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  Complex stone tools in China may re-write our species’ ancient history .................................................................................... 7

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Humpback whale songs undergo a ‘cultural revolution’ every few years

Like any fad, the songs of humpback whales don’t stick around for long. Every few years, males swap their chorus of squeaks and groans for a brand new one. Now, scientists have figured out how these “cultural revolutions” take place.

SOCIETY FOR SCIENCE – How Twitter bots get people to spread fake news
Automated bot accounts on Twitter help spread misinformation by strategically encouraging people to make it go viral. {The strategies used by bots (and especially twitterbots) are relatively easy to spot; it’s about time we started to learn how to immunise ourselves against them.}

SCIAM NEWS – Do We Actually Experience the Flow of Time?

SCIENCE DAILY – The 'Swiss Army knife of prehistoric tools' found, suggests homegrown Asian technology
A study by an international team of researchers have determined that carved stone tools, also known as Levallois cores, were used in Asia 80,000 to 170,000 years ago. With the find -- and absent human fossils linking the tools to migrating populations -- researchers believe people in Asia developed the technology independently, evidence of similar sets of skills evolving throughout different parts of the ancient world. https://www.sciencedaily.com/releases/2018/11/181119160256.htm

SCIENCE DAILY – To predict the future, the brain uses two clocks
One type of anticipatory timing relies on memories from past experiences. The other on rhythm. Both are critical to our ability to navigate and enjoy the world, and scientists have found they are handled in two different parts of the brain. https://www.sciencedaily.com/releases/2018/11/181120151851.htm

SCIENCE DAILY – Among birds-of-paradise, good looks are not enough to win a mate
Male birds-of-paradise are justly world famous for their wildly extravagant feather ornaments, complex calls, and shape-shifting dance moves -- all evolved to attract a mate. New research suggests for the first time that female preferences drive the evolution of physical and behavioral trait combinations that may also be tied to where the male does his courting: on the ground or up in the trees. https://www.sciencedaily.com/releases/2018/11/181120151841.htm

SCIENCE DAILY – Dogs know when they don't know
Researchers have shown that dogs possess some 'metacognitive' abilities -- specifically, they are aware of when they do not have enough information to solve a problem and will actively seek more information. The researchers created a test in which dogs had to find a reward behind one of two fences. They found that the dogs looked for additional information significantly more often when they had not seen where the reward was hidden. https://www.sciencedaily.com/releases/2018/11/181120125745.htm

SCIENCE DAILY – How female hyaenases came to dominate males
In most animal societies, members of one sex dominate those of the other. Is this, as widely believed, an inevitable consequence of a disparity in strength and ferocity between males and females? Not necessarily. A new study on wild
spotlight hyenas shows that in this social carnivore, females dominate males because they can rely on greater social support than males, not because they are stronger or more competitive in any other individual attribute.


**SCIENCE DAILY – Evolution: South Africa's hominin record is a fair-weather friend**
The fossil record of early hominins in South Africa is biased towards periods of drier climate, suggests a study of cave deposits. This finding suggests there are gaps in the fossil record, potentially obscuring evolutionary patterns and affecting our understanding of both the habitats and dietary behaviors of early hominins in this region. South Africa's highest concentration of early hominin fossils comes from the 'Cradle of Humankind' caves northwest of Johannesburg.


**SCIENCE DAILY – Typically human: Babies recognize nested structures similar to our grammar**
At a mere five months of age, babies seemingly have the ability to recognize very complex grammatical structures. That is what a research team has now shown.


**SCIENCE DAILY – Human ancestors not to blame for ancient mammal extinctions in Africa**
New research disputes a long-held view that our earliest tool-bearing ancestors contributed to the demise of large mammals in Africa over the last several million years. Instead, the researchers argue that long-term environmental change drove the extinctions, mainly in the form of grassland expansion likely caused by falling atmospheric carbon dioxide (CO2) levels.


**NATURE BRIEFING – Automated peer reviewers chip in**
A handful of academic publishers are piloting the use of artificial-intelligence tools to do everything from selecting reviewers to checking statistics and summarizing a paper’s findings. The goal is to help out the fraction of scientists who take on the reviewing burden and boost the quality of published papers.

https://nature.us17.list-manage.com/track/click?u=2c6057c528fdc6f73fa196d9d&id=4b00152b48&e=1db4b9a19b

**NATURE BRIEFING – Why two heads are better than one**
Cognitive scientists Uta Frith and Chris Frith take an entertaining journey through the science of decision-making, illustrated with examples from their own 50-year marriage. They explore why people tend make better decisions together than they do alone, why diversity helps and why arguments are not such a bad thing.

https://nature.us17.list-manage.com/track/click?u=2c6057c528fdc6f73fa196d9d&id=998000f46b&e=1db4b9a19b

**ACADEMIA.EDU – JOHANN-MATTIS et al – common research avenues for biology and linguistics**

**JOHANN-MATTIS et al – Unity and disunity in evolutionary sciences: process-based analogies open common research avenues for biology and linguistics**
For a long time biologists and linguists have been noticing surprising similarities between the evolution of life forms and languages. Most of the proposed analogies have been rejected. Some, however, have persisted, and some even turned out to be fruitful, inspiring the transfer of methods and models between biology and linguistics up to today. Most proposed analogies were based on a comparison of the research objects rather than the processes that shaped their evolution. Focusing on process-based analogies, however, has the advantage of minimizing the risk of overstating similarities, while at the same time reflecting the common strategy to use processes to explain the evolution of complexity in both fields. Apart from new analogies between evolutionary processes, we also identified processes which are specific to either biology or linguistics. This shows that general evolution cannot be studied from within one discipline alone. In order to get a full picture of evolution, biologists and linguists need to complement their studies, trying to identify cross-disciplinary and discipline-specific evolutionary processes. The fact that we found many process-based analogies favoring transfer from biology to linguistics further shows that certain biological methods and models have a broader scope than previously recognized. This opens fruitful paths for collaboration between the two disciplines.

https://www.academia.edu/27951396/Unity_and_disunity_in_evolutionary_sciences_process-based_analogies_open_common_research_avenues_for_biology_and_linguistics

**ACADEMIA.EDU – MICHAEL PLEYER & STEFAN HARTMANN – A Matter of Perspective**

**MICHAEL PLEYER & STEFAN HARTMANN – A Matter of Perspective: Viewpoint phenomena in the evolution of grammar**
Language provides a variety of means to conceptualize objects, states, events, and abstract entities in different ways and from different perspectives. These so-called ‘construal operations’ play a key role in Cognitive Linguistics. With the example of construal operations pertaining to viewpoint and perspectivation, this paper aims to demonstrate how different theoretical and methodological approaches can be combined to yield a better understanding of how languages systematically
make use of general cognitive capacities of perspective-taking, -setting, and sharing. These insights can in turn shed light on the evolution of specific grammatical phenomena as well as on the evolution of language more generally.


PUBLICATIONS

American Journal of Physical Anthropology

PAPERS

GAËL BECAM & TONY CHEVALIER – Neandertal features of the deciduous and permanent teeth from Portel-Ouest Cave (Ariège, France)

We describe 14 unpublished and nine published teeth from the Mousterian level of Portel-Ouest (Ariège, France), dated to 44 ka. In a comparative context, we explore the taxonomical affinities of those teeth with Neandertals and modern humans which are both known to exist at that time. We further make some paleobiological inferences about this human group. This morphological study confirms that the remains from Portel-Ouest are Neandertals, associated with a Mousterian complex. Furthermore, we found the expected pattern of mortality and stress for a Neandertal group, that is, various age categories and developmental defects (nonexclusive to Neandertals), while adults are underrepresented and juveniles are overrepresented. Further excavations would contribute finding new remains and maybe complete this demographic profile.


MARCO MILELLA et al – Population density and developmental stress in the Neolithic: A diachronic study of dental fluctuating asymmetry at Çatalhöyük (Turkey, 7,100–5,950 BC)

The transition from foraging to farming is usually associated with unprecedented population densities coupled with an increase in fertility and population growth. However, little is known about the biological effects of such demographic changes during the Neolithic. In the present work, we test the relationship between diachronic changes in population size, relative exposure to developmental stressors, and patterns of dental fluctuating asymmetry in the Neolithic population of Çatalhöyük (Turkey, 7,100–5,950 cal BC).

Though preliminary, our data reflect the presence of developmental stressors throughout the occupation of the site, albeit with a slight improvement in living conditions during the latest periods of occupation. At the same time, these data confirm the key role of diet as buffer against the detrimental effects of fluctuating demographic pressures on the biology of prehistoric human populations.


NICOLE TORRES-TAMAYO et al – The torso integration hypothesis revisited in Homo sapiens: Contributions to the understanding of hominin body shape evolution

Lower thoracic widths and curvatures track upper pelvic widths and iliac blades curvatures in hominins and other primates (torso integration hypothesis). However, recent studies suggest that sexual dimorphism could challenge this assumption in Homo sapiens. We test the torso integration hypothesis in two modern human populations, both considering and excluding the effect of sexual dimorphism. We further assess covariation patterns between different thoracic and pelvic levels, and we explore the allometric effects on torso shape variation.

This is the first study testing statistically the torso integration hypothesis in anatomically connected torsos. We propose a new and more complex torso integration model in H. sapiens with sexual dimorphism leading to different thoracic and pelvic widths and curvatures. These findings have important implications in hominin body shape reconstructions.


Cognitive Semiotics

PAPERS

ANDREW FEENEY – Saussurian biolinguistics? Bouchard’s offline brain systems and Sign Theory of Language

This article examines Bouchard’s (e.g. Bouchard, D. 2010. From neurons to signs. In A. D. M. Smith, M. Schouwstra, B. de Boer & K. Smith (ed.), Proceedings of the 8th International conference on the evolution of language, 42–49. Singapore: World Scientific; Bouchard, D. 2013. The nature and origin of language. Oxford: Oxford University Press; Bouchard, D. 2015. Brain readiness and the nature of language. Frontiers in Psychology 6.) discussion of the nature of language as ‘Saussurian Biolinguistics.’ A fundamental assumption of Bouchard, that of the existence of the Saussurian sign as a psychologically real entity in language, is disputed and an alternative understanding of the semiotic function of language is stressed. The consequences of Bouchard’s adoption of double interface signs for the relation of language to thought are also discussed and it is argued that such an approach leads inexorably to a form of linguistic relativity, and that positing a language independent ‘mentalese’ resolves this problem. The proposed model of language evolution, in which Bouchard is sceptical of protolanguage, is challenged, as are his claims regarding the properties of the language faculty. Bouchard presents a theory of the cognitive underpinning of language, ‘Offline Brain Systems,’ which is inadequate in accounting for the unique properties of human cognition. Instead, a more insightful and explanatorily comprehensive theory is presented here: dual-processing and the Representational Hypothesis.
Coordinated behaviors are the hallmark of animal societies. General mechanisms for the emergence of social group dynamics are still unknown. New research suggests that a vocal feedback loop explains the appearance of coordinated vocal exchanges in large groups of meerkats.

Coordination is a fundamental aspect of social living, underlying processes ranging from the maintenance of group cohesion to the avoidance of competition. Coordination can manifest as synchronization, where individuals perform the same action at the same time but can also take the form of anti-synchronization or turn-taking. Turn-taking has mainly been studied in the context of the development of language due to the fact that it is a universal feature in all languages and has been found to appear early in infancy. Recently, turn-taking has received attention in animal communication research as a potential foundation on which social communication was formed. In this study, we describe turn-taking in group-wide vocal interactions of meerkats (Suricata suricatta) during low-conflict sunning behavior, which is accompanied by the production of specific “sunning calls.” We show that sunning-call production is socially stimulated and that at the group level, meerkats avoid overlap, thus fulfilling a key principle of turn-taking. Through observational data and playback experiments, we show that these group-level patterns arise from two individual-level rules: call inhibition over short timescales, which prevents mutual interference, and call excitation over longer timescales, which stimulates further group calling. These simple rules suggest that hierarchy formation and turn allocation are not required for achieving group-wide coordination of communication. We also suggest that the potential bonding function of turn-taking shown in humans might have similar effects in animal interactions.

Anthropologists have a long history of applying concepts from evolutionary biology to cultural evolution. Evolutionary biologists, however, have been slow to turn to anthropology for insights about evolution. Recently, evolutionary biology has been engaged in a debate over the need to revise evolutionary theory to account for developments made in 60 years since the Modern Synthesis, the standard evolutionary paradigm, was framed. Revision proponents maintain these developments challenge central tenets of standard theory that can only be accounted for in an extended evolutionary synthesis (EES). Anthropology has much to offer to this debate. One important transition in human cultural evolution, the domestication of plants and animals, provides an ideal model system assessing core EES assumptions about directionality, causality, targets of selection, modes of inheritance, and pace of evolution. In so doing, anthropologists contribute to an overarching framework that brings together cultural and biological evolution.

In life as in language, living beings act in ways that are multiply constrained as history works through them both directly and as mediated by what we identify as structures (e.g. genes or words). Emphasising direct effects, we replace the ‘language metaphor of life’ with the view that language extends the domain of the living. Just as a living proteome system manages without central control, so does language. Both life and language enable living beings to expand into – and create – new domains or Umwelten. Pursuing the parallel, we link emphasis on fitness with Berthoz’s notion of simplexity and the distributed view of life/language/cognition. The semiosphere evolved, we suggest, as systems found novel ways of tapping into the bio-ecology’s energetics. Accordingly, there are striking parallels between how regulatory genes influence body structures and how, in humans, community histories re-echo during conversation. In both cases, cross-talk prompts living systems to re-enact a lineage/community’s music (or ‘worldviews’). While rejecting Berthoz’s residual neuro-centrism, we find ‘simplexity’ to be a powerful heuristic. Instead of proposing a single explanatory principle (e.g. computation, autonomy), lineages and communities build on meaning by altering ways of coordinating/cooperating. In all cases, life and language cooperate to bring forth new possibilities.
In this paper, I present selves as simplex structures (Berthoz, 2012/2009) that construct themselves and are constructed in and through the embodied socio-cognitive dynamics of ‘selving’. Selves are, following Vygotsky (1986: 59–73; see also Ratner, 2017), individuations and crystallisations of the concrete social relations in which the self has participated along its life-trajectory. Selving arises and takes place in dialogically coordinated languaging activity. In complex social and cultural worlds, simplex selves-in-languaging constitute and stabilise their own and others’ experience and living bodies in and through norm saturated languaging. Thus, while human subjectivity is foundational, a self emerges from an ontogenetic history—it is a bodily-based time-extended process that generates a sense of its felt agency. Given the agency of self, a person experiences an ‘inner’ life—a virtual internal ecology—that generates affective relations and dialogical resonances with its ‘objects’. The latter come to be co-articulated together with how the self contributes to their becoming. Far from being ‘representational’, mental objects derive from a microgenetic constructive process that arises under both endophasic and exophasic controlling factors. The self is thus empowered to enact an embodied and enduring anima that is intrinsic to a living human being: it appears in articulatory acts and, dramatically, when people engage with each other by means of what is generically called ‘languaging’. In illustration, I analyse an example of observable first-order languaging activity in which action, perception, and expression constitute a unitary field within which parties undertake selving. Having presented the example, I conclude by showing that, during first-order languaging, wilful acts can be traced to the dialectic of autonomy and heteronomy in which selves participate. The analysis shows how, on at least some occasions, selving is a matter of configuring personal meaning and adapting and integrating it to second-order cultural resources in ways that are amenable to a description of languaging activity in terms of a three-part structure.


Nature

PAPERS

YUE HU et al – Late Middle Pleistocene Levallois stone-tool technology in southwest China
Levallois approaches are one of the best known variants of prepared-core technologies, and are an important hallmark of stone technologies developed around 300,000 years ago in Africa and west Eurasia1,2. Existing archaeological evidence suggests that the stone technology of east Asian hominins lacked a Levallois component during the late Middle Pleistocene epoch and it is not until the Late Pleistocene (around 40,000–30,000 years ago) that this technology spread into east Asia in association with a dispersal of modern humans. Here we present evidence of Levallois technology from the lithic assemblage of the Guanyindong Cave site in southwest China, dated to approximately 170,000–80,000 years ago. To our knowledge, this is the earliest evidence of Levallois technology in east Asia. Our findings thus challenge the existing model of the origin and spread of Levallois technologies in east Asia and its links to a Late Pleistocene dispersal of modern humans.
https://www.nature.com/articles/s41586-018-0710-17#WT.ec_id=NATURE-201811&sap-outbound-id=DC0825004F1E0A6B96118A0B986A35DB51C92608

New Scientist

NEWS

Complex stone tools in China may re-write our species’ ancient history
A haul of ancient stone tools has plugged a big gap in China’s archaeological record, challenging our understanding of how our species spread around the world.

ARTICLES

GRAHAM LAWTON – An audacious new plan will make all science free. Can it work?
We fund scientific research through our taxes but often have to pay a hefty fee to read its findings. An uprising aims to bring the knowledge paywall crashing down.
https://www.newscientist.com/article/mg24032050-300-an-audacious-new-plan-will-make-all-science-free-can-it-work/

PLoS Biology

PAPERS

RUSSELL A. LIGON et al – Evolution of correlated complexity in the radically different courtship signals of birds-of-paradise
Ornaments used in courtship ofte

https://www.newscientist.com/article/mg24032050-300-an-audacious-new-plan-will-make-all-science-free-can-it-work/
functional integration of ornamental traits into a composite unit—the “courtship phenotype.” Furthermore, given the broad theoretical and empirical support for the idea that systemic robustness—functional overlap and interdependency—promotes evolutionary innovation, we posit that birds-of-paradise have radiated extensively through ornamental phenotype space as a consequence of the robustness in the courtship phenotype that we document at a phylogenetic scale. We suggest that the degree of robustness in courtship phenotypes among taxa can provide new insights into the relative influence of sexual and natural selection on phenotypic radiations.

https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.2006962

**PLoS One**

**PAPERS**

ELENI ASOUTI, MARIA NTINOU & CEREN KABUKCU – The Impact of environmental change on Palaeolithic and Mesolithic plant use and the transition to agriculture at Franchthi Cave, Greece

The multi-period (~38,000–6000 cal BP) site of Franchthi Cave, located in the Argolid peninsula of southern mainland Greece, is unique in the Eastern Mediterranean for preserving a long archaeological sequence extending from the Upper Palaeolithic through to the end of the Neolithic period. In this paper, we present new anthracological (carbonized fuel wood waste) evidence from Franchthi Cave with which we reconstruct the changing ecology of woodland vegetation in its environs during the late Pleistocene and the early-mid Holocene. The integrated archaeobotanical record (charred wood and non-wood macro-remains) demonstrates that in the Lateglacial the now-submerged coastal shelf of the southern Argolid peninsula was covered by steppe grassland vegetation dominated by junipers, almonds, cereals and legumes. The rapid climatic amelioration that marked the start of the Holocene brought about the disappearance of juniper and the expansion of deciduous woodland, cereals and lentsils. This woodland-grassland biome bears no analogues in the modern and historical vegetation ecology of the Aegean island. Instead, it is directly comparable to the steppe woodland biomes exploited by late Pleistocene and early Holocene hunter-gatherers in Southwest Asia, and points to the convergent evolution of late Pleistocene and early Holocene plant exploitation strategies between the two regions. Continuous sea-level rise during the early Holocene led to the gradual extinction of this unique palaeohabitat, which acted as the catalyst for the selective introduction of domesticated cereal crops at Franchthi Cave in the early 9th millennium cal BP. Our meta-analysis of the non-wood archaeobotanical data puts into question the concept of the wholesale introduction of a crop “package” by pioneer settler groups arriving from the East. It is proposed instead that selective cereal crop introduction formed part of a complex pattern of sociocultural interactions that brought together indigenous and immigrant groups into new communities.

https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0207805

**PNAS**

**PAPERS**

ERIK TRINKAUS – An abundance of developmental anomalies and abnormalities in Pleistocene people

Diverse developmental abnormalities and anomalous features are evident in the Pleistocene Homo fossil record, varying from minor but rare dental, vertebral, and carpal variants to exceptional systemic disorders. There are currently 75 documented anomalies or abnormalities from 66 individuals, spanning the Pleistocene but primarily from the Late Pleistocene Middle and Upper Paleolithic with their more complete skeletal remains. The expected probabilities of finding these variants or developmental disorders vary from <5% to <0.0001%, based on either recent human incidences or relevant Pleistocene sample distributions. Given the modest sample sizes available for the skeletal or dental elements in question, especially if the samples are appropriately limited in time and geography, the cumulative multiplicative probability of finding these developmental changes is vanishingly small. These data raise questions regarding social survival abilities, differing mortuary treatments of the biologically unusual, the role of ubiquitous stress among these Pleistocene foragers, and their levels of consanguinity. No single factor sufficiently accounts for the elevated level of these developmental variants or the low probability of finding them in the available paleontological record.

http://www.pnas.org/content/115/47/11941?etoc=

CHRISTINE N. SMITH & LARRY R. SQUIRE – Awareness of what is learned as a characteristic of hippocampus-dependent memory

We explored the relationship between memory performance and conscious knowledge (or awareness) of what has been learned in memory-impaired patients with hippocampal lesions or larger medial temporal lesions. Participants viewed familiar scenes or familiar scenes where a change had been introduced. Patients identified many fewer of the changes than controls. Across all of the scenes, controls preferentially directed their gaze toward the regions that had been changed whenever they had what we term robust knowledge about the change: They could identify that a change occurred, report what had changed, and indicate where the change occurred. Preferential looking did not occur when they were unaware of the change or had only partial knowledge about it. The patients, overall, did not direct their gaze toward the regions that had been changed, but on the few occasions when they had robust knowledge about the change they (like controls) did exhibit this effect. Patients did not exhibit this effect when they were unaware of the change or had partial knowledge. The findings support the idea that awareness of what has been learned is a key feature of hippocampus-dependent memory.

http://www.pnas.org/content/115/47/11947?etoc=
It has long been proposed that pre-modern hominin impacts drove extinctions and shaped the evolutionary history of Africa’s exceptionally diverse large mammal communities, but this hypothesis has yet to be rigorously tested. We analyzed eastern African herbivore communities spanning the past 7 million years—encompassing the entirety of hominin evolutionary history—to test the hypothesis that top-down impacts of tool-bearing, meat-eating hominins contributed to the demise of megaherbivores prior to the emergence of Homo sapiens. We document a steady, long-term decline of megaherbivores beginning ~4.6 million years ago, long before the appearance of hominin species capable of exerting top-
down control of large mammal communities and predating evidence for hominin interactions with megaherbivore prey. Expansion of C4 grasslands can account for the loss of megaherbivore diversity.

http://science.sciencemag.org/content/362/6417/938

Science Advances

PAPERS

MARC H. BORNSTEIN et al – Stability of core language skill from infancy to adolescence in typical and atypical development

Command of language is a fundamental life skill, a cornerstone of cognitive and socioemotional development, and a necessary ingredient for successful functioning in society. We used 15-year prospective longitudinal data from the Avon longitudinal study of parents and children to evaluate two types of stability of core language skill in 5036 typically developing and 1056 atypically developing (preterm, dyslexic, autistic, and hearing impaired) children in a multiage, multidomain, multimeasure, multireporter framework. A single core language skill was extracted from multiple measures at multiple ages, and this skill proved stable from infancy to adolescence in all groups, even accounting for child nonverbal intelligence and sociability and maternal age and education. Language skill is a highly conserved and robust individual-differences characteristic. Lagging language skills, a risk factor in child development, would profitably be addressed early in life.

http://advances.sciencemag.org/content/4/11/eaat7422?utm_campaign=toc_advances_2018-11-21&et_rid=17774313&et_cid=2502979

M. WINKLER et al with A. D. FRIEDERICI – Infant cognition includes the potentially human-unique ability to encode embedding

Human cognition relies on the ability to encode complex regularities in the input. Regularities above a certain complexity level can involve the feature of embedding, defined by nested relations between sequential elements. While comparative studies suggest the cognitive processing of embedding to be human specific, evidence of its ontogenesis is lacking. To assess infants’ ability to process embedding, we implemented nested relations in tone sequences, minimizing perceptual and memory requirements. We measured 5-month-olds’ brain responses in two auditory oddball paradigms, presenting standard sequences with one or two levels of embedding, interspersed with infrequent deviant sequences violating the established embedding rules. Brain potentials indicate that infants detect embedding violations and thus appear to track nested relations. This shows that the ability to encode embedding may be part of the basic human cognitive makeup, which might serve as scaffolding for the acquisition of complex regularities in language or music.

http://advances.sciencemag.org/content/4/11/eaar8334?utm_campaign=toc_advances_2018-11-21&et_rid=17774313&et_cid=2502979

Trends in Cognitive Sciences

PAPERS

LEONHARD SCHILBACH – From One to Many: Representing Not Only Actions, but Interactions in the Brain

Observing others is a pervasive way of learning about the social world, but little is known about the neural correlates of observing more than one individual. A recent neuroimaging study demonstrates that activity in the human motor system tracks multiple actions and that anterior cingulate cortex is involved to monitor motor conflict.

https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(18)30255-9

Trends in Ecology and Evolution

PAPERS

PIERO AMODIO et al – Grow Smart and Die Young: Why Did Cephalopods Evolve Intelligence?

Intelligence in large-brained vertebrates might have evolved through independent, yet similar processes based on comparable socioecological pressures and slow life histories. This convergent evolutionary route, however, cannot explain why cephalopods developed large brains and flexible behavioural repertoires: cephalopods have fast life histories and live in simple social environments. Here, we suggest that the loss of the external shell in cephalopods (i) caused a dramatic increase in predatory pressure, which in turn prevented the emergence of slow life histories, and (ii) allowed the exploitation of novel challenging niches, thus favouring the emergence of intelligence. By highlighting convergent and divergent aspects between cephalopods and large-brained vertebrates we illustrate how the evolution of intelligence might not be constrained to a single evolutionary route.


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