

EAORC Bulletin 308

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- PNAS 5 May 2009

*** NOTICES ***

--- EAORC Developments ---

At the request of some members, I have added the URL to the appropriate paper at the end of the description. This will not be available for all items, but I should be able to do it for all the weeklies.

I have also added the Proceedings of the Royal Society B to the newsletter. The date of 22 June is correct: there must have been a paper in Proceedings of the Royal Society A about successful time travel.

--- From WorldScience.net: A seat of wisdom in the brain? ---

Two scientists have compiled what they say is the first scholarly review of the basis in the brain of wisdom.
http://www.world-science.net/othernews/090424_wisdom

--- Death of Dr Peter Martin ---

It is with regret I have to announce the death of my PhD internal examiner, Peter Martin.

A memorial service will be held on Thursday 28th May at 11.00; coffee first from 10.30 in the Cass School of Education, UEL's Stratford Campus, then the service in TL 03, then drinks and buffet lunch from 12.30.

--- Origins Festival - UK's first Festival of First Nations creative arts ---

5-17 May, Riverside Studios, London

Origins Festival is the UK's first Festival of First Nations creative arts. The festival was born out of the wish to ask questions of our own culture and listen to people who have different approaches to living. What

might they be able to teach us? In many First Nations cultures there tends not to be a distinction drawn between the everyday world and the world of dreams, the spiritual. So, come and discover the invisible...

Almighty Voice and His Wife: Daniel David Moses' seminal play about the legendary 19th century Saskatchewan Cree. A story which toys with the audience in a powerful reminder of the misrepresentation of First Nations peoples by Westerners.

Windmill Baby: A one-woman redemption piece told by Maymay, an old Aboriginal woman who returns to the deserted Kimberley cattle station that was her home fifty years ago.

Salvage: In this story about a family faced with revenge, Cherokee writer Diane Glancy offers a picture of Native American culture battling to exist in the contemporary world.

Riverside Studios, Crisp Rd, Hammersmith, London, W6 9RL

Recession Tickets only £10. Box office 020 8237 1111. www.riversidestudios.co.uk

*** PUBLICATIONS ***

If you have problems getting copies let me know.

--- KEY:

*** NEWS: items that cannot stand as an independent source.

*** REVIEWS: items that review a book or publication.

*** ARTICLES: items that are quotable, but which count as secondary sources.

*** PAPERS: quotable primary source items.

--- Proceedings of the Royal Society B 22 June 2009 ---

*** PAPERS

... STUART SEMPLE et al - Bystanders affect the outcome of mother–infant interactions in rhesus macaques ["it was found that mothers gave infants access to the nipple significantly more often when crying occurred in the presence of animals that posed a high risk of aggression towards them. Both mothers and infants tended to receive more aggression from bystanders during crying bouts than outside of this time, although such aggression was extremely rare and was received by less than half of the mothers and infants in the study. Mothers were also found to be significantly more aggressive to their infants while the latter were crying than outside of crying bouts"] [

<http://rspb.royalsocietypublishing.org/content/276/1665/2257.abstract>]

... SIMON J GREENHILL et al - Does horizontal transmission invalidate cultural phylogenies? ["The results show that tree topologies constructed with Bayesian phylogenetic methods are robust to realistic levels of borrowing. Inferences about divergence dates are slightly less robust and show a tendency to underestimate dates. Our results demonstrate that realistic levels of reticulation between cultures do not invalidate a phylogenetic approach to cultural and linguistic evolution"] [

<http://rspb.royalsocietypublishing.org/content/276/1665/2299.abstract>]

--- New Scientist 9 May 2009 ---

*** NEWS

... Huge gene study shines new light on African history ["The largest-ever study of the genomes of people from across Africa provides 'spectacular insight into the history of African populations'"] [<http://www.newscientist.com/article/dn17057-huge-gene-study-shines-new-light-on-african-history.html>]

... 'Brain-juggling' lets dolphins avoid sleep deprivation ["Dolphins seem to be able to go on and on performing mental tests without tiring – it may be down to the way they can sleep with half a brain"] [<http://www.newscientist.com/article/dn17059-brainjuggling-lets-dolphins-avoid-sleep-deprivation.html>]

*** REVIEWS

... DEBORAH BLUM - Review of 'Wild Justice' by Marc Bekoff & Jessica Pierce [<http://www.newscientist.com/article/mg20227071.400-review-wild-justice-by-marc-bekoff-and-jessica-pierce.html>]

--- Science 8 May 2009 ---

*** NEWS

... Going the Distance to Uncover The Roots of Trade in the Near East ["Archaeologists are revealing the 'invisible exports' of the world's first civilizations: textiles, silk, and stone shipped to ordinary people rather than elites"] [<http://www.sciencemag.org/cgi/content/summary/324/5928/717>]

*** REVIEWS

... PRASANTH AK - Human Inhumanity [review of 'Cruelty: Human Evil and the Human Brain' by Kathleen Taylor] [<http://www.sciencemag.org/cgi/content/summary/324/5928/726-a>]

*** ARTICLES

... M K JONES & X LIU - Origins of Agriculture in East Asia ["During the initial phase of cereal cultivation in East Asia, domesticated traits emerged only slowly"] [<http://www.sciencemag.org/cgi/content/summary/324/5928/730>]

... PATRICK HAGGARD - The Sources of Human Volition ["Two regions of the brain contribute to the conscious experience of carrying out an action"] [<http://www.sciencemag.org/cgi/content/summary/324/5928/731>]

*** PAPERS

... R KIANI & M N SHADLEN - Representation of Confidence Associated with a Decision by Neurons in the Parietal Cortex ["Neurons in the primate parietal cortex encode information required to make a decision and also the certainty of that choice"] [<http://www.sciencemag.org/cgi/content/abstract/324/5928/759>]

... M DESMURGET et al - Movement Intention After Parietal Cortex Stimulation in Humans ["Stimulation of the parietal cortex causes subjects to report having moved, even in the absence of actual motor responses"] [<http://www.sciencemag.org/cgi/content/abstract/324/5928/811>]

--- Nature 7 May 2009 ---

*** ARTICLES

... MARTIN KEMP - Dissecting The Two Cultures ["Fifty years ago today, Charles Percy Snow argued in an influential lecture that the failure of science and the humanities to converse, and the lack of scientists in positions of power, was disastrous for society"] [

<http://www.nature.com/nature/journal/v459/n7243/full/459032a.html>]

... GEORGINA FERRY - Science's new battle lines [is the current division in science between optimists and pessimists rather than between scientific and literary intellectuals?] [

<http://www.nature.com/nature/journal/v459/n7243/full/459034a.html>]

... DANIEL E LIEBERMAN - Homo floresiensis from head to toe ["Fossils of tiny ancient humans, found on the island of Flores, have provoked much debate and speculation. Evidence that they are a real species comes from analyses of the foot and also — more surprisingly — of dwarf hippos"] [

<http://www.nature.com/nature/journal/v459/n7243/full/459041a.html>]

*** REVIEWS

... JOANNE BAKER - Snow's portrait of science in politics [retro-review of 'Extract from Science and

Government' by C. P. Snow] [<http://www.nature.com/nature/journal/v459/n7243/full/459036a.html>]

*** PAPERS

... W L JUNGERS et al - The foot of Homo floresiensis ["The 'hobbit', Homo floresiensis, was a species of diminutive hominin that lived on the island of Flores in Indonesia until around 14,000 years ago. Analysis of the legs and feet of the partial skeleton of the type specimen (LB1) shows some ape-like features which suggest an origin not from Homo erectus but rather some other, more primitive, hominin whose dispersal into southeast Asia is still undocumented"] [

<http://www.nature.com/nature/journal/v459/n7243/full/nature07989.html>]

... ELEANOR M WESTON & ADRIAN M LISTER - Insular dwarfism in hippos and a model for brain size reduction in Homo floresiensis ["Body size reduction in mammals is accompanied by only a moderate reduction in brain size, so that the brains of dwarfs are proportionately larger than those of giants. Here, the brains of extinct dwarf hippos from the island of Madagascar are shown to be disproportionately very much smaller than those of their closest mainland relatives. If this trend no longer holds true on islands, it may explain the exceptionally small brain size of the diminutive hominin, Homo floresiensis"] [

<http://www.nature.com/nature/journal/v459/n7243/full/nature07922.html>]

... HENDRIKJE NIENBORG & BRUCE G CUMMING - Decision-related activity in sensory neurons reflects more than a neuron's causal effect ["The ability of sensory neurons to predict an animal's upcoming decision has generated enormous interest over the last 10 years, with the proposal being that the activity of these neurons causes the appropriate decision to be made. Measuring neuronal tuning curves and perceptual decisions in a visual discrimination task in macaque monkeys, decision making was found to change the responses in sensory neurons in a 'top-down' manner, consistent with the effects of attention, thus indicating that this model is too simplistic"] [

<http://www.nature.com/nature/journal/v459/n7243/full/nature07821.html>]

... OLGA FEHER et al - De novo establishment of wild-type song culture in the zebra finch ["In tutoring lineages starting from isolate founders, we quantified alterations in song across tutoring generations in two social environments: tutor–pupil pairs in sound-isolated chambers and an isolated semi-natural colony. In both settings, juveniles imitated the isolate tutors but changed certain characteristics of the songs. These alterations accumulated over learning generations. Consequently, songs evolved towards the wild-type in three to four generations. Thus, species-typical song culture can appear de novo. Our study has parallels with language change and evolution ..."] [

<http://www.nature.com/nature/journal/vaop/ncurrent/full/nature07994.html>]

--- PLOS One 6 May 2009 ---

*** PAPERS

... ALICE MADDO PROVERBIO et al - Observation of Static Pictures of Dynamic Actions Enhances the Activity of Movement-Related Brain Areas ["Our results indicate that even when the stimulus shows no explicit motion, observation of static photographs of human actions with implied motion produces a clear increase in cortical activation, manifest in a long-lasting positivity (LP) between 350–600 ms that is much greater to dynamic than less dynamic actions, especially in men"] [<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0005389>]

... ELENA RUSCONI et al - Know Thyself: Behavioral Evidence for a Structural Representation of the Human Body ["Our results suggest the existence of an allocentric representation of body structure at higher stages of the somatosensory processing pathway, in addition to primary sensory representation" - in other words, two levels of self-awareness] [<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0005418>]

--- PNAS 5 May 2009 ---

*** ARTICLES

... MARC G CARON & R MARK WIGHTMAN - "To learn, you must pay attention." Molecular insights into teachers' wisdom ["a large body of evidence supports a central role for phasic DA release in reward-driven learning. However, it has been difficult to determine with certainty the trigger that initiates this phasic firing"] [<http://www.pnas.org/content/106/18/7267.extract>]

... GARY W CRAWFORD - Agricultural origins in North China pushed back to the Pleistocene–Holocene boundary ["The Early Holocene Cishan site in North China is one of several sites considered key to understanding millet domestication and the origin of dry-land agriculture in China, yet the dating and identity of the crops recovered there have never been adequately documented"] [<http://www.pnas.org/content/106/18/7271.extract>]

*** PAPERS

... THOMAS E CURRIE & RUTH MACE - Political complexity predicts the spread of ethnolinguistic groups ["We show that the degree of political complexity and type of subsistence strategy exhibited by societies are important predictors of the area covered by a language. Political complexity is also strongly associated with the latitudinal gradient in language area, whereas subsistence strategy is not. We argue that a process of cultural group selection favoring more complex societies may have been important in shaping the present-day global distribution of language diversity"] [<http://www.pnas.org/content/106/18/7339.abstract>]

... TODD S BRAVER et al - Flexible neural mechanisms of cognitive control within human prefrontal cortex ["Regions within lateral prefrontal cortex (PFC) were examined that, in a prior study, exhibited contrasting temporal dynamics between older and younger adults during performance of the AX-CPT cognitive control task. The temporal dynamics in younger adults fit a proactive control pattern (primarily cue-based activation), whereas in older adults a reactive control pattern was found (primarily probe-based activation). In the current study, we found that following a period of task-strategy training, these older adults exhibited a proactive shift within a subset of the PFC regions, normalizing their activity dynamics toward young adult patterns. Conversely, under conditions of penalty-based monetary incentives, the younger adults exhibited a reactive shift some of the same regions, altering their temporal dynamics toward the older adult baseline pattern"] [<http://www.pnas.org/content/106/18/7351.abstract>]

... HOUYUAN LU et al - Earliest domestication of common millet (*Panicum miliaceum*) in East Asia extended to 10,000 years ago ["Here, we report the discovery of husk phytoliths and biomolecular components identifiable solely as common millet from newly excavated storage pits at the Neolithic Cishan site, China, dated to between ca. 10,300 and ca. 8,700 calibrated years before present (cal yr BP). After ca. 8,700 cal yr BP, the grain crops began to contain a small quantity of foxtail millet. Our research reveals that the common millet was the earliest dry farming crop in East Asia, which is probably attributed to its excellent resistance to drought"] [<http://www.pnas.org/content/106/18/7367.abstract>]

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