

Literatur

Aktuell

DUCKWORTH 2011

Angela Lee Duckworth, Patrick D. Quinn, Donald R. Lynam, Rolf Loeber & Magda Stouthamer-Loeber, *Role of test motivation in intelligence testing*. [PNAS](#) **108** (2011), 7716–7720.

[pnas108-07716-Supplement1.pdf](#), [pnas108-07716-Supplement2.xls](#)

Intelligence tests are widely assumed to measure maximal intellectual performance, and predictive associations between intelligence quotient (IQ) scores and later-life outcomes are typically interpreted as unbiased estimates of the effect of intellectual ability on academic, professional, and social life outcomes. The current investigation critically examines these assumptions and finds evidence against both. First, we examined whether motivation is less than maximal on intelligence tests administered in the context of low-stakes research situations. Specifically, we completed a metaanalysis of random-assignment experiments testing the effects of material incentives on intelligence-test performance on a collective 2,008 participants. Incentives increased IQ scores by an average of 0.64 SD, with larger effects for individuals with lower baseline IQ scores. Second, we tested whether individual differences in motivation during IQ testing can spuriously inflate the predictive validity of intelligence for life outcomes. Trained observers rated test motivation among 251 adolescent boys completing intelligence tests using a 15-min “thin-slice” video sample. IQ score predicted life outcomes, including academic performance in adolescence and criminal convictions, employment, and years of education in early adulthood. After adjusting for the influence of test motivation, however, the predictive validity of intelligence for life outcomes was significantly diminished, particularly for nonacademic outcomes. Collectively, our findings suggest that, under low-stakes research conditions, some individuals try harder than others, and, in this context, test motivation can act as a third-variable confound that inflates estimates of the predictive validity of intelligence for life outcomes.

LAWLER 2011

Andrew Lawler, *Society for American Archaeology 76th Annual Meeting, 30 March–3 April 2011, Sacramento*. [science](#) **332** (2011), 416–417.

Beneath a Barren Steppe, A Mongolian Surprise

Early Farmers Went Heavy on the Starch

A U.S.-German team is gathering the first comprehensive evidence that the earliest farmers in the Levant ate a wide variety of plants, including starchy tubers, which may have allowed them to experiment with grain cultivation without fear of starvation.

Searching for Syphilis’s Origins

MARCHANT 2011

Jo Marchant, *Curse of the Pharaoh’s DNA*. [nature](#) **472** (2011), 404–406.

Some researchers claim to have analysed DNA from Egyptian mummies. Others say that’s impossible. Could new sequencing methods bridge the divide?

RISEN 2011

Jane L. Risen & Clayton R. Critcher, *Visceral Fit: While in a Visceral State, Associated States of the World Seem More Likely*. [Journal of Personality and Social Psychology](#) **100** (2011), 777–793.

We propose that visceral states can influence beliefs through "visceral fit": People will judge states of the world associated with their current visceral experience as more likely. We found that warmth influenced belief in global warming (Studies 1-3) and that thirst impacted forecasts of drought and desertification (Study 5). These effects emerged in a naturalistic setting (Study 1) and in experimental lab settings (Studies 2, 3, and 5). Studies 2-6 distinguished between 3 mechanistic accounts: temperature as information (Studies 2 and 3), conceptual accessibility (Studies 4 and 5), and fluency of simulation (Studies 6a and 6b). Studies 2 and 3 ruled out the temperature as information account. Feeling warm enhanced belief in global warming even when temperature was manipulated in an uninformative indoor setting, when participants' attention was first directed to the indoor temperature, and when participants' belief about the current outdoor temperature was statistically controlled. Studies 4 and 5 ruled out conceptual accessibility as the key mediator: Priming the corresponding concepts did not produce analogous effects on judgment. Studies 6a and 6b used a causal chain design and found support for a "simulational fluency" account. Participants experiencing the visceral state of warmth constructed more fluent mental representations of hot (vs. cold) outdoor images, and those who were led to construe the same hot outdoor images more fluently believed more in global warming. Together, the results suggest that visceral states can influence one's beliefs by making matching states of the world easier to simulate and therefore seem more likely.
Keywords: global warming, embodied cognition, fluency, visceral fit, simulation

SCHIERMEIER 2011

Quirin Schiermeier, *Defying disaster*. [nature](#) **472** (2011), 505.

The worst nuclear disaster since Chernobyl is unlikely to slow job growth in the industry.

Amerika

BIRK 2011

Jago Jonathan Birk, Wenceslau Gerales Teixeira, Eduardo Góes Neves & Bruno Glaser, *Faeces deposition on Amazonian Anthrosols as assessed from 5 β -stanols*. [Journal of Archaeological Science](#) **38** (2011), 1209–1220.

In the Amazon Basin, within a landscape of infertile soils, fertile Anthrosols of pre-Columbian origin occur (Amazonian Dark Earths or terra preta de Índio). These soils are characterized by high amounts of charred organic matter (black carbon, biochar) and high nutrient stocks. Frequently, they were considered as sign for intensive landscape domestication by way of sedentary agriculture and as sign for large settlements in pre-Columbian Amazonia. Beyond the archaeological interest in Amazonian Dark Earths, they increasingly receive attention because it is assumed that they could serve as a model for sustainable agriculture in the humid tropics (terra preta nova). Both questions lack information about the preColumbian practices which were responsible for the genesis of Amazonian Dark Earths. It has often been hypothesized that deposition of faeces could have contributed to the high nutrient stocks in these soils, but no study has focussed on this question yet. We analyzed the biomarkers for faeces 5b-stanols as well as their precursors and their 5a-isomers in Amazonian Dark Earths and reference soils to investigate the input of faeces into Amazonian Dark Earths. Using Amazonian Dark Earths as example, we discuss the application of threshold values for specific stanols to evaluate faeces deposition in archaeological soils and demonstrate an alternative approach which is based on a comparison of the concentration patterns of 5b-stanols with the concentration patterns of their precursors and their 5a-isomers as well as with local backgrounds. The concentration patterns of sterols show that faeces were deposited on Amazonian Dark Earths.

Keywords: Terra preta; Amazonian Dark Earths; Anthrosols; Landscape domestication; Biomarkers; 5b-stanols

Jungpaläolithikum

PÉTILLON 2011

Jean-Marc Pétillon et al., *Hard core and cutting edge: experimental manufacture and use of Magdalenian composite projectile tips*. [Journal of Archaeological Science](#) **38** (2011), 1266–1283.

Jean-Marc Pétillon, Olivier Bignon, Pierre Bodu, Pierre Cattelain, Grégory Debout, Mathieu Langlais, Véronique Laroulandie, Hugues Plisson & Boris Valentin

The technology of the European Upper Palaeolithic yielded abundant evidence of the use of composite projectile heads, in the form of osseous points on the side of which one or several (micro)lithic elements are attached. Yet, little experimental work has been devoted to testing and assessing the parameters of use of this type of composite tips. In this paper we present a pilot experiment with replicas of Magdalenian composite spear tips, made of an antler point with one or two rows of flint backed bladelets. Two series of replicas were manufactured after the lithic and osseous record of, respectively, the Lower Magdalenian from southwest France (c. 20–18 ky cal BP) and the Upper Magdalenian of Pincevent in the Paris Basin (c. 15–14 ky cal BP). The 34 experimental composite heads were hafted to spears that were then shot with a spearthrower at the carcasses of two young deer. The results provide some insight into the performance characteristics of the osseous and lithic components, both in efficiency and durability. Finally, possible improvements of the experimental protocol are discussed, as well as the implications of our results for the understanding of projectile point variability in the Upper Palaeolithic.

Keywords: Upper Palaeolithic; Magdalenian; Pincevent; Experimental archaeology; Hunting; Composite projectile head; Flint backed bladelet

Klima

BEAL 2011

Lisa M. Beal, Wilhelmus P. M. De Ruijter, Arne Biastoch, Rainer Zahn & SCOR/WCRP/IAPSO Working Group 136, *On the role of the Agulhas system in ocean circulation and climate*. [nature](#) **472** (2011), 429–436.

The Atlantic Ocean receives warm, saline water from the Indo-Pacific Ocean through Agulhas leakage around the southern tip of Africa. Recent findings suggest that Agulhas leakage is a crucial component of the climate system and that ongoing increases in leakage under anthropogenic warming could strengthen the Atlantic overturning circulation at a time when warming and accelerated meltwater input in the North Atlantic is predicted to weaken it. Yet in comparison with processes in the North Atlantic, the overall Agulhas system is largely overlooked as a potential climate trigger or feedback mechanism. Detailed modelling experiments-backed by palaeoceanographic and sustained modern observations-are required to establish firmly the role of the Agulhas system in a warming climate.

BOWEN 2011

Gabriel J. Bowen, *A Faster Water Cycle*. [science](#) **332** (2011), 430–431.

Fossil teeth from marine mammals suggest that the tropical water cycle sped up during the Eocene.

CLEMENTZ 2011

Mark T. Clementz & Jacob O. Sewall, *Latitudinal Gradients in Greenhouse Seawater $\delta^{18}\text{O}$: Evidence from Eocene Sirenian Tooth Enamel*. [science](#) **332** (2011), 455–458.

s332-0455-Supplement.pdf

The Eocene greenhouse climate state has been linked to a more vigorous hydrologic cycle at mid- and high latitudes; similar information on precipitation levels at low latitudes is, however, limited. Oxygen isotopic fluxes track moisture fluxes and, thus, the $\delta^{18}\text{O}$ values of ocean surface waters can provide insight into hydrologic cycle changes. The offset between tropical $\delta^{18}\text{O}$ values from sampled Eocene sirenian tooth enamel and modern surface waters is greater than the expected 1.0 per mil increase due to increased continental ice volume. This increased offset could result from suppression of surface-water $\delta^{18}\text{O}$ values by a tropical, annual moisture balance substantially wetter than that of today. Results from an atmospheric general circulation model support this interpretation and suggest that Eocene low latitudes were extremely wet.

Kultur

DUNN 2011

Michael Dunn, Simon J. Greenhill, Stephen C. Levinson & Russell D. Gray, *Evolved structure of language shows lineage-specific trends in word-order universals*. *nature* **473** (2011), 79–82.
n473-0079-Supplement.pdf

Languages vary widely but not without limit. The central goal of linguistics is to describe the diversity of human languages and explain the constraints on that diversity. Generative linguists following Chomsky have claimed that linguistic diversity must be constrained by innate parameters that are set as a child learns a language. In contrast, other linguists following Greenberg have claimed that there are statistical tendencies for co-occurrence of traits reflecting universal systems biases, rather than absolute constraints or parametric variation. Here we use computational phylogenetic methods to address the nature of constraints on linguistic diversity in an evolutionary framework. First, contrary to the generative account of parameter setting, we show that the evolution of only a few word-order features of languages are strongly correlated. Second, contrary to the Greenbergian generalizations, we show that most observed functional dependencies between traits are lineage-specific rather than universal tendencies. These findings support the view that—at least with respect to word order-cultural evolution is the primary factor that determines linguistic structure, with the current state of a linguistic system shaping and constraining future states.

PÉREZ-LOSADA 2011

Joaquim Pérez-Losada & Joaquim Fort, *Spatial dimensions increase the effect of cultural drift*. *Journal of Archaeological Science* **38** (2011), 1294–1299.
JArchSci38-1294-Supplement.doc

The transition from hunter-gathering to agriculture (Neolithic) spread gradually across Europe from the Southeast. A reduction in cultural diversity of crop farming practices has been previously observed by comparing pre-LBK Neolithic sites in Greece and the Balkans (dated about 8500 yr BP) to LBK Neolithic sites in Central Europe (dated about 7000 yr BP). The decrease in crop diversity is statistically significant even when considering only the species less likely to have been subject to smaller productivity due to climatic factors (reductions in growing season, temperature, daylight, etc.). This reduction in cultural diversity has not been explained previously. In this paper we show that spatial drift, which occurred on the front of the advancing wave of pioneer settlements, can explain the observed loss of diversity during the LBK range expansion. Our results suggest that spatial dimensions can have a relevant effect also in other case studies in which cultural drift is important.

Keywords: Cultural drift; Spatial dimensions; Neolithic; Demic diffusion; Waves of advance

SCHULZE 2008

C. Schulze, D. Stauffer & S. Wichmann, *Birth, Survival and Death of Languages by Monte Carlo Simulation*. [Communications in Computational Physics](#) **3** (2008), 271–294.

Simulations mostly by physicists of the competition between adult languages since 2003 are reviewed. The Viviane and Schulze models give good and reasonable agreement, respectively, with the empirical histogram of language sizes. Also the numbers of different languages within one language family is modeled reasonably in an intermediate range. Bilingualism is now incorporated into the Schulze model. Also the rate at which the majority shifts from one language to another is found to be nearly independent of the population size, or to depend strongly on it, according to details of the Schulze model. Other simulations, like Nettle-Culicover-Nowak, are reviewed more briefly.

Key words: Language competition, Schulze model, Viviane model, agent-based modeling.

Neolithikum

ZIMMERMANN 2009

Andreas Zimmermann, *Neolithisierung und frühe soziale Gefüge*. In: ALBRECHT JOCKENHÖVEL (Hrsg.), *WBG Weltgeschichte, I. Grundlagen der globalen Welt vom Beginn bis 1200 v. Chr.* ([Darmstadt 2009](#)), 95–127.