

## References

### Aktuell

#### BALTER 2014

Michael Balter, *RIP for a key Homo species?* [science](#) **345** (2014), 129.

Researchers consider killing off a claimed common ancestor of Neandertals and modern humans.

At the meeting, Arsuaga went a big step further and proposed eliminating *H. heidelbergensis* altogether. Rightmire analyzed 34 *H. erectus* and 11 potential *H. heidelbergensis* skulls, and found that their similarities—including massive brow ridges, large faces, and flattened frontal bones—stemmed from true relatedness, rather than convergent evolution. “Calling them *H. heidelbergensis* is the correct position,” he said.

#### FREEMAN 2014

Scott Freeman, Sarah L. Eddy, Hannah Jordt, Michelle K. Smith & Mary Pat Wenderoth, *Meta-analytic techniques are designed to accommodate variation in implementation, Reply to Hora.* [PNAS](#) **111** (2014), E3025.

Thus, variation in implementation does not undermine our analysis, as Hora (1) implies. Instead, it strengthens our findings. If not all of the control conditions represented “pure” traditional lecturing, then our results underestimate the actual impact of active learning compared with “pure” lecturing. With examination data, for example, active learning—compared with strictly expository teaching—may lead to even larger benefits than our summary estimate of 0.47 indicates.

#### GEWIN 2014

Virginia Gewin, *Hello, Governor.* [nature](#) **511** (2014), 402–404.

When California’s governor enlisted the aid of two palaeoecologists, their careers took an unusual turn.

“I thought it was a great review of the evidence for rapid shifts in ecology, but then it switched to a series of unsupported statements — at best a hypothesis — about how a global tipping point in the biosphere could happen,” says Erle Ellis, a landscape ecologist at the University of Maryland, Baltimore County, who was involved in a response to the paper.

So the feature of the paper that Brown, as a lifelong politician, instinctively responded to — the tipping point — was the hardest to sell to scientists.

All along, Hadly and Barnosky have tried to walk a fine line between vigorous communication of the facts and outright advocacy for particular policies.

#### HORA 2014

Matthew T. Hora, *Limitations in experimental design mean that the jury is still out on lecturing.* [PNAS](#) **111** (2014), E3024.

In addition, no standardized definition of lecturing exists in the field. [...] If what STEM education researchers are attempting to contrast with other types of instruction is “pure” lecturing, then more precise and consistent definitions for this condition are necessary.

## OCHIAI 2014

Kazuhiko Ochiai et al., *Low blood cell counts in wild Japanese monkeys after the Fukushima Daiichi nuclear disaster*. [Scientific Reports 4 \(2014\), 5793](#). DOI:10.1038/srep05793.

Kazuhiko Ochiai, Shin-ichi Hayama, Sachie Nakiri, Setsuko Nakanishi, Naomi Ishii, Taiki Uno, Takuya Kato, Fumiharu Konno, Yoshi Kawamoto, Shuichi Tsuchida & Toshinori Omi

In April 2012 we carried out a 1-year hematological study on a population of wild Japanese monkeys inhabiting the forest area of Fukushima City. This area is located 70 km from the Fukushima Daiichi Nuclear Power Plant (NPP), which released a large amount of radioactive material into the environment following the Great East Japan Earthquake of 2011. For comparison, we examined monkeys inhabiting the Shimokita Peninsula in Aomori Prefecture, located approximately 400 km from the NPP. Total muscle cesium concentration in Fukushima monkeys was in the range of 78–1778 Bq/kg, whereas the level of cesium was below the detection limit in all Shimokita monkeys. Compared with Shimokita monkeys, Fukushima monkeys had significantly low white and red blood cell counts, hemoglobin, and hematocrit, and the white blood cell count in immature monkeys showed a significant negative correlation with muscle cesium concentration. These results suggest that the exposure to some form of radioactive material contributed to hematological changes in Fukushima monkeys.

## Amerika

### SANCHEZ 2014

Guadalupe Sanchez et al., *Human (Clovis)–gomphothere (Cuvieronius sp.) association  $\approx$ 13,390 calibrated yBP in Sonora, Mexico*. [PNAS 111 \(2014\), 10972–10977](#).

Guadalupe Sanchez, Vance T. Holliday, Edmund P. Gaines, Joaquin Arroyo-Cabrales, Natalia Martínez-Tagüena, Andrew Kowler, Todd Lange, Gregory W. L. Hodgins, Susan M. Mentzer & Ismael Sanchez-Morales

The earliest known foragers to populate most of North America south of the glaciers [ $\approx$ 11,500 to  $\geq$   $\approx$ 10,800 14C yBP;  $\approx$ 13,300 to  $\approx$ 12,800 calibrated (Cal) years] made distinctive “Clovis” artifacts. They are stereotypically characterized as hunters of Pleistocene megamammals (mostly mammoth) who entered the continent via Beringia and an ice-free corridor in Canada. The origins of Clovis technology are unclear, however, with no obvious evidence of a predecessor to the north. Here we present evidence for Clovis hunting and habitation  $\approx$ 11,550 yBP ( $\approx$ 13,390 Cal years) at “El Fin del Mundo,” an archaeological site in Sonora, northwestern Mexico. The site also includes the first evidence to our knowledge for gomphothere (*Cuvieronius* sp.) as Clovis prey, otherwise unknown in the North American archaeological record and terminal Pleistocene paleontological record. These data (i) broaden the age and geographic range for Clovis, establishing El Fin del Mundo as one of the oldest and southernmost in situ Clovis sites, supporting the hypothesis that Clovis had its origins well south of the gateways into the continent, and (ii) expand the make-up of the North American megafauna community just before extinction.

Paleoindian | proboscidean

## Grabung

GILL 1993

Dan Gill, *A natural spur at Masada*. [nature 364 \(1993\), 569–570](#).

Contrary to the prevailing opinion that the Roman assault ramp at Masada in Israel was entirely man-made, geological observations reveal that it consists mostly of natural bedrock.

LAMMERER 1933

Adolf Lammerer, *Der Angriffsdamm*. [Zeitschrift des Deutschen Palästina-Vereins 56 \(1933\), 167–171](#).

Von der Gebirgsstufe, an deren Rand das Massiv von Masada angelagert ist, hinüber zur Festung bildet der kaum 180 m breite Hügelrücken zwischen den Oberläufen des wadi sebbe und wadi nimre eine langgestreckte Einsattelung. Hier befand sich denn auch seinerzeit der einzige Zugang zur Festung für Tragtiere und Fahrzeuge gefunden.

Die besprochene Einsattelung bot nun auch die beste – ja einzige – Möglichkeit, dem Burgfelsen mit gewaltsamem Sturmangriff beizukommen. Hier stieg das Gelände an der Felsenwand am höchsten empor, bis ungefähr 20 m unter dem Fuß der Festungsmauer; hier besaß das Angriffsgelände die weitaus geringste Steigung im ganzen Umfang der Festung, und zugleich war hier die kürzeste Linie von der Gebirgsstufe zur Burg.

NGO 2014

ROBIN NGO (Hrsg.), *Masada, The Dead Sea's Desert Fortress*. [\(Washington 2014\)](#).

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SCHULTEN 1933

Adolf Schulten, Adolf Lammerer, R. Paulsen, K. Regling & E.

Schramm, *Masada die Burg des Herodes und die römischen Lager mit einem Anhang: Beth-Ter*. [Zeitschrift des Deutschen Palästina-Vereins 56 \(1933\), 1–185](#).

## Methoden

BOCQUET-APPEL 1985

Jean-Pierre Bocquet-Appel & Claude Masset, *Paleodernography: Resurrection or Ghost?* [Journal of Human Evolution 14 \(1985\), 107–111](#).

Paleodemographic results always seem remarkable when we look at living populations, compared with socio-economic systems: life expectancy at birth in the region of 10 years (Van Gerven et al., 1981), infant mortality (0-1 year) less than that of children (1.5-6 years), almost complete absence of persons older than 50,

rapid rate of cortical bone thickness reduction, and so forth. If all that were true, it would have been necessary to investigate even more the different causes of such a difference between ancient and modern populations that seem to be under the same kind of constraints. The truth is much simpler: it is the age estimations of the skeletons at death which is biased.

Since 1971, we have tried to find the errors that affect the reconstruction of age structures. For some of these errors, we have been able to propose remedies (or ways to reduce their effects). But there is one which we do not understand how to eliminate: it is impossible to estimate skeleton age without bias, unless if we know before hand the age structure at death of the population to which it belongs.

Our “Farewell to paleodemography” is not a farewell to research on ancient population dynamics. It is only a refusal to continue to estimate age structures which are only vaguely related to reality.

Van Gerven & Armelagos believe in Todd and his epigones and reject without examination the heresies of Nemeskeri et al. or Kobayashi. If our doubts have not shaken their faith, their arguments have not revived paleodemography: they have only evoked its ghost.

#### BOCQUET-APPEL 1986

Jean-Pierre Bocquet-Appel, *Once upon a time: Palaeodemography, Es war einmal: Paläodemographie. Mitteilungen der Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte* **7** (1986), 127–133.

The current methods for the estimation of age at death of adult skeletons cannot give a correct estimation of a demographic distribution. The reasons for this include statistical (reference population) as well as biological aspects (the variation of bone during lifetime is too large). Moreover, in a large number of cases the methods are technically rather irrational. Several studies have provided elements for a realistic picture of past population mortality. It must not have changed much from the ape ancestor of man to the preindustrial populations, longevity taken into account.

Gegenwärtige Methoden der Alters- und Geschlechtsbestimmung erwachsener Skelete können keine zuverlässige Beschreibung der demographischen Verteilung liefern. Die Gründe sind vornehmlich sowohl statistischer Art (Referenzpopulation) als auch biologischer (die Veränderungen des Knochens während der Lebensspanne sind zu groß). Weiterhin sind die in vielen Fällen verwendeten Methoden technisch unsinnig. In einigen Arbeiten sind Möglichkeiten einer realistischen Erfassung der Sterblichkeit untersucht worden. Unter Berücksichtigung des zeitlichen Rahmens ist der Unterschied im Sterblichkeitsverhalten der Primatenvorfahren des Menschen und des Menschen der vorindustriellen Zeit offensichtlich nicht sehr unterschiedlich.

#### BOCQUET-APPEL 1996

J. P. Bocquet-Appel & C. Masset, *Paleodemography: Expectancy and False Hope. American Journal of Physical Anthropology* **99** (1996), 571–583.

From parent populations ( $N = 50,000$ ) stochastically generated, representing different levels of correlation ( $r$ ) between the age at death and a hypothetical biological indicator ( $r = 0.8-0.98$ ), reference samples and target demographic samples are randomly drawn. Two iterative techniques, proportional fitting procedure and Bayesian, are used to estimate from the reference samples the age distribution of the targets. Due to the random fluctuations of the pattern of aging, both in the reference and target samples, these techniques converge only in expectation toward the true value of a distribution, but not in practice for any particular realization.

Nevertheless, these techniques allow the estimation of the average of an age distribution, even if its shape is unknown. Under the hypothesis that the target sample is drawn from a stationary population, this average represents the life expectancy at 20 years (plus 20 years). Using this mean age at death for the adults and the juvenility index at death ( $D5 - 14/D20 - \omega$ ), a new set of paleodemographic estimators were derived from 40 archaic life tables. For a hypothesized stable population, they give the life expectancy at birth and at 20 years, and the probability of death at 1 and 5 years.

**Keywords:** Iterative proportional fitting, Age distribution, Demographic estimators

## Story or Book

WRIGLEY 2014

Sylvia Spruck Wrigley, *A long way from home, Distant memories.* [nature 511 \(2014\), 502.](#)

When Great-Uncle Herbert told us that he'd bought a fully laden escape shuttle, we all said he was crazy. He'd wasted his entire pension, fallen for scammers, gone senile. When the war started, he must have been pretty tempted to leave us all behind for laughing at him.