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Literatur

Afrika

Breton 2014

Gwenna Breton, Carina M. Schlebusch, Marlize Lombard, Per Sjödin, Himla Soodyall & Mattias Jakobsson, *Lactase Persistence Alleles Reveal Partial East African Ancestry of Southern African Khoe Pastoralists*. Current Biology (2014), preprint, 1–7. DOI:10.1016/j.cub.2014.02.041.

The ability to digest milk into adulthood, lactase persistence (LP), as well as specific genetic variants associated with LP, is heterogeneously distributed in global populations. These variants were most likely targets of selection when some populations converted from hunter-gatherer to pastoralist or farming lifestyles. Specific LP polymorphisms are associated with particular geographic regions and populations; however, they have not been extensively studied in southern Africa. We investigate the LP-regulatory region in 267 individuals from 13 southern African populations (including descendants of hunter-gatherers, pastoralists, and agropastoralists), providing the first comprehensive study of the LP-regulatory region in a large group of southern Africans. The "East African" LP singlenucleotide polymorphism (SNP) (14010G>C) was found at high frequency (>20 %) in a strict pastoralist Khoe population, the Nama of Namibia, suggesting a connection to East Africa, whereas the "European" LP SNP (13910C>T) was found in populations of mixed ancestry. Using genome-wide data from various African populations, we identify admixture (13 %) in the Nama, from an Afro-Asiatic group dating to >1,300 years ago, with the remaining fraction of their genomes being from San hunter-gatherers. We also find evidence of selection around the LCT gene among Khoe-speaking groups, and the substantial frequency of the 14010C variant among the Nama is best explained by adaptation to digesting milk. These genome-local and genome-wide results support a model in which an East African group brought pastoralist practices to southern Africa and admixed with local hunter-gatherers to form the ancestors of Khoe people.

Phillipson 2005

David W. Phillipson, *African Archaeology*. (Cambridge ^{3}2005).

In this fully revised and expanded edition of his seminal archaeological survey, David Phillipson presents a lucid and fully illustrated account of African archaeology from prehistory and the origins of humanity to the age of European colonisation. The work spans the entire continent from the Mediterranean to the Cape of Good Hope and demonstrates the relevance of archaeological research to the understanding of Africa today.

Aktuell

Campbell 2014

Frances Campbell, Gabriella Conti, James J. Heckman, Seong Hyeok Moon, Rodrigo Pinto, Elizabeth Pungello & Yi Pan, *Early Childhood*

Investments Substantially Boost Adult Health. science **343** (2014), 1478–1485.

s343-1478-Supplement.pdf

High-quality early childhood programs have been shown to have substantial benefits in reducing crime, raising earnings, and promoting education. Much less is known about their benefits for adult health. We report on the long-term health effects of one of the oldest and most heavily cited early childhood interventions with long-term follow-up evaluated by the method of randomization: the Carolina Abecedarian Project (ABC). Using recently collected biomedical data, we find that disadvantaged children randomly assigned to treatment have significantly lower prevalence of risk factors for cardiovascular and metabolic diseases in their mid-30s. The evidence is especially strong for males. The mean systolic blood pressure among the control males is 143 millimeters of mercury (mm Hg), whereas it is only 126 mm Hg among the treated. One in four males in the control group is affected by metabolic syndrome, whereas none in the treatment group are affected. To reach these conclusions, we address several statistical challenges. We use exact permutation tests to account for small sample sizes and conduct a parallel bootstrap confidence interval analysis to confirm the permutation analysis. We adjust inference to account for the multiple hypotheses tested and for nonrandom attrition. Our evidence shows the potential of early life interventions for preventing disease and promoting health.

Gibbons 2014

Ann Gibbons, *Oldest Homo sapiens Genome Pinpoints Neandertal Input*. science **343** (2014), 1417.

"Genetically we now have a modern human that just barely postdates the Neandertal introgression into modern humans," explains Bence Viola of the Max Planck, who was not at the meeting but has studied the bone, found near the village of Ust-Ishim.

Nearly twice as old as the Mal'ta bones, the Ust-Ishim femur shows that almost as soon as modern humans arrived in northern Eurasia, they made themselves at home in harsh climates, Viola says. "Ust-Ishim is at about the latitude of Stockholm or Juneau, Alaska," he notes. "It was not that much warmer at the time, so they must have been quite well adapted to northern environments."

Watts 2014

Susan Watts, *Society needs more than wonder to respect science*. nature **508** (2014), 151.

Researchers are well placed to explain concepts, but journalists will bring the critical scrutiny needed to integrate science in society, says Susan Watts.

I don't normally watch football on television, but recently I have been paying attention. What has happened in sports presenting, with former and current players replacing specialist journalists, is creeping into science coverage too.

Anthropologie

Haig 2014

David Haig, *Interbirth intervals, Intrafamilial, intragenomic and intrasomatic conflict*. Evolution, Medicine, and Public Health **2014**, 12–17.

Background and objectives: Interbirth intervals (IBIs) mediate a trade-off between child number and child survival. Life history theory predicts that the evolutionarily optimal IBI differs for different individuals whose fitness is affected by how closely a mother spaces her children. The objective of the article is to clarify these conflicts and explore their implications for public health.

Methodology: Simple models of inclusive fitness and kin conflict address the evolution of human birthspacing.

Results: Genes of infants generally favor longer intervals than genes of mothers, and infant genes of paternal origin generally favor longer IBIs than genes of maternal origin.

Conclusions and implications: The colonization of maternal bodies by offspring cells (fetal microchimerism) raises the possibility that cells of older offspring could extend IBIs by interfering with the implantation of subsequent embryos.

Keywords: parent–offspring conflict; interbirth interval; genomic imprinting; microchimerism; secondary infertility

Haig 2014

David Haig, James J. McKenna, Katie Hinde, Bernard Crespi & Patrick McNamara, *Troubled sleep, Night waking, breastfeeding and parent–offspring conflict.* Evolution, Medicine, and Public Health **2014**, 32–62.

Disrupted sleep is probably the most common complaint of parents with a new baby. Night waking increases in the second half of the first year of infant life and is more pronounced for breastfed infants. Sleep-related phenotypes of infants with Prader-Willi and Angelman syndromes suggest that imprinted genes of paternal origin promote greater wakefulness whereas imprinted genes of maternal origin favor more consolidated sleep. All these observations are consistent with a hypothesis that waking at night to suckle is an adaptation of infants to extend their mothers' lactational amenorrhea, thus delaying the birth of a younger sib and enhancing infant survival.

Keywords: lactational amenorrhea; interbirth intervals; night waking; breastfeeding; co-sleeping; evolutionary pediatrics

Wilkins 2014

Jon F. Wilkins, *Costs and consequences of the conflict over infant sleep.* Evolution, Medicine, and Public Health **2014**, 63–64.

Whether via fragility, pleiotropy, or a combination of the two, conflict leads to antagonistic coevolution, which leads in turn to the accumulation of deleterious traits. This is not just a likely outcome, it is a necessary one, as the conflict will not resolve until the accumulating side effects become detrimental enough that further escalation does not pay. It is important to remember in general that natural selection does not necessarily guarantee positive health outcomes. But when conflict is a central driving force, selection can actually actively create negative ones.

Keywords: genetic gonflict; genomic imprinting; parent-offspring conflict; coevolution

Energie

Cottrell 1955

Fred Cottrell, *Energy & Society, The relation between energy, social change, and economic development.* (Bloomington ^{2}2009).

When first published in 1955, this book was among the first interpretive treatments of the connection between a society's energy conditions and evolution of its culture. The book begins with a basic discussion of the earliest forms of energy uses and evolves through a discussion of how the evolution of alternative energy converters has impacted the growth of civilization. Dr. Cottrell takes us from food gathering societies up through the beginning of the industrial revolution into the age of nuclear power. With each step of change, he discusses how society has changed and the impact these changes have had on economic, moral and social issues. Today, more than any time in history, the questions of energy sources, energy conversion, energy uses and energy distribution are among the greatest challenges faced by civilization. In this book, Dr. Cottrell does not give you answers or predictions but takes you through the thought processes necessary to overcome the multible barriers we face in moving into the future.

Pimentel 1973

David Pimentel, L. E. Hurd, A. C. Bellotti, M. J. Forster, I. N. Oka, O. D. Sholes & R. J. Whitman, *Food Production and the Energy Crisis*. science **182** (1973), 443–449.

The principal raw material of modern U.S. agriculture is fossil fuel, whereas the labor input is relatively small (about 9 hours per crop acre). As agriculture is dependent upon fossil energy, crop production costs will also soar when fuel costs increase two- to fivefold. A return of 2.8 kcal of corn per 1 kcal of fuel input may then be uneconomical.

Green revolution agriculture also uses high energy crop production technology, especially with respect to fertilizers and pesticides. While one may not doubt the sincerity of the U.S. effort to share its agricultural technology so that the rest of the world can live and eat as it does, one must be realistic about the resources available to accomplish this mission. In the United States we are currently using an equivalent of 80 gallons of gasoline to produce an acre of corn. With fuel shortages and high prices to come, we wonder if many developing nations will be able to afford the technology of U.S. agriculture.

Problems have already occurred with green revolution crops, particularly problems related to pests (57). More critical problems are expected when there is a world energy crisis. A careful assessment should be made of the benefits, costs, and risks of high energydemand green revolution agriculture in order to be certain that this program will not aggravate the already serious world food situation (58).

To reduce energy inputs, green revolution and U.S. agriculture might employ such alternatives as rotations and green manures to reduce the high energy demand of chemical fertilizers and pesticides. U.S. agriculture might also reduce energy expenditures by substituting some manpower currently displaced by mechanization.

While no one knows for certain what changes will have to be made, we can be sure that when conventional energy resources become scarce and expensive, the impact on agriculture as an industry and a way of life will be significant. This analysis is but a preliminary investigation of a significant agricultural problem that deserves careful attention and greater study before the energy situation becomes more critical.

Grundlagen

Arthur 2009

W. Brian Arthur, *The Nature of Technology, What it is and how it evolves*. (New York 2009), 167–189.

Bamforth 1997

Douglas B. Bamforth & Peter Bleed, *Technology, Flaked Stone Technology, and Risk*. In: C. Michael Barton & G. A. Clark (Hrsg.), *Rediscovering Darwin*, *Evolutionary Theory in Archeological Explanation*. Archaeological Papers of the American Anthropological Association 7 (Arlington 1997), 109–139.

ISBN:0-913167-87-8

Recent theoretical studies of flaked stone technology have identified many factors that affect the ways in which human beings make and use tools. However, these studies lack a unified body of theory that might help to integrate their diverse perspectives. This paper expands recent anthropological discussions of risk as the basis for such a theory. We begin by defining risk, emphasizing two distinct components of this concept-the probability that some problem will occur and the cost of such an occurrenceand argue that technology can be seen as a means of reducing such probabilities in the face of unacceptably high costs. We support this argument using cross-cultural data on hunter-gatherer technology and archaeological and historic data on the construction of defensive works on the northern Great Plains. Next, we consider specific problems in applying this perspective archaeologically, concluding that existing limits on our ability to estimate failure probabilities and costs prevent us from testing the ideas outlined here in archaeological contexts. However, accepting this perspective as provisionally validated by ethnographic data allows us to see how it can illuminate archaeological cases, and we exemplify this by comparing the production of Araya microblade projectile points in the Japanese Paleolithic and Folsom fluted projectile points on the North American Great Plains.

Barton 1997

C. Michael Barton, *Stone Tools, Style, and Social Identity*, *An Evolutionary Perspective on the Archaeological Record*. In: C. Michael Barton & G. A. Clark (Hrsg.), *Rediscovering Darwin*, *Evolutionary Theory in Archeological Explanation*. Archaeological Papers of the American Anthropological Association 7 (Arlington 1997), 141–156.

ISBN:0-913167-87-8

Because of their prevalence in the archaeological record, chipped stone assemblages have long been used for the identification of social entities and the tracing of cultural relationships through space and time. To do this, archaeologists have focused primarily on variations in lithic morphology. Although the forms of stone artifacts are determined by a combination their utilitarian function, 'style', and the physical constraints of knapping different cryptocrystalline rocks, there is widespread belief that style provides the best information about social group membership. Style, however, is not a unified concept, including both passive variability resulting from stochastic processes and actively encoded social information, constrained by selection and manipulated by the makers and users of artifacts. A neo-Darwinian framework is used to evaluate differing concepts of style and their applicability to the lithic archaeological record. Identifying prehistoric social entities and tracing cultural relationships is loosely analogous, methodologically and theoretically, to identifying taxa and tracing ancestor/descendant relationships in biology. Lithic technology is also examined from the point of view of neo-Darwinian evolutionary theory to identity sources of morphological variability

most likely to mark group social identity, and suggest methodologies best able to identify and differentiate prehistoric social groups.

Bleed 1997

Peter Bleed, *Content as Variability, Result as Selection, Toward a Behavioral Definition of Technology.* In: C. Michael Barton & G. A. Clark (Hrsg.), *Rediscovering Darwin, Evolutionary Theory in Archeological Explanation.* Archaeological Papers of the American Anthropological Association 7 (Arlington 1997), 95–104.

ISBN:0-913167-87-8

Technology has long been of interest to anthropologists but anthropological study of the topic has lagged behind consideration of other human institutions. In part this is because technology has remained poorly understood and incompletely defined and because technology's material and non-material components have been either confused or treated in isolation. To clarify the relationship between its material and non-material aspects, this paper defines the contents and results of technology in behavioral terms. Material results are an intrinsic part of technology that offer immediate, clear feedback. For that reason, technological behaviors are easy to evaluate and adjust. This makes technology especially subject to selective pressure and evolutionary change.

Bleed 2001

Peter Bleed, *Trees or Chains, Links or Branches, Conceptual Alternatives for Consideration of Stone Tool Production and Other Sequential Activities.* Journal of Archaeological Method and Theory **8** (2001), 101–127.

Archaeologists construct sequence models to describe the operation of past activities such as production of stone tools. As developed in Japan, France, and North American, such models summarize processes, present intermediate steps, and link formally diverse materials. Some sequence models are teleological in that they present actions as predetermined patterns. Others can be considered evolutionary in that they describe results produced by selected interaction between conditions and variables. With separate strengths and different goals, both approaches to sequence modeling have archaeological utility.

Keywords: technology; chaîne opératoire; stone tools; tool production.

Dobres 2005

Marcia-Anne Dobres & John E. Robb, *"Doing" Agency, Introductory Remarks on Methodology.* Journal of Archaeological Method and Theory **12** (2005), 159–166.

As a theory of social reproduction, agency provides an attractive framework for understanding how material culture relates to everyday social action, to long-standing cultural institutions, and to wholesale culture change. What remains under-explored in archaeology is the question of how to proceed in linking observable material patterning to the agency of ancient social reproduction and how to understand the role of material culture in this dynamic process. This introduction (to this and the next issue of JAMT (Journal of Archaeological Method and Theory)) explores why there is a need for archaeology to develop explicitly articulated "middle range interpretive methodologies" that are appropriate for agency-oriented research in the past.

Keywords: agency; methodology; middle range interpretive methodologies; social reproduction.

Dobres 2010

Marcia-Anne Dobres, *Archaeologies of technology*. Cambridge Journal of Economics **34** (2010), 103–114.

Archaeologists make use of several different ontologies to research and develop theories about ancient technology. After briefly sketching out central features of mainstream (materialist) technovisions, this essay concentrates on recent ontological trends emphasizing the 'mutual becoming' of people and products. Symbolic and structuralist orientations enable archaeologists to 'see' something of the social values and cognitive structures shaping technological traditions in the deep past. As the question of gender has become an explicit topic of interest, archaeologists are able, at long last, to theorise about ancient technicians as thinking and feeling women and men. To appreciate ancient technology 'as if people mattered', I outline my own preferred ontology—grounded in phenomenology and agency theory. It argues that the ancient technician's body was a mindful, sensual, socially constituted and gendered being making sense of the world—and themself—by working through it. Chaîne opératoire data on technical gestures and related strategic choices of artifact manufacture, use, and repair provide the necessary empirical and interpretive link between the making of personhood and the making and use of products within the (ancient) body politic.

Keywords: Archaeology, Technology, Gender, Embodied agency, Chaýêne ope'ratoire

Eren 2005

Metin I. Eren, Manuel Dominguez-Rodrigo, Steven L. Kuhn, Daniel S. Adler, Ian Le & Ofer Bar-Yosef, *Defining and measuring reduction in unifacial stone tools*. Journal of Archaeological Science **32** (2005), 1190–1201.

Observations pertaining to particular stages of the lithic chaýêne ope'ratoire, or reconstructions of the entire operational sequence at a particular site, can be used to develop a detailed understanding of past human cognitive capabilities, technological sophistication, mobility, and land use. The "reduction sequence" is a specific stage of the chaýêne ope'ratoire that many archaeologists have attempted to measure. Many of these attempts fail to recognize that "reduction" is a three-dimensional process, and thus should be measured with an appropriate three-dimensional unit: volume. This paper presents a new methodology for measuring and defining reduction in unifacial stone tools that reconstructs the original volume of a modified blank, allowing a realistic percentage of volume loss to be calculated. This new method is fast, precise, and very accurate.

Keywords: Lithic technology; Reduction sequence; Chaýêne ope'ratoire; Unifacial stone tools; Experimental archaeology

Holdaway 2012

Simon Holdaway & Matthew Douglass, *A Twenty-First Century Archaeology of Stone Artifacts*. Journal of Archaeological Method and Theory **19** (2012), 101–131.

Archaeologists today, as in the past, continue to divide their stone artifact assemblages into categories and to give privilege to certain of these categories over others. Retouched tools and particular core forms, for instance, are thought to contain more information than the unretouched flakes and flake fragments. This reflects the assumption that information to be gained from stone artifacts is present within the artifact itself. This study evaluates a continued interest in the final form of stone artifacts by first considering ethnographic accounts of stone artifact

manufacture and use in Australia and then by utilizing the patterns observed in these accounts to investigate assemblage patterning within an Australian archaeological case study. Reading the ethnographic accounts provides no indication that Aboriginal people valued more or less complex artifacts, in uniform ways, in every situation. In fact, the opposite is true. Stone artifacts were always valued in some sense but which ones, and in which ways, depended on the situations the people who needed the artifacts found themselves in. Aboriginal people were quite capable of making and using expedient and informal artifacts in complex ways. The significance of these observations is considered for stone artifact studies in general and in relation to a case study from western New South Wales, Australia.

Keywords: Stone artifacts | Ethnoarchaeology

Ingold 1997

Tim Ingold, *Eight themes in the anthropology of technology*. Social Analysis **41** (1997), 106–138.

Kelly 2013

Robert L. Kelly, *The Lifeways of Hunter-Gatherers*, *The Foraging Spectrum*. (Cambridge ²2013), 114–136.

Kapitel 5: Technology

Kuhn 2004

Steven L. Kuhn, *Evolutionary perspectives on technology and technological change*. World Archaeology **36** (2004), 561–570.

Lemonnier 2013

Pierre Lemonnier, *Mundane Objects*, *Materiality and Non-verbal Communication*. Critical Cultural Heritage 10 (Walnut Creek 2013), 119–147.

Kapitel 6: What Materiality Means: Objects as Resonators

Kapitel 7: What's New? Blurring Anthropological Borders but Keeping "Technology" in Mind

Moore 2013

Mark W. Moore, *Simple stone flaking in Australasia*, *Patterns and implications*. Quaternary International **285** (2013), 140–149.

The archaeological records in the Old World and Australasia reflect a pattern of simple approaches to stone flaking in early stone tool assemblages followed by a later proliferation in more complex approaches. Although the pattern is similar in structure, the proliferation of complex flaking occurred much later in Australasia. 'Simple' stone flaking can be characterized as the arrangement of flake removals in chains and 'complex' approaches involved a hierarchical arrangement. Some archaeologists see the proliferation of hierarchical reduction sequences as a reflection of hominin cognitive changes, but Homo sapiens colonizers of Australiadcarrying a toolkit made by simple chainingdwere cognitively modern. The Australian proliferation has been explained as a response to ecological conditions but this proximate explanation fails to account for the complex nature of hierarchical reduction sequences. Demographic modeling that links the emergence of complex stone flaking to population structure or growth better accounts for the proliferations in both the Old World and Australasia. Efforts to reconstruct hominin migrations through Asia by focusing on the 'derived' parts of stone toolkits track demographically-linked trends rather than initial emigration events.

Pelegrin 2005

Jacques Pelegrin, *Remarks about Archaeological Techniques and Methods of Knapping, Elements of a Cognitive Approach to Stone Knapping*. In: Valentine Roux & Blandine Bril (Hrsg.), *Stone knapping, The necessary conditions for a uniquely hominin behaviour*. (Cambridge 2005), 23–33.

The preservation of hard stone and the regularity of the conchoidal fracture technique allows for a highly-detailed analysis of stone-knapping techniques and methods throughout prehistory. Though frequently disputed, the earliest stone knapping produced by conchoidal fracture should not be conflated with the cracking of nuts by some chimpanzees, nor the simple 'splitting'technique used by Kanzi, who clearly failed to produce true flakes. This failure may suggest that the control of conchoidal fracture is more a matter of'understanding' rules than of motor skill. Moreover, the very early flake production of Lokalelei IIc (Roche this volume) shows that core reduction was sometimes interrupted in order to evaluate a problem and determine an adequate solution. Several hundreds of thousands years ago, by the time of Homo erectus, the morphological redundancy of the handaxe demonstrates that it was the result of a mental template. Somewhat later, typical Levallois flake production provides evidence of a goal-structured process, which again implies mental representations and also an evaluation of technical solutions which had to compromise between what was feasible and what was desirable. This indicates the existence of prepositional reasoning, which is the basis of modern technical intelligence.

Pfaffenberger 1992

Bryan Pfaffenberger, *Social Anthropology of Technology*. Annual Review of Anthropology **21** (1992), 491–516.

Keywords: activity systems, technological change, sociotechnical systems, ritual, artifacts

Schiffer 2001

Michael Brian Schiffer, James M. Skibo, Janet L. Griffitts, Kacy L. Hollenback & William A. Longacre, *Behavioral Archaeology and the Study of Technology*. American Antiquity **66** (2001), 729–737.

Loney's (2000) recent paper claims that American archaeologists have paid scant attention to the study of technological, especially ceramic, change. We argue that, in fact, interest in such change processes has grown greatly in recent decades and that Loney has overlooked much relevant literature. We support our general argument with a catalog of recent behavioral research on technological change.

Shott 1986

Michael Shott, *Technological Organization and Settlement Mobility, An ethnographic examination*. Journal of Anthropological Research **42** (1986), 15–51.

Functional requirements of activities do not alone explain variability in the technologies of forager groups. Rather, they are one among a larger set of factors that determine how technologies are organized within cultural systems. Failure to consider these other factors can impair interpretations of behavior based on analysis of artifact assemblages. One promising avenue of research is the relationship between technology and settlement mobility. Ethnographic evidence shows that elements of

technology are related to the settlement mobility of forager societies. The implications of this relationship for archaeology are farreaching, and they deserve careful consideration.

Shott 2003

Michael J. Shott, *Chaîne Opératoire and Reduction Sequence*. Lithic Technology **28** (2003), 95–105.

National traditions ofarchaeological thought are a popular subject today. This essay concerns an ap parent difference between interpretative concepts in two traditions oflithic analysis: the French chaîne opératoire and the American reduction sequence. To speak of French or American traditions of thought reifies the characteristic to the categorical, done to simplify not because the characterizations are accurate to the last detail. The American reduction sequence concept arose in the 1890s and matured around 1970. The French chaîne opératoire originated in the 1960s and came into common use in the 1990s. The intellectual and historical contexts of the concepts differ. Yet the two are substantially the same thing despite the efforts especially of chaîne opératoire's advocates to claim originality.

Simondon 1958

Gilbert Simondon, *Die Existenzweise technischer Objekte*. (Zürich 2012), 19–45.

Kapitel 1: Genese des technischen Objekts: Der Prozess der Konkretisation

Tostevin 2011

Gilbert B. Tostevin, *Levels of Theory and Social Practice in the Reduction Sequence and Chaîne Opératoire Methods of Lithic Analysis*. PaleoAnthropology **2011**, 351–375.

There are more areas of overlap as well as distinction between the Reduction Sequence and Chaîne Opératoire methods of archaeological analysis than the current debate recognizes. While methodological differences have been acknowledged, high-level theory differs to a greater degree than is currently appreciated, partly due to the social practice of archaeology in different contexts. This paper compares and evaluates examples of reduction sequence and chaîne opératoire research to demonstrate how high-level theory goals impact middle-range theory and even low-level theory practices (i.e., how data are constructed and published). The paper then utilizes the distinction between an emic decision hierarchy and an etic production hierarchy to elucidate how the practitioners of both methods can more successfully integrate their approaches. An alternative to both methods is offered to demonstrate how common epistemological problems can be resolved. As an example of this alternative approach, the paper compares blank production behaviors and tool kit morphologies among Levantine Ahmarian, as well as among Levantine Aurignacian assemblages, from Kebara Cave, Israel. This case study demonstrates that the two Ahmarian assemblages are more different, rather than more similar to each other, in comparison to the Levantine Aurignacian assemblages. This suggests that a typological approach to these assemblages conceals significant behavioral data.

Turq 2013

Alain Turq, Wil Roebroeks, Laurence Bourguignon & Jean-Philippe Faivre, *The fragmented character of Middle Palaeolithic stone tool technology*. Journal of Human Evolution **65** (2013), 641–655.

The importance of the transport of stone artefacts in structuring Neandertal lithic assemblages has often been addressed, but the degree to which this led to fragmentation of lithic reduction over Middle Palaeolithic landscapes has not been explicitly studied thus far. Large-scale excavations of Middle Palaeolithic open-air sites and refitting studies of the retrieved assemblages have yielded new, highre-solution data on the mobile aspects of Neandertal stone tool technology. In this paper, we integrate lithic technology and raw material data from recent studies of Middle Palaeolithic open-air and rock shelter sites in Western Europe. We demonstrate that the results of a variety of typological, technological (especially refitting), and lithological studies have important consequences for our knowledge of the acquisition of raw materials and subsequent production, usage and discard of stone artefacts in the Middle Palaeolithic. Neandertal production and use of stone tools was fragmented in three domains: the spatial, the temporal and the social domain. We show that this versatile segmentation of stone artefact handling strategies is a main determinant of the character of the Neandertal archaeological record. Our data testify to ubiquitous and continuous transport of stone artefacts of a wide variety of forms, picked by Neandertals using selection criteria that were sometimes far removed from what archaeologists have traditionally considered, and to some degree still consider, to be desired end products of knapping activities. The data presented here testify to the variability and versatility of Middle Palaeolithic stone tool technology, whose fragmented character created very heterogeneous archaeological assemblages, usually the product of a wide variety of independent import, use, discard and/or subsequent transport events.

Keywords: Raw material transport | Mobility | Western Europe | Pleistocene | Neandertals

White 1943

Leslie A. White, *Energy and the Evolution of Culture*. American Anthropologist **45** (1943), 335–356.

To classify cultures as "wild food, domestic food, and literate," as Morgan and Tylor did, is illogical; it is like classifying vehicles as "three-wheeled, four-wheeled, and pretty." We classify cultures according to the way, or ways, in which they harness energy and the manner in which it is put to work to serve human needs.

In the foregoing we have, we believe, a sound and illuminating theory of cultural evolution. We have hold of principles, fundamental principles, which are operative in all cultures at all times and places. The theory set forth in the preceding pages was, as we have made clear, held by the foremost thinkers of the Evolutionist school of the nineteenth century, both in England and in America. Today they seem to us as sound as they did to Tylor and Morgan, and, if anything, more obvious. It seems almost incredible that anthropologists of the twentieth century could have turned their backs upon and repudiated such a simple, sound, and illuminating generalization, one that makes the vast range of tens of thousands of years of culture history intelligible. But they have done just this.

Jungpaläolithikum

Fagan 2011

Brian Fagan, *Cro-Magnon, How the Ice Age gave birth to the first modern humans.* (New York 2011).

Neolithikum

Bocquet-Appel 2008

Jean-Pierre Bocquet-Appel & Ofer Bar-Yosef (Hrsg.), *The Neolithic Demographic Transition and its Consequences.* (New York 2008).

Enattah 2002

Nabil Sabri Enattah, Timo Sahi, Erkki Savilahti, Joseph D. Terwilliger, Leena Peltonen & Irma Järvelä, *Identification of a variant associated with adult-type hypolactasia.* NatGen **30** (2002), 233–237.

NatGen30-0233-Supplement.pdf

Adult-type hypolactasia, also known as lactase non-persistence (lactose intolerance), is a common autosomal recessive condition resulting from the physiological decline in activity of the lactasephlorizin hydrolase (LPH) in intestinal cells after weaning. LPH hydrolyzes lactose into glucose and galactose. Sequence analyses of the coding and promoter regions of LCT, the gene encoding LPH, has revealed no DNA variations correlating with lactase nonpersistence1,2. An associated haplotype spanning LCT, as well as a distinct difference in the transcript levels of 'non-persistence' and 'persistence' alleles in heterozygotes, suggest that a cis-acting element contributes to the lactase non-persistence phenotype3,4. Using linkage disequilibrium (LD) and haplotype analysis of nine extended Finnish families, we restricted the locus to a 47-kb interval on 2q21. Sequence analysis of the complete region and subsequent association analyses revealed that a DNA variant, C/T–13910, roughly 14 kb upstream from the LCT locus, completely associates with biochemically verified lactase non-persistence in Finnish families and a sample set of 236 individuals from four different populations. A second variant, G/A–22018, 8 kb telomeric to C/T–13910, is also associated with the trait in 229 of 236 cases. Prevalence of the C/T–13910 variant in 1,047 DNA samples is consistent with the reported prevalence of adult-type hypolactasia in four different populations. That the variant (C/T–13910) occurs in distantly related populations indicates that it is very old.

Schön 2006

Werner Schön & Birgit Gehlen, *Für neue Ansätze bei der Erforschung der Neolithisierungsprozesse in Europa, Erwiderung auf A. Reingruber / M. Rösch.* Archäologische Informationen **29** (2006), 127–128.

The problems associated with the transition to the Neolithic period cannot be solved by simply examining selected fi nds and their contexts or by holding on to the traditional paradigms developed in the course of earlier research. Like all other sciences, archaeology experiences continuous growth and modifi cation in the sum of our accumulated knowledge and cannot be treated as a manifestation of eternal truth. Only a modern diachronic approach and inter- and intra-disciplinary regional studies will be able to clarify the present blurred picture of one of the most interesting periods in human history that, indeed, lasted around 3000 years in Europe.

Weder die Beschränkung auf eine detaillierte Betrachtung ausgewählter Befunde noch das Festhalten an forschungsgeschichtlich begründeten Paradigmen werden dem Problemkomplex "Neolithisierungsprozesse" gerecht. Archäologie ist wie jede Wissenschaft einem steten Erkenntniszuwachs und -wandel unterworfen und eignet sich nicht zur Manifestierung ewiger Wahrheiten. Nur moderne, diachron angelegte,

inter- und intradisziplinäre Regionalstudien werden dazu beitragen, dass die derzeit unklaren Bilder einer der interessantesten Perioden der Menschheitsgeschichte, die in Europa immerhin etwa 3000 Jahre andauerte, an Schärfe gewinnen.

Keywords – Neolithic transition, Europe, regional research, archaeobotany

Schlüsselwörter – Neolithisierungsprozesse, Europa, Regionalstudien, Archäobotanik

Tanno 2006

Ken-ichi Tanno & George Willcox, *How Fast Was Wild Wheat Domesticated?* science **311** (2006), 1886.

s311-1886-Supplement.pdf

Wild cereals with dehiscent ears shatter at maturity into dispersal units called spikelets, identifiable by their smooth abscission scars. The combined results indicate that indehiscence took over one millennium to become established. Selection for large cereal grains was slow. Measurements taken from ancient grains demonstrate that the size of wheat and barley grains remained essentially the same between 9500 and 6500 yr B.P.

We argue that wild cereals could have been cultivated for over one millennium before the emergence of domestic varieties. Domestication was a series of events occurring at different places over thousands of years, during which wild wheat persisted in cultivated fields (it still occurs today as a weed in Turkey). Our data require consolidation, but combined with the data for barley, they support a gradualist domestication model, suggesting that we should examine the possibility that agriculture arose soon after humans adopted a sedentary existence in the early villages of the Near East.

Vigne 2008

Jean-Denis Vigne, *Zooarchaeological Aspects of the Neolithic Diet Transition in the Near East and Europe, And Their Putative Relationships with the Neolithic Demographic Transition.* In: Jean-Pierre Bocquet-Appel & Ofer Bar-Yosef (Hrsg.), *The Neolithic Demographic Transition and its Consequences.* (New York 2008), 179–205.

The goal of the first part of this chapter is to summarize the recent results of zooarchaeological research into the beginning of ungulate domestication in the Near East (more precisely southeastern Anatolia, the northern Levant and Cyprus) and Europe. It focuses on the earliest evidence of animal domestication and dispersion, and on its slow and complex tempo. The impact on diet varies in the different regions, especially in Western Europe. The second part of the chapter inventories differing deliberations, as well as both osteological and isotopic results, in order to estimate the technical skills of the last hunters/first farmers in animal management and exploitation. A special section is devoted to the question of early milk exploitation during the early stages of the Neolithic. In the conclusion, based on a new chronology of the different steps in the birth of animal husbandry in the Near East between 8500 and 7000 B.C., the author posits that these developments provoked a substantial qualitative and quantitative improvement of the animal food supply, and discusses these proposals with reference to the Neolithic Demographic Transition (NDT) and the other components of neolithization in these areas.

Keywords: Animal Domestication | Neolithization | Archaeozoology | Human Diet | Milk | Near East | Europe

Zimmermann 2003
Andreas Zimmermann & Karl Peter Wendt, *Wie viele Bandkeramiker lebten 5.060 v. Chr.? Techniken Geographischer Informationssysteme zum Schätzen von Bevölkerungsdichten*. Archäologische Informationen **26** (2003), 491–497.