

References

Aktuell

BOUWMEESTER 2019

Harro Bouwmeester, *Can witchweed be wiped out? A potent stimulant induces parasitic plant germination that causes it to die.* [science](#) **362** (2019), 1248–1249.

EDITORIAL 2019

Gut feeling. [nature](#) **566** (2019), 7.

The once-radical idea that gut microbes affect mental health is now a major research pursuit.

The researchers found that two groups of bacteria, Coprococcus and Dialister, were reduced in people with depression. And they saw a positive correlation between quality of life and the potential ability of the gut microbiome to synthesize a breakdown product of the neurotransmitter dopamine, called 3,4-dihydroxyphenylacetic acid. The results are some of the strongest yet to show that a person's microbiota can influence their mental health. These are still correlations, not causes.

GU 2019

Baojing Gu, Xiaoling Zhang, Xuemei Bai, Bojie Fu & Deli Chen, *Four steps to food security for swelling cities.* [nature](#) **566** (2019), 31–33.

Combine pockets of rural land, reduce food waste, improve farming and encourage urbanites to eat less meat, urge Baojing Gu and colleagues.

KREMEN 2019

William S. Kremen et al., *Influence of young adult cognitive ability and additional education on later-life cognition.* [PNAS](#) **116** (2019), 2021–2026.

[pnas116-02021-Supplement.pdf](#)

William S. Kremen, Asad Beck, Jeremy A. Elman, Daniel E. Gustavson, Chandra A. Reynolds, Xin M. Tu, Mark E. Sanderson-Cimino, Matthew S. Panizzon, Eero Vuoksima, Rosemary Toomey, Christine Fennema-Notestine, Donald J. Hagler Jr., Bin Fang, Anders M. Dale, Michael J. Lyons & Carol E. Franz

How and when education improves cognitive capacity is an issue of profound societal importance. Education and later-life education-related factors, such as occupational complexity and engagement in cognitive-intellectual activities, are frequently considered indices of cognitive reserve, but whether their effects are truly causal remains unclear. In this study, after accounting for general cognitive ability (GCA) at an average age of 20 y, additional education, occupational complexity, or engagement in cognitive-intellectual activities accounted for little variance in late midlife cognitive functioning in men age 56–66 (n= 1009). Age 20 GCA accounted for 40 % of variance in the same measure in late midlife and approximately 10 % of variance in each of seven cognitive domains. The other factors each accounted for <1 % of the variance in cognitive outcomes. The impact of these other factors likely reflects reverse causation—namely, downstream effects of early adult

GCA. Supporting that idea, age 20 GCA, but not education, was associated with late midlife cortical surface area ($n = 367$). In our view, the most parsimonious explanation of our results, a meta-analysis of the impact of education, and epidemiologic studies of the Flynn effect is that intellectual capacity gains due to education plateau in late adolescence/early adulthood. Longitudinal studies with multiple cognitive assessments before completion of education would be needed to confirm this speculation. If cognitive gains reach an asymptote by early adulthood, then strengthening cognitive reserve and reducing later-life cognitive decline and dementia risk may really begin with improving educational quality and access in childhood and adolescence.

Keywords: cognitive aging | longitudinal | occupational complexity | cognitive activities | reverse causation

Significance: The impact of additional education on later-life cognition remains unclear. After accounting for general cognitive ability (GCA) at age 20 y, education, occupational complexity, or engagement in cognitive-intellectual activities accounted for <1% of the variance in late midlife cognitive functioning. Age 20 y GCA, but not education, was also associated with late midlife cortical surface area. Education exposures likely reflect reverse causation, that is, downstream effects of earlier GCA. Education does improve cognitive ability, but there are suggestions that this effect plateaus in late adolescence/early adulthood. If so, improving educational quality and access much earlier in life may be important for reducing later-life cognitive decline and risk for dementia.

PARK 2019

Denise C. Park, *Cognitive ability in old age is predetermined by age 20 y*. [PNAS 116 \(2019\), 1832–1833](#).

Importantly, when GCA measured at age 20 y was added to this model, results showed that age 20 GCA accounted for over 10% of the variance in GCA at age 62 y, and the variance explained by the three experience-based predictors (education, engagement, and job complexity) was sharply curtailed, with each accounting for less than 1% of variance.

SCHWERDTFEGER 2019

Luke A. Schwerdtfeger, *Spirals of science*. [science 362 \(2019\), 1318](#).

The timing was perfect. A few weeks after the experimental protocol that had served me for years inexplicably stopped working, my grad school adviser approached me about writing a review paper detailing the history of our field. I was feeling hopeless about my lab work. I had seemingly tried everything to fix the broken tissue culture system, but nothing worked, crippling not only my productivity, but also my confidence. Shifting my focus to literature review and writing offered a welcome respite. And although I didn't expect it, this historical venture ended up teaching me how science proceeds across generations—and it provided the key to getting my research back on track.

SIVAK 2019

Elizaveta Sivak & Ivan Smirnov, *Parents mention sons more often than daughters on social media*. [PNAS 116 \(2019\), 2039–2041](#).

[pnas116-02039-Supplement.pdf](#)

Gender inequality starts early in life. Parents tend to prefer boys over girls, which is manifested in reproductive behavior, marital life, and parents' pastimes and investments in their children. While social media and sharing information about children (so-called "sharenting") have become an integral part of parenthood, whether and how gender preference shapes the online behavior of users are not

well known. In this paper we use public posts made by 635,665 users from Saint Petersburg on a popular Russian social networking site, to investigate public mentions of daughters and sons on social media. We find that both men and women mention sons more often than daughters in their posts. We also find that posts featuring sons receive more “likes” on average. Our results indicate that girls are underrepresented in parents’ digital narratives about their children, in a country with an aboveaverage ranking on gender parity. This gender imbalance may send a message that girls are less important than boys or that they deserve less attention, thus reinforcing gender inequality from an early age.

Keywords: gender inequality | son preference | parenthood | sharenting | social media

Significance: Parents’ preference for sons is a well-known phenomenon. This study examines whether the use of social media by parents is gender biased. Due to the large-scale use of social media, even a moderate bias might significantly contribute to gender inequality. We use data from a Russian social networking site on posts made by 635,665 users and find that parents mention sons more often than daughters and that posts featuring sons get more “likes.” This gender imbalance may send a message that girls are less important than boys or that they deserve less attention. Particularly in a country with an above-average ranking on gender parity, this invisible bias might present an intractable obstacle to gender equality.

URAGUCHI 2019

Daisuke Uraguchi et al., *A femtomolar-range suicide germination stimulant for the parasitic plant *Striga hermonthica**. [science 362 \(2019\), 1301–1305](#).

[s362-1301-Supplement.pdf](#)

Daisuke Uraguchi, Keiko Kuwata, Yuh Hijikata, Rie Yamaguchi, Hanae Imaizumi, Sathiyarayanan AM, Christin Rakers, Narumi Mori, Kohki Akiyama, Stephan Irle, Peter McCourt, Toshinori Kinoshita, Takashi Ooi & Yuichiro Tsuchiya

The parasitic plant *Striga hermonthica* has been causing devastating damage to the crop production in Africa. Because *Striga* requires host-generated strigolactones to germinate, the identification of selective and potent strigolactone agonists could help control these noxious weeds. We developed a selective agonist, sphynolactone-7, a hybrid molecule originated from chemical screening, that contains two functional modules derived from a synthetic scaffold and a core component of strigolactones. Cooperative action of these modules in the activation of a high-affinity strigolactone receptor ShHTL7 allows sphynolactone-7 to provoke *Striga* germination with potency in the femtomolar range. We demonstrate that sphynolactone-7 is effective for reducing *Striga* parasitism without impinging on host strigolactone-related processes.

Amerika

KISTLER 2019

Logan Kistler et al., *Multiproxy evidence Highlights a complex evolutionary legacy of maize in South America*. [science 362 \(2019\), 1309–1313](#).

[s362-1309-Supplement.pdf](#)

Logan Kistler, S. Yoshi Maezumi, Jonas Gregorio de Souza, Natalia A. S. Przelomska, Flaviane Malaquias Costa, Oliver Smith, Hope Loiselle, Jazmín

Ramos-Madrigal, NathanWales, Eduardo Rivail Ribeiro, Ryan R. Morrison, Claudia Grimaldo, Andre P. Prous, Bernardo Arriaza, M. Thomas P. Gilbert, Fabio de Oliveira Freitas & Robin G. Allaby

Domesticated maize evolved from wild teosinte under human influences in Mexico beginning around 9000 years before the present (yr B.P.), traversed Central America by ≈ 7500 yr B.P., and spread into South America by ≈ 6500 yr B.P. Landrace and archaeological maize genomes from South America suggest that the ancestral population to South American maize was brought out of the domestication center in Mexico and became isolated from the wild teosinte gene pool before traits of domesticated maize were fixed. Deeply structured lineages then evolved within South America out of this partially domesticated progenitor population. Genomic, linguistic, archaeological, and paleoecological data suggest that the southwestern Amazon was a secondary improvement center for partially domesticated maize. Multiple waves of human-mediated dispersal are responsible for the diversity and biogeography of modern South American maize.

ZEDER 2019

Melinda A. Zeder, *Did maize dispersal precede domestication? Unraveling the history of maize domesticates reveals a complex journey into South America.* [science](#) **362** (2019), 1246–1247.

Conventional wisdom had been that maize dispersed into South America well after it was fully domesticated. In a major departure, Kistler et al. demonstrate that the maize lineage that made its way into South America began its journey out of central Mexico in a state of partial domestication shortly after initial domestication. At the same time, the authors show that other semidomesticated lineages followed independent trajectories through Mexico and beyond, as they diversified into various extant landraces of maize.

Anthropologie

SAHNOUNI 2019

Mohamed Sahnouni et al., *1.9-million- and 2.4-million-year-old artifacts and stone tool-cutmarked bones from Ain Boucherit, Algeria.* [science](#) **362** (2019), 1297–1301.

[s362-1297-Supplement.pdf](#)

Mohamed Sahnouni, Josep M. Parés, Mathieu Duval, Isabel Cáceres, Zoheir Harichane, Jan van der Made, Alfredo Pérez-González, Salah Abdessadok, Nadia Kandi, Abdelkader Derradji, Mohamed Medig, Kamel Boulaghraif & Sileshi Semaw

East Africa has provided the earliest known evidence for Oldowan stone artifacts and hominin-induced stone tool cutmarks dated to ≈ 2.6 million years (Ma) ago. The ≈ 1.8 -million-year-old stone artifacts from Ain Hanech (Algeria) were considered to represent the oldest archaeological materials in North Africa. Here we report older stone artifacts and cutmarked bones excavated from two nearby deposits at Ain Boucherit estimated to ≈ 1.9 Ma ago, and the older to ≈ 2.4 Ma ago. Hence, the Ain Boucherit evidence shows that ancestral hominins inhabited the Mediterranean fringe in northern Africa much earlier than previously thought. The evidence strongly argues for early dispersal of stone tool manufacture and use from East Africa or a possible multiple-origin scenario of stone technology in both East and North Africa.

Bibel

DIEBNER 1984

Bernd Jörg Diebner, *Erwägungen zum Thema „Exodus“*. [Studien zur Altägyptischen Kultur 11](#) (1984), 595–630.

[Es] werden zwei “Exodus-Traditionen” im Alten Testament unterschieden. Eine der beiden Traditionen (hier: “Abraham-Exodus- [= AE-] Tradition” genannt) hat die Exilsgemeinde des Zweistromlandes im Auge, die andere (hier: “Mose-Exodus- [= ME-] Tradition” genannt) hat primär die ägyptische Exilsgemeinde im Auge.

Beide Traditionen gründen in den geschichtlichen Erfahrungen Israels — beginnend mit dem Ende des “Nordreichs” 722/21 v. Chr. und der Deportation größerer Bevölkerungskreise “Israels” bis hin zum Ende des “Südreichs” 597/96 resp. 587/86 v. Chr. und der Deportation der Oberschicht “Judas” nach Mesopotamien bzw. deren Flucht nach Ägypten, sowie der Rückkehr-Erlaubnis für die “Gola” des Zweistromlandes, die zur schubweisen Rückwanderung von Nachkommen der Exulanten führte – und zur Forderung der Jerusalemer Orthodoxie nach weiterer Rückkehr aus Mesopotamien und Ägypten.

Beide Traditionen sind frühestens in der prophetischen Verkündigung greifbar. – Ihre erzählerischen Ausgestaltungen erfuhren sie nach der Rückkehr von Nachkommen der Exulanten, besonders vermutlich nach der Rückkehr der Gruppe um Esra (/Nehemia).

“Geschichtsschreibung” wurde dies vor allem wohl in den Büchern Esra/Nehemia. Sagenhaft-legendarische Ausgestaltung im Sinne eines “Israel” begründenden “Urgeschehens” fand die AE-Tradition in Gen 12ff., die ME-Tradition in Ex 1ff. – Beide Traditionen wurden in Erzählungen und Bekenntnissen vielfach kontaminiert, wobei aus Gründen, die nur zu vermuten sind, die ME-Tradition dominierte. Zeugnis dieser Kontamination sind in der erzählerischen Überlieferung besonders auch die Pentateuch-Erzählungen ab Ex 32.

Ein “Exodus” “Israels” – oder von Gruppen, die später in “Israel” aufgingen – aus Ägypten im letzten Drittel des 2. Jt. v. Chr. ist historisch gesehen höchst unwahrscheinlich.

FINKELSTEIN 2016

Israel Finkelstein, *Comments on the Abimelech Story in Judges 9*. [Ugarit-Forschungen 47](#) (2016), 69–84.

The Abimelech story in Judges 9 can be divided into two main layers (and possibly several still later additions). The old Northern story deals with a struggle between two apiru-like groups over the rule of the town of Shechem. The account of the complete annihilation of the city in v. 45 may be read against the background of the severe destruction of the site of Shechem (Tell Balata) in the late Iron Age I, in the late 11th or early 10th century BCE. The story was put in writing for the first time in the first half of the 8th century. Whether this story conceals an old savior tale is impossible to say. The later polemics, which include the Jotham parable, the episodes of the Tower of Shechem and Thebez and different insertions into the old story (e.g., the number 70 for the brothers of Abimelech), are directed at places, personalities and events in the history of the Northern Kingdom. They should best be understood on the background of antiNorthern sentiments in Deuteronomistic Judahite circles in late Monarchic times.

DE MOOR 1990

Johannes Cornelis de Moor, *The Rise of Yahwism, The roots of Israelite monotheism*. ([Leuven 1990](#)).

Chapter 4.6: Beya and Moses

SHANKS 2016

Hershel Shanks, *The Interrupted Search for King David's Palace*. [Biblical Archaeology Review](#) **42** (2016), iv, 33–39.

Eilat Mazar was forced to put her excavation of what may be King David's palace on hold to excavate the collapsing Northern Tower. Her amazing discoveries were worth it.

Perhaps the star recovery has been more than a hundred bullae—pieces of hardened clay bearing seal impressions. Typically the lumps of clay were first pressed onto the string that tied up an ancient document; a seal was then pressed onto the soft clay; in this way the seal impression officially identified the sender of the tied document. According to Mazar, the bullae recovered from the Northern Tower excavation originated and fell from the palatial building designated the LSS, which she identifies as David's palace, although most (but not all) of the bullae come from a few hundred years after David's reign. The large number of bullae recovered from this small excavation indicate, in Mazar's words, that "there was a large archive in the palace." And the administrative activity in this area was intense. The government of Judah was maintained by a sophisticated governmental bureaucracy.

THOMPSON 1978

Thomas L. Thompson, *The Background of the Patriarchs, A Reply to William Dever and Malcolm Clark*. [Journal for the Study of the Old Testament](#) **9** (1978), 2–43.

This paper is written in response to the recent articles of Malcolm Clark and William Dever in Westminster Press's new *Israelite and Judaeon History*. Part I attempts to clarify my position giving an Iron Age post quem dating for the origin of the Genesis narratives. Part II discusses the sociologically descriptive term "dimorphic" as used by Dever in his article, and as it has been variously used in the writing of Mesopotamian history. Part III discusses the limitations of the use to which such parallels or analogues can be put in developing a history of Palestine. Part IV uses the EB IV/MB I period as an example of the effect of sociological and anthropological questions on the writing of a history of Palestine. Part V discusses the complexity of settlement patterns in Bronze Age Palestine, and the variety of political structures implied by these patterns, as well as the impact of such observations on the history of the Late Bronze and Early Iron Ages in Palestine.

WILLETTE 2012

Dorothy Willette, *Nehemiah, The Man Behind the Wall*. [Bible History Daily](#) **2012**, Aug..

WOHLSTEIN 1967

Hermann Wohlstein, *Zu einigen altisraelitischen Volksvorstellungen von Toten- und Ahnengeistern in biblischer Überlieferung*. [Zeitschrift für Religions- und Geistesgeschichte](#) **19** (1967), 348–355.

Schon aus dem dortigen Angaben ist ersichtlich, daß die Totengeister im Volksglauben eigentlich zu den Nachtgestalten gehörten und daß das Grauenhafte und Schreckenerregende der tiefen Dunkelheit in ihnen personifiziert war. Saul begibt sich zur Totenwahrseherin erst, nachdem die Nacht völlig angebrochen war; erst dann zeigt sich das Wesen, das wohl dem Worte nach "göttliche Macht" im kollektiven Sinne bedeutet.

ZOBEL 1989

Hans-Jürgen Zobel, *Der frühe Jahwe-Glaube in der Spannung von Wüste und Kulturland*. [Zeitschrift für die Alttestamentliche Wissenschaft](#) **101** (1989), 342–365.

Wüste und gelobtes Land sind prägende Größen für den frühen Jahwe-Glauben. Wie die voralästinische Vätergottverehrung, so stammt auch die Jahwe-Religion aus der “Wüste”. Das begründet die gemeinsamen Züge beider Religionsformen, macht aber zugleich auf den der Jahwe-Religion von Hause aus inhärenten Zug von Kulturlanddistanz aufmerksam. Während die El-Religion Kanaans als Bereicherung der Jahwe-Vorstellung empfunden und vollkommen eingeschmolzen wurde, ist gegenüber der Baal-Vorstellung eine unterschiedliche Haltung in den Quellen wahrzunehmen. Auf dem Boden des späteren Nordreichs erfolgte eine grundsätzliche Ablehnung des Baalismus; im Südreich dagegen floß durch Vermittlung des bereits in vordavidischer Zeit synkretistisch gestalteten El-Eljon-Kults Jerusalems vielfältiges kanaanäisch-baalistisches Überlieferungsgut in den Jahwe-Glauben ein und begründete somit die biblische Naturfrömmigkeit.

Biologie

QUINN 2018

Laleh K. Quinn et al., *When Rats Rescue Robots*. [Animal Behavior and Cognition](#) **5** (2018), 368–379.

Laleh K. Quinn, Luisa P. Schuster, Marcelo Aguilar-Rivera, Joshua Arnold, David Ball, Emmanuel Gygi, Scott Heath, Jesse Holt, Daeun J. Lee, Jonathon Taufatofua, Janet Wiles & Andrea A. Chiba

Robots are increasingly being used to monitor and even participate in social interactions with animals in their own environments. Robotic animals enable social behaviors to be observed in natural environments, or specifically elicited under the control of an experimenter. It is an open question to what extent animals will form positive social connections with such robots. To test this, we familiarized rats to two rat-sized robots, one exhibiting “social” behaviors, including helping, while the other was also mobile but not helpful. When given an opportunity to release the robots from restrainers, as they do for conspecifics, we found that rats did release the robots, and moreover, were significantly more likely to release the helpful than the unhelpful robot. These findings indicate that robots can elicit helpful behavior from rats, and that rats will even discriminate between robots on the basis of their behaviors.

Keywords: Rat | Robot | Reciprocity | Pro-social

ZEDER 2018

Melinda A. Zeder, *Why evolutionary biology needs anthropology, Evaluating core assumptions of the extended evolutionary synthesis*. [Evolutionary Anthropology](#) **27** (2018), 267–284.

Anthropologists have a long history of applying concepts from evolutionary biology to cultural evolution. Evolutionary biologists, however, have been slow to turn to anthropology for insights about evolution. Recently, evolutionary biology has been engaged in a debate over the need to revise evolutionary theory to account for developments made in 60 years since the Modern Synthesis, the standard evolutionary paradigm, was framed. Revision proponents maintain these developments challenge central tenets of standard theory that can only be accounted for in an extended evolutionary synthesis (EES). Anthropology has much to offer to this

debate. One important transition in human cultural evolution, the domestication of plants and animals, provides an ideal model system assessing core EES assumptions about directionality, causality, targets of selection, modes of inheritance, and pace of evolution. In so doing, anthropologists contribute to an overarching framework that brings together cultural and biological evolution.

Keywords: causality | constructive development | modes of inheritance | pace of evolution | targets of selection

Datierung

CHENG 2019

Hai Cheng et al., *Atmospheric $^{14}\text{C}/^{12}\text{C}$ changes during the last glacial period from Hulu Cave*. *science* **362** (2019), 1293–1297.

s362-1293-Supplement1.pdf, s362-1293-Supplement2.xlsx, s362-1293-Supplement3.xlsx

Hai Cheng, R. Lawrence Edwards, John Southon, Katsumi Matsumoto, Joshua M. Feinberg, Ashish Sinha, Weijian Zhou, Hanying Li, Xianglei Li, Yao Xu, Shitao Chen, Ming Tan, Quan Wang, Yongjin Wang & Youfeng Ning

Paired measurements of $^{14}\text{C}/^{12}\text{C}$ and ^{230}Th ages from two Hulu Cave stalagmites complete a precise record of atmospheric ^{14}C covering the full range of the ^{14}C dating method ($\approx 54,000$ years). Over the last glacial period, atmospheric $^{14}\text{C}/^{12}\text{C}$ ranges from values similar to modern values to values 1.70 times higher (42,000 to 39,000 years ago). The latter correspond to ^{14}C ages 5200 years less than calibrated ages and correlate with the Laschamp geomagnetic excursion followed by Heinrich Stadial 4. Millennial-scale variations are largely attributable to Earth's magnetic field changes and in part to climate-related changes in the oceanic carbon cycle. A progressive shift to lower $^{14}\text{C}/^{12}\text{C}$ values between 25,000 and 11,000 years ago is likely related, in part, to progressively increasing ocean ventilation rates.

Grabung

MAZAR 2015

EILAT MAZAR (Hrsg.), *The Summit of the City of David – Excavations 2005–2008, Final Reports Volume I – Area G*. (Jerusalem 2015).

MAZAR 2015

Eilat Mazar & Reut Livyatan Ben-Arie, *Hebrew and Non-Indicative Bullae*. In: EILAT MAZAR (Hrsg.), *The Summit of the City of David – Excavations 2005–2008, Final Reports Volume I – Area G*. (Jerusalem 2015), 299–362.

Apart from the variety of dates for the bullae, there is also a variety of functions that these bullae served. Not only did the bullae seal papyrus documents, they also sealed boxes, sacks, and cloth bags that were delivered to the king. Some did not seal anything (see “Free Standing Bullae”) and were apparently kept in the archive as testimony to the receipt of delivery of a shipment. Even so, most of the bullae found in our excavation were impressed on papyrus and probably sealed a document recording a legal decision in the royal court, or a letter sent to the king. In the case of a legal document, it is likely that the seal that impressed them

was the seal of one of the parties. In the case of a letter sent to the king, the seal of one of the senders was used. Also, one should note that two of the seal owners were known ministers of the kingdom at the end of the First Temple period and it is likely that some of the other seal owners were as well, even though their names are not known to us from the Bible. The writing on the Hebrew bullae, most of which was impressed on papyrus, resembles the writing on the bullae from the archive at the bottom of the Stepped Stone Structure and both appear to be from the same period.

Judentum

BÖHM 1962

Richard Böhm, *Zu den ältesten hebräischen Grabinschriften des Rheingebiets*. *Zeitschrift der Deutschen Morgenländischen Gesellschaft* **112** (1962), 275–290.

KOBER 1944

Adolf Kober, *Jewish Monuments of the Middle Ages in Germany, I: One Hundred and Ten Tombstone Inscriptions from Speyer, Cologne, Nuremberg and Worms (1085 – c. 1428)*. *Proceedings of the American Academy for Jewish Research* **14** (1944), 149–220.

KOBER 1945

Adolf Kober, *Jewish Monuments of the Middle Ages in Germany, II: Hebrew Tombstone Inscriptions from Cologne (12th to 15th centuries)*. *Proceedings of the American Academy for Jewish Research* **15** (1945), 1–90.

Although a large number of the tombstones included here are only fragments, they nevertheless enrich our knowledge with regard to archaeology and history, they add to our information regarding Jewish personalities, and they increase our understanding of the development of the Hebrew script and language. With reference to cultural history they speak in unmistakable language of the thorough destruction of medieval Jewish cemeteries and the misuse of tombstones for all sorts of purposes. These fragments become a symbol of former Jewish life and creative activity on the soil of Europe.

KOBER 1953

Adolf Kober, *Notizen über jüdische Altertümer im Kölner Raum*. *Jahrbuch des Kölnischen Geschichtsvereins* **28** (1953), 64–66.

Der Fund hat insofern für die Baugeschichte des Kölner Rathauses besondere Bedeutung, als er die Frage nach der Erbauungszeit des Hansasaales eindeutig dahin entscheidet, daß mindestens die äußere Seitenwand nicht vor 1349, d.h. vor der ersten Ausweisung der Juden aus Köln, entstanden sein kann; denn vorher wäre die Profanierung eines jüdischen Grabsteins undenkbar. Bisher war ein Nachweis, daß damals ein Neubau des Saales stattfand, nicht zu führen; man war vielmehr lediglich auf Vermutungen und formengeschichtliche Schlüsse angewiesen.

MÜLLER 2010

Jörg R. Müller, *Juden und Burgen im Mittelalter, Eine nur scheinbar marginale Beziehung*. In: ULRICH GROSSMANN & HANS OTTOMEYER (Hrsg.), *Die Burg, Wissenschaftlicher Begleitband zu den*

Ausstellungen “Burg und Herrschaft” und “Mythos Burg”. ([Dresden 2010](#)), 110–125.

This article provides a short survey of the varied links between Jews and castles. The significance of these relationships, which are usually given little attention, will be examined in detail. This involves, above all, the financial power and taxable capacity of individual Jews and Jewish communities as well as their expert knowledge in the commodities and money trade. This knowledge was increasingly utilized from the second half of the 13th century in order to expand the central functions of castles and related settlements. In the context of power consolidation castles were also frequently needed for initiating the development of towns. Baldwin (1307–1354), the Archbishop of Trier, provides an important example of the systematic use of both the financial resources as well as the administrative skills of the Jews. With regard to the military function of fortified buildings, the castle, particularly in the sense of an area protected by a defensive wall, was able both to guarantee protection and to exercise force; castles near cities and rural areas thus crystallized into centers of Jewish settlement. These processes have to be seen in the context of territorial conflicts, into which the Jews could be drawn and to which they often fell victim.

Klima

BEVIS 2019

Michael Bevis et al., *Accelerating changes in ice mass within Greenland, and the ice sheet’s sensitivity to atmospheric forcing*. [PNAS 116 \(2019\)](#), 1934–1939.

[pnas116-01934-Supplement.pdf](#)

Michael Bevis, Christopher Harig, Shfaqat A. Khan, Abel Brown, Frederik J. Simons, Michael Willis, Xavier Fettweis, Michiel R. van den Broeke, Finn Bo Madsen, Eric Kendrick, Dana J. Caccamise II, Tonie van Dam, Per Knudsen & Thomas Nylén

From early 2003 to mid-2013, the total mass of ice in Greenland declined at a progressively increasing rate. In mid-2013, an abrupt reversal occurred, and very little net ice loss occurred in the next 12–18 months. Gravity Recovery and Climate Experiment (GRACE) and global positioning system (GPS) observations reveal that the spatial patterns of the sustained acceleration and the abrupt deceleration in mass loss are similar. The strongest accelerations tracked the phase of the North Atlantic Oscillation (NAO). The negative phase of the NAO enhances summertime warming and insolation while reducing snowfall, especially in west Greenland, driving surface mass balance (SMB) more negative, as illustrated using the regional climate model MAR. The spatial pattern of accelerating mass changes reflects the geography of NAO-driven shifts in atmospheric forcing and the ice sheet’s sensitivity to that forcing. We infer that southwest Greenland will become a major future contributor to sea level rise.

Keywords: GRACE | GNET | NAO | SMB | mass acceleration

Significance: The recent deglaciation of Greenland is a response to both oceanic and atmospheric forcings. From 2000 to 2010, ice loss was concentrated in the southeast and northwest margins of the ice sheet, in large part due to the increasing discharge of marine-terminating outlet glaciers, emphasizing the importance of oceanic forcing. However, the largest sustained (≈ 10 years) acceleration detected by Gravity Recovery and Climate Experiment (GRACE) occurred in southwest Greenland, an area largely devoid of such glaciers. The sustained acceleration and the subsequent, abrupt, and even stronger deceleration were mostly driven by

changes in air temperature and solar radiation. Continued atmospheric warming will lead to southwest Greenland becoming a major contributor to sea level rise.

SEROUSSI 2019

Hélène Seroussi, *Fate and future role of polar ice sheets*. [nature 566 \(2019\), 48–49](#).

Mass loss from the Greenland and Antarctic ice sheets is accelerating as a result of rising global temperatures. Two studies explore how this mass loss will affect sea level and other aspects of the climate in the future.

They also emphasize the limitations on the modelling of these remote ice sheets. For instance, current numerical models have a coarse spatial resolution that cannot capture all of the outlet glaciers in the Greenland fjords. Moreover, these models cannot accurately simulate the migration of grounding lines — the transitions between grounded ice sheets and floating ice shelves — in Antarctica. As a result, the models rely on simple parameterizations to account for such effects. Further work is needed to continue to improve numerical models and to better understand how ice sheets will affect Earth’s climate over the coming decades and centuries.

Kultur

MADIGAN 2019

Sheri Madigan, Dillon Browne, Nicole Racine, Camille Mori & Suzanne Tough, *Association Between Screen Time and Children’s Performance on a Developmental Screening Test*. [JAMA Pediatrics \(2019\), preprint, 1–7](#). DOI:10.1001/jamapediatrics.2018.5056.

One-quarter of children are not developmentally ready for school entry. Although educational curriculums and programs have continued to progress, no improvements have been seen in student academic performance over the past decade, which parallels the period in which technology use and screen time have rapidly increased. Excessive screen time has been associated with various negative outcomes, including cognitive delays and poor academic performance. To our knowledge, the present study is the first to provide evidence of a directional association between screen time and poor performance on development screening tests among very young children. As technology use is entrenched in the modern-day lives of individuals, understanding the directional association between screen time and its correlates, and taking family-based steps to engage with technology in positive ways may be fundamental to ensuring developmental success of children growing up in a digital age.

IMPORTANCE Excessive screen time is associated with delays in development; however, it is unclear if greater screen time predicts lower performance scores on developmental screening tests or if children with poor developmental performance receive added screen time as a way to modulate challenging behavior.

OBJECTIVE To assess the directional association between screen time and child development in a population of mothers and children.

DESIGN, SETTING, AND PARTICIPANTS This longitudinal cohort study used a 3-wave, cross-lagged panel model in 2441 mothers and children in Calgary, Alberta, Canada, drawn from the All Our Families study. Data were available when children were aged 24, 36, and 60 months. Data were collected between October 20, 2011, and October 6, 2016. Statistical analyses were conducted from July 31 to November 15, 2018.

EXPOSURES Media.

MAIN OUTCOMES AND MEASURES At age 24, 36, and 60 months, children’s screen-time behavior (total hours per week) and developmental outcomes (Ages and Stages Questionnaire, Third Edition) were assessed via maternal report. **RESULTS** Of the 2441 children included in the analysis, 1169 (47.9%) were boys. A random-intercepts, cross-lagged panel model revealed that higher levels of screen time at 24 and 36 months were significantly associated with poorer performance on developmental screening tests at 36 months (β , .008; 95% CI, .013 to .002) and 60 months (β , .006; 95% CI, .013 to .002), respectively. These within-person (time-varying) associations statistically controlled for between-person (stable) differences.

CONCLUSIONS AND RELEVANCE The results of this study support the directional association between screen time and child development. Recommendations include encouraging family media plans, as well as managing screen time, to offset the potential consequences of excess use.

WIBLE 2019

Brad Wible et al., *Tragedy revisited*. *science* **362** (2019), 1236–1241. [s162-1243-Hardin.pdf](#)

Brad Wible, Robert Boyd, Peter J. Richerson, Ruth Meinzen-Dick, Tine De Moor, Matthew O. Jackson, Kristina M. Gjerde, Harriet Harden-Davies, Brett M. Frischmann, Michael J. Madison, Katherine J. Strandburg, Angela R McLean and Christopher Dye

“Freedom in a commons brings ruin to all.” So argued ecologist Garrett Hardin in “The Tragedy of the Commons” in the 13 December 1968 issue of *Science*. Hardin questioned society’s ability to manage shared resources and avoid an environmentally and socially calamitous free-for-all. In the 50 years since, the essay has influenced discussions ranging from climate change (see page 1217) to evolution, from infectious disease to the internet, and has reached far beyond academic literature—but not without criticism. Considerable work, notably by Nobelist Elinor Ostrom, has challenged Hardin, particularly his emphasis on property rights and government regulatory leviathans as solutions. Instead, research has documented contexts, cases, and principles that reflect the ability of groups to collectively govern common resources. To mark this anniversary and celebrate the richness of research and practice around commons and cooperation, *Science* invited experts to share some contemporary views on such tragedies and how to avert them.

Mathematik

EDWARDS 2019

Tamsin L. Edwards et al., *Revisiting Antarctic ice loss due to marine ice-cliff instability*. *nature* **566** (2019), 58–64.

Tamsin L. Edwards, Mark A. Brandon, Gael Durand, Neil R. Edwards, Nicholas R. Golledge, Philip B. Holden, Isabel J. Nias, Antony J. Payne, Catherine Ritz & Andreas Wernecke

Predictions for sea-level rise this century due to melt from Antarctica range from zero to more than one metre. The highest predictions are driven by the controversial marine ice-cliff instability (MICI) hypothesis, which assumes that coastal ice cliffs can rapidly collapse after ice shelves disintegrate, as a result of surface and sub-shelf melting caused by global warming. But MICI has not been observed in the modern era and it remains unclear whether it is required to reproduce sea-level variations in the geological past. Here we quantify ice-sheet modelling uncertainties for the original MICI study and show that the probability distributions

are skewed towards lower values (under very high greenhouse gas concentrations, the most likely value is 45 centimetres). However, MICI is not required to reproduce sea-level changes due to Antarctic ice loss in the mid-Pliocene epoch, the last interglacial period or 1992–2017; without it we find that the projections agree with previous studies (all 95th percentiles are less than 43 centimetres). We conclude that previous interpretations of these MICI projections over-estimate sea-level rise this century; because the MICI hypothesis is not well constrained, confidence in projections with MICI would require a greater range of observationally constrained models of ice-shelf vulnerability and ice-cliff collapse.

GOLLEDGE 2019

Nicholas R. Golledge et al., *Global environmental consequences of twenty-first-century ice-sheet melt*. *nature* **566** (2019), 65–72.

Nicholas R. Golledge, Elizabeth D. Keller, Natalya Gomez, Kaitlin A. Naughten, Jorge Bernales, Luke D. Trusel & Tamsin L. Edwards

Government policies currently commit us to surface warming of three to four degrees Celsius above pre-industrial levels by 2100, which will lead to enhanced ice-sheet melt. Ice-sheet discharge was not explicitly included in Coupled Model Intercomparison Project phase 5, so effects on climate from this melt are not currently captured in the simulations most commonly used to inform governmental policy. Here we show, using simulations of the Greenland and Antarctic ice sheets constrained by satellite-based measurements of recent changes in ice mass, that increasing meltwater from Greenland will lead to substantial slowing of the Atlantic overturning circulation, and that meltwater from Antarctica will trap warm water below the sea surface, creating a positive feedback that increases Antarctic ice loss. In our simulations, future ice-sheet melt enhances global temperature variability and contributes up to 25 centimetres to sea level by 2100. However, uncertainties in the way in which future changes in ice dynamics are modelled remain, underlining the need for continued observations and comprehensive multi-model assessments.

Sprachlehre

AMZALLAG 2017

Nissim Amzallag, *The Forgotten Meaning of 'āpār in Biblical Hebrew*. *Journal of the American Oriental Society* **137** (2017), 767–783.

It is argued in this study that 'apar, in the context of mining expressed in Job 28:2, 6, probably denotes neither 'dust' nor related materials ('earth', 'dirt', or 'ashes'), as is generally assumed, but 'metallic ore'. A similar designation of 'apar as ore is identified in Job 30:6 and Ezek. 26:12. Further examination reveals the figurative use of 'apar as ore in Job 22:24, Isa. 34:9, and Isa. 41:2. In contrast to the abasement, humiliation, and worthlessness that are closely related to dust, metallic ore is associated with preciousness, rarity, and wisdom. Consequently, disregard of the figurative meaning of 'apar as ore may generate misunderstandings of the biblical text. It may also conceal a theological reality. For example, the identification of 'apar as ore in Prov. 8:26 promotes homology between Lady Wisdom and the Egyptian goddess Hathor in Prov. 8:22–31. In Gen. 3:14, it stresses the metallurgical Background of the Hebrew myth of origin and helps to clarify its significance. The meaning of 'apar as ore in Isa. 65:25 even transforms the metallurgical theological component into the source of eschatological developments. It is concluded that the 'ore' dimension of meaning of 'apar coexists in biblical Hebrew with the traditional association of 'apar with dust and that the disregard of this dimension

overlooks the meaning of these verses and the theology that inspires them; it also reflects misunderstandings of biblical Hebrew after the Persian period.

Story or Book

FREEDMAN 1991

David Noel Freedman, *The Rise of Yahwism by Johannes C. de Moor*. [Journal of Biblical Literature 110 \(1991\), 693–698](#).

The Rise of Yahwism: The Roots of Israelite Monotheism, by Johannes C. de Moor. Leuven: Leuven University Press, 1990. Pp. 320. N.P.

FREEDMAN 1991

David Noel Freedman, *The Early History of God by Mark S. Smith*. [Journal of Biblical Literature 110 \(1991\), 693–698](#).

The Early History of God: Yahweh and the Other Deities in Ancient Israel, by Mark S. Smith. San Francisco: Harper and Row, 1990. Pp. 197. \$26.95.

WOOD 2019

Bernard Wood, *How Neanderthal minds took flight*. [nature 566 \(2019\), 35–36](#).

Bernard Wood explores a claim that our nearest cousins were our cognitive equals — and that birds show it.

The Smart Neanderthal: Bird Catching, Cave Art, and the Cognitive Revolution. Clive Finlayson. Oxford University Press (2019)

Not all of Finlayson's inferences (including this one) are logically sound, and *The Smart Neanderthal* would have benefited from some editorial 'tough love'. His point about the neglect of avian evidence is well taken, however. So is his reflection that most of the humdrum things we do daily do not necessarily reflect our cognitive potential.