Liste erstellt am 2021-11-13

# References

## Aktuell


Samet 2021

Jonathan M. Samet et al., *SARS-CoV-2 indoor air transmission is a threat that can be addressed with science*. PNAS **118** (2021), e2116155118. DOI:10.1073/pnas.2116155118.

of the Science. Discussions at the workshop were convergent on several critical findings relevant to control of airborne transmission: 1) SARSCoV2 is transmitted by aerosols; 2) effective measures are available to reduce transmission, including masks, social distancing, and ensuring sufficient building ventilation and using HEPA (high-efficiency particular air) filtration; and 3) layered interventions are needed to address the multiple pathways leading to infection by SARS-CoV-2 (Table 1). Interventions taken need to reflect the heterogeneity of environmental, population health, and social factors driving the inequitable burden of the pandemic, which has fallen heavily on the elderly, persons of color, and those with lower incomes.

Jonathan M. Samet, Thomas A. Burke, Seema S. Lakdawala, John J. Lowe, Linsey C. Marr, Kimberly A. Prather, Marilee Shelton-Davenport & John Volckens


## Anthropologie


Dupuy 2021

Paula N. Doumani Dupuy, *The unexpected ancestry of Inner Asian mummies*. nature **599** (2021), 204–206.

The genomes of Bronze Age mummies from the Tarim Basin in northwest China suggest that these individuals were descended from an ancient Asian population that was genetically isolated, despite extensive cultural interactions in the region.

Thibault 2021

Simon Thibault, Raphaël Py, Angelo Mattia Gervasi, Romeo Salemme, Eric Koun, Martin Lövden, Véronique Boulenger, Alice C. Roy, *Tool use and language share syntactic processes and neural patterns in the basal ganglia*. science **374** (2021), 841.

s374-0841-Supplement1.pdf, s374-0841-Supplement2.mov, s374-0841-Supplement3.mov

The shared neurofunctional resources were moreover reflected behaviorally by cross-domain learning transfer. Indeed, tool-use training significantly improved linguistic performance with complex syntactic structures. No learning transfer was observed on language syntactic abilities if participants trained without the tool. The reverse was also true: Syntactic training with complex sentences improved motor performance with the tool more than motor performance in a task without the tool and matched for sensorimotor difficulty. No learning transfer was observed on tool use if participants trained with simpler syntactic structures in language.

Does tool use share syntactic processes with language? Acting with a tool is thought to add a hierarchical level into the motor plan. In the linguistic domain,

syntax is the cognitive function handling interdependent elements. Using functional magnetic resonance imaging, we detected common neurofunctional substrates in the basal ganglia subserving both tool use and syntax in language. The two abilities elicited similar patterns of neural activity, indicating the existence of shared functional resources. Manual actions and verbal working memory did not contribute to this common network. Consistent with the existence of shared neural resources, we observed bidirectional behavioral enhancement of tool use and syntactic skills in language so that training one function improves performance in the other. This reveals supramodal syntactic processes for tool use and language.

Simon Thibault, Raphaël Py, Angelo Mattia Gervasi, Romeo Salemme, Eric Koun, Martin Lövden, Véronique Boulenger, Alice C. Roy & Claudio Brozzoli

### Zhang 2021

Fan Zhang, Chao Ning, Ashley Scott, Christina Warinner, Choongwon Jeong & Yinqiu Cui et al., *The genomic origins of the Bronze Age Tarim Basin mummies*. nature **599** (2021), 256–261.

n599-0256-Supplement.pdf

The identity of the earliest inhabitants of Xinjiang, in the heart of Inner Asia, and the languages that they spoke have long been debated and remain contentious1. Here we present genomic data from 5 individuals dating to around 3000–2800 bc from the Dzungarian Basin and 13 individuals dating to around 2100–1700 bc from the Tarim Basin, representing the earliest yet discovered human remains from North and South Xinjiang, respectively. We find that the Early Bronze Age Dzungarian individuals exhibit a predominantly Afanasievo ancestry with an additional local contribution, and the Early–Middle Bronze Age Tarim individuals contain only a local ancestry. The Tarim individuals from the site of Xiaohe further exhibit strong evidence of milk proteins in their dental calculus, indicating a reliance on dairy pastoralism at the site since its founding. Our results do not support previous hypotheses for the origin of the Tarim mummies, who were argued to be Proto-Tocharian-speaking pastoralists descended from the Afanasievo1,2 or to have originated among the Bactria–Margiana Archaeological Complex3 or Inner Asian Mountain Corridor cultures4. Instead, although Tocharian may have been plausibly introduced to the Dzungarian Basin by Afanasievo migrants during the Early Bronze Age, we find that the earliest Tarim Basin cultures appear to have arisen from a genetically isolated local population that adopted neighbouring pastoralist and agriculturalist practices, which allowed them to settle and thrive along the shifting riverine oases of the Taklamakan Desert.

Fan Zhang, Chao Ning, Ashley Scott, Qiaomei Fu, Rasmus Bjørn, Wenying Li, Dong Wei, Wenjun Wang, Linyuan Fan, Idilisi Abuduresule, Xingjun Hu, Qiurong Ruan, Alipujiang Niyazi, Guanghui Dong, Peng Cao, Feng Liu, Qingyan Dai, Xiaotian Feng, Ruowei Yang, Zihua Tang, Pengcheng Ma, Chunxiang Li, Shizhu Gao, Yang Xu, Sihao Wu, Shaoqing Wen, Hong Zhu, Hui Zhou, Martine Robbeets, Vikas Kumar, Johannes Krause, Christina Warinner, Choongwon Jeong & Yinqiu Cui

## Klima

### Marcott 2021

Shaun A. Marcott & Jeremy D. Shakun, *A complete palaeoclimate picture emerges*. nature **599** (2021), 208–209.

Palaeoclimate data and models have been used to produce a comprehensive report of Earth's temperature changes over the past 24 millennia. The results

suggest that modern warming differs from the gradual rise of the past 10,000 years.

Osman 2021

Matthew B. Osman, Jessica E. Tierney, Jiang Zhu, Robert Tardif, Gregory J. Hakim, Jonathan King & Christopher J. Poulsen, *Globally resolved surface temperatures since the Last Glacial Maximum*. nature **599** (2021), 239–244.

n599-0239-Supplement.pdf

Climate changes across the past 24,000 years provide key insights into Earth system responses to external forcing. Climate model simulations1,2 and proxy data3–8 have independently allowed for study of this crucial interval; however, they have at times yielded disparate conclusions. Here, we leverage both types of information using paleoclimate data assimilation9,10 to produce the first proxy-constrained, full-field reanalysis of surface temperature change spanning the Last Glacial Maximum to present at 200-year resolution. We demonstrate that temperature variability across the past 24 thousand years was linked to two primary climatic mechanisms: radiative forcing from ice sheets and greenhouse gases; and a superposition of changes in the ocean overturning circulation and seasonal insolation. In contrast with previous proxy-based reconstructions6,7 our results show that global mean temperature has slightly but steadily warmed, by ≈0.5 °C, since the early Holocene (around 9 thousand years ago). When compared with recent temperature changes11, our reanalysis indicates that both the rate and magnitude of modern warming are unusual relative to the changes of the past 24 thousand years.

## Methoden

Ead 2021

E. A. D., *Out of the fog*. science **374** (2021), 902.

The tile floor was cold and hard against my knees, but I couldn't move from my spot in front of the toilet. It was the third morning that week I had spent violently throwing up because of anxiety at the prospect of going into the lab. So far, I had been able to stay home without consequence. But that day I was scheduled to meet other lab members to work on an experiment essential for my Ph.D. project. At 5:45 a.m. I let them know I wouldn't be coming in, feeling a wave of guilt. "How did I get here?" I wondered.

Throughout my life I had dealt with more minor mental health issues, but what I experienced during the pandemic was unlike anything before. My depression was so bad I was essentially bed-bound. I barely managed to shower once a week, could not sleep, and had zero motivation to work—a problem I never imagined I would have. Yet there I was, doing nothing day after day. The inertia was insurmountable.