

References

Aktuell

KOZOWYK 2023

Paul R. B. Kozowyk, *Archaeological Podocarpus tar supports the cognitive complexity of Neanderthals*. [PNAS 120 \(2023\), e2221676120](#).

Schmidt et al. showcase the inherent complexity of producing tar adhesives regardless of the method used. If we accept their claim, which I hope many do, that the discovery, selection, manufacture, and use of Podocarpus tar is an excellent proxy for complex cognition, then we must accept that this is also the case for Neanderthals. Data from Podocarpus tar experiments and evidence of tar production more than 100,000 y earlier in the MP than in the MSA help to settle the debate about Neanderthal complexity.

SCHMIDT 2023

Patrick Schmidt, Tabea J. Koch & Claudio Tennie, *Interpreting the complexity of archaeological adhesives may lead to misconceptions about early humans, Reply to Paul R.B. Kozowyk*. [PNAS 120 \(2023\), e2300325120](#).

Kozowyk's (1) claim that Schmidt et al. (3) go against Schmidt et al.'s (2) interpretation is incorrect. Schmidt et al. (3) pinpoint innovative behavior in the African MSA because Podocarpus tar was produced. We do believe that birch tar has the same implications for understanding human behaviors as Podocarpus tar. This would indeed be strengthened by comparable data on alternative adhesives from Europe (yet, contrary to what is claimed in ref. 1, only data on highly transformed industrial colophony are available from refs. 7 and 8; we need data on natural "pine resin" and other substances). Regardless, what this debate illustrates is that equating "complexity," as in stepwise process complexity and "complex" cognition/behavior (a loosely defined qualifier, at least in archaeology), may lead to misinterpretations.

Amerika

PRAETORIUS 2023

Summer K. Praetorius, Jay R. Alder, Alan Condron, Alan C. Mix, Maureen H. Walczak, Beth E. Caissie & Jon M. Erlandson, *Ice and ocean constraints on early human migrations into North America along the Pacific coast*. [PNAS 120 \(2023\), e2208738120](#).

[pnas120-e2208738120-Supplement.pdf](#)

Founding populations of the first Americans likely occupied parts of Beringia during the Last Glacial Maximum (LGM). The timing, pathways, and modes of their southward transit remain unknown, but blockage of the interior route by North American ice sheets between ≈ 26 and 14 cal kyr BP (ka) favors a coastal route during this period. Using models and paleoceanographic data from the North Pacific, we identify climatically favorable intervals when humans could have plausibly traversed the Cordilleran coastal corridor during the terminal Pleistocene. Model

simulations suggest that northward coastal currents strengthened during the LGM and at times of enhanced freshwater input, making southward transit by boat more difficult. Repeated Cordilleran glacial-calving events would have further challenged coastal transit on land and at sea. Following these events, ice-free coastal areas opened and seasonal sea ice was present along the Alaskan margin until at least 15 ka. Given evidence for humans south of the ice sheets by 16 ka and possibly earlier, we posit that early people may have taken advantage of winter sea ice that connected islands and coastal refugia. Marine ice-edge habitats offer a rich food supply and traversing coastal sea ice could have mitigated the difficulty of traveling southward in watercraft or on land over glaciers. We identify 24.5 to 22 ka and 16.4 to 14.8 ka as environmentally favorable time periods for coastal migration, when climate conditions provided both winter sea ice and ice-free summer conditions that facilitated year-round marine resource diversity and multiple modes of mobility along the North Pacific coast.

Keywords: paleoceanography | sea ice | human migration | North Pacific | paleoclimate

Significance: Growing evidence for a human presence in the Americas prior to 15,000 y ago—when ice sheets blocked transit through the continental interior—imply a Pacific Coast route was the more likely pathway for dispersals from Beringia into North America between \approx 26,000 and 14,000 y ago. The feasibility of coastal migration at various times depended on the extent of Cordilleran glaciers, sea ice, the strength of ocean currents, and the productivity and availability of marine and terrestrial resources. Based on paleoclimate records and climate models, we estimate that 24,500 to 22,000 and 16,400 to 14,800 y ago were the most environmentally favorable time windows for a coastal migration during the period when the interior route was blocked.

Anthropologie

KUBAT 2023

Jülide Kubat et al., *Dietary strategies of Pleistocene Pongo sp. and Homo erectus on Java (Indonesia)*. [Nature Ecology & Evolution 7 \(2023\), 279–289](#).

[NatEcoEvo07-0279-Supplement.pdf](#)

During the Early to Middle Pleistocene, Java was inhabited by hominid taxa of great diversity. However, their seasonal dietary strategies have never been explored. We undertook geochemical analyses of orangutan (*Pongo sp.*), *Homo erectus* and other mammalian Pleistocene teeth from Sangiran. We reconstructed past dietary strategies at subweekly resolution and inferred seasonal ecological patterns. Histologically controlled spatially resolved elemental analyses by laser-based plasma mass spectrometry confirmed the preservation of authentic biogenic signals despite the effect of spatially restricted diagenetic overprint. The Sr/Ca record of faunal remains is in line with expected trophic positions, contextualizing fossil hominid diet. *Pongo sp.* displays marked seasonal cycles with \approx 3 month-long strongly elevated Sr/Ca peaks, reflecting contrasting plant food consumption presumably during the monsoon season, while lower Sr/Ca ratios suggest different food availability during the dry season. In contrast, omnivorous *H. erectus* shows low and less accentuated intra-annual Sr/Ca variability compared to *Pongo sp.*, with $\delta^{13}\text{C}$ data of one individual indicating a dietary shift from C4 to a mix of C3 and C4 plants. Our data suggest that *H. erectus* on Java was maximizing the resources available in more open mosaic habitats and was less dependent on variations in seasonal resource availability. While still influenced by seasonal food availability,

we infer that *H. erectus* was affected to a lesser degree than *Pongo* sp., which inhabited monsoonal rain forests on Java. We suggest that *H. erectus* maintained a greater degree of nutritional independence by exploiting the regional diversity of food resources across the seasons.

Jülide Kubat, Alessia Nava, Luca Bondioli, M. Christopher Dean, Clément Zanolli, Nicolas Bourgon, Anne-Marie Bacon, Fabrice Demeter, Beatrice Peripoli, Richard Albert, Tina Lüdecke, Christine Hertler, Patrick Mahoney, Ottmar Kullmer, Friedemann Schrenk & Wolfgang Müller

SKOURTANIOTI 2023

Eirini Skourtanioti, Harald Ringbauer, Choongwon Jeong & Philipp W. Stockhammer et al., *Ancient DNA reveals admixture history and endogamy in the prehistoric Aegean*. [Nature Ecology & Evolution 7 \(2023\), 290–303](#).

[NatEcoEvo07-0290-Supplement.pdf](#)

The Neolithic and Bronze Ages were highly transformative periods for the genetic history of Europe but for the Aegean—a region fundamental to Europe’s prehistory—the biological dimensions of cultural transitions have been elucidated only to a limited extent so far. We have analysed newly generated genome-wide data from 102 ancient individuals from Crete, the Greek mainland and the Aegean Islands, spanning from the Neolithic to the Iron Age. We found that the early farmers from Crete shared the same ancestry as other contemporaneous Neolithic Aegeans. In contrast, the end of the Neolithic period and the following Early Bronze Age were marked by ‘eastern’ gene flow, which was predominantly of Anatolian origin in Crete. Confirming previous findings for additional Central/Eastern European ancestry in the Greek mainland by the Middle Bronze Age, we additionally show that such genetic signatures appeared in Crete gradually from the seventeenth to twelfth centuries bc, a period when the influence of the mainland over the island intensified. Biological and cultural connectedness within the Aegean is also supported by the finding of consanguineous endogamy practiced at high frequencies, unprecedented in the global ancient DNA record. Our results highlight the potential of archaeogenomic approaches in the Aegean for unravelling the interplay of genetic admixture, marital and other cultural practices.

Eirini Skourtanioti, Harald Ringbauer, Guido Alberto Gnecci Ruscone, Raffaella Angelina Bianco, Marta Burri, Căcilia Freund, Anja Furtwängler, Nuno Filipe Gomes Martins, Florian Knolle, Gunnar U. Neumann, Anthi Tiliakou, Anagnostis Agelarakis, Maria Andreadaki-Vlazaki, Philip Betancourt, Birgitta P. Hallager, Olivia A. Jones, Olga Kakavogianni, Athanasia Kanta, Panagiotis Karkanias, Eftymia Kataki, Konstantinos Kissas, Robert Koehl, Lynne Kvapil, Joseph Maran, Photini J.P. McGeorge, Alkestis Papadimitriou, Anastasia Papathanasiou, Lena Papazoglou-Manioudaki, Kostas Paschalidis, Naya Polychronakou-Sgouritsa, Sofia Preve, Eleni-Anna Prevedorou, Gypsy Price, Eftychia Protopapadaki, Tyede Schmidt-Schultz, Michael Schultz, Kim Shelton, Malcolm H. Wiener, Johannes Krause, Choongwon Jeong & Philipp W. Stockhammer

Datierung

PINTO-LLONA 2022

Ana Cristina Pinto-Llona & Aurora Grandal-d’Anglade, *Sorting the riddle of the Neanderthal to anatomically modern human boundary in Sopena (Asturias, Spain), New dates and a preliminar Bayesian*

analysis. [Journal of Archaeological Science: Reports](#) **45** (2022), 103607, 1–10.

Sopena is a limestone shelter in the northern slopes of the Cantabrian range of mountains of northern Spain. A long sequence of in situ nearly undisturbed archaeological strata has been documented there, including seven Gravettian, four Early Upper Palaeolithic and a minimum of four Mousterian levels, and bedrock has not been reached. Dating the last occupations by Neanderthals and their substitution by modern humans in northern Spain is a currently debated issue, made difficult by the scarcity of sites bearing those levels and able to produce reliable dates. Earlier work in Sopena pointed to a disappearance of the Mousterian that was later than proposed by other authors on other sites of what is known as Cantabrian Spain, a mountainous fringe facing the Bay of Biscay. Here we present 11 new dates, corresponding to Gravettian, Early Upper Palaeolithic and Mousterian levels, and some of these new dates are ultrafiltered. It is concluded that although the earliest Sopena Gravettian dates are older than those proposed elsewhere in the region, we do not have still enough information to produce a definite model for the Gravettian of this site. Furthermore, a Bayesian model is produced for the interpretation of the dates obtained for the earliest Upper and the latest Middle Palaeolithic, and it is concluded that the disappearance of the Mousterian in Sopena is indeed a few millennia later than currently proposed by others in the region, while that available dates cannot shed unquestionable light on the existence or not of a hiatus between the dismissal of Neanderthals and the earliest arrival of the Upper Palaeolithic technocultures at the site.

Keywords: Mousterian | Early Upper Palaeolithic | Gravettian | AMS dating | Ultrafiltered dates | Neanderthal extinction | Northern Spain

Grabung

USSISHKIN 2023

David Ussishkin, *The Lion Orthostats from Hazor, An addendum to the paper of Shlomit Bechar*. [Oxford Journal of Archaeology](#) **42** (2023), 17–31.

In a paper recently published in this journal, Shlomit Bechar (2021) analyzed the appearance and use of basalt orthostats in Canaanite and Israelite Hazor. The present paper is an addendum to Bechar's paper, elaborating the subject of the basalt lion orthostats found at Hazor. These lion orthostats formed an inseparable component of the 'orthostats architecture' characteristic of several monumental buildings in the Canaanite city. The paper discusses their original position, date, style, function, and fate following the destruction of the city.

Judentum

MILETTO 1993

Gianfranco Miletto, *Der Mortarafall vor dem Beginn der Einheit Italiens, Neue Urkunden aus dem Vatikanischen Archiv*. [Zeitschrift für Religions- und Geistesgeschichte](#) **45** (1993), 1–17.

Ende August 1852 wurde ein 17 Monate altes jüdisches Kind in Bologna heimlich von einem christlichen Kindermädchen aus religiösen und Gewissensgründen getauft. Trotz jedes gesetzlichen Verbotes hatte das Mädchen das Kind getauft, weil es schwer erkrankt war und sein Tod drohte. Es handelte sich um eine Nottaufe, die einem Sterbenden (in articulo mortis, wie das kanonische Gesetz lautet)

gespendet wurde. Das Kind überlebte aber und wuchs bis kurz vor Vollendung seines 6. Lebensjahres in seiner Familie auf. Das Mädchen, das die Taufe spendete, war tief darüber betrübt daß das getaufte Kind als Jude erzogen wurde und gestand einer Freundin, daß sie einige Jahre zuvor das Kind heimlich getauft hatte. Das Heilige Offizium, das Nachricht von dem Fall erhielt, befahl daraufhin, das Kind von seiner Familie zu entfernen, um so eine christliche Erziehung zu gewährleisten. Die päpstliche Polizei (damals gehörte Bologna noch zum päpstlichen Staat) führte den Befehl aus und in der Nacht zum 25. Juni 1858 wurde das Kind nach Rom in ein kirchliches Institut gebracht. Die Entscheidung des Heiligen Offiziums löste eine heftige internationale Diskussion aus, deren Hintergründe im folgenden analysiert werden sollen.

Auch wenn persönliche Überzeugungen neben politischem Kalkül sicher eine Rolle spielten, kann davon ausgegangen werden, daß viele Mitglieder der laizistischen und liberalen Partei nicht so sehr an Mortara und seiner Familie als vielmehr an der politischen Zweckmäßigkeit interessiert waren. In dem damaligen politischen Spiel wurde das menschliche Drama der Familie Mortara schließlich zu einem vorübergehenden Werkzeug, das verwandt wurde, solange es nutzte. Bei aller menschlichen Tragik, die die Familie Mortara traf, muß der Fall in der historischen Betrachtung wesentlich als politisches Ereignis betrachtet werden. In ihm fokussieren sich die verschiedenen Parteien.

MILETTO 2010

Gianfranco Miletto, *Die Bibel als Deuteschlüssel der Geschichte für Juden und Christen im 16. Jahrhundert*. In: JOHANNES HEIL & DANIEL KROCHMALNIK (Hrsg.), *Jüdische Studien als Disziplin – Die Disziplinen der Jüdischen Studien, Festschrift der Hochschule für Jüdische Studien Heidelberg 1979–2009*. Schriften der Hochschule für Jüdische Studien Heidelberg 13 (Heidelberg 2010), 43–52.

Im 16. und im 17. Jahrhundert vollzogen sich politische, wissenschaftliche und religiöse Veränderungen, in deren Folge die vertraute Weltanschauung grundlegend modifiziert wurde. Es war eine Zeit des Umbruchs und der Krise, die verschiedene Reaktionen auslöste. Einen Versuch, sie zu bewältigen, stellt die Berufung auf das Alte Testament als der höchsten Autorität auf allen Gebieten und zu allen Fragen dar. Dergleichen wurde sowohl von jüdischen als auch von einigen christlichen Intellektuellen unternommen.

Das Alte Testament wurde dabei als unbezweifelbare Quelle der Erkenntnis angeführt. Es diente als feststehender Ausgangspunkt in einer sich verändernden Umwelt, um von ihm aus das Neue in die alten Denkschemata so einzuordnen, wie es im Judentum üblich war.

Neu war auf christlicher Seite in diesem Zusammenhang einer Auffassung der Bibel als Prisma, mit dem die ganze Umwelt wahrgenommen und interpretiert werden kann, die positive Einstellung gegenüber dem Judentum.

Jungpaläolithikum

BARBIERI 2022

Alvise Barbieri, Andreas Maier, Tobias Lauer, Carsten Mischka, Merlin Hattermann & Thorsten Uthmeier, *Post-LGM environments and foragers on the move, New data from the lower Altmühl Valley (Franconian Jura, SE Germany)*. *Journal of Human Evolution* **173** (2022), 103267, 1–19.

After the Last Glacial Maximum, the Swabian and Franconian Jura (in SW and SE Germany, respectively) were repopulated by Magdalenian hunter-gatherers within the same communication network. However, while the Magdalenian settlement of the Swabian Jura dates to 17–14 ka cal BP, permanent Magdalenian occupations in the Franconian Jura date to 15–14 ka cal BP. In comparison with its western counterpart, the Franconian Jura was mostly excavated in the early days of archaeological research. Does this different chronology reflect the different history of research? Why did Magdalenian foragers establish permanent occupation in the Franconian Jura nearly 2 millennia after settling in Swabia, despite the fact these regions are only 150 km apart? To address these questions, we reinvestigated two sites in the Altmühl Valley with micromorphology and luminescence dating, namely Felsenhäusl-Kellerhöhle and Klausennische. Our data show that both sites have intact Pleistocene deposits. Among these, we identified sediments dating between 17 and 15 ka that show only rare lithic artifacts and microfeatures indicative of cold and arid conditions. Our work and published data suggest that the steady settlement of Magdalenian foragers in the Altmühl Valley starting 15 ka cal BP coincides with the end of this harsh period and the onset of cool and wetter environments. Data from the Swabian Jura demonstrated that in the Lone Valley, similar environments and Magdalenian occupations commenced earlier, starting 17 ka cal BP. Therefore, we propose that regional environments acted as a barrier against the dispersal of foragers in the Franconian Jura and determined its later Magdalenian occupation. Our research highlighted that different environments, taphonomic processes, and site uses probably coexisted across the German Jura. Therefore, it remains fundamental to expand the multisite data set proposed in this article to further test hypotheses about human/environment interaction in this region.

Keywords: Altmühl Valley | Forager/environment interactions | Magdalenian recolonization | Geoarchaeology | Luminescence dating

Klima

KAUFMAN 2023

Darrell S. Kaufman & Ellie Broadman, *Revisiting the Holocene global temperature conundrum*. [nature](#) **614** (2023), 425–435.

Recent global temperature reconstructions for the current interglacial period (the Holocene, beginning 11,700 years ago) have generated contrasting trends. This Review examines evidence from indicators and drivers of global change, as inferred from proxy records and simulated by climate models, to evaluate whether anthropogenic global warming was preceded by a long-term warming trend or by global cooling. Multimillennial-scale cooling before industrialization requires extra climate forcing and major climate feedbacks that are not well represented in most climate models at present. Conversely, global warming before industrialization challenges proxy-based reconstructions of past climate. The resolution of this conundrum has implications for contextualizing post-industrial warming and for understanding climate sensitivity to several forcings and their attendant feedbacks, including greenhouse gases. From a large variety of available evidence, we find support for a relatively mild millennial-scale global thermal maximum during the mid-Holocene, but more research is needed to firmly resolve the conundrum and to advance our understanding of slow-moving climate variability.

Kupfer

WANG 2023

Qingzhu Wang, Siran Liu, Jianli Chen, Yanxiang Li, Jianfeng Lang, Xiaodong Guo, Xuexiang Chen & Hui Fang, *The first discovery of Shang period smelting slags with highly radiogenic lead in Yingcheng and implications for the Shang political economy*. [Journal of Archaeological Science](#) **149** (2023), 105704, 1–9.

Locating the source(s) of the raw material used in the production of Shang bronzes with highly radiogenic lead (HRL) has been one of the most important unresolved issues surrounding metallurgy in early China. In this paper, we demonstrate that the Shang period (ca. 1600–1050 BCE) smelting slags from Yingcheng contain HRL, and the copper ores could have been acquired from Lüzdong and Bukou (6 km and 17 km from Yingcheng, respectively). This is the first discovery of HRL from Shang period smelting slags. In addition, the lead isotope signals from Yingcheng match well with those from Middle Shang period bronzes, indicating the possibility that Laiwu could be a source area for metals with HRL at the time. Our data provide a new direction for exploring the sources of ores for Shang bronzes, which can in turn inform us about the socio-political and economic organization of the Shang state.

Keywords: Yingcheng | Shang | Copper smelting | Lead isotopes | Highly radiogenic lead

Metallzeiten

MAARANEN 2022

Nina Maaranen, Sonia Zakrzewski & Holger Schutkowski, *Who Were the Hyksos? Investigating Provenance from Dental Nonmetric Traits*. [Current Anthropology](#) **63** (2022), 660–690.

[CurrAnth63-660-Supplement.pdf](#)

The term “Hyksos” commonly refers to the foreign dynasty that inhabited and held power in Egypt during the Second Intermediate Period, ca. 1650–1550 BCE. The later historian Manetho described the Hyksos as invading foreigners, and this view persisted until the modern period. Recent research has integrated archaeological, artistic, and textual evidence revealing the Hyksos origin and presence in Egypt to be more complex than previously envisioned. To investigate the provenance of the so-called Hyksos, human remains from Tell el-Dab’a, the ancient Hyksos capital of Avaris, were analyzed using Arizona State University Dental Anthropology System dental nonmetric traits. An intra- and intersite biodistance analysis of individuals from Tell el-Dab’a (n = 92) and other contemporary sites in the Near East (n = 285) was conducted. Two statistical tests, mean measure of divergence and Gower distance analysis, were selected. The archaeological and biological evidence suggests continued occupation spanning from the end of the Middle Kingdom through the Hyksos dynasty, offering further evidence contra Manetho, who described a sudden invasion. The intersite analysis supports the archaeological finds from Tell el-Dab’a, suggesting that not only commodities but also people made their way to Tell el-Dab’a.

Methoden

MORENO-IBÁÑEZ 2023

Miguel Ángel Moreno-Ibáñez, Linda Fibiger & Palmira Saladié, *Unraveling Neolithic sharp-blunt cranial trauma, Experimental approach through synthetic analogues*. [Journal of Archaeological Science](#) **151** (2023), 105739, 1–10.

JAS151-a105739-Supplement1.pdf, JAS151-a105739-Supplement2.mp4

Interpersonal violence in the past is studied from different perspectives, one of which is experimentation. Using analogues to the human skeleton it is possible to replicate fractures found in the archaeological record and understand how they were produced. The main objective of this paper is to describe and differentiate sharp-blunt force cranial trauma caused by stone axes and adzes, to test previous interpretations of an archaeological case. This will create a comparative frame of reference for future studies. In the present experiment, seven Synbone polyurethane spheres were used as analogues to the human skull. These were covered with rubber skin, filled with ballistic gelatin, and fixed in a way that allowed some mobility when struck. This system creates a skinskull-brain-neck model. A replica of a stone axe and adze were used as weapon-tools, simulating a face-to-face attack. The results of the experiment showed that there are a series of characteristics that differentiate the fracture pattern associated with each one, confirming previous bioarchaeological interpretations. The differentiation between both weapon-tools through the resulting cranial trauma allows conclusions about the direction of the blow and the position of the attacker with respect to the victim. This provides a better reconstruction of the most likely scenario surrounding the confrontation and the possible cause of death of the individuals, which is especially important during the Neolithic period, when this type of cranial trauma is very common.

Keywords: Synbone sphere | Stone axe | Stone adze | Weapon-tool | Fracture pattern | Skull

PAINE 2023

Oliver C. C. Paine & David J. Daegling, *The game of models, Dietary reconstruction in human evolution*. [Journal of Human Evolution](#) **174** (2023), 103295, 1–13.

Despite substantial additions to the paleontological record and unanticipated improvements in analytical techniques since the *Journal of Human Evolution* was first published, consensus on the diet of early hominin species remains elusive. For instance, the notable advances in the analyses of hominin dental microwear and stable isotopes have provided a plethora of data that have in some instances clouded what was once ostensibly a clear picture of dietary differentiation between and within hominin taxa. In the present study, we explore the reasons why the retrodiction of diet in human evolution has proven vexing over the last half century from the perspective of both ecological and functional-mechanical models. Such models continue to be indispensable for paleobiological reconstructions, but they often contain rigid or unstated assumptions about how primary paleontological data, such as fossils and their geological and taphonomic contexts, allow unambiguous insight into the evolutionary processes that produced them. In theoretical discussions of paleobiology, it has long been recognized that a mapping function of morphology to adaptation is not one-to-one, in the sense that a particular trait cannot necessarily be attributed to a specific selective pressure and/or behavior. This article explores how the intrinsic variability within biological systems has often been underappreciated in paleoanthropological research.

For instance, to claim that derived anatomical traits represent adaptations related to stereotypical behaviors largely ignores the importance of biological roles (i.e., how anatomical traits function in the environment), a concept that depends on behavioral flexibility for its potency. Similarly, in the paleoecological context, the underrepresentation of variability within the ‘edible landscapes’ our hominin ancestors occupied has inhibited an adequate appreciation of early hominin dietary flexibility. Incorporating the reality of variation at organismal and ecological scales makes the practice of paleobiological reconstruction more challenging, but in return, allows for a better appreciation of the evolutionary possibilities that were open to early hominins.

Keywords: Ecological models | Morphological models | Hominin adaptations | Biological roles | Dietary reconstruction | Paranthropus

SCHROEDER 2023

Lauren Schroeder & Rebecca Rogers Ackermann, *Moving beyond the adaptationist paradigm for human evolution, and why it matters*. [Journal of Human Evolution 174 \(2023\), 103296, 1–21.](#)

The Journal of Human Evolution (JHE) was founded 50 years ago when much of the foundation for how we think about human evolution was in place or being put in place, providing the main framework for how we consider our origins today. Here, we will explore historical developments, including early JHE outputs, as they relate to our understanding of the relationship between phenotypic variation and evolutionary process, and use that as a springboard for considering our current understanding of these links as applied to human evolution. We will focus specifically on how the study of variation itself has shifted us away from taxonomic and adaptationist perspectives toward a richer understanding of the processes shaping human evolutionary history, using literature searches and specific test cases to highlight this. We argue that natural selection, gene exchange, genetic drift, and mutation should not be considered individually when considering the production of hominin diversity. In this context, we offer suggestions for future research directions and reflect on this more complex understanding of human evolution and its broader relevance to society. Finally, we end by considering authorship demographics and practices in the last 50 years within JHE and how a shift in these demographics has the potential to reshape the science of human evolution going forward.

Keywords: Genetic drift | Hybridization | Neutral evolution | Natural selection | Phenotypic variation | Evolutionary process

TEAFORD 2023

Mark F. Teaford, Peter S. Ungar & Frederick E. Grine, *Changing perspectives on early hominin diets*. [PNAS 120 \(2023\), e2201421120.](#)

It is axiomatic that knowledge of the diets of extinct hominin species is central to any understanding of their ecology and our evolution. The importance of diet in the paleontological realm has led to the employment of multiple approaches in its elucidation. Some of these have deep historical roots, while others are dependent upon more recent technical and methodological advances. Historically, studies of tooth size, shape, and structure have been the gold standard for reconstructing diet. They focus on species-level adaptations, and as such, they can set theoretical brackets for dietary capabilities within the context of specific evolutionary moments. Other methods (e.g., analyses of dental calculus, biogeochemistry, and dental microwear) have only been developed within the past few decades, but are now beginning to yield evidence of the actual foods consumed by individuals represented by fossil remains. Here we begin by looking at these more “direct”

forms of evidence of diet before showing that, when used in conjunction with other techniques, these “multi-proxy” approaches can raise questions about traditional interpretations of early hominin diets and change the nature of paleobiological interpretations.

Keywords: hominin | dental microwear | stable isotope | phytoliths | dental calculus