Liste erstellt am 2014-09-12

References

Afrika

Scerri 2014

Eleanor M. L. Scerri, Nick A. Drake, Richard Jennings & Huw S. Groucutt, *Earliest evidence for the structure of Homo sapiens populations in Africa*. Quaternary Science Reviews **101** (2014), 207–216.

Understanding the structure and variation of Homo sapiens populations in Africa is critical for interpreting multiproxy evidence of their subsequent dispersals into Eurasia. However, there is no consensus on early H. sapiens demographic structure, or its effects on intra-African dispersals. Here, we show how a patchwork of ecological corridors and bottlenecks triggered a successive budding of populations across the Sahara. Using a temporally and spatially explicit palaeoenvironmental model, we found that the Sahara was not uniformly ameliorated between ≈130 and 75 thousand years ago (ka), as has been stated. Model integration with multivariate analyses of corresponding stone tools then revealed several spatially defined technological clusters which correlated with distinct palaeobiomes. Similarities between technological clusters were such that they decreased with distance except where connected by palaeohydrological networks. These results indicate that populations at the Eurasian gateway were strongly structured, which has implications for refining the demographic parameters of dispersals out of Africa.

Keywords: Middle Stone Age | Human evolution | Modern human dispersals | Palaeoclimate

Aktuell

Marshall 2014

Eliot Marshall, *An experiment in zero parenting*. science **345** (2014), 752–754.

A controversial study of Romanian orphans reveals long-term harm to the intellect.

Today, Nelson is convinced that early life without parenting can be “more disastrous for brain development” than living with an abusive caregiver. But the Romanian work also confirms that many children can bounce back to something like normality, if placed in a supportive environment. No country should be complacent, Nelson adds, noting that what he saw in Romania is “not all that different from the kind of neglect that many kids in the United States experience.” The problem is insidious because neglected children often don’t have injuries and don’t get the attention that victims of physical or sexual abuse receive. “They wind up coming to the emergency room when they’re 5 years old and weigh 20 pounds,” Nelson says, long after the damage is critical.

Like other studies, the BEIP project suggests that brain development passes through critical periods. The first 24 months of life seem especially important for cognitive development, and Nelson says that the critical period for healthy attachment to a parent lasts through the first 20 to 22 months. For language, the window appears to be up to 16 months. But there are no sharp lines, says UMN’s Gunnar. “The general story seems to be that the brain is remarkably plastic” and can find many ways around obstacles. But neglect makes things harder.

Spinney 2014

Laura Spinney, *Switzerland braces for Alpine lake tsunami*. nature **513** (2014), 16–17.

Authorities in Swiss canton blaze a trail by factoring the risk into hazard planning.

The AD 563 event, the largest of the five, occurred when part of a mountain fell onto an unstable underwater delta of the Rhône river, which flows into Lake Geneva (see 'Origin of a wave'). The falling rock forced the collapse of sections of the delta, creating a wave that was 8 metres high when it hit and wiped out the old city of Geneva at the other end of the lake.

Anthropologie

Breyer 2014

Thiemo Breyer & Shumon T. Hussain, *Empathie*. In: G. Jüttemann (Hrsg.), *Die Entwicklung der Menschheit, „Integrative Humanwissenschaft" als Forschungskooperative und Metadisziplin*. (in press 2014), 233–240.

Empathie kann in einem weitesten Sinne als die Erfahrung von Fremdpsychischem bestimmt werden. Sie bildet die anthropologische Grundlage dafür, dass sich komplexe soziale Strukturen und kulturelle Interaktionsformen entwickeln konnten. Um den Anderen als intentionalen Agenten (Tomasello, 1999) auffassen zu können, muss das Subjekt von seinem egozentrischen Standpunkt abstrahieren und sich auf die Tatsache einstellen können, dass der Andere eine Perspektive auf die Welt hat, die von der eigenen abweicht. Im Folgenden gehen wir von der Fähigkeit zum Perspektivenwechsel als notwendiger Bedingung von Empathie (vgl. Breyer, 2013) aus und fragen nach möglichen prähistorischen Szenarien, die besonders förderlich für die Herausbildung dieser Bedingung gewesen sein könnten. Die kooperative Aufzucht des Nachwuchses wird als ein solches Szenario identiiziert (vgl. Hussain, 2013). Mit Blick auf eine "Integrative Humanwissenschaft" scheint uns die Kombination aus sozial-kognitiver und paläoanthropologischer Dimension hilfreich, um zentrale geistige Fähigkeiten des Menschen in ihrer Entwicklung nachvollziehen zu können.

Gura 2014

Trisha Gura, *Nature's first functional food*. science **345** (2014), 747–749.

Breast milk feeds helpful microbes, fights harmful ones, provides immunity, and jump-starts a newborn's life.

After sequencing the genome of B. longum bv. infantis, he learned that it carries the precise genes for all the enzymes needed to digest the milk's oligosaccharides—other bacteria, even closely related ones, don't share all of those genes. "Clearly this bacterium coevolved" with humans, German says. Why would a new mother expend energy producing food for an organism other than her offspring? German says it's pretty clear. "Mother is recruiting another life form to babysit her baby."

NEC (necrotizing enterocolitis) can strike just when it seems a premature infant is out of the initial dangers of being born too early. "I can think of a baby," says neonatologist Mark Underwood of UC Davis, "who one day was looking good and on the next day was pooping blood. By that night was dead. You see that in a kid who you thought was past the worst of it, and it is just so devastating." Theories abound to explain the condition: Premature infants have a leaky gut

that lets bacteria through, or cells lining their intestine exhibit an overreactive inflammatory response. Premature infants may also not get enough breast milk: Studies show that the risk of NEC plummets six- to 10-fold if preemies are given breast milk rather than formula.

Holloway 2014

Ralph L. Holloway, Douglas C. Broadfield & Kristian J. Carlson, *New high-resolution computed tomography data of the Taung partial cranium and endocast and their bearing on metopism and hominin brain evolution*. PNAS **111** (2014), 13022–13027.

Falk and colleagues [Falk D, Zollikofer CP, Morimoto N, Ponce de León MS (2012) Proc Natl Acad Sci U S A 109(22):8467–8470] hypothesized that selective pressures favored late persistence of a metopic suture and open anterior fontanelle early in hominin evolution, and they put an emphasis on the Taung Child (Australopithecus africanus) as evidence for the antiquity of these adaptive features. They suggested three mutually nonexclusive pressures: an "obstetric dilemma," high early postnatal brain growth rates, and neural reorganization in the frontal cortex. To test this hypothesis, we obtained the first high-resolution computed tomography (CT) data from the Taung hominin. These high-resolution image data and an examination of the hominin fossil record do not support the metopic and fontanelle features proposed by Falk and colleagues. Although a possible remnant of the metopic suture is observed in the nasion–glabella region of the Taung partial cranium (but not along the frontal crest), this character state is incongruent with the zipper model of metopic closure described by Falk and colleagues. Nor do chimpanzee and bonobo endocast data support the assertion that delayed metopic closure in Taung is necessary because of widening (reorganization) of the prefrontal or frontal cortex. These results call into question the adaptive value of delaying metopic closure, and particularly its antiquity in hominin evolution. Further data from hominoids and hominins are required to support the proposed adaptive arguments, particularly an obstetric dilemma placing constraints on neural and cranial development in Australopithecus.

prefrontal reorganization | cranial capacity | human evolution

Knodel 1978

John Knodel, *Natural fertility in pre-industrial Germany*. Population Studies **32** (1978), 481–510.

Behavioural results such as are presented in the present paper tell us nothing, of course, about what was going on in the minds of the actors. Was the absence of family limitation in these pre-industrial German villages a result of the very 'unthinkableness' of interfering with the reproductive function within marriage,45 a lack of knowledge of effective techniques to translate a wish for fewer children into reality, or a lack of motivation to reduce fertility because couples welcomed as many children as would result within a natural fertility situation? Direct evidence on such questions must come from other sources if it is to come from anywhere.

Our findings, however, do give us an important insight into how couples were behaving and, thus, do have direct bearing on assertions that birth control was widely practised in the pre-industrial period. Such assertions are central to the position that the fertility transition can be viewed entirely as an adjustment process to a new set of structural and motivational forces utilizing long standing behavioural mechanisms.46 The evidence suggests that if any birth control had been practised within marriage in pre-industrial German villages, it differed fundamentally from modern forms of control in not being parity-dependent. Family limitation appears to be a behavioural form which becomes common only during the fertility

transition. It would be misleading, therefore, to disregard the possibility that in Germany the diffusion of family limitation as an innovative idea contributed to the speed and breadth of the eventual broad fertility decline.

Kuzawa 2014

Christopher W. Kuzawa et al., *Metabolic costs and evolutionary implications of human brain development*. PNAS **111** (2014), 13010–13015.

Christopher W. Kuzawa, Harry T. Chugani, Lawrence I. Grossman, Leonard Lipovich, Otto Muzik, Patrick R. Hof, Derek E. Wildman, Chet C. Sherwood, William R. Leonard & Nicholas Lange

The high energetic costs of human brain development have been hypothesized to explain distinctive human traits, including exceptionally slow and protracted preadult growth. Although widely assumed to constrain life-history evolution, the metabolic requirements of the growing human brain are unknown. We combined previously collected PET and MRI data to calculate the human brain's glucose use from birth to adulthood, which we compare with body growth rate. We evaluate the strength of brain–body metabolic trade-offs using the ratios of brain glucose uptake to the body's resting metabolic rate (RMR) and daily energy requirements (DER) expressed in glucose-gram equivalents (glucose-rmr% and glucose-der%). We find that glucose-rmr% and glucose-der% do not peak at birth (52.5 % and 59.8 % of RMR, or 35.4 % and 38.7 % of DER, for males and females, respectively), when relative brain size is largest, but rather in childhood (66.3 % and 65.0 % of RMR and 43.3 % and 43.8 % of DER). Body-weight growth (dw/dt) and both glucose-rmr% and glucose-der% are strongly, inversely related: soon after birth, increases in brain glucose demand are accompanied by proportionate decreases in dw/dt. Ages of peak brain glucose demand and lowest dw/dt co-occur and subsequent developmental declines in brain metabolism are matched by proportionate increases in dw/dt until puberty. The finding that human brain glucose demands peak during childhood, and evidence that brain metabolism and body growth rate covary inversely across development, support the hypothesis that the high costs of human brain development require compensatory slowing of body growth rate.

neuroimaging | diabetes | human evolution | neuronal plasticity | anthropology

Plomin 1997

Robert Plomin, David W. Fulker, Robin Corley & John C. DeFries, *Nature, Nurture, and Cognitive Development from 1 to 16 years, A Parent-Offspring Adoption Study*. Psychological Science **8** (1997), 442–447.

Children increasingly resemble their parents in cognitive abilities from infancy through adolescence. Results obtained from a 20-year longitudinal adoption study of 245 adopted children and their biological and adoptive parents, as well as 245 matched nonadoptive (control) parents and offspring, show that this increasing resemblance is due to genetic factors. Adopted children resemble their adoptive parents slightly in early childhood but not at all in middle childhood or adolescence. In contrast, during childhood and adolescence, adopted children become more like their biological parents, and to the same degree as children and parents in control families. Although these results were strongest for general cognitive ability and verbal ability, similar results were found for other specific cognitive abilities – spatial ability, speed of processing, and recognition memory. These findings indicate that, within this population, genes that stably affect cognitive

abilities in adulthood do not all come into play until adolescence and that environmental factors that contribute to cognitive development are not correlated with parents' cognitive ability.

Watkins 1985

Susan Cotts Watkins & Jane Menken, *Famines in Historical Perspective*. Population and Development Review **11** (1985), 647–675.

What this analysis strongly suggests is that the far more plausible explanation for the long-term slow growth of large populations in the past is the low rate of natural increase set by normal levels of mortality and fertility. Although it is true that, for aggregates of substantial size, levels of normal mortality would have reflected small, short, and local famines, mortality was high even in areas that rarely experienced a crisis. It would thus appear that the control of normal mortality, the day-to-day causes of death, rather than the elimination of the one-time or extremely rare large-scale killer, is far more responsible for the onset of modem population growth.

Bibel

Spronk 1986

Klaas Spronk, *Beatific Afterlife in Ancient Israel and in the Ancient Near East*. Dissertation, Theologische Academie Kampen (Kevelaer 1986).

The history of the ancient Israelite conceptions of afterlife is closely related to the struggle between Yahwism and Baalism. There can be no doubt about the belief in YHWH having power over life and death, but usually the Old Testament only speaks of YHWH saving the faithful from the power of death in this life, i.e., rescuing them from premature death. This reluctance to speak about help of YHWH after death is neither due to a lack of confidence in this matter nor to the fact that the Israelites would have lacked the natural human interest in life after death, but primarily to the fear of becoming entangled in the Canaanite religious ideas about life and death.

The Israelites were clearly familiar with the Canaanite belief in Baal rising from the netherworld every year and taking the deified spirits of the royal dead with him. This belief was not taken over by Yahwism, as was the case with other elements of Canaanite religion, because the very character of YHWH was at stake here. YHWH is not a god like Baal; He looks more like El. It would have been a blasphemy to assume that He could be dead, be it temporarily. The role of El as the one who revivifies the dead together with Baal would seem to suit Him better. But the adoption of this idea was excluded as well, because there was no room in Yahwism for such revivified dead who were venerated as gods. All attempts to seek advice or help from such mighty dead are rejected in the Old Testament.

A very interesting result or this study is that it is possible now to trace some elements of the Jewish and Christian conceptions of beatific afterlife back to Canaanite influence upon the religion of ancient Israel. We already noticed the identification of the resurrected dead with stars and angels. The attempt to prove the resurrection by referring to the revival of nature (see pp.9-10 above) may have its origin here as well. We can also mention in this connection the belief that prominent persons like martyrs would be resurrected to heavenly bliss shortly after their death without having to wait for the general resurrection at the end of time and the belief that they would act as intermediaries between God and man or as judges. Finally, it has also become clear that the veneration of (beatific) saints

in connection with annual feasts on their behalf among Jews, Christians, and Muslims goes back at least as much to the ancient beliefs of Syria and Palestine as to the Greek and Roman hero-cults.

Energie

Kaufman 2014

B. Kaufman & D. A. Scott, *Fuel Efficiency of ancient Copper Alloys, Theoretical melting thermodynamics of copper, tin and arsenical copper and timber conservation in the Bronze Age Levant.* Archaeometry (2014), preprint, 1–16. DOI:10.1111/arcm.12127.

Archaeometry2014-Kaufman-Supplement.pdf

The melting of pure or alloyed copper, tin and arsenical copper ingots or recycled objects was a drain on the timber and dung fuel resources of many cultures. This paper suggests formulae grounded in thermodynamic principles in an attempt to estimate the energy requirements necessary to melt copper alloys common to both Old and New World cultures, with the goal of identifying consumption and conservation patterns. It has been suggested that tin bronze metallurgy was first adopted in the Levant during the Early Bronze Age (EB) IV, at the onset of the Late Holocene climate episode (c.2300–2000 BC), becoming the most desired alloy by the Middle Bronze Age (MB) II (2000–1530 BC) due to the ease of melting tin. To test this hypothesis, the formulae are applied here to all published Levantine EB IV – MB II copper alloys. Fuel conservation rates are proposed based on the thermodynamic formulae. Tin bronze is demonstrably more fuel efficient than pure copper. Due to the inherent difficulties in predicting the behaviour of arsenical copper compounds, it is suggested that melting experiments with representative alloys are conducted to further test and refine these energy relationships.

Keywords: EB IV–MB II Levant, Late Holocene, SEM–EDS, bronze archaeometallurgy, physical metallurgy, cultural ecology

Riess 2010

Michael Rieß, *Freisetzung und Einbindung von Schwermetallen bei der Hochtemperaturvergasung.* Dissertation, RWTH Aachen (Aachen 2010).

Beside the usage of regenerative energy sources it is necessary to increase the effciency of fossil fuel power plants to preserve these available fossil resources. As they were thermal engines, the improvement of power plants causes higher process temperatures. To protect the materials being used, like reactor walls or catalysts, at high temperatures, an improvement of gas cleaning is required.

The GuD combined process using gas- and steam turbine is achieving 60 % of degree of effciency. IGCC Plant e.g. this combined process is applied with a subsequent gasification of the fuel.

To minimize the unavoidable losses of energy during the gas cleaning, it is necessary to maximize the cleaning temperature. However, soption-based removal of heavy metals at high temperatures is widely less investigated than alkali or sulphur removal by sorption. The intention of this study was to determine the capability of available sulphur and alkali sorption materials for the removal of heavy metals. The examined heavy metals in this work were arsenic, cadmium, selenium, lead and zinc. The used sorbent materials were part from the groups of silicates, alumosilicates, zeolites, lime, fly ashes and some synthetic materials like titania or CaSiO3.

Initially the release and the sorption behaviour were calculated with thermodynamic software. Therefore coals with different ranks and different heavy metal

contents were assumed. These coals were gasified both in a fluidised bed gasifier and in an entrained flow gasifier.

The results of these calculations were compared with the results of laboratory experiments at a molecular beam mass spectrometer (MBMS) to determine sorption kinetics. With a MBMS it is possible to measure the gas purity downstream the sorbent bed without condensation of the impurities. The sorption mechanisms were then investigated by XRD and SEM in additional exposure tests.

Neben der Intensivierung der regenerativen Energiegewinnung ist es notwendig, den Wirkungsgrad bei der Nutzung fossiler Brennstoffe zu erhöhen, um diese endlichen Ressourcen zu schonen. Die mit der Entwicklung verbesserter Kraftwerke einhergehenden, steigenden Prozesstemperaturen bedingen wegen der zunehmenden Materialempfindlichkeit sehr hohe Gasreinheiten.

Insbesondere der GuD Kombiprozess mit Gas- und Dampfturbine erreicht Wirkungsgrade bis zu 60 %. Beispielsweise in IGCC-Anlagen (Integrated Gasification Combined Cycle) wird dieser Prozess mit vorangehender Vergasung des Brennstoffs angewandt. Um die unvermeidbaren Energieverluste durch die Gasreinigung so gering wie möglich zu halten, ist es notwendig die Reinigungstemperatur so hoch als möglich zu wählen. Die sorptive Entfernung Schwermetallen bei hohen Temperaturen ist im Vergleich zu Reinigung von Schwefel und Alkalien aber noch wenig erforscht.

Das Ziel dieser Arbeit besteht somit in der Untersuchung vorhandener Schwefel- und Alkali-Getter sowie neuer, angepasster Sorbentien auf ihre Verwendbarkeit bei der Schwermetallsorption in Vergasungsatmosphäre bei 800 °C. Die untersuchten Schwermetalle waren hierbei Arsen, Cadmium, Selen, Blei und Zink. Die Sorbensauswahl umfasste in dieser Arbeit die Gruppen der Silikate, Alumosilikate, Zeolithe, Flugaschen, Kalke sowie einige synthetische Rohstoffe wie z.B. Titandioxid oder CaSiO3.

Zunächst wurde das Freisetzungs- und Einbindungsverhalten von Schwermetallen in Vergaserreaktoren mittels thermodynamischer Rechentools ermittelt. Dabei wurden verschiedene Kohlearten mit variierenden Schwermetallgehalten bei zwei Vergasungsprozessen, Wirbelschichtvergasung und Flugstromvergasung, berechnet.

Im Abgleich mit diesen Ergebnissen wurden Laborversuche an einem Molekularstrahlmassenspektrometer (MBMS) zur Bestimmung der Einbindungskinetik der Schwermetalle an den Sorbentien, die nach den Berechnungen sowie nach vorangegangenen Untersuchungen als geeignet erschienen, durchgeführt. Mit dem MBMS wurde dabei die Gasreinheit stromabwärts der Sorbensschüttung ohne vorherige Kondensation der Schwermetallverunreinigungen direkt gemessen. Die Einbindungsmechanismen wurden anschließend mittels XRD und REM in separaten Auslagerungsversuchen untersucht.

Judentum

Cochran 2006

Gregory Cochran, Jason Hardy & Henry Harpending, *Natural History of Ashkenazi Intelligence*. Journal of Biosocial Science **38** (2006), 659–693.

This paper elaborates the hypothesis that the unique demography and sociology of Ashkenazim in medieval Europe selected for intelligence. Ashkenazi literacy, economic specialization, and closure to inward gene flow led to a social environment in which there was high fitness payoff to intelligence, specifically verbal and mathematical intelligence but not spatial ability. As with any regime of strong directional selection on a quantitative trait, genetic variants that were otherwise

fitness reducing rose in frequency. In particular we propose that the well-known clusters of Ashkenazi genetic diseases, the sphingolipid cluster and the DNA repair cluster in particular, increase intelligence in heterozygotes. Other Ashkenazi disorders are known to increase intelligence. Although these disorders have been attributed to a bottleneck in Ashkenazi history and consequent genetic drift, there is no evidence of any bottleneck. Gene frequencies at a large number of autosomal loci show that if there was a bottleneck then subsequent gene flow from Europeans must have been very large, obliterating the effects of any bottleneck. The clustering of the disorders in only a few pathways and the presence at elevated frequency of more than one deleterious allele at many of them could not have been produced by drift. Instead these are signatures of strong and recent natural selection.

Ferguson 2008

R. Brian Ferguson, *How Jews Became Smart, Anti-"Natural History of Ashkenazi Intelligence"*. (Newark 2008). http://www.ncas.rutgers.edu/sites/fasn/files/How%20Jews%20Became%20Smart%20(2008).pdf (2014-09-04).

Natural History of Ashkenazi Intelligence (NHAI) provides a novel answer to a longstanding question: why do Jews of Ashkenazi ancestry carry so many recessive genes for harmful conditions? It argues that in heterozygotes, these alleles substantially increase intelligence. For 800 years, Ashkenazi were confined to professions demanding high cognitive skills. Those with the alleles prospered, and had more surviving children, thus selecting for the alleles in the population. This thesis has received widespread media and web attention, and represents a growing tendency to explain psychological differences between populations as due to different genes.

This article challenges NHAI, showing so many points of improbability, that the entire hypothesis is highly unlikely. The main criticisms are: (a) Contrary to NHAI's argument that the inherited conditions are due to selection, population bottlenecks and drift remain strong explanations of their frequency, and consistent with historical information. (b) In NHAI, less than half of all inherited conditions have even a suggested pathway to higher intelligence. (c) The inference that genes which stimulate aspects of neural growth are linked to higher intelligence is pure speculation predicated on a simplistic view of neurological development. (d) The claimed connection between three specific conditions and higher IQ has virtually no empirical support whatever. (e) The demonstrated IQ advantage of Ashkenazi Jews as a whole is less than asserted. (f) The multi-point IQ boosts proposed for specific genes are very inconsistent with current research on the genetics of IQ. (g) Even within the mainstream of IQ research, which emphasizes genetic/biological bases, the extent of Ashkenazi IQ advantage is easily accommodated as due to enviromnent. (h) The "Talmudic Tradition" of emphasizing learning and abstract reasoning provides a clear cultural explanation for higher IQ among Ashkenazi. In Ashkenazi history, NHAI's assumption that higher intelligence led to greater income is contradicted by (i) a rigid system of social stratification, (j) the critical importance for amassing wealth of capital, social connections, and political patrons, and (k) the absence of any evidence that success in business required anything more than average intelligence.

Ostrer 2013

Harry Ostrer & Karl Skorecki, *The population genetics of the Jewish people*. Human Genetics **132** (2013), 119–127.

HumGen132-0119-Supplement.xls

Adherents to the Jewish faith have resided in numerous geographic locations over the course of three millennia. Progressively more detailed population genetic

analysis carried out independently by multiple research groups over the past two decades has revealed a pattern for the population genetic architecture of contemporary Jews descendant from globally dispersed Diaspora communities. This pattern is consistent with a major, but variable component of shared Near East ancestry, together with variable degrees of admixture and introgression from the corresponding host Diaspora populations. By combining analysis of monoallelic markers with recent genome-wide variation analysis of simple tandem repeats, copy number variations, and single-nucleotide polymorphisms at high density, it has been possible to determine the relative contribution of sex-specific migration and introgression to map founder events and to suggest demographic histories corresponding to western and eastern Diaspora migrations, as well as subsequent microevolutionary events. These patterns have been congruous with the inferences of many, but not of all historians using more traditional tools such as archeology, archival records, linguistics, comparative analysis of religious narrative, liturgy and practices. Importantly, the population genetic architecture of Jews helps to explain the observed patterns of health and diseaserelevant mutations and phenotypes which continue to be carefully studied and catalogued, and represent an important resource for human medical genetics research. The current review attempts to provide a succinct update of the more recent developments in a historical and human health context.

Klima

Kremer 2014

Katrina Kremer et al., *Lake dwellers occupation gap in Lake Geneva (France-Switzerland) possibly explained by an earthquake-mass movement-tsunami event during Early Bronze Age*. Earth and Planetary Science Letters **385** (2014), 28–39.

Katrina Kremer, Francois Marillier, Michael Hilbe, Guy Simpson, David Dupuy, Ble J. F. Yrro, Anne-Marie Rachoud-Schneider, Pierre Corboud, Benjamin Bellwald, Walter Wildi & Stephanie Girardclos

High-resolution seismic and sediment core data from the 'Grand Lac' basin of Lake Geneva reveal traces of repeated slope instabilities with one main slide-evolved mass-flow (minimum volume 0.13 km3) that originated from the northern lateral slope of the lake near the city of Lausanne. Radiocarbon dating of organic remains sampled from the top of the main deposit gives an age interval of 1865–1608 BC. This date coincides with the age interval for a mass movement event described in the 'Petit Lac' basin of Lake Geneva (1872–1622 BC). Because multiple mass movements took place at the same time in different parts of the lake, we consider the most likely trigger mechanism to be a strong earthquake (Mw 6) that occurred in the period between 1872 and 1608 BC. Based on numerical simulations, we show the major deposit near Lausanne would have generated a tsunami with local wave heights of up to 6 m. The combined effects of the earthquake and the following tsunami provide a possible explanation for a gap in lake dwellers occupation along the shores of Lake Geneva revealed by dendrochronological dating of two palafitte archaeological sites.

Keywords: lake dwellers | Lake Geneva | mass movement | earthquake | tsunami

Kultur

Black 2005

Sandra E. Black, Paul J. Devereux & Kjell G. Salvanes, *Why the Apple*

Doesn't Fall Far, Understanding Intergenerational Transmission of Human Capital. American Economic Review **95** (2005), 437–449.

By using the increased educational attainment induced by the change in the compulsory schooling legislation in Norway, in combination with a unique dataset containing the entire population of the country, we are able to estimate the causal relationship between parents' education and that of their children. Despite strong OLS relationships, we find little causal relationship between parent education and child education. The one exception is among mothers and sons; when mothers increase their educational attainment, their sons get more education as well. These results are robust to a number of specification checks.

Kupfer

Subramanian 1988

P. R. Subramanian & D. E. Laughlin, *The As-Cu (Arsenic-Copper) System*. Bulletin of Alloy Phase Diagrams **9** (1988), v, 605–618.

Keywords: phase diagram, arsenic-bronze, Arsenbronze, melting

Methoden

Bocquet-Appel 1999

Jean-Pierre Bocquet-Appel & Juan-Luis Arsuaga, *Age Distributions of Hominid Samples at Atapuerca (SH) and Krapina Could Indicate Accumulation by Catastrophe*. Journal of Archaeological Science **26** (1999), 327–338.

Age distributions of the Atapuerca (SH) (MNI=32) and Krapina (average MNI=23.5) hominid assemblages diVer markedly from that of the pooled Neanderthals. Three out of six statistical tests imply both assemblages resulted from catastrophe while for the remaining three no decision can be made due to the very small size of the age samples in the age-class 5–14 years. It is improbable that the human bones accumulation be the result of an attritional mortality via, either a regular lion predation, or a kind of primitive cemetery. However, there is either a marked underrepresentation of the individuals aged 5–14 years or an overrepresentation of those aged 15–24 years, along with an underrepresentation of the younger (below 5 years) and older individuals (25 years and above). The mortality distribution corresponds neither to a shortage nor an epidemic mortality profile. The curious age distribution of both hominid samples may be best explained as a result of a demographic crisis of a local group for a meta-population in nature, caused by severe environmental fluctuation.

Keywords: palaeodemography, Pleistocene Hominid samples, catastrophe, mortality, Atapuerca (SH), Krapina.

Downey 2014

Sean S. Downey, Emmy Bocaege, Tim Kerig, Kevan Edinborough & Stephen Shennan, *The Neolithic Demographic Transition in Europe: Correlation with Juvenility Index Supports Interpretation of the Summed Calibrated Radiocarbon Date Probability Distribution (SCDPD) as a Valid Demographic Proxy*. PLoS ONE **9** (2014), e105730. DOI:10.1371/journal.pone.0105730.

pone09-e105730-Supplement1.pdf, pone09-e105730-Supplement2.pdf, pone09-e105730-Supplement3.pdf

Analysis of the proportion of immature skeletons recovered from European prehistoric cemeteries has shown that the transition to agriculture after 9000 BP triggered a long-term increase in human fertility. Here we compare the largest analysis of European cemeteries to date with an independent line of evidence, the summed calibrated date probability distribution of radiocarbon dates (SCDPD) from archaeological sites. Our cemetery reanalysis confirms increased growth rates after the introduction of agriculture; the radiocarbon analysis also shows this pattern, and a significant correlation between both lines of evidence confirms the demographic validity of SCDPDs. We analyze the areal extent of Neolithic enclosures and demographic data from ethnographically known farming and foraging societies and we estimate differences in population levels at individual sites. We find little effect on the overall shape and precision of the SCDPD and we observe a small increase in the correlation with the cemetery trends. The SCDPD analysis supports the hypothesis that the transition to agriculture dramatically increased demographic growth, but it was followed within centuries by a general pattern of collapse even after accounting for higher settlement densities during the Neolithic. The study supports the unique contribution of SCDPDs as a valid demographic proxy for the demographic patterns associated with early agriculture.

Harpending 1998

Henry C. Harpending, Mark A. Batzer, Michael Gurven, Lynn B. Jorde, Alan R. Rogers & Stephen T. Sherry, *Genetic traces of ancient demography*. PNAS **95** (1998), 1961–1967.

Patterns of gene differences among humans contain information about the demographic history of our species. Haploid loci like mitochondrial DNA and the nonrecombining part of the Y chromosome show a pattern indicating expansion froma population of only several thousand during the late middle or early upper Pleistocene. Nuclear short tandem repeat loci also show evidence of this expansion. Both mitochondrial DNA and the Y chromosome coalesce within the last several hundred thousand years, and they cannot provide information about the population before their coalescence. Several nuclear loci are informative about our ancestral population size during nearly the whole Pleistocene. They indicate a small effective size, on the order of 10,000 breeding individuals, throughout this time period. This genetic evidence denies any version of the multiregional model of modern human origins. It implies instead that our ancestors were effectively a separate species for most of the Pleistocene.

Howell 1982

Nancy Howell, *Village Composition Implied by a Paleodemographic Life Table, The Libben Site*. American Journal of Physical Anthropology **59** (1982), 263–269.

Lovejoy and colleagues excavated some 1327 skeletons deposited around 800 to 1100 A.D. at a site near Lake Erie in Ohio, called Libben. Examination of the implications of the life table presented for the living group which produced the cemetery shows that it would have had to be an extremely young population, in which many of the children would be orphans, in which the adults would have had to work hard and effectively to support the group, and almost none of whom would have lived long enough to become grandparents. The unusual and implausible features of the population structure can be interpreted as direct evidence on prehistoric living conditions, or alternatively, as a caution that the life table may include sources of error or bias.

Keywords: Libben, Paleodemography, Life tables, Village composition

Jackes 1985

M. K. Jackes, *Pubic Symphysis Age Distributions*. American Journal of Physical Anthropology **68** (1985), 281–299.

A further discussion of age assessment and palaeodemography requires detailed reviews of methods, especially pubic symphysis techniques. Before reanalysis of changes in symphyseal form, the initial steps in distributing ages must be examined. Use of the mean values for age scores gives age distributions that are not real, but subject to systematic distortions, and cumulative percentages of skeletal samples can be shown to reflect the mean ages. Distributing skeletal ages using 95 % probability distributions provides a more accurate estimation of true ages for palaeodemography and a better basis for discussions of pubic symphysis aging techniques.

Keywords: Pubic symphysis, Demography, Age assessment, Ontario Indians

Lovejoy 1977

C. Owen Lovejoy, Richard S. Meindl, Thomas R. Pryzbeck, Thomas S. Barton, Kingsbury G. Heiple & David Kotting, *Paleodemography of the Libben Site, Ottawa County, Ohio*. science **198** (1977), 291–293.

The Libben site, a Late Woodland ossuary and occupation sitefrom the Great Black Swamp ofnorthern Ohio has yielded a well-preserved skeletal sample of 1327 articulated individuals. The outstanding preservation and completeness of the site and the utilization ofan exhaustive aging methodology make this the largest and most comprehensively censused North American prehistoric cemetery. Survivorship data indicate a robust, successful population. Life expectancy at birth was 20 years. Among adults, male mortality was consistently higher than female, a condition possibly related to high interpersonal and intergroup aggression. Infant mortality was generally low, and a general hypothesis concerning the elevation of infant mortality and the simultaneous depression of adult mortality among aboriginal peoples after European contact is suggested.

Manning 1988

Patrick Manning & William S. Griffiths, *Divining the Unprovable, Simulating the Demography of African Slavery*. Journal of Interdisciplinary History **19** (1988), 177–201.

The simulation model provides a structured, internally consistent way to increase the value of scarce African demographic data by linking them with demographic principles and the historical record. To date the model has been useful in generating hypotheses about the demography of African slavery. In future work, it should be useful in verifying or rejecting these and other hypotheses. More generally, simulation provides a tool for addressing that intractable demographic problem: migration.21 Here migration is integrated into an approach which does not abandon the traditional heart of demographic analysis, fertility and mortality. That a daunting list of assumptions is necessary to any migration analysis is confirmed by the number of migration variables required for the simulation. But the sensitivity analysis offers the possibility that migration studies can be simplified, after appropriate analysis, to permit concentration on a small number of variables.

Weiss 1972

Kenneth M. Weiss, *On the Systematic Bias in Skeletal Sexing*. American Journal of Physical Anthropology **37** (1972), 239–249.

Comparison of a large series of sexed adult skeletal populations and a similar series of adult pre-industrial peoples shows that there is a regular and systematic bias in the sexing of adult skeletons. This bias, which is about 12 % in favor of males, is due to the nature of secondary sex characteristics in bone. It should be corrected in skeletal series before demographic analysis is made of them. Application of this knowledge and the same data to problems of age-specific male and female mortality rates is inconclusive, but points to an area for important future investigation. Application to the fossil record confirms some ecological ideas about human evolution.

Keywords: Sex ratio | Skeletal sexing | Paleodemography | Mortality of adults

Mittelalter

Capelli 2003

Cristian Capelli et al., *A Y Chromosome Census of the British Isles*. Current Biology **13** (2003), 979–984.

Cristian Capelli, Nicola Redhead, Julia K. Abernethy, Fiona Gratrix, James F. Wilson, Torolf Moen, Tor Hervig, Martin Richards, Michael P. H. Stumpf, Peter A. Underhill, Paul Bradshaw, Alom Shaha, Mark G. Thomas, Neal Bradman & David B. Goldstein

The degree of population replacement in the British Isles associated with cultural changes has been extensively debated. Recent work has demonstrated that comparisons of genetic variation in the British Isles and on the European Continent can illuminate specific demographic processes in the history of the British Isles. For example, Wilson et al. used the similarity of Basque and Celtic Y chromosomes to argue for genetic continuity from the Upper Palaeolithic to the present in the paternal history of these populations. Differences in the Y chromosome composition of these groups also suggested genetic signatures of Norwegian influence in the Orkney Islands north of the Scottish mainland, an important center of Viking activities between 800 and 1300 A.D. More recently, Weale et al. argued for substantial Anglo-Saxon male migration into central England based on the analysis of eight British sample sets collected on an east-west transect across England and Wales. To provide a more complete assessment of the paternal genetic history of the British Isles, we have compared the Y chromosome composition of multiple geographically distant British sample sets with collections from Norway (two sites), Denmark, and Germany and with collections from central Ireland, representing, respectively, the putative invading and the indigenous populations. By analyzing 1772 Y chromosomes from 25 predominantly small urban locations, we found that different parts of the British Isles have sharply different paternal histories; the degree of population replacement and genetic continuity shows systematic variation across the sampled areas.

Mittelpaläolithikum

Ashton 2002

Nick Ashton & Simon Lewis, *Deserted Britain, Declining populations in the British Late Middle Pleistocene*. Antiquity **76** (2002), 388–396.

This paper defines the potential reasons for low population levels in Oxygen Isotope Stages 6-4: climate, habitat preferences and sea level.

Keywords: Britain; Middle Pleistocene; Oxygen Isotope Stages 6-4; demography

Bocquet-Appel 2000

Jean-Pierre Bocquet-Appel & Pierre Yves Demars, *Neanderthal contraction and modern human colonization of Europe*. Antiquity **74** (2000), 544–552.

Antiquity074-0544-Supplement.zip

A complex statistical analysis of 14C dates from European Neanderthal and Early Modern humans has enabled important new understanding of how and when this major population change took place. This data allows the debate on the end of the Neanderthals to continue on much firmer ground. The large dataset may be found at http://intarch.ac.uk/antiquity/additional/bocqtable1.html

Keywords: Neanderthal contraction, modern human dispersal, hunter-gatherer demography, Palaeolithic demography, palaeodemography

Story or Book

Kewin 2014

Simon Kewin, *Investments*, *Creative thought*. nature **513** (2014), 136.

"So you plan to return us to somewhere around — what — the Renaissance?" "Ah, the Baroque," said Allen. "Such musical glories."