 to the early Holocene (ca or ~ 40 ka to 10 ka) on the south-eastern African coast.

https://www.academia.edu/96127576/Peering_into_the_unseen_Novel_methods_in_identifying_shell_taxa_from_archaeological_micro_fragments

ACADEMIA.EDU – Learning Conditions and Individual Differences in Knapping Skill Acquisition

Journal of Archaeological Method and Theory (2022).

JUSTIN PARGETER et al with DIETRICH STOUT – Testing the Effect of Learning Conditions and Individual Motor/Cognitive Differences on Knapping Skill Acquisition

Stone tools provide key evidence of human cognitive evolution but remain challenging to interpret. Stone tool skill-learning has been understudied even though (1) the most salient cognitive demands of tool-making should occur during learning, and (2) variation in learning aptitude would have provided the raw material for any past selection acting on tool-making ability. However, we know very little about the cognitive prerequisites of learning under different information transmission conditions that may have prevailed during the Paleolithic. This paper presents results from an exploratory study to trial new experimental methods for studying the effect of learning conditions and individual differences on Oldowan stone tool skill acquisition. We trained 23 participants for two hours to make stone flakes under two different instructional conditions (observation only vs. direct active teaching). We employed appropriate raw materials, a moderate practice time, and in-person, fully interactive instruction. Participant performance was evaluated through an analysis of the stone artifacts produced. We compared performance across experimental groups with respect to individual participant differences in grip strength, motor accuracy, and cognitive function measured for the study. Our results show that a 2h training window is insufficient to document learning-related performance change. However, direct active teaching reduces variability in knapping rate, methods, and outcomes during early-stage learning, thus increasing the reliability of skill reproduction. Instruction also altered knapping quality vs. quantity trade-offs in the two groups and dramatically changed the effects of individual differences in strength, visuospatial working memory, and social learning tendencies on knapping outcomes. Our results provide further support for the hypothetical co-evolution of teaching, language, and tool-making, and suggest that the presence/absence of direct active teaching can fundamentally alter learning-related selection pressures on individuals. The study provides lessons for future experimental design.

https://www.academia.edu/96127953/Testing_the_Effect_of_Learning_Conditions_and_Individual_Motor_Cognitive_Differences_on_Knapping_Skill_Acquisition

NEWS

NATURE BRIEFING – Voles fall in love, even without oxytocin

Gene-edited prairie voles that can't detect the 'love hormone' oxytocin still form monogamous relationships and care for their pups. The study challenges decades of research suggesting that prairie voles' unusually strong bonds were down to the way their brains express oxytocin receptors. The study might help scientists to understand oxytocin's role in humans. It has been trialled as a treatment for conditions that can affect social attachment. "There's a sort of eerie similarity between prairie vole social behaviours and human social behaviours," says neuroscientist Nirao Shah. "Prairie voles are one of the few mammalian species that exhibit social attachment."

https://nature.us17.list-manage.com/track/click?u=2c6057c528fdc6f73fa196d9d&id=eb55e27b03&e=1db4b9a19b

NATURE BRIEFING – How dolphins and people fish together

Researchers have confirmed how people and dolphins benefit from a centuries-old practice of fishing together in southern Brazil. Bottlenose dolphins (Tursiops truncatus gephyreus) find schools of fish and herd them to the shallows, where fishers stand and wait. The dolphins even signal, usually by making a sudden deep dive, the perfect time to throw the nets. When the process works in harmony, the fishers are more successful. In turn, their nets separate individual fish that are easier prey for the dolphins. Unfortunately, the traditional practice is on the wane: artisanal fishing methods are dying out, and some fishers are turning to modern gear, such as trammel netting, that actually kills dolphins.
https://nature.us17.list-manage.com/track/click?u=2c6057c528fdc6f73fa196d9d&id=eb1fb59e31&e=1db4b9a19b

NATURE BRIEFING – Science urgently needs a plan for ChatGPT

The artificial intelligence (AI) chatbot ChatGPT shows how science "now faces a reckoning induced by AI technology infringing on its most dearly held values, practices and standards", argue five researchers who specialize in psychology, cognition and AI. The authors delve into the complexities of accuracy and misinformation, how to bestow attribution and credit, and how AI might ultimately remake the scientific enterprise.
https://nature.us17.list-manage.com/track/click?u=2c6057c528fdc6f73fa196d9d&id=8745c086e6&e=1db4b9a19b

SAPIENS – When Disaster Tests the Strength of Human Cooperation

In the aftermath of disasters, many of us are drawn to heartwarming stories about random acts of kindness and altruism in the face of shared devastation. But in this essay, an anthropologist who works with communities living close to an active volcano in Ecuador argues that the realities of surviving and recovering from disasters depends much more on the strength of existing social institutions. These communities practice minga, a form of collective labor developed in Andean societies, to support mutual care and aid. What lessons might other societies draw on in the face of ongoing disasters and crises?
https://sapiens.us11.list-manage.com/track/click?u=80f6cf678900daf984bf763b7&id=baabc15365&e=dc0eff6180

SAPIENS – Rethinking Homo Sapiens' Origins

Evidence from fossils, objects, and DNA is prompting researchers to rethink our species' origin story—and what it means to be human.
https://sapiens.us11.list-manage.com/track/click?u=80f6cf678900daf984bf763b7&id=bfab565515&e=dc0eff6180

SAPIENS – Rock Drawings

A Tohono O'odham poet and linguist reflects on the stories and wisdom ancestors communicated—and how people remember.
https://sapiens.us11.list-manage.com/track/click?u=80f6cf678900daf984bf763b7&id=65d8ba3a5b&e=dc0eff6180

SCIENCE NEWS – Dolphins and humans team up to catch fish in Brazil

For more than 140 years, fishers in southeastern Brazil have formed an unusual partnership with local dolphins. In the small coastal city of Laguna, men wait for the marine mammals to swim up a narrow lagoon, herding silvery mullet from the Atlantic Ocean into shallower waters. As soon as the fishers spot a dolphin slapping its tail, lifting its head, and diving deeply, they race into the water with their nets.
https://www.science.org/content/article/dolphins-and-humans-team-catch-fish-brazil

SCIENCE NEWS – Neanderthals lived in groups big enough to eat giant elephants

Meat from the butchered beasts would have fed hundreds.
https://www.science.org/content/article/neanderthals-lived-groups-big-enough-eat-giant-elephants

SCIENCE NEWS – Want to avoid a heated argument? This trick could help

Scientists find that reflecting on your values before debating someone makes you more open-minded.
https://www.science.org/content/article/want-avoid-heated-argument-trick-could-help

PUBLICATIONS

American Journal of Biological Anthropology

PAPERS

SCOTT A. WILLIAMS et al – African apes and the evolutionary history of orthogrady and bipedalism

Since the first discovery of human fossils in the mid-19th century, two subjects—our phylogenetic relationship to living and fossil apes and the ancestral locomotor behaviors preceding bipedalism—have driven the majority of discourse in the study

of human origins. With few fossils and thus limited comparative evidence available to inform or constrain them, morphologists of the 19th and early mid-20th centuries posited a range of scenarios for the evolution of bipedalism. In contrast, there exists a rich hominin fossil record and the acceptance of Pan (chimpanzees and bonobos) as our closest living relatives is nearly universal, yet consensus about the ancestral condition from which hominins evolved remains elusive. Notably, while the earliest known hominins are generally congruent with parsimonious inferences of an African ape-like last common ancestor, our more distantly related Miocene ape cousins are frequently invoked as evidence in favor of more complex scenarios that require substantial homoplasy. Debate over these alternatives suggests that how we infer ancestral nodes and weigh evidence to test their relative likelihoods remains a stumbling block. Here we argue that a key contributor to this impasse includes the history of terminology associated with positional behavior, which has become confused over the last century. We aim to clarify positional behavior concepts and contextualize knuckle-walking and other forms of posture and locomotion chimpanzees and gorillas engage in, while arguing that the presence of homoplasy in ape evolution does not alter the weight of evidence in favor of an African ape-like evolutionary history of hominins.
https://onlinelibrary.wiley.com/doi/abs/10.1002/ajpa.24684

Heliyon

PAPERS

I NYOMAN UDAYANA et al – Tonal properties in a non-tonal language: The case of Indonesian

This study investigates the tonal properties of Indonesian, specifically examining intonation contours in Indonesian at the sentence level and focusing on how the tonal system is used to indicate different pragmatic meanings in Indonesian. Four distinct intonation contours with four distinct meanings were contrasted: strong agreement to the truth of the relevant word (emphasizing) (H), interrogative meaning (LH), doubting the fact of the word in question (L), and a neutral conceptual meaning of the relevant word (HL). The stimuli for the study were four Indonesian words (two verbs makan 'eat' and tahu 'know' and two adjectives cantik 'beautiful' and marah 'angry'). Stimuli were recorded to capture the four-way contrast in pitch contour. A comprehension task to identify the distinct meanings was conducted. Forty-nine participants were asked to listen to the four words with the four different pitch contours and select their respective meanings. The data show that the participants were able to apply the Mandarin four-way contrast pitch contour to Indonesian to accurately indicate four different (pragmatic) meanings. The most difficult contour for the listeners/participants was in distinguishing the interrogative intonation contour (LH) from the low-dipping intonation contour (L) signaling doubting the conceptual truth of the lexical items used. The overall study suggests that a tonal system based on Mandarin tonal contrasts can be applied to Indonesian intonational expressions.
https://www.cell.com/heliyon/fulltext/S2405-8440(23)00647-3

Interface: Journal of the Royal Society

PAPERS

SARAH L. WALSH et al with SIMON W. TOWNSEND – Multi-level combinatoriality in magpie non-song vocalizations

Comparative studies conducted over the past few decades have provided important insights into the capacity for animals to combine vocal segments at either one of two levels: within- or between-calls. There remains, however, a distinct gap in knowledge as to whether animal combinatoriality can extend beyond one level. Investigating this requires a comprehensive analysis of the combinatorial features characterizing a species' vocal system. Here, we used a nonlinear dimensionality reduction analysis and sequential transition analysis to quantitatively describe the non-song combinatorial repertoire of the Western Australian magpie (Gymnorhina tibicen dorsalis). We found that (i) magpies recombine four distinct acoustic segments to create a larger number of calls, and (ii) the resultant calls are further combined into larger call combinations. Our work demonstrates two levels in the combining of magpie vocal units. These results are incongruous with the notion that a capacity for multi-level combinatoriality is unique to human language, wherein the combining of meaningless sounds and meaningful words interactively occurs across different combinatorial levels. Our study thus provides novel insights into the combinatorial capacities of a non-human species, adding to the growing evidence of analogues of language-specific traits present in the animal kingdom.
https://royalsocietypublishing.org/doi/10.1098/rsif.2022.0679

iScience

PAPERS

TIANTIAN WANG et al – Do golden snub-nosed monkeys use deceptive alarm calls during competition for food?

Tactical deception can be beneficial for social animals during intra-specific competition. However, the use of tactical deception in wild mammals is predicted to be rare. We tested whether a food-provisioned free-ranging band of golden snub-nosed monkeys (Rhinopithecus roxellana) use alarm calls in a functionally deceptive manner to gain access to food resources, whether the rate of deceptive alarm calls varies among individuals, and whether there are any counter-deception behaviors. We used a hexagonal camera array consisting of 10 cameras to record videos during feeding, which allowed us to identify individual alarm callers. We found evidence that these monkeys use deceptive alarms, and that adult females were more

likely to use such calls than other individuals. The monkeys increased their rates of response to alarm calls when competition for food was high. However, we found no direct evidence of any counter-deception strategies.
https://www.cell.com/iscience/fulltext/S2589-0042(23)00175-X

Nature

ARTICLES

EVA A. M. VAN DIS et al with WILLEM ZUIDEMA – ChatGPT: five priorities for research
Conversational AI is a game-changer for science. Here's how to respond.
https://www.nature.com/articles/d41586-023-00288-7

PAPERS

PINGFEN ZHU et al – Correlated evolution of social organization and lifespan in mammals
Discerning the relationship between sociality and longevity would permit a deeper understanding of how animal life history evolved. Here, we perform a phylogenetic comparative analysis of ~1000 mammalian species on three states of social organization (solitary, pair-living, and group-living) and longevity. We show that group-living species generally live longer than solitary species, and that the transition rate from a short-lived state to a long-lived state is higher in group-living than non-group-living species, altogether supporting the correlated evolution of social organization and longevity. The comparative brain transcriptomes of 94 mammalian species identify 31 genes, hormones and immunity-related pathways broadly involved in the association between social organization and longevity. Further selection features reveal twenty overlapping pathways under selection for both social organization and longevity. These results underscore a molecular basis for the influence of the social organization on longevity.
https://www.nature.com/articles/s41467-023-35869-7

Nature Communications

PAPERS

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https://www.nature.com/articles/s41467-023-35869-7

Nature Humanities & Social Sciences Communications

ARTICLES

BARBARA MCGILLIVRAY & GARD B. JENSET – Quantifying the quantitative (re-)turn in historical linguistics
Historical linguistics is the study of language change and stability, of the history of individual languages, and of the relatedness between languages. In spite of numerous acknowledgements, the adoption of quantitative methods in historical linguistics is still far from being mainstream and it falls below the level of other branches of linguistics. This comment considers the adoption of quantitative methods in recent historical linguistics research, and compares a study on 2012 publications with a similar study conducted seven years later. This comment argues for the advantages of a wider adoption of quantitative methods among historical linguists, and considers various reasons for the relatively slow progress in this direction. It also clarifies when quantitative methods are not the preferred route.
https://www.nature.com/articles/s41599-023-01531-2

Nature Reviews Genetics

ARTICLES

ALEX A. POLLEN et al – Human-specific genetics: new tools to explore the molecular and cellular basis of human evolution
Our ancestors acquired morphological, cognitive and metabolic modifications that enabled humans to colonize diverse habitats, develop extraordinary technologies and reshape the biosphere. Understanding the genetic, developmental and molecular bases for these changes will provide insights into how we became human. Connecting human-specific genetic changes to species differences has been challenging owing to an abundance of low-effect size genetic changes, limited descriptions of phenotypic differences across development at the level of cell types and lack of experimental models.

Emerging approaches for single-cell sequencing, genetic manipulation and stem cell culture now support descriptive and functional studies in defined cell types with a human or ape genetic background. In this Review, we describe how the sequencing of genomes from modern and archaic hominins, great apes and other primates is revealing human-specific genetic changes and how new molecular and cellular approaches — including cell atlases and organoids — are enabling exploration of the candidate causal factors that underlie human-specific traits.
https://www.nature.com/articles/s41576-022-00568-4

Nature Scientific Reports

PAPERS

MICHAEL SCHAEFER et al – Experiencing sweet taste is associated with an increase in prosocial behavior
Taste may be the first sense that emerged in evolution. Taste is also a very important sense since it signals potential beneficial or dangerous effects of foods. Given this fundamental role of taste in our lives, it is not surprising that taste also affects our psychological perception and thinking. For example, previous research demonstrated remarkable psychological effects of sweet taste experiences, suggesting that sweetness may be a source domain for prosocial functioning. Recent research reports that briefly experiencing sweet taste made participants more helpful in their intentions and behavior. The current study aims to test this hypothesis and to examine the neural underpinnings of this effect by using an fMRI approach. Participants were asked to taste sweet, salty, and neutral taste while lying in the fMRI scanner. Subsequently their prosocial behavior was tested by playing the dictator game, a measure of prosocial behavior. Results showed that sweet taste was associated with an increase in prosocial behavior compared with previously experiencing salty taste but did not affect control stimuli ratings. FMRI results revealed a modulation of the dorsal anterior cingulate cortex associated with this sweetness effect. This brain area is known to play a central role for monitoring conflicts and decisions and has been directly linked to selfish and prosocial economic decisions. The results demonstrate that sweet taste has complex psychological effects including positive and socially desirable outcomes. We discuss the results with other studies on psychological sweetness effects and suggest possible implications of these findings.
{Just a spoonful of sugar helps the murder rate go down …}
https://www.nature.com/articles/s41598-023-28553-9

ROSENDO CASTAÑÓN et al – A reinforcement learning approach to explore the role of social expectations in altruistic behavior
While altruism has been studied from a variety of standpoints, none of them has proven sufficient to explain the richness of nuances detected in experimentally observed altruistic behavior. On the other hand, the recent success of behavioral economics in linking expectation formation to key behaviors in complex societies hints to social expectations having a key role in the emergence of altruism. This paper proposes an agent-based model based upon the Bush–Mosteller reinforcement learning algorithm in which agents, subject to stimuli derived from empirical and normative expectations, update their aspirations (and, consequently, their future cooperative behavior) after playing successive rounds of the Dictator Game. The results of the model are compared with experimental results. Such comparison suggests that a stimuli model based on empirical and normative expectations, such as the one presented in this work, has considerable potential for capturing the cognitive-behavioral processes that shape decision-making in contexts where cooperative behavior is relevant.
https://www.nature.com/articles/s41598-023-28659-0

COMMENTARIES

JOSEPH L. HARDY et al with TERRY REGIER & PAUL KAY – Sunlight exposure cannot explain “grue” languages
ARISING FROM: Josserand, M. et al, Environment and culture shape both the colour lexicon and the genetics of colour perception. Scientific Reports 11, 19095 (https://www.nature.com/articles/s41598-021-98550-3).
Recently in this journal, Josserand et al. argued that high exposure to UV-B light is an important factor in a language’s failing to lexically distinguish green and blue. As noted previously, there is a correlation, globally, between (1) societies living in areas with high levels of exposure to UV-B light and (2) the tendency for languages in those societies to lack separate basic color terms for green and blue. Such languages, instead, have either a single term spanning green and blue, referred to as a “grue” term, or a term that merges green and blue with black and other dark shades. It has been proposed that this correlation is caused in part by premature lens aging. While this hypothesis is attractive at first glance, given that UV-B exposure can lead to more rapid yellowing of the eye’s crystalline lens, it overlooks two well-established facts, one about color vision and one about color naming.
https://www.nature.com/articles/s41598-023-28280-1

MATHILDE JOSSERAND et al with DAN DEDIU – Reply to: Sunlight exposure cannot explain "grue" languages
Hardy et al. raise two critical points regarding our original research paper. First, they highlight their important earlier work—which we did not discuss in our original article—that suggests lens brunescence cannot explain color naming due to color constancy. Second, they stress a more “parsimonious” account of color naming that relies on the communicative needs of different cultures. We take this opportunity to discuss their findings in light of other recent studies, and to discuss the potential role of lens brunescence as one factor among many that shapes color naming.

https://www.nature.com/articles/s41598-023-28281-0

New Scientist

NEWS

Neanderthals hunting giant elephants

This would certainly have been something to witness, in the days when homo sapiens wasn't the only human on the block.
https://link.newscientist.com/click/30447430.1106/aHR0cHM6Ly93d3cubmV3c2NpZW50aXN0LmNvbS9hcnRpY2xlLzIzNTc1NTMtbmVhbmRlcnRoYWxzLWh1bnRlZC1lbm9ybW91cy1lbGVwaGFudHMtdGhhdC1mZWQtMTAwLXBlb3BsZS1mb3ItItYS1tb250aC8_dXRtX3NvdXJjZT1uc2VkaA/62f670e7b4c0ae4acc5bc76aCa73baac1

PLoS Biology

PAPERS

KIRSTY E. GRAHAM & CATHERINE HOBAITER – Towards a great ape dictionary: Inexperienced humans understand common nonhuman ape gestures

In the comparative study of human and nonhuman communication, ape gesturing provided the first demonstrations of flexible, intentional communication outside human language. Rich repertoires of these gestures have been described in all ape species, bar one: us. Given that the majority of great ape gestural signals are shared, and their form appears biologically inherited, this creates a conundrum: Where did the ape gestures go in human communication? Here, we test human recognition and understanding of 10 of the most frequently used ape gestures. We crowdsourced data from 5,656 participants through an online game, which required them to select the meaning of chimpanzee and bonobo gestures in 20 videos. We show that humans may retain an understanding of ape gestural communication (either directly inherited or part of more general cognition), across gesture types and gesture meanings, with information on communicative context providing only a marginal improvement in success. By assessing comprehension, rather than production, we accessed part of the great ape gestural repertoire for the first time in adult humans. Cognitive access to an ancestral system of gesture appears to have been retained after our divergence from other apes, drawing deep evolutionary continuity between their communication and our own.
https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3001939

PLoS One

PAPERS

JUSTYNA SARZYNSKA-WAWER et al – Truth or lie: Exploring the language of deception

Lying appears in everyday oral and written communication. As a consequence, detecting it on the basis of linguistic analysis is particularly important. Our study aimed to verify whether the differences between true and false statements in terms of complexity and sentiment that were reported in previous studies can be confirmed using tools dedicated to measuring those factors. Further, we investigated whether linguistic features that differentiate true and false utterances in English—namely utterance length, concreteness, and particular parts-of-speech—are also present in the Polish language. We analyzed nearly 1,500 true and false statements, half of which were transcripts while the other half were written statements. Our results show that false statements are less complex in terms of vocabulary, are more concise and concrete, and have more positive words and fewer negative words. We found no significant differences between spoken and written lies. Using this data, we built classifiers to automatically distinguish true from false utterances, achieving an accuracy of 60%. Our results provide a significant contribution to previous conclusions regarding linguistic deception indicators.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0281179

RICHARD WUNDRACK & JULE SPECHT – Mindful self-focus–an interaction affecting Theory of Mind?

Is thinking about oneself helpful or harmful for understanding other people? The answer might depend on how a person thinks about themself. Mindfulness is one prominent construct that seems to affect the quality and content of a person's thoughts about themselves in the world. Thus, we hypothesize that the relationship between self-focus and Theory of Mind (ToM) is moderated by mindfulness. We evaluate our hypothesis with a large cross-sectional dataset (N = 543) of native and non-native German and English speakers using OLS and MM-estimated robust multiple regression analysis. We found a small but robust self-focus × mindfulness interaction effect on ToM so that there was a significant positive relation between self-focus and ToM for more mindful individuals and no significant relation for less mindful individuals. The findings support our hypothesis that mindfulness moderates the relationship between self-focus and ToM performance. We discuss the limitations and differences between the present study and previous findings.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0279544

EMILIA PARADA-CABALEIRO et al – Perception and classification of emotions in nonsense speech: Humans versus machines

This article contributes to a more adequate modelling of emotions encoded in speech, by addressing four fallacies prevalent in traditional affective computing: First, studies concentrate on few emotions and disregard all other ones ('closed world').

Second, studies use clean (lab) data or real-life ones but do not compare clean and noisy data in a comparable setting ('clean world'). Third, machine learning approaches need large amounts of data; however, their performance has not yet been assessed by systematically comparing different approaches and different sizes of databases ('small world'). Fourth, although human annotations of emotion constitute the basis for automatic classification, human perception and machine classification have not yet been compared on a strict basis ('one world'). Finally, we deal with the intrinsic ambiguities of emotions by interpreting the confusions between categories ('fuzzy world'). We use acted nonsense speech from the GEMEP corpus, emotional 'distractors' as categories not entailed in the test set, real-life noises that mask the clear recordings, and different sizes of the training set for machine learning. We show that machine learning based on state-of-the-art feature representations (wav2vec2) is able to mirror the main emotional categories ('pillars') present in perceptual emotional constellations even in degradated acoustic conditions.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0281079

PNAS

PAPERS

ERIN R. SIRACUSA et al – Within-individual changes reveal increasing social selectivity with age in rhesus macaques
Accumulating evidence in humans and other mammals suggests older individuals tend to have smaller social networks. Uncovering the cause of these declines can inform how changes in social relationships with age affect health and fitness in later life. While age-based declines in social networks have been thought to be detrimental, physical and physiological limitations associated with age may lead older individuals to adjust their social behavior and be more selective in partner choice. Greater selectivity with age has been shown in humans, but the extent to which this phenomenon occurs across the animal kingdom remains an open question. Using longitudinal data from a population of rhesus macaques on Cayo Santiago, we provide compelling evidence in a nonhuman animal for within-individual increases in social selectivity with age. Our analyses revealed that adult female macaques actively reduced the size of their networks as they aged and focused on partners previously linked to fitness benefits, including kin and partners to whom they were strongly and consistently connected earlier in life. Females spent similar amounts of time socializing as they aged, suggesting that network shrinkage does not result from lack of motivation or ability to engage, nor was this narrowing driven by the deaths of social partners. Furthermore, females remained attractive companions and were not isolated by withdrawal of social partners. Taken together, our results provide rare empirical evidence for social selectivity in nonhumans, suggesting that patterns of increasing selectivity with age may be deeply rooted in primate evolution.
https://www.pnas.org/doi/10.1073/pnas.2209180119

Science Advances

ARTICLES

BRITT M. STARKOVICH – Perception versus reality: Implications of elephant hunting by Neanderthals
Neanderthals hunted elephants at Neumark-Nord 1 (Germany), a finding that has major implications for our understanding of social and cultural aspects of Neanderthal behavior.
https://www.science.org/doi/full/10.1126/sciadv.adg6072

PAPERS

STEPHAN KROHN et al – A spatiotemporal complexity architecture of human brain activity
The human brain operates in large-scale functional networks. These networks are an expression of temporally correlated activity across brain regions, but how global network properties relate to the neural dynamics of individual regions remains incompletely understood. Here, we show that the brain's network architecture is tightly linked to critical episodes of neural regularity, visible as spontaneous "complexity drops" in functional magnetic resonance imaging signals. These episodes closely explain functional connectivity strength between regions, subserve the propagation of neural activity patterns, and reflect interindividual differences in age and behavior. Furthermore, complexity drops define neural activity states that dynamically shape the connectivity strength, topological configuration, and hierarchy of brain networks and comprehensively explain known structure-function relationships within the brain. These findings delineate a principled complexity architecture of neural activity—a human "complexome" that underpins the brain's functional network organization.
https://www.science.org/doi/full/10.1126/sciadv.abq3851

SABINE GAUDZINSKI-WINDHEUSER et al with WIL ROEBROEKS – Hunting and processing of straight-tusked elephants 125.000 years ago: Implications for Neanderthal behavior
Straight-tusked elephants (Palaeoloxodon antiquus) were the largest terrestrial mammals of the Pleistocene, present in Eurasian landscapes between 800,000 and 100,000 years ago. The occasional co-occurrence of their skeletal remains with stone tools has generated rich speculation about the nature of interactions between these elephants and Pleistocene humans: Did hominins scavenge on elephants that died a natural death or maybe even hunt some individuals? Our archaeozoological study of the largest P. antiquus assemblage known, excavated from 125,000-year-old lake deposits in Germany, shows that hunting of elephants weighing up to 13 metric tons was part of the cultural repertoire of Last

Interglacial Neanderthals there, over >2000 years, many dozens of generations. The intensity and nutritional yields of these well-documented butchering activities, combined with previously reported data from this Neumark-Nord site complex, suggest that Neanderthals were less mobile and operated within social units substantially larger than commonly envisaged.
https://www.science.org/doi/full/10.1126/sciadv.add8186

MICHAEL R. WATERS et al – Late Pleistocene osseous projectile point from the Manis site, Washington—Mastodon hunting in the Pacific Northwest 13,900 years ago

Bone fragments embedded in a rib of a mastodon (Mammut americanum) from the Manis site, Washington, were digitally excavated and refit to reconstruct an object that is thin and broad, has smooth, shaped faces that converge to sharp lateral edges, and has a plano-convex cross section. These characteristics are consistent with the object being a human-made projectile point. The 13,900-year-old Manis projectile point is morphologically different from later cylindrical osseous points of the 13,000-year-old Clovis complex. The Manis point, which is made of mastodon bone, shows that people predating Clovis made and used osseous weapons to hunt megafauna in the Pacific Northwest during the Bølling-Allerød.
https://www.science.org/doi/full/10.1126/sciadv.ade9068

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