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EAORC 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.

EAORC NEWS – Biennial Membership Check

Today you will receive one of two second emails from me. If you receive the wrong email, please let me know and I will change your status accordingly.

IF YOU HAVE RE-REGISTERED YOUR EAORC AFFILIATION

In response to your email giving permission, I am writing to inform you that you will continue to receive EAORC bulletins for the next two years. I hope you continue to find them helpful in your research.

IF YOU HAVE NOT RE-REGISTERED YOUR EAORC AFFILIATION

EAORC has a policy that, once every two years, members will be asked to confirm their continuing membership. This is done to ensure that the EAORC list is going where it should, and I am not acting as a source of spam.

In May I began the process of checking membership, asking everyone to send me an email if they wanted to continue to receive the bulletin. I have not heard from you, so I assume you are no longer interested in the bulletin, and I will remove you from the EAORC list, as promised. This week's issue will be the last issue of EAORC you will receive.

If this is an error, let me know by emailing martin.edwardes@bopenworld.com and I will immediately reinstate you. Thank you for your interest over the years. EAORC will continue to be here if you should wish to come back.

NEW E-BOOK ALERT – Engaging the Self: Theory and its Applications in Psychoanalysis

Free e-book from Routledge.

The editors are pleased to publish *Engaging the Self: Theory and its Applications in Psychoanalysis*, the first of what we hope will be an annual volume showcasing the scholarship of the faculty of the Postgraduate Programs in Psychoanalysis and Psychotherapy (PPPP) at the Derner School of Psychology at Adelphi University. This volume is unique in its focus on nurturing authentic dialogue within the analytic setting, offering a depth-psychological perspective on the processes of communication and engagement both clinically and from the perspective of theory. All of the papers endorse the view of psychoanalysis as creating the conditions for authentic dialogue, whether one regards this dialogue intersubjectively as transpiring between subjects or as the reflection of a deeper engagement with one's own interiority mediated by an engaged other. Self-understanding always implicates a significant other, be it a parent, teacher, therapist, or mentor. The role of the latter is discussed in terms of the challenges of clinical work faced by practitioners in the public sector

<https://click.email.taylorandfrancis.com/?qs=09bb77fa2aa3bb118f194863d3b3b35a7152c7801f9df03b19134cba4a0a32e00f9acb7b00a527d1df6bba8564742e2e3b22b98dcc33dcf8245df5b563f7528f>

ACADEMIA.EDU – The Tale of “The Bear’s Son”

In Adam Glaz (ed.), Languages--Cultures--Worldviews: Focus on Translation. London: Palgrave Macmillan, 53-80.

ROSLYN M. FRANK – Translating a Worldview in the *longue durée*: The Tale of “The Bear’s Son”

Translation is usually understood as the practice of rendering a text written in one language into another language. That process also requires taking into consideration the cultural similarities and differences entrenched in each of the languages in question. In what follows this notion will be expanded to apply to the way that cultural conceptualisations embedded in a set of folktales have been translated across time and more specifically the way that the interpretative framework utilised by storytellers and their audiences has changed as the cultural conceptualisations intrinsic to reception and understanding of meanings of words and actions in the tales have been altered. These shifts in the worldview are reflected in the modifications that the texts have undergone across time. In other words, the chapter enters a little explored terrain, engaging with and addressing not only the question of the role played by folktales in projecting cultural mindsets, but also their role in constructing, maintaining, and ultimately deconstructing a worldview indigenous to Europe.

https://www.academia.edu/44351613/R_M_Frank_2019_Bears_Son_Tale?email_work_card=view-paper

ACADEMIA.EDU – Hominin Evolution

In T.K. Shackelford, V.A. Weekes-Shackelford (eds.), Encyclopedia of Evolutionary Psychological Science. Springer International Publishing (2017).

LAURA VAN HOLSTEIN & ROBERT A. FOLEY – Hominin Evolution

Early evolutionary biologists answered the question of human origins by searching for the precise location of “man’s place in nature,” in T.H. Huxley’s phrasing, based on comparative anatomy between living species. Research has moved from viewing humanity at the top of the *scala naturae* to seeing it as “just” a big-brained, bipedal primate, and the focus shifted to explaining how we arrived at “our” place. The post-nineteenth-century focus has been on understanding the evolutionary circumstances that produced *Homo sapiens*, based on the idea that human-specific traits are the product of the same evolutionary processes that led to all other species. This effort is notably multidisciplinary: human origins fall within the remit of anthropology, biology, genetics, zoology, primatology, geology, and psychology. The (occasionally contentious) synthesis of work within these fields has produced a coherent, albeit pixelated picture, of which this summary is a sketch. It first reviews hominin evolutionary history chronologically and then explores evolutionary patterns, including the evolution of cognition, in more depth.

https://www.academia.edu/35324486/Hominin_Evolution?email_work_card=view-paper

ACADEMIA.EDU – Hominins and the emergence of the modern human brain

M. A. Hofman and D. Falk (eds.), Progress in Brain Research: 195, 293-322.

ALEXANDRA DE SOUSA & EUGÉNIA CUNHA – Hominins and the emergence of the modern human brain

Evidence used to reconstruct the morphology and function of the brain (and the rest of the central nervous system) in fossil hominin species comes from the fossil and archeological records. Although the details provided about human brain evolution are scarce, they benefit from interpretations informed by interspecific comparative studies and, in particular, human

pathology studies. In recent years, new information has come to light about fossil DNA and ontogenetic trajectories, for which pathology research has significant implications. We briefly describe and summarize data from the paleoarcheological and paleoneurological records about the evolution of fossil hominin brains, including behavioral data most relevant to brain research. These findings are brought together to characterize fossil hominin taxa in terms of brain structure and function and to summarize brain evolution in the human lineage.

https://www.academia.edu/2942367/Hominins_and_the_emergence_of_the_modern_human_brain?email_work_card=view-paper

RESEARCHGATE – Origins of Pictures

In Klaus Sachs-Hombach & Jörg R. J. Schirra (eds.), Origins of Pictures: Anthropological Discourses in Image Science. Herbert von Halem Verlag: Köln, Germany.

IAIN DAVIDSON – Origins of Pictures: An Argument for Transformation of Signs

This paper argues that the persisting visual signs of hominin behaviour – the signs left by our ancestors – were crucial to the evolution of human cognition. As part of that same process they were crucial to the origins of picture-making or depiction. The transformation of depiction into art is probably a later process, which is not the principal focus of this paper. The key to this process of transformation is Peirce's (1986) definition of a sign as »something which stands to somebody for something in some respect or capacity.«

Hominins did things that left marks on the environment, and these marks endured beyond the moment. An example of this would be the production of debris from stone artefact making which could be seen as signs of that activity (Davidson/McGrew 2005). This allowed those hominins to see the regularities of the relation between their actions and the consequent signs of that previous activity, though research is needed to show when hominins actually noticed those signs (Adam Brumm and Matt Pope, personal communication 22 Sept 2011). Deliberate production of meaningful marks came later, once hominins came to recognise the signs of their own activities.

https://www.researchgate.net/publication/279174506_Origins_of_pictures_An_argument_for_transformation_of_signs

RESEARCHGATE – The Minimalist Program and the Origin of Language

In Frontiers in Psychology 10:677, April 2019.

IAN TATTERSALL – The Minimalist Program and the Origin of Language: A View From Paleoanthropology

In arguing that articulate language is underpinned by an algorithmically simple neural operation, the Minimalist Program (MP) retrodicts that language emerged in a short-term event. Because spoken language leaves no physical traces, its ancient use must be inferred from archeological proxies. These strongly suggest that modern symbolic human behavior patterns – and, by extension, cognition – emerged both abruptly and late in time (subsequent to the appearance of Homo sapiens as an anatomical entity some 200 thousand years kyr ago). Because the evidence is compelling that language is an integral component of modern symbolic thought, the archeological evidence clearly supports the basic tenet of the MP. But the associated proposition, that language was externalized in an independent event that followed its initial appearance as a conduit to internal thought, is much more debatable.

https://www.researchgate.net/publication/332147014_The_Minimalist_Program_and_the_Origin_of_Language_A_View_From_Paleoanthropology

NEWS

SCIENCE NEWS – How climate disruptions revolutionized ancient human toolmaking

Impatient for your next smartphone upgrade? Just be glad you weren't born hundreds of thousands of years ago, when the key technology for survival—stone hand axes—stayed almost exactly the same for 700,000 years. Researchers have long debated the reasons behind this long period of stasis. Now, a study of unusually detailed environmental data from an ancient lakebed in Kenya suggests a turbulent mix of climate change, tectonic activity, and rapid shifts in animal populations about 400,000 years ago forged new social and technological adaptations, including smaller obsidian blades and long-distance trade networks.

https://www.sciencemag.org/news/2020/10/how-climate-disruptions-revolutionized-ancient-human-toolmaking?utm_campaign=news_daily_2020-10-21

SCIENCE NEWS – Why bird brains are more brilliant than anyone suspected

Although bird brains are tiny, they're packed with neurons, especially in areas responsible for higher level thinking. Two studies published last month in Science explore the structure and function of avian brains—revealing they are organized similarly to mammals' and are capable of conscious thought.

https://www.sciencemag.org/news/2020/10/why-bird-brains-are-more-brilliant-anyone-suspected?utm_campaign=news_daily_2020-10-22&et rid=17774313&et cid=3529629

SCIENCE NEWS – Like humans, male chimps mellow with age

For all its drawbacks, aging brings a benefit: Social relationships generally improve. Older individuals have fewer but closer friendships, avoid conflicts, and are more optimistic compared with younger adults. Now, 20 years of data on chimpanzees suggest they, too, develop more meaningful friendships as they age.

https://www.sciencemag.org/news/2020/10/humans-male-chimps-mellow-age?utm_campaign=news_daily_2020-10-22&et rid=17774313&et cid=3529629

SOCIETY FOR SCIENCE – Environmental changes may have helped make ancient humans more adaptable

An East African sediment core unveils ecological changes underlying a key Stone Age transition.

<http://click.societyforscience-email.com/?qs=e1cfc44bce77ead02e98c63276e3b7302220d11c9b4037be6bb8d857ac954818d153c5b74017401540d7127d5ba5628e7466d3ed20eed834>

SOCIETY FOR SCIENCE – Naked mole-rats invade neighboring colonies and steal babies

Naked mole-rats invade neighboring colonies, steal pups and evict any others left behind. The show of force may be central to their underground lifestyle.

<http://click.societyforscience-email.com/?qs=e1cfc44bce77ead0d7fad79c535c6614ec923effda9d6d54a7de5e29d33cdd2ecba97b958f631906c34335a46e276a84cab7ca74f65eab53>

SOCIETY FOR SCIENCE – Homo erectus, not humans, may have invented the barbed bone point

Carved artifacts excavated from Tanzania's Olduvai Gorge suggest now-extinct hominids made barbed bone points long before humans did, researchers say.

<http://click.societyforscience-email.com/?qs=b44fda218295003428b62c5384bd88a0b75507e8f2f1833cf49be53147f7c2b5c7c808201df46c9bae54a2654e40e49a48576ba3816b30bc>

BREAKING SCIENCE – Climate Change Drove Early Human Species Extinct, Says New Study

At least six different species of the genus Homo — H. habilis, H. ergaster, H. erectus, H. heidelbergensis, H. neanderthalensis, and H. sapiens — populated the world during the latest Pliocene to the Pleistocene. The extinction of all but one of them is currently shrouded in mystery.

http://feedproxy.google.com/~r/BreakingScienceNews/~3/kl7iKXGJqa8/climate-change-early-human-species-08961.html?utm_source=feedburner&utm_medium=email

BREAKING SCIENCE – Consciousness is Brain's Information-Rich Energy Field

Consciousness is physically integrated, and causally active, information encoded in the brain's global electromagnetic field, according to the conscious electromagnetic information (cemi) field theory developed by University of Surrey's Professor Johnjoe McFadden. Early theories on what our consciousness is and how it has been created tended towards the supernatural, suggesting that humans and probably other animals possess an immaterial soul that confers consciousness, thought and free will — capabilities that inanimate objects lack.

http://feedproxy.google.com/~r/BreakingScienceNews/~3/EKRjsFaR21Q/cemi-field-theory-08973.html?utm_source=feedburner&utm_medium=email

BREAKING SCIENCE – Clovis Stone Tools Were Made Only During 300-Year Period: Study

Clovis is a prehistoric culture named for stone tools found near Clovis, New Mexico in the early 1930s. New radiocarbon testing of bones and artifacts from 10 known Clovis sites show that this culture first appeared about 13,050 years ago and disappeared 300 years later at the beginning of the Younger Dryas.

http://feedproxy.google.com/~r/BreakingScienceNews/~3/FHJA2hutH1s/clovis-culture-age-08982.html?utm_source=feedburner&utm_medium=email

BREAKING SCIENCE – Building Blocks of Language Evolved at least 40 Million Years before Language Itself

In a new study, published this week in the journal Science Advances, apes and monkeys were able to track relationships between sounds the same way as humans, showing that this ability predates the evolution of language itself by at least 40 million years.

http://feedproxy.google.com/~r/BreakingScienceNews/~3/oxcKdFDRDXc/building-blocks-language-08977.html?utm_source=feedburner&utm_medium=email

SCIENCE DAILY – Cheaters don't always win: Species that work together do better

The sign of a healthy personal relationship is one that is equally mutual - where you get out just as much as you put in. Nature has its own version of a healthy relationship. A team of researchers investigated these interactions, known as mutualisms, and why they are so critical for healthy environments.

<https://www.sciencedaily.com/releases/2020/10/201019145551.htm>

SCIENCE DAILY – Lullabies in any language relax babies

Researchers have determined that American infants relaxed when played lullabies that were unfamiliar and in a foreign language. The new findings supported the latter hypothesis: infants responded to universal elements of songs, despite the unfamiliarity of their melodies and words, and relaxed. The researchers also predict that the results could be replicated with a different group of subjects from another culture.

<https://www.sciencedaily.com/releases/2020/10/201019112115.htm>

SCIENCE DAILY – How'd we get so picky about friendship late in life? Ask the chimps

When humans age, they tend to favor small circles of meaningful, already established friendships rather than seek new ones. People are also more likely to lean toward positive relationships rather than ones that bring tension or conflict. These behaviors were thought to be unique to humans but it turns out chimpanzees, one of our closest living relatives, have these traits, too. The study shows what's believed to be the first evidence of nonhuman animals actively selecting who they socialize with during aging.

<https://www.sciencedaily.com/releases/2020/10/201022143934.htm>

SCIENCE DAILY – Humans are born with brains 'prewired' to see words

Humans are born with a part of the brain that is prewired to be receptive to seeing words and letters, setting the stage at birth for people to learn how to read, a new study suggests. Analyzing brain scans of newborns, researchers found that this part of the brain -- called the 'visual word form area' (VWFA) -- is connected to the language network of the brain.

{If mass reading is only a few centuries old, what fitness pressures drove the evolution of this universal VWFA? Something is missing from this explanation. Perhaps what is missing lies not in the VWFA but in the assumptions about the language network of the brain, or language itself.}

<https://www.sciencedaily.com/releases/2020/10/201022125525.htm>

SCIENCE DAILY – Social life as a driving factor of birds' generosity

Taking a look at generosity within the crow family reveals parallels with human evolution. Working together to raise offspring and increased tolerance towards group members contribute to the emergence of generous behavior among ravens, crows, magpies and company. Biologists found that the social life of corvids is a crucial factor for whether the birds act generously or not.

<https://www.sciencedaily.com/releases/2020/10/201022112557.htm>

SCIENCE DAILY – Cognitive elements of language have existed for 40 million years

Humans are not the only beings that can identify rules in complex language-like constructions -- monkeys and great apes can do so, too, a new study has shown. Researcher used a series of experiments based on an 'artificial grammar' to conclude that this ability can be traced back to our ancient primate ancestors.

<https://www.sciencedaily.com/releases/2020/10/201021180740.htm>

SCIENCE DAILY – Turbulent era sparked leap in human behavior, adaptability 320,000 years ago

The first analysis of a sedimentary drill core representing 1 million years of environmental history in the East African Rift Valley shows that at the same time early humans were abandoning old tools in favor of more sophisticated technology and broadening their trade, their landscape was experiencing frequent fluctuations in vegetation and water supply that made resources less reliably available. The findings suggest that instability in their landscape was a key driver of human adaptability.

<https://www.sciencedaily.com/releases/2020/10/201021140919.htm>

SCIENCE DAILY – Happiness and the evolution of brain size

Serotonin can act as a growth factor for the stem cells in the fetal human brain that determine brain size.

<https://www.sciencedaily.com/releases/2020/10/201023123137.htm>

SCIENCE DAILY – Clovis people: Narrow window of tool-making

There is much debate surrounding the age of the Clovis -- a prehistoric culture named for stone tools found near Clovis, New Mexico in the early 1930s -- who once occupied North America during the end of the last Ice Age. New testing of bones and artifacts show that Clovis tools were made only during a brief, 300-year period from 13,050 to 12,750 years ago.

PUBLICATIONS

Current Biology

ARTICLES

CECILIA HEYES – Culture

If you are not sure what ‘culture’ means, you are not alone. In 1952, anthropologists Kroeber and Kluckhohn identified 164 definitions of culture and there has been growth rather than rationalisation in the ensuing 70 years. In everyday English, culture is the knowledge and behaviour that characterises a particular group of people. Under this umbrella definition, culture was for many decades the exclusive province of the humanities and social sciences, where anthropologists, historians, linguists, sociologists and other scholars studied and compared the language, arts, cuisine, and social habits of particular human groups. Of course, that important work continues, but since the 1980s culture has also been a major focus of enquiry in the natural sciences.

[https://www.cell.com/current-biology/fulltext/S0960-9822\(20\)31276-8](https://www.cell.com/current-biology/fulltext/S0960-9822(20)31276-8)

PAPERS

JUNFENG HUANG et al – Having Infants in the Family Group Promotes Altruistic Behavior of Marmoset Monkeys

The common marmoset (*Callithrix jacchus*) has attracted much attention as a useful model for studying social behaviors. They naturally live in a monogamous family group and exhibit cooperative breeding, in which parents and older siblings help to carry infants less than 2 months old. Marmoset parents also transfer foods to their offspring, a process that may help them learn the food diet. Furthermore, marmosets show spontaneous altruistic behaviors, such as providing food to non-reciprocating and genetically unrelated individuals. These social habits indicate that marmosets may be a useful non-human primate model for studying parenting and altruistic behaviors, as well as underlying neural mechanisms. Using a novel rescue paradigm, we found that marmoset parents and older siblings showed strong motivation to rescue trapped young infants but not juvenile marmosets beyond 2 months of age, and infant calls alone could trigger these parents’ rescue behaviors. The marmoset parents showed little rescue of each other, but young infants or infant calls could also induce such parents’ mutual rescue. Moreover, all these infant- and mate-rescue behaviors depended on currently having young infants in the family group. Functional MRI studies on awake adult marmosets showed that calls from young infants, but not juvenile marmosets, elicited a large-scale activation of specific brain areas including auditory and insular cortices, and such activation was absent in marmosets not living with infants. Thus, such infant-induced modification of neural activity offers a window for examining the neural basis of altruistic behaviors in marmoset monkeys.

[https://www.cell.com/current-biology/fulltext/S0960-9822\(20\)31070-8?dgcid=raven_jbs_etoc_email](https://www.cell.com/current-biology/fulltext/S0960-9822(20)31070-8?dgcid=raven_jbs_etoc_email)

Frontiers in Psychology

PAPERS

EVA BALLOVÁ MIKUŠKOVÁ & VLADIMÍRA ČAVOJOVÁ – The Effect of Analytic Cognitive Style on Credulity

Belief in astrology remains strong even today, and one of the explanations why some people endorse paranormal explanations is the individual differences in analytical thinking. Therefore, the main aim of this paper was to determine the effects of priming an analytical or intuitive thinking style on the credulity of participants. In two experiments (N = 965), analytic thinking was induced and the source of fake profile (astrological reading vs. psychological testing) was manipulated and participants’ prior paranormal beliefs, anomalous explanation, cognitive reflection, and depression were measured. Although analytic thinking was proved to be hard to induce experimentally, the results showed that analytic thinking predicts credulity and belief in the paranormal was linked with experiencing more anomalous experiences and more paranormal explanations. The more people were able to think analytically, the less credulous they were as reflected in the lower acceptance of fake profile as accurate.

https://www.frontiersin.org/articles/10.3389/fpsyg.2020.584424/full?utm_source=F-AAE&utm_medium=EMLF&utm_campaign=MRK_1463957_69_Psycho_20201022_arts_A

Humanities and Social Sciences Communications

PAPERS

STEVEN MITHEN – Lost for words: an extraordinary structure at the early Neolithic settlement of WF16

Extraordinariness is a useful concept for everyday life and for academic research, frequently invoked within archaeology. In this contribution I explore how this term might be defined and whether it is appropriate for a large early Neolithic structure excavated at the site of WF16 in the southern Levant, dating to c. 11,200 BP. I draw on research regarding categorisation, concepts and their relationships to words, to suggest that Structure O75 can usefully be considered as ‘extraordinary’ because it does not comfortably fit into a category of finds currently used by Neolithic archaeologists. To do so, a brief review of the history of Neolithic research is required because that has shaped the categories that archaeologists bring to the archaeological record and hence what might be viewed as either ordinary or extraordinary discoveries. I conclude that

extraordinary objects such as Structure O75 are likely to have played an active role in the conceptual and linguistic developments that was associated with the transition from mobile hunting and gathering to sedentary farming communities. <https://www.nature.com/articles/s41599-020-00615-7>

Journal of Human Evolution

PAPERS

MICHAEL PANTE et al with FRANCESCO D'ERRICO – Bone tools from Beds II–IV, Olduvai Gorge, Tanzania, and implications for the origins and evolution of bone technology

The advent of bone technology in Africa is often associated with behavioral modernity that began sometime in the Middle Stone Age. Yet, small numbers of bone tools are known from Early Pleistocene sites in East and South Africa, complicating our understanding of the evolutionary significance of osseous technologies. These early bone tools vary geographically, with those in South Africa indicating use in foraging activities such as termite extraction and those in East Africa intentionally shaped in a manner similar to lithic tool manufacture, leading some to infer multiple hominin species were responsible for bone technology in these regions, with *Paranthropus robustus* assumed to be the maker of South African bone tools and *Homo erectus* responsible for those in East Africa. Here, we present on an assemblage of 52 supposed bone tools primarily from Beds III and IV, Olduvai Gorge, Tanzania, that was excavated by Mary Leakey in the late 1960s and early 1970s, but was only partially published and was never studied in detail from a taphonomic perspective. The majority of the sites from which the tools were recovered were deposited when only *H. erectus* is known to have existed in the region, potentially allowing a direct link between this fossil hominin and bone technology. Our analysis confirms at least six bone tools in the assemblage, the majority of which are intentionally flaked large mammal bones. However, one of the tools is a preform of the oldest barbed bone point known to exist anywhere in the world and pushes back the initial appearance of this technology by 700 kyr.

<https://www.sciencedirect.com/science/article/abs/pii/S0047248420301469>

Mind & Language

PAPERS

DANIEL W. HARRIS – Semantics without semantic content

I argue that semantics is the study of the proprietary database of a centrally inaccessible and informationally encapsulated input–output system. This system's role is to encode and decode partial and defeasible evidence of what speakers are saying. Since information about nonlinguistic context is therefore outside the purview of semantic processing, a sentence's semantic value is not its content but a partial and defeasible constraint on what it can be used to say. I show how to translate this thesis into a detailed compositional-semantic theory based on the influential framework of Heim and Kratzer. This approach situates semantics within an independently motivated account of human cognitive architecture and reveals the semantics–pragmatics interface to be grounded in the underlying interface between modular and central systems.

{The views expressed in bulletin papers are not necessarily those of the bulletin editor.}

<https://onlinelibrary.wiley.com/doi/full/10.1111/mila.12290?campaign=wolearlyview>

FRAUKE HILDEBRANDT, RAMIRO GLAUER & GREGOR KACHEL – Coming from a world without objects

While research on object individuation assumes that even very young children are able to perceive objects as particulars, we argue that the results of relevant studies can be explained in terms of feature discrimination. We propose that children start out navigating the world with a feature-based ontology and only later become able to individuate objects spatiotemporally. Furthermore, object individuation is a cognitively demanding achievement resting on a uniquely human form of enculturation, namely the acquisition of deictic demonstratives. We conclude by outlining empirical expectations for operationalizations of our proposal.

<https://onlinelibrary.wiley.com/doi/full/10.1111/mila.12313?campaign=wolearlyview>

Nature Communications

PAPERS

FABIAN KOSSE & MICHELA M. TINCANI – Prosociality predicts labor market success around the world

A large literature points to the importance of prosociality for the well-being of societies and individuals. However, most of this work is based on observations from western, educated, industrialized, rich, and democratic (WEIRD) societies, questioning the generalizability of these findings. Here we present a global investigation of the relation between prosociality and labor market success. Our analysis uses experimentally validated measures of prosociality and is based on about 80,000 individuals in 76 representative country samples. We show a sizable and robust positive relation between prosociality and labor market success around the world that does not systematically differ across continents or by countries' economic development. These findings generalize the positive relation between prosociality and labor market success to a wide geographical context.

<https://www.nature.com/articles/s41467-020-19007-1>

TAIHEI NINOMIYA et al – A causal role for frontal cortico-cortical coordination in social action monitoring

Decision-making via monitoring others' actions is a cornerstone of interpersonal exchanges. Although the ventral premotor cortex (PMv) and the medial prefrontal cortex (MPFC) are cortical nodes in social brain networks, the two areas are rarely concurrently active in neuroimaging, inviting the hypothesis that they are functionally independent. Here we show in macaques that the ability of the MPFC to monitor others' actions depends on input from the PMv. We found that delta-band coherence between the two areas emerged during action execution and action observation. Information flow especially in the delta band increased from the PMv to the MPFC as the biological nature of observed actions increased. Furthermore, selective blockade of the PMv-to-MPFC pathway using a double viral vector infection technique impaired the processing of observed, but not executed, actions. These findings demonstrate that coordinated activity in the PMv-to-MPFC pathway has a causal role in social action monitoring.

<https://www.nature.com/articles/s41467-020-19026-y>

K. J. FORSETH et al – Language prediction mechanisms in human auditory cortex

Spoken language, both perception and production, is thought to be facilitated by an ensemble of predictive mechanisms. We obtain intracranial recordings in 37 patients using depth probes implanted along the anteroposterior extent of the supratemporal plane during rhythm listening, speech perception, and speech production. These reveal two predictive mechanisms in early auditory cortex with distinct anatomical and functional characteristics. The first, localized to bilateral Heschl's gyri and indexed by low-frequency phase, predicts the timing of acoustic events. The second, localized to planum temporale only in language-dominant cortex and indexed by high-gamma power, shows a transient response to acoustic stimuli that is uniquely suppressed during speech production. Chronometric stimulation of Heschl's gyrus selectively disrupts speech perception, while stimulation of planum temporale selectively disrupts speech production. This work illuminates the fundamental acoustic infrastructure—both architecture and function—for spoken language, grounding cognitive models of speech perception and production in human neurobiology.

<https://www.nature.com/articles/s41467-020-19010-6>

Nature Human Behaviour

PAPERS

CONSTANCE M. BAINBRIDGE et al – Infants relax in response to unfamiliar foreign lullabies

Music is characterized by acoustic forms that are predictive of its behavioural functions. For example, adult listeners accurately identify unfamiliar lullabies as infant-directed on the basis of their musical features alone. This property could reflect a function of listeners' experiences, the basic design of the human mind, or both. Here, we show that US infants (N = 144) relax in response to eight unfamiliar foreign lullabies, relative to matched non-lullaby songs from other foreign societies, as indexed by heart rate, pupillometry and electrodermal activity. They do so consistently throughout the first year of life, suggesting that the response is not a function of their musical experiences, which are limited relative to those of adults. The infants' parents overwhelmingly chose lullabies as the songs that they would use to calm their fussy infant, despite their unfamiliarity. Together, these findings suggest that infants may be predisposed to respond to common features of lullabies found in different cultures.

<https://www.nature.com/articles/s41562-020-00963-z>

Nature Scientific Reports

PAPERS

ROSA RUGANI et al – Middle identification for rhesus monkeys is influenced by number but not extent

Abstract concept learning provides a fundamental building block for many cognitive functions in humans. Here we address whether rhesus monkeys (*Macaca mulatta*) can learn the abstract concept of "middle" in a series of objects. First, we trained monkeys to select the middle dot in a horizontal series of three dots presented on a touchscreen. Monkeys maintained a preference to choose the middle dot despite changes in the appearance, location, and spacing of the horizontal series of dots. They maintained high performance when the color, shape and the length of the stimuli were new, indicating that their responses did not depend upon the particular appearance of the array items. Next, we asked whether monkeys would generalize the middle concept to a 7 dot series. Although accuracy decreased when the number of dots was increased, monkeys continued to preferentially select the middle dot. Our results demonstrate that rhesus macaques can learn to use a middle concept for a discrete set of items.

<https://www.nature.com/articles/s41598-020-74533-8>

URI HERTZ et al – Self-competence increases the willingness to pay for social influence

Theoretical works in social psychology and neuroscientific evidence have proposed that social rewards have intrinsic value, suggesting that people place a high premium on the ability to influence others. To test this hypothesis, we asked whether, and under what conditions, people are willing to forgo monetary reward for the sake of influencing others' decisions. In four experiments, online and lab-based participants competed with a rival for influence over a client. The majority of participants sacrificed some of their financial reward to increase their chance of being selected over their rival within the experiment. Willingness to pay was affected by the participant's current level of influence and performance, as participants were most

likely to pay to promote their competence after having given good advice that had been ignored by the client using a situation where monetary incentives fail to explain human motivations, our experiments highlight the intrinsic value of social influence.

<https://www.nature.com/articles/s41598-020-74857-5>

New Scientist

NEWS

Climate change may have driven early human species to extinction

Pasquale Raia at the University of Naples Federico II in Italy and his colleagues have used climate modelling and fossil records to determine the effect climate change had on the survival of the species in our Homo genus. The researchers used a database of 2754 archaeological records of the remains of several species alive over the past 2.5 million years, including Homo habilis, Homo ergaster, Homo erectus, Homo heidelbergensis, Homo neanderthalensis and Homo sapiens. They cross-referenced these records with a climate emulator, which modelled temperature, rainfall and other weather data over the past 5 million years. The aim was to determine the climatic niche for each species – a range of conditions including temperature and precipitation that are optimal for survival – and how widely distributed the niche area was through time. The team found that H. erectus, H. heidelbergensis and H. neanderthalensis all lost a significant portion of their climatic niche area just before they became extinct.

<https://www.newscientist.com/article/2257479-climate-change-may-have-driven-early-human-species-to-extinction/#ixzz6bhVlhluS>

PNAS

PAPERS

ANTHONY STRITTMATTER, UWE SUNDE & DAINIS ZEGNERS – Life cycle patterns of cognitive performance over the long run

Little is known about how the age pattern in individual performance in cognitively demanding tasks changed over the past century. The main difficulty for measuring such life cycle performance patterns and their dynamics over time is related to the construction of a reliable measure that is comparable across individuals and over time and not affected by changes in technology or other environmental factors. This study presents evidence for the dynamics of life cycle patterns of cognitive performance over the past 125 y based on an analysis of data from professional chess tournaments. Individual move-by-move performance in more than 24,000 games is evaluated relative to an objective benchmark that is based on the respective optimal move suggested by a chess engine. This provides a precise and comparable measurement of individual performance for the same individual at different ages over long periods of time, exploiting the advantage of a strictly comparable task and a comparison with an identical performance benchmark. Repeated observations for the same individuals allow disentangling age patterns from idiosyncratic variation and analyzing how age patterns change over time and across birth cohorts. The findings document a hump-shaped performance profile over the life cycle and a long-run shift in the profile toward younger ages that is associated with cohort effects rather than period effects. This shift can be rationalized by greater experience, which is potentially a consequence of changes in education and training facilities related to digitization.

<https://www.pnas.org/content/early/2020/10/13/2006653117.abstract?etoc>

SYDNEY LEVINE et al with FIERY CUSHMAN – The logic of universalization guides moral judgment

To explain why an action is wrong, we sometimes say, “What if everybody did that?” In other words, even if a single person’s behavior is harmless, that behavior may be wrong if it would be harmful once universalized. We formalize the process of universalization in a computational model, test its quantitative predictions in studies of human moral judgment, and distinguish it from alternative models. We show that adults spontaneously make moral judgments consistent with the logic of universalization, and report comparable patterns of judgment in children. We conclude that, alongside other well-characterized mechanisms of moral judgment, such as outcome-based and rule-based thinking, the logic of universalizing holds an important place in our moral minds.

<https://www.pnas.org/content/117/42/26158.abstract?etoc>

MONIKA CECHOVA et al – Dynamic evolution of great ape Y chromosomes

The mammalian male-specific Y chromosome plays a critical role in sex determination and male fertility. However, because of its repetitive and haploid nature, it is frequently absent from genome assemblies and remains enigmatic. The Y chromosomes of great apes represent a particular puzzle: their gene content is more similar between human and gorilla than between human and chimpanzee, even though human and chimpanzee share a more recent common ancestor. To solve this puzzle, here we constructed a dataset including Ys from all extant great ape genera. We generated assemblies of bonobo and orangutan Ys from short and long sequencing reads and aligned them with the publicly available human, chimpanzee, and gorilla Y assemblies. Analyzing this dataset, we found that the genus Pan, which includes chimpanzee and bonobo, experienced accelerated substitution rates. Pan also exhibited elevated gene death rates. These observations are consistent with high levels of sperm competition in Pan. Furthermore, we inferred that the great ape common ancestor already

possessed multicopy sequences homologous to most human and chimpanzee palindromes. Nonetheless, each species also acquired distinct ampliconic sequences. We also detected increased chromatin contacts between and within palindromes (from Hi-C data), likely facilitating gene conversion and structural rearrangements. Our results highlight the dynamic mode of Y chromosome evolution and open avenues for studies of male-specific dispersal in endangered great ape species.

<https://www.pnas.org/content/117/42/26273.abstract?etoc>

Science

PAPERS

ALEXANDRA G. ROSATI et al with RICHARD W. WRANGHAM – Social selectivity in aging wild chimpanzees

Humans prioritize close, positive relationships during aging, and socioemotional selectivity theory proposes that this shift causally depends on capacities for thinking about personal future time horizons. To examine this theory, we tested for key elements of human social aging in longitudinal data on wild chimpanzees. Aging male chimpanzees have more mutual friendships characterized by high, equitable investment, whereas younger males have more one-sided relationships. Older males are more likely to be alone, but they also socialize more with important social partners. Further, males show a relative shift from more agonistic interactions to more positive, affiliative interactions over their life span. Our findings indicate that social selectivity can emerge in the absence of complex future-oriented cognition, and they provide an evolutionary context for patterns of social aging in humans.

<https://science.sciencemag.org/content/370/6515/473>

Science Advances

PAPERS

STUART K. WATSON et al with JUDITH M. BURKART & SIMON W. TOWNSEND – Nonadjacent dependency processing in monkeys, apes, and humans

The ability to track syntactic relationships between words, particularly over distances (“nonadjacent dependencies”), is a critical faculty underpinning human language, although its evolutionary origins remain poorly understood. While some monkey species are reported to process auditory nonadjacent dependencies, comparative data from apes are missing, complicating inferences regarding shared ancestry. Here, we examined nonadjacent dependency processing in common marmosets, chimpanzees, and humans using “artificial grammars”: strings of arbitrary acoustic stimuli composed of adjacent (nonhumans) or nonadjacent (all species) dependencies. Individuals from each species (i) generalized the grammars to novel stimuli and (ii) detected grammatical violations, indicating that they processed the dependencies between constituent elements. Furthermore, there was no difference between marmosets and chimpanzees in their sensitivity to nonadjacent dependencies. These notable similarities between monkeys, apes, and humans indicate that nonadjacent dependency processing, a crucial cognitive facilitator of language, is an ancestral trait that evolved at least ~40 million years before language itself.

<https://advances.sciencemag.org/content/6/43/eabb0725>

RICHARD POTTS et al – Increased ecological resource variability during a critical transition in hominin evolution

Although climate change is considered to have been a large-scale driver of African human evolution, landscape-scale shifts in ecological resources that may have shaped novel hominin adaptations are rarely investigated. We use well-dated, high-resolution, drill-core datasets to understand ecological dynamics associated with a major adaptive transition in the archeological record ~24 km from the coring site. Outcrops preserve evidence of the replacement of Acheulean by middle stone age (MSA) technological, cognitive, and social innovations between 500 and 300 thousand years (ka) ago, contemporaneous with large-scale taxonomic and adaptive turnover in mammal herbivores. Beginning ~400 ka ago, tectonic, hydrological, and ecological changes combined to disrupt a relatively stable resource base, prompting fluctuations of increasing magnitude in freshwater availability, grassland communities, and woody plant cover. Interaction of these factors offers a resource-oriented hypothesis for the evolutionary success of MSA adaptations, which likely contributed to the ecological flexibility typical of *Homo sapiens* foragers.

<https://advances.sciencemag.org/content/6/43/eabc8975>

MICHAEL R. WATERS, THOMAS W. STAFFORD & DAVID L. CARLSON – The age of Clovis—13,050 to 12,750 cal yr b.p.

Thirty-two radiocarbon ages on bone, charcoal, and carbonized plant remains from 10 Clovis sites range from 11,110 ± 40 to 10,820 ± 10 14c years before the present (yr b.p.). These radiocarbon ages provide a maximum calibrated (cal) age range for Clovis of ~13,050 to ~12,750 cal yr b.p. this radiocarbon record suggests that Clovis first appeared at the end of the Allerød and is one of at least three contemporary archaeological complexes in the western hemisphere during the terminal Pleistocene. Stemmed projectile points in western north America are coeval and even older than Clovis, and the fishtail point complex is well established in the Southern cone of south America by ~12,900 cal yr b.p. Clovis disappeared ~12,750 cal yr b.p. at the beginning of the younger dryas, coincident with the extinction of the remaining north American megafauna (proboscideans) and the appearance of multiple north American regional archaeological complexes.

https://advances.sciencemag.org/content/6/43/eaaz0455?utm_campaign=toc_advances_2020-10-23&et rid=17774313&et cid=3530786

T. AFLALO et al – A shared neural substrate for action verbs and observed actions in human posterior parietal cortex

High-level sensory and motor cortical areas are activated when processing the meaning of language, but it is unknown whether, and how, words share a neural substrate with corresponding sensorimotor representations. We recorded from single neurons in human posterior parietal cortex (PPC) while participants viewed action verbs and corresponding action videos from multiple views. We find that PPC neurons exhibit a common neural substrate for action verbs and observed actions. Further, videos were encoded with mixtures of invariant and idiosyncratic responses across views. Action verbs elicited selective responses from a fraction of these invariant and idiosyncratic neurons, without preference, thus associating with a statistical sampling of the diverse sensory representations related to the corresponding action concept. Controls indicated that the results are not the product of visual imagery or arbitrary learned associations. Our results suggest that language may activate the consolidated visual experience of the reader.

https://advances.sciencemag.org/content/6/43/eabb3984?utm_campaign=toc_advances_2020-10-23&et rid=17774313&et cid=3530786

Trends in Cognitive Sciences

PAPERS

GARY LUPYAN et al with LERA BORODITSKY – Effects of Language on Visual Perception

Does language change what we perceive? Does speaking different languages cause us to perceive things differently? We review the behavioral and electrophysiological evidence for the influence of language on perception, with an emphasis on the visual modality. Effects of language on perception can be observed both in higher-level processes such as recognition and in lower-level processes such as discrimination and detection. A consistent finding is that language causes us to perceive in a more categorical way. Rather than being fringe or exotic, as they are sometimes portrayed, we discuss how effects of language on perception naturally arise from the interactive and predictive nature of perception.

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(20\)30213-8?dgcid=raven_jbs_etoc_email](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(20)30213-8?dgcid=raven_jbs_etoc_email)

DORA KAMPIS & VICTORIA SOUTHGATE – Altercentric Cognition: How Others Influence Our Cognitive Processing

Humans are ultrasocial, yet, theories of cognition have often been occupied with the solitary mind. Over the past decade, an increasing volume of work has revealed how individual cognition is influenced by the presence of others. Not only do we rapidly identify others in our environment, but we also align our attention with their attention, which influences what we perceive, represent, and remember, even when our immediate goals do not involve coordination. Here, we refer to the human sensitivity to others and to the targets and content of their attention as ‘altercentrism’; and aim to bring seemingly disparate findings together, suggesting that they are all reflections of the altercentric nature of human cognition.

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(20\)30217-5?dgcid=raven_jbs_etoc_email](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(20)30217-5?dgcid=raven_jbs_etoc_email)

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