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Literatur

Aktuell

DeBruine 2011

Lisa M. DeBruine, Benedict C. Jones, Christopher D. Watkins, S. Craig Roberts, Anthony C. Little, Finlay G. Smith & Michelle , *Opposite-sex siblings decrease attraction, but not prosocial attributions, to self-resembling opposite-sex faces*. PNAS **108** (2011), 11710–11714.

Contextual cues of genetic relatedness to familiar individuals, such as cosocialization and maternal-perinatal association, modulate prosocial and inbreeding-avoidance behaviors toward specific potential siblings. These findings have been interpreted as evidence that contextual cues of kinship indirectly influence social behavior by affecting the perceived probability of genetic relatedness to familiar individuals. Here, we test a more general alternative model in which contextual cues of kinship can influence the kinrecognition system more directly, changing how the mechanisms that regulate social behavior respond to cues of kinship, even in unfamiliar individuals for whom contextual cues of kinship are absent. We show that having opposite-sex siblings influences inbreeding-relevant perceptions of facial resemblance but not prosocial perceptions. Women with brothers were less attracted to self-resembling, unfamiliar male faces than were women without brothers, and both groups found self-resemblance to be equally trustworthy for the same faces. Further analyses suggest that this effect is driven by younger, rather than older, brothers, consistent with the proposal that only younger siblings exhibit the strong kinship cue of maternal-perinatal association. Our findings provide evidence that experience with opposite-sex siblings can directly influence inbreeding-avoidance mechanisms and demonstrate a striking functional dissociation between the mechanisms that regulate inbreeding and the mechanisms that regulate prosocial behavior toward kin.

inclusive fitness | incest avoidance | optimal outbreeding | individual differences | face perception

Gardiner 2011

Maria Gardiner & Hugh Kearns, *Turbocharge your writing today*. nature **475** (2011), 129–130.

Before you can tackle the overwhelming task of huge writing projects, you must first put aside some widely held myths, say Maria Gardiner and Hugh Kearns.

Writing isn't referencing: when you make that killer argument and want to reference Smith and Brown (2006; or maybe it was 2007?), don't stop and look it up. Write "Smith & Brown (200??)" and keep going. You can look up the reference later. Furthermore, writing is not formatting, literature searching, photo copying, e-mailing or nosing around on Facebook. Writing – at least for your snack-writing sessions – means putting new words on the page or substantially rewriting existing words.

Anthropologie

Anderson 2011

Eric Anderson, Erika H. Siegel, Eliza Bliss-Moreau & Lisa Feldman Barrett, *The Visual Impact of Gossip*. science **332** (2011), 1446–1448.

s332-1446-Supplement.pdf

Gossip is a form of affective information about who is friend and who is foe. We show that gossip does not influence only how a face is evaluated-it affects whether a face is seen in the first place. In two experiments, neutral faces were paired with negative, positive, or neutral gossip and were then presented alone in a binocular rivalry paradigm (faces were presented to one eye, houses to the other). In both studies, faces previously paired with negative (but not positive or neutral) gossip dominated longer in visual consciousness. These findings demonstrate that gossip, as a potent form of social affective learning, can influence vision in a completely top-down manner, independent of the basic structural features of a face.

Argue 2009

D. Argue, M. J. Morwood, T. Sutikna, Jatmiko & E. W. Saptomo, *Homo floresiensis: a cladistic analysis*. Journal of Human Evolution **57** (2009), 623–639.

JHumEvo57-0623-Supplement1.doc, JHumEvo57-0623-Supplement2.doc, JHumEvo57-0623-Supplement3.doc, JHumEvo57-0623-Comment.pdf, JHumEvo57-0623-Supplement4.doc, JHumEvo57-0623-Reply.pdf

The announcement of a new species, Homo floresiensis, a primitive hominin that survived until relatively recent times is an enormous challenge to paradigms of human evolution. Until this announcement, the dominant paradigm stipulated that: 1) only more derived hominins had emerged from Africa, and 2) H. sapiens was the only hominin since the demise of Homo erectus and Homo neanderthalensis. Resistance to H. floresiensis has been intense, and debate centers on two sets of competing hypotheses: 1) that it is a primitive hominin, and 2) that it is a modern human, either a pygmoid form or a pathological individual. Despite a range of analytical techniques having been applied to the question, no resolution has been reached. Here, we use cladistic analysis, a tool that has not, until now, been applied to the problem, to establish the phylogenetic position of the species. Our results produce two equally parsimonious phylogenetic trees. The first suggests that H. floresiensis is an early hominin that emerged after Homo rudolfensis (1.86 Ma) but before H. habilis (1.66 Ma, or after 1.9 Ma if the earlier chronology for H. habilis is retained). The second tree indicates H. floresiensis branched after Homo habilis.

Keywords: Homo floresiensis; Cladistic analysis; Homo habilis; Homo ergaster; Homo erectus; Homo sapiens; Dmanisi; Homo rudolfensis; Australopithecus afarensis; Australopithecus africanus

Gibbons 2011

Ann Gibbons, *Who Was Homo habilis—And Was It Really Homo?* science **332** (2011), 1370–1371.

Now, a report in press in the Journal of Human Evolution finds that H. habilis's dietary range was also more like Lucy's than that of H. erectus, which many consider the first fully human species to walk the earth. That suggests the handyman had yet to make the key adaptations associated with our genus, such as the ability to exploit a variety of foods in many environments, says lead author Peter Ungar of the University of Arkansas, Fayetteville.

Lieberman 2007

Daniel E. Lieberman, Dennis M. Bramble, David A. Raichlen & John J. Shea, *The evolution of endurance running and the tyranny of ethnography: A reply to Pickering and Bunn (2007)*. Journal of Human Evolution **53** (2007), 439–442.

We will never know for sure why and how ER capabilities evolved, but the modern ethnographic record is a limited, biased, and sometimes misleading source of evidence to

test hypotheses about how ESA hominids hunted and scavenged. The challenge for paleoanthropologists is to explain the past in terms of testable hypotheses derived from actualistic studies and middle-range research without succumbing to the "tyranny of ethnography." We also recognize the difficulties of testing hypotheses about how, when, and why ER evolved. At this point, all we can say is that there are several lines of evidence cited above and elsewhere (Carrier, 1984; Bramble and Lieberman, 2004; Liebenberg, 2006) that ER capabilities would have improved the performance of hominids to hunt and/or scavenge using just an ESA technology. These capabilities may have enabled early Homo to occupy a new niche, that of a diurnal social carnivore. In fact, without projectiles, it is hard to imagine how early Homo in the ESA would have either scavenged or hunted safely and effectively unless they employed ER to some extent. That said, we are not proposing that PH was the exclusive method for hunting, that all scavenging was dependent on ER, or that H. erectus had all the ER capabilities of modern humans. Instead, all we can infer is that there is good evidence that H. erectus was capable to some extent of ER and that ER would have increased their fitness.
Keywords: Endurance running; Foragers; Homo; Hunter-gatherers; Hunting

Lombard 2011

Marlize Lombard, *Quartz-tipped arrows older than 60 ka: further use-trace evidence from Sibudu, KwaZulu-Natal, South Africa.* Journal of Archaeological Science **38** (2011), 1918–1930.
JArchSci38-1918-Supplement.doc
This paper discusses the results of a detailed functional study of 16 microlithic backed tools made on quartz, and newly excavated at Sibudu Cave, KwaZulu-Natal, South Africa. The layers associated with the artefacts have OSL ages of 61.7 ± 1.5 ka, 63.8 ± 2.5 ka and 64.7 ± 1.9 ka and represent the Howiesons Poort Industry at the site. I show that more than 50 % of the pieces could hardly have been used in any way other than to tip arrows in a transverse position. This outcome supports previous inferences that some of these small stone tools, and perhaps a bone point from the same context, signify the use of bow and arrow technology during the Middle Stone Age. In addition to transversely hafted arrow tips, there is also evidence that some of the tools could have been hafted diagonally. Such tools could have been used equally successfully as arrow tips or barbs, or as barbs for hand-delivered spears. The variation in hafting configuration for these geometric shapes signifies hunting technologies that were flexible and most likely adapted according to need, preference, season and/or prey type.
Keywords: Bow and arrow technology; Howiesons Poort; Sibudu; Quartz; Backed tools; Middle stone age

Mathew 2011

Sarah Mathew & Robert Boyd, *Punishment sustains large-scale cooperation in prestate warfare.* PNAS **108** (2011), 11375–11380.
Understanding cooperation and punishment in small-scale societies is crucial for explaining the origins of human cooperation. We studied warfare among the Turkana, a politically uncentralized, egalitarian, nomadic pastoral society in East Africa. Based on a representative sample of 88 recent raids, we show that the Turkana sustain costly cooperation in combat at a remarkably large scale, at least in part, through punishment of free-riders. Raiding parties comprised several hundred warriors and participants are not kin or day-to-day interactants. Warriors incur substantial risk of death and produce collective benefits. Cowardice and desertions occur, and are punished by community-imposed sanctions, including collective corporal punishment and fines. Furthermore, Turkana norms governing warfare benefit the ethnolinguistic group, a population of a half-million people, at the expense of smaller social groupings. These results challenge current views that punishment is unimportant in small-scale societies and that human cooperation evolved

in small groups of kin and familiar individuals. Instead, these results suggest that cooperation at the larger scale of ethnolinguistic units enforced by third-party sanctions could have a deep evolutionary history in the human species.
public goods | collective action | cultural group selection | parochialism | pastoralists

Mgeladze 2011

Ana Mgeladze, David Lordkipanidze, Marie-Hélène Moncel, Jackie Despriee, Rusudan Chagelishvili, Medea Nioradze & Giorgi Niora, *Hominin occupations at the Dmanisi site, Georgia, Southern Caucasus: Raw materials and technical behaviours of Europe's first hominins*. Journal of Human Evolution **60** (2011), 571–596.

Dmanisi is the oldest site outside of Africa that records unquestioned hominin occupations as well as the dispersal of hominins in Europe and Asia. The site has yielded large numbers of artefacts from several periods of hominin occupation. This analysis of Dmanisi stone tool technology includes a review of all the pieces recovered during the last 15 years of excavations. This lithic assemblage gives insights into the hominin behaviour at 1.7–1.8 Ma in Eurasia. Dmanisi hominins exploited local rocks derived from either nearby riverbeds or outcrops, and petrographic study provides data on patterns of stone procurement. Recent geological surveys and technological studies of the artefacts illustrate the roles of hominins in composing the assemblage. Dmanisi hominins selected two types of blanks, including cobbles and angular blocks, of basalt, andesite, and tuffs. Many complete cobbles, pebbles, and rolled blocks in basalt were unmodified, and geological analyses and surveys indicate that hominins brought manuports back to the site, suggesting a complex procurement strategy. Cores, flakes and debris show that all stages of flaking activity took place at the site. Numerous unifacial cores suggest that knapping was not very elaborate. Centripetal knapping is observed on some flake-cores. Knapping was influenced by the blank shape and natural angles. Most flaked objects were either cores or chopper-cores. Flakes predominate while flake tools are rare. The Dmanisi lithic assemblage is comparable to Oldowan sites in Africa in terms of reduction sequence, organisation of the removals, platform types, and the lack of retouched flakes. Dmanisi artefacts and may have been produced by the original hominins in Europe and Asia.
Keywords: Georgia; Dmanisi; Eurasia; West Asia; Early Pleistocene; Oldowan; Raw materials; Technical behaviours

Pickering 2007

Travis Rayne Pickering & Henry T. Bunn, *The endurance running hypothesis and hunting and scavenging in savanna-woodlands*. Journal of Human Evolution **53** (2007), 434–438.

We agree with the opinion of Bramble and Lieberman (2004) that early Homo required a high-quality diet, which included a substantial meat component, and that it was thus a capable carcass forager. However, our understanding of the paleoenvironment, paleoecology, and archaeology of early Homo sites, reviewed here, makes us dubious about their further suggestion that ER might have been employed regularly and successfully in service of that foraging pursuit. We are reluctant to assign to early Homo the impressive tracking skills of the Kalahari San, when the cognitive and meat-foraging abilities of Plio-Pleistocene Homo are active research issues. The behavioral pattern that selected for ER in the genus Homo remains unclear, but it seems likely that hunting and scavenging contributed minimally, if at all.
Keywords: Carcass foraging; Early Homo; Tracking; Zooarchaeology

Roca 2011

Carlos P. Roca & Dirk Helbing, *Emergence of social cohesion in a model society of greedy, mobile individuals*. PNAS **108** (2011), 11370–11374.

Human wellbeing in modern societies relies on social cohesion, which can be characterized by high levels of cooperation and a large number of social ties. Both features, however, are frequently challenged by individual self-interest. In fact, the stability of social and economic systems can suddenly break down as the recent financial crisis and outbreaks of civil wars illustrate. To understand the conditions for the emergence and robustness of social cohesion, we simulate the creation of public goods among mobile agents, assuming that behavioral changes are determined by individual satisfaction. Specifically, we study a generalized win-stay-lose-shift learning model, which is only based on previous experience and rules out greenbeard effects that would allow individuals to guess future gains. The most noteworthy aspect of this model is that it promotes cooperation in social dilemma situations despite very low information requirements and without assuming imitation, a shadow of the future, reputation effects, signaling, or punishment. We find that moderate greediness favors social cohesion by a coevolution between cooperation and spatial organization, additionally showing that those cooperation-enforcing levels of greediness can be evolutionarily selected. However, a maladaptive trend of increasing greediness, although enhancing individuals' returns in the beginning, eventually causes cooperation and social relationships to fall apart. Our model is, therefore, expected to shed light on the long-standing problem of the emergence and stability of cooperative behavior.

Ruxton 2011

Graeme D. Ruxton & David M. Wilkinson, *Thermoregulation and endurance running in extinct hominins: Wheeler's models revisited*. Journal of Human Evolution **61** (2011), 169–175.

Thermoregulation is often cited as a potentially important influence on the evolution of hominins, thanks to a highly influential series of papers in the Journal of Human Evolution in the 1980s and 1990s by Peter Wheeler. These papers developed quantitative modeling of heat balance between different potential hominins and their environment. Here, we return to these models, update them in line with new developments and measurements in animal thermal biology, and modify them to represent a running hominin rather than the stationary form considered previously. In particular, we use our modified Wheeler model to investigate thermoregulatory aspects of the evolution of endurance running ability. Our model suggests that for endurance running to be possible, a hominin would need locomotive efficiency, sweating rates, and areas of hairless skin similar to modern humans. We argue that these restrictions suggest that endurance running may have been possible (from a thermoregulatory viewpoint) for Homo erectus, but is unlikely for any earlier hominins.

Keywords: Bipedalism; Hair-loss; Persistence hunting; Heat balance; Sustained activity

Ungar 2006

Peter S. Ungar, Frederick E. Grine, Mark F. Teaford & Sireen El Zaatari, *Dental microwear and diets of African early Homo*. Journal of Human Evolution **50** (2006), 78–95.

Conventional wisdom ties the origin and early evolution of the genus Homo to environmental changes that occurred near the end of the Pliocene. The basic idea is that changing habitats led to new diets emphasizing savanna resources, such as herd mammals or underground storage organs. Fossil teeth provide the most direct evidence available for evaluating this theory. In this paper, we present a comprehensive study of dental microwear in Plio-Pleistocene Homo from Africa. We examined all available cheek teeth from Ethiopia, Kenya, Tanzania, Malawi, and South Africa and found 18 that preserved antemortem microwear. Microwear features were measured and compared for these specimens and a baseline series of five extant primate species (Cebus apella, Gorilla gorilla, Lophocebus albigena, Pan troglodytes, and Papio ursinus) and two protohistoric human foraging groups (Aleut and Arikara) with documented differences in diet and subsistence

strategies. Results confirmed that dental microwear reflects diet, such that hard-object specialists tend to have more large microwear pits, whereas tough food eaters usually have more striations and smaller microwear features. Early Homo specimens clustered with baseline groups that do not prefer fracture resistant foods. Still, Homo erectus and individuals from Swartkrans Member 1 had more small pits than Homo habilis and specimens from Sterkfontein Member 5C. These results suggest that none of the early Homo groups specialized on very hard or tough foods, but that H. erectus and Swartkrans Member 1 individuals ate, at least occasionally, more brittle or tough items than other fossil hominins studied.
Keywords: Hominin; Feeding adaptations; Homo habilis; Homo rudolfensis; Homo erectus

Biologie

Perrier 2011

Xavier Perrier et al., *Multidisciplinary perspectives on banana (Musa spp.) domestication*. PNAS **108** (2011), 11311–11318.
pnas108-11311-Supplement1.doc, pnas108-11311-Supplement2.doc, pnas108-11311-Supplement3.doc, pnas108-11311-Supplement4.doc
Xavier Perrier, Edmond De Langhe, Mark Donohue, Carol Lentfer, Luc Vrydaghs, Frédéric Bakry, Françoise Carreel, Isabelle Hippolyte, Jean-Pierre Horry, Christophe Jenny, Vincent Lebot, Ange-Marie Risterucci, Kodjo Tomekpe, Hugues Doutrelepont, Terry Ball, Jason Manwaring, Pierre de Maret and Tim Denhamk
Original multidisciplinary research hereby clarifies the complex geodomestication pathways that generated the vast range of banana cultivars (cvs). Genetic analyses identify the wild ancestors of modern-day cvs and elucidate several key stages of domestication for different cv groups. Archaeology and linguistics shed light on the historical roles of people in the movement and cultivation of bananas from New Guinea to West Africa during the Holocene. The historical reconstruction of domestication processes is essential for breeding programs seeking to diversify and improve banana cvs for the future.
plant genetics | historical linguistics | archaeobotany | diploid banana cultivars | triploid banana cultivars

Grundlagen

Gower 1971

J. C. Gower, *A General Coefficient of Similarity and Some of Its Properties*. Biometrics **27** (1971), 857–871.
A general coefficient measuring the similarity between two sampling units is defined. The matrix of similarities between all pairs of sample units is shown to be positive semi-definite (except possibly when there are missing values). This is important for the multi-dimensional Euclidean representation of the sample and also establishes some inequalities amongst the similarities relating three individuals. The definition is extended to cope with a hierarchy of characters.

Klima

Staubwasser 2006

Michael Staubwasser & Harvey Weiss, *Holocene climate and cultural evolution in late prehistoric–early historic West Asia*. Quaternary Research **66** (2006), 372–387.

The precipitation climatology and the underlying climate mechanisms of the eastern Mediterranean, West Asia, and the Indian subcontinent are reviewed, with emphasis on upper and middle tropospheric flow in the subtropics and its steering of precipitation. Holocene climate change of the region is summarized from proxy records. The Indian monsoon weakened during the Holocene over its northernmost region, the Ganges and Indus catchments and the western Arabian Sea. Southern regions, the Indian Peninsula, do not show a reduction, but an increase of summer monsoon rain across the Holocene. The long-term trend towards drier conditions in the eastern Mediterranean can be linked to a regionally complex monsoon evolution. Abrupt climate change events, such as the widespread droughts around 8200, 5200 and 4200 cal yr BP, are suggested to be the result of altered subtropical upper-level flow over the eastern Mediterranean and Asia. The abrupt climate change events of the Holocene radically altered precipitation, fundamental for cereal agriculture, across the expanse of late prehistoric-early historic cultures known from the archaeological record in these regions. Social adaptations to reduced agro-production, in both dry-farming and irrigation agriculture regions, are visible in the archaeological record during each abrupt climate change event in West Asia. Chronological refinement, in both the paleoclimate and archaeological records, and transfer functions for both precipitation and agro-production are needed to understand precisely the evident causal linkages.
Keywords: Climate change; West Asia; Monsoon; Neolithic; Early Bronze Age

Methoden

Jin 2011

Jennie J. H. Jin & Edward W. Mills, *Split phalanges from archaeological sites: evidence of nutritional stress?* Journal of Archaeological Science **38** (2011), 1798–1809.

Broken animal phalanges from archaeological sites have been widely used as an indicator of nutritional stress of the prehistoric people due to the low caloric return rate (caloric yield/processing time) of the phalanges. Although it sounds logical, this widely popular argument is based on Binford's (1978) interview with the Nunamiut and lacks empirical support. In this study, we present the results of experimental studies conducted on 142 modern cow (Bos taurus) and deer (Odocoileus virginianus) first phalanges to document the processing of phalanges, such as the required force and processing time to break them open, possible methods of breaking phalanges, and the resultant breakage and surface modification patterns. This comparative dataset and ethnographic data from contemporary huntergatherer groups indicate that broken phalanges in and of themselves cannot be taken as evidence of resource stress. The phalanges do not require substantial amount of processing time and marrow from the phalanges could have been preferred for its taste and soft texture during the period when resources were not scarce. This may explain the bone breakage pattern from an 8800 year old archaeological assemblage from Tangzigou in southwest China, where phalanges were intensively broken without any other evidence of resource stress.
Keywords: Phalanges; Resource intensification; Nutritional stress; Yunnan; China; Experimental studies; Optimal foraging theory

Shillito 2011

Lisa-Marie Shillito, Ian D. Bull, Wendy Matthews, Matthew J. Almond, James M. Williams & Richard P. Evershed, *Biomolecular and micromorphological analysis of suspected faecal deposits at Neolithic Çatalhöyük, Turkey*. Journal of Archaeological Science **38** (2011), 1869–1877.

Suspected coprolites from midden, burial and room fill contexts at Çatalhöyük were analysed by GC/MS and thin section micromorphology. Assessment of sterol biomarkers enabled a distinction between faecal and non-faecal sources for the deposits to be made, with bile acid biomarkers indicating that many of the faecal deposits are human coprolites. The relative lack of ruminant faeces could be due to this material being used as a fuel source. Deposits in burials were observed to contain soil and plant derived sterols rather than their faecal counterparts. Further analysis in thin section enabled identification of associated materials and contents. Diagnostic inclusions such as bone and plant fragments were only present in some of the human coprolites, which were observed to have a very similar morphology to decayed plant remains. This study illustrates the difficulties in distinguishing coprolites in the field and under the microscope, and demonstrates the importance of integrating biogeochemical methods, particularly when such deposits are used as the basis for interpreting human health and diet, and use-of-space in settlements.
Keywords: Biomarker; Organic residue analysis; Micromorphology; Coprolite; Çatalhöyük; Midden; Burial

Mittelpaläolithikum

Delagnes 2011

Anne Delagnes & William Rendu, *Shifts in Neandertal mobility, technology and subsistence strategies in western France*. Journal of Archaeological Science **38** (2011), 1771–1783.

We propose a reassessment of Neandertal mobility strategies by crossing technological and zooarchaeological data. A broad comparative approach to the Middle Paleolithic series from western France shows that the Levallois and laminar flaking systems, the Mousterian of Acheulian Tradition (MTA) shaping system and the Quina and discoidal-denticulate flaking systems, vary significantly in terms of duration of reduction sequences, blank versatility and tool maintenance. These technological systems, which prevail in this context over different time periods, reflect distinct mobility strategies as a response to differing hunting practices. This new approach to Middle Paleolithic technologies and related mobility patterns gives new insights into Mousterian diversity. It also highlights the determinant role played by large game hunting strategies in the organization of late Neandertal societies.
Keywords: Hunting strategies; Lithic technology; Middle Paleolithic; Neandertal; Mobility; Western France; Zooarchaeology