

## Literatur

### Aktuell

VELLEKOOOP 2014

Johan Vellekoop, Appy Sluijs, Jan Smit, Stefan Schouten, Johan W. H. Weijers, Jaap S. Sinninghe Damsté & Henk Brinkhuis, *Rapid short-term cooling following the Chicxulub impact at the Cretaceous–Paleogene boundary*. [PNAS \*\*111\*\* \(2014\), 7537–7541](#).

The mass extinction at the Cretaceous–Paleogene boundary,  $\approx 66$  Ma, is thought to be caused by the impact of an asteroid at Chicxulub, present-day Mexico. Although the precise mechanisms that led to this mass extinction remain enigmatic, most postulated scenarios involve a short-lived global cooling, a so-called “impact winter” phase. Here we document a major decline in sea surface temperature during the first months to decades following the impact event, using TEX86 paleothermometry of sediments from the Brazos River section, Texas. We interpret this cold spell to reflect, to our knowledge, the first direct evidence for the effects of the formation of dust and aerosols by the impact and their injection in the stratosphere, blocking incoming solar radiation. This impact winter was likely a major driver of mass extinction because of the resulting global decimation of marine and continental photosynthesis.

K-Pg boundary | bolide impact | Climate change | organic paleothermometry

### Anthropologie

GOKHMAN 2014

David Gokhman et al., *Reconstructing the DNA Methylation Maps of the Neandertal and the Denisovan*. [science \*\*344\*\* \(2014\), 523–527](#).

s344-0523-Supplement1.pdf, s344-0523-Supplement2.xlsx, s344-0523-Supplement3.xlsx

David Gokhman, Eitan Lavi, Kay Prüfer, Mario F. Fraga, José A. Riancho, Janet Kelso, Svante Pääbo, Eran Meshorer & Liran Carmel

Ancient DNA sequencing has recently provided high-coverage archaic human genomes. However, the evolution of epigenetic regulation along the human lineage remains largely unexplored. We reconstructed the full DNA methylation maps of the Neandertal and the Denisovan by harnessing the natural degradation processes of methylated and unmethylated cytosines. Comparing these ancient methylation maps to those of present-day humans, we identified  $\approx 2000$  differentially methylated regions (DMRs). Particularly, we found substantial methylation changes in the HOXD cluster that may explain anatomical differences between archaic and present-day humans. Additionally, we found that DMRs are significantly more likely to be associated with diseases. This study provides insight into the epigenetic landscape of our closest evolutionary relatives and opens a window to explore the epigenomes of extinct species.

HENRICH 2014

Florian Hanig & Mark Peterson, *Wieso wir so verschieden ticken*. [Geo \*\*2014\*\*, v, 40–44](#).

Der Mensch ist ein rationaler Egoist. Deshalb kooperiert er. Von dieser Annahme gehen die meisten Ökonomen aus. Und eine Vielzahl von Studien scheint ihnen recht zu geben. Doch als der Psychologe Joseph Henrich einmal recherchierte, wer da eigentlich immer zum Wesen des Homo sapiens befragt wird, stellte er fest: Es sind fast ausschließlich US-Studenten, überhaupt nicht repräsentativ für die globale Menschheit. Im Rest der Welt, sagt Henrich, könne man völlig andere Entdeckungen machen.

#### SCHAEFER 2013

Jürgen Schaefer & Matt Mahurin, *Stark sein*. *Geo* **2013**, ix, 86–98.

Ein simpler Test aus den 1960er Jahren deutete es schon an: Die Fähigkeit, sich zu beherrschen, ist der vielleicht wichtigste Faktor für Erfolg im Leben. Seither versuchen Hirnforscher und Psychologen zu entschlüsseln, was “Willenskraft” eigentlich ist

## Bibel

#### BIRAN 1995

Avraham Biran & Joseph Naveh, *The Tel Dan Inscription: A New Fragment*. *Israel Exploration Journal* **45** (1995), 1–18.

#### BRIDGE 2014

Edward J. Bridge, *Who killed the Kings? An Ancient Whodunnit, 2 Kings vs. the Tel-Dan Inscription*. *Ancient History: Resources for Teachers* **40** (2014), ii, 139–150.

#### EMERTON 1997

J. A. Emerton, *Further Comments on the Use of Tenses in the Aramaic Inscription from Tel Dan*. *Vetus Testamentum* **47** (1997), 429–440.

#### EMERTON 2000

J. A. Emerton, *Two Issues in the Interpretation of the Tel Dan Inscription*. *Vetus Testamentum* **50** (2000), 27–37.

In line 3 of the Tel Dan inscription, *wyškb* refers to lying down either to die or in illness, and it is possible to understand *yhk* in more than one way, and not necessarily as a preterite; the possibilities include understanding it to be in a circumstantial clause. The use of *w* + the imperfect as a narrative tense in past time resembles the *waw* consecutive construction in Hebrew as far as the consonantal text is concerned. Since the inscription does not use vowel letters (except at the ends of some words), it is impossible to be sure either that the vocalization was identical with that of the Hebrew or that it was not. Even if *yhk* is a preterite, its proximity to *wyškb* is not an argument against understanding the latter as a *waw* consecutive.

#### IRVINE 2005

Stuart A. Irvine, *The Last Battle of Hadadezer*. *Journal of Biblical Literature* **124** (2005), 341–347.

To conclude: The first section of the Tel Dan stele helps to advance two rhetorical strategies that are fairly common in royal inscriptions. On the one hand, the text strives to glorify Hazael’s reign by contrasting it with the dismal situation of

his predecessor(s). The historical datum of Shalmaneser's assault against Hadadzer at Abel might be adduced in line 2 for this purpose. On the other hand, the stele is concerned to provide a pretext for Hazael's own attack against Jehoram of Israel and Ahaziah of Judah. The vague claim in lines 3b-4a about a previous Israelite invasion has a twofold effect: it continues the derogation of Hazael's predecessor(s), and it justifies Hazael's own aggression by presenting it as "payback" and thus as an essentially defensive measure.

#### KITCHEN 1997

K. A. Kitchen, *A Possible Mention of David in the Late Tenth Century Bce, and Deity Dod as Dead as the Dodo?* [Journal for the Study of the Old Testament](#) **22** (1997), 29–44.

Following the recent controversies over the Tel Dan Stela, this paper presents a minimal interpretation of the main part of its text with resulting implications, and likewise of relevant passages on the Moabite Stone. A much earlier attestation of the name of David may very likely be found in a place name in the topographical list of Shoshenq I of Egypt, c. 925 BCE, carved only half a century after David's death. The supposed deity Dod appears to be a wholly specious modern invention.

#### LEMAIRE 1994

André Lemaire, *"House of David" Restored in Moabite Inscription, A new restoration of a famous inscription reveals another mention of the "House of David" in the ninth century B.C.E.* [Biblical Archaeology Review](#) **20** (1994), iii, 30–37.

My own examination of the stone and the squeeze, which is now being restored and cleaned of accumulated dust, confirms that t follows the b. I would now, for the first time, reconstruct the missing letter as a d. The result: bt[d]wd, the "House of [D]avid!"

#### LEMAIRE 1998

André Lemaire, *The Tel Dan Stela as a Piece of Royal Historiography.* [Journal for the Study of the Old Testament](#) **23** (1998), 3–14.

The fragmentary stela found in Tel Dan, erected by Hazael, king of Damascus, is to be understood in the context of Semitic royal historiography of the ninth-eighth centuries BCE. Its text makes sense when confronted with the data and formulae of contemporary Akkadian, Aramaic, Phoenician and Moabite inscriptions, as well as with the Hebrew books of Kings.

#### MURAOKA 1995

Takamitsu Muraoka, *Linguistic Notes on the Aramaic Inscription from Tel Dan.* [Israel Exploration Journal](#) **45** (1995), 19–21.

#### RENDSBURG 1995

Gary A. Rendsburg, *On the Writing ביהרור in the Aramaic Inscription from Tel Dan.* [Israel Exploration Journal](#) **45** (1995), 22–25.

The totality of the evidence demonstrates that X-ביה was a strong characteristic of Aramaic phraseology. This fact explains why an Aramean scribe would use the expression ביהרור for Judah, writing it as one lexeme not requiring a word divider.

SCHNIEDEWIND 1996

William M. Schniedewind, *Tel Dan Stela: New Light on Aramaic and Jehu's Revolt*. [Bulletin of the American Schools of Oriental Research](#) **302** (1996), 75–90.

Two new fragments of the Tel Dan stela were found in 1994. These new fragments provide a more certain historical context for the mention of the “house of David” in the first fragment. The reconstructed fragments refer to the death of both Joram, king of Israel, and Ahaziah, king of the “house of David.” These new data indicate that Hazael was the author of the inscription and suggest that Jehu’s revolt was undertaken in collusion with Hazael. The language of the stela also fills a gap in the dialect continuum that stretched from northern Syria to Canaan.

SURIANO 2007

Matthew J. Suriano, *The Apology of Hazael, A Literary and Historical Analysis of the Tel Dan Inscription*. [Journal of Near Eastern Studies](#) **66** (2007), 163–176.

The translation found in the editio princeps is reasonable and based upon a minimal amount of reconstruction, which, when offered, is supported by readings found in cognate literatures. This literary dimension in favor of the editio princeps works against the various earlier attempts to rearrange the fragments, as these rearrangements produce new readings involving extensive reconstructions that only introduce other problems.

## Biologie

GOLDSTEIN 2014

Pavel Goldstein & Micah Leshem, *Dietary sodium, added salt, and serum sodium associations with growth and depression in the U.S. general population*. [Appetite](#) **79** (2014), 83–90.

It is not known why salt is so attractive to humans. Here, guided by hypotheses suggesting that the attraction of salt is conditioned by postingestive benefits, we sought to establish whether there are such benefits in a population by analyzing the National Health and Nutrition Examination Survey (NHANES) 2007–2008 database ( $n = \approx 10,000$ ). We focus on two potential benefits supported by the literature, growth and moderation of depression, and examine their relationship to sodium, dietary, added at table, and serum. We find that during growth (<18 years), there is a specific increase in adjusted dietary sodium intake, independent of caloric or other electrolyte intakes. We find that adding salt and depression are related. In contrast, and in women only, dietary sodium and depression are inversely related. The relationships are correlational, but we speculate that this constellation may reflect self-medication for depression by adding salt, and that men may be protected by their higher dietary sodium intake. Additional findings are that women add more salt than men below age  $\approx 30$ , after which men add more, and below 40 years of age, serum sodium is lower in women than in men. It remains possible that small but beneficial effects of sodium could condition salt preference and thus contribute to population-wide sodium intake.

Keywords: Depression | Diet | Growth | Salt appetite | Sex differences | Sodium

KOHLHÖFER 2013

Philipp Kohlhöfer & Claudius Schulze, *Killer als Retter?* [Geo](#) **2013**, ix, 122–136.

Antibiotika, Allzweckwaffen der Medizin, verlieren an Schlagkraft. Alternativen? Dringend gesucht. In Georgien gehen Ärzte einen ungewöhnlichen Weg: Sie behandeln Kranke mit Viren, die krankmachende Bakterien befallen. Eine Lösung auch für uns?

#### LESHEM 2011

M. Leshem, *Low dietary sodium is anxiogenic in rats*. *Physiology & Behavior* **103** (2011), 453–458.

It is commonly believed that salt intake is required solely to maintain mineralofluid balance, and that its excessive intake is pathophysiological. Yet, apart from the increased intake of sodium-rich foods caused by perinatal sodium loss, the determinants of human salt intake, its excess and persistence, are unknown. One suggestion is that high salt intake may be adaptive in coping with daily adversity. Therefore, we investigated the effect of low dietary sodium in models of depression and anxiety, on chronic mild stress (CMS), and on acute unpredictable stressors. We find that low dietary sodium exacerbates anxiety in the elevated maze and open field. However, it does not exacerbate modeled depression or anxiety in chronically and acutely stressed rats. We find that CMS-induced anhedonia reduces 1.5% NaCl as well as 5% sucrose intake. The reduction in NaCl intake is specific to depression insofar as it did not occur after repeated acute stressors. The reduction occurred despite sodium restriction. Thus while sodium restriction is anxiogenic, it does not exacerbate preexisting depression or anxiety in clearly demarcated behavioral models. These psychological dimensions of salt intake are only now being addressed experimentally, and the ramifications for its control, and for individuals vulnerable to depression or stress, require clarification.

Keywords: Chronic mild stress | Rat | Salt appetite | Sodium restriction | Stress

#### SALLON 2008

Sarah Sallon, Elaine Solowey, Yuval Cohen, Raia Korchinsky, Markus Egli, Ivan Woodhatch, Orit Simchoni & Mordechai Kislev, *Germination, Genetics, and Growth of an Ancient Date Seed*. *science* **322** (2008), 1464.

s322-1464-Supplement.pdf, s322-1464-Comment.pdf

In our Brevia, the claim for germinating a 2000-year-old date seed was based on direct radiocarbon dating of seed coat fragments from the seed itself and indirectly on two ungerminated date seeds from the same archaeological site and locus. Therefore, although we have not claimed that this is the oldest viable seed, it is the oldest seed in which germination has been documented based on validated direct radiocarbon evidence.

#### VERD 2010

Sergio Verd, Juan Nadal-Amat, Ignasi Gich & Micah Leshem, *Salt preference of nursing mothers is associated with earlier cessation of exclusive breastfeeding*. *Appetite* **54** (2010), 233–236.

Successful breastfeeding is predicated on its initial success. Salt appetite during lactation may be relevant to breastfeeding success because sodium is essential for development of foetus and neonate. Here we examined whether maternal salt preference might facilitate breastfeeding. Nursing mothers ( $n = 327$ ) were categorized as high, medium or low salt preferring, and the relationship to persistence of exclusive breastfeeding during the first 25 days postnatal was evaluated. Contrary to expectation, we find that mothers with low salt preference persisted in breastfeeding beyond day 7 postnatal in comparison to mothers with high salt preference,

and mothers with high salt preference had the shortest exclusive breastfeeding duration up to postnatal day 25. Awareness of this among health workers and nursing mothers could contribute to successful breastfeeding.

Keywords: Breastfeeding | Diet | Sodium-restricted | Neonate | Metabolic syndrome X | Folklore

## Grabung

ADAMS 2014

Matthew J. Adams, Israel Finkelstein & David Ussishkin, *The Great Temple of Early Bronze I Megiddo*. [American Journal of Archaeology](#) **118** (2014), 285–305.

Tel Megiddo in the Jezreel Valley of Israel has been the most cited type-site of the Early Bronze Age Levant since the excavations of the University of Chicago in the 1920s and 1930s. Through the efforts of the Tel Aviv University Megiddo Expedition, the stratigraphic sequence of the Early Bronze Age has been significantly refined, and a new monumental temple dating to Early Bronze Age IB (ca. 3000 B.C.E.) has been discovered. This Great Temple has proven to be the most monumental structure of the period in the Levant. This discovery provides new evidence for the rise of social and political complexity in the region.

ADAMS 2014

Matthew J. Adams, Jonathan David, Robert S. Homsher & Margaret E. Cohen, *The rise of a complex society, New Evidence from Tel Megiddo East in the late fourth millennium*. [Near Eastern Archaeology](#) **77** (2014), 32–43.

Tel Megiddo lies in the heart of the Jezreel Valley, Israel, a region vivified by its role as a hub of international roads. The east-west valley provides one of the easiest transits from the coastal areas to the interior mountains and valleys, and, consequently, links the international roads between Egypt and Syria, and beyond. Due to this geographical situation and to the fertile and well-watered plain itself, the valley has attracted human occupation since the Paleolithic period, and the region has enjoyed great prosperity during most subsequent periods.

WIENER 2014

Noah Wiener, *Early Bronze Age Megiddo's Great Temple and the Birth of Urban Culture in the Levant*. [Bible History Daily](#) **2014**, May 21.

## Judentum

HENK 2013

Malte Henk & Anastasia Taylor-Lind, *Was bleibt*. [Geo](#) **2013**, ix, 46–60.

Als Kinder haben sie den Holocaust überlebt. Als Erwachsene in Israel meist geschwiegen. Nun erzählen sie von sich – mithilfe einer Frau, die Erinnerungsbücher mit ihnen verfasst: Miriam Dubi-Gazan

MAIER 1978

Johann Maier, *Die Tempelrolle vom Toten Meer*. Uni-Taschenbücher 829 (München 1978).

## Jungpaläolithikum

SHIPMAN 2014

Pat Shipman, *How do you kill 86 mammoths? Taphonomic investigations of mammoth megasites*. *Quaternary International* (2014), preprint, 1–9. DOI:10.1016/j.quaint.2014.04.048.

A series of Eurasian archaeological sites formed between about 40 – 15 ka feature unusually large numbers of mammoth remains with abundant artefacts and, often, mammoth bone dwellings. None of these mammoth megasites is dated prior to the appearance of modern humans in Eurasia. This unusual type of site begs for taphonomic explanation. The large number of individual mammoths and the scarcity of carnivore toothmarks and gnawing suggest a new ability to retain kill mammoths and control of carcasses. Age profiles of such mammoth-dominated sites with a large minimum number of individuals differ statistically at the  $p < 0.01$  level from age profiles of *Loxodonta africana* populations that died of either attritional or catastrophic causes. However, age profiles from some mammoth sites exhibit a chain of linked resemblances with each other through time and space, suggesting the transmission of behavioral or technological innovation. I hypothesize that this innovation may have been facilitated by an early attempted domestication of dogs, as indicated by a group of genetically and morphologically distinct large canids which first appear in archaeological sites at about 32 ka B.P. (uncal). Testable predictions of this hypothesis are generated based on ethnographic data.

## Klima

MARIN-SPIOTTA 2014

Erika Marin-Spiotta et al., *Long-term stabilization of deep soil carbon by fire and burial during early Holocene climate change*. *Nature Geoscience* 7 (2014), 428–432.

NatGeo07-428-Supplement.pdf

Erika Marin-Spiotta, Nina T. Chaopricha, Alain F. Plante, Aaron F. Diefendorf, Carsten W. Mueller, A. Stuart Grandy & Joseph A. Mason

Buried soils contain large reservoirs of organic carbon at depths that are not typically included in regional and global soil carbon inventories<sup>1</sup>. One such palaeosol, the Brady soil of southwestern Nebraska, USA, is buried under six metres of loess. The Brady soil developed at the land surface on the late-Pleistocene-aged Peoria Loess in a period of warmth and wetness during which dunefields and dust sources across the region were stabilized<sup>2,3</sup>. Abrupt climate change in the early Holocene led to increased loess deposition that buried the soil<sup>4</sup>. Here, we used spectroscopic and isotopic analyses to determine the composition and stability of organic carbon in the Brady soil. We identify high levels of black carbon, indicating extensive biomass burning. In addition, we found intact vascular plant lipids in soil organic matter with radiocarbon ages ranging from 10,500 to 12,400 cal yr BP, indicating decomposition was slowed by rapid burial at the start of the Holocene. We conclude that landscape disturbance caused by abrupt climate change, fire and the loss of vegetative cover contributed to deep carbon sequestration as the soil was quickly buried under accumulating loess. We suggest that terrestrial soil carbon storage in arid and semi-arid environments could undergo landscape-scale shifts in response to rising temperatures, increased fire activity or drought.

MELTZER 2014

David J. Meltzer, Vance T. Holliday, Michael D. Cannon & D. Shane Miller, *Chronological evidence fails to support claim of an isochronous widespread layer of cosmic impact indicators dated to 12,800 years ago*. [PNAS 111 \(2014\), E2162–E2171](#).

According to the Younger Dryas Impact Hypothesis (YDIH),  $\approx 12,800$  calendar years before present, North America experienced an extraterrestrial impact that triggered the Younger Dryas and devastated human populations and biotic communities on this continent and elsewhere. This supposed event is reportedly marked by multiple impact indicators, but critics have challenged this evidence, and considerable controversy now surrounds the YDIH. Proponents of the YDIH state that a key test of the hypothesis is whether those indicators are isochronous and securely dated to the Younger Dryas onset. They are not. We have examined the age basis of the supposed Younger Dryas boundary layer at the 29 sites and regions in North and South America, Europe, and the Middle East in which proponents report its occurrence. Several of the sites lack any age control, others have radiometric ages that are chronologically irrelevant, nearly a dozen have ages inferred by statistically and chronologically flawed age–depth interpolations, and in several the ages directly on the supposed impact layer are older or younger than  $\approx 12,800$  calendar years ago. Only 3 of the 29 sites fall within the temporal window of the YD onset as defined by YDIH proponents. The YDIH fails the critical chronological test of an isochronous event at the YD onset, which, coupled with the many published concerns about the extraterrestrial origin of the purported impact markers, renders the YDIH unsupported. There is no reason or compelling evidence to accept the claim that a cosmic impact occurred  $\approx 12,800$  y ago and caused the Younger Dryas.

Clovis | black mat | chronology | Pleistocene extinctions

## Klima Isotope

ARAUS 2014

José L. Araus, Juan P. Ferrio, Jordi Voltas, Mònica Aguilera & Ramón Buxo, *Agronomic conditions and crop evolution in ancient Near East agriculture*. [Nature Communications 5 \(2014\), 3953](#). [DOI:10.1038/ncomms4953](#).

[NatComm05-3953-Supplement1.pdf](#), [NatComm05-3953-Supplement2.xls](#), [NatComm05-3953-Supplement3.xls](#)

The appearance of agriculture in the Fertile Crescent propelled the development of Western civilization. Here we investigate the evolution of agronomic conditions in this region by reconstructing cereal kernel weight and using stable carbon and nitrogen isotope signatures of kernels and charcoal from a set of 11 Upper Mesopotamia archaeological sites, with chronologies spanning from the onset of agriculture to the turn of the era. We show that water availability for crops, inferred from carbon isotope discrimination ( $\delta^{13}\text{C}$ ), was two- to fourfold higher in the past than at present, with a maximum between 10,000 and 8,000 cal BP. Nitrogen isotope composition ( $\delta^{15}\text{N}$ ) decreased over time, which suggests cultivation occurring under gradually less-fertile soil conditions. Domesticated cereals showed a progressive increase in kernel weight over several millennia following domestication. Our results provide a first comprehensive view of agricultural evolution in the Near East inferred directly from archaeobotanical remains.



## Kultur

BLOOM 2013

Paul Bloom, *Warum wir uns auf unser Mitgefühl nicht verlassen dürfen*.  
[Geo 2013](#), ix, 62–63.

Das ist der Widerspruch: Empathie fokussiert unsere Aufmerksamkeit wie ein Laserpointer auf das Schicksal einzelner Opfer. Aber für das Wohl unseres Planeten müssen wir uns um das Wohl von Menschen sorgen, denen noch nichts zugestoßen ist, ja, die vielleicht noch gar nicht geboren sind. Sie besitzen weder Namen noch Gesichter noch Geschichten, die uns berühren. Ihre Zukunft hängt von unserem Kalkül ab, unserem rationalen Abwägen.