

CONTENTS

NOTICES	2
PUBLICATION ALERTS.....	2
SCIENCE NEWS – Mutations may reveal how Tibetans can live on world’s highest plateau	2
SCIENCE NEWS – Ancient skeletons show direct link to modern tribes in the Pacific Northwest.....	2
SCIENCE NEWS – Spear tips point to path of first Americans	2
SCIENCE NEWS – Why don’t we eat each other for dinner? Too few calories, says new cannibalism study	2
SCIAM NEWS – Food for Thought: Do We Owe Our Large Primate Brains to a Passion for Fruit?	3
SCIAM NEWS – Ancient Bones Reveal Girl’s Tough Life in Early Americas	3
SCIAM NEWS – Living a Lie: We Deceive Ourselves to Better Deceive Others	3
SCI-NEWS.COM – Ancient DNA Reveals Genetic Continuity in Northwest North America.....	3
SCI-NEWS.COM – Neuroscientists Identify New Neural Pathway that Controls Hand Movements	3
SCIENCE DAILY – Prehistoric art and ornaments from Indonesian 'Ice Age'	3
SCIENCE DAILY – Girls are better at masking autism than boys.....	3
SCIENCE DAILY – Do smart songbirds always get the girl?	3
SCIENCE DAILY – There's a cost to 'bee-ing' too smart.....	3
SCIENCE DAILY – Archaeologist explains innovation of 'fluting' ancient stone weaponry	3
SCIENCE DAILY – How songbirds teach themselves songs.....	4
SCIENCE DAILY – When female mates multiply, males evolve to be choosy.....	4
SCIENCE DAILY – Steppe migrant thugs pacified by Stone Age farming women	4
SCIENCE DAILY – 10,000 years of genetic continuity in northwest North America, study reveals.....	4
SCIENCE DAILY – You spy with your little eye, dogs can adopt the perspective of humans	4
SCIENCE DAILY – How learning in the present shapes future learning	4
SAPIENS – Nature’s Most Creative Copulators.....	4
ACADEMIA.EDU – Review of research on belief in a Sky Bear	4
Roslyn M. Frank – A status report: A review of research on the origins and diffusion of the belief in a Sky Bear	4
FRONTIERS NEWS – Did Humans Create the Sahara Desert?.....	5
PUBLICATIONS	5
Science.....	5
ARTICLES	5
LIZZIE WADE – Relics of the first Americans?.....	5
Nature	5
NEWS	5
Ancient bones reveal girl's tough life in early Americas	5
Nature Communications	5
PAPERS	5
SANJEEV GUPTA et al – Two-stage opening of the Dover Strait and the origin of island Britain	5
Nature Scientific Reports.....	5
PAPERS	5
MICHAEL LAAKASUO, JUKKA SUNDVALL & MARIANNA DROSINO – Individual Differences in Moral Disgust Do Not Predict Utilitarian Judgments, Sexual and Pathogen Disgust Do.....	5
MARION BOSCH et al – Checking behavior in rhesus monkeys is related to anxiety and frontal activity	6
PLOS One.....	6
PAPERS	6
DAVID BUTTELMANN et al with JOSEP CALL & MICHAEL TOMASELLO – Great apes distinguish true from false beliefs in an interactive helping task	6
HEDVIG SKIRGÅRD, SEÁN G. ROBERTS & LARS YENCKEN – Why are some languages confused for others? Investigating data from the Great Language Game	6
NAOMI KAROUBI, TALILBOVICH & RONEN SEGEV – Symbol-value association and discrimination in the archerfish	6
HEINZ GRETSCHER et al with JULIANE KAMINSKI – Prelinguistic human infants and great apes show different communicative strategies in a triadic request situation	7
PNAS	7

ARTICLES.....	7
ESTHER P. GARDNER – Neural pathways for cognitive command and control of hand movements	7
STEFANO ANZELLOTTI – Anterior temporal lobe and the representation of knowledge about people	7
PAPERS.....	7
JEAN-ALBAN RATHELOT, RICHARD P. DUM & PETER L. STRICK – Posterior parietal cortex contains a command apparatus for hand movements ...	7
JULIEN CLAVEL & HÉLÈNE MORLON – Accelerated body size evolution during cold climatic periods in the Cenozoic	7
JOHN LINDO et al with MORTEN RASMUSSEN & ESKE WILLERSLEV – Ancient individuals from the North American Northwest Coast reveal 10,000 years of regional genetic continuity.....	8
Animal Behaviour.....	8
PAPERS.....	8
EVAN L. MACLEAN et al with BRIAN HARE – Individual differences in cooperative communicative skills are more similar between dogs and humans than chimpanzees.....	8
To unsubscribe from the EAORC Bulletin	8
Produced by and for the EAORC email group	8

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.

SCIENCE NEWS – Mutations may reveal how Tibetans can live on world’s highest plateau

It’s not easy living thousands of meters above sea level. The air holds less oxygen, there’s more harmful ultraviolet (UV) radiation from the sun, and food supplies vary dramatically from season to season. But that doesn’t stop nearly 5 million people from living on the Tibetan Plateau, the world’s highest at an average of 4000 meters. Now, scientists working with the largest-ever sample of Tibetan genomes have discovered seven new ways in which Tibetan genes have been tweaked to cope with high altitude, resulting in higher body mass index (BMI) and a boost in the body’s production of the vitamin folate.

http://www.sciencemag.org/news/2017/04/mutations-may-reveal-how-tibetans-can-live-world-s-highest-plateau?utm_campaign=news_daily_2017-04-03&et rid=17774313&et cid=1253428

SCIENCE NEWS – Ancient skeletons show direct link to modern tribes in the Pacific Northwest

The Native Americans of the Pacific Northwest have always claimed to have deep roots in the region. Now, an ancient mariner may be able to back that claim up. Scientists sequencing the DNA of 10,300-year-old human remains from On Your Knees Cave in Alaska have found that he was closely related to three ancient skeletons found along the coast of British Columbia in Canada. These three ancient people were in turn closely related to the Tsimshian, Tlingit, Nisga’a, and Haida tribes living in the region today. The new finding reveals a direct line of descent to these tribes, and it shows—for the first time from ancient DNA—that at least two different groups of people were living in North America more than 10,000 years ago.

http://www.sciencemag.org/news/2017/04/ancient-skeletons-show-direct-link-modern-tribes-pacific-northwest?utm_campaign=news_daily_2017-04-04&et rid=17774313&et cid=1255428

SCIENCE NEWS – Spear tips point to path of first Americans

For years archaeologists have searched for a sign of the earliest Americans—the mysterious newcomers who, it’s generally believed, set out from Asia and spread down the Pacific coast by boat more than 14,000 years ago. Last week, at a jammed session of the meeting of the Society for American Archaeologists here, researchers proposed that such evidence has been under their noses all along. They argued that a staple of museum collections known as Western Stemmed points—roughly pinkie-sized stone spearpoints with a chunky stem—are the handiwork of those first arrivals.

http://www.sciencemag.org/news/2017/04/spear-tips-point-path-first-americans?utm_campaign=news_daily_2017-04-05&et rid=17774313&et cid=1257756

SCIENCE NEWS – Why don’t we eat each other for dinner? Too few calories, says new cannibalism study

Humans may be the most dangerous game, but they’re hardly the most nutritious (despite evidence of cannibalism, like these skulls found on an island in Fiji, above). A new, slightly morbid study based on the calorie counts of average humans suggests that human-eating was mostly ritualistic, not dietary, in nature among hominins including Homo erectus, H. antecessor, Neandertals, and early modern humans.

http://www.sciencemag.org/news/2017/04/why-don-t-we-eat-each-other-dinner-too-few-calories-says-new-cannibalism-study?utm_campaign=news_daily_2017-04-06&et rid=17774313&et cid=1260000

SCIAM NEWS – Food for Thought: Do We Owe Our Large Primate Brains to a Passion for Fruit?

A new study suggests our outside brains may have arisen from scouring for and eating kumquats and kiwis

https://www.scientificamerican.com/article/food-for-thought-do-we-owe-our-large-primate-brains-to-a-passion-for-fruit/?WT.mc_id=SA_EVO_20170403

SCIAM NEWS – Ancient Bones Reveal Girl's Tough Life in Early Americas

Teenage mother who lived 12,000 years ago was malnourished but still roamed widely

https://www.scientificamerican.com/article/ancient-bones-reveal-girl-s-tough-life-in-early-americas/?WT.mc_id=SA_EVO_20170403

SCIAM NEWS – Living a Lie: We Deceive Ourselves to Better Deceive Others

New research provides the first evidence for a theory first put forward in the 1970s

https://www.scientificamerican.com/article/living-a-lie-we-deceive-ourselves-to-better-deceive-others/?WT.mc_id=SA_MB_20170405

SCI-NEWS.COM – Ancient DNA Reveals Genetic Continuity in Northwest North America

According to a new analysis of nuclear DNA from ancient individuals, many of today's indigenous peoples living in southern Alaska and coastal British Columbia are descendants of the first humans to make their home in northwest North America more than 10,000 years ago (early Holocene epoch).

http://feedproxy.google.com/~r/BreakingScienceNews/~3/6Hb_Kz7O18A/genetic-continuity-early-holocene-modern-populations-northwest-north-america-04761.html?utm_source=feedburner&utm_medium=email

SCI-NEWS.COM – Neuroscientists Identify New Neural Pathway that Controls Hand Movements

A new neural pathway has been identified by a group of neuroscientists that could underlie our ability to make the coordinated hand movements needed to reach out and manipulate objects within immediate extrapersonal space. The discovery, described in the Proceedings of the National Academy of Sciences, was made in non-human primates.

http://feedproxy.google.com/~r/BreakingScienceNews/~3/a_X8_LRq7pU/neural-pathway-controls-hand-movements-04759.html?utm_source=feedburner&utm_medium=email

SCIENCE DAILY – Prehistoric art and ornaments from Indonesian 'Ice Age'

A joint Indonesian-Australian team has unearthed a rare collection of prehistoric art and 'jewellery' objects from the Indonesian island of Sulawesi, dating in some instances to as early as 30,000 years ago.

<https://www.sciencedaily.com/releases/2017/04/170403151157.htm>

SCIENCE DAILY – Girls are better at masking autism than boys

Girls with autism have relatively good social skills, which means that their autism is often not recognized. And autism manifests itself in girls differently from in boys, suggests a new report.

<https://www.sciencedaily.com/releases/2017/04/170403140134.htm>

SCIENCE DAILY – Do smart songbirds always get the girl?

Compelling evidence shows females prefer mates with better cognitive abilities in a number of animals and even humans. For male songbirds, their ability to sing complex songs has been suggested to signal cognitive ability and is vital for attracting females as well as repelling rival males. What's not clear is how female songbirds can judge the cognitive abilities of potential mates, which is a necessary first step if smarter mates are preferred over their not-as-smart counterparts.

<https://www.sciencedaily.com/releases/2017/04/170403091313.htm>

SCIENCE DAILY – There's a cost to 'bee-ing' too smart

Researchers have discovered that smart bumblebees die sooner and don't collect as much food over their life spans as their less intelligent co-workers. Researchers suggest that the energy demands of intelligence eat up limited resources, leaving smart bees with less energy for foraging than their slower-learning counterparts. This is the first evidence of a learning-associated cost in the wild and could have implications for a variety of species.

<https://www.sciencedaily.com/releases/2017/04/170404160101.htm>

SCIENCE DAILY – Archaeologist explains innovation of 'fluting' ancient stone weaponry

Approximately 13,500 years after nomadic Clovis hunters crossed the frozen land bridge from Asia to North America, researchers are still asking questions and putting together clues as to how they not only survived in a new landscape with unique new challenges but adapted with stone tools and weapons to thrive for thousands of years. Kent State University's Metin Eren, Ph.D., and his colleagues are not only asking these questions but testing their unique new theories.

<https://www.sciencedaily.com/releases/2017/04/170404160022.htm>

SCIENCE DAILY – How songbirds teach themselves songs

Scientists typically think of songbirds' vocal development in terms of how one circuit in the brain learns a song. But researchers have now investigated how zebra finches learn songs from a different perspective. They studied how one part of its brain, which they dubbed the 'tutor,' teaches another part of its brain, the 'student.' They found that in order to teach effectively, the tutor must adapt its teaching style to how the student best learns.

<https://www.sciencedaily.com/releases/2017/04/170404104719.htm>

SCIENCE DAILY – When female mates multiply, males evolve to be choosy

Female choice for good quality males is familiar to everyone, whereas much less is known about the evolution of male mate choice. Researchers have studied the evolution of male and female mating strategies and mate choice for female fecundity and male fertilization ability in a system where both sexes can mate with multiple partners, and where there is variation in individual quality.

<https://www.sciencedaily.com/releases/2017/04/170404085745.htm>

SCIENCE DAILY – Steppe migrant thugs pacified by Stone Age farming women

When present day European genetics was formed during the beginning of the Bronze Age 5,000 years ago it was a result of migrating Yamnaya pastoralists from the Caspian steppe encountering Stone Age farmers in northern and eastern Europe. A grand synthesis article argues that young Yamnaya warriors belonging to raiding parties married local Stone Age women, settling and adopting a more agrarian lifestyle. During this process, where the Corded Ware Culture was formed, a new Proto-Germanic dialect appeared.

<https://www.sciencedaily.com/releases/2017/04/170404084429.htm>

SCIENCE DAILY – 10,000 years of genetic continuity in northwest North America, study reveals

A study of the DNA in ancient skeletal remains adds to the evidence that indigenous groups living today in southern Alaska and the western coast of British Columbia are descendants of the first humans to make their home in northwest North America more than 10,000 years ago.

<https://www.sciencedaily.com/releases/2017/04/170404160034.htm>

SCIENCE DAILY – You spy with your little eye, dogs can adopt the perspective of humans

Humans are able to interpret the behavior of others by attributing mental states to them (and to themselves). By adopting the perspectives of other persons, they can assume their emotions, needs and intentions and react accordingly. In the animal kingdom, the ability to attribute mental states (Theory of Mind) is a highly contentious issue. Cognitive biologists could demonstrate with a new test procedure that dogs are not only able to identify whether a human has an eye on a food source and, therefore, knows where the food has been hidden. They can also apply this knowledge in order to correctly interpret cues by humans and find food they cannot see themselves.

<https://www.sciencedaily.com/releases/2017/04/170407091829.htm>

SCIENCE DAILY – How learning in the present shapes future learning

Neurons in the prefrontal cortex “teach” neurons in the hippocampus to “learn” rules that distinguish memory-based predictions in otherwise identical situations, suggesting that learning in the present helps guide learning in the future, according to research.

<https://www.sciencedaily.com/releases/2017/04/170406163511.htm>

SAPIENS – Nature’s Most Creative Copulators

Why have humans taken mammalian sex to a whole new level?

http://www.sapiens.org/evolution/human-sex-evolution-creative-sex/?utm_source=SAPIENS.org+Subscribers&utm_campaign=287904c1e2-Email+Blast+4.7.17&utm_medium=email&utm_term=0_18b7e41cd8-287904c1e2-201933693

ACADEMIA.EDU – Review of research on belief in a Sky Bear

Roslyn M. Frank – A status report: A review of research on the origins and diffusion of the belief in a Sky Bear

In Fabio Silva, Kim Malville, Tore Lomsdalen & Frank Ventura (eds.) (2016). The Materiality of the Sky: Proceedings of the 22nd Conference of the European Society for Astronomy in Culture. University of Wales. Sophia Centre Press: Lampeter, Cymru, pp79-87.

https://www.academia.edu/32234371/Frank_Roslyn_M._2016_.A_status_report_A_review_of_research_on_the_origins_and_diffusion_of_the_belief_in_a_Sky_Bear.

FRONTIERS NEWS – Did Humans Create the Sahara Desert?

The Sahara today forms one of the largest and driest expanses of land on Earth. Yet between 5,000 and 10,000 years ago, a period of time commonly referred to as the 'African Humid Period', both the climate and ecosystem of the Sahara were dramatically different. Instead of an arid desert landscape, the Sahara was characterized by lush and diverse vegetation, a consequence of monsoons and increased rainfall over the northern Africa landmass.

https://blog.frontiersin.org/2017/03/14/did-humans-create-the-sahara-desert/?utm_source=F-NLT&utm_medium=EMLF&utm_campaign=ECO_FEART_20170330_prhumannssahara

PUBLICATIONS

Science

ARTICLES

LIZZIE WADE – Relics of the first Americans?

For years archaeologists have searched for a sign of the earliest Americans—the mysterious newcomers who, it's generally believed, set out from Asia and spread down the Pacific coast by boat more than 14,000 years ago. Last week, at a jammed session of the meeting of the Society for American Archaeologists in Vancouver, researchers proposed that such evidence has been under their noses all along. They argued that a staple of museum collections known as Western Stemmed points—roughly pinkie-sized stone spearpoints with a chunky stem—are the handiwork of those first arrivals. Stemmed spearpoints in various styles may show the expansion of the first people from Asia into the Americas, although the oldest known points are still later than the site of Monte Verde in Chile, where people lived over 14,000 years ago.

<http://science.sciencemag.org/content/356/6333/13>

Nature

NEWS

Ancient bones reveal girl's tough life in early Americas

Teenage mother who lived 12,000 years ago was malnourished but still roamed widely.

<http://links.ealart.nature.com/ctt?kn=116&ms=NTM3ODQzNDES1&r=MjA1NTkxNTc2NAS2&b=0&j=MTE0MDC4NDE1NAS2&mt=1&rt=0>

Nature Communications

PAPERS

SANJEEV GUPTA et al – Two-stage opening of the Dover Strait and the origin of island Britain

Late Quaternary separation of Britain from mainland Europe is considered to be a consequence of spillover of a large proglacial lake in the Southern North Sea basin. Lake spillover is inferred to have caused breaching of a rock ridge at the Dover Strait, although this hypothesis remains untested. Here we show that opening of the Strait involved at least two major episodes of erosion. Sub-bottom records reveal a remarkable set of sediment-infilled depressions that are deeply incised into bedrock that we interpret as giant plunge pools. These support a model of initial erosion of the Dover Strait by lake overflow, plunge pool erosion by waterfalls and subsequent dam breaching. Cross-cutting of these landforms by a prominent bedrock-eroded valley that is characterized by features associated with catastrophic flooding indicates final breaching of the Strait by high-magnitude flows. These events set-up conditions for island Britain during sea-level highstands and caused large-scale re-routing of NW European drainage.

<http://www.nature.com/articles/ncomms15101>

Nature Scientific Reports

PAPERS

MICHAEL LAAKASUO, JUKKA SUNDVALL & MARIANNA DROSINO – Individual Differences in Moral Disgust Do Not Predict Utilitarian Judgments, Sexual and Pathogen Disgust Do

The role of emotional disgust and disgust sensitivity in moral judgment and decision-making has been debated intensively for over 20 years. Until very recently, there were two main evolutionary narratives for this rather puzzling association. One of the models suggest that it was developed through some form of group selection mechanism, where the internal norms of the groups were acting as pathogen safety mechanisms. Another model suggested that these mechanisms were developed through hygiene norms, which were piggybacking on pathogen disgust mechanisms. In this study we present another alternative, namely that this mechanism might have evolved through sexual disgust sensitivity. We note that though the role of disgust in moral judgment has been questioned recently, few studies have taken disgust sensitivity to account. We present data from a large sample (N = 1300) where we analyzed the associations between The Three Domain Disgust Scale and the most commonly used 12 moral dilemmas measuring utilitarian/deontological preferences with Structural Equation Modeling. Our results indicate that of the three domains of disgust, only sexual disgust is associated with more deontological moral preferences. We also found that pathogen disgust was associated with more utilitarian preferences. Implications of the findings are discussed.

http://www.nature.com/articles/srep45526?WT.ec_id=SREP-20170404&spMailingID=53772272&spUserID=ODY4NjU1NzU3NQs2&spJobID=1140564925&spReportId=MTE0MDU2NDkyNQs2

MARION BOSC et al – Checking behavior in rhesus monkeys is related to anxiety and frontal activity

When facing doubt, humans can go back over a performed action in order to optimize subsequent performance. The present study aimed to establish and characterize physiological doubt and checking behavior in non-human primates (NHP). We trained two rhesus monkeys (*Macaca mulatta*) in a newly designed “Check-or-Go” task that allows the animal to repeatedly check and change the availability of a reward before making the final decision towards obtaining that reward. By manipulating the ambiguity of a visual cue in which the reward status is embedded, we successfully modulated animal certainty and created doubt that led the animals to check. This voluntary checking behavior was further characterized by making EEG recordings and measuring correlated changes in salivary cortisol. Our data show that monkeys have the metacognitive ability to express voluntary checking behavior similar to that observed in humans, which depends on uncertainty monitoring, relates to anxiety and involves brain frontal areas.

http://www.nature.com/articles/srep45267?WT.ec_id=SREP-20170404&spMailingID=53772272&spUserID=ODY4NjU1NzU3NQs2&spJobID=1140564925&spReportId=MTE0MDU2NDkyNQs2

PLoS One

PAPERS

DAVID BUTTELMANN et al with JOSEP CALL & MICHAEL TOMASELLO – Great apes distinguish true from false beliefs in an interactive helping task

Understanding the behavior of others in a wide variety of circumstances requires an understanding of their psychological states. Humans' nearest primate relatives, the great apes, understand many psychological states of others, for example, perceptions, goals, and desires. However, so far there is little evidence that they possess the key marker of advanced human social cognition: an understanding of false beliefs. Here we demonstrate that in a nonverbal (implicit) false-belief test which is passed by human 1-year-old infants, great apes as a group, including chimpanzees (*Pan troglodytes*), bonobos (*Pan paniscus*), and orangutans (*Pongo abelii*), distinguish between true and false beliefs in their helping behavior. Great apes thus may possess at least some basic understanding that an agent's actions are based on her beliefs about reality. Hence, such understanding might not be the exclusive province of the human species.

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0173793>

HEDVIG SKIRGÅRD, SEÁN G. ROBERTS & LARS YENCKEN – Why are some languages confused for others? Investigating data from the Great Language Game

In this paper we explore the results of a large-scale online game called ‘the Great Language Game’, in which people listen to an audio speech sample and make a forced-choice guess about the identity of the language from 2 or more alternatives. The data include 15 million guesses from 400 audio recordings of 78 languages. We investigate which languages are confused for which in the game, and if this correlates with the similarities that linguists identify between languages. This includes shared lexical items, similar sound inventories and established historical relationships. Our findings are, as expected, that players are more likely to confuse two languages that are objectively more similar. We also investigate factors that may affect players' ability to accurately select the target language, such as how many people speak the language, how often the language is mentioned in written materials and the economic power of the target language community. We see that non-linguistic factors affect players' ability to accurately identify the target. For example, languages with wider ‘global reach’ are more often identified correctly. This suggests that both linguistic and cultural knowledge influence the perception and recognition of languages and their similarity.

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0165934>

NAOMI KAROUBI, TALI LEIBOVICH & RONEN SEGEV – Symbol-value association and discrimination in the archerfish

One of the most important aspects of mathematical cognition in humans is the ability to symbolically represent magnitudes and quantities. In the last 20 years it has been shown that not only humans but also other primates, birds and dolphins can use symbolic representation of quantities. However, it remains unclear to what extent this ability is spread across the animal kingdom. Here, by training archerfish to associate variable amounts of rewards with different geometric shapes, we show for the first time that lower vertebrates can also associate a value with a symbol and make a decision that maximizes their food intake based on this information. In addition, the archerfish is able to understand up to four different quantities and organize them mentally in an ordinal manner, similar to observations in higher vertebrates. These findings point in the direction of the existence of an approximate magnitude system in fish.

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0174044>

HEINZ GRETSCHER et al with JULIANE KAMINSKI – Prelinguistic human infants and great apes show different communicative strategies in a triadic request situation

In the present research, we investigate the communicative strategies of 20 month old human infants and great apes when requesting rewards from a human experimenter. Infants and apes both adapted their signals to the attentional state of the experimenter as well as to the location of the reward. Yet, while infants frequently positioned themselves in front of the experimenter and pointed towards a distant reward, apes either remained in the experimenter's line of sight and pointed towards him or moved out of sight and pointed towards the reward. Further, when pointing towards a reward that was placed at a distance from the experimenter, only the infants, and not the apes, took the experimenter's attentional state into account. These results demonstrate that prelinguistic human infants and nonhuman apes use different means when guiding others' attention to a location; indicating that differing cognitive mechanisms may underlie their pointing gestures.

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0175227>

{Aaargh! "In the present research..." Delete it and the sentence reads just as well; nay, better. Where did this scientific excrement into English come from? Why do otherwise intelligent people feel the need to use it? Is it part of the trend of showing your scientific credentials by experimenting on live sentences without anaesthetic? Rant over; and ... breathe.}

PNAS

ARTICLES

ESTHER P. GARDNER – Neural pathways for cognitive command and control of hand movements

A piece of fruit—a raisin—swings on a stick in front of a monkey. He likes raisins; he wants this one. He stretches out his arm, opens his hand with the fingers spread wide apart, and tries to capture it; he misses. He tries again, this time successfully. He grabs the raisin, pulls it off the stick, brings it to his mouth, and eats it. Delicious! What happens in the brain when the animal performs these actions? The chart above the images tracks responses of a neuron recorded in lateral area 5 bordering the intraparietal sulcus, a subregion of the posterior parietal cortex (PPC) originally studied by Mountcastle et al., and described as a hand-manipulation "command neuron" engaged in purposeful actions of the hand: reaching and grasping an object of behavioral interest.

<http://www.pnas.org/content/pnas/early/2017/04/03/1702746114.extract.html?collection>

STEFANO ANZELLOTTI – Anterior temporal lobe and the representation of knowledge about people

Patients with semantic dementia (SD), a neurodegenerative disease affecting the anterior temporal lobes (ATL), present with striking cognitive deficits: they can have difficulties naming objects and familiar people from both pictures and descriptions. Furthermore, SD patients make semantic errors (e.g., naming "horse" a picture of a zebra), suggesting that their impairment affects object knowledge rather than lexical retrieval. Because SD can affect object categories as disparate as artifacts, animals, and people, as well as multiple input modalities, it has been hypothesized that ATL is a semantic hub that integrates information across multiple modality-specific brain regions into multimodal representations. With a series of converging experiments using multiple analysis techniques, Wang et al. test the proposal that ATL is a semantic hub in the case of person knowledge, investigating whether ATL: (i) encodes multimodal representations of identity, and (ii) mediates the retrieval of knowledge about people from representations of perceptual cues.

<http://www.pnas.org/content/pnas/early/2017/04/03/1703438114.extract.html?collection>

PAPERS

JEAN-ALBAN RATHELOT, RICHARD P. DUM & PETER L. STRICK – Posterior parietal cortex contains a command apparatus for hand movements

Mountcastle and colleagues proposed that the posterior parietal cortex contains a "command apparatus" for the operation of the hand in immediate extrapersonal space [Mountcastle et al. (1975) *J Neurophysiol* 38(4):871–908]. Here we provide three lines of converging evidence that a lateral region within area 5 has corticospinal neurons that are directly linked to the control of hand movements. First, electrical stimulation in a lateral region of area 5 evokes finger and wrist movements. Second, corticospinal neurons in the same region of area 5 terminate at spinal locations that contain last-order interneurons that innervate hand motoneurons. Third, this lateral region of area 5 contains many neurons that make disynaptic connections with hand motoneurons. The disynaptic input to motoneurons from this portion of area 5 is as direct and prominent as that from any of the premotor areas in the frontal lobe. Thus, our results establish that a region within area 5 contains a motor area with corticospinal neurons that could function as a command apparatus for operation of the hand.

<http://www.pnas.org/content/pnas/early/2017/03/28/1608132114.abstract.html?collection>

JULIEN CLAVEL & HÉLÈNE MORLON – Accelerated body size evolution during cold climatic periods in the Cenozoic

How ecological and morphological diversity accumulates over geological time is much debated. Adaptive radiation theory has been successful in testing the effects of biotic interactions on the rapid divergence of phenotypes within a clade, but this theory ignores abiotic effects. The role of abiotic drivers on the tempo of phenotypic evolution has been tested only in a few lineages or small clades from the fossil record. Here, we develop a phylogenetic comparative framework for testing if and how clade-wide rates of phenotypic evolution vary with abiotic drivers. We apply this approach to comprehensive bird and mammal phylogenies, body size data for 9,465 extant species, and global average temperature trends over the Cenozoic. Across birds and mammals, we find that the rate of body size evolution is primarily driven by past climate. Unexpectedly,

evolutionary rates are inferred to be higher during periods of cold rather than warm climates in most groups, suggesting that temperature influences evolutionary rates by modifying selective pressures rather than through its effect on energy availability and metabolism. The effect of climate on the rate of body size evolution seems to be a general feature of endotherm evolution, regardless of wide differences in species' ecology and evolutionary history. These results suggest that climatic changes played a major role in shaping species' evolution in the past and could also play a major role in shaping their evolution in the future.

<http://www.pnas.org/content/pnas/early/2017/03/29/1606868114.abstract.html?collection>

JOHN LINDO et al with MORTEN RASMUSSEN & ESKE WILLERSLEV – Ancient individuals from the North American Northwest Coast reveal 10,000 years of regional genetic continuity

Recent genomic studies of both ancient and modern indigenous people of the Americas have shed light on the demographic processes involved during the first peopling. The Pacific Northwest Coast proves an intriguing focus for these studies because of its association with coastal migration models and genetic ancestral patterns that are difficult to reconcile with modern DNA alone. Here, we report the low-coverage genome sequence of an ancient individual known as "Shuká Káa" ("Man Ahead of Us") recovered from the On Your Knees Cave (OYKC) in southeastern Alaska (archaeological site 49-PET-408). The human remains date to ~10,300 calendar (cal) y B.P. We also analyze low-coverage genomes of three more recent individuals from the nearby coast of British Columbia dating from ~6,075 to 1,750 cal y B.P. From the resulting time series of genetic data, we show that the Pacific Northwest Coast exhibits genetic continuity for at least the past 10,300 cal y B.P. We also infer that population structure existed in the late Pleistocene of North America with Shuká Káa on a different ancestral line compared with other North American individuals from the late Pleistocene or early Holocene (i.e., Anzick-1 and Kennewick Man). Despite regional shifts in mtDNA haplogroups, we conclude from individuals sampled through time that people of the northern Northwest Coast belong to an early genetic lineage that may stem from a late Pleistocene coastal migration into the Americas.

<http://www.pnas.org/content/pnas/early/2017/04/03/1620410114.abstract.html?collection>

Animal Behaviour

PAPERS

EVAN L. MACLEAN et al with BRIAN HARE – Individual differences in cooperative communicative skills are more similar between dogs and humans than chimpanzees

By 2.5 years of age humans are more skilful than other apes on a set of social, but not nonsocial, cognitive tasks. Individual differences in human infants, but not chimpanzees, Pan troglodytes, are also explained by correlated variance in these cooperative communicative skills. Relative to nonhuman apes, domestic dogs, *Canis familiaris*, perform more like human infants in cooperative communicative tasks, but it is unknown whether dog and human cognition share a similar underlying structure. We tested 552 dogs in a large-scale test battery modelled after similar work with humans and nonhuman apes. Unlike chimpanzees, but similarly to humans, individual differences in dogs were explained by correlated variance in skills for solving cooperative communicative problems. Direct comparisons of data from all three species revealed similar patterns of individual differences in cooperative communication between human infants (N = 105) and domestic dogs (N = 430), which were not observed in chimpanzees (N = 106). Future research will be needed to examine whether the observed similarities are a result of similar psychological mechanisms and evolutionary processes in the dog and human lineages.

http://www.sciencedirect.com/science/article/pii/S0003347217300064?dgcid=raven_sd_via_email

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.