Liste erstellt am 2014-11-30

References

Aktuell

Blanke 2014

Olaf Blanke et al., *Neurological and Robot-Controlled Induction of an Apparition*. Current Biology **24** (2014), 2681–2686.

CurrBiol24-2681-Supplement1.mp4, CurrBiol24-2681-Supplement2.mp4, CurrBiol24-2681-Supplement3.mp4

Olaf Blanke, Polona Pozeg, Masayuki Hara, Lukas Heydrich, Andrea Serino, Akio Yamamoto, Toshiro Higuchi, Roy Salomon, Margitta Seeck, Theodor Landis, Shahar Arzy, Bruno Herbelin, Hannes Bleuler & Giulio Rognini

Tales of ghosts, wraiths, and other apparitions have been reported in virtually all cultures. The strange sensation that somebody is nearby when no one is actually present and cannot be seen (feeling of a presence, FoP) is a fascinating feat of the human mind, and this apparition is often covered in the literature of divinity, occultism, and fiction. Although it is described by neurological and psychiatric patients [1, 2] and healthy individuals in different situations [1, 3, 4], it is not yet understood howthe phenomenon is triggered by the brain. Here, we performed lesion analysis in neurological FoP patients, supported by an analysis of associated neurological deficits. Our data show that the FoP is an illusory own-body perceptionwith well-defined characteristics that is associated with sensorimotor loss and caused by lesions in three distinct brain regions: temporoparietal, insular, and especially frontoparietal cortex. Based on these data and recent experimental advances of multisensory own-body illusions [5–9], we designed a master-slave robotic system that generated specific sensorimotor conflicts and enabled us to induce the FoP and related illusory own-body perceptions experimentally in normal participants. These data show that the illusion of feeling another person nearby is caused by misperceiving the source and identity of sensorimotor (tactile, proprioceptive, andmotor) signals ofone'sown body.Ourfindings reveal theneuralmechanisms of theFoP,highlight the subtlebalance of brain mechanisms that generate the experience of "self" and "other," and advance the understanding of the brain mechanisms responsible for hallucinations in schizophrenia.

Liu 2014

Jinting Liu, Pingyuan Gong & Xiaolin Zhou, *The association between romantic relationship status and 5-HT1A gene in young adults*. Scientific Reports **4** (2014), 7049. DOI:10.1038/srep07049.

SciRep04-07049-Supplement.pdf

What factors determine whether or not a young adult will fall in love? Sociological surveys and psychological studies have shown that non-genetic factors, such as socioeconomic status, external appearance, and personality attributes, are crucial components in romantic relationship formation. Here we demonstrate that genetic variants also contribute to romantic relationship formation. As love-related behaviors are associated with serotonin levels in the brain, this study investigated to what extent a polymorphism (C-1019G, rs6295) of 5-HT1Agene is related to relationship status in 579 Chinese Han people. We found that 50.4 % of individuals with the CC genotype and 39.0 % with CG/GG genotype were in romantic relationship. Logistic regression analysis indicated that the C-1019G polymorphism

was significantly associated with the odds of being single both before and after controlling for socioeconomic status, external appearance, religious beliefs, parenting style, and depressive symptoms. These findings provide, for the first time, direct evidence for the genetic contribution to romantic relationship formation.

Anthropologie

Bednarik 2012

Robert G. Bednarik, *An aetiology of hominin behaviour*. HOMO—Journal of Comparative Human Biology **63** (2012), 319–335.

A rough framework for a first attempt to formulate a preliminary aetiology of hominin behaviour is proposed, based on scientific rather than archaeological evidence and reasoning. Distinctive precursors of modernity in human behaviour were present several million years ago, and since then have become gradually more established. By the beginning of the Middle Pleistocene, modern human cognitive processes seem to have been largely established. However, full modernity of behaviour can only have occurred in recent centuries, and there remain great variations in it even among extant conspecifics. This model differs significantly from all narratives offered by mainstream archaeology, which generally place the advent of modern human behaviour 30 or 40 millennia ago. These notions and the hypotheses they are based on appear to be false, however such behaviour is defined.

Bednarik 2014

Robert G. Bednarik, *Doing with less: Hominin brain atrophy*. HOMO—Journal of Comparative Human Biology **65** (2014), 433–449.

In contrast to hominin encephalization, the final Pleistocene and Holocene reduction in cranial volume has attracted very little attention and remains unexplained. Here it is examined in the light of current neuroscientific and archaeological understanding, and it is shown that the most parsimonious explanation is via the domestication hypothesis of recent humans. Accordingly, rapid atrophy of the brain is partly explained by the culturally based process of sexual selection, first detectable in late robust Homo sapiens perhaps 40,000 years ago. Furthermore it is suggested that this deleterious process of neotenization and brain atrophy was compensated for by the concurrent development of exograms, i.e. means of storing memory outside the brain. Consequently most of human memory and cultural information is now stored external to the brain, which has altered that organ significantly and facilitated a cultural complexity that would be impossible to maintain by biological memory alone. The escalating use of exograms, neotenization and reduction in cranial volume all appear to co-occur with numerous other changes to the human genome.

Datierung

Burleigh 1982

Richard Burleigh & Keith Matthews, *British Museum natural radiocarbon measurements XIII*. Radiocarbon **24** (1982), 151–170.

The dates were obtained by liquid scintillation counting of benzene using the laboratory procedures outlined in previous lists.

Jericho series Charcoal samples excavated from stratified levels in tell of Jericho (31° 50' N, 35° 30' E). Coll ca 1955 and subm 1976 by Kathleen Kenyon as supplement to previous series (Burleigh, 1981), p. 165–166.

Cook 2014

Robert A. Cook & Aaron R. Comstock, *Evaluating the old wood problem in a temperate climate, A Fort Ancient case study.* American Antiquity **79** (2014), 763–775.

Schiffer (1986) first identified the old wood problem for wood charcoal-based dates from archaeological contexts in the American Southwest. The potential for dates to be skewed toward excessively old calendar ages in this region has recently generated reticence in part of the archaeological community towards including wood charcoal dates in general. Some scholars have even begun to cleanse the radiocarbon databases of regions throughout North America, partly with this presumed limitation in mind. However, the issues that contribute to the old wood problem have not been closely examined outside the arid climate of the American Southwest, resulting in some studies excluding hundreds of radiocarbon dates. The present study fills that void by examining the radiocarbon record from four well-dated Fort Ancient sites in southwestern Ohio and southeastern Indiana. Specifically, we test whether or not there are significant differences between wood charcoal and non-wood charcoal assays. Our findings suggest that wood charcoal dates should not be excluded. We explore reasons for this difference in the Eastern Woodlands and propose an ideal dating regime.

Mazurowski 2009

Ryszard F. Mazurowski, Danuta J. Michczyńska, Anna Pazdur & Natalia Piotrowska, *Chronology of the early Pre-Pottery Neolithic settlement Tell Qaramel, Northern Syria, in the light of radiocarbon dating.* Radiocarbon **51** (2009), 771–781.

Archaeological excavations at the Syrian settlement of Tell Qaramel have been conducted since 1999. They are concentrated on remnants of the Protoneolithic and early stages of the Pre-Pottery Neolithic period. The settlement has revealed an extremely rich collection of everyday use of flint, bone, and mostly stone objects, such as decorated chlorite or limestone vessels; shaft straighteners used to stretch wooden arrow shafts, richly decorated in geometrical, zoomorphic, and anthropomorphic patterns; as well as different kinds of stones, querns, mortars, pestles, grinders, polishing plates, celts, and adzes.

Excavations brought the discovery of 5 circular towers. Some 57 charcoal samples were collected during the excavations and dated in the GADAM Centre in Gliwice, Poland. The stratigraphy of the settlement and results of radiocarbon dating testify that these are the oldest such constructions in the world, older than the famous and unique tower in Jericho. They confirm that the Neolithic culture was formed simultaneously in many regions of the Near East, creating a farming culture and establishing settlements with mud and stone architecture and creating the first stages of a proto-urban being.

Grabung

Bar-Yosef 1980

O. Bar-Yosef, A. Gopher & A. N. Goring-Morris, *Netiv Hagdud, A "Sultanian" Mound in the Lower Jordan Valley.* Paléorient **6** (1980), i, 201–206.

Test excavations at the tell of Netiv Hagdud, a site of one hectare, revealed several oval structures associated with a Sultanian lithic industry of axes and sickle blades. Samples for C14 dating were obtained.

Bar-Yosef 1997
Ofer Bar-Yosef & Avi Gopher, *The Excavations of Netiv Hagdud, Stratigraphy and Architectural Remains.* In: Ofer Bar-Yosef & Avi Gopher (Hrsg.), *An Early Neolithic Village in the Jordan Valley, Part I: The Archaeology of Netiv Hagdud.* American School of Prehistoric Research Bulletin 43 (Cambridge 1997), 41–69.

Kenyon 1983
K. M. Kenyon & T. A. Holland (Hrsg.), *Excavations at Jericho, Volume Five: The Pottery Phases of the Tell and Other Finds.* (London 1983).
Appendices B to D
Hopf: Plant Remains
Payne: Flint Industries
Burleigh: Radiocarbon Dates

Lang 2013
Caroline Lang, Joris Peters, Nadja Pöllath, Klaus Schmidt & Gisela Grupe, *Gazelle behaviour and human presence at early Neolithic Göbekli Tepe, south-east Anatolia.* World Archaeology **45** (2013), 410–429.
With its impressive megalithic architecture dating to the tenth to ninth millennium cal. BC, the site of Göbekli Tepe (south-east Anatolia) is singular in the cultural history of mankind. Excavations at this ritual centre produced a rich archaeofaunal assemblage dominated by skeletal remains of Persian gazelle (Gazella subgutturosa). In order to trace relevant features of this species' behaviour in early Neolithic times relating to its dietary demands, catchment area and annual round, zooarchaeological analysis was complemented by stable isotope analysis of carbon, oxygen and strontium in tooth enamel and bone apatite. Demographic profiles and stable isotope results are consistent with a seasonal presence and hence migratory behaviour in gazelle. Conceivably working events, feasting and performing rituals at Göbekli Tepe coincided with high game density in the southern Anti-Taurus piedmont.
Keywords: Göbekli Tepe; Pre-Pottery Neolithic; Persian gazelle; stable isotopes; migratory behaviour.

Marder 2007
O. Marder, A. N. Goring-Morris, H. Khalaily, I. Milevski, R. Rabinovich & V. Zbenovich, *Tzur Natan, a Pre-Pottery Neolithic A site in Central Israel and observations on regional settlement patterns.* Paléorient **33** (2007), ii, 79–100.
The results of salvage investigations conducted at the Pre-Pottery Neolithic A (PPNA) site of Tzur Natan are described. The site is located on the western fl anks of the Samarian Hills bordering the central coastal plain (Shephelah). The excavations revealed no architectural features but numerous cupmarked bedrock installations. The small fi nds included fl int and groundstone artefacts, as well as a small faunal assemblage. The vast majority of the fl int tools can be attributed to the PPNA, although there may also be a small Middle Epipalaeolithic Geometric Kebaran element present. Notable are the numbers of bifacial tools, some sickle blades, but few projectile points. Local settlement patterns are discussed in light of several other recent investigations of PPNA sites in the region. In addition to

a few larger permanent settlements with architecture, such as Hatoula and Nahal Oren, at the western edges of the Judean, Samarian and Carmel hills, there are numbers of more ephemeral sites, also located on the fl anks of the hill zone. These have little or no architectural remains but quantities of cup-marked installations and groundstone are found in addition to lithic tool assemblages. These smaller sites perhaps focused primarily on (seasonal?) processing of (vegetal?) resources, as well as the production and use of bifacials. Some sickle blades are found but projectile points are rare or absent. Few, if any, PPNA sites are documented actually within the coastal plain. This settlement pattern contrasts markedly with the Early and Middle Epipalaeolithic and the PPNB, but may refl ect some continuity from the Late Natufi an.

Keywords: PPNA, Settlement Patterns, Cupmarks

Mazurowski 2001

Ryszard F. Mazurowski & Thaer Yartah, *Tell Qaramel, Excavations 2001*. Polish Archaeology in the Mediterranean **13** (2001), 295–307.

The Syrian-Polish Archaeological Mission to Tell Qaramel carried out the third season of excavations at the site.1) Fieldwork continued in trenches located in the lowest part of the southern slope of the tell (squares J-7 b,d; K-6 a,c; K-5 b,d). A new trench (L-4 a,c, 5 by 10 m) was opened to the southeast of square K-5. Together with previously excavated trenches J-12, J-11, J-10 and J-9, they form an 80 m long step-trench. The surface of the area explored on the southern slope in 2001 totals 200 sq. m. It was expected after examination of last year's stratigraphical evidence that Pre-Pottery Neolithic layers would be reached forthwith.

Rosenberg 1998

M. Rosenberg, R. Nesbitt, R. W. Redding & B. L. Peasnall, *Hallan Çemi, pig husbandry, and post-pleistocene adaptations along the Taurus-Zagros arc (Turkey)*. Paléorient **24** (1998), i, 25–41.

Recent work at Hallan Çemi and other round house horizon sites in eastern Anatolia indicates that the Taurus-Zagros flanks were a second autochthonous center of neolithization in southwestern Asia. Fully settled complex hunter- gatherer societies are in existence in this area by the late Younger Dryas. These settled village societies were based on adaptations that did not involve cereal exploitation, presumably because cereals were absent in this area during the late Younger Dryas. Instead , these adaptations revolved around the exploitation of nuts and pulses, plus the hunting of ovicaprids and deer supplemented by early experiments with animal husbandry involving pigs. They are thus distinct from those that served as the foundation for the earliest sedentary societies in the Levant. Most current attempts to explain the beginnings of settled village life in southwestern Asia are based solely on Levantine data, which until recently were virtually all that were available. The Anatolian data do not conform to the Levantine pattern and thus raise serious questions about the general validity of these models.

Rosenberg 2000

Michael Rosenberg & Richard W. Redding, *Hallan Çemi and Early Village Organization in Eastern Anatolia*. In: Ian Kuijt (Hrsg.), *Life in Neolithic Farming Communities, Social Organization, Identity, and Differentiation*. Fundamental Issues in Archaeology (New York 2002), 39–61.

Hallan Semi represents the remains of a fully sedentary group of huntergatherers on the threshold of food production. It also exhibits the basic socioeconomic

and sociopolitical characteristics of a fully settled village society. This indicates that the basic structure of Neolithic society coalesced with the very beginnings of sedentary lifeways and did not develop in tandem with either the gradually increased reliance on food production or with the gradual elaboration of culture during the Neolithic.

Specifically, Hallan Semi exhibits a community layout that provides for some degree of individual privacy. This indirectly implies a significant departure from the generalized reciprocal sharing that characterizes mobile hunter-gatherer societies. Also, the formal tallies represented by the notched batons, whether they stand for things done or things given, indicate the formal recognition of individual social action and thus constitute another significant departure from the mobile hunting-gathering norm. In addition, Hallan Çemi appears to contain public buildings representing the existence of sociopolitical groupings at the suprahousehold level. These represent still another departure from the mobile hunter-gatherer norm and would have functioned to, among other things, resolve conflicts and otherwise promote group cohesion in the context of a fully sedentary lifeway. Lastly, while the precise size of the Hallan Semi community is debatable, as was its precise sociopolitical organization, there is little doubt that it was a relatively small community, probably not much larger than what is thought to be typical of mobile hunting-gathering bands. This means that the abovedescribed aspects of community organization were not a product of community size, suggesting that they were instead a direct product of sedentism.

Finally, there is evidence for public feasting. This evidence takes the form of the central activity area deposits themselves, with their bone and firecracked stone concentrations. It also takes the form of the formalized food preparation and consumption implicit in the stone bowls and sculpted pestles. Whether this feasting was for purposes of sociopolitical competition, building socioeconomic and sociopolitical ties with other neighboring communities, or some combination of the two is not clear. However, the latent hostility suggested to characterize the earliest stages of the shift to settled village life (cf. Rosenberg 1994, n.d), coupled with Hallan Çemi's apparent small size, the evidence for trade, etc., favor a cooperation fostering rather than competitive role for such feasting.

Grundlagen

Ambos 1996

Claus Ambos, *Prestige und Prestigegüter im beginnenden vorderasiatischen Neolithikum, Nemrik 9 und Qermez Dere.* In: Johannes Müller & Reinhard Bernbeck (Hrsg.), *Prestige – Prestigegüter – Sozialstrukturen, Beispiele aus dem europäischen und vorderasiatischen Neolithikum.* Archäologische Berichte 6 (Bonn 1996), 47–56.

Die Ergebnisse lassen sich folgendermaßen zusammenfassen:

Die soziale Organisation verlief auf Familien bzw. Haushaltsbasis.

Bestimmte gemeinschaftliche Aktivitäten auf höherem sozialen Niveau, die die Gesamtsiedlung betrafen, waren mit zeitweiligem Prestig – verbunden.

Durch kurzfristige Aktivitäten gewonnenes Prestige muß sich jedoch keinesfalls immer in entsprechenden reinen Prestigegütern äußern (wie etwa im Falle des Terrassenbaues).

Charisma läßt sich durch Veränderung der Hausausstattung und der Pfeilspitzenforme n erschließen, wobei hier eventuell auch äußere Faktoren berücksichtigt

werden müssen (Raubbau an natürlichen Holzressourcen kann die Einführung von Mergelpfeilem erzwungen haben).

Die Siedlungsaufteilung selbst kann die Ausbildung von Prestige fördern: Da wichtige Tätigkeiten wie die der Lebensmittelverarbeitung der Fundlage nach in der Öffentlichkeit und nicht abgeschlossen im häuslichen Milieu stattfanden, kamen die hierfür benötigten Fähigkeiten besser zur Geltung.

Die am Anfang dieses Abschnittes von mir verwendete Methode zur Ermittlung von Prestigegütern anhand der Ermittlung besonders auffälliger Artefakte bleibt, gemessen am zweiten Ansatz, der mit archäologischen Korrelaten arbeitet, unbefriedigend.

Isotope

Eerkens 2014

Jelmer W. Eerkens, Alex de Voogt, Tosha L. Dupras, Samuel C. Rose, Eric J. Bartelink & Vincent Francigny, *Intra- and inter-individual variation in $\delta^{13}C$ and $\delta^{15}N$ in human dental calculus and comparison to bone collagen and apatite isotopes*. Journal of Archaeological Science **52** (2014), 64–71.

JAS052-0064-Supplement.docx

There are mixed opinions on the suitability of dental calculus for paleodietary reconstruction using stable isotope analysis. We examine d13C and d15N values of calculus samples from two regions, central California in the USA and Sai Island in the Sudan. When atomic C/N ratios are less than 12 in calculus, results show positive correlations at both the regional and individual level between stable isotopes of bone collagen and calculus, suggesting these materials track similar dietary behaviors. Correlations are still positive but lower between d13C values of calculus and bone apatite. Stable isotope ratios of calculus show between 30 % and 50 % greater variation than bone, are typically enriched in 15N (mean = 2.1 ‰ higher), and are depleted in 13C relative to bone collagen (mean = 0.8 ‰ lower) and apatite (mean = 6.4 ‰ lower). Calculus from multiple teeth was analyzed separately for seven individuals to examine intra-individual variation. Results show that within an individual d13C varies up to 1.8 ‰, and d15N up to 2.1 ‰, which may explain some of the weak bone-calculus correlations previously reported in the literature. When atomic C/N ratios are greater than 12, calculus correlates more poorly with bone collagen, suggesting these samples should be treated with caution.

Keywords: Stable isotope analysis | Nubia | Central California | Paleodiet | Dental calculus

Kanstrup 2014

Marie Kanstrup, Mads K. Holst, Peter M. Jensen, Ingrid K. Thomsen & Bent T. Christensen, *Searching for long-term trends in prehistoric manuring practice, $\delta^{15}N$ analyses of charred cereal grains from the 4th to the 1st millennium BC*. Journal of Archaeological Science **51** (2014), 115–125.

JAS051-0115-Supplement.zip

Current concepts of prehistoric manuring are founded on limited and mainly circumstantial evidence, giving rise to much ambiguity with respect to the onset of systematic use of manure to enhance cereal production. This paper reports carbon (C) and nitrogen (N) contents and isotopic compositions (d13C, d15N) of

charred grains of naked barley, emmer and spelt dating to the first four millennia of early agriculture in Denmark. The d15N values ranged from c. 0.5 ‰–5.5 ‰, 0.5 ‰–6.0 ‰ and 1.5 ‰–8 ‰ for spelt, emmer and naked barley, respectively. This study represents the until now most comprehensive investigation of long term trends in d15N values of charred cereal grains, which previous research have proposed as an indicator for prehistoric manuring practice. Our study suggests a longterm (3900–500 BC) decrease of manuring intensity in emmer cropping. Conversely the long-term (2300 BC – AD 1) trend for naked barley cropping displays a more distinct and significant increase (±2 ‰) in grain d15N values, reflecting an increased manuring intensity with an average d15N value of as high as 6 ‰. We interpret this trend as indicating the initiation of a more intensive and systematic manuring practice associated with cultivation of barley in the Early Iron Age (500 BC- 0). Although the isotopic signal ascribed to manuring was (somewhat) variable, the relative manuring effect was detected throughout the chronological continuum being investigated. Further, we observed that the conventional sample pre-treatment (acid-base-acid) induced an average d15N offset of 0.7 ‰ (pretreated sample > non pre-treated sample). This has not previously been reported. Methodological advancements are needed to remedy this issue and provide consensus about appropriate pretreatment of grain samples from archaeological sites. We conclude that N-isotope analysis of charred cereal grains constitutes a new and direct source of information about prehistoric manuring practice.

Keywords: Nitrogen isotopes | Archaeobotanical remains | Animal manure | Radiocarbon dates | Agricultural regimes

Isotope Kupfer

Yamazaki 2014

E. Yamazaki, S. Nakai, Y. Sahoo, T. Yokoyama, H. Mifune, T. Saito, J. Chen, N. Takagi, N. Hokanishi & A. Yasuda, *Feasibility studies of Sn isotope composition for provenancing ancient bronzes*. Journal of Archaeological Science **52** (2014), 458–467.

This study examined isotope fractionation during bronze casting and assessed variation in Sn isotope composition of Chinese bronze products to ascertain whether a Sn isotope tracer is applicable to provenance studies of bronze products or not. A casting experiment revealed that the Sn isotope composition of a bronze block surface becomes slightly heavier, 0.22 ‰ in d124Sn/120Sn scale, (d124Sn/120Sn = [(124Sn/120Sn sample)/ (124Sn/120Sn standard)-1]*1000), than original Sn beads because of selective evaporation of light isotopes.The Sn isotope compositions of six bronze product samples excavated in China were analyzed. The variation of d124Sn/120Sn in the six samples was as great as 0.4 ‰. Six bronze samples showed small but detectable isotope variation that surpassed isotope shift during casting. Results suggested that the application of Sn isotope ratio to provenance studies of bronze products was of limited use because of the small variation. However, it was also shown that the Sn isotope ratio can be applied for provenancing a bronze sample with a distinct isotope composition.

Klima

Gronenborn 2014

Detlef Gronenborn, Hans-Christoph Strien, Stephan Dietrich & Frank Sirocko, *'Adaptive cycles' and climate fluctuations: a case study from*

Linear Pottery Culture in western Central Europe. Journal of Archaeological Science **51** (2014), 73–83.

JAS051-0073-Supplement.zip

By applying cycle-based resilience theory the dynamics of the Early Neolithic west-central European Linear Pottery Culture (LBK) are investigated. These are interpreted as resulting from a combination of internal socio-economic processes as well as external environmental parameters. Resilience theory is helpful in understanding periods of increased vulnerability and inherent trends to social complexity. Cycles and threshold levels also help to understand why societies experience periods of increasing fragility and subsequent decline.

Results are based on the correlation of a typology and dendrochronology-based archaeological chronology for western LBK and various palaeoclimatic proxy-data. The 14C-production curve is taken as an indicator for solar activity fluctuations, and an age model for laminated sediments as an indicator for rainfall fluctuations. We currently consider this correlation as agreeably robust; however future finedating may result in slight shifts within the archaeological chronology.

According to the applied age model, the simple farming societies of the LBK (5600–4900 cal BC) in west-central Europe were not immediately and devastatingly affected by most climate fluctuations. Yet, they might have been one destabilising component within broader processes. However, periods of decreased or irregularly spaced rainfall are contemporaneous to periods of population decline, while periods of increased rainfall may have favoured population growth. Towards the end of the 6th millennium cal BC, the final years of LBK in western Central Europe are contemporaneous to a general trend to less rainfall punctuated by short-term increases in precipitation. During this climatically highly volatile period LBK reaches its highest population rates and at the same time experiences a period of warfare. Thereafter population rates decline and LBK gradually vanishes from the archaeological record, being replaced by Middle Neolithic societies.

Keywords: Linear Pottery Culture | Climate fluctuations | Adaptive cycles | West-central Europe | Expansion | Social dynamics

Kultur

MACFARLAN 2014

Shane J. Macfarlan, Robert S. Walker, Mark V. Flinn & Napoleon A. Chagnon, *Lethal coalitionary aggression and long-term alliance formation among Yanomamö men*. PNAS **111** (2014), 16662–16669.

Some cross-cultural evidence suggests lethal coalitionary aggression in humans is the product of residence and descent rules that promote fraternal interest groups, i.e., power groups of coresident males bonded by kinship. As such, human lethal coalitions are hypothesized to be homologous to chimpanzee (Pan troglodytes) border patrols. However, humans demonstrate a unique metagroup social structure in which strategic alliances allow individuals to form coalitions transcending local community boundaries.We test predictions derived fromthe fraternal interest group and strategic alliancemodels using lethal coalition data from a lowland South American population, the Yanomamö. Yanomamö menwho kill an enemy acquire a special status, termed unokai.We examine the social characteristics of co-unokais or men who jointly kill others. Analyses indicate co-unokais generally are (i) from the same population but from different villages and patrilines, (ii) close agemates, and (iii) maternal half-first cousins. Furthermore, the incident rate for co-unokai killings increases if men are similar in age, from the same population, and from different natal communities. Co-unokais who have killed more times in the past

andwho aremore genetically related to each other haveahigher probabilityof coresidence in adulthood. Last, a relationship exists between lethal coalition formation and marriage exchange. In this population, internal warfare unites multiple communities, and co-unokais strategically form new residential groups and marriage alliances. These results support the strategic alliance model of coalitionary aggression, demonstrate the complexities of human alliance formation, and illuminate key differences in social structure distinguishing humans from other primates.

internal warfare | male coalitions | fraternal interest groups | strategic alliances | Yanomamö

Neolithikum

Frank 1993

Thomas Frank, *Die neolithische Besiedlung zwischen der Köln-Bonner Rheinebene und den Bergischen Hochflächen*. Archäologische Berichte 10 (Bonn 1998). Dissertation, Universität Köln.

Fuller 2012

Dorian Q. Fuller, Eleni Asouti & Michael D. Purugganan, *Cultivation as slow evolutionary entanglement, Comparative data on rate and sequence of domestication*. Vegetation History and Archaeobotany **21** (2012), 131–145.

Recent studies have suggested that domestication was a slower evolutionary process than was previously thought. We address this issue by quantifying rates of phenotypic change in crops undergoing domestication, including five crops from the Near East (Triticum monococcum, T. dicoccum, Hordeum vulgare, Pisum sativum, Lens culinaris) and six crops from other regions (Oryza sativa, Pennisetum glaucum, Vigna radiata, Cucumis melo, Helianthus annus, Iva annua). We calculate rates using the metrics of darwin units and haldane units, which have been used in evolutionary biology, and apply this to data on nonshattering cereal spikelets and seed size. Rates are calculated by considering data over a 4,000-year period from archaeological sites in the region of origin, although we discuss the likelihood that a shorter period of domestication (1,000–2,000) years may be more appropriate for some crops, such as pulses. We report broadly comparable rates of change across all the crops and traits considered, and find that these are close to the averages and median values reported in various evolutionary biological studies. Nevertheless, there is still variation in rates between domesticates, such as melon seeds increasing at twice the rate of cereals, and between traits, such as nonshattering evolving faster than grain size. Such comparisons underline the utility of a quantitative approach to domestication rates, and the need to develop larger datasets for comparisons between crops and across regions.

Keywords: Domestication syndrome | Unconscious selection | Southwest Asia | Neolithic | Palaeoethnobotany

McBride 2013

A. McBride, *Performance and Participation, Multi-sensual analysis of Near Eastern Pre-Pottery Neolithic non-domestic architecture*. Paléorient **39** (2013), ii, 47–67.

A series of non-domestic structures have been found at Pre-Pottery Neolithic (PPN) sites across the Near East, but have not been comprehensively analysed to

determine how they were used and perceived by inhabitants of the site. A multisensual embodied analysis of the non-domestic structures at Göbekli Tepe, Nevalý Çori, and Jerf el-Ahmar show that these structures were very open and undifferentiated, and would have facilitated sharing of highly charged experiences rather than fostering and materializing hierarchical relationships. Analysis of the physical reality of inhabiting these spaces permits a contextual and nuanced model of the capacity of the structures to be constructed, elucidating the types of relationships that would be created and maintained within these spaces.

Keywords: Pre-Pottery Neolithic; Non-domestic; Communal; Embodiment; Capacity.

Silva 2014

Fabio Silva & James Steele, *New methods for reconstructing geographical effects on dispersal rates and routes from large-scale radiocarbon databases*. Journal of Archaeological Science **52** (2014), 609–620.

JAS052-0609-Supplement.xlsx

We introduce a methodology for reconstructing geographical effects on dispersal and diffusion patterns, using georeferenced archaeological radiocarbon databases. Fast Marching methods for modelling front propagation enable geographical scenarios to be explored regarding barriers, corridors, and favoured and unfavoured habitat types. The use of genetic algorithms as optimal search tools also enables the derivation of new geographical scenarios, and is especially useful in high-dimensional parameter spaces that cannot be characterized exhaustively due to computer runtime constraints. Model selection is guided by goodness-of-fit statistics for observed and predicted radiocarbon dates.

We also introduce an important additional model output, namely, modelled phylogenies of the dispersing population or diffusing cultural entity, based on branching networks of shortest or 'least cost' paths. These 'dispersal trees' can be used as an additional tool to evaluate dispersal scenarios, based on their degree of congruence with phylogenies of the dispersing population reconstructed independently from other kinds of information.

We illustrate our approach with a case study, the spread of the Neolithic transition in Europe, using a database from the literature (Pinhasi, Fort and Amerman 2005). Our methods find support for a geographical model in which dispersal is limited by an altitudinal cut-off and in which there is a climate related latitudinal gradient in rate of spread. This model leads to a deceleration in front propagation rate with geodesic distance, which is also consistent with models of the propagation of the Neolithic transition under space competition with pre-existing populations of hunter-gatherers. Our genetic algorithms meanwhile searched the parameter space and found support for an alternative model involving fast spread along the northern Mediterranean coast and the Danube/Rhine riverine corridor. Both these models outperformed the geography-free Great Circle distance model, and both also outperformed another, almost geography-free, model that constrains dispersal to land to and near-offshore coastal waters. The adjusted coefficient of determination for modelled and observed radiocarbon dates for first arrival supports the GA-derived model; the shortest path network analysis, however, gives greater support to the model with altitudinal cut-off and latitudinal gradient in dispersal rate, since it produces branching 'dispersal trees' that are more congruent with these archaeological sites' clade memberships (as defined by archaeological material culture).

Keywords: Radiocarbon | Front propagation | Human dispersal | Fast Marching methods | Phylogeography | Cultural Phylogenetics | Neolithic transition

Tanno 2012

Ken-ichi Tanno & George Willcox, *Distinguishing wild and domestic wheat and barley spikelets from early Holocene sites in the Near East*. Vegetation History and Archaeobotany **21** (2012), 107–115.

Identifying morphologically domestic cereals is essential to understanding the origins of agriculture. Charred spikelet bases provide the best evidence for distinguishing wild from domestic varieties of emmer, einkorn and barley; however until now, identification criteria have not been agreed upon or well established. We examined more than 20,000 remains of charred spikelets from eleven early Holocene sites in the Near East, classing them into nine groups. We show that damage and fragmentation of wheat spikelets probably due to dehusking makes identification problematic, and only when the abscission scar is well preserved is it possible to distinguish wild spikelets which shatter from domestic spikelets which adhere and separate during threshing. Barley spikelets were found to be less damaged and more easily identified, perhaps because the processing was less damaging. Einkorn was dominant over emmer on early sites, whereas on later sites emmer was dominant. Identifications presented here from eleven sites date from approximately 13000 to 8200 cal B.P. They give an incomplete picture, but no domestic cereals were identified during the PPNA (Pre-pottery Neolithic A). Early PPNB Aswad produced domestic barley but at other sites for this period the evidence is inconclusive. Unequivocal signs of domestic emmer spikelets appear during the Middle PPNB about 10,000 years ago but wild forms continue as part of the crop after this period. These conclusions are based on limited data. Future studies will undoubtedly produce a more accurate picture.

Keywords: Wheat | Barley | Origins | Near East | Domestication | Agriculture

Religion

Botero 2014

Carlos A. Botero, Beth Gardner, Kathryn R. Kirby, Joseph Bulbulia, Michael C. Gavin & Russell D. Gray, *The ecology of religious beliefs*. PNAS **111** (2014), 16784–16789.

pnas111-16784-Supplement.csv

Although ecological forces are known to shape the expression of sociality across a broad range of biological taxa, their role in shaping human behavior is currently disputed. Both comparative and experimental evidence indicate that beliefs in moralizing high gods promote cooperation among humans, a behavioral attribute known to correlate with environmental harshness in nonhuman animals. Here we combine fine-grained bioclimatic data with the latest statistical tools from ecology and the social sciences to evaluate the potential effects of environmental forces, language history, and culture on the global distribution of belief in moralizing high gods (n = 583 societies). After simultaneously accounting for potential nonindependence among societies because of shared ancestry and cultural diffusion, we find that these beliefs are more prevalent among societies that inhabit poorer environments and are more prone to ecological duress. In addition, we find that these beliefs are more likely in politically complex societies that recognize rights to movable property. Overall, our multimodel inference approach predicts the global distribution of beliefs in moralizing high gods with an accuracy of 91 %, and estimates the relative importance of different potential mechanisms by which this spatial pattern may have arisen. The emerging picture is neither one of pure cultural transmission nor of simple ecological determinism, but rather a complex mixture of social, cultural, and environmental influences. Our methods and findings provide a

blueprint for how the increasing wealth of ecological, linguistic, and historical data can be leveraged to understand the forces that have shaped the behavior of our own species.

religion | cultural evolution | environmental effects | ecological risk | supernatural beliefs