Liste erstellt am 2011-04-08

Literatur

Aktuell

Casana 2009

Jesse Casana, *The Breakfast Cereal Survey, Teaching archaeology with 12 essential vitamins and minerals*. SAA Archaeological Record **2009**, iv, 13–18.
During this unit I always try to help students understand the fundamental tensions and trade-offs that exist between extensive, full-coverage surveys and intensive, sample-based surveys. To any archaeologist who has conducted a regional survey, these issues are second nature. But for students unfamiliar with the practical challenges involved in undertaking archaeological field projects, arguments between the proponents of these two strategies remain irrelevant and confusing. I have tried writing assignments, in-class debates, waving my arms and shouting, but almost without fail, students inevitably settle on that classic undergraduate cop-out, believing that we ought to do "a little bit of both," as if the correct answer to any complex question always lies somewhere in the middle.

Clery 2011

Daniel Clery, *Current Designs Address Safety Problems in Fukushima Reactors*. science **331** (2011), 1506.

Editorial 2011

Lessons from the past. nature **471** (2011), 547.
The Chernobyl disaster still has much to tell us about the long-term risks of low-level radiation exposure. But only if the necessary follow-up studies are supported.

Frame 2009

Lesley Frame & Sam Duwe, *The where's, why's, and how's of student publishing*. SAA Archaeological Record **2009**, iv, 36–37.

Kaiser 2011

Jocelyn Kaiser, *Radiation Risks Outlined by Bombs, Weapons Work, and Accidents*. science **331** (2011), 1504–1505.
The only clear health effect among the public from Chernobyl so far has been more than 6000 cases of thyroid cancer (15 of them fatal), mainly in people who as children and adolescents drank milk from cows that fed on grass tainted with iodine-131. Researchers expect that 4000 excess cancer deaths will eventually result. But precise dose information is lacking even for the "liquidators," the 600,000 workers who helped clean up.

Keller 2009

Angela H. Keller, *In defense of the database*. SAA Archaeological Record **2009**, v, 26–32.
Although I believe that we should all be using proper databases, simply creating an electronic database will not make an inherently better data set. Certainly, the electronic medium allows for rapid and novel data analysis, but our data are not necessarily more accurate or meaningful simply because they are electronic (Agrawal 2002). When creating databases,

we often feel that we are creating more objective pictures of the world than existed previously, but this is an illusion. A well-designed database will reduce the number of technical errors in a data set, but it cannot fix fundamental conceptual or logical errors.
As the primary authors of the archaeological record, we must take the time to thoughtfully construct databases that are logical, consistent, and meticulously documented such that other researchers will be able to understand them with little preamble. We must consider why we are recording what we are recording, as well as what we are leaving out in the process. Further, we must think about how our recovery and recording procedures affect our questions, our data, and our thoughts about the past (Hodder 2000). These are the deeper questions that conscientious database design entails. Ultimately, these basic methodological and epistemological questions are the reason that I believe every archaeologist and archaeological student should work through the initial stages of database design.
Databases may still be uncool, but simple database design is no longer technically impossible for the average archaeologist. Given the proper instruction, most of our graduate students should be able to master rudimentary database development. Just as many anthropology programs now offer disciplinespecific GIS classes, we should also be teaching database design and data management skills for archaeologists. Certainly, Access is no more complicated than GIS programs like ESRI's ArchInfo, which is itself a type of graphical database. If we feel that our students need to learn how to run their own GIS projects, I suggest that we should also give them the database design skills to collect, store, and manipulate the data necessary for those projects and anything else they may choose to explore.

Kuhl 2011

Brice A. Kuhl, Jesse Rissman, Marvin M. Chun & Anthony D. Wagner, *Fidelity of neural reactivation reveals competition between memories*. PNAS **108** (2011), 5903–5908.

pnas108-05903-Supplement.pdf

Remembering an event from the past is often complicated by the fact that our memories are cluttered with similar events. Though competition is a fundamental part of remembering, there is little evidence of how mnemonic competition is neurally represented. Here, we assessed whether competition between visual memories is captured in the relative degree to which target vs. competing memories are reactivated within the ventral occipitotemporal cortex (VOTC). To assess reactivation, we used multivoxel pattern analysis of fMRI data, quantifying the degree to which retrieval events elicited patterns of neural activity that matched those elicited during encoding. Consistent with recent evidence, we found that retrieval of visual memories was associated with robust VOTC reactivation and that the degree of reactivation scaled with behavioral expressions of target memory retrieval. Critically, competitive remembering was associated with more ambiguous patterns of VOTC reactivation, putatively reflecting simultaneous reactivation of target and competing memories. Indeed, the more weakly that target memories were reactivated, the more likely that competing memories were later remembered. Moreover, when VOTC reactivation indicated that conflict between target and competing memories was high, frontoparietal mechanisms were markedly engaged, revealing specific neural mechanisms that tracked competing mnemonic evidence. Together, these findings provide unique evidence that neural reactivation captures competition between individual memories, providing insight into how well target memories are retrieved in the present and how likely competing memories will be remembered in the future.

forgetting | pattern classification

Laidlaw 2011

Kaitlin E. W. Laidlaw, Tom Foulsham, Gustav Kuhn & Alan Kingstone,

Potential social interactions are important to social attention. PNAS **108** (2011), 5548–5553.
Social attention, or how spatial attention is allocated to biologically relevant stimuli, has typically been studied using simplistic paradigms that do not provide any opportunity for social interaction. To study social attention in a complex setting that affords social interaction, we measured participants' looking behavior as they were sitting in a waiting room, either in the presence of a confederate posing as another research participant, or in the presence of a videotape of the same confederate. Thus, the potential for social interaction existed only when the confederate was physically present. Although participants frequently looked at the videotaped confederate, they seldom turned toward or looked at the live confederate. Ratings of participants' social skills correlated with head turns to the live, but not videotaped, confederate. Our results demonstrate the importance of studying social attention within a social context, and suggest that the mere opportunity for social interaction can alter social attention.
eye movements | overt visual attention | visual cognition | autism

Lovis 2011
William A. Lovis, *"So, where does meat come from?"*. SAA Archaeological Record **2011**, i, 6–9.
I looked out over the 40 students in my European Archaeology class. Today we were going to talk about the acquisition and processing of animal products among hunter-gatherers (and yes, scavengers as well); a topic near and dear to my heart, and central to an understanding of many hundreds of millennia of human (and pre-AMH) adaptation. "How many of you are Vegan or Vegetarian?" Anywhere from 10 to 15 percent of the class raise their hands. In truth these folks have actually had meat in the past, but have not viewed it as a dietary staple in some time. Since this is often a deeply seated philosophical position, I focus more closely on the variable contributions of meat as recorded in ethnographic accounts of hunter-gatherers. Of significance here is the notion held by many students that meat is not necessary to a diet at all – which depending on local resource availability and cycling can be fatally false.

Macilwain 2011
Colin Macilwain, *Concerns over nuclear energy are legitimate*. nature **471** (2011), 549.
Reassurances from 'experts' on the safety of nuclear power will not wash, says Colin Macilwain. The Fukushima crisis raises genuine questions.

Munson 2009
Marit K. Munson, Kacy L. Hollenback & Rebecca Schwendler, *How to win the student paper award and impress a conference audience*. SAA Archaeological Record **2009**, v, 8–9.

News Staff 2011
Nuclear Power's Global Fallout. science **331** (2011), 1502–1502.
The map on this page provides a snapshot of the number of nuclear reactors in operation (dark blue) and under construction (green), locations of power plants in relation to seismic hazard zones, and reactions to events in Japan in some countries.

Peplow 2011
Mark Peplow, *Chernobyl's legacy*. nature **471** (2011), 562–565.
Twenty-five years after the nuclear disaster, the clean-up grinds on and health studies are faltering. Are there lessons for Japan?

Stone 2011
Richard Stone & Dennis Normile, *Fukushima Cleanup Will Be Drawn Out and Costly*. science **331** (2011), 1507.

VanderVeen 2010
James M. VanderVeen & Jeanette Repczynski, *The need for stewardship training in archaeological field schools*. SAA Archaeological Record **2010**, i, 26–28.

Walton 2011
Gregory M. Walton & Geoffrey L. Cohen, *A Brief Social-Belonging Intervention Improves Academic and Health Outcomes of Minority Students*. science **331** (2011), 1447–1451.
s331-1447-Supplement.pdf
A brief intervention aimed at buttressing college freshmen's sense of social belonging in school was tested in a randomized controlled trial (N = 92), and its academic and health-related consequences over 3 years are reported. The intervention aimed to lessen psychological perceptions of threat on campus by framing social adversity as common and transient. It used subtle attitude-change strategies to lead participants to self-generate the intervention message. The intervention was expected to be particularly beneficial to African-American students (N = 49), a stereotyped and socially marginalized group in academics, and less so to European-American students (N = 43). Consistent with these expectations, over the 3-year observation period the intervention raised African Americans' grade-point average (GPA) relative to multiple control groups and halved the minority achievement gap. This performance boost was mediated by the effect of the intervention on subjective construal: It prevented students from seeing adversity on campus as an indictment of their belonging. Additionally, the intervention improved African Americans' self-reported health and well-being and reduced their reported number of doctor visits 3 years postintervention. Senior-year surveys indicated no awareness among participants of the intervention's impact. The results suggest that social belonging is a psychological lever where targeted intervention can have broad consequences that lessen inequalities in achievement and health.

Whittaker 2010
John C. Whittaker, *Novels of Cahokia*. SAA Archaeological Record **2010**, ii, 34–36.
I enjoy using novels in teaching my archaeology classes, partly to make this point that our scientific views of the past are also interpretive and imaginative. Beyond that, writing a fictional narrative set in the past, or critiquing someone else's attempt, is an excellent exercise in scientific archaeology. To produce a vivid, fleshed-out, human picture of the past, you need lots of details, and these require you to answer questions that are fundamentally based in archaeological evidence.

Amerika

Pringle 2011
Heather Pringle, *Texas Site Confirms Pre-Clovis Settlement of the Americas*. science **331** (2011), 1512.
Very ancient stone tools help confirm what many have long suspected: Clovis hunters, with their distinctive spear points, were not the first to people the Americas

Waters 2011
Michael R. Waters et al., *The Buttermilk Creek Complex and the Origins of Clovis at the Debra L. Friedkin Site, Texas*. science **331** (2011), 1599–1603.
s331-1599-Supplement.pdf
Michael R. Waters, Steven L. Forman, Thomas A. Jennings, Lee C. Nordt, Steven G. Driese, Joshua M. Feinberg, Joshua L. Keene, Jessi Halligan, Anna Lindquist, James Pierson, Charles T. Hallmark, Michael B. Collins & James E. Wiederhold
Compelling archaeological evidence of an occupation older than Clovis (≈12.8 to 13.1 thousand years ago) in North America is present at only a few sites, and the stone tool assemblages from these sites are small and varied. The Debra L. Friedkin site, Texas, contains an assemblage of 15,528 artifacts that define the Buttermilk Creek Complex, which stratigraphically underlies a Clovis assemblage and dates between ≈13.2 and 15.5 thousand years ago. The Buttermilk Creek Complex confirms the emerging view that people occupied the Americas before Clovis and provides a large artifact assemblage to explore Clovis origins.

Anthropologie

Dennell 2011
Robin Dennell, *An Earlier Acheulian Arrival in South Asia*. science **331** (2011), 1532–1533.
Early stone tools found in India alter our view of how a key technology spread from Africa.

Pappu 2011
Shanti Pappu, Yanni Gunnell, Kumar Akhilesh, Régis Braucher, Maurice Taieb, François Demory & Nicolas Thouveny, *Early Pleistocene Presence of Acheulian Hominins in South India*. science **331** (2011), 1596–1599.
s331-1596-Supplement.pdf
South Asia is rich in Lower Paleolithic Acheulian sites. These have been attributed to the Middle Pleistocene on the basis of a small number of dates, with a few older but disputed age estimates. Here, we report new ages from the excavated site of Attirampakkam, where paleomagnetic measurements and direct 26Al/10Be burial dating of stone artifacts now position the earliest Acheulian levels as no younger than 1.07 million years ago (Ma), with a pooled average age of 1.51 ± 0.07 Ma. These results reveal that, during the Early Pleistocene, India was already occupied by hominins fully conversant with an Acheulian technology including handaxes and cleavers among other artifacts. This implies that a spread of bifacial technologies across Asia occurred earlier than previously accepted.

Biologie

Trivers 1971
Robert L. Trivers, *The Evolution of Reciprocal Altruism*. Quarterly Review of Biology **46** (1971), 35–57.
A model is presented to account for the natural selection of what is termed reciprocally altruistic behavior. The model shows how selection can operate against the cheater (non-reciprocator) in the system. Three instances of altruistic behavior are discussed, the evolution of which the model can explain: (1) behavior involved in cleaning symbioses; (2) warning cries in birds: and (3) human reciprocal altruism. Regarding human reciprocal altruism, it is shown that the details of the psychological system that regulates this altruism can be explained by the model. Specifically, friendship, dislike, moralistic aggression,

gratitude, sympathy, trust, suspicion, trustworthiness, aspects of guilt, and some forms of dishonesty and hypocrisy can be explained as important adaptations to regulate the altruistic system. Each individual human is seen as possessing altruistic and cheating tendencies, the expression of which is sensitive to developmental variables that were selected to set the tendencies at a balance appropriate to the local social and ecological environment.

Datierung

Pitts 2011

Mike Pitts, *Gathering Time*. Heritage Today **2011** March, 24–27. <http://axel.berger-odenthal.de/Scans/Zeitschrift/HeritageToday/2011-03/24-Pitts.pdf> (27 MB).

Our Neolithic period, it emerged, began in south-east England and the Thames estuary before 4000 BC, almost certainly with the arrival of farmers from the Continent. The new technologies, economy and lifestyle spread gradually west and north, to reach Ireland and Scotland around 3800 BC. By then, the first long barrows in significant numbers were being built (so not, as long believed, by the very first farmers), and it was yet another century before enclosures became common, which they were for 200 years. Similar enclosures had been around on the Continent for some time, so renewed or continuing contact with Europe seems likely.

Energie

Kerr 2011

Richard A. Kerr, *Peak Oil Production May Already Be Here*. science **331** (2011), 1510–1511.

Outside of OPEC's vast resources, oil production has leveled off, and it's looking like it may never rise again

Marino 2011

Kristen A. Marino, Berit Hinnemann & Emily A. Carter, *Atomic-scale insight and design principles for turbine engine thermal barrier coatings from theory*. PNAS **108** (2011), 5480–5487.

pnas108-05480-Supplement.pdf

To maximize energy efficiency, gas turbine engines used in airplanes and for power generation operate at very high temperatures, even above the melting point of the metal alloys from which they are comprised. This feat is accomplished in part via the deposition of a multilayer, multicomponent thermal barrier coating (TBC), which lasts up to approximately 40,000 h before failing. Understanding failure mechanisms can aid in designing circumvention strategies. We review results of quantum mechanics calculations used to test hypotheses about impurities that harm TBCs and transition metal (TM) additives that render TBCs more robust. In particular, we discovered a number of roles that Pt and early TMs such as Hf and Y additives play in extending the lifetime of TBCs. Fundamental insight into the nature of the bonding created by such additives and its effect on high-temperature evolution of the TBCs led to design principles that can be used to create materials for even more efficient engines.

Sutton 2011

Andrew D. Sutton et al., *Regeneration of Ammonia Borane Spent Fuel by Direct Reaction with Hydrazine and Liquid Ammonia*. science **331** (2011), 1426–1429.

s331-1426-Supplement.pdf
Andrew D. Sutton, Anthony K. Burrell, David A. Dixon, Edward B. Garner III, John C. Gordon, Tessui Nakagawa, Kevin C. Ott, J. Pierce Robinson & Monica Vasiliu
Ammonia borane (H3N-BH3, AB) is a lightweight material containing a high density of hydrogen (H2) that can be readily liberated for use in fuel cell-powered applications. However, in the absence of a straightforward, efficient method for regenerating AB from dehydrogenated polymeric spent fuel, its full potential as a viable H2 storage material will not be realized. We demonstrate that the spent fuel type derived from the removal of greater than two equivalents of H2 per molecule of AB (i.e., polyborazylene, PB) can be converted back to AB nearly quantitatively by 24-hour treatment with hydrazine (N2H4) in liquid ammonia (NH3) at 40°C in a sealed pressure vessel.

Grabung

Lubos 2011

C. C. M. Lubos et al., *A multi-layered prehistoric settlement structure (tell?) at Niederröblingen, Germany and its implications.* Journal of Archaeological Science **38** (2011), 1101–1110.
JArchSci38-1101-Supplement1.doc, JArchSci38-1101-Supplement2.doc, JArchSci38-1101-Supplement3.doc
C.C.M. Lubos, S. Dreibrodt, O. Nelle, M. Klamm, S. Friederich, H. Meller, M.J. Nadeau, P.M. Grootes, M. Fuchs & H.-R. Bork
At least 15 settlement layers, deposited above each other from the early Neolithic (ca. 5300 cal BC) until Roman Imperial Times (ca. 400 cal AD), have been discovered at Niederröblingen, Germany. Constituting the longest duration of prehistoric settlement in central Europe so far known (ca. 4000 yrs), the site is thought to represent the first multi-layered settlement mound (tell?) north of the Alps. This implicates that the occurrence of settlement mound is not limited to the circum-Mediterranean area. The detailed chronology, based on archaeological, radiocarbon and OSL dating and supporting a Bayesian model, shows one clear occupational gap (early Neolithic) and a possible hiatus (Roman Times). Erosion phases of the settlement mound and the deposition of alluvial sediments (since Roman Imperial Times) in the surroundings resulted in an almost complete disappearance of the mound from the recent scenery. Being difficult to detect, similar sites might be present, undetected, in central Europe. Their discovery and study would enable the precise reconstruction of the settlement history as well as of the prehistoric man-environmental interactions at a high resolution.
Keywords: Prehistoric multi-layered settlement mound; Central Europe; Bayesian modeling; Holocene soil formation; Tell

Klima

Calvo 2011

Eva Calvo, Carles Pelejero, Leopoldo D. Pena, Isabel Cacho & Graham A. Logan, *Eastern Equatorial Pacific productivity and related* CO_2 *changes since the last glacial period.* PNAS **108** (2011), 5537–5541.
pnas108-05537-Supplement.pdf
Understanding oceanic processes, both physical and biological, that control atmospheric CO2 is vital for predicting their influence during the past and into the future. The Eastern Equatorial Pacific (EEP) is thought to have exerted a strong control over glacial/interglacial CO2 variations through its link to circulation and nutrientrelated changes in the Southern Ocean, the primary region of the world oceans where CO2-enriched deep

water is upwelled to the surface ocean and comes into contact with the atmosphere. Here we present a multiproxy record of surface ocean productivity, dust inputs, and thermocline conditions for the EEP over the last 40,000 y. This allows us to detect changes in phytoplankton productivity and composition associated with increases in equatorial upwelling intensity and influence of Si-rich waters of subAntarctic origin. Our evidence indicates that diatoms outcompeted coccolithophores at times when the influence of Si-rich Southern Ocean intermediate waters was greatest. This shift from calcareous to noncalcareous phytoplankton would cause a lowering in atmospheric CO2 through a reduced carbonate pump, as hypothesized by the Silicic Acid Leakage Hypothesis. However, this change does not seem to have been crucial in controlling atmospheric CO2, as it took place during the deglaciation, when atmospheric CO2 concentrations had already started to rise. Instead, the concomitant intensification of Antarctic upwelling brought large quantities of deep CO2-rich waters to the ocean surface. This process very likely dominated any biologically mediated CO2 sequestration and probably accounts for most of the deglacial rise in atmospheric CO2.
marine productivity | molecular biomarkers | paleoceanography

Kultur

Nichols 2011

Shaun Nichols, *Experimental Philosophy and the Problem of Free Will.* science **331** (2011), 1401–1403.

Many philosophical problems are rooted in everyday thought, and experimental philosophy uses social scientific techniques to study the psychological underpinnings of such problems. In the case of free will, research suggests that people in a diverse range of cultures reject determinism, but people give conflicting responses on whether determinism would undermine moral responsibility. When presented with abstract questions, people tend to maintain that determinism would undermine responsibility, but when presented with concrete cases of wrongdoing, people tend to say that determinism is consistent with moral responsibility. It remains unclear why people reject determinism and what drives people's conflicted attitudes about responsibility. Experimental philosophy aims to address these issues and thereby illuminate the philosophical problem of free will.

Neolithikum

Stinchcomb 2011

G. E. Stinchcomb, T. C. Messner, S. G. Driese, L. C. Nordt & R. M. Stewart, *Pre-colonial (A. D. 1100–1600) sedimentation related to prehistoric maize agriculture and climate change in eastern North America.* Geology **39** (2011), 363–366.

Despite the importance of understanding the effect of land use on floodplains in eastern North America, few studies have directly addressed the possibility and extent of prehistoric indigenous land use on floodplain development. Here we report geoarchaeological evidence of increasing floodplain sedimentation and prehistoric land-use intensification in the Delaware River Valley (eastern United States) during the Medieval Climate Anomaly-Little Ice Age transition. The evidence of this anthropogenic sedimentation event, documented throughout eastern North America, is designated here as pre-colonial sediment (PCS), ca. A.D. 1100-1600. The data demonstrate that the combined effects of prehistoric land use and climate change affected eastern North American floodplain development several hundred years prior to the onset of major European settlement.

Religion

Sosis 2003

Richard Sosis, *Why aren't we all Hutterites? Costly Signaling Theory and Religious Behavior*. Human Nature **14** (2003), 91–127.

In this paper I explore the psychology of ritual performance and present a simple graphical model that clarifies several issues in William Irons's theory of religion as a "hard-to-fake" sign of commitment. Irons posits that religious behaviors or rituals serve as costly signals of an individual's commitment to a religious group. Increased commitment among members of a religious group may facilitate intra-group cooperation, which is argued to be the primary adaptive benefit of religion. Here I propose a proximate explanation for how individuals are able to pay the short-term costs of ritual performance to achieve the long-term fitness benefits offered by religious groups. The model addresses three significant problems raised by Irons's theory. First, the model explains why potential free-riders do not join religious groups even when there are significant net benefits that members of religious groups can achieve. Second, the model clarifies how costly a ritual must be to achieve stability and prevent potential freeriders from joining the religious group. Third, the model suggests why religious groups may require adherents to perform private rituals that are not observed by others. Several hypotheses generated from the model are also discussed.
KEY WORDS: Costly signaling theory; Evolution of religion; Intra-group cooperation; Ritual

Sosis 2003

Richard Sosis & Eric R. Bressler, *Cooperation and Commune Longevity: A Test of the Costly Signaling Theory of Religion*. Cross-Cultural Research **37** (2003), 211–239.

The costly signaling theory of religion posits that religious rituals and taboos can promote intragroup cooperation, which is argued to be the primary adaptive benefit of religion. To test this theory, the authors collected historical data on the constraints and ritual requirements that eighty-three 19th-century U.S. communes imposed on their members. All communes must solve the collective action problem of cooperative labor to survive; thus, they are an ideal population to assess the impact of ritual and taboo on intragroup cooperation. The authors evaluated whether communes that imposed costlier requirements survived longer than less demanding communes and whether costly requirements and religiosity interact to promote cooperation. The results support aspects of the costly signaling theory of religion and reveal new avenues for its development. The authors discuss some of the shortcomings of the theory and explore ways to expand the theory that incorporate additional features of ritual and religious belief.
Keywords: cooperation; costly signaling theory; group solidarity; 19th-century communes; ritual; religion; utopian societies

Story or Book

Story 2011

Dan Erlanson, *A PERFECT DRUG, What you don't know can help you.* nature **471** (2011), 672–672.