

Literatur

Aktuell

ANDREWS 2014

Peter Andrews, *Supporting Mavericks*. [science 343 \(2014\), 1077](#).

Consider the persistence of Nobel Laureate Barry Marshall, who overturned conventional wisdom on the genesis of gastric ulcers despite the entrenched opposition of grant agencies and the medical establishment; the self-belief that enabled environmental solutions pioneer Olivia Lum, abandoned as an infant and brought up in a palm hut without running water, to build a water purification industry that now spans the planet; and the commitment that enabled U.S. gynecologist Mitch Besser to reduce mother-to-child transmission of HIV AIDS in South Africa from 40% to 4% over the space of 10 years. Certainly, we need to encourage collaboration in the ways identified by Sharp and Leshner. But we also need to find ways to support those with the courage to go it alone, regardless of the odds.

COUZIN-FRANKEL 2014

Jennifer Couzin-Frankel, *Diet Studies Challenge Thinking on Proteins Versus Carbs*. [science 343 \(2014\), 1068](#).

Mice that ate lots of protein were skinnier—just as people on high-protein diets tend to be. But for these mice, slender translated to ill health and earlier death.

6381 adults over 50 years old [...] were interviewed once about their diet as part of NHANES, a national survey of health and nutrition. The high-protein eaters were more than four times as likely to die from cancer over the 18 years after they were surveyed, and 75% more likely to die of any cause.

ENSERINK 2014

Martin Enserink, *Sabotaged Scientist Sues Yale and Her Lab Chief*. [science 343 \(2014\), 1065–1066](#).

Some experts argue that wrecking experiments, while terrible, is more akin to slashing a fellow researcher's tires than to making up data.

[I]n 2011, the agency [ORI] ruled that his tampering “caused false results to be reported in the research record,” and thus amounted to data falsification. The research record, in this case, was simply the lab notebooks in which Ames recorded her failed experiments, Ross says; Bhriгу's obstruction didn't result in any flawed papers. It will be “interesting” to see whether ORI has gotten involved in the Ocbina case, Rasmussen says, because Koziol presumably mentioned the dead fish in her notebooks as well.

WILLETT 2014

Sean D. Willett, Scott W. McCoy, J. Taylor Perron, Liran Goren, Chia-Yu Chen, *Dynamic Reorganization of River Basins*. [science 343 \(2014\), 1117](#).

s343-1117-Supplement1.pdf, s343-1117-Supplement2.mov, s343-1117-Supplement3.zip

Introduction: River networks, the backbone of most landscapes on Earth, collect and transport water, sediment, organic matter, and nutrients from upland mountain regions to the oceans. Dynamic aspects of these networks include channels

that shift laterally or expand upstream, ridges that migrate across Earth's surface, and river capture events whereby flow from one branch of the network is rerouted in a new direction. These processes result in a constantly changing map of the network with implications for mass transport and the geographic connectivity between species or ecosystems. Ultimately, this dynamic system strives to establish equilibrium between tectonic uplift and river erosion. Determining whether or not a river network is in equilibrium, and, if not, what changes are required to bring it to equilibrium, will help us understand the processes underlying landscape evolution and the implications for river ecosystems.

Methods: We developed the use of a proxy, referred to as χ , for steady-state river channel elevation. This proxy is based on the current geometry of the river network and provides a snapshot of the dynamic state of river basins. Geometric equilibrium in planform requires that a network map of χ exhibit equal values across all water divides (the ridges separating river basins). Disequilibrium river networks adjust their drainage area through divide migration (geometric change) or river capture (topologic change) until this condition is met. We constructed a numerical model to demonstrate that this is a fundamental characteristic of a stable river network. We applied this principle to natural landscapes using digital elevation models to calculate χ for three, very different, systems: the Loess Plateau in China, the eastern Central Range of Taiwan, and the southeastern United States.

Results: The Loess Plateau is close to geometric equilibrium, with χ exhibiting nearly equal values across water divides. By contrast, the young and tectonically active Taiwan mountain belt is not in equilibrium, with numerous examples of actively migrating water divides and river network reorganization. The southeastern United States also appears to be far from equilibrium, with the Blue Ridge escarpment migrating to the northwest and the coastal plain rivers reorganizing in response to this change in boundary geometry. Major reorganization events, such as the capture of the headwaters of the Apalachicola River by the Savannah River, are readily identifiable in our maps.

Discussion: Disequilibrium conditions in a river network imply greater variation of weathering, soil production, and erosion rates. Disequilibrium also implies more frequent river capture with implications for exchange of aquatic species and genetic diversification. Transient conditions in river basins are often interpreted in terms of tectonic perturbation, but our results show that river basin reorganization can occur even in tectonically quiescent regions such as the southeastern United States.

Amerika

HOFFECKER 2014

John F. Hoffecker, Scott A. Elias & Dennis H. O'Rourke, *Out of Beringia?* *science* **343** (2014), 979–980.

A shrub tundra refugium on the Bering land bridge may have played a pivotal role in the peopling of the Americas.

The shrub tundra zone in central Beringia represents the most plausible home for the isolated standstill population. Although high-latitude archaeological sites of LGM age are unknown, postglacial submergence of the Bering land bridge would explain the absence of traces of people concentrated in central Beringia. On the other hand, occupation of western Beringia before the LGM is well documented.

MEIRI 2014

Meirav Meiri et al., *Faunal record identifies Bering isthmus conditions as constraint to end-Pleistocene migration to the New World*. *Proc. Royal Society B* (2014), preprint, 1–9. DOI:10.1098/rspb.2013.2167.

ProcRSocB2014-preprint-Supplement0325.pdf

Meirav Meiri, Adrian M. Lister, Matthew J. Collins, Noreen Tuross, Ted Goebel, Simon Blockley, Grant D. Zazula, Nienke van Doorn, R. Dale Guthrie, Gennady G. Boeskorov, Gennady F. Baryshnikov, Andrei Sher & Ian Barnes

Human colonization of the New World is generally believed to have entailed migrations from Siberia across the Bering isthmus. However, the limited archaeological record of these migrations means that details of the timing, cause and rate remain cryptic. Here, we have used a combination of ancient DNA, 14C dating, hydrogen and oxygen isotopes, and collagen sequencing to explore the colonization history of one of the few other large mammals to have successfully migrated into the Americas at this time: the North American elk (*Cervus elaphus canadensis*), also known as wapiti. We identify a long-term occupation of northeast Siberia, far beyond the species's current Old World distribution. Migration into North America occurred at the end of the last glaciation, while the northeast Siberian source population became extinct only within the last 500 years. This finding is congruent with a similar proposed delay in human colonization, inferred from modern human mitochondrial DNA, and suggestions that the Bering isthmus was not traversable during parts of the Late Pleistocene. Our data imply a fundamental constraint in crossing Beringia, placing limits on the age and mode of human settlement in the Americas, and further establish the utility of ancient DNA in palaeontological investigations of species histories.

Subject Areas: evolution, genetics, palaeontology

Keywords: ancient DNA, Beringia, Bering isthmus, Pleistocene, wapiti

PRINGLE 2014

Heather Pringle, *Welcome to Beringia*. *science* **343** (2014), 961–963.

A flurry of studies suggests that instead of being simply a bridge from Asia to the Americas, Beringia may have beckoned the ancestors of the first Americans to linger.

Anthropologie

GRODZINSKY 2014

Yosef Grodzinsky & Israel Nelken, *The Neural Code That Makes Us Human*. *science* **343** (2014), 978–979.

How does a certain pattern of vibration in the air reliably represent a meaningful speech sound?

MESGARANI 2014

Nima Mesgarani, Connie Cheung, Keith Johnson & Edward F. Chang, *Phonetic Feature Encoding in Human Superior Temporal Gyrus*. *science* **343** (2014), 1006–1010.

s343-1006-Supplement.pdf

During speech perception, linguistic elements such as consonants and vowels are extracted from a complex acoustic speech signal. The superior temporal gyrus (STG) participates in high-order auditory processing of speech, but how it encodes phonetic information is poorly understood. We used high-density direct cortical

surface recordings in humans while they listened to natural, continuous speech to reveal the STG representation of the entire English phonetic inventory. At single electrodes, we found response selectivity to distinct phonetic features. Encoding of acoustic properties was mediated by a distributed population response. Phonetic features could be directly related to tuning for spectrotemporal acoustic cues, some of which were encoded in a nonlinear fashion or by integration of multiple cues. These findings demonstrate the acoustic-phonetic representation of speech in human STG.

POWELL 2010

Joanne L. Powell, Penelope A. Lewis, Robin I. M. Dunbar, Marta García-Fiñana & Neil Roberts, *Orbital prefrontal cortex volume correlates with social cognitive competence*. *Neuropsychologia* **48** (2010), 3554–3562.

NeuroPsy48-3554-Figures02a-rev.png

Intentionality, or Theory of Mind, is the ability to explain and predict the behaviour of others by attributing to them intentions and mental states and is hypothesised to be one of several social cognitive mechanisms which have impacted upon brain size evolution. Though the brain activity associated with processing this type of information has been studied extensively, the neuroanatomical correlates of these abilities, e.g. whether subjects who perform better have greater volume of associated brain regions, remain to be investigated. Because social abilities of this type appear to have evolved relatively recently, and because the prefrontal cortex (PFC) was the last brain region to develop both phylogenetically and ontogenetically, we hypothesised a relationship between PFC volume and intentional competence. To test this, we estimated the volume of four regional prefrontal subfields in each cerebral hemisphere, in 40 healthy adult humans by applying stereological methods on T1-weighted magnetic resonance images. Our results reveal a significant linear relationship between intentionality score and volume of orbital PFC ($p = 0.01$). Since this region is known to be involved in the processing of social information our findings support the hypothesis that brain size evolution is, at least in part, the result of social cognitive mechanisms supporting social cohesion.

Keywords: Intentionality | Prefrontal cortex | Stereology | Theory of Mind

POWELL 2012

Joanne Powell, Penelope A. Lewis, Neil Roberts, Marta García-Fiñana & R. I. M. Dunbar, *Orbital prefrontal cortex volume predicts social network size, An imaging study of individual differences in humans*. *Proc. Royal Society B* **279** (2012), 2157–2162.

The social brain hypothesis, an explanation for the unusually large brains of primates, posits that the size of social group typical of a species is directly related to the volume of its neocortex. To test whether this hypothesis also applies at the within-species level, we applied the Cavalieri method of stereology in conjunction with point counting on magnetic resonance images to determine the volume of prefrontal cortex (PFC) subfields, including dorsal and orbital regions. Path analysis in a sample of 40 healthy adult humans revealed a significant linear relationship between orbital (but not dorsal) PFC volume and the size of subjects' social networks that was mediated by individual intentionality (mentalizing) competences. The results support the social brain hypothesis by indicating a relationship between PFC volume and social network size that applies within species, and, more importantly, indicates that the relationship is mediated by social cognitive skills.

Keywords: MRI; prefrontal cortex; stereology; social network

SANKARARAMAN 2014

Sriram Sankararaman, Swapan Mallick, Michael Dannemann, Kay Prüfer, Janet Kelso, Svante Pääbo, Nick Patterson & David Reich, *The genomic landscape of Neanderthal ancestry in present-day humans*. [nature](#) **507** (2014), 354–357.

[n507-0354-Supplement.pdf](#)

Genomic studies have shown that Neanderthals interbred with modern humans, and that non-Africans today are the products of this mixture^{1,2}. The antiquity of Neanderthal gene flow into modern humans means that genomic regions that derive from Neanderthals in any one human today are usually less than a hundred kilobases in size. However, Neanderthal haplotypes are also distinctive enough that several studies have been able to detect Neanderthal ancestry at specific loci^{1,3–8}. We systematically infer Neanderthal haplotypes in the genomes of 1,004 present-day humans⁹. Regions that harbour a high frequency of Neanderthal alleles are enriched for genes affecting keratin filaments, suggesting that Neanderthal alleles may have helped modern humans to adapt to non-African environments. We identify multiple Neanderthal-derived alleles that confer risk for disease, suggesting that Neanderthal alleles continue to shape human biology. An unexpected finding is that regions with reduced Neanderthal ancestry are enriched in genes, implying selection to remove genetic material derived from Neanderthals. Genes that are more highly expressed in testes than in any other tissue are especially reduced in Neanderthal ancestry, and there is an approximately fivefold reduction of Neanderthal ancestry on the X chromosome, which is known from studies of diverse species to be especially dense in male hybrid sterility genes^{10–12}. These results suggest that part of the explanation for genomic regions of reduced Neanderthal ancestry is Neanderthal alleles that caused decreased fertility in males when moved to a modern human genetic background.

VERNOT 2014

Benjamin Vernot & Joshua M. Akey, *Resurrecting Surviving Neandertal Lineages from Modern Human Genomes*. [science](#) **343** (2014), 1017–1021.

[s343-1017-Supplement.pdf](#)

Anatomically modern humans overlapped and mated with Neandertals such that non-African humans inherit ≈ 1 to 3% of their genomes from Neandertal ancestors. We identified Neandertal lineages that persist in the DNA of modern humans, in whole-genome sequences from 379 European and 286 East Asian individuals, recovering more than 15 gigabases of introgressed sequence that spans $\approx 20\%$ of the Neandertal genome (false discovery rate = 5%). Analyses of surviving archaic lineages suggest that there were fitness costs to hybridization, admixture occurred both before and after divergence of non-African modern humans, and Neandertals were a source of adaptive variation for loci involved in skin phenotypes. Our results provide a new avenue for paleogenomics studies, allowing substantial amounts of population-level DNA sequence information to be obtained from extinct groups, even in the absence of fossilized remains.

WREN 2014

Colin D. Wren, Julian Z. Xue, Andre Costopoulos & Ariane Burke, *The role of spatial foresight in models of hominin dispersal*. [Journal of Human Evolution](#) (2014), preprint, 1–9. DOI:10.1016/j.jhevol.2014.02.004.

Increasingly sophisticated hominin cognition is assumed to play an important role in major dispersal events but it is unclear what that role is. We present an

agent-based model showing that there is a close relationship between level of foresight, environmental heterogeneity, and population dispersibility. We explore the dynamics between these three factors and discuss how they may affect the capacity of a hominin population to disperse. Generally, we find that high levels of environmental heterogeneity select for increased foresight and that high levels of foresight tend to reduce dispersibility. This suggests that cognitively complex hominins in heterogeneous environments have low dispersibility relative to cognitively less complex organisms in more homogeneous environments. The model predicts that the environments leading up to major episodes of dispersal, such as the initial hominin dispersal into Eurasia, were likely relatively low in spatial heterogeneity and that the dispersing hominins had relatively low foresight.

Keywords: Environmental heterogeneity | Simulation | Agent-based modelling | Hominin cognition

Grundlagen

THÉRY 1995

I. Théry, J. Gril, J. L. Vernet, L. Meignen, J. Maury, *First use of coal. nature* **373** (1995), 480–481.

THÉRY 1996

I. Théry, J. Gril, J. L. Vernet, L. Meignen, J. Maury, *Coal used for Fuel at Two Prehistoric Sites in Southern France, Les Canalettes (Mousterian) and Les Usclades (Mesolithic)*. *Journal of Archaeological Science* **23** (1996), 509–512.

Charcoal analysis—the study of charcoal from archaeological contexts—is designed to reconstruct palaeoenvironment and human use of wood. At two prehistoric sites in the Causse du Larzac (France)—Les Canalettes (Mousterian) and Les Usclades (Mesolithic)—charcoal analysis has revealed specimens whose anatomical structure was abnormally compressed in transverse section. The authors conducted experiments to determine how the compression could have occurred. The result was the first evidence for lignite in Palaeolithic settlements. Lignite fragments in a hearth suggest local Palaeolithic people used it for fuel. The lignite could have come from major coal outcrops within 7 to 15 km of the sites. Coal use is otherwise unknown for Palaeolithic cultures in France, and its use at Les Canalettes during the last glacial is the oldest recorded instance. Coal may have been used for fuel primarily because wood became scarce during the last glacial.

Keywords: charcoal analysis, coal, Palaeolithic fuel

THÉRY-PARISOT 2002

I. Théry-Parisot, *Fuel Management (Bone and Wood) During the Lower Aurignacian in the Pataud Rock Shelter (Lower Palaeolithic, Les Eyzies de Tayac, Dordogne, France)*. *Contribution of Experimentation*. *Journal of Archaeological Science* **29** (2002), 1415–1421.

The use of bone as fuel during the lower Aurignacian in the Pataud rock shelter was studied. An anterior study allowed us to dismiss the hypothesis of an imbalance between wood availability and the use of bone as fuel. An experimental study of bone combustion shows the specific properties of bone as fuel. We have proposed that the combustion of a mixture of material (wood and bone) is more effective as source of heat than the combustion of wood alone and the higher the proportion of bone the longer the combustion lasts. Lastly, we observed that the combustion

of bone favours two kinds of heat transfer: radiation and convection, but that it is completely ineffective for conduction. The results show that the use of bone could result from an intentional management of fuel in relation with the function of the settlement. It also could be a response to the disadvantage of using wood in a Palaeolithic camp.

Keywords: lower Palaeolithic, fuel, burnt bones, wood, anthraco-analysis, economy, Périgord.

Klima

BANKS 2013

William E. Banks, Francesco d’Errico & João Zilhão, *Human–climate interaction during the Early Upper Paleolithic, Testing the hypothesis of an adaptive shift between the Proto-Aurignacian and the Early Aurignacian*. *Journal of Human Evolution* **64** (2013), 39–55.

JHumEvo064-0039-Comment1.pdf, JHumEvo064-0039-Reply1.pdf

The Aurignacian technocomplex comprises a succession of culturally distinct phases. Between its first two subdivisions, the Proto-Aurignacian and the Early Aurignacian, we see a shift from single to separate reduction sequences for blade and bladelet production, the appearance of split-based antler points, and a number of other changes in stone tool typology and technology as well as in symbolic material culture. Bayesian modeling of available ¹⁴C determinations, conducted within the framework of this study, indicates that these material culture changes are coincident with abrupt and marked climatic changes. The Proto-Aurignacian occurs during an interval (ca. 41.5–39.9 k cal BP) of relative climatic amelioration, Greenland Interstadials (GI) 10 and 9, punctuated by a short cold stadial. The Early Aurignacian (ca. 39.8–37.9 k cal BP) predominantly falls within the climatic phase known as Heinrich Stadial (HS) 4, and its end overlaps with the beginning of GI 8, the former being predominantly characterized by cold and dry conditions across the European continent.

We use eco-cultural niche modeling to quantitatively evaluate whether these shifts in material culture are correlated with environmental variability and, if so, whether the ecological niches exploited by human populations shifted accordingly. We employ genetic algorithm (GARP) and maximum entropy (Maxent) techniques to estimate the ecological niches exploited by humans (i.e., eco-cultural niches) during these two phases of the Aurignacian. Partial receiver operating characteristic analyses are used to evaluate niche variability between the two phases.

Results indicate that the changes in material culture between the Proto-Aurignacian and the Early Aurignacian are associated with an expansion of the ecological niche. These shifts in both the ecocultural niche and material culture are interpreted to represent an adaptive response to the relative deterioration of environmental conditions at the onset of HS4.

Keywords: Eco-cultural niche modeling | Proto-Aurignacian | Ecological niche expansion | Heinrich Stadial 4

GALAASEN 2014

Eirik Vinje Galaasen et al., *Rapid Reductions in North Atlantic Deep Water During the Peak of the Last Interglacial Period*. *science* **343** (2014), 1129–1132.

s343-1129-Supplement1.pdf, s343-1129-Supplement2.xlsx

Eirik Vinje Galaasen, Ulysses S. Ninnemann, Nil Irvah, Helga (Kikki) F. Kleiven, Yair Rosenthal, Catherine Kissel & David A. Hodell

Deep ocean circulation has been considered relatively stable during interglacial periods, yet little is known about its behavior on submillennial time scales. Using a subcentennially resolved epibenthic foraminiferal $\delta^{13}\text{C}$ record, we show that the influence of North Atlantic Deep Water (NADW) was strong at the onset of the last interglacial period and was then interrupted by several prominent centennial-scale reductions. These NADW transients occurred during periods of increased ice rafting and southward expansions of polar water influence, suggesting that a buoyancy threshold for convective instability was triggered by freshwater and circum-Arctic cryosphere changes. The deep Atlantic chemical changes were similar in magnitude to those associated with glaciations, implying that the canonical view of a relatively stable interglacial circulation may not hold for conditions warmer and fresher than at present.

PEDERSON 2014

Neil Pederson, Amy E. Hessel, Nachin Baatarbileg, Kevin J. Anchukaitis & Nicola Di Cosmo, *Pluvials, droughts, the Mongol Empire, and modern Mongolia*. [PNAS 111 \(2014\), 4375–4379](#).

[pnas111-04375-Supplement.pdf](#)

Although many studies have associated the demise of complex societies with deteriorating climate, few have investigated the connection between an ameliorating environment, surplus resources, energy, and the rise of empires. The 13th-century Mongol Empire was the largest contiguous land empire in world history. Although drought has been proposed as one factor that spurred these conquests, no high-resolution moisture data are available during the rapid development of the Mongol Empire. Here we present a 1,112-y tree-ring reconstruction of warm-season water balance derived from Siberian pine (*Pinus sibirica*) trees in central Mongolia. Our reconstruction accounts for 56% of the variability in the regional water balance and is significantly correlated with steppe productivity across central Mongolia. In combination with a gridded temperature reconstruction, our results indicate that the regional climate during the conquests of Chinggis Khan's (Genghis Khan's) 13th-century Mongol Empire was warm and persistently wet. This period, characterized by 15 consecutive years of aboveaverage moisture in central Mongolia and coinciding with the rise of Chinggis Khan, is unprecedented over the last 1,112 y. We propose that these climate conditions promoted high grassland productivity and favored the formation of Mongol political and military power. Tree-ring and meteorological data also suggest that the early 21st-century drought in central Mongolia was the hottest drought in the last 1,112 y, consistent with projections of warming over Inner Asia. Future warming may overwhelm increases in precipitation leading to similar heat droughts, with potentially severe consequences for modern Mongolia.

paleoclimate | dendrochronology | human ecology | Anthropocene | coupled human natural systems

Religion

DUNBAR 2013

Robin I. M. Dunbar, *What Makes the Neolithic So Special?* [Neo-Lithics 2013, ii, 25–29](#).

Camp groups represent a size of group that humans seem to be able to cope with reasonably well. Settling an entire community of 150 in the same place, however, is an entirely different matter: it inevitably ramps up the tension and stress to a level that natural human psychological mechanisms were not designed to deal

with. In fact, it recreates the very problem that the fission-fusion system of foraging societies was specifically designed to solve. The inexorable increase in the size of settlements that was then set in train merely compounded the problem, creating a second phase crisis that differed from the first because it extended settlements beyond the natural human community size.

This cues in what, to me at least, is perhaps the one other glaringly obvious feature of post-Neolithic settlement societies: formal (or doctrinal) religions associated with evidence for special places of communal worship and/or formal priesthoods. Religions of this kind are invariably associated with high gods (gods that can observe what mere mortals cannot and, more importantly perhaps, impose punitive sanctions on those who fail to toe the line). Unlike the shamanistic religions of forager societies, doctrinal religions (as their name implies) require symbolic representations to communicate what amounts to a theology so as to be able to justify their ‘moral’ line. However, it seems that these informal mechanisms only work on the scale of the community, and that larger groupings cannot be bound together in this way. Doctrinal religions are the solution and they achieve this by shifting the solution from an endogenous, bottom-up, endorphin-based mechanism to an externalised, top-down, punishment-based one.

RENFREW 2013

Colin Renfrew, *Centres of Congregation*. [Neo-Lithics 2013, ii, 30–34](#).

One standard model for the evolution of socio-cultural complexity sees the development of monumental architecture as a feature associated with the rise of a state society, often accompanying urban formation. Such a model was indeed well outlined by Childe (1936), for whom the ‘Urban Revolution’ followed some millennia after the ‘Neolithic Revolution’. The paradigm example in his study is the formation of the city state in Sumer.

Increasingly, however, we can recognise early manifestations of monumentality at a much earlier date, indeed at a date coincident with the emergence of agriculture rather than with the emergence of a hierarchically structured state society, which is often an urban society. Göbekli Tepe has sparked off this discussion for the case of Western Asia. But it is a discussion with much earlier origins in South America, going back as far as Michael Moseley’s *The Maritime Foundations of Andean Civilisation*.

It is clear that the transition from a hunter-gatherer way of life to one based upon farming was in many cases accompanied by the development of systems of thinking and of communication which may be regarded as symbolic systems and also often as semiotic systems. [...] Although we do not have access to the speech of these communities, we can glimpse the emergence of such concepts through their figurative representation, as in the case of the relief carvings and sculptures at Göbekli Tepe. [...] Something of the same may indeed be detected in western and northern Europe, as evidenced by the rich repertoire of monumental architecture, sometimes termed ‘megalithic’, which is seen at or after the time of the transition to a farming economy.

THEWELEIT 2013

Klaus Theweleit, *An Entirely New Interaction with the Animal World?* [Neo-Lithics 2013, ii, 57–60](#).

After a brief review of world cultures suspicion arises; a suspicion that those cultures which survive and prosper are the very same cultures whose economy and learning processes are founded on the principles of segmentation (Ger. Segmentierung), sequencing (Ger. Sequenzierung), and conceptualisation (Ger. Konzeptualisierung). All other cultures, especially those which are based on more natural and

more holistic methodologies, predominantly religious concepts, are those which have failed.

Story or Book

ROBERTS 2014

Richard G. Roberts, *Just add water*. [nature](#) **507** (2014), 303–304.

Richard G. Roberts is intrigued by the idea that early humans gained an edge by ‘hunting’ for lakes and rivers.

The Improbable Primate: How Water Shaped Human Evolution. Clive Finlayson. Oxford University Press: 2014.

Was water the evolutionary driver or is it merely one of the key habitat components that we require to survive? Answers cannot be sought solely in hominin fossils, which are exceptionally rare. So Finlayson scours the archaeological and palaeontological literature for common features of what our ancient forebears called home: some combination of woody cover, open spaces and fresh water. In 1925, the pioneering palaeoanthropologist Raymond Dart proposed that these habitat elements were essential to early human evolution in southern Africa. Finlayson extends this list to the needs of later hominin lineages, adding rocky outcrops, which proved particularly popular with cool-climate Neanderthals occupying the mountain ranges of Eurasia.