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References

Aktuell

Cao 2020

Shiyi Cao et al., *Post-lockdown SARS-CoV-2 nucleic acid screening in nearly ten million residents of Wuhan, China*. Nature Communications **11** (2020), 5917, 1–7. DOI:10.1038/s41467-020-19802-w.

NatComm11-a05917-Supplement.pdf

Stringent COVID-19 control measures were imposed in Wuhan between January 23 and April 8, 2020. Estimates of the prevalence of infection following the release of restrictions could inform post-lockdown pandemic management. Here, we describe a city-wide SARS-CoV-2 nucleic acid screening programme between May 14 and June 1, 2020 in Wuhan. All city residents aged six years or older were eligible and 9,899,828 (92.9 %) participated. No new symptomatic cases and 300 asymptomatic cases (detection rate 0.303/10,000, 95 % CI 0.270–0.339/10,000) were identified. There were no positive tests amongst 1,174 close contacts of asymptomatic cases. 107 of 34,424 previously recovered COVID-19 patients tested positive again (re-positive rate 0.31 %, 95 % CI 0.423–0.574 %). The prevalence of SARS-CoV-2 infection in Wuhan was therefore very low five to eight weeks after the end of lockdown.

Shiyi Cao, Yong Gan, Chao Wang, Max Bachmann, Shanbo Wei, Jie Gong, Yuchai Huang, Tiantian Wang, Liqing Li, Kai Lu, Heng Jiang, Yanhong Gong, Hongbin Xu, Xin Shen, Qingfeng Tian, Chuanzhu Lv, Fujian Song, Xiaoxv Yin1. & Zuxun Lu

Ekelund 2020

Ulf Ekelund et al., *Joint associations of accelero-meter measured physical activity and sedentary time with all-cause mortality, A harmonised meta-analysis in more than 44 000 middle-aged and older individuals*. British Journal of Sports Medicine **54** (2020), 1499–1506.

Objectives To examine the joint associations of accelerometer-measured physical activity and sedentary time with all-cause mortality.

Methods We conducted a harmonised meta-analysis including nine prospective cohort studies from four countries. 44 370 men and women were followed for 4.0 to 14.5 years during which 3451 participants died (7.8 % mortality rate). Associations between different combinations of moderate-to-vigorous intensity physical activity (MVPA) and sedentary time were analysed at study level using Cox proportional hazards regression analysis and summarised using random effects metaanalysis.

Results Across cohorts, the average time spent sedentary ranged from 8.5 hours/day to 10.5 hours/ day and 8 min/day to 35 min/day for MVPA. Compared with the referent group (highest physical activity/lowest sedentary time), the risk of death increased with lower levels of MVPA and greater amounts of sedentary time. Among those in the highest third of MVPA, the risk of death was not statistically different from the referent for those in the middle (16 %; 95 % CI 0.87 % to 1.54 %) and highest (40 %; 95 % CI 0.87 % to 2.26 %) thirds of sedentary time. Those in the lowest third of MVPA had a greater risk of death in all combinations with sedentary time; 65 % (95 % CI 1.25 % to 2.19 %), 65 % (95 % CI 1.24 % to 2.21 %) and 263 % (95 % CI 1.93 % to 3.57 %), respectively.

Conclusion Higher sedentary time is associated with higher mortality in less active individuals when measured by accelerometry. About 30–40 min of MVPA per day attenuate the association between sedentary time and risk of death, which is lower than previous estimates from self-reported data.

Ulf Ekelund, Jakob Tarp, Morten W. Fagerland, Jostein Steene Johannessen, Bjørge H. Hansen, Barbara J. Jefferis, Peter H. Whincup, Keith M. Diaz, Steven Hooker, Virginia J. Howard, Ariel Chernofsky, Martin G. Larson, Nicole Spartano, Ramachandran S. Vasan, Ing-Mari Dohrn, Maria Hagströmer, Charlotte Edwardson, Thomas Yates, Eric J. Shiroma, Paddy Dempsey, Katrien Wijndaele, Sigmund A. Anderssen & I-Min Lee

Fogarty 2020

Emily Fogarty, *Credit where credit is due*. science **370** (2020), 1130.

"While I recognise that she thinks she had a major contribution to the project it will be difficult to show that she did more than a technician's job." This was the infuriating response I received in a long email thread with former colleagues about work I had done as an undergraduate researcher. During my 7-month internship, my colleagues in the lab told me I would be an author when they wrote up the work. A few months ago, I was shocked to learn that the resulting paper had already been accepted for publication—and that my contribution had been relegated to the acknowledgments section. This was my wake-up call about the need to speak up for myself regarding authorship, and to speak out against the unfair convention of diminishing the contributions of undergrads and technicians to scientific research.

Nogrady 2020

Bianca Nogrady, *What the Data Say About Asymptomatic Covid Infections*. nature **587** (2020), 534–535.

People without symptoms can transmit the virus, but estimating their contribution to outbreaks is tricky.

Scudellari 2020

Megan Scudellari, *How Iceland Hammered Covid With Science*. nature **587** (2020), 536–539.

The tiny island nation brought huge scientific heft to its attempts to contain and study the coronavirus. Here's what it learnt.

"Essentially, the New Zealand population more or less stayed at home for 7 weeks. After that, we emerged into a virus-free country," says Michael Baker.

Wong 2020

Felix Wong & James J. Collins, *Evidence that coronavirus superspreading is fat-tailed*. PNAS **117** (2020), 29416–29418. DOI:10.1073/pnas.2018490117.

Superspreaders, infected individuals who result in an outsized number of secondary cases, are believed to underlie a significant fraction of total SARS-CoV-2 transmission. Here, we combine empirical observations of SARS-CoV and SARS-CoV-2 transmission and extreme value statistics to show that the distribution of secondary cases is consistent with being fat-tailed, implying that large superspreading events are extremal, yet probable, occurrences. We integrate these results with interaction-based network models of disease transmission and show that superspreading, when it is fat-tailed, leads to pronounced transmission by increasing dispersion. Our findings indicate that large superspreading events should be the targets of interventions that minimize tail exposure.

Keywords: COVID-19 | SARS-CoV-2 | superspreading | extreme value theory | infectious disease

Bibel

Barkay 2003
Gabriel Barkay, *Mounds of Mystery*. Biblical Archaeology Review **29** (2003), iii, 32–39.

I have pieced together a plausible series of events based on Biblical and archaeological evidence: A king died. The news took time to spread throughout the kingdom. A month or so after the king had been buried within the City of David, a ceremony took place for all the people (2 Chronicles 32:33). There was no space for them in the densely built up and narrow streets of Jerusalem. To avoid damaging agricultural plantations that ringed the city, they gathered on the barren hills outside the city, probably on land that was royal domain.

The entire ceremony took only a few hours. A 066platform was prepared. Around it the crowd chanted laments. Perhaps there were a few speeches, and then a huge fire was ignited in memory of the deceased monarch. Afterward each participant took a basket of stones and dirt and piled the material within rings of stone walls in order to cover the place of burning, forming a large artificial memorial mound.

It is interesting that there are 19 (or 20) of these mounds. Between kings David and Zedekiah, the last king of the House of David, there were 21 kings. The existence of, say, 40 mounds—not to mention only one or two—would create a problem for my interpretation. Even if some of the kings were not honored with a memorial mound (as the Book of Chronicles says with regard to Jehoram), or even if some other high official was honored in this way, the number of mounds more or less fits with the number of kings of Judah. It is not proof, but it is a detail to bear in mind.

Boisclair 2020
Regina A. Boisclair, *The Whole Christmas Package, Jesus's Infancy Stories*. Biblical Archaeology Review **46** (2020), v, 58–61.

Burrell 2020
Kevin Burrell, *Representing Cush in the Hebrew Bible*. Biblical Archaeology Review **46** (2020), v, 62–64.

Kisilevitz 2020
Shua Kisilevitz, Ido Koch, Oded Lipschits & David S. Vanderhooft, *Facing the Facts About the "Face of God", A Critical Response to Yosef Garfinkel*. Biblical Archaeology Review **46** (2020), v, 38–45.

Naredi-Rainer 1994
Paul von Naredi-Rainer, *Salomos Tempel und das Abendland, Monumentale Folgen historischer Irrtümer*. (Köln 1994).

Welton 2020
Rebekah Welton, *Gluttony & Drunkenness in Ancient Israel*. Biblical Archaeology Review **46** (2020), v, 52–57.

Thus, the rebellious son was likely not guilty of simply eating too much food or drinking too much beer and wine. What concerned the biblical authors was that all consumption be carried out in the correct context, in the company of followers of Yahweh, and alongside the worship of Yahweh alone. The foodways that the rebellious son fails to follow are those relating to socioreligious practices that accompany food consumption, rather than the quantity of food consumed. The parents of the rebellious son likely did not claim that he was a mere glutton and a drunkard, but rather that he was a religiously deviant consumer, eating against the societal and ritual norms of his Yahwistic community.

Biologie

Sallon 2008

Sarah Sallon, Elaine Solowey, Yuval Cohen, Raia Korchinsky, Markus Egli, Ivan Woodhatch, Orit Simchoni & Mordechai Kislev, *Germination, Genetics, and Growth of an Ancient Date Seed*. science **320** (2008), 1464.

The Judean Dead Sea region was particularly famous for its extensive and high-quality date culture in the 1st century CE. Over the next 2 millennia, these historic cultivars were lost, and by the early twentieth century relatively few, lowquality date palms mostly propagated from seeds were recorded.

Sallon 2020

Sarah Sallon et al., *Origins and insights into the historic Judean date palm based on genetic analysis of germinated ancient seeds and morphometric studies*. Science Advances **6** (2020), eaax0384. DOI:10.1126/sciadv.aax0384.

SciAdv06-eaax0384-Supplement.pdf

Germination of 2000-year-old seeds of Phoenix dactylifera from Judean desert archaeological sites provides a unique opportunity to study the Judean date palm, described in antiquity for the quality, size, and medicinal properties of its fruit, but lost for centuries. Microsatellite genotyping of germinated seeds indicates that exchanges of genetic material occurred between the Middle East (eastern) and North Africa (western) date palm gene pools, with older seeds exhibiting a more eastern nuclear genome on a gradient from east to west of genetic contributions. Ancient seeds were significantly longer and wider than modern varieties, supporting historical records of the large size of the Judean date. These findings, in accord with the region's location between east and west date palm gene pools, suggest that sophisticated agricultural practices may have contributed to the Judean date's historical reputation. Given its exceptional storage potentialities, the date palm is a remarkable model for seed longevity research.

Sarah Sallon, Emira Cherif, Nathalie Chabrillange, Elaine Solowey, Muriel Gros-Balthazard, Sarah Ivorra, Jean-Frédéric Terral, Markus Egli & Frédérique Aberlenc

Sauter 2020

Megan Sauter, *New Fruit from Old Seeds*. Biblical Archaeology Review **46** (2020), v, 18–19.

The Judean Date Palm (Phoenix dactylifera) is known from historical accounts for its sweet, large fruit, which even had medicinal properties. It played a significant role in the Judean economy for about two millennia—at the least from the

fifth century B.C.E. until the 11th century C.E.—but then it went extinct centuries ago.

The researchers confirm the fruit has a subtle sweetness. The taste is interesting—not overly sweet with a lovely side taste of honey.

Klima

Vincent 2020

Warwick F. Vincent & Derek Mueller, *Witnessing ice habitat collapse in the Arctic*. science **370** (2020), 1031–1032.

Abrupt ice loss signals major changes ahead in a north polar conservation zone.

Zhang 2020

Qi-Bin Zhang & Ouya Fang, *Tree rings circle an abrupt shift in climate*. science **370** (2020), 1037–1038.

A recent drier-hotter climate s tands out in the context of past climate variability.

Most studies on climate regime shifts have concentrated primarily on one climate variable at a time, to detect when and how it persistently exceeds the threshold (also called "tipping point") of its natural variability. Real-world climate systems involve many variables whose complex interactions could either cause negative feedbacks that reduce the probability that any single variable crosses its tipping point or cause positive feedbacks that increase the probability that multiple variables cross their tipping points.

Given that climate systems involve feedback among multiple variables, it is crucial to be able to predict when each variable will exceed its tipping point and when changes in these variables will lead to a domino effect, which has more severe deleterious consequences for ecosystems and society than do individual variable changes.

Zhang 2020

Peng Zhang & Jee-Hoon Jeong et al., *Abrupt shift to hotter and drier climate over inner East Asia beyond the tipping point*. science **370** (2020), 1095–1099.

s370-1095-Supplement.pdf

Unprecedented heatwave-drought concurrences in the past two decades have been reported over inner East Asia. Tree-ring–based reconstructions of heatwaves and soil moisture for the past 260 years reveal an abrupt shift to hotter and drier climate over this region. Enhanced land-atmosphere coupling, associated with persistent soil moisture deficit, appears to intensify surface warming and anticyclonic circulation anomalies, fueling heatwaves that exacerbate soil drying. Our analysis demonstrates that the magnitude of the warm and dry anomalies compounding in the recent two decades is unprecedented over the quarter of a millennium, and this trend clearly exceeds the natural variability range. The "hockey stick"–like change warns that the warming and drying concurrence is potentially irreversible beyond a tipping point in the East Asian climate system.

Peng Zhang, Jee-Hoon Jeong, Jin-Ho Yoon, Hyungjun Kim, S.-Y. Simon Wang, Hans W. Linderholm, Keyan Fang, Xiuchen Wu & Deliang Chen

Kultur

Krishnan 2020

K. S. Krishnan, *Yamnaya horizon as PIE 'Urheimat'*. unknown (2020), preprint, 1–14. .

There are many proposals for a 'Urheimat' or 'Home-land' of Proto-Indo-European languages. But the one for a Homeland somewhere in the Pontic-Caspian steppe always had more support. To begin with, this was nothing more than speculation. But over the years many authors have come up with linguistic, archaeological, and genetic evidence in support of the model and a consensus seems to have emerged in favor of it.

However, emerging evidence from different domains seems to challenge this cozy consensus. This paper is an attempt to look into some of these.

Kupfer

Berger 2020

Daniel Berger, Gerhard Brügmann & Ernst Pernicka, *Zum Stand der Zinnforschung: Neue Erkenntnisse zu Zinnherkunft und -handel anhand von Isotopen- und Spurenelementanalysen spätbronzezeitlicher Zinnbarren*. Metalla (2020), Sonderheft 9, 192–195.

Untersuchungen im Rahmen des vom ERC finanzierten Projektes "BronzeAgeTin" liefern nun erste analytische Hinweise darauf, dass das Zinn der Spätbronzezeit (ca. 1300–1200 v. Chr.) im östlichen Mittelmeerraum – zumindest teilweise – nicht aus Asien, sondern aus europäischen Lagerstätten stammt.

Ostasien

Li 2020

Yue Li, Chengrui Zhang & William Timothy Treal Taylor et al., *Early evidence for mounted horseback riding in northwest China*. PNAS **117** (2020), 29569–29576.

Horseback riding was a transformative force in the ancient world, prompting radical shifts in human mobility, warfare, trade, and interaction. In China, domestic horses laid the foundation for trade, communication, and state infrastructure along the ancient Silk Road, while also stimulating key military, social, and political changes in Chinese society. Nonetheless, the emergence and adoption of mounted horseback riding in China is still poorly understood, particularly due to a lack of direct archaeological data. Here we present a detailed osteological study of eight horse skeletons dated to ca. 350 BCE from the sites of Shirenzigou and Xigou in Xinjiang, northwest China, prior to the formalization of Silk Road trade across this key region. Our analyses reveal characteristic osteological changes associated with equestrian practices on all specimens. Alongside other relevant archaeological evidence, these data provide direct evidence for mounted horseback riding, horse equipment, and mounted archery in northwest China by the late first millennium BCE. Most importantly, our Results suggest that this region may have played a crucial role in the spread of equestrian technologies from the Eurasian interior to the settled civilizations of early China, where horses facilitated the rise of the first united Chinese empires and the emergence of transcontinental trade networks.

Keywords: horseback riding | zooarchaeology | early Iron Age | Xinjiang | China

Yue Li, Chengrui Zhang, William Timothy Treal Taylor, Liang Chen, Rowan K. Flad, Nicole Boivin, Huan Liu, Yue You, Jianxin Wang, Meng Ren, Tongyuan Xi, Yifu Han, Rui Wen & Jian Ma

Significance: This study provides insights into the emergence and adoption of equestrian technologies in China. Analysis of ancient horse bones from Shirenzigou and Xigou in eastern Xinjiang demonstrates that pastoralists along China's northwest frontier practiced horseback riding and mounted archery by the fourth century BCE. This region may have played a key role in the initial spread of equestrian technologies from the Altai region into the heartland of China's early settled states, where they eventually facilitated the rise of the first united empires in China and triggered extensive social, political, and economic exchanges between China and its neighbors on the Eurasian Steppes.

Sprachlehre

Clines 2020

David J. A. Clines, *Synonym Hunting in Classical Hebrew*, *The How, the Why, and the Wherefore*. unknown (2020), preprint, 1–8. .

There was also my conviction that the time is past for Hebrew dictionaries to treat all their words in isolation from other words, and that we need a more conscious and deliberate tracing of the networks within the vocabulary. Researching and presenting the richness of the Hebrew synonyms is a means to that end.