

## Literatur

### Aktuell

#### LAVIGNE 2013

Franck Lavigne et al., *Source of the great A.D. 1257 mystery eruption unveiled, Samalas volcano, Rinjani Volcanic Complex, Indonesia*. [PNAS 110 \(2013\), 16742–16747](#).

Franck Lavigne, Jean-Philippe Degeai, Jean-Christophe Komorowski, Sébastien Guillet, Vincent Robert, Pierre Lahitte, Clive Oppenheimer, Markus Stoffel, Céline M. Vidal, Surono, Indyo Pratomo, Patrick Wassmer, Irka Hajdas, Danang Sri Hadmoko & Edouard de Belizal

Polar ice core records attest to a colossal volcanic eruption that took place ca. A.D. 1257 or 1258, most probably in the tropics. Estimates based on sulfate deposition in these records suggest that it yielded the largest volcanic sulfur release to the stratosphere of the past 7,000 y. Tree rings, medieval chronicles, and computational models corroborate the expected worldwide atmospheric and climatic effects of this eruption. However, until now there has been no convincing candidate for the mid-13th century “mystery eruption.” Drawing upon compelling evidence from stratigraphic and geomorphic data, physical volcanology, radiocarbon dating, tephra geochemistry, and chronicles, we argue the source of this long-sought eruption is the Samalas volcano, adjacent to Mount Rinjani on Lombok Island, Indonesia. At least 40 km<sup>3</sup> (dense-rock equivalent) of tephra were deposited and the eruption column reached an altitude of up to 43 km. Three principal pumice fallout deposits mantle the region and thick pyroclastic flow deposits are found at the coast, 25 km from source. With an estimated magnitude of 7, this event ranks among the largest Holocene explosive eruptions. Radiocarbon dates on charcoal are consistent with a mid-13th century eruption. In addition, glass geochemistry of the associated pumice deposits matches that of shards found in both Arctic and Antarctic ice cores, providing compelling evidence to link the prominent A.D. 1258/1259 ice core sulfate spike to Samalas. We further constrain the timing of the mystery eruption based on tephra dispersal and historical records, suggesting it occurred between May and October A.D. 1257.

volcanism | climate | ultraplinian | caldera | archaeology

#### TYMULA 2013

Agnieszka Tymula, Lior A. Rosenberg Belmaker, Lital Ruderman, Paul W. Glimcher & Ifat Levy, *Like cognitive function, decision making across the life span shows profound age-related changes*. [PNAS 110 \(2013\), 17143–17148](#).

It has long been known that human cognitive function improves through young adulthood and then declines across the later life span. Here we examined how decision-making function changes across the life span by measuring risk and ambiguity attitudes in the gain and loss domains, as well as choice consistency, in an urban cohort ranging in age from 12 to 90 y. We identified several important age-related patterns in decision making under uncertainty: First, we found that healthy elders between the ages of 65 and 90 were strikingly inconsistent in their choices compared with younger subjects. Just as elders show profound declines in cognitive function, they also show profound declines in choice rationality compared

with their younger peers. Second, we found that the widely documented phenomenon of ambiguity aversion is specific to the gain domain and does not occur in the loss domain, except for a slight effect in older adults. Finally, extending an earlier report by our group, we found that risk attitudes across the life span show an inverted U-shaped function; both elders and adolescents are more risk-averse than their midlife counterparts. Taken together, these characterizations of decision-making function across the life span in this urban cohort strengthen the conclusions of previous reports suggesting a profound impact of aging on cognitive function in this domain.

## Amerika

### ADOVASIO 2002

James Adovasio & Jake Page, *The First Americans, In Pursuit of Archaeology's Greatest Mystery*. (New York 2002).

### DILLEHAY 2000

Thomas D. Dillehay, *The settlement of the Americas, A new prehistory*. (New York 2000).

### HAYNES 2004

Gary Haynes, *Rather odd detective stories, A view of some actualistic and taphonomic trends in Paleoindian studies*. In: T. R. PICKERING, K. SCHICK & N. TOTH (Hrsg.), *African Taphonomy: A Tribute to the Career of C. K. "Bob" Brain*, Stone Age Institute, Bloomington, Indiana, April 29 – May 1, 2004. (Unpublished 2004), 1–11.

During the last three decades of American Paleoindian research, some taphonomists played a mug's game while others knew all about the game's ambiguous rules. After Paleoindianists discovered a string of influential 1970s publications by researchers working mainly in Africa, they changed their attitude towards taphonomy. But many Paleoindianists idiosyncratically used taphonomy to create support for unusual propositions or to lend plausibility to off-beat theses such as an unexpectedly early human presence in the Americas, instead of testing hypotheses through taphonomic analysis. After the 1980s, taphonomic research has greatly advanced in allowing clear and definite interpretations of Paleoindian bone assemblages, but stubborn personalities and the tendency to "brand" certain sites continue to discourage the most rigorous skeptical inquiry that is taphonomy. The process of explaining archaeological contexts through taphonomy is a make-or-break step that must be applied to the earliest sites.

### HECKENBERGER 2003

Michael J. Heckenberger et al., *Amazonia 1492: Pristine Forest or Cultural Parkland?* *science* **301** (2003), 1710–1714.

s301-1710-Supplement1.pdf

Michael J. Heckenberger, Afukaka Kuikuro, Urissapá Tabata Kuikuro, J. Christian Russell, Morgan Schmidt, Carlos Fausto & Bruna Franchetto

Archaeology and indigenous history of Native Amazonian peoples in the Upper Xingu region of Brazil reveal unexpectedly complex regional settlement patterns

and large-scale transformations of local landscapes over the past millennium. Mapping and excavation of archaeological structures document pronounced human-induced alteration of the forest cover, particularly in relation to large, dense late-prehistoric settlements (circa 1200 to 1600 A.D.). The findings contribute to debates on human carrying capacity, population size and settlement patterns, anthropogenic impacts on the environment, and the importance of indigenous knowledge, as well as contributing to the pride of place of the native peoples in this part of the Amazon.

#### MAYLE 2008

Francis E. Mayle & Mitchell J. Power, *Impact of a drier Early–Mid-Holocene climate upon Amazonian forests*. *Phil. Trans. Royal Society B* **363** (2008), 1829–1838.

This paper uses a palaeoecological approach to examine the impact of drier climatic conditions of the Early–Mid-Holocene (ca 8000–4000 years ago) upon Amazonia’s forests and their fire regimes. Palaeovegetation (pollen data) and palaeofire (charcoal) records are synthesized from 20 sites within the present tropical forest biome, and the underlying causes of any emergent patterns or changes are explored by reference to independent palaeoclimate data and present-day patterns of precipitation, forest cover and fire activity across Amazonia. During the Early–Mid-Holocene, Andean cloud forest taxa were replaced by lowland tree taxa as the cloud base rose while lowland ecotonal areas, which are presently covered by evergreen rainforest, were instead dominated by savannahs and/or semideciduous dry forests. Elsewhere in the Amazon Basin there is considerable spatial and temporal variation in patterns of vegetation disturbance and fire, which probably reflects the complex heterogeneous patterns in precipitation and seasonality across the basin, and the interactions between climate change, drought- and fire susceptibility of the forests, and Palaeo-Indian land use. Our analysis shows that the forest biome in most parts of Amazonia appears to have been remarkably resilient to climatic conditions significantly drier than those of today, despite widespread evidence of forest burning. Only in ecotonal areas is there evidence of biome replacement in the Holocene. From this palaeoecological perspective, we argue against the Amazon forest ‘dieback’ scenario simulated for the future.

Keywords: Amazon tropical forest; pollen; charcoal; fire; Holocene; climate

#### ROOSEVELT 1991

A. C. Roosevelt, R. A. Housley, M. Imazio Da Silveira, S. Maranca & R. Johnson, *Eighth Millennium Pottery from a Prehistoric Shell Midden in the Brazilian Amazon*. *science* **254** (1991), 1621–1624.

The earliest pottery yet found in the Western Hemisphere has been excavated from a prehistoric shell midden near Santarim in the lower Amazon, Brazil. Calibrated accelerator radiocarbon dates on charcoal, shell, and pottery and a thermoluminescence date on pottery from the site fall from about 8000 to 7000 years before the present. The early fishing village is part of a long prehistoric trajectory that contradicts theories that resource poverty limited cultural evolution in the tropics.

#### TOLLEFSON 2013

Jeff Tollefson, *Footprints in the forest*. *nature* **502** (2013), 160–162.

Researchers are tracking just how much impact ancient peoples had on the Amazon.

Researchers working across the eastern and central Amazon have found deposits of ‘terra preta’ (literally ‘black earth’ in Portuguese), which are fertile soils that

are thought to have been created through cycles of fire and cultivation. Further earthworks, including mysterious systems of ditches and mounds, were uncovered throughout the 1990s in the western Amazon. By the mid-2000s, researchers had come to believe that prehistoric people once occupied large areas; built networks of roads, canals and bridges; cultivated crops such as maize and manioc (cassava); and maintained plantations of useful trees such as bananas and palms.

After such a radical shift in thinking, it was perhaps inevitable that the scientific pendulum would swing back the other way. In June 2012, a team of researchers led by McMichael and Mark Bush at the Florida Institute of Technology published a paper arguing that human civilization was sparse across the wetter forests of western and central Amazonia. The team had collected 247 soil cores from dozens of sites and found charcoal in many locations — a sign of human fires. But none of the sites held human artefacts or terra preta (see ‘Signs of life’). The team documented maize cultivation in only one instance, and just a couple of other sites revealed signs of grasses that suggested repeated clearing of the land. Bush concluded that others had been too quick to extrapolate evidence of dense populations in the eastern Amazon across the entire basin. McMichael says that she gleaned something similar from Lake Ayauchi. She found significant amounts of charcoal and tiny fossilized structures from maize crops around the lake, but evidence of occupation fell away just a kilometre from the waters. “People were there, but their impact was very localized,” she says.

## Anthropologie

### BEHAR 2012

Doron M. Behar et al., *A “Copernican” Reassessment of the Human Mitochondrial DNA Tree from its Root*. [American Journal of Human Genetics 90 \(2012\), 675–684](#).

[AmJHumGen90-0675-Supplement1.pdf](#), [AmJHumGen90-0675-Supplement2.zip](#)

Doron M. Behar, Mannis van Oven, Saharon Rosset, Mait Metspalu, Eva-Liis Loogväli, Nuno M. Silva, Toomas Kivisild, Antonio Torroni & Richard Villems  
Mutational events along the human mtDNA phylogeny are traditionally identified relative to the revised Cambridge Reference Sequence, a contemporary European sequence published in 1981. This historical choice is a continuous source of inconsistencies, misinterpretations, and errors in medical, forensic, and population genetic studies. Here, after having refined the human mtDNA phylogeny to an unprecedented level by adding information from 8,216 modern mitogenomes, we propose switching the reference to a Reconstructed Sapiens Reference Sequence, which was identified by considering all available mitogenomes from *Homo neanderthalensis*. This “Copernican” reassessment of the human mtDNA tree from its deepest root should resolve previous problems and will have a substantial practical and educational influence on the scientific and public perception of human evolution by clarifying the core principles of common ancestry for extant descendants.

### BORJON 2013

Jeremy I. Borjon & Asif A. Ghazanfar, *Neural tuning of human face processing*. [PNAS 110 \(2013\), 16702–16703](#).

In one group were individuals born with congenital cataracts, a condition where the lenses of the eyes are opaque at birth. It is one of the most common forms of childhood blindness (estimates range from 5 to 20% of births, worldwide), but also one of the most treatable.

## RÖDER 2013

Brigitte Röder, Pia Ley, Bhamy H. Shenoy, Ramesh Kekunnaya & Davide Bottari, *Sensitive periods for the functional specialization of the neural system for human face processing*. *PNAS* **110** (2013), 16760–16765.

The aim of the study was to identify possible sensitive phases in the development of the processing system for human faces. We tested the neural processing of faces in 11 humans who had been blind from birth and had undergone cataract surgery between 2 mo and 14 y of age. Pictures of faces and houses, scrambled versions of these pictures, and pictures of butterflies were presented while event-related potentials were recorded. Participants had to respond to the pictures of butterflies (targets) only. All participants, even those who had been blind from birth for several years, were able to categorize the pictures and to detect the targets. In healthy controls and in a group of visually impaired individuals with a history of developmental or incomplete congenital cataracts, the well-known enhancement of the N170 (negative peak around 170 ms) event-related potential to faces emerged, but a face-sensitive response was not observed in humans with a history of congenital dense cataracts. By contrast, this group showed a similar N170 response to all visual stimuli, which was indistinguishable from the N170 response to faces in the controls. The face-sensitive N170 response has been associated with the structural encoding of faces. Therefore, these data provide evidence for the hypothesis that the functional differentiation of category-specific neural representations in humans, presumably involving the elaboration of inhibitory circuits, is dependent on experience and linked to a sensitive period. Such functional specialization of neural systems seems necessary to archive high processing proficiency.

## Bibel

### NIESIOŁOWSKI-SPANÒ 2013

Łukasz Niesiołowski-Spanò, *Child sacrifice in seventh-century Judah and the origins of Passover*. *Przegląd Humanistyczny* **2013**, ii, 161–161. There were no connections of the Passover sacrifice with the Exodus story. Its function was stated in its name – psh – meaning “a protecting sacrifice”. The role of this sacrifice, as the key ritual for the community, might be compared with Babylonian Akitu ritual of the New Year Feast. As such, the ritual had an obvious urban aspect and was closely related to the king’s ritual duties performed in the Jerusalem Temple. Political changes at the end of the seventh century BCE influenced changes in the monarchic rituals, including replacement of the child sacrifice practiced in the tophet into annual lamb sacrifice in Jerusalem’s Temple. Passover became the central sacrifice, offered under king’s supervision once a year, in Jerusalem. It is impossible, at this point, to prove or disprove that the offering of the Passover sacrifice by the heads of families originated already in the late monarchic period in Judah. However, the period of the Babylonian exile provides perfect circumstances for the switching of practice of the offering being noble and conducted in the temple, to the ritual being familial and conducted in households.

## Datierung

### DIETRICH 2013

Oliver Dietrich, Çiğdem Köksal-Schmidt, Jens Notroff & Klaus

Schmidt, *Establishing a Radiocarbon Sequence for Göbekli Tepe, State of Research and New Data*. [Neo-Lithics 2013, i, 36–41](#).

As a preliminary conclusion, the still limited series of radiocarbon data seems to suggest that Layer III enclosures at Göbekli Tepe were not exactly contemporaneous. Earliest radiocarbon dates stem from Enclosure D, for which the relative sequence of construction (ca. mid-10th millennium calBC), usage, and burial (late 10th millennium calBC) are documented. The outer ring wall of Enclosure C could be younger than Enclosure D. However, more data are needed to confirm this interpretation. Finally, Enclosure A seems younger than Enclosures C and D. With only eleven radiocarbon dates, many questions remain. It is hoped that the recent discovery of larger amounts of carbonized material at Göbekli Tepe will soon provide us with further dates and a much firmer grasp on the absolute chronology of this unique site.

#### EISENHAUER 1993

A. Eisenhauer, G. J. Wasserburg, J. H. Chen, G. Bonani, L. B. Collins, Z. R. Zhu & K. H. Wyrwoll, *Holocene sea-level determination relative to the Australian continent, U/Th (TIMS) and  $^{14}\text{C}$  (AMS) dating of coral cores from the Abrolhos Islands*. [Earth and Planetary Science Letters 114 \(1993\), 529–547](#).

U/Th (TIMS) and  $^{14}\text{C}$  (AMS) measurements are presented from two coral cores from the Easter group of the Houtman Abrolhos Islands between 28°S and 29°S on the western continental margin of Australia. The U/Th measurements on the Morley core from Morley Island cover a depth interval from 0.2 m above present sea level to 24.4 m below present sea level and comprise eleven samples. The ages vary between  $6320 \pm 50$  a, at 0.2 m above sea level, and  $9809 \pm 95$  a, at 24.4 m below sea level (all errors are  $2\sigma$ ). The mean growth rate is  $7.1 \pm 0.9$  m/ka. The  $^{14}\text{C}$  dates of selected Morley core corals show that the  $^{14}\text{C}$  ages are  $\approx 1000$  a younger than their corresponding U/Th ages, which agrees with previous results. The main purpose of our  $^{14}\text{C}$  measurements is to be able to compare them precisely with other coral cores where no U/Th measurements are available. The U/Th measurements of the Suomi core from Suomi Island cover a depth interval from 0.05 m to 14.2 m below present sea level and consist of four samples. The ages vary between  $4671 \pm 40$  a, at 0.05 m below sea level, and  $7102 \pm 82$  a, at 14.2 m below sea level, with a mean growth rate of  $5.8 \pm 0.2$  m/ka. The growth history of both cores is explained by a simple model in which the growth rates of the Morley core can be interpreted as reflecting local rates of sea level rise, whereas the Suomi core is interpreted as reflecting lateral growth during the past  $\approx 6000$  a.

Our results indicate that sea level relative to the western margins of the Australian continent was about 24 m lower than present at about 9800 a B.P. ( $^{14}\text{C}$  gives a date of 8500 a B.P.). Sea level then rose and reached a highstand, slightly higher than the present position at about 6300 a B.P. ( $^{14}\text{C}$  date: 5500 a). This highstand declined but was still higher than present at 4600 a B.P. This is in agreement with previous observations along the Australian coastal margins and with observations from the Huon peninsula (Papua New Guinea). Our results are very similar to theoretical numerical models, which take into consideration water loading and isostatic compensation and viscous mantle flow. In contrast, coral cores from Barbados show that corals with a  $^{14}\text{C}$  age of  $\approx 5500$  a B.P. are some  $\approx 10$  m b.p.s.l. We interpret the difference between the Barbados core and the Morley core as resulting from additional “flooding” of Barbados by water redistribution, due to changes in the Earth’s geoid but not reflecting global sea level rise or major addition of melt waters over the past  $\approx 6000$  a. The difference in the geoid at Barbados between  $\approx 6000$  a B.P. and the present will require a refinement in the geophysical

models. Precise  $^{230}\text{Th}$  (TIMS) measurements on continental coasts will be required to provide an adequate data base for modelling deformation, flow of mantle material and sea-level height.

#### EISENHAUER 1994

A. Eisenhauer, R. F. Spielhagen, M. Frank, G. Hentzschel, A. Mangini, P. W. Kubik, B. Dittrich-Hannen & T. Billen,  *$^{10}\text{Be}$  records of sediment cores from high northern latitudes, Implications for environmental and climatic changes.* *Earth and Planetary Science Letters* **124** (1994), 171–184.

The  $^{10}\text{Be}$  records of four sediment cores forming a transect from the Norwegian Sea at  $70^\circ\text{N}$  (core 23059) via the Fram Strait (core 23235) to the Arctic Ocean at  $86^\circ\text{N}$  (cores 1533 and 1524) were measured at a high depth resolution. Although the material in all the cores was controlled by different sedimentological regimes, the  $^{10}\text{Be}$  records of these cores were superimposed by glacial/interglacial changes in the sedimentary environment. Core sections with high  $^{10}\text{Be}$  concentrations ( $> 1 \times 10^9$  at/g) are related to interglacial stages and core sections with low  $^{10}\text{Be}$  concentrations ( $< 0.5 \times 10^9$  at/g) are related to glacial stages. Climatic transitions (e.g., Termination II, 5/6) are marked by drastic changes in the  $^{10}\text{Be}$  concentrations of up to one order of magnitude. The average  $^{10}\text{Be}$  concentrations for each climatic stage show an inverse relationship to their corresponding sedimentation rates, indicating that the  $^{10}\text{Be}$  records are the result of dilution with more or less terrigenous ice-rafted material. However, there are strong changes in the  $^{10}\text{Be}$  fluxes (e.g., Termination II) into the sediments which may also account for the observed oscillations. Most likely, both processes affected the  $^{10}\text{Be}$  records equally, amplifying the contrast between lower (glacials) and higher (interglacials)  $^{10}\text{Be}$  concentrations. The sharp contrast of high and low  $^{10}\text{Be}$  concentrations at climatic stage boundaries are an independent proxy for climatic and sedimentary change in the Nordic Seas and can be applied for stratigraphic dating ( $^{10}\text{Be}$  stratigraphy) of sediment cores from the northern North Atlantic and the Arctic Ocean.

#### GEYH 2005

Mebus A. Geyh, *Handbuch der physikalischen und chemischen Altersbestimmung.* (Darmstadt 2005).

#### HIGHAM 2007

Tom Higham, John Chapman, Vladimir Slavchev, Bisserka Gaydarska, Noah Honch, Yordan Yordanov & Branmira Dimitrova, *New perspectives on the Varna cemetery (Bulgaria), AMS dates and social implications.* *Antiquity* **81** (2007), 640–654.

The research team of this new project has begun the precision radiocarbon dating of the superimportant Copper Age cemetery at Varna. These first dates show the cemetery in use from 4560-4450 BC, with the possibility that the richer burials are earlier and the poor burials later in the sequence. The limited number of lavish graves at Varna, representing no more than a handful of paramount chiefs, buried over 50-60 years, suggests a stabilisation of the new social structure by the early part of the Late Copper Age.

Keywords: Copper Age, Eneolithic, Bulgaria, Varna, mortuary practice

#### SHEN 2013

Chuan-Chou Shen, Ke Lin, Wuhui Duan, Xiuyang Jiang, Judson W. Partin, R. Lawrence Edwards, Hai Cheng & Ming Tan, *Testing the*

annual nature of speleothem banding. [Scientific Reports 3 \(2013\), 2633. DOI:10.1038/srep02633.](#)

[SciRep03-02633-Supplement1.pdf](#)

Speleothem laminae have been postulated to form annually, and this lamina-chronology is widely applied to high-resolution modern and past climate reconstructions. However, this argument has not been directly supported by high resolution dating methods. Here we present contemporary single-lamina  $^{230}\text{Th}$  dating techniques with 2s precision as good as 60.5 yr on a laminated stalagmite with density couplets from Xianren Cave, China, that covers the last 300 years. We find that the layers do not always deposit annually. Annual bands can be under- or over-counted by several years during different multi-decadal intervals. The irregular formation of missing and false bands in this example indicates that the assumption of annual speleothem laminae in a climate reconstruction should be approached carefully without a robust absolute-dated chronology.

WAGNER 1998

Wagner, *Age determination of young rocks and artifacts, Physical and chemical clocks in Quaternary geology and archaeology.* (Berlin 1998).

## Klima

SHEVLIAKOVA 2013

Elena Shevliakova, Ronald J. Stouffer, Sergey Malyshev, John P. Krasting, George C. Hurtt & Stephen W. Pacala, *Historical warming reduced due to enhanced land carbon uptake.* [PNAS 110 \(2013\), 16730–16735.](#)

Previous studies have demonstrated the importance of enhanced vegetation growth under future elevated atmospheric  $\text{CO}_2$  for 21st century climate warming. Surprisingly no study has completed an analogous assessment for the historical period, during which emissions of greenhouse gases increased rapidly and landuse changes (LUC) dramatically altered terrestrial carbon sources and sinks. Using the Geophysical Fluid Dynamics Laboratory comprehensive Earth System Model ESM2G and a reconstruction of the LUC, we estimate that enhanced vegetation growth has lowered the historical atmospheric  $\text{CO}_2$  concentration by 85 ppm, avoiding an additional  $0.31 \pm 0.06$  °C warming. We demonstrate that without enhanced vegetation growth the total residual terrestrial carbon flux (i.e., the net land flux minus LUC flux) would be a source of 65–82 Gt of carbon (GtC) to atmosphere instead of the historical residual carbon sink of 186–192 GtC, a carbon saving of 251–274 GtC.

climate change | carbon sink | earth system modeling

## Kupfer

KIENLIN 2008

Tobias L. Kienlin, *Frühes Metall im nordalpinen Raum, Teil 1, Eine Untersuchung zu technologischen und kognitiven Aspekten früher Metallurgie anhand der Gefüge frühbronzezeitlicher Beile.* Universitätsforschungen zur prähistorischen Archäologie 162 ([Bonn 2008](#)).

Was die funktionale Deutung der Beile anbelangt, so zeigt das offenkundige Interesse der Hersteller an guten mechanischen Eigenschaften, daß von einer längeren

Beanspruchung im Rahmen praktischer Tätigkeiten ausgegangen wurde. Äußerlich sichtbare Abnutzungserscheinungen und Gebrauchsspuren in den Gefügen belegen eben dies. Eine Verwendung als Waffe ist damit nicht ausgeschlossen, und eine scharfe Trennung von “Werkzeug” und “Waffe” geht wohl insgesamt an der urgeschichtlichen Wirklichkeit vorbei. Der Befund zeigt aber eindeutig, daß die Beile vorwiegend in Situationen gebraucht wurden, die kaum adäquat in den Rubriken “Konflikt” und “Aggression” zu fassen sind. Die Art der Herstellung legt auch nahe, daß man nicht mit einem baldigen Wiedereinschmelzen rechnete, und der Gefügebefund belegt eindeutig, daß keine Beilbarren in dem Sinne zirkulierten, daß die Beile – statt sie umzuschmelzen – erst von einem “Endabnehmer” ausgeschmiedet werden sollten. Wenn es sich bei “Geld” um eine Objektgruppe handeln soll, die vor allem zur Verwendung in ökonomisch motivierten Zusammenhängen hergestellt wurde, so muß man eine solche Deutung aus denselben Gründen zurückweisen.

KIENLIN 2009

TOBIAS L. KIENLIN & BEN ROBERTS (Hrsg.), *Metals and Societies, Studies in honour of Barbara S. Ottaway*. Universitätsforschungen zur prähistorischen Archäologie 169 ([Bonn 2009](#)).

ROVIRA 2009

Salvador Rovira, Ignacio Montero-Ruiz & Martina Renzi, *Experimental co-smelting to copper-tin alloys*. In: TOBIAS L. KIENLIN & BEN ROBERTS (Hrsg.), *Metals and Societies, Studies in honour of Barbara S. Ottaway*. Universitätsforschungen zur prähistorischen Archäologie 169 ([Bonn 2009](#)), 407–414.

Many aspects of prehistoric technologies for copper-tin alloy production are so far unknown to us and require further investigation. In particular, there is a shortage of archaeological slags that strongly contrasts with the frequent discovery of bronze objects. In this article we will briefly review the most important archaeological evidence concerning tin, as well as describe a successful experiment carried out to obtain bronze through a process of co-smelting copper and tin ores. We will also show the most relevant analytical data obtained during a lab study of the materials coming from this experiment. As we can gather from recent archaeometallurgical research, the technology that has been employed in the experiment is quite close to the one that a prehistoric metallurgist could have used. Thus, co-smelting is a process that we have to consider when talking about early bronze production.

## Story or Book

FALLON 2013

*The Psychopath Inside*. [nature 502 \(2013\), 167](#).

The Psychopath Inside: A Neuroscientist’s Personal Journey into the Dark Side of the Brain. James Fallon. *Current* (2013)

In 2005, neuroscientist James Fallon was checking the brain scans of psychopathic murderers and ‘normal’ controls, including himself. Noting that his scan closely resembled those of the murderers, the happy, successful Fallon had to know why. He shares his journey, mining genetics, epigenetics and neuroscience, and perusing his childhood (including a brief spell of obsessive-compulsive disorder), family tree and behavioural eccentricities. His surprising final diagnosis could broaden the way we see normality.

## JAIN 2013

*Malignant*. [nature 502 \(2013\), 167](#).

*Malignant: How Cancer Becomes Us*. S. Lochlann Jain. University of California Press (2013)

Patients with cancer generate so much revenue for the US healthcare industry that a cure would be an economic risk. Thus argues anthropologist S. Lochlann Jain, who deems cancer “a constitutive aspect of American social life, economics, and science” — so bizarrely entwined that chemical companies churn out both cancer drugs and carcinogenic herbicides. In this trenchant mix of science history, memoir and cultural analysis, Jain is thoughtful and often darkly humorous on everything from cancer statistics to treatments, trials and issues around sexuality. Brilliant and disturbing.