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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.

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### EAORC NEWS – Replacing the Membership Page on the Website

The new membership page is now live. If you wish to add a comment, just send me a few kind words about EAORC and I’ll include them.

You can add a comment no matter how you receive the bulletin – first-hand by email every Sunday, by copied email, by ResearchGate notification, or any way you access the bulletin.

Many thanks in anticipation, and especial thanks to those who have already responded.

Martin

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## ACADEMIA.EDU – New wrist bones of *Homo floresiensis* from Liang Bua

*In Journal of Human Evolution 64, 109-129 (2013)*

**CALEY M. ORR et al with MICHAEL J. MORWOOD – New wrist bones of *Homo floresiensis* from Liang Bua (Flores, Indonesia)**

The carpals from the *Homo floresiensis* type specimen (LB1) lack features that compose the shared, derived complex of the radial side of the wrist in Neandertals and modern humans. This paper comprises a description and three-dimensional morphometric analysis of new carpals from at least one other individual at Liang Bua attributed to *H. floresiensis*: a right capitate and two hamates. The new capitate is smaller than that of LB1 but is nearly identical in morphology. As with capitates from extant apes, species of *Australopithecus*, and LB1, the newly described capitate displays a deeply-excavated nonarticular area along its radial aspect, a scaphoid facet that extends into a J-hook articulation on the neck, and a more radially-oriented second metacarpal facet; it also lacks an enlarged palmarly-positioned trapezoid facet. Because there is no accommodation for the derived, palmarly blocky trapezoid that characterizes *Homo sapiens* and Neandertals, this individual most likely had a plesiomorphically wedge-shaped trapezoid (like LB1). Morphometric analyses confirm the close similarity of the new capitate and that of LB1, and are consistent with previous findings of an overall primitive articular geometry. In general, hamate morphology is more conserved across hominins, and the *H. floresiensis* specimens fall at the far edge of the range of variation for *H. sapiens* in a number of metrics. However, the hamate of *H. floresiensis* is exceptionally small and exhibits a relatively long, stout hamulus lacking the oval-shaped cross-section characteristic of human and Neandertal hamuli (variably present in australopiths). Documentation of a second individual with primitive carpal anatomy from Liang Bua, along with further analysis of trapezoid scaling relative to the capitate in LB1, refutes claims that the wrist of the type specimen represents a modern human with pathology. In total, the carpal anatomy of *H. floresiensis* supports the hypothesis that the lineage leading to the evolution of this species originated prior to the cladogenetic event that gave rise to modern humans and Neandertals.

[https://www.academia.edu/4300670/New\\_wrist\\_bones\\_of\\_Homo\\_floresiensis\\_from\\_Liang\\_Bua\\_Flores\\_Indonesia](https://www.academia.edu/4300670/New_wrist_bones_of_Homo_floresiensis_from_Liang_Bua_Flores_Indonesia)

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## ACADEMIA.EDU – The Case for Chimpanzee Religion

*Journal for the Study of Religion, Nature and Culture 8:1, 8-45, (2014)*

**JAMES B. HARROD – The Case for Chimpanzee Religion**

Do chimpanzees engage in religious behaviors? To date this question remains unanswered. I use methods from religious studies and anthropology of religion that demonstrate an answer in the affirmative. A comprehensive review of primatology reports reveals that chimpanzees do perform ritualized patterns of behavior in response to birth, death, consortship, and elemental natural phenomena. A structuralist analysis of these patterns shows that chimpanzees deploy similar formulaic action schemas involving recombination of syntagmatic and paradigmatic behaviors across all four of these life-situations. In the course of these performances, chimpanzees decontextualize and convert everyday communicative signals to express non-ordinary emotions of wonder and awe. The patterning of chimpanzee ritual behaviors evidences all the components of a prototypical trans-species definition of religion. These findings support hypotheses that propose religious behaviors for other species, including hominins prior to *Homo sapiens sapiens*.

[https://www.academia.edu/28323177/Harrod\\_Case\\_for\\_Chimpanzee\\_Religion\\_2014\\_copy\\_pdf](https://www.academia.edu/28323177/Harrod_Case_for_Chimpanzee_Religion_2014_copy_pdf)

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## ACADEMIA.EDU – Evolution and function of the hominin forefoot

*PNAS 115:35, 8746-8751 (2018)*

**PETER J. FERNÁNDEZ et al – Evolution and function of the hominin forefoot**

The primate foot functions as a grasping organ. As such, its bones, soft tissues, and joints evolved to maximize power and stability in a variety of grasping configurations. Humans are the obvious exception to this primate pattern, with feet that evolved to support the unique biomechanical demands of bipedal locomotion. Of key functional importance to bipedalism is the morphology of the joints at the forefoot, known as the metatarsophalangeal joints (MTPJs), but a comprehensive analysis of hominin MTPJ morphology is currently lacking. Here we present the results of a multivariate shape and Bayesian phylogenetic comparative analyses of metatarsals (MTs) from a broad selection of anthropoid primates (including fossil apes and stem catarrhines) and most of the early hominin pedal fossil record, including the oldest hominin for which good pedal remains exist, *Ardipithecus ramidus*. Results corroborate the importance of specific bony morphologies such as dorsal MT head expansion and “doming” to the evolution of terrestrial bipedalism in hominins. Further, our evolutionary models reveal that the MT1 of *Ar. ramidus* shifts away from the reconstructed optimum of our last common ancestor with apes, but not necessarily in the direction of modern humans. However, the lateral rays of *Ar. ramidus* are transformed in a more human-like direction, suggesting that they were the digits first recruited by hominins into the primary role of terrestrial propulsion. This pattern of evolutionary change is seen consistently throughout the evolution of the foot, highlighting the mosaic nature of pedal evolution and the emergence of a derived, modern hallux relatively late in human evolution.

[https://www.academia.edu/40032376/Evolution\\_and\\_function\\_of\\_the\\_hominin\\_forefoot](https://www.academia.edu/40032376/Evolution_and_function_of_the_hominin_forefoot)

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## RESEARCHGATE – Associated functional network development and language abilities in children

*In NeuroImage 242:118452 (2021)*

### TING QI, GESA SCHAADT & ANGELA D. FRIEDERICI – Associated functional network development and language abilities in children

During childhood, the brain is gradually converging to the efficient functional architecture observed in adults. How the brain's functional architecture evolves with age, particularly in young children, is however, not well understood. We examined the functional connectivity of the core language regions, in association with cortical growth and language abilities, in 175 young children in the age range of 4 to 9 years. We analyzed the brain's developmental changes using resting-state functional and T1-weighted structural magnetic resonance imaging data. The results showed increased functional connectivity strength with age between the pars triangularis of the left inferior frontal gyrus and left temporoparietal regions, (cohen's  $d = 0.54$ , CI: 0.24 - 0.84), associated with children's language abilities. Stronger functional connectivity between bilateral prefrontal and temporoparietal regions was associated with better language abilities regardless of age. In addition, the stronger functional connectivity between the left inferior frontal and temporoparietal regions was associated with larger surface area and thinner cortical thickness in these regions, which in turn was associated with superior language abilities. Thus, using functional and structural brain indices, coupled with behavioral measures, we elucidate the association of functional language network development, language ability, and cortical growth, thereby adding to our understanding of the neural basis of language acquisition in young children.

[https://www.researchgate.net/publication/353686862\\_Associated\\_functional\\_network\\_development\\_and\\_language\\_abilities\\_in\\_children](https://www.researchgate.net/publication/353686862_Associated_functional_network_development_and_language_abilities_in_children)

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## CONFERENCE ALERT – Animal Behaviour Live: Annual Online Conference 18-19 November 2021

We are thrilled to announce the Animal Behaviour Live: Annual Online Conference 2021 that will take place on the 18th and 19th of November 2021. Like the previous version, this conference will be fully broadcasted online on YouTube and is aimed at inclusively bringing together researchers in animal behaviour from all over the world. Like last year, the event will be completely FREE of charge and open to everyone.

We already have two confirmed plenary speakers: Prof. Marie E. Herberstein who studies the behavioural ecology of spiders and insects, and Prof. Rebecca Kilner who studies the relationship between social behaviour and evolution in birds and insects.

Based on our previous edition, we have implemented some changes to make ABL:AOC 2021 even more accessible. The main one is a new presentation session every day for a better coverage of global time zones. Thus, the congress will be divided in 6 sessions (3 sessions per day):

- \* Session 1: 7h-10h UTC+0
- \* Session 2: 14h-17h UTC+0
- \* Session 3: 21h-24h UTC+0

Over these different sessions, you will be able to attend 4 plenaries and 24 short presentations, as well as other little surprises. In parallel, it will also be possible to watch a series of posters during the whole congress.

The short presentations will be for 20 min (15 min talk + 5 min questions). This year, two options will be offered to the speaker: 1) Record the 15 min presentation (and we will stream the video) 2) Present live. In both cases, the 5 minutes of questions will be held live to allow for interactions with the attendees.

The posters will keep the same format as last year, namely a pre-recorded 5 min presentation. You can find a lot of different examples on our YouTube channel: <https://www.youtube.com/channel/UckAcB-k186yZmalqN9JtJw>.

For more information, please visit our website: <https://animalbehaviour.live/>

Registration is now open: You can register here:

<https://docs.google.com/forms/d/e/1FAIpQLSdnAAyMYB4goaQKGm8H8m95occ9NwnA7melBQpjcP1Sm3Orww/viewform>,  
or visit our website: <https://animalbehaviour.live/aoc.html>

Submission is now open (deadline September 15th): Submit your abstract for a short presentation or a poster here:

[https://docs.google.com/forms/d/e/1FAIpQLSd3WbewL3vMJ\\_Y4e6anhPjT4xuQx7kqYCbXcCvZ5Zxe25WTA/viewform](https://docs.google.com/forms/d/e/1FAIpQLSd3WbewL3vMJ_Y4e6anhPjT4xuQx7kqYCbXcCvZ5Zxe25WTA/viewform),  
or by visiting our website: <https://animalbehaviour.live/abstract.html>

Please keep in mind that we are a small team and that the inclusiveness and success of this event is based on the participation of our community. So please, do not hesitate to spread the word about ABL:AOC 2021 around you by forwarding this email to as many colleagues as possible, and publishing our event on social media. We look forward to seeing you all for this exciting conference.

Website: <https://animalbehaviour.live/>

Email: [contact@animalbehaviour.live](mailto:contact@animalbehaviour.live)

Twitter: @AnimalBehavLive  
Facebook: @AnimalBehaviourLive  
Natacha Rossi [n.rossi@qmul.ac.uk](mailto:n.rossi@qmul.ac.uk)

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## CONFERENCE ALERT – Joint conference co-organized by Evolang, Protolang, and Evolving Linguistics

### **Organized by Evolang, Protolang & Evolving Linguistics, 2022**

The Protolang conference series creates an interdisciplinary platform for scholarly discussion on the origins of symbolic communication distinctive of human beings.

The thematic focus of Protolang is on delineating the genetic, anatomical, neuro-cognitive, socio-cultural, semiotic, symbolic and ecological requirements for evolving (proto)language. Sign use, tools, cooperative breeding, pointing, vocalisation, intersubjectivity, bodily mimesis, planning and navigation are among many examples of such possible factors through which hominins have gained a degree of specificity that is not found in other forms of animal communication and cognition. We aim at identifying the proximate and ultimate causes as well as the mechanisms by which these requirements evolved; evaluating the methodologies, research tools and simulation techniques; and enabling extended and vigorous exchange of ideas across disciplinary borders.

We invite scholars from A(rcheology) to Z(ooology), and all disciplines in between, to contribute data, experimental and theoretical research, and look forward to welcoming you at one of our conferences!

<http://protolang.org/>

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## FUNDING ALERT – ESEB EQUAL OPPORTUNITIES INITIATIVE FUND

The European Society for Evolutionary Biology is pleased to announce the open call for proposals for activities that increase knowledge and awareness of unequal opportunities. Such proposals can include, but are not limited to, short workshops (for instance, on unconscious bias) and/or seminars (with invited speakers) at your home organization, data collection, publication activities and similar events. It must be clear from the proposal how the activity will improve our knowledge and awareness of unequal opportunities, or how the activity will improve equal opportunities directly, in the ESEB specifically, or Evolutionary Biology as a field in general. There are two calls per year, with the next upcoming deadline being the 30 Sep 2021. More information about the Equal Opportunities (EO) Initiative is available at

<https://eseb.org/prizes-funding/equal-opportunities-initiative/equal-opportunities-initiative-fund/>

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## ECLECTICS – Cartoon – Did you know some birds make their own tools?!

First Dog on the Moon

<https://www.theguardian.com/commentisfree/2021/sep/02/did-you-know-birds-use-tools-did-you-know-some-birds-make-their-own-tools>

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## NEWS

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### BREAKING SCIENCE – 400,000-Year-Old Elephant Bone Tools Unearthed in Italy

Around 400,000 years ago, pre-modern hominids — likely Neanderthals — at a Middle Pleistocene site in Italy appropriated elephant carcasses to produce an unprecedented array of bone tools — some crafted with sophisticated methods that wouldn't become common for another 100,000 years, according to new research led by University of Colorado Boulder archaeologists.

[http://feedproxy.google.com/~r/BreakingScienceNews/~3/g9ykiEN6PBO/castel-di-guido-elephant-bone-tools-10016.html?utm\\_source=feedburner&utm\\_medium=email](http://feedproxy.google.com/~r/BreakingScienceNews/~3/g9ykiEN6PBO/castel-di-guido-elephant-bone-tools-10016.html?utm_source=feedburner&utm_medium=email)

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### BREAKING SCIENCE – Orangutans Observed Using Hammer Tools to Crack Nuts

New research from the University of Tübingen demonstrates that nut-cracking can emerge in Sumatran (*Pongo abelii*) and Bornean (*Pongo pygmaeus*) orangutans through individual learning and certain types of non-copying social learning. “Nut-cracking with hammer tools has been argued to be one of the most complex tool-use behaviors observed in nonhuman animals,” said study lead author Dr. Elisa Bandini from the Department for Early Prehistory and Quaternary Ecology at the University of Tübingen.

[http://feedproxy.google.com/~r/BreakingScienceNews/~3/e9rgNOleUJo/nut-cracking-orangutans-10022.html?utm\\_source=feedburner&utm\\_medium=email](http://feedproxy.google.com/~r/BreakingScienceNews/~3/e9rgNOleUJo/nut-cracking-orangutans-10022.html?utm_source=feedburner&utm_medium=email)

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## NATURE BRIEFING – Ancient human crossroads in Arabia

Ten years ago, no dated archaeological sites more than 10,000 years old had been recorded in the three million square kilometres of the Arabian Peninsula, despite it being the gateway from Africa to Asia. New research adds to an explosion of knowledge about how early humans moved across the region, writes archaeologist Robin Dennell. Artefacts from Saudi Arabia, which correspond to five periods of occupation during brief ‘green’ windows of reduced aridity, reveal more about how humans repeatedly dispersed from Africa onto the Arabian Peninsula and perhaps onwards to Asia and Australia.

<https://nature.us17.list-manage.com/track/click?u=2c6057c528fdc6f73fa196d9d&id=5526eb0c4a&e=1db4b9a19b>

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## SAPIENS – Evolution of fatherhood

Most male mammals are not involved in raising their offspring. Anthropological observations of fatherhood can provide insight into how—and why—humans are so different.

<https://sapiens.us11.list-manage.com/track/click?u=80f6cf678900daf984bf763b7&id=06cd5b4f07&e=dc0eff6180>

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## SCIENCE DAILY – A new model for group decision-making shows how 'followers' can influence outcomes

From small committees to national elections, group decision-making can be complicated -- and it may not always settle on the best choice. That's partly because some members of the group do research on their own, and others take their cues from the people around them. A new mathematical framework predicts that decision-making groups have a critical threshold of people who get their information from others. Below that threshold, the group chooses the high-quality outcome. Above it, the group can end up choosing the better or worse option.

<https://www.sciencedaily.com/releases/2021/08/210826170240.htm>

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## SCIENCE DAILY – Record number of ancient elephant bone tools discovered

Humans living about 400,000 years ago produced an unprecedented diversity of elephant bone tools, including pointed tools for carving meat and wedge-shaped tools for cracking open large femurs and other long bones.

<https://www.sciencedaily.com/releases/2021/08/210830144755.htm>

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## SCIENCE DAILY – Computational models shed new light on the evolution of prehistoric languages

A new linguistic study sheds light on the nature of languages spoken before the written period, using computational modeling to reconstruct the grammar of the 6500-7000 year-old Proto-Indo-European language.

<https://www.sciencedaily.com/releases/2021/08/210831131354.htm>

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## SCIENCE DAILY – Prehistoric climate change repeatedly channelled human migrations across Arabia

Researchers have discovered archaeological sites in the Nefud Desert of Saudi Arabia associated with the remains of ancient lakes formed when periods of increased rainfall transformed the region into grassland. The researchers found that early humans spread into the region during each 'Green Arabia' phase, each bringing a different kind of material culture. The new research establishes northern Arabia as a crucial migration route and a crossroads for early humans.

<https://www.sciencedaily.com/releases/2021/09/210901113726.htm>

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## SCIENCE DAILY – Does our mind's eye match real life? Differences in how we perceive images

A new study investigated how we visualize things that we have already seen, discovering that many adults are resistant to imagining their own vision as if it were a flat image -- seeing it in its fully processed, knowledge-laden form instead.

<https://www.sciencedaily.com/releases/2021/09/210902125031.htm>

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## SCIENCE DAILY – Many fastest-evolving human genes linked to changes in brain development

More than 3,000 regions in the human genome are very different in people from in any other mammals, including our closest primate relatives. Now, a study has evidence to confirm that nearly half of these so-called human accelerated regions (HARs) have played an important role in rewriting the course of human brain development, offering important insight into the genetic basis of human evolution.

<https://www.sciencedaily.com/releases/2021/09/210902124922.htm>

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## SCIENCE DAILY – New evidence that America's first civilization was made up of 'sophisticated' engineers

New evidence discovered at Poverty Point in northern Louisiana by anthropologists challenges previous beliefs about how pre-modern hunter-gatherers behaved.

<https://www.sciencedaily.com/releases/2021/09/210902101122.htm>

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## SCIENCE DAILY – Gut and heart signals affect how we see ourselves

Research has discovered that the strength of the connection between our brain and internal organs is linked to how we feel about our appearance. The study has investigated the association between body image and the brain's processing of internal signals that occur unconsciously. It found that adults whose brains are less efficient at detecting these internal messages are more likely to experience body shame and weight preoccupation.

<https://www.sciencedaily.com/releases/2021/09/210903085908.htm>

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## SCIENCE DAILY – Epilepsy brain implant does not transform patients' sense of self or personality

A next-generation brain implant currently in clinical use for treating refractory epilepsy -- to help prevent symptoms including seizures -- does not induce changes to patients' personalities or self-perceptions, a new study of patient experiences shows.

<https://www.sciencedaily.com/releases/2021/09/210902191613.htm>

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## SCIENCE NEWS – Lush wetlands lured waves of early humans out of Africa, stone tools suggest

If you know what to look for in dappled satellite images of desert—slight depressions, subtle color shifts—the dried-up ghosts of prehistoric lakes pop out against the sand fields of the Arabian Peninsula. Eight years ago, one ancient multihued lake in the Nefud Desert caught the eye of researchers. When scientists excavated its ancient shorelines, a new study reports, they found thousands of stone tools—and evidence that multiple waves of *Homo sapiens* and their relatives have been migrating across the Arabian interior for at least the past 400,000 years.

<https://www.science.org/content/article/lush-wetlands-lured-waves-early-humans-out-africa-stone-tools-suggest>

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## SCIENCE NEWS – Wild cockatoos make their own cutlery sets

Goffin's cockatoos (*Cacatua goffiniana*) are so smart they've been compared to 3-year-old humans. But what 3-year-old has made their own cutlery set? Scientists have observed wild cockatoos, members of the parrot family, crafting the equivalent of a crowbar, an ice pick, and a spoon to pry open one of their favorite fruits. This is the first time any bird species has been seen creating and using a set of tools in a specific order—a cognitively challenging behavior previously known only in humans, chimpanzees, and capuchin monkeys.

<https://www.science.org/content/article/wild-cockatoos-make-their-own-cutlery-sets>

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## SCIENCE NEWS – Does your dog know what you're thinking?

New study adds evidence for canine "theory of mind".

<https://www.science.org/content/article/does-your-dog-know-what-you-re-thinking>

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## SOCIETY FOR SCIENCE – Stone Age humans or their relatives occasionally trekked through a green Arabia

Hominids periodically inhabited ancient Arabia starting around 400,000 years ago when lakes temporarily formed as a result of monsoons, a study finds.

<http://click.societyforscience->

[email.com/?qs=ea5e13e497df06375aa487f6b6281384d7c78b18c44fd42761ed3013a4a0ad6e64d5ede5a7375fd901e674205ef26692b769bc081e41dc60](mailto:email.com/?qs=ea5e13e497df06375aa487f6b6281384d7c78b18c44fd42761ed3013a4a0ad6e64d5ede5a7375fd901e674205ef26692b769bc081e41dc60)

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## PUBLICATIONS

### Current Biology

#### PAPERS

#### MARK O'HARA et al with ALICE M.I. AUERSPERG – Wild Goffin's cockatoos flexibly manufacture and use tool sets

The use of different tools to achieve a single goal is considered unique to human and primate technology. To unravel the origins of such complex behaviors, it is crucial to investigate tool use that is not necessary for a species' survival. These cases can be assumed to have emerged innovatively and be applied flexibly, thus emphasizing creativity and intelligence. However, it is intrinsically challenging to record tool innovations in natural settings that do not occur species-wide. Here, we report the discovery of two distinct tool manufacture methods and the use of tool sets in wild Goffin's cockatoos (*Cacatua goffiniana*). Up to three types of wooden tools, differing in their physical properties and each serving a different function, were manufactured and employed to extract embedded seed matter of *Cerbera manghas*. While Goffin's cockatoos do not depend on tool-obtained resources, repeated observations of two temporarily captive wild birds and indications from free-ranging individuals suggest this behavior occurs in the wild, albeit not species-wide. The use of a tool set in a non-primate implies convergent evolution of advanced tool use. Furthermore, these observations demonstrate how a species without hands can achieve dexterity in a high-precision task. The presence of flexible use and manufacture of tool sets in animals distantly related to humans significantly diversifies the phylogenetic landscape of technology and opens multiple avenues for future research.

[https://www.cell.com/current-biology/fulltext/S0960-9822\(21\)01111-8](https://www.cell.com/current-biology/fulltext/S0960-9822(21)01111-8)

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### Mind & Language

#### PAPERS

#### KATHERINE RITCHIE – Essentializing inferences

Predicate nominals (e.g., "is a female") seem to label or categorize their subjects, while their adjectival correlates (e.g., "is female") merely attribute a property. Predicate nominals also elicit essentializing inferential judgments about inductive potential and stable explanatory membership. Data from psychology and semantics support that this distinction is robust and productive. I argue that while the difference between predicate nominals and predicate adjectives is elided by standard semantic theories, it ought not be. I then develop and defend a psychologically motivated semantic account on which predicate nominals attribute kind membership and trigger a presupposition that underpins our essentialist judgments.

<https://onlinelibrary.wiley.com/doi/abs/10.1111/mila.12360>

**QIANRU TIFFANY YANG, KATHRYN A. LEECH & PAUL L. HARRIS – Missing persons: Young children's talk about absent members of their social network**

Little is known about young children's ability to talk about absent members of their social network. We analyzed the speech of four children from 2 to 5 years. References to absent caregivers were relatively frequent, even when children were 2 years old. Such references were often generated spontaneously rather than being repetitions of a name produced by the child's interlocutor. Children's comments about absent family members occasionally expressed concern about contact with them but were predominantly neutral or reflective. By implication, children can maintain a representation of the various members of their social network from an early age, despite separation.

<https://onlinelibrary.wiley.com/doi/abs/10.1111/mila.12379>

**DANIEL WILLIAMS – Signalling, commitment, and strategic absurdities**

Why do well-functioning psychological systems sometimes give rise to absurd beliefs that are radically misaligned with reality? Drawing on signalling theory, I develop and explore the hypothesis that groups often embrace beliefs that are viewed as absurd by outsiders as a means of signalling ingroup commitment. I clarify the game-theoretic and psychological underpinnings of this hypothesis, I contrast it with similar proposals about the signalling functions of beliefs, and I motivate several psychological and sociological predictions that could be used to distinguish it from alternative explanations of irrational group beliefs.

<https://onlinelibrary.wiley.com/doi/full/10.1111/mila.12392>

**BART GEURTS – First saying, then believing: The pragmatic roots of folk psychology**

Linguistic research has revealed several pathways of language change that may guide our understanding of the evolution of mental-state attribution. In particular, it turns out that, in many languages, quotative verbs have been exapted for attributing a variety of mental states, including beliefs and intentions. In such languages, the literal translation of, "Betty said: 'There will be war'", may be used not only to quote Betty's words, but also to convey that she thought or intended there to be war. This paper presents a model of the pragmatic shifts underlying this pathway, and proposes an evolutionary trajectory from quotation to the public practice of attributing beliefs and intentions, and thence to implicit belief/intention attribution.

*{Hmmm. Not sure about this one. When I say, 'Betty said, "there will be a war"', I am implicating myself as the listener; I don't think 'Betty thought, "there will be a war"' has the same implication.}*

<https://onlinelibrary.wiley.com/doi/full/10.1111/mila.12345>

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**Nature**

**ARTICLES**

**ROBIN DENNELL – Traces of a series of human dispersals through Arabia**

The Arabian Peninsula was a key migratory crossroads when humans and our hominin relatives began to leave Africa. Archaeological evidence and climate reconstructions reveal episodes when early humans inhabited Arabia.

<https://www.nature.com/articles/d41586-021-02321-z>

**PAPERS**

**HUW S. GROUCUTT et al with MICHAEL D. PETRAGLIA – Multiple hominin dispersals into Southwest Asia over the past 400,000 years**

Pleistocene hominin dispersals out of, and back into, Africa necessarily involved traversing the diverse and often challenging environments of Southwest Asia. Archaeological and palaeontological records from the Levantine woodland zone document major biological and cultural shifts, such as alternating occupations by Homo sapiens and Neanderthals. However, Late Quaternary cultural, biological and environmental records from the vast arid zone that constitutes most of Southwest Asia remain scarce, limiting regional-scale insights into changes in hominin demography and behaviour. Here we report a series of dated palaeolake sequences, associated with stone tool assemblages and vertebrate fossils, from the Khall Amayshan 4 and Jubba basins in the Nefud Desert. These findings, including the oldest dated hominin occupations in Arabia, reveal at least five hominin expansions into the Arabian interior, coinciding with brief 'green' windows of reduced aridity approximately 400, 300, 200, 130–75 and 55 thousand years ago. Each occupation phase is characterized by a distinct form of material culture, indicating colonization by diverse hominin groups, and a lack of long-term Southwest Asian population continuity. Within a general pattern of African and Eurasian hominin groups being separated by Pleistocene Saharo-Arabian aridity, our findings reveal the tempo and character of climatically modulated windows for dispersal and admixture.

<https://www.nature.com/articles/s41586-021-03863-y>

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**Nature Ecology & Evolution**

**ARTICLES**

**SILVIA M. BELLO – Boning up on Neanderthal art**

A decorated bone object adds to the mounting evidence that Neanderthals were capable of advanced behavioural complexity and could produce artistic representations.



<https://www.nature.com/articles/s41559-021-01506-z>

## PAPERS

### **DIRK LEDER et al – A 51,000-year-old engraved bone reveals Neanderthals' capacity for symbolic behaviour**

While there is substantial evidence for art and symbolic behaviour in early Homo sapiens across Africa and Eurasia, similar evidence connected to Neanderthals is sparse and often contested in scientific debates. Each new discovery is thus crucial for our understanding of Neanderthals' cognitive capacity. Here we report on the discovery of an at least 51,000-year-old engraved giant deer phalanx found at the former cave entrance of Einhornhöhle, northern Germany. The find comes from an apparent Middle Palaeolithic context that is linked to Neanderthals. The engraved bone demonstrates that conceptual imagination, as a prerequisite to compose individual lines into a coherent design, was present in Neanderthals. Therefore, Neanderthal's awareness of symbolic meaning is very likely. Our findings show that Neanderthals were capable of creating symbolic expressions before H. sapiens arrived in Central Europe.

<https://www.nature.com/articles/s41559-021-01487-z>

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## Nature Scientific Reports

## PAPERS

### **ROSALIA GALLOTTI et al – First high resolution chronostratigraphy for the early North African Acheulean at Casablanca (Morocco)**

The onset of the Acheulean, marked by the emergence of large cutting tools (LCTs), is considered a major technological advance in the Early Stone Age and a key turning point in human evolution. The Acheulean originated in East Africa at ~ 1.8–1.6 Ma and is reported in South Africa between ~ 1.6 and > 1.0 Ma. The timing of its appearance and development in North Africa have been poorly known due to the near-absence of well-dated sites in reliable contexts. The ~ 1 Ma stone artefacts of Tighennif (Algeria) and Thomas Quarry I-Unit L (ThI-L) at Casablanca (Morocco) are thus far regarded as documenting the oldest Acheulean in North Africa but whatever the precision of their stratigraphical position, both deserve a better chronology. Here we provide a chronology for ThI-L, based on new magnetostratigraphic and geochemical data. Added to the existing lithostratigraphy of the Casablanca sequence, these results provide the first robust chronostratigraphic framework for the early North African Acheulean and firmly establish its emergence in this part of the continent back at least to ~ 1.3 Ma.

<https://www.nature.com/articles/s41598-021-94695-3>

### **JAMES FLAMINO et al – Creation, evolution, and dissolution of social groups**

Understanding why people join, stay, or leave social groups is a central question in the social sciences, including computational social systems, while modeling these processes is a challenge in complex networks. Yet, the current empirical studies rarely focus on group dynamics for lack of data relating opinions to group membership. In the NetSense data, we find hundreds of face-to-face groups whose members make thousands of changes of memberships and opinions. We also observe two trends: opinion homogeneity grows over time, and individuals holding unpopular opinions frequently change groups. These observations and data provide us with the basis on which we model the underlying dynamics of human behavior. We formally define the utility that members gain from ingroup interactions as a function of the levels of homophily of opinions of group members with opinions of a given individual in this group. We demonstrate that so-defined utility applied to our empirical data increases after each observed change. We then introduce an analytical model and show that it accurately recreates the trends observed in the NetSense data.

<https://www.nature.com/articles/s41598-021-96805-7>

### **AMOS KORMAN & ROBIN VACUS – On the role of hypocrisy in escaping the tragedy of the commons**

We study the emergence of cooperation in large spatial public goods games. Without employing severe social-pressure against “defectors”, or alternatively, significantly rewarding “cooperators”, theoretical models typically predict a system collapse in a way that is reminiscent of the “tragedy-of-the-commons” metaphor. Drawing on a dynamic network model, this paper demonstrates how cooperation can emerge when the social-pressure is mild. This is achieved with the aid of an additional behavior called “hypocrisy”, which appears to be cooperative from the external observer's perspective but in fact hardly contributes to the social-welfare. Our model assumes that social-pressure is induced over both defectors and hypocritical players, though the extent of which may differ. Our main result indicates that the emergence of cooperation highly depends on the extent of social-pressure applied against hypocritical players. Setting it to be at some intermediate range below the one employed against defectors allows a system composed almost exclusively of defectors to transform into a fully cooperative one quickly. Conversely, when the social-pressure against hypocritical players is either too low or too high, the system remains locked in a degenerate configuration.

<https://www.nature.com/articles/s41598-021-97001-3>

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## New Scientist

### NEWS

#### **7200-year-old DNA suggests Denisovans bred with humans on Sulawesi**

For the first time, DNA has been obtained from the bones of a Stone Age person who lived on the Indonesian island of Sulawesi. The genetic information sheds light on the prehistory of the South-East Asian islands – including what happened when our species, *Homo sapiens*, first reached the area.

<https://www.newscientist.com/article/2288031-7200-year-old-dna-suggests-denisovans-bred-with-humans-on-sulawesi/#ixzz75KjDUjH1>

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## NPJ Schizophrenia

### PAPERS

#### **LENA PALANIYAPPAN – More than a biomarker: could language be a biosocial marker of psychosis?**

Automated extraction of quantitative linguistic features has the potential to predict objectively the onset and progression of psychosis. These linguistic variables are often considered to be biomarkers, with a large emphasis placed on the pathological aberrations in the biological processes that underwrite the faculty of language in psychosis. This perspective offers a reminder that human language is primarily a social device that is biologically implemented. As such, linguistic aberrations in patients with psychosis reflect both social and biological processes affecting an individual. Failure to consider the sociolinguistic aspects of NLP measures will limit their usefulness as digital tools in clinical settings. In the context of psychosis, considering language as a biosocial marker could lead to less biased and more accessible tools for patient-specific predictions in the clinic.

<https://www.nature.com/articles/s41537-021-00172-1>

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## PeerJ

### PAPERS

#### **JUDY CHE-CASTALDO et al with KRISTIN HAVERCAMP – Comparative survival analyses among captive chimpanzees (*Pan troglodytes*) in America and Japan**

Detailed, long-term datasets on the life histories of long-lived species such as great apes are necessary to understand their survival patterns but are relatively rare. Such information requires prolonged and consistent record-keeping over many generations, so for chimpanzees (*Pan troglodytes*), this equates to many decades of input. As life history variables can be altered by differences in environmental influences (whether natural or artificial), there is substantial value to being able to compare across populations. Here, we present the first comparative analysis of life history data for two ex situ chimpanzee populations residing in North America (1975–2020; n = 730) and Japan (1980–2020; n = 660). Overall, survival patterns were similar between regions, and the median life expectancy from birth is estimated at 35.7 (95% CI = [32.4–40.0]) years for females and 30.1 (27.3–34.3) years for males across both populations. Females who survive to their first birthday are estimated to survive 42.4 (40.0–46.3) years and males 35.5 (32.6–38.0) years. We found that birth type (wild-born or captive-born) did not influence survival patterns in either population, but there were differential effects of sex on longevity. In the America population, males had higher mortality rates than females, whereas in the Japan population we found no differences between the sexes. First year mortality did not differ between populations for males (18–20%), but for females it was lower in America (15%) compared to Japan (25%). Survival patterns of chimpanzees in the present study will be useful for future investigation into potential causes of regional differences and cross-species comparisons.

<https://peerj.com/articles/11913/>

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## PNAS

### PAPERS

#### **NIELS J. VAN DOESUM et al – Social mindfulness and prosociality vary across the globe**

Humans are social animals, but not everyone will be mindful of others to the same extent. Individual differences have been found, but would social mindfulness also be shaped by one's location in the world? Expecting cross-national differences to exist, we examined if and how social mindfulness differs across countries. At little to no material cost, social mindfulness typically entails small acts of attention or kindness. Even though fairly common, such low-cost cooperation has received little empirical attention. Measuring social mindfulness across 31 samples from industrialized countries and regions (n = 8,354), we found considerable variation. Among selected country-level variables, greater social mindfulness was most strongly associated with countries' better general performance on environmental protection. Together, our findings contribute to the literature on prosociality by targeting the kind of everyday cooperation that is more focused on communicating benevolence than on providing material benefits.

<https://www.pnas.org/content/118/35/e2023846118.abstract?etoc>

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#### **ADAM L. SHOULDER et al – Monkeys exhibit a paradoxical decrease in performance in high-stakes scenarios**

In high-stakes situations, people sometimes exhibit a frustrating phenomenon known as “choking under pressure.” Usually, we perform better when the potential payoff is larger. However, once potential rewards get too high, performance

paradoxically decreases—we “choke.” Why do we choke under pressure? An animal model of choking would facilitate the investigation of its neural basis. However, it could be that choking is a uniquely human occurrence. To determine whether animals also choke, we trained three rhesus monkeys to perform a difficult reaching task in which they knew in advance the amount of reward to be given upon successful completion. Like humans, monkeys performed worse when potential rewards were exceptionally valuable. Failures that occurred at the highest level of reward were due to overly cautious reaching, in line with the psychological theory that explicit monitoring of behavior leads to choking. Our results demonstrate that choking under pressure is not unique to humans, and thus, its neural basis might be conserved across species.

<https://www.pnas.org/content/118/35/e2109643118.abstract?etoc>

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## Science Advances

### PAPERS

#### **JENNIFER ALLEN et al – Scaling up fact-checking using the wisdom of crowds**

Professional fact-checking, a prominent approach to combating misinformation, does not scale easily. Furthermore, some distrust fact-checkers because of alleged liberal bias. We explore a solution to these problems: using politically balanced groups of laypeople to identify misinformation at scale. Examining 207 news articles flagged for fact-checking by Facebook algorithms, we compare accuracy ratings of three professional fact-checkers who researched each article to those of 1128 Americans from Amazon Mechanical Turk who rated each article’s headline and lede. The average ratings of small, politically balanced crowds of laypeople (i) correlate with the average fact-checker ratings as well as the fact-checkers’ ratings correlate with each other and (ii) predict whether the majority of fact-checkers rated a headline as “true” with high accuracy. Furthermore, cognitive reflection, political knowledge, and Democratic Party preference are positively related to agreement with fact-checkers, and identifying each headline’s publisher leads to a small increase in agreement with fact-checkers.

<https://www.science.org/doi/full/10.1126/sciadv.abf4393>

#### **CHAOQUN NI et al – The gendered nature of authorship**

Authorship is the primary form of symbolic capital in science. Despite this, authorship is rife with injustice and malpractice, with women expressing concerns regarding the fair attribution of credit. Based on an international survey, we examine gendered practices in authorship communication, disagreement, and fairness. Our results demonstrate that women were more likely to experience authorship disagreements and experience them more often. Their contributions to research papers were more often devalued by both men and women. Women were more likely to discuss authorship with coauthors at the beginning of the project, whereas men were more likely to determine authorship unilaterally at the end. Women perceived that they received less credit than deserved, while men reported the opposite. This devaluation of women’s work in science creates cumulative disadvantages in scientific careers. Open discussion regarding power dynamics related to gender is necessary to develop more equitable distribution of credit for scientific labor.

<https://www.science.org/doi/full/10.1126/sciadv.abe4639>

#### **MICHAEL V. LOMBARDO et al – Atypical genomic cortical patterning in autism with poor early language outcome**

Cortical regionalization develops via genomic patterning along anterior-posterior (A-P) and dorsal-ventral (D-V) gradients. Here, we find that normative A-P and D-V genomic patterning of cortical surface area (SA) and thickness (CT), present in typically developing and autistic toddlers with good early language outcome, is absent in autistic toddlers with poor early language outcome. Autistic toddlers with poor early language outcome are instead specifically characterized by a secondary and independent genomic patterning effect on CT. Genes involved in these effects can be traced back to midgestational A-P and D-V gene expression gradients and different prenatal cell types (e.g., progenitor cells and excitatory neurons), are functionally important for vocal learning and human-specific evolution, and are prominent in prenatal coexpression networks enriched for high-penetrance autism risk genes. Autism with poor early language outcome may be explained by atypical genomic cortical patterning starting in prenatal development, which may detrimentally affect later regional functional specialization and circuit formation.

<https://www.science.org/doi/full/10.1126/sciadv.abh1663>

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## Scientific American

### ARTICLES

#### **KATE WONG – How Scientists Discovered the Staggering Complexity of Human Evolution**

Darwin would be delighted by the story his successors have revealed

<https://www.scientificamerican.com/article/how-scientists-discovered-the-staggering-complexity-of-human-evolution/>

#### **BRIAN HARE & VANESSA WOODS – Humans Evolved to Be Friendly**

Cooperation made Homo sapiens the last human species standing

<https://www.scientificamerican.com/article/humans-evolved-to-be-friendly/>

#### **JOHN HAWKS – Humans Are Still Evolving**

For 30,000 years our species has been changing remarkably quickly. And we're not done yet

<https://www.scientificamerican.com/article/humans-are-still-evolving/>

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## Trends in Cognitive Sciences

### PAPERS

#### **JENS KRAUSE et al – Collective rule-breaking**

Rules form an important part of our everyday lives. Here we explore the role of social influence in rule-breaking. In particular, we identify some of the cognitive mechanisms underlying rule-breaking and propose approaches for how they can be scaled up to the level of groups or crowds to better understand the emergence of collective rule-breaking. Social contagion plays an important role in such processes and different dynamics such as linear or rapid nonlinear spreading can have important consequences for interventions in rule-breaking. A closer integration of cognitive psychology, microsociology and mathematical modelling will be key to a deeper understanding of collective rule-breaking to turn this field of research into a predictive science.

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(21\)00206-0](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(21)00206-0)

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