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References

Aktuell

Fell 2014

Gillian L. Fell, Kathleen C. Robinson, Jianren Mao, Clifford J. Woolf & David E. Fisher, *Skin β-Endorphin Mediates Addiction to UV Light*. Cell **157** (2014), 1527–1534.

UV light is an established carcinogen, yet evidence suggests that UV-seeking behavior has addictive features. Following UV exposure, epidermal keratinocytes synthesize proopiomelanocortin (POMC) that is processed to melanocyte-stimulating hormone, inducing tanning. We show that, in rodents, another POMC-derived peptide, b-endorphin, is coordinately synthesized in skin, elevating plasma levels after lowdose UV. Increases in pain-related thresholds are observed and reversed by pharmacologic opioid antagonism. Opioid blockade also elicits withdrawal signs after chronic UV exposure. This effect was sufficient to guide operant behavioral choices to avoidance of opioid withdrawal (conditioned place aversion). These UV-induced nociceptive and behavioral effects were absent in b-endorphin knockout mice and in mice lacking p53-mediated POMC induction in epidermal keratinocytes. Although primordial UV addiction, mediated by the hedonic action of b-endorphin and anhedonic effects of withdrawal, may theoretically have enhanced evolutionary vitamin D biosynthesis, it now may contribute to the relentless rise in skin cancer incidence in humans.

Fritz 2014

Claudia Fritz, Joseph Curtin & Jacques Poitevineau, *On the inability of 10 soloists to tell apart Old Italian and new violins at better than chance levels, Reply to Tai*. PNAS **111** (2014), E2779.

Tai seems to criticize our study on the basis that it contradicts his own. His study, however, is based solely on the analysis of measurements and does not include perceptual validation. There is consequently no way of knowing whether the differences he measures can be distinguished by players or listeners—and if distinguishable, which instruments are actually preferred. Even if his measured differences were shown to be obvious to listeners, they still do not contradict our results.

Macilwain 2014

Colin Macilwain, *A touch of the random*. science **344** (2014), 1221–1223.

As researchers seek ever-larger supercomputers to crunch climate models of baffling complexity, some are calling for a fresh, statistics-based approach.

Last year in the Journal of Climate, Leonard Smith of the London School of Economics and Political Science and his colleague Emma Suckling reported the results of an experiment in which they took global climate data for various locations over the past half-century, fed it into the most prominent climate models, and compared the predictions with those of a very simple statistical model that extrapolated the future climate from that of the recent past. The simple model—which worked by taking mean-temperature changes for periods of 1 to 10 years over the past century and using these to extrapolate the future— fared best, Smith says.

Smith says, time is running out: "The question is, when will we have significantly better quality information than we have today? I think we may have our answer from the climate before we get it from the physics."

Schlamminger 2014

Stephan Schlamminger, *A cool way to measure big G*. nature **510** (2014), 478–480.

Published results of the gravitational constant, a measure of the strength of gravity, have failed to converge. An approach that uses cold atoms provides a new data point in the quest to determine this fundamental constant.

Tai 2014

Hwan-Ching Tai, *Role of timbre memory in evaluating Stradivari violins*. PNAS **111** (2014), E2778.

In fact, we have already done the latter, and found that Stradivari violins produced significantly higher formant frequencies compared with a selection of Old Italian violins and new violins of professional quality. The magnitude of the observed variation in violins was similar to the formant variation between speakers of different sex.

Wang 2014

Zheng Wang, Tyler Solloway, Richard M. Shiffrin & Jerome R. Busemeyer, *Context effects produced by question orders reveal quantum nature of human judgments*. PNAS **111** (2014), 9431–9436.

The hypothesis that human reasoning obeys the laws of quantum rather than classical probability has been used in recent years to explain a variety of seemingly "irrational" judgment and decisionmaking findings. This article provides independent evidence for this hypothesis based on an a priori prediction, called the quantum question (QQ) equality, concerning the effect of asking attitude questions successively in different orders. We empirically evaluated the predicted QQ equality using 70 national representative surveys and two laboratory experiments that manipulated question orders. Each national study contained 651–3,006 participants. The results provided strong support for the predicted QQ equality. These findings suggest that quantum probability theory, initially invented to explain noncommutativity of measurements in physics, provides a simple account for a surprising regularity regarding measurement order effects in social and behavioral science.

attitude judgment | national surveys | quantum theory | measurement effects

Wiseman 2014

Howard Wiseman, *Bell's theorem still reverberates*. nature **510** (2014), 467–469.

Fifty years ago, John Bell made metaphysics testable, but quantum scientists still dispute the implications. Howard Wiseman proposes a way forward.

As Bell proved in 1964, this leaves two options for the nature of reality. The first is that reality is irreducibly random, meaning that there are no hidden variables that "determine the results of individual measurements". The second option is that reality is 'non-local', meaning that "the setting of one measuring device can influence the reading of another instrument, however remote".

Anthropologie

Gillespie 2010

Duncan O. S. Gillespie, Mirkka Lahdenperä, Andrew F. Russell & Virpi Lummaa, *Pair-Bonding Modifies the Age-Specific Intensities of Natural Selection on Human Female Fecundity*. The American Naturalist **176** (2010), 159–169.

AmNaturalist176-159-Supplement.pdf

In many animals, including humans, the ability of females to reproduce depends not only on their survival to each age but also on being pair-bonded to a mate. Exposure of the genetic variation underlying fecundity to natural selection should therefore depend on the proportion of females both alive and pair-bonded. In spite of this, female "marital" status is seldom considered to impact the strength of selection on age-specific fecundity.We used marriagehistory data of preindustrial Finns who experienced conditions of natural mortality and fertility to investigate how assortative mating by age and socioeconomic status affected female fitness and underlay age-specific female marriage patterns. The probability that a female was married peaked at age 30–40 years; females who married in their early 20s to high-socioeconomic-status husbands had the highest levels of lifetime reproductive success. Greater age difference between the pair, which is typical for females who are married to highsocioeconomicstatus husbands, increased the likelihood of widowhood occurring premenopause, adding to declines in the proportion of genetic variation exposed to selection with age. Using the age schedule of female marriage, we present an indicator of selection intensity on within-pair-bond fecundity. Our results suggest that the decline in selection intensity after age 30 years is a factor in the evolutionary maintenance of female reproductive senescence and menopause.

Keywords: biparental, marriage, monogamy, senescence, sensitivity, widowhood.

Bibel

Dever 1992

Willial G. Dever, *How to tell a Canaanite from an Israelite, With comments by Israel Finkelstein, Norman Gottwald & Adam Zertal.* In: Hershel Shanks, William G. Dever, Baruch Halpern & P. Kyle McCarter, Jr. (Hrsg.), *The Rise of Ancient Israel, Symposium at the Smithsonian Institution October 26, 1991.* (Washington 1992), 27–85.

Finkelstein 1988

Israel Finkelstein, *Searching for Israelite Origins*. Biblical Archaeology Review **14** (1988), v, 34–45.

Even in times of sparse permanent habitation, however, the "frontier zones" of the hill country were well suited to the needs of pastoralists, who exploited them primarily for summer pasturage.

There is even some historical evidence for the existence of significant nonsedentary groups in the Late Bronze Age. New Kingdom Egyptian sources such as the Amarna letters tell us of certain population elements operating outside urban Canaanite society, but nonetheless alongside that framework. The most important may be the Shosu=Sutu groups. Indeed, many scholars have suggested that the early Israelites may have originated from these groups, or, at least, that they were

associated with them. Interestingly enough, these elements are generally mentioned in conjunction with the "frontier" regions of the country—Transjordan, the hill country and the south.

The origins of many of the Israelites must therefore be sought in pastoral nomads becoming sedentary, that is, settling down in permanent structures.

Finkelstein 1989

Israel Finkelstein, *The Emergence of the Monarchy in Israel, The Environmental and Socio-Economic Aspects*. Journal for the Study of the Old Testament **14** (1989), 44, 43–74.

The present reconstruction of the emergence of the monarchy includes several components of well-known theories on the rise of states: geographical and social circumscription; population increase creating pressure for the conquest of new frontiers for cultivation; intensification of agricultural activity which produces surpluses and creates social stratification; inter- and intra-regional trade between specializing groups in different ecological niches which leads to the rise of advanced administration; and external conflict which unites the population under one military leadership. All this must be evaluated on the background of the specific geographical and historical conditions of ancient Israel at the end of the eleventh century BCE.

Hendel 1989

Ronald S. Hendel, *Sacrifice as a Cultural System, The Ritual Symbolism of Exodus 24, 3–8*. Zeitschrift für die Alttestamentliche Wissenschaft **101** (1989), 366–390.

An examination of the social functions and symbolism of Israelite sacrifice, centering on the ceremony depicted in Exodus 24,3-8. The study begins with a discussion and criticism of some of the major tendencies in the modern study of Israelite sacrifice beginning with W. Robertson Smith. The connection of Exodus 24,3-8 with the pilgrimage festivals of ancient Israel is then considered, followed by a discussion of the relevance of V. Turner's theory of the "pilgrimage process" for our understanding of the social functions of Israelite sacrifice. Finally the culinary symbolism of Israelite sacrifice is examined and found to articulate a coherent symbolic System, through which the Israelites expressed the moral relationships of their religious world.

Malamat 1982

Abraham Malamat, *Israel Comes to Canaan, How Inferior Israelite Forces Conquered Fortified Canaanite Cities*. Biblical Archaeology Review **8** (1982), ii, 24–35.

But at the core, a military conquest remains. Despite poetic embellishment and distortion, this ancient tradition reflects an intimate and authentic knowledge of the land, and a knowledge of its topography and demography—all as they relate to military strategy—which strongly support the conclusion that the settlement of the Israelites in Canaan was accompanied by substantial military operations.

Utilization of the veil of darkness in achieving surprise was ingrained in Israelite tactical planning, from the days of the Conquest down to the beginning of the Monarchy.

Night movements in anticipation of attack in light occur in the following Biblical episodes: (1) in the final attack upon Ai (Joshua 8:3, and cf. vs. 13); (2) as we have seen, at Gibeon (Joshua 10:9); (3) in Abimelech's ambush against Shechem

Judges 9:34); (4) in Saul's deployment against the Ammonites besieging Jabesh-Gilead (1 Samuel 11:11); and possibly (5) in David's raid on the Amalekite camp (1 Samuel 30:17).

Mazar 1982

Amihai Mazar, *The "Bull Site"—An Iron Age I Open Cult Place.* Bulletin of the American Schools of Oriental Research **247** (1982), 27–42.

A special feature of the Patriarchal narratives are the altars (mizbeah) that were erected by the Patriarchs in the open, close to Shechem, Bethel, Jerusalem, Hebron, and Beersheba. Some of them were erected near a sacred tree, and at least in one case a sacred stone (massebah) was erected (Gen 35: 14). Such altars could be simple installations, facilitating sacrifices and the placing of offerings in a well defined enclosure. Our cult place may be taken as an illustration of such an ancient "altar," built in the open outside of a settlement. The large stone defined by us as a maassebah may be part of such a cult place as understood in the Patriarchal narratives.

Shanks 1992

Hershel Shanks, William G. Dever, Baruch Halpern & P. Kyle McCarter, Jr., *The Rise of Ancient Israel, Symposium at the Smithsonian Institution October 26, 1991.* (Washington 1992).

Stager 1989

Lawrence E. Stager, *The Song of Deborah, Why Some Tribes Answered the Call and Others Did Not.* Biblical Archaeology Review **15** (1989), i, 50–59, 62–64.

Yadin 1982

Yigael Yadin, *Israel Comes to Canaan, Is the Biblical Account of the Israelite Conquest of Canaan Historically Reliable?* Biblical Archaeology Review **8** (1982), ii, 16–23.

My basic point in this article is that we should not be dogmatic. We can pick and choose based on the evidence in each case. It is not necessary either to accept each detail of the Biblical account, on the one hand, or to reject the basic historicity of the Conquest, on the other. Examined in this light, archaeology broadly confirms that at the end of the Late Bronze Age, semi-nomadic Israelites destroyed a number of major Canaanite cities; then, gradually and slowly, they built their own sedentary settlements on the ruins, and occupied the remainder of the country.

Biologie

Parker 2014

Eric T. Parker et al., *A Plausible Simultaneous Synthesis of Amino Acids and Simple Peptides on the Primordial Earth.* Angewandte Chemie Int. Ed. (2014), preprint, 1–6. DOI:10.1002/anie.201403683.

AngChIE2014-Parker-Supplement.pdf

Eric T. Parker, Manshui Zhou, Aaron S. Burton, Daniel P. Glavin, Jason P. Dworkin, Ramanarayanan Krishnamurthy, Facundo M. Fernández and Jeffrey L. Bada

Abstract: Following his seminal work in 1953, Stanley Miller conducted an experiment in 1958 to study the polymerization of amino acids under simulated early Earth conditions. In the experiment, Miller sparked a gas mixture of CH4, NH3, and H2O, while intermittently adding the plausible prebiotic condensing reagent cyanamide. For unknown reasons, an analysis of the samples was not reported. We analyzed the archived samples for amino acids, dipeptides, and diketopiperazines by liquid chromatography, ion mobility spectrometry, and mass spectrometry. A dozen amino acids, 10 glycine-containing dipeptides, and 3 glycine-containing diketopiperazines were detected. Miller's experiment was repeated and similar polymerization products were observed. Aqueous heating experiments indicate that Strecker synthesis intermediates play a key role in facilitating polymerization. These results highlight the potential importance of condensing reagents in generating diversity within the prebiotic chemical inventory.

Power 2014

R. A. Power et al., *Genetic predisposition to schizophrenia associated with increased use of cannabis*. Molecular Psychiatry (2014), preprint, 1–4. DOI:10.1038/mp.2014.51.

R. A. Power, K. J. H. Verweij, M. Zuhair, G. W. Montgomery, A. K. Henders, A. C. Heath, P. A. F. Madden, S. E. Medland, N. R. Wray & N. G. Martin

Cannabis is the most commonly used illicit drug worldwide. With debate surrounding the legalization and control of use, investigating its health risks has become a pressing area of research. One established association is that between cannabis use and schizophrenia, a debilitating psychiatric disorder affecting ≈ 1 % of the population over their lifetime. Although considerable evidence implicates cannabis use as a component cause of schizophrenia, it remains unclear whether this is entirely due to cannabis directly raising risk of psychosis, or whether the same genes that increases psychosis risk may also increase risk of cannabis use. In a sample of 2082 healthy individuals, we show an association between an individual's burden of schizophrenia risk alleles and use of cannabis. This was significant both for comparing those who have ever versus never used cannabis (P = 2.6 × 10-4), and for quantity of use within users (P = 3.0 × 10-3). Although directly predicting only a small amount of the variance in cannabis use, these findings suggest that part of the association between schizophrenia and cannabis is due to a shared genetic aetiology. This form of gene-environment correlation is an important consideration when calculating the impact of environmental risk factors, including cannabis use.

Judentum

Cruciani 2006

Fulvio Cruciani, Roberta La Fratta, Antonio Torroni, Peter A. Underhill & Rosaria Scozzari, *Molecular Dissection of the Y Chromosome Haplogroup E-M78 (E3b1a), A Posteriori Evaluation of a Microsatellite-Network-Based Approach Through Six New Biallelic Markers*. Human Mutation **27** (2006), 831–832.

The human Y chromosome haplogroup E-M78 (E3b1a) occurs commonly and is distributed in northern and eastern Africa, western Asia, and all of Europe. Previously, only two rarely observed internal biallelic markers (UEPs) were known

within the E-M78 clade. Here we report the identification of six novel UEPs that significantly refine the phylogeny of this haplogroup. Then, we evaluate the correspondence between the newly defined subhaplogroups and the E-M78 haplotype clusters previously identified by an 11-microsatellite loci-based network encompassing 232 chromosomes (Cruciani et al., 2004). We observed considerable correspondence between the trees generated by the two types of markers, but also noted important discrepancies between microsatellite and UEP findings. Overall, this analysis reveals that the currently visible terminal branches of the Y tree still contain a large amount of information, in terms of undiscovered biallelic markers, and that caution is needed when using the microsatellite alleles as surrogates of unique event polymorphisms.

Keywords: Y-chromosome; microsatellite; polymorphism; haplogroup; network; human evolution

Shen 2004

Peidong Shen et al., *Reconstruction of Patrilineages and Matrilineages of Samaritans and other Israeli Populations from Y-Chromosome and Mitochondrial DNA Sequence Variation*. Human Mutation **24** (2004), 248–260.

Peidong Shen, Tal Lavi, Toomas Kivisild, Vivian Chou, Deniz Sengun, Dov Gefel, Issac Shpirer, Eilon Woolf, Jossi Hillel, Marcus W. Feldman, & Peter J. Oefner

The Samaritan community, which numbered more than a million in late Roman times and only 146 in 1917, numbers today about 640 people representing four large families. They are culturally different from both Jewish and non-Jewish populations in the Middle East and their origin remains a question of great interest. Genetic differences between the Samaritans and neighboring Jewish and non-Jewish populations are corroborated in the present study of 7,280 bp of non-recombining Y-chromosome and 5,622 bp of coding and hypervariable segment I (HVS-I) mitochondrial DNA (mtDNA) sequences. Comparative sequence analysis was carried out on 12 Samaritan Y-chromosome, and mtDNA samples from nine male and seven female Samaritans separated by at least two generations. In addition, 18–20 male individuals were analyzed, each representing Ethiopian, Ashkenazi, Iraqi, Libyan, Moroccan, and Yemenite Jews, as well as Druze and Palestinians, all currently living in Israel. The four Samaritan families clustered to four distinct Y-chromosome haplogroups according to their patrilineal identity. Of the 16 Samaritan mtDNA samples, 14 carry either of two mitochondrial haplotypes that are rare or absent among other worldwide ethnic groups. Principal component analysis suggests a common ancestry of Samaritan and Jewish patrilineages. Most of the former may be traced back to a common ancestor in the paternally-inherited Jewish high priesthood (Cohanim) at the time of the Assyrian conquest of the kingdom of Israel.

Keywords: Y-chromosome; mitochondrial DNA; Samaritan; population genetics; EIF1AY; MTCYB

Stampfer 2014

Shaul Stampfer, *Did the Khazars Convert to Judaism?* Jewish Social Studies **19** (2014), iii, 1–72.

The view that some or all of the Khazars, a central Asian people, converted to Judaism at some point during the ninth or tenth century is widely accepted. A careful examination of the sources, however, shows that some of them are pseudepigraphic, and the rest are of questionable reliability. Many ofthe most reliable contemporary texts that mention Khazars say nothing about their conversion, nor

is there any archaeological evidence for it. This leads to the conclusion that such a conversion never took place.

Keywords: Khazars, conversion, Hasdai ibn Shaprut, historiography

Klima

Davin 2014

Edouard L. Davin, Sonia I. Seneviratne, Philippe Ciais, Albert Olioso & Tao Wang, *Preferential cooling of hot extremes from cropland albedo management*. PNAS **111** (2014), 9757–9761.

pnas111-09757-Supplement.pdf

Changes in agricultural practices are considered a possible option to mitigate climate change. In particular, reducing or suppressing tillage (no-till) may have the potential to sequester carbon in soils, which could help slow global warming. On the other hand, such practices also have a direct effect on regional climate by altering the physical properties of the land surface. These biogeophysical effects, however, are still poorly known. Here we show that no-till management increases the surface albedo of croplands in summer and that the resulting cooling effect is amplified during hot extremes, thus attenuating peak temperatures reached during heat waves. Using a regional climate model accounting for the observed effects of no-till farming on surface albedo, as well as possible reductions in soil evaporation, we investigate the potential consequences of a full conversion to no-till agriculture in Europe. We find that the summer cooling from cropland albedo increase is strongly amplified during hot summer days, when surface albedo has more impact on the Earth's radiative balance due to clear-sky conditions. The reduced evaporation associated with the crop residue cover tends to counteract the albedo-induced cooling, but during hot days the albedo effect is the dominating factor. For heatwave summer days the local cooling effect gained from no-till practice is of the order of 2 °C. The identified asymmetric impact of surface albedo change on summer temperature opens new avenues for climateengineering measures targeting high-impact events rather than mean climate properties.

Filippelli 2014

Gabriel Filippelli, *A salty start to modern ocean circulation*. science **344** (2014), 1228–1229.

Water flow out of the Mediterranean is linked to large-scale ocean circulation patterns.

Hernández-Molina 2014

F. Javier Hernández-Molina et al., *Onset of Mediterranean outflow into the North Atlantic*. science **344** (2014), 1244–1250.

s344-1244-Supplement1.pdf, s344-1244-Supplement2.xlsx

F. Javier Hernández-Molina, Dorrik A. V. Stow, Carlos A. Alvarez-Zarikian, Gary Acton, André Bahr, Barbara Balestra, Emmanuelle Ducassou, Roger Flood, José-Abel Flores, Satoshi Furota, Patrick Grunert, David Hodell, Francisco Jimenez-Espejo, Jin Kyoung Kim, Lawrence Krissek, Junichiro Kuroda, Baohua Li, Estefania Llave, Johanna Lofi, Lucas Lourens, Madeline Miller, Futoshi Nanayama, Naohisa Nishida, Carl Richter, Cristina Roque, Hélder Pereira, Maria Fernanda Sanchez Goñi, Francisco J. Sierro, Arun Deo Singh, Craig Sloss, Yasuhiro Takashimizu, Alexandrina Tzanova, Antje Voelker, Trevor Williams & Chuang Xuan

Sediments cored along the southwestern Iberian margin during Integrated Ocean Drilling Program Expedition 339 provide constraints on Mediterranean Outflow Water (MOW) circulation patterns from the Pliocene epoch to the present day. After the Strait of Gibraltar opened (5.33 million years ago), a limited volume of MOW entered the Atlantic. Depositional hiatuses indicate erosion by bottom currents related to higher volumes of MOW circulating into the North Atlantic, beginning in the late Pliocene. The hiatuses coincide with regional tectonic events and changes in global thermohaline circulation (THC). This suggests that MOW influenced Atlantic Meridional Overturning Circulation (AMOC), THC, and climatic shifts by contributing a component of warm, saline water to northern latitudes while in turn being influenced by plate tectonics.

Neumann 1987

J. Neumann & S. Parpola, *Climatic Change and the Eleventh-Tenth-Century Eclipse of Assyria and Babylonia*. Journal of Near Eastern Studies **46** (1987), 161–182.

The purpose of this paper is to draw attention to the fact that the political, military, and economic decline of Assyria and Babylonia in the twelfth through tenth centuries appears to coincide with the period of notable warming and aridity which set in about 1200 and lasted till about 900. Although the relevant evidence still needs to be substantiated, we feel justified in concluding that this type of climatic change very likely took place in the Near East.

It would be simplistic to attribute all adverse developments in contemporary Mesopotamia to this change. Nevertheless, we find that a knowledge of the change does make the associated long-term historical processes easier to understand.

Nie 2014

Junsheng Nie, Thomas Stevens, Yougui Song, John W. King, Rui Zhang, Shunchuan Ji, Lisha Gong & Danielle Cares, *Pacific freshening drives Pliocene cooling and Asian monsoon intensification*. Scientific Reports **4** (2014), 5474. DOI:10.1038/srep05474.

SciRep04-05474-Supplement.pdf

The monsoon is a fundamental component of Earth's climate. The Pliocene warm period is characterized by long-term global cooling yet concurrent monsoon dynamics are poorly known. Here we present the first fully quantified and calibrated reconstructions of separate Pliocene air temperature and East Asian summer monsoon precipitation histories on the Chinese Loess Plateau through joint analysis of loess/red clay magnetic parameters with different sensitivities to air temperature and precipitation. East Asian summer monsoon precipitation shows an intensified trend, paradoxically at the same time that climate cooled. We propose a hitherto unrecognized feedback where persistently intensified East Asian summer monsoon during the late Pliocene, triggered by the gradual closure of the Panama Seaway, reinforced late Pliocene Pacific freshening, sea-ice development and ice volume increase, culminating in initiation of the extensive Northern Hemisphere glaciations of the Quaternary Ice Age. This feedback mechanism represents a fundamental reinterpretation of the origin of the Quaternary glaciations and the impact of the monsoon.

Reyes 2014

Alberto V. Reyes et al., *South Greenland ice-sheet collapse during Marine Isotope Stage 11*. nature **510** (2014), 525–528.

Alberto V. Reyes, Anders E. Carlson, Brian L. Beard, Robert G. Hatfield, Joseph S. Stoner, Kelsey Winsor, Bethany Welke & David J. Ullman

Varying levels of boreal summer insolation and associated Earth system feedbacks led to differing climate and ice-sheet states during late-Quaternary interglaciations. In particular, Marine Isotope Stage (MIS) 11 was an exceptionally long interglaciation and potentially had a global mean sea level 6 to 13 metres above the present level around410,000 to 400,000 years ago1,2, implying substantial mass loss fromtheGreenland ice sheet (GIS).There are, however, nomodel simulations and only limitedproxy data3,4 to constrain themagnitude of the GIS response to climate change during this 'super interglacial' 5, thus confounding efforts to assess climate/ice-sheet threshold behaviour6,7 and associated sea-level rise1,2. Here we show that the south GIS was drastically smaller during MIS 11 than it is now, with only a small residual ice dome over southernmost Greenland. We use the strontium–neodymium–lead isotopic composition of proglacial sediment discharged from south Greenland to constrain the provenance of terrigenous silt deposited on the Eirik Drift, a sedimentary depositoff the southGreenlandmargin.We identify amajor reduction in sediment input derived from south Greenland's Precambrian bedrock terranes, probably reflecting the cessation of subglacial erosion and sediment transport8 as a result of near-complete deglaciation of south Greenland. Comparison with ice-sheet configurations from numerical models7,9–12 suggests that the GIS lost about 4.5 to 6 metres of sea-level-equivalent volume during MIS 11. This is evidence for late-Quaternary GIS collapse after it crossed a climate/ice-sheet stability threshold thatmayhave beennomore than several degrees above pre-industrial temperatures6,7.

Metallzeiten

Bietak 1991

Manfred Bietak, *Egypt and Canaan during the Middle Bronze Age.* Bulletin of the American Schools of Oriental Research **281** (1991), 27–72.

The existence of Middle Bronze Age remains within the fine stratification of Tell el-Dab'a brings about the possibility of a new direct link to Egyptian cultural sequence and absolute chronology. Recent seriation studies of Egyptian pottery also add to the precision of dating by allowing cross links with other well-dated assemblages in Egypt. The evaluation shows that hitherto popular schemes for Palestinian chronology have to be lowered in relative and absolute terms. The result offers a very promising tool for reinterpretation of the historical context of the Middle Bronze Age world in connection with reconstruction of trade and cultural clusters.

Dever 1991

William G. Dever, *Tell el-Dab'a and Levantine Middle Bronze Age Chronology, A Rejoinder to Manfred Bietak.* Bulletin of the American Schools of Oriental Research **281** (1991), 73–79.

Manfred Bietak's excavations since 1966 at Tell el-Dab'a have brought to light the ancient Hyksos capital of Avaris. The material culture of the early, "Asiatic" level in Strata G–F has significant correlations with Palestinian MB IIA. Bietak's "ultra-low" chronology, however, is 50 to 125 years too low. This paper challenges his latest (1984a) evidence for absolute dates and defends the "middle chronology."

Methoden

Sistiaga 2014

Ainara Sistiaga, Carolina Mallol, Bertila Galván & Roger Everett Summons, *The Neanderthal Meal, A New Perspective Using Faecal Biomarkers.* PLoS ONE **9** (2014), e101045. DOI:10.1371/journal.pone.0101045.

pone09-e101045-Supplement.pdf

Neanderthal dietary reconstructions have, to date, been based on indirect evidence and may underestimate the significance of plants as a food source. While zooarchaeological and stable isotope data have conveyed an image of Neanderthals as largely carnivorous, studies on dental calculus and scattered palaeobotanical evidence suggest some degree of contribution of plants to their diet. However, both views remain plausible and there is no categorical indication of an omnivorous diet. Here we present direct evidence of Neanderthal diet using faecal biomarkers, a valuable analytical tool for identifying dietary provenance. Our gas chromatography-mass spectrometry results from El Salt (Spain), a Middle Palaeolithic site dating to ca. 50,000 yr. BP, represents the oldest positive identification of human faecal matter. We show that Neanderthals, like anatomically modern humans, have a high rate of conversion of cholesterol to coprostanol related to the presence of required bacteria in their guts. Analysis of five sediment samples from different occupation floors suggests that Neanderthals predominantly consumed meat, as indicated by high coprostanol proportions, but also had significant plant intake, as shown by the presence of 5b-stigmastanol. This study highlights the applicability of the biomarker approach in Pleistocene contexts as a provider of direct palaeodietary information and supports the opportunity for further research into cholesterol metabolism throughout human evolution.

Story or Book

Christensen 1986

Duane L. Christensen, *The Emergence of Israel in Canaan.* Journal of Biblical Literature **105** (1986), 307–309.

The Emergence of Israel in Canaan, by Baruch Halpern. Chico: Scholars Press, 1983. Pp. xiii + 334. $36.75/24.50 ($24.50/16.50 for members).

Halpern's love for words may prove a problem for some, particularly foreign readers. The following is a sample of some of the rather unfamiliar terms used throughout the book: cataphractic, brule, equipollent, mantle-tatters, adduction, piacular, recidivism, eristic, inconncinnities [sic], proles, affinal, lookit [sic], Tecumseh-like, dybbuk, sortition, cental, propositus, prelatic, apostil, and bracken.

[T]he analysis of "The Lists of Israel's Tribes" (chap. 7) is an important contribution. Building on the observation of F. M. Cross that the lists "are broadly susceptible to typological treatment" (p. 126), Halpern proceeds to demonstrate the relative chronology of Judges 5, Deuteronomy 33, and Genesis 49, in that order (pp. 146-59). He dates Deuteronomy 33 to the time of Saul and argues that the evolution of Israel's conception of itself continues in the early Davidic monarchy "into the twelve-tribe unit of Genesis 49, and further, into the JE genealogical tradition" (p. 163). The data are summarized in a series of useful diagrams (pp. 134-44).

Dever 1990

William G. Dever, *Archaeology and Israelite Origins*. Bulletin of the American Schools of Oriental Research **279** (1990), 89–95.

Ergebnisse der Ausgrabungen auf der Hirbet el-Msas (Tel Masos) 1972–1975. Teil I: Textband. Teil II: Tafelband. Teil III: Pläne, by Volkmar Fritz and Aharon Kempinski. Abhandlungen des Deutschen Palästinavereins, hrsg. S. Mittmann und Manfred Weippert. Wiesbaden: Otto Harrassowitz, 1983. xvi + 253 pp.; 176 plates, 30 fold-out plans.

The test of a truly stratigraphic excavation and publication is obvious, simple, and fair: can the material presented as "data" be put back together again in its original, three-dimensional context, independent of the excavator's opinion. That is the only check or control we have on field and analytical method, the fundamental basis upon which all later interpretation rests—including, of course, the far-reaching historical and cultural conclusions usually drawn by archaeologists and historians.

[. . .] That statement on method, together with its implication about the way the material has been put together and presented, does not exactly inspire confidence. Indeed, when we look at the pottery, our suspicions are confirmed. Not a single sherd from inside the house is published; all the Locus 6 and 14 pottery comes from an area outside the house to the southwest.

The conclusion that inevitably follows from the above (which is only a sample of the reworking that is probably necessary) is that both the stratigraphy and the dates of Tel Masos must be used with caution, despite the wealth of material and the appearance of authority that the volumes convey on first impression.

In my judgment, if Izbet Sartah is an "early Israelite" site, Tel Masos can be, as well. Certainly the pottery repertoire of the two sites is very similar, and in both cases close to that of the late Late Bronze tradition. Furthermore, the courtyard houses of Izbet Sartah II and Tel Masos II are based on the same module. Tel Masos is larger, more sophisticated, closer to Late Bronze Age/Iron I urban sites in its economy. But why should some "early Israelite" sites not have been so? The very richness of the Tel Masos data should warn us against pressing all the possible evidence for the Israelite settlement in Canaan into a single mold. After all, even the biblical tradition does not attempt that.

Dever 1991

William G. Dever, *Archaeological Data on the Israelite Settlement, A Review of Two Recent Works by Israel Finkelstein*. Bulletin of the American Schools of Oriental Research **284** (1991), 77–90.

Izbet Sartah. An Early Iron Age Site Near Rosh Ha'ayin, Israel, by Israel Finkelstein. BAR International Series 299. Oxford: B.A.R., 1986. xii + 223 pp. £ 15.00.

The Archaeology of the Israelite Settlement, by Israel Finkelstein. Jerusalem: Israel Exploration Society, 1988. 380 pp. $ 36.00.

These are sweeping assertions, and if true they would vitiate many of Finkelstein's arguments regarding the origins (although perhaps not the ethnic identity) of the hill country settlers. I am prepared, however, to make my case.

I do not wish to caricature Finkelstein's use of ceramic arguments, and I am certainly not implying any lack of professional skill or integrity. I do wish, however, to remind generalist readers of this exceedingly important and potentially very influential work that ceramic typology is not a science, that it is a formidably complex art, and that historical and cultural inferences must be used only with great caution. We are all prone to wishful thinking when so much hinges on so little.

Virtually all the textual evidence is later, deliberately selective in what it includes, shaped in final form by the religious community. The "facts of history" are now embodied in a theocratic framework and a fixed tradition behind which we can never penetrate fully. Archaeological evidence, on the other hand, is encountered in situ, selected only by the vagaries of human behavior and the accidents of preservation. By their very "randomness," material culture remains may be more objective, more representative of what really happened in the past. Finally, archaeology is a continually expanding source of information, in theory limited only by our energy and enterprise and imagination in interpreting the data. In the final analysis, however, any account that does full justice to the variety and richness of life in the past must seek a balance between idealist and materialist paradigms. Texts reflect and refract belief somewhat better, but archaeology is unique in illuminating practice. The two "histories of ancient Israelthe sacred and the secular-seem to run parallel in the present state of our knowledge; but it is perhaps not too much to hope that, to the extent that each is faithful to its task, the two histories will eventually begin to converge.

Shvartsman 2014

Alex Shvartsman, *A one-sided argument*, *The voice of reason*. nature **510** (2014), 570.

We're a real odd couple. I served two tours in Iraq, and she protested against the war. I'm quiet and she's chatty. But it was her non-stop chitchat that got me through the nightmares and the shakes and all the other fun parting gifts I returned home with after the war.