

## References

### Afrika

CHIRIKURE 2018

Shadreck Chirikure, Tawanda Mukwende, Abigail J. Moffett, Robert T. Nyamushosho, Foreman Bandama & Michelle House, *No Big Brother Here, Heterarchy, Shona Political Succession and the Relationship between Great Zimbabwe and Khami, Southern Africa*. [Cambridge Archaeological Journal](#) **28** (2018), 45–66.

In southern Africa, there has been a long-standing but unsubstantiated assumption that the site of Khami evolved out of Great Zimbabwe's demise around AD 1450. The study of local ceramics from the two sites indicate that the respective ceramic traditions are clearly different across the entire sequence, pointing towards different cultural affiliations in their origins. Furthermore, there are tangible typological differences between and within their related dry-stone architecture. Finally, absolute and relative chronologies of the two sites suggest that Khami flourished as a major centre from the late fourteenth/early fifteenth century, long before Great Zimbabwe's decline. Great Zimbabwe also continued to be occupied into the late seventeenth and perhaps eighteenth centuries, after the decline of Khami. Consequently, the combined significance of these observations contradicts the parent-offspring relationship implied in traditional frameworks. Instead, as chronologically overlapping entities, the relationship between Khami and Great Zimbabwe, was heterarchical. However, within the individual polities, malleable hierarchies of control and situational heterarchies were a common feature. This is in tune with historically documented political relations in related pre-colonial southern Zambebian states, and motivates for contextual approaches to imagining power relations in pre-colonial African contexts.

### Aktuell

ADOLPHS 2018

Ralph Adolphs, Jan Gläscher & Daniel Tranel, *Searching for the neural causes of criminal behavior*. [PNAS](#) **115** (2018), 451–452.

Genes, upbringing, provocation, alcohol and drugs, and other factors that cause momentary emotions and lapses in control, are all going to act through the brain but may not be easily mapped onto the brain. Only by gaining a firm handle on these other factors can we understand the substrate on which a focal brain lesion could cause criminal behavior.

This fact is particularly important because laypeople and the media alike continually search for objective explanations of criminal behavior, when in fact criminality is highly relative to particular laws and the interpretation of behaviors in a specific context. In a supplemental table to the Darby et al. study (3), the authors list the examples of criminality that they included, some of which are not obviously so (lying, theft, fraud), and some of which go in the opposite direction (in two patients the lesion caused the cessation of prelesion criminal behavior). A premeditated white-collar crime and a murder committed in blind fury may have few psychological features in common, making it more fruitful to treat them as

separate behaviors to try to understand, than as aspects of a single very heterogeneous category we should attempt to investigate. A more precise operationalization of criminality, and a much better understanding of its psychological causes, are likely to be a prerequisite for understanding the neurological causes.

#### DARBY 2018

R. Ryan Darby, Andreas Horn, Fiery Cushman & Michael D. Fox, *Lesion network localization of criminal behavior*. *PNAS* **115** (2018), 601–606.

Following brain lesions, previously normal patients sometimes exhibit criminal behavior. Although rare, these cases can lend unique insight into the neurobiological substrate of criminality. Here we present a systematic mapping of lesions with known temporal association to criminal behavior, identifying 17 lesion cases. The lesion sites were spatially heterogeneous, including the medial prefrontal cortex, orbitofrontal cortex, and different locations within the bilateral temporal lobes. No single brain region was damaged in all cases. Because lesion-induced symptoms can come from sites connected to the lesion location and not just the lesion location itself, we also identified brain regions functionally connected to each lesion location. This technique, termed lesion network mapping, has recently identified regions involved in symptom generation across a variety of lesion-induced disorders. All lesions were functionally connected to the same network of brain regions. This criminality-associated connectivity pattern was unique compared with lesions causing four other neuropsychiatric syndromes. This network includes regions involved in morality, value-based decision making, and theory of mind, but not regions involved in cognitive control or empathy. Finally, we replicated our results in a separate cohort of 23 cases in which a temporal relationship between brain lesions and criminal behavior was implied but not definitive. Our results suggest that lesions in criminals occur in different brain locations but localize to a unique resting state network, providing insight into the neurobiology of criminal behavior.

**Keywords:** morality | functional connectivity | criminality | sociopathy | lesion

**Significance:** Cases like that of Charles Whitman, who murdered 16 people after growth of a brain tumor, have sparked debate about why some brain lesions, but not others, might lead to criminal behavior. Here we systematically characterize such lesions and compare them with lesions that cause other symptoms. We find that lesions in multiple different brain areas are associated with criminal behavior. However, these lesions all fall within a unique functionally connected brain network involved in moral decision making. Furthermore, connectivity to competing brain networks predicts the abnormal moral decisions observed in these patients. These results provide insight into why some brain lesions, but not others, might predispose to criminal behavior, with potential neuroscience, medical, and legal implications.

#### GROVER 2018

Samantha Grover, *My children help my science*. *science* **358** (2018), 1486.

When I turned 28 years old, midway through my Ph.D., my biological clock went “BRRRRRING!” My rational self thought, “Hmm, not a good time. Fact A: I love research and want a career in academia. Fact B: There are only two female faculty members in my department, and neither has children.” So, I put off having children, planning to secure a tenured position and publish at least a dozen papers before a “career interruption.” But biology couldn’t wait for my career. When I saw that thin blue line on a pregnancy test at age 34, I was overjoyed—and terrified about the career compromises I expected to face.

## Archäologie

RATHJE 2013

WILLIAM L. RATHJE, MICHAEL SHANKS & CHRISTOPHER WITMORE (Hrsg.), *Archaeology in the Making, Conversations through a discipline*. (London 2013).

## Bibel

FREVEL 1995

Christian Frevel, *Einleitung in das Alte Testament*. (Stuttgart 1995).

NA'AMAN 2016

Nadav Na'aman, *The lmlk Seal Impressions Reconsidered*. [Tel Aviv: Archaeology 43 \(2016\), 111–125](#).

The article critically examines recent works that discuss the lmlk and private stamps on storage jars. It proposes that Hezekiah introduced the lmlk impressions on jars when he ascended the throne (ca. 714 BCE); that the lmlk jar system was an internal Judahite economic enterprise not directly related to the Assyrian subjugation; that the four- and two-winged symbols were royal emblems; and that the named cities denoted four royal wine and oil presses under state control. The article further proposes that the private stamps belonged to estate owners who began marking the royal jars some years after the introduction of the lmlk jar system and that the use of private stamps came to an end in 701 BCE, when many estate owners were either deported or lost their land and fled to the Judean highlands. After Sennacherib's campaign, production of the two-winged symbol resumed, whereas the four-winged symbol was discarded, possibly because of its Egyptian characteristics.

Keywords: lmlk jars | winged symbols | private stamps | estate owners | Hezekiah | Sennacherib's campaign

## Bibel Datierung

NA'AMAN 2016

Nadav Na'aman, *Tel Dor and Iron Age IIA Chronology*. [Bulletin of the American Schools of Oriental Research 376 \(2016\), 1–5](#).

The article discusses the date and historical background of the transfer of Tel Dor from Phoenician to Israelite hands. Archaeologically, the transfer was peaceful and took place in the late Iron Age IIA. I suggest that it happened under the reign of either Omri or Ahab, at a time when Israel expanded on all fronts. Either Tel Dor was endowed as a dowry on the occasion of Jezebel's marriage to Ahab (cf. 1 Kgs 9:16), or the king of Israel purchased it as part of his alliance with Tyre (cf. 1 Kgs 9:11–14). Dating the Israelite–Tyrian alliance helps establish the date of the transition between the early and late Iron Age IIA.

Keywords: Dor | late Iron Age IIA | Omrides | Tyre | Jezebel

## Islam

POHLMANN 2012

Karl-Friedrich Pohlmann, *Die Entstehung des Korans, Neue Erkenntnisse aus Sicht der historisch-kritischen Bibelwissenschaft*. (Darmstadt 2015).

## Klima

COX 2018

Peter M. Cox, Chris Huntingford & Mark S. Williamson, *Emergent constraint on equilibrium climate sensitivity from global temperature variability*. *nature* **553** (2018), 319–322.

Equilibrium climate sensitivity (ECS) remains one of the most important unknowns in climate change science. ECS is defined as the global mean warming that would occur if the atmospheric carbon dioxide (CO<sub>2</sub>) concentration were instantly doubled and the climate were then brought to equilibrium with that new level of CO<sub>2</sub>. Despite its rather idealized definition, ECS has continuing relevance for international climate change agreements, which are often framed in terms of stabilization of global warming relative to the preindustrial climate. However, the ‘likely’ range of ECS as stated by the Intergovernmental Panel on Climate Change (IPCC) has remained at 1.5–4.5 degrees Celsius for more than 25 years<sup>1</sup>. The possibility of a value of ECS towards the upper end of this range reduces the feasibility of avoiding 2 degrees Celsius of global warming, as required by the Paris Agreement. Here we present a new emergent constraint on ECS that yields a central estimate of 2.8 degrees Celsius with 66 per cent confidence limits (equivalent to the IPCC ‘likely’ range) of 2.2–3.4 degrees Celsius. Our approach is to focus on the variability of temperature about long-term historical warming, rather than on the warming trend itself. We use an ensemble of climate models to define an emergent relationship<sup>2</sup> between ECS and a theoretically informed metric of global temperature variability. This metric of variability can also be calculated from observational records of global warming<sup>3</sup>, which enables tighter constraints to be placed on ECS, reducing the probability of ECS being less than 1.5 degrees Celsius to less than 3 per cent, and the probability of ECS exceeding 4.5 degrees Celsius to less than 1 per cent.

FORSTER 2018

Piers Forster, *Homing in on a key factor of climate change*. *nature* **553** (2018), 288–289.

The sensitivity of Earth’s climate to atmospheric carbon dioxide levels is a big unknown in predicting future global warming. A compelling analysis suggests that we can rule out high estimates of this sensitivity.

The idea underpinning this work is so enviably simple that it will make climate scientists ask, “Why didn’t I think of that?” The authors examined the variability of surface temperature in terms of its variance and autocorrelation — the ‘memory’ of a previous year’s surface temperature that is retained in measurements taken the following year. They then developed a theory-derived metric of surface temperature variability and evaluated this metric in historical simulations from 22 computational models of the Earth system, ultimately finding that it is a good predictor of the inherent ECS of each of the models.

Cox et al. then used the relationship between the metric and the ECS found in the models as a constraint on ECS in the real world. Their analysis revealed

that only climate models that produce relatively small values of ECS match the variability seen in the historical temperature record. It turns out that, in general, climate models have considerable memory in their climate systems, so if one year is abnormally hot, for example, then the next year is likely also to be hot. The historical temperature record, however, does not seem to have as much system memory as most models. This means that some models have both autocorrelations and ECS values that are too high.

#### KINTIGH 2018

Keith W. Kintigh & Scott E. Ingram, *Was the drought really responsible? Assessing statistical relationships between climate extremes and cultural transitions*. *Journal of Archaeological Science* **89** (2018), 25–31.

It is commonplace to assert causal relationships between episodes of extreme climate with dramatic cultural shifts. We explore the problem of statistically assessing the correspondence between episodes of extreme climate (such as droughts) and cultural events (such as depopulation) they are purported to explain. In order to do this: 1) We describe a method that permits the objective identification of climate extremes in a way that is independent of their supposed causal outcomes; 2) We discuss how we identify and date cultural transitions of interest; 3) We explore a variety of decision rules for determining whether or not there is a match between a given extreme climate interval and the interval during which a transition began; and 4) We propose an intuitive Monte Carlo approach to statistically assess the observed correspondence between the climate extremes and the cultural transitions. Our application does not indicate statistical support for a linkage between intervals of extreme climate and major transitions in any of the seven cultural traditions in the Southwest US that we examined.

Keywords: Monte Carlo methods | Climate extremes | Coupled human-natural systems | Southwest U.S.

## Kultur

#### CECH 2009

Brigitte Cech, *Technik in der Antike*. (Darmstadt <sup>3</sup>2017).

#### PARKINSON 2003

William A. Parkinson, *Integration, Interaction, and Tribal ‘Cycling’, The Transition to the Copper Age on the Great Hungarian Plain*. In: WILLIAM A. PARKINSON (Hrsg.), *The Archaeology of Tribal Societies*. *Archaeological* 15 (*Ann Arbor* 2003), 391–438.

The trend I document for the transition to the Copper Age is but a single occurrence in the greater temporal and geographic context of the Carpathian Basin. In fact, the basic pattern—from a few, complexly structured integrative units interacting intensively over small areas (in the Late Neolithic) to less complexly-structured integrative units interacting extensively over a larger area (in the Early Copper Age)—repeats itself throughout the prehistory of the Plain at least two times from the Neolithic through the Bronze Age. This phenomenon of tribal ‘pulsing’ or ‘cycling,’ has been documented in tribal societies in a wide variety of historical and geographic contexts, and seems to occur at varying temporal frequencies (Fowles 1997 and this volume, Chapter 2; Parkinson 1999, and this volume, Chapter 1). Although this process is reminiscent of the ‘cycling’ commonly discussed in chiefdoms (e.g. Anderson 1990) and even states (e.g., Marcus 1993), the absence of any

institutionalized central authority allows this process to occur much more fluidly in tribal societies.

## Neolithikum

MÜLLER 2017

Johannes Müller, *Großsteingräber, Grabenwerke, Langhügel, Frühe Monumentalbauten Mitteleuropas*. (Darmstadt 2017).

## Story or Book

KISER 2018

Barbara Kiser, *When*. [nature 553 \(2018\), 279](#).

*When*. Daniel H. Pink. Riverhead (2018)

When is the best time to start a relationship, change career or eat dinner? Daniel Pink analysed 700 studies in anthropology, endocrinology, social psychology and beyond to probe the science of timing. He unpicks compelling patterns: why medical malpractice and harsher judicial rulings cluster in the afternoon; how we pay too much attention to endings; which circumstances favour synchronization in teams. And he includes handy ‘time-hacking’ advice on how to put the insights divulged into practice.