NOTICES ................................................................. 2

PUBLICATION ALERTS ........................................................................................................... 2

IMPORTANT – BIENNIAL CENSUS ......................................................................................... 2

SCIENCE NEWS – Did famed human ancestor ‘Lucy’ fall to her death? .............................. 3

SCIENCE NEWS – Video: Your dog understands more than you think .............................. 3

SCIENCE NEWS – These wolves are born gamblers, unlike cautious dogs ........................... 3

SCIAM NEWS – Like Humans, Chimps Reward Cooperation and Punish Freeloaders ................. 3

SCIAM NEWS – Early Hominid Lucy May Have Died by Falling out of a Tree ...................... 3

SCI-NEWS.COM – Australopithecus afarensis ‘Lucy’ Died after Falling from Tall Tree .......... 3

SCI-NEWS.COM – Dogs Understand Words and Intonation of Human Speech, New Study Finds ................................................................. 3

SCIENCE DAILY – Dogs understand both vocabulary and intonation of human speech ........... 3

SCIENCE DAILY – Cracking the coldest case: How Lucy, the most famous human ancestor, died ................................................................. 3

SCIENCE DAILY – Milky Way had a blowout bash 6 million years ago .................................. 4

SCIENCE DAILY – People enhanced the environment, not degraded it, over past 13,000 years ...... 4

SCIENCE DAILY – ‘Gambling' wolves take more risks than dogs ............................................. 4

SCIENCE DAILY – Threat of group extinction proves a powerful motivator .......................... 4

SCIENCE DAILY – Babies chew on subtle social, cultural cues at mealtime ......................... 4

SCIENCE DAILY – EEG recordings prove learning foreign languages can sharpen our minds .... 4

SCIENCE DAILY – Four-year-olds are not physically ready to start school ............................ 4

SAPIENS – Iconic Fossil Assigned Probable Cause of Death: A Big Fall ................................ 4

PUBLICATIONS ......................................................................................................................... 4

Proceedings of the Royal Society B – 31 August 2016 .............................................................. 4

NOTHING OF INTEREST ........................................................................................................... 4

Philosophical Transactions of the Royal Society B – 5 October 2016 .................................... 4

PAPERS ........................................................................................................................................ 4

ROBERT TURNER – Uses, misuses, new uses and fundamental limitations of magnetic resonance imaging in cognitive science ................................................. 4

Royal Society Biology Letters – No issue this week ............................................................... 5

Royal Society Open Science – August 2016 .............................................................................. 5

PAPERS ........................................................................................................................................ 5

ROGER S. SEYMOUR, VANYA BOSIOVIC & EDWARD P. SNELLING – Fossil skulls reveal that blood flow rate to the brain increased faster than brain volume during human evolution .............................................................................. 5

MARLEN FRÖHLICH, ROMAN M. WITTIG & SIMONE PIKA – Play-solicitation gestures in chimpanzees in the wild: flexible adjustment to social circumstances and individual matrices .............................................................................. 5

CHRISTIAN RUTZ et al – Tool bending in New Caledonian crows ........................................... 5

ISABELLE DE GROOTE et al with CHRIS B. STRINGER – New genetic and morphological evidence suggests a single hoaxer created ‘Piltdown man’ .................................................................................. 5

JEFFREY R. STEVENS et al – Reflections of the social environment in chimpanzee memory: applying rational analysis beyond humans ................................................................. 6

New Scientist – 3 September 2016 ............................................................................................ 6

ARTICLES .................................................................................................................................. 6

Metaphysics special: Philosophy’s biggest questions unravelled ................................................ 6

Science – 2 September 2016 ...................................................................................................... 6

PAPERS ........................................................................................................................................ 6

A. ANDICS et al – Neural mechanisms for lexical processing in dogs ...................................... 6

Science Express – 2 September 2016 ........................................................................................ 6

NOTHING OF INTEREST ........................................................................................................... 6

Science Advances – 2 September 2016 ..................................................................................... 6

NOTHING OF INTEREST ........................................................................................................... 6

Nature – 1 September 2016 ...................................................................................................... 6

NEWS ......................................................................................................................................... 6

Ancient DNA: Muddy messages about American migration ................................................... 6

PAPERS ........................................................................................................................................ 6

JOHN KAPPELMAN et al – Perimortem fractures in Lucy suggest mortality from fall out of tall tree ................................................................. 6
Nature Communications – 31 August 2016 ........................................................................................................7

PAPERS......................................................................................................................................................7

GUIDO MARCO CICCHINI, GIOVANNI ANOBILE & DAVID C. BURR – Spontaneous perception of numerosity in humans. .........................................................7

Nature Scientific Reports – 30 August 2016..................................................................................................7

PAPERS......................................................................................................................................................7

TRU-GIN LIU & YAO LU – Gene–culture interaction and the evolution of the human sense of fairness ......................................................................................7

ANA B. CHICA et al – Interactions between phasic alerting and consciousness in the fronto-striatal network ...........................................................................7

PLoS One – 29 August 2016..........................................................................................................................8

PAPERS......................................................................................................................................................8

DANA PFEFFERLE et al – Does the Structure of Female Rhesus Macaque Coo Calls Reflect Relatedness and/or Familiarity? ................................................8

STEVEN PIANTADOSI & RICHARD ASLIN – Compositional Reasoning in Early Childhood ..................................................8

PLoS Biology – 30 August 2016....................................................................................................................8

PAPERS......................................................................................................................................................8

THOMAS C. SÜDHOF – Truth in Science Publishing: A Personal Perspective .................................................8

PLoS Genetics – 31 August 2016...................................................................................................................8

NOTHING OF INTEREST.............................................................................................................................8

PNAS – 30 August 2016................................................................................................................................9

PAPERS......................................................................................................................................................9

SEAN S. DOWNEY, W. RANDALL HAAS, JR., & STEPHEN J. SHENNAN – European Neolithic societies showed early warning signals of population collapse ..................................................................................................................9

PATRICIA L. LOCKWOOD et al – Neurocomputational mechanisms of prosocial learning and links to empathy ............................................................................9

Frontiers in Psychology – 2 September 2016 ................................................................................................9

NOTHING OF INTEREST.............................................................................................................................9

Frontiers in Neuroscience – 2 September 2016 .........................................................................................9

NOTHING OF INTEREST.............................................................................................................................9

Frontiers in Ecology & Evolution – 2 September 2016 .............................................................................9

NOTHING OF INTEREST.............................................................................................................................9

PeerJ – 31 August 2016................................................................................................................................9

NOTHING OF INTEREST.............................................................................................................................9

Current Anthropology – September 2016....................................................................................................9

PAPERS......................................................................................................................................................9

ROB HOSFIELD – Walking in a Winter Wonderland? Strategies for Early and Middle Pleistocene Survival in Midlatitude Europe ........................................9

To unsubscribe from the EAORC Bulletin..................................................................................................9

Produced by and for the EAORC email group..............................................................................................10

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.

IMPORTANT – BIENNIAL CENSUS

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’m not acting as a source of spam.

Now that EAORC has turned 13, that time has rolled around again. So, if you wish to continue receiving the bulletin, please send me an email. It needs to say no more than “yes”; but if you check your listed details on http://martinedwards.webplus.net/eaorc_members.html and let me know of any changes, I will get that list up-to-date, too. You can also let me know of any journals I should be following and reporting on, and any other ways the service can be improved.

If you do not want the newsletters any more, you need do nothing. You will continue to receive Bulletins until September, when I will remove anyone who hasn’t responded.

Martin
a fall from considerable height when the conscious victim stretched out an arm in an attempt to break the fall.

Lucy, the most famous fossil of a human ancestor, probably died after falling from a tree, according to a new study.

Scientists printed out 3-D models of Lucy's bones, showing a breakage pattern consistent with a fall from a tree.

Australopithecus afarensis ‘Lucy’ Died after Falling from Tall Tree

According to a study led by Dr. Attila Andics of the Eötvös Loránd University in Budapest, Hungary, dogs use the left hemisphere to process words and the auditory region of the right hemisphere to process intonation, and praising activates dog’s reward center only when both words and intonation match.

Dogs understand both vocabulary and intonation of human speech, new study finds

Dogs have the ability to distinguish vocabulary words and the intonation of human speech through brain regions similar to those that humans use, a new study reports.

Cracking the coldest case: How Lucy, the most famous human ancestor, died

Lucy, the most famous fossil of a human ancestor, probably died after falling from a tree, according to a new study. Researchers have found that the injury Lucy sustained was consistent with a four-part proximal humerus fracture, caused by a fall from considerable height when the conscious victim stretched out an arm in an attempt to break the fall.
SCIENCE DAILY – Milky Way had a blowout bash 6 million years ago
The center of the Milky Way galaxy is currently a quiet place where a supermassive black hole slumbers, only occasionally slurping small sips of hydrogen gas. But it wasn't always this way. A new study shows that 6 million years ago, when the first human ancestors known as hominins walked the Earth, our galaxy's core blazed forth furiously. The evidence for this active phase came from a search for the galaxy's missing mass.
(An interesting coincidence that will be remarked upon; but there is no evidence of causation.)
https://www.sciencedaily.com/releases/2016/08/160829111120.htm

SCIENCE DAILY – People enhanced the environment, not degraded it, over past 13,000 years
Human occupation is usually associated with deteriorated landscapes, but new research shows that 13,000 years of repeated occupation by British Columbia's coastal First Nations has had the opposite effect, enhancing temperate rainforest productivity.
https://www.sciencedaily.com/releases/2016/08/160830113739.htm

SCIENCE DAILY – 'Gambling' wolves take more risks than dogs
Wolves pursue a high-risk, all-or-nothing strategy when gambling for food, while dogs are more cautious, shows a new study. This difference is likely innate and adaptive, reflecting the hunter versus scavenger lifestyle of wolves versus dogs.

SCIENCE DAILY – Threat of group extinction proves a powerful motivator
Charles Darwin was right: Groups that enjoy an advantage have members who are 'ready to aid one another and to sacrifice themselves for the common good.'

SCIENCE DAILY – Babies chew on subtle social, cultural cues at mealtime
At the dinner table, babies do a lot more than play with their sippy cups, new research suggests.

SCIENCE DAILY – EEG recordings prove learning foreign languages can sharpen our minds
Scientists say the more foreign languages we learn, the more effectively our brain reacts and processes the data accumulated in the course of learning.

SCIENCE DAILY – Four-year-olds are not physically ready to start school
New research from Loughborough University has revealed many four-year-olds are not physically ready to start school.

SAPIENS – Iconic Fossil Assigned Probable Cause of Death: A Big Fall
An intriguing new study adds cred to the theory that Lucy and her relatives spent some of their time in trees.
http://www.sapiens.org/evolution/arboreal-human-ancestors-lucy/?utm_source=SAPIENS.org+Subscribers&utm_campaign=509a669b49-Email+8last+9.2&utm_medium=email&utm_term=0_18b7e41cd8-509a669b49-201933693

PUBLICATIONS
NOTHING OF INTEREST

Philosophical Transactions of the Royal Society B – 5 October 2016
PAPERS
ROBERT TURNER – Uses, misuses, new uses and fundamental limitations of magnetic resonance imaging in cognitive science
When blood oxygenation level-dependent (BOLD) contrast functional magnetic resonance imaging (fMRI) was discovered in the early 1990s, it provoked an explosion of interest in exploring human cognition, using brain mapping techniques based on MRI. Standards for data acquisition and analysis were rapidly put in place, in order to assist comparison of results across laboratories. Recently, MRI data acquisition capabilities have improved dramatically, inviting a rethink of strategies for relating functional brain activity at the systems level with its neuronal substrates and functional connections. This paper reviews the established capabilities of BOLD contrast fMRI, the perceived weaknesses of major methods of analysis, and
current results that may provide insights into improved brain modelling. These results have inspired the use of in vivo
cytoarchitecture for localizing brain activity, individual subject analysis without spatial smoothing and mapping of changes
in cerebral blood volume instead of BOLD activation changes. The apparent fundamental limitations of all methods based on
magnetic resonance are also discussed.
http://rstb.royalsocietypublishing.org/content/371/1705/20150349?etoc

Royal Society Biology Letters – No issue this week

Royal Society Open Science – August 2016

PAPERS

ROGER S. SEYMOUR, VANYA BOSIOCIC & EDWARD P. SNELLING – Fossil skulls reveal that blood flow rate to the brain
increased faster than brain volume during human evolution
The evolution of human cognition has been inferred from anthropological discoveries and estimates of brain size from fossil
skulls. A more direct measure of cognition would be cerebral metabolic rate, which is proportional to cerebral blood flow
rate (perfusion). The hominin cerebrum is supplied almost exclusively by the internal carotid arteries. The sizes of the
foramina that transmitted these vessels in life can be measured in hominin fossil skulls and used to calculate cerebral
perfusion rate. Perfusion in 11 species of hominin ancestors, from Australopithecus to archaic Homo sapiens, increases
disproportionately when scaled against brain volume (the allometric exponent is 1.41). The high exponent indicates an
increase in the metabolic intensity of cerebral tissue in later Homo species, rather than remaining constant (1.0) as expected
by a linear increase in neuron number, or decreasing according to Kleiber's Law (0.75). During 3 Myr of hominin evolution,
cerebral tissue perfusion increased 1.7-fold, which, when multiplied by a 3.5-fold increase in brain size, indicates a 6.0-fold
increase in total cerebral blood flow rate. This is probably associated with increased interneuron connectivity, synaptic
activity and cognitive function, which all ultimately depend on cerebral metabolic rate.
http://rsos.royalsocietypublishing.org/content/3/8/160305.abstract?etoc

MARLEN FRÖHLICH, ROMAN M. WITTIG & SIMONE PIKA – Play-solicitation gestures in chimpanzees in the wild: flexible
adjustment to social circumstances and individual matrices
Social play is a frequent behaviour in great apes and involves sophisticated forms of communicative exchange. While it is well
established that great apes test and practise the majority of their gestural signals during play interactions, the influence of
demographic factors and kin relationships between the interactants on the form and variability of gestures are relatively little
understood. We thus carried out the first systematic study on the exchange of play-soliciting gestures in two chimpanzee
(Pan troglodytes) communities of different subspecies. We examined the influence of age, sex and kin relationships of the
play partners on gestural play solicitations, including object-associated and self-handicapping gestures. Our results
demonstrated that the usage of (i) audible and visual gestures increased significantly with infant age, (ii) tactile gestures
differed between the sexes, and (iii) audible and visual gestures were higher in interactions with conspecifics than with
mothers. Object-associated and self-handicapping gestures were frequently used to initiate play with same-aged and
younger play partners, respectively. Our study thus strengthens the view that gestures are mutually constructed
communicative means, which are flexibly adjusted to social circumstances and individual matrices of interactants.
http://rsos.royalsocietypublishing.org/content/3/8/160278.abstract?etoc

CHRISTIAN RUTZ et al – Tool bending in New Caledonian crows
‘Betty’ the New Caledonian crow astonished the world when she ‘spontaneously’ bent straight pieces of garden wire into
hooked foraging tools. Recent field experiments have revealed that tool bending is part of the species’ natural behavioural
repertoire, providing important context for interpreting Betty’s iconic wire-bending feat. More generally, this discovery
provides a compelling illustration of how natural history observations can inform laboratory-based research into the
cognitive capacities of non-human animals.
http://rsos.royalsocietypublishing.org/content/3/8/160278.abstract?etoc

ISABELLE DE GROOTE et al with CHRIS B. STRINGER – New genetic and morphological evidence suggests a single
hoaxer created ‘Piltdown man’
In 1912, palaeontologist Arthur Smith Woodward and amateur antiquarian and solicitor Charles Dawson announced the
discovery of a fossil that supposedly provided a link between apes and humans: Eoanthropus dawsoni (Dawson’s dawn man).
The publication generated huge interest from scientists and the general public. However, ‘Piltdown man’s’ initial celebrity
has long been overshadowed by its subsequent infamy as one of the most famous scientific frauds in history. Our re-
evaluation of the Piltdown fossils using the latest scientific methods (DNA analyses, high-precision measurements,
spectroscopy and virtual anthropology) shows that it is highly likely that a single orang-utan specimen and at least two
human specimens were used to create the fake fossils. The modus operandi was found consistent throughout the
assemblage (specimens are stained brown, loaded with gravel fragments and restored using filling materials), linking all
specimens from the Piltdown I and Piltdown II sites to a single forger—Charles Dawson. Whether Dawson acted alone is
uncertain, but his hunger for acclaim may have driven him to risk his reputation and misdirect the course of anthropology for
decades. The Piltdown hoax stands as a cautionary tale to scientists not to be led by preconceived ideas, but to use scientific integrity and rigour in the face of novel discoveries.

http://rsos.royalsocietypublishing.org/content/3/8/160328.abstract?etoc

JEFFREY R. STEVENS et al – Reflections of the social environment in chimpanzee memory: applying rational analysis beyond humans

In cognitive science, the rational analysis framework allows modelling of how physical and social environments impose information-processing demands onto cognitive systems. In humans, for example, past social contact among individuals predicts their future contact with linear and power functions. These features of the human environment constrain the optimal way to remember information and probably shape how memory records are retained and retrieved. We offer a primer on how biologists can apply rational analysis to study animal behaviour. Using chimpanzees (Pan troglodytes) as a case study, we modelled 19 years of observational data on their social contact patterns. Much like humans, the frequency of past encounters in chimpanzees linearly predicted future encounters, and the recency of past encounters predicted future encounters with a power function. Consistent with the rational analyses carried out for human memory, these findings suggest that chimpanzee memory performance should reflect those environmental regularities. In re-analysing existing chimpanzee memory data, we found that chimpanzee memory patterns mirrored their social contact patterns. Our findings hint that human and chimpanzee memory systems may have evolved to solve similar information-processing problems. Overall, rational analysis offers novel theoretical and methodological avenues for the comparative study of cognition.

http://rsos.royalsocietypublishing.org/content/3/8/160293.abstract?etoc

New Scientist – 3 September 2016

ARTICLES

Metaphysics special: Philosophy's biggest questions unravelled

The biggest questions are normally left to philosophers: how do I know I exist? Do we have free will? What is reality made of? Why, for that matter, is there anything at all?

HTTPS://WWW.NEWSCIENTIST.COM/ROUND-UP/METAPHYSICS/?CMPID=NLC%7CNSNS%7C2016-0109-NEWGLOBAL&UTM_MEDIUM=NLC&UTM_SOURCE=NSNS

Science – 2 September 2016

PAPERS

A. ANDICS et al – Neural mechanisms for lexical processing in dogs

During speech processing, human listeners can separately analyze lexical and intonational cues to arrive at a unified representation of communicative content. The evolution of this capacity can be best investigated by comparative studies. Using functional magnetic resonance imaging, we explored whether and how dog brains segregate and integrate lexical and intonational information. We found a left-hemisphere bias for processing meaningful words, independently of intonation; a right auditory brain region for distinguishing intonationally marked and unmarked words; and increased activity in primary reward regions only when both lexical and intonational information were consistent with praise. Neural mechanisms to separately analyze and integrate word meaning and intonation in dogs suggest that this capacity can evolve in the absence of language.

http://science.sciencemag.org/content/353/6303/1030?utm_campaign=toc_sci-mag_2016-09-01&et_rid=17774313&et_cid=768871

Science Express – 2 September 2016

NOTHING OF INTEREST

Science Advances – 2 September 2016

NOTHING OF INTEREST

Nature – 1 September 2016

NEWS

Ancient DNA: Muddy messages about American migration

When and by which paths did early humans migrate into America? An analysis of ancient plant and animal remains revises the timeframe during which a route may have opened between ice sheets in northwest America.

http://www.nature.com/nature/journal/v537/n7618/full/nature19421.html

PAPERS

JOHN KAPPELMAN et al – Perimortem fractures in Lucy suggest mortality from fall out of tall tree

The Pliocene fossil ‘Lucy’ (Australopithecus afarensis) was discovered in the Afar region of Ethiopia in 1974 and is among the oldest and most complete fossil hominin skeletons discovered. Here we propose, on the basis of close study of her skeleton,
that her cause of death was a vertical deceleration event or impact following a fall from considerable height that produced compressive and hinge (greenstick) fractures in multiple skeletal elements. Impacts that are so severe as to cause concomitant fractures usually also damage internal organs; together, these injuries are hypothesized to have caused her death. Lucy has been at the centre of a vigorous debate about the role, if any, of arboreal locomotion in early human evolution. It is therefore ironic that her death can be attributed to injuries resulting from a fall, probably out of a tall tree, thus offering unusual evidence for the presence of arborealism in this species.

http://www.nature.com/nature/journal/vaop/ncurrent/full/nature19332.html

MIKKEL W. PEDERSEN et al with ESKE WILLERSLEV – Postglacial viability and colonization in North America’s Ice-free corridor

During the Last Glacial Maximum, continental ice sheets isolated Beringia (northeast Siberia and northwest North America) from unglaciated North America. By around 15 to 14 thousand calibrated radiocarbon years before present (cal. kyr bp), glacial retreat opened an approximately 1,500-km-long corridor between the ice sheets. It remains unclear when plants and animals colonized this corridor and it became biologically viable for human migration. We obtained radiocarbon dates, pollen, macrofossils and metagenomic DNA from lake sediment cores in a bottleneck portion of the corridor. We find evidence of steppe vegetation, bison and mammoth by approximately 12.6 cal. kyr bp, followed by open forest, with evidence of moose and elk at about 11.5 cal. kyr bp, and boreal forest approximately 10 cal. kyr bp. Our findings reveal that the first Americans, whether Clovis or earlier groups in unglaciated North America before 12.6 cal. kyr bp, are unlikely to have travelled by this route into the Americas. However, later groups may have used this north–south passageway.

http://www.nature.com/nature/journal/v537/n7618/full/nature19085.html

Nature Communications – 31 August 2016

PAPERS

GUIDO MARCO CICCHINI, GIOVANNI ANOBILE & DAVID C. BURR – Spontaneous perception of numerosity in humans

Humans, including infants, and many other species have a capacity for rapid, nonverbal estimation of numerosity. However, the mechanisms for number perception are still not clear; some maintain that the system calculates numerosity via density estimates—similar to those involved in texture—while others maintain that more direct, dedicated mechanisms are involved. Here we show that provided that items are not packed too densely, human subjects are far more sensitive to numerosity than to either density or area. In a two-dimensional space spanning density, area and numerosity, subjects spontaneously react with far greater sensitivity to changes in numerosity, than either area or density. Even in tasks where they were explicitly instructed to make density or area judgments, they responded spontaneously to number. We conclude, that humans extract number information, directly and spontaneously, via dedicated mechanisms.

http://www.nature.com/ncomms/2016/160824/ncomms12536/full/ncomms12536.html?WT.ec_id=NCOMMS-20160831&spMailingID=52185146&spUserID=MTA5NjM3MTAyODYxS0&spJobID=985707461&spReportId=OTg1NzA3NDYxS0

Nature Scientific Reports – 30 August 2016

PAPERS

TRU-QIN LIU & YAO LU – Gene–culture interaction and the evolution of the human sense of fairness

How Darwinian evolution would produce creatures with the proclivity of Darwinian generosity, most of them voluntarily giving up the immediate benefit for themselves or their genes, remains a puzzle. This study targets a problem, the origin of human sense of fairness, and uses fairness-related genes and the social manipulation of Darwinian generosity as the key variables underlying the human sense of fairness, inequity aversion, as well as their relationships within cooperation, and the anticipation foresight of the way relationships are affected by resource division, given the assumption of randomly matched partners. Here we suggest a model in which phenotype will gradually converge towards the perfect sense of fairness along with the prospect of cooperation. Later, the sense of fairness will decrease but it is never extinct. Where social manipulation of Darwinian generosity overshadows genetics, the sense of fairness could be acute to the degree of social manipulation. Above all, there still exists a threshold in the degree of social manipulation, beyond which altruism dominates selfishness in human cooperation. Finally, we propose three new directions toward more realistic scenarios stimulated by recent development of the synergy between statistical physics, network science and evolutionary game theory.

http://www.nature.com/articles/srep32483?WT.ec_id=SREP-20160830&spMailingID=52176628&spUserID=ODY4NJU1NzU3NQS2&spJobID=985535494&spReportId=OTg1NTM1NDk0S0

ANA B. CHICA et al – Interactions between phasic alerting and consciousness in the fronto-striatal network

Only a small fraction of all the information reaching our senses can be the object of conscious report or voluntary action. Although some models propose that different attentional states (top-down amplification and vigilance) are necessary for conscious perception, few studies have explored how the brain activations associated with different attentional systems (such as top-down orienting and phasic alerting) lead to conscious perception of subsequent visual stimulation. The aim of the present study was to investigate the neural mechanisms associated with endogenous spatial attention and phasic alertness, and their interaction with the conscious perception of near-threshold stimuli. The only region demonstrating a

http://www.nature.com/nature/journal/v537/n7618/full/nature19085.html

—
neural interaction between endogenous attention and conscious perception was the thalamus, while a larger network of cortical and subcortical brain activations, typically associated with phasic alerting, was highly correlated with participants' conscious reports. Activation of the anterior cingulate cortex, supplementary motor area, frontal eye fields, thalamus, and caudate nucleus was related to perceptual consciousness. These data suggest that not all attentional systems are equally effective in enhancing conscious perception, highlighting the importance of thalamo-cortical circuits on the interactions between alerting and consciousness.

http://www.nature.com/articles/srep31868?WT.ec_id=SREP-20160830&spMailingID=52176628&spUserID=ODY4NjU1NzU3NQS2&spJobID=985535494&spReportId=OTg1NTM1NDk0S0


PAPERS

DANA PFEFFERLE et al – Does the Structure of Female Rhesus Macaque Coo Calls Reflect Relatedness and/or Familiarity?

In social animals, kin relations strongly shape the social structure of a group. In female-bonded species, maternal relatedness is likely to be mediated via familiarity, but evidence is accumulating that non-human primates are able to recognize kin that they are not familiar with and adjust their behavior accordingly. In playback experiments, female rhesus macaques showed increased interest in 'coo' calls produced by unfamiliar paternal half-sisters compared to 'coo' calls produced by unfamiliar unrelated females, suggesting that these calls should have some common structural characteristics that facilitate the discrimination of kin from non-kin. Here we analyzed 'coo' calls of 67 adult female rhesus macaques from four groups and seven matrilines living on the island of Cayo Santiago (Puerto Rico). We tested whether the call structure of closely maternal and/or paternal related females, as determined from extensive pedigree data, differed from the call structure of unrelated females, while controlling for familiarity (i.e., group-matrilinial membership and age difference) of subjects. In contrast to our expectation, kinship did not predict similarities in 'coo' call structure, whereas 'coo' structure was more similar when produced by females of similar age as well as by females with higher familiarity, suggesting that experience is more decisive than genetic background. The high number of individuals in the analysis and the high accuracy of the assignment of calls to individuals render a lack of power as an unlikely explanation. Thus, based on the results of this study, kin recognition in rhesus monkeys does neither appear to be based on the assessment of self-similarity, nor on the comparison among related subjects (i.e., acoustic phenotype matching), but appears to be mediated by different or multiple cues. Furthermore, the results support the notion that frequent social interactions result in increasing acoustic similarity within largely innate call types ('vocal accommodation').

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0161133

STEVEN PIANTADOSI & RICHARD ASLIN – Compositional Reasoning In Early Childhood

Compositional “language of thought” models have recently been proposed to account for a wide range of children’s conceptual and linguistic learning. The present work aims to evaluate one of the most basic assumptions of these models: children should have an ability to represent and compose functions. We show that 3.5–4.5 year olds are able to predictively compose two novel functions at significantly above chance levels, even without any explicit training or feedback on the composition itself. We take this as evidence that children at this age possess some capacity for compositionality, consistent with models that make this ability explicit, and providing an empirical challenge to those that do not.

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0147734


PAPERS

THOMAS C. SÜDHOF – Truth In Science Publishing: A Personal Perspective

Scientists, public servants, and patient advocates alike increasingly question the validity of published scientific results, endangering the public’s acceptance of science. Here, I argue that emerging flaws in the integrity of the peer review system are largely responsible. Distortions in peer review are driven by economic forces and enabled by a lack of accountability of journals, editors, and authors. One approach to restoring trust in the validity of published results may be to establish basic rules that render peer review more transparent, such as publishing the reviews (a practice already embraced by some journals) and monitoring not only the track records of authors but also of editors and journals.

http://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.1002547

PLoS Genetics – 31 August 2016

NOTHING OF INTEREST
PNAS – 30 August 2016

PAPERS

SEAN S. DOWNEY, W. RANDALL HAAS, JR., & STEPHEN J. SHENNAN – European Neolithic societies showed early warning signals of population collapse

This study explores whether archaeologically detectable declines in resilience precede the onset of large-scale human population collapses. Our case study is the European Neolithic: a period that began approximately 9,000 y ago when the introduction of agricultural technologies initiated phases of rapid population growth that were in many cases followed by demographic instability and dramatic collapse. Our study finds evidence that statistical signatures of decreasing resilience can be detected long before population decline begins. To our knowledge, this study is the first to find early warning signals of demographic regime shift among human populations. The results suggest that archaeological information can potentially be used to monitor social and ecological vulnerability in human societies at large spatial and temporal scales.

http://www.pnas.org/content/113/35/9751.abstract

PATRICIA L. LOCKWOOD et al – Neurocomputational mechanisms of prosocial learning and links to empathy

Prosocial behaviors are essential for social bonding and cohesion, but the mechanisms that underpin these behaviors are still poorly understood. Using computational modeling and neuroimaging, we show that people can learn to benefit others and that this learning is underpinned by reinforcement learning signals in the subgenual anterior cingulate cortex (sgACC). However, there is substantial individual variability in people’s ability for prosocial learning. More empathic people learn faster and have more selective responses in the sgACC when benefitting others. Our results thus reveal a computational mechanism driving prosocial learning in humans and why empathy and prosocial behavior may be linked. This framework could help to explain reduced empathy and prosocial behavior in people with disorders of social cognition.

http://www.pnas.org/content/113/35/9763.abstract

Frontiers in Psychology – 2 September 2016

NOTHING OF INTEREST

Frontiers in Neuroscience – 2 September 2016

NOTHING OF INTEREST

Frontiers in Ecology & Evolution – 2 September 2016

NOTHING OF INTEREST

PeerJ – 31 August 2016

NOTHING OF INTEREST

Current Anthropology – September 2016

PAPERS

ROB HOSFIELD – Walking in a Winter Wonderland? Strategies for Early and Middle Pleistocene Survival in Midlatitude Europe

Any occupation of northern Europe by Lower Paleolithic hominins, even those occurring during full interglacials, must have addressed the challenges of marked seasonality and cold winters. These would have included the problems of windchill and frostbite; duration, distribution, and depth of snow cover; reduced daylight hours; and distribution and availability of animal and plant foods. Solutions can essentially be characterized as a “stick or twist” choice, that is, year-round presence on a local scale versus extensive annual mobility. However, these options—and the interim strategies that lie between them—present various problems, including maintaining core body temperature, meeting the energetic demands of mobility, coping with reduced resource availability and increasing patchiness, and meeting nutritional requirements. The feasibility of different winter survival strategies are explored with reference to Lower Paleolithic paleoenvironmental reconstructions and on-site behavioral evidence. Emphasis is placed on possible strategies for (i) avoiding the excessive lean meat protein problem of “rabbit starvation” (e.g., through exploitation of “residential” species with significant winter body fat and/or by targeting specific body parts, following modern ethnographic examples, supplemented by the exploitation of winter plants) and (ii) maintaining body temperatures (e.g., through managed pyrotechnology and/or other forms of cultural insulation). The paper concludes with a suggested winter strategy.

http://www.journals.uchicago.edu/doi/abs/10.1086/688579

To unsubscribe from the EAORC Bulletin

Send an email to martin.edwardes@btopenworld.com with the subject "EAORC unsubscribe".

EAORC website information is at http://martinedwardes.webplus.net/eaorc.html
Produced by and for the EAORC email group
EAORC is a fee-free academic internet news service and has no commercial sponsorship or other commercial interests. If you have received this email and are not subscribed to EAORC then contact martin.edwardes@btopenworld.com immediately.