

## References

### Aktuell

#### CALISI 2018

Rebecca M. Calisi, *Got milk, must conference*. [science 359 \(2018\), 838](#).

I sat huddled over my laptop in a cramped stall of a smelly public restroom, making last-minute changes to my upcoming talk. The whoosh-whoosh of the battery-powered breast pump attached to my hands-free nursing bra accompanied my typing. A toilet flushed in the next stall. It had been 15 minutes and I had barely pumped 2 ounces of milk, less than a third of what I had hoped. I had 10 more minutes before I would have to run to make the start of the conference session in which I was due to speak. To get my milk flowing, I thought of my 5-week-old baby at home and tried to relax, willing the milk to come out now instead of in the middle of my talk.

#### GLAUSIUSZ 2018

Josie Glausiusz, *A big-screen requiem for Ötzi the Iceman*. [nature 555 \(2018\), 310](#).

Josie Glausiusz is gripped by a portrayal of the Neolithic man whose mummified body was found in the Alps.

Randau's feat is to put flesh and blood and feelings into this ancient, frozen human, re creating a society and even a language that are long gone. The film sticks closely to archaeological details. The film's minimal dialogue is conducted in reconstructed Rhaetic, a language spoken in the eastern Alps in pre-Roman and Roman times. But it's the action — and Vogel's wonderfully expressive face — that moves the story along.

#### JOHNS 2018

David Merritt Johns & Gerald M. Oppenheimer, *Was there ever really a "sugar conspiracy"?* [science 359 \(2018\), 747–750](#).

Twists and turns in science and policy are not necessarily products of malevolence.

Moreover, we think it is an error to demonize, almost as a reflex, scientists and their research when there is evidence of private funding. Such a response can create an intellectual template that short-circuits a fuller investigation of alternative explanations.

#### MARCUS 2018

Adam Marcus & Ivan Oransky, *The Data Thugs*. [science 359 \(2018\), 730–732](#).

Nick Brown and James Heathers have had striking success in catalyzing retractions by publicly calling out questionable data.

## Bibel

GUIL 2018

Shlomo Guil, *A New Perspective on the Various Components of the Siloam Water System in Jerusalem*. *Zeitschrift des Deutschen Palästina-Vereins* **133** (2018), 145–175.

The dating of the Siloam Tunnel hinges on two basic aspects: the palaeography and epigraphy of the inscription within it, and the level of technology revealed in its construction.

I have attempted to demonstrate that the Siloam Inscription was not a late 8th cent. B.C.E. royal inscription, but rather a product of archaism, engraved at the time of the hewing of the Siloam Tunnel in the Hasmonean period. In addition, the evidence presented in this paper reveals that technologically, the Siloam Tunnel could not have been constructed in the 8th cent. B.C.E. by Hezekiah in preparation for an impending siege.

In summary, based on the above evidence, I propose that Tunnel VIII was hewn by the Hasmonean authorities to transport pure spring water, according to halachic law, to a large pool located in the area known as Birket el-Hamra, which functioned as a large miqwe for the worshippers visiting the Temple Mount.

This article presents a new perspective on both the relative and absolute dating of the various components of the Siloam Water System. The Siloam Tunnel, part of the Siloam Water System, known as Hezekiah's Tunnel since the 19th cent. C.E., has given rise to a number of unsolved enigmas, for example its scope and the level of technical and engineering capability, as well as the cryptic Siloam Inscription found within the tunnel. The Siloam Tunnel has been generally attributed to Hezekiah, the Judean king who faced a siege from Sennacherib in 701 B.C.E., and it is commonly accepted that Hezekiah built it as a defensive measure in preparation for the impending siege. Recently, REICH and SHUKRON have proposed that the Siloam Tunnel should be dated to the early part of the 8th cent. B.C.E., thus implying that the 'Hezekiah Tunnel' actually predated Hezekiah by approximately one hundred years. However, they do not consider its *raison d'être* or whether the technological knowhow required for such a complicated project was available during that period. While this paper agrees with the proposal that the Siloam Tunnel cannot be attributed to Hezekiah, I rather date it several hundred years later, based on engineering, archaeological, historic, palaeographic and epigraphic evidence. Nevertheless, it is assumed that Hezekiah did initiate a major water-provision project in anticipation of the siege; hence an identification of his emergency preparatory activity for the siege is hereby proposed.

Keywords: Siloam | Siloam Tunnel | Siloam Inscription | City of David | WARREN | Hezekiah | Jerusalem | Palaeo-Hebrew.

WEIPPERT 1997

Manfred Weippert, *Jahwe und die anderen Götter, Studien zur Religionsgeschichte des antiken Israel in ihrem syrisch-palästinischen Kontext*. *Forschungen zum Alten Testament* 18 (Tübingen 1997).

## Datierung

SCHNEIDER 2010

Thomas Schneider, *Contributions to the Chronology of the New Kingdom and the Third Intermediate Period*. *Ägypten und Levante* **20** (2010), 373–403.

The internal chronology of the New Kingdom appears to be definitively established with a minor margin of  $\pm 15$  years. A majority agreement seems to be reached about the basic chronology between 880 and 690 BCE, despite ongoing debate on several issues. The main uncertainties pertain to the time around 900 BCE, as discussed above in 1.2. Here, a chronological leeway of  $\pm 25$  years cannot be eliminated at present.

## Energie

CARTLIDGE 2018

Edwin Cartlidge, *Isotope cloud linked to failed neutrino source*. [science 359 \(2018\), 729](#).

Mishandling of spent fuel in Russia may have caused radioactivity to spread across Europe.

## Isotope

PRICE 2018

Samantha D. R. Price, Anne Keenleyside & Henry P. Schwarcz, *Testing the validity of stable isotope analyses of dental calculus as a proxy in paleodietary studies*. [Journal of Archaeological Science 91 \(2018\), 92–103](#).

Stable isotopic analyses (d13C, d15N) of dental calculus have been suggested as a proxy for the study of diet of ancient populations but questions about their validity have been raised. Here we test this question, introducing significant improvements in the analysis of d13C and comparing our results for d13C and d15N of calculus with corresponding analyses of associated well-preserved bone which are widely believed to provide reliable paleodiet values. The content of organic material in calculus is decreased by  $\approx 75\%$  compared with modern calculus, resulting in diagenetic changes to d13C and d15N of organic matter. Neither d13C nor d15N analyses of the organic component of calculus provide accurate estimates of paleodiet. Although d15N values of dental calculus are correlated with d15N values of bone collagen from the same individual, it is clear that they have been greatly affected by diagenesis, as shown by a correlation between C/N ratio and d15N. The inorganic (mineral-bound) carbon component of calculus, analyzed separately from the organic component, gave d13C values slightly offset from d13C values of CO<sub>3</sub> in bone mineral. Thus it alone appears to have potential as a dietary proxy.

**Keywords:** Dental calculus | Stable isotopes | Carbon | Nitrogen | Paleodiet | Apatite | Plaque | Diagenesis

## Mathematik

KENNEDY 2018

Patrick Kennedy, Andrew D. Higginson, Andrew N. Radford & Seirian Sumner, *Altruism in a volatile world*. [nature 555 \(2018\), 359–362](#).

n555-0359-Supplement1.pdf, n555-0359-Supplement2.pdf, n555-0359-Supplement3.txt, n555-0359-Supplement4.txt

The evolution of altruism—costly self-sacrifice in the service of others—has puzzled biologists<sup>1</sup> since *The Origin of Species*. For half a century, attempts to understand altruism have developed around the concept that altruists may help relatives to have extra offspring in order to spread shared genes<sup>2</sup>. This theory—known as inclusive fitness—is founded on a simple inequality termed Hamilton’s rule<sup>2</sup>. However, explanations of altruism have typically not considered the stochasticity of natural environments, which will not necessarily favour genotypes that produce the greatest average reproductive success<sup>3,4</sup>. Moreover, empirical data across many taxa reveal associations between altruism and environmental stochasticity<sup>5–8</sup>, a pattern not predicted by standard interpretations of Hamilton’s rule. Here we derive Hamilton’s rule with explicit stochasticity, leading to new predictions about the evolution of altruism. We show that altruists can increase the long-term success of their genotype by reducing the temporal variability in the number of offspring produced by their relatives. Consequently, costly altruism can evolve even if it has a net negative effect on the average reproductive success of related recipients. The selective pressure on volatility-suppressing altruism is proportional to the coefficient of variation in population fitness, and is therefore diminished by its own success. Our results formalize the hitherto elusive link between bet-hedging and altruism<sup>4,9–11</sup>, and reveal missing fitness effects in the evolution of animal societies.

## Metallzeiten

EARLE 2010

TIMOTHY EARLE & KRISTIAN KRISTIANSEN (Hrsg.), *Organizing Bronze Age Societies, The Mediterranean, Central Europe, and Scandinavia compared*. (Cambridge 2010).

MASSA 2018

Michele Massa & Alessio Palmisano, *Change and continuity in the long-distance exchange networks between western/central Anatolia, northern Levant and northern Mesopotamia, c. 3200–1600 BCE*. [Journal of Anthropological Archaeology](#) **49** (2018), 65–87.

This paper investigates and offers explanations for the distribution of specific products (ivory and lapis lazuli artefacts, “Syrian” bottles) and technologies (metrology) that have often been invoked as tracers of long-distance trade contacts and/or political units in Anatolia, northern Levant and northern Mesopotamia during the Early and Middle Bronze Ages. Unlike former studies investigating third and second millennia exchange networks as separate entities, we examine comparatively and systematically a large corpus of published archaeological data by adopting a quantitative and spatial approach. Through this analysis, we propose that a significant degree of similarity in the shape, infrastructure and motivations behind the development and maintenance of these longdistance exchanges existed between the third and early second millennia BC.

**Keywords:** Early Bronze Age | Middle Bronze Age | Near East | Anatolia | Mesopotamia | Levant | Material culture | Long-distance trade | Exchange networks | Spatial approaches

All this evidence strongly suggests that Anatolian metallurgy may have been the single most important factor in igniting the development of stable long-distance relations across the Taurus Mountains, possibly as early as 3500–3200 BCE.

The paper has hopefully been successful in highlighting significant elements of continuity that strongly suggest that the Old Assyrian Trade network is only the

mature stage of a process started at least during the late fourth millennium BC. A more in-depth understanding of the origins, mechanisms and developments of this process will be paramount to better assess the role of Anatolia within the broader Near Eastern world, not only as a source of raw materials, but as a centre of technological and cultural innovation.

## Sprachlehre

COOK 2017

Edward M. Cook, *Language contact and the genesis of Mishnaic Hebrew*. Edward Ullendorff lectures in semitic philology 4 ([Cambridge 2017](#)). 10.17863/CAM.9630.

It is reasonable to think that such a rapid expansion had linguistic repercussions. Many of the lands added to the Hasmonean state were inhabited by Syrophone Gentiles, and we have concrete epigraphic evidence of the prior use of Aramaic in the Negev (Maresha, Khirbet el-Kom) and in Samaria (inscriptions). We have admittedly no evidence on the language policy of the Hasmoneans, if any, but the forcible propagation of Judaism and the Jewish law, as well as the presence of new Judean landowners, nobility, and settlers in non-Judean areas, I argue, led to a Hasmonean edition of an old sociolinguistic story, in which acquiring the language of the new rulers became an attractive choice for adults of the region; and no doubt intermarriage of Judeans with non-Judean natives played a large role as well. It was at this point that Hebrew broke out of its status as a local ethnic language and became a prestige language for non-natives, at least regionally. The fact that Aramaic loanwords and calques were already present in the Hebrew of the conquerors facilitated its acquisition by Aramaic speakers.

At this point, the “creoloid” or conventionalized second-language Hebrew that arose out of this process quickly became a popular alternative vernacular. Although it did not succeed in ousting Aramaic as a language of wider communication, or Greek as the tongue of international high culture, it did apparently find a home among those who wished to signal strongly their adherence to the customs and values of Judaism. In Judea proper, it seems, “Old” Hebrew continued to be used for literature, and even for speech, but eventually it gave way to the more widely used conventionalized second language; which, after all, was Hebrew, too.

It seems probable that a true situation of diglossia was in place throughout Jewish Palestine by the time Herod died in 4 BCE—with a form of MH, now become a first language for many, used for the “low” functions of oral communication, and a form of BH used for the “high” functions of religion and literature (cf. Qumran Hebrew). How and where it shared these functions with Aramaic, as it seemingly did up to at least the second century CE, is a question that is difficult to answer. Ironically, MH would not become a literary language in its own right until the late second century CE, when it was once again ceasing to be anyone’s first language and was once again becoming “second-language Hebrew” used primarily by speakers of Jewish Aramaic and of Greek.

## Story or Book

KING 2018

Turi King, *Traces of ancient DNA*. [nature 555 \(2018\), 307–308](#).

Turi King hails David Reich’s thrilling account of mapping humans through time and place.

Who We Are and How We Got Here: Ancient DNA and the New Science of the Human Past. David Reich. Pantheon: 2018.

It was Reich's lab that did the Beaker work of the headlines. Indeed, the group has been involved in many of the big findings in the field over the past decade, and it's these that Reich discusses.

What his and other labs are uncovering is the tremendous degree to which populations globally are blended, repeatedly, over generations. Gone is the family tree spreading from Africa over the world, with each branch and twig representing a new population that never touches others. What has been revealed is something much more complex and exciting: populations that split and re-form, change under selective pressures, move, exchange ideas, overthrow one another.

Reich also reflects on how his work can be misinterpreted by the public and those outside the field. We all belong to one species and we are all related. Yet when genetic differences between populations, for instance, are revealed, the media and interest groups can oversimplify and distort.