

References

Aktuell

CELE 2021

Sandile Cele et al., *Escape of SARS-CoV-2 501Y.V2 from neutralization by convalescent plasma.* *nature* **593** (2021), 142–146. DOI:10.1038/s41586-021-03471-w.

SARS-CoV-2 variants of concern (VOC) have arisen independently at multiple locations^{1,2} and may reduce the efficacy of current vaccines that target the spike glycoprotein of SARS-CoV-2. Here, using a live-virus neutralization assay, we compared the neutralization of a non-VOC variant with the 501Y.V2 VOC (also known as B.1.351) using plasma collected from adults who were hospitalized with COVID-19 during the two waves of infection in South Africa, the second wave of which was dominated by infections with the 501Y.V2 variant. Sequencing demonstrated that infections of plasma donors from the first wave were with viruses that did not contain the mutations associated with 501Y.V2, except for one infection that contained the E484K substitution in the receptor-binding domain. The 501Y.V2 virus variant was effectively neutralized by plasma from individuals who were infected during the second wave. The first-wave virus variant was effectively neutralized by plasma from first-wave infections. However, the 501Y.V2 variant was poorly cross-neutralized by plasma from individuals with first-wave infections; the efficacy was reduced by 15.1-fold relative to neutralization of 501Y.V2 by plasma from individuals infected in the second wave. By contrast, cross-neutralization of first-wave virus variants using plasma from individuals with second-wave infections was more effective, showing only a 2.3-fold decrease relative to neutralization of first-wave virus variants by plasma from individuals infected in the first wave. Although we tested only one plasma sample from an individual infected with a SARS-CoV-2 variant with only the E484K substitution, this plasma sample potentially neutralized both variants. The observed effective neutralization of first-wave virus by plasma from individuals infected with 501Y.V2 provides preliminary evidence that vaccines based on VOC sequences could retain activity against other circulating SARS-CoV-2 lineages.

Sandile Cele, Inbal Gazy, Laurelle Jackson, Shi-Hsia Hwa, Houriiyah Tegally, Gila Lustig, Jennifer Giandhari, Sureshnee Pillay, Eduan Wilkinson, Yeshnee Naidoo, Farina Karim, Yashica Ganga, Khadija Khan, Mallory Bernstein, Alejandro B. Balazs, Bernadett I. Gosnell, Willem Hanekom, Mahomed-Yunus S. Moosa, Network for Genomic Surveillance in South Africa, COMMIT-K. Z. N. Tea, Richard J. Lessells, Tulio de Oliveira & Alex Sigal

COLLIER 2021

Dami A. Collier et al., *Sensitivity of SARS-CoV-2 B.1.1.7 to mRNA vaccine-elicited antibodies.* *nature* **593** (2021), 136–141. DOI:10.1038/s41586-021-03412-7.

Transmission of SARS-CoV-2 is uncontrolled in many parts of the world; control is compounded in some areas by the higher transmission potential of the B.1.1.7 variant¹, which has now been reported in 94 countries. It is unclear whether the response of the virus to vaccines against SARS-CoV-2 on the basis of the prototypic strain will be affected by the mutations found in B.1.1.7. Here we assess

the immune responses of individuals after vaccination with the mRNA-based vaccine BNT162b22. We measured neutralizing antibody responses after the first and second immunizations using pseudoviruses that expressed the wild-type spike protein or a mutated spike protein that contained the eight amino acid changes found in the B.1.1.7 variant. The sera from individuals who received the vaccine exhibited a broad range of neutralizing titres against the wild-type pseudoviruses that were modestly reduced against the B.1.1.7 variant. This reduction was also evident in sera from some patients who had recovered from COVID-19. Decreased neutralization of the B.1.1.7 variant was also observed for monoclonal antibodies that target the N-terminal domain (9 out of 10) and the receptor-binding motif (5 out of 31), but not for monoclonal antibodies that recognize the receptor-binding domain that bind outside the receptor-binding motif. Introduction of the mutation that encodes the E484K substitution in the B.1.1.7 Background to reflect a newly emerged variant of concern (VOC 202102/02) led to a more-substantial loss of neutralizing activity by vaccine-elicited antibodies and monoclonal antibodies (19 out of 31) compared with the loss of neutralizing activity conferred by the mutations in B.1.1.7 alone. The emergence of the E484K substitution in a B.1.1.7 background represents a threat to the efficacy of the BNT162b2 vaccine.

Dami A. Collier, Anna De Marco, Isabella A. T. M. Ferreira, Bo Meng, Rawlings P. Datir, Alexandra C. Walls, Steven A. Kemp, Jessica Bassi, Dora Pinto, Chiara Silacci-Fregni, Siro Bianchi, M. Alejandra Tortorici, John Bowen, Katja Culap, Stefano Jaconi, Elisabetta Cameroni, Gyorgy Snell, Matteo S. Pizzuto, Alessandra Franzetti Pellanda, Christian Garzoni, Agostino Riva, The CITI-N. I. H. R. BioResource COV- Collaboratio, Anne Elmer, Nathalie Kingston, Barbara Graves, Laura E. McCoy, Kenneth G. C. Smith, John R. Bradley, Nigel Temperton, Lourdes Ceron-Gutierrez, Gabriela Barcenas-Morales, The COV- Genomics U. K. Consortiu, William Harvey, Herbert W. Virgin, Antonio Lanzavecchia, Luca Piccoli, Rainer Doffinger, Mark Wills, David Veessler, Davide Corti & Ravindra K. Gupta

GALEA 2021

Sandro Galea, *Understanding why we do what we do during a global pandemic.* [PNAS 118 \(2021\), e2104413118.](#)
[DOI:10.1073/pnas.2104413118.](#)

WANG 2021

Pengfei Wang et al., *Antibody resistance of SARS-CoV-2 variants B.1.351 and B.1.1.7.* [nature 593 \(2021\), 130–135.](#) [DOI:10.1038/s41586-021-03398-2.](#)

The COVID-19 pandemic has had widespread effects across the globe, and its causative agent, SARS-CoV-2, continues to spread. Effective interventions need to be developed to end this pandemic. Single and combination therapies with monoclonal antibodies have received emergency use authorization^{1–3}, and more treatments are under development^{4–7}. Furthermore, multiple vaccine constructs have shown promise⁸, including two that have an approximately 95% protective efficacy against COVID-19^{9,10}. However, these interventions were directed against the initial SARS-CoV-2 virus that emerged in 2019. The recent detection of SARS-CoV-2 variants B.1.1.7 in the UK¹¹ and B.1.351 in South Africa¹² is of concern because of their purported ease of transmission and extensive mutations in the spike protein. Here we show that B.1.1.7 is refractory to neutralization by most monoclonal antibodies against the N-terminal domain of the spike protein and is relatively resistant to a few monoclonal antibodies against the receptor-binding domain. It is not more resistant to plasma from individuals who have recovered from

COVID-19 or sera from individuals who have been vaccinated against SARS-CoV-2. The B.1.351 variant is not only refractory to neutralization by most monoclonal antibodies against the N-terminal domain but also by multiple individual monoclonal antibodies against the receptor-binding motif of the receptor-binding domain, which is mostly due to a mutation causing an E484K substitution. Moreover, compared to wild-type SARS-CoV-2, B.1.351 is markedly more resistant to neutralization by convalescent plasma (9.4-fold) and sera from individuals who have been vaccinated (10.3–12.4-fold). B.1.351 and emergent variants^{13,14} with similar mutations in the spike protein present new challenges for monoclonal antibody therapies and threaten the protective efficacy of current vaccines.

Pengfei Wang, Manoj S. Nair, Lihong Liu, Sho Iketani, Yang Luo, Yicheng Guo, Maple Wang, Jian Yu, Baoshan Zhang, Peter D. Kwong, Barney S. Graham, John R. Mascola, Jennifer Y. Chang, Michael T. Yin, Magdalena Sobieszczyk, Christos A. Kyrtatsous, Lawrence Shapiro, Zizhang Sheng, Yaoxing Huang & David D. Ho

Anthropologie

ALMÉCIJA 2021

Sergio Almécija, Ashley S. Hammond, Nathan E. Thompson, Kelsey D. Pugh, Salvador Moyà-Solà & David M. Alba, *Fossil apes and human evolution*. [science](#) **372** (2021), [eabb4363](#).

Humans diverged from apes (chimpanzees, specifically) toward the end of the Miocene \approx 9.3 million to 6.5 million years ago. Understanding the origins of the human lineage (hominins) requires reconstructing the morphology, behavior, and environment of the chimpanzee-human last common ancestor. Modern hominoids (that is, humans and apes) share multiple features (for example, an orthograde body plan facilitating upright positional behaviors). However, the fossil record indicates that living hominoids constitute narrow representatives of an ancient radiation of more widely distributed, diverse species, none of which exhibit the entire suite of locomotor adaptations present in the extant relatives. Hence, some modern ape similarities might have evolved in parallel in response to similar selection pressures. Current evidence suggests that hominins originated in Africa from Miocene ape ancestors unlike any living species.

HUMPHREY 2021

Louise Humphrey, *Burial of a child during the Middle Stone Age in Africa*. [nature](#) **593** (2021), 39–40.

The discovery of the burial of a young child in a cave in Kenya around 78,000 years ago sheds new light on the role of symbolism in the treatment of the dead during the Middle Stone Age.

MARTINÓN-TORRES 2021

María Martínón-Torres, Francesco d’Errico, Nicole Boivin & Michael D. Petraglia et al., *Earliest known human burial in Africa*. [nature](#) **593** (2021), 95–100.

n593-0095-Supplement.docx

The origin and evolution of hominin mortuary practices are topics of intense interest and debate^{1–3}. Human burials dated to the Middle Stone Age (MSA) are exceedingly rare in Africa and unknown in East Africa^{1–6}. Here we describe the partial skeleton of a roughly 2.5- to 3.0-year-old child dating to 78.3 ± 4.1 thousand years ago, which was recovered in the MSA layers of Panga ya Saidi (PYS), a cave

site in the tropical upland coast of Kenya^{7,8}. Recent excavations have revealed a pit feature containing a child in a flexed position. Geochemical, granulometric and micromorphological analyses of the burial pit content and encasing archaeological layers indicate that the pit was deliberately excavated. Taphonomical evidence, such as the strict articulation or good anatomical association of the skeletal elements and histological evidence of putrefaction, support the in-place decomposition of the fresh body. The presence of little or no displacement of the unstable joints during decomposition points to an interment in a filled space (grave earth), making the PYS finding the oldest known human burial in Africa. The morphological assessment of the partial skeleton is consistent with its assignment to *Homo sapiens*, although the preservation of some primitive features in the dentition supports increasing evidence for non-gradual assembly of modern traits during the emergence of our species. The PYS burial sheds light on how MSA populations interacted with the dead.

María Martín-Torres, Francesco d’Errico, Elena Santos, Ana Álvaro Gallo, Noel Amano, William Archer, Simon J. Armitage, Juan Luis Arsuaga, José María Bermúdez de Castro, James Blinkhorn, Alison Crowther, Katerina Douka, Stéphan Dubernet, Patrick Faulkner, Pilar Fernández-Colón, Nikos Kourampas, Jorge González García, David Larreina, François-Xavier Le Bourdonnec, George MacLeod, Laura Martín-Francés, Diyendo Massilani, Julio Mercader, Jennifer M. Miller, Emmanuel Ndiema, Belén Notario, Africa Pitarch Martí, Mary E. Prendergast, Alain Queffelec, Solange Rigaud, Patrick Roberts, Mohammad Javad Shoaee, Ceri Shipton, Ian Simpson, Nicole Boivin & Michael D. Petraglia

Bibel

USSISHKIN 2021

David Ussishkin, *Was a “Gate Shrine” Built at the Level III Inner City Gate of Lachish? A Response to Ganor and Kreimerman*. [Bulletin of the American Schools of Oriental Research](#) **385** (2021), 153–170.

The city gate of Level III at biblical Lachish dates to the Iron Age IIB period and was destroyed in the Assyrian conquest in 701 B.C.E. In 2015–2016, Saar Ganor and Igor Kreimerman excavated the southern wing of the inner gate. In a recent issue of this journal, Ganor and Kreimerman (2019) suggested that the innermost, southern chamber of the gatehouse was a “gate shrine,” that the “gate shrine” was desecrated during the reform of Hezekiah, that it was turned into a symbolic toilet, and then sealed. The present paper has four aims. First, it presents an integral picture of the inner gatehouse based on all the excavations which took place there. Second, it argues that there was no gate shrine in the gatehouse. Third, it argues that the assumed gate shrine was not desecrated during the time of Hezekiah’s reform. Fourth, it shows that the innermost, southern chamber contained an installation of secular nature that parallels that in the innermost northern side of the gatehouse.

Keywords: Lachish | Iron Age city gate | gate shrine | horned altar | Hezekiah’s reform

Biologie

NYBERG 2021

Lars Nyberg et al., *Educational attainment does not influence brain aging*. [PNAS](#) **118** (2021), e2101644118.

pnas118-e2101644118-Supplement.pdf

Education has been related to various advantageous lifetime outcomes. Here, using longitudinal structural MRI data (4,422 observations), we tested the influential hypothesis that higher education translates into slower rates of brain aging. Cross-sectionally, education was modestly associated with regional cortical volume. However, despite marked mean atrophy in the cortex and hippocampus, education did not influence rates of change. The results were replicated across two independent samples. Our findings challenge the view that higher education slows brain aging.

Keywords: education | aging | cerebral cortex | hippocampus | reserve

Lars Nyberg, Fredrik Magnussen, Anders Lundquist, William Baar, David Bartr-Faz, Lars Bertram, C. J. Boraxbekk, Andreas M. Brandmaier, Christian A. Drevon, Klaus Ebmeier, Paolo Ghisletta, Richard N. Henson, Carme Junqu, Rogier Kievit, Maike Kleemeyer, Ethan Knights, Simone Kühn, Ulman Lindenberger, Brenda W. J. H. Penninx, Sara Pudas, ystein Srensen, Ldia Vaqu-Alczar, Kristine B. Walhovd & Anders M. Fjell

WHITE 2021

Thomas E. White & Kate D. L. Umbers, *Meta-analytic evidence for quantitative honesty in aposematic signals*. [Proc. Royal Society B 288 \(2021\), 20210679](#).

The combined use of noxious chemical defences and conspicuous warning colours is a ubiquitous anti-predator strategy. That such signals advertise the presence of defences is inherent to their function, but their predicted potential for quantitative honesty—the positive scaling of signal salience with the strength of protection—is the subject of enduring debate. Here, we systematically synthesized the available evidence to test this prediction using meta-analysis. We found evidence for a positive correlation between warning colour expression and the extent of chemical defences across taxa. Notably, this relationship held at all scales; among individuals, populations and species, though substantial between-study heterogeneity remains unexplained. Consideration of the design of signals revealed that all visual features, from colour to contrast, were equally informative of the extent of prey defence. Our results affirm a central prediction of honesty-based models of signal function and narrow the scope of possible mechanisms shaping the evolution of aposematism. They suggest diverse pathways to the encoding and exchange of information, while highlighting the need for deeper knowledge of the ecology of chemical defences to enrich our understanding of this widespread anti-predator adaptation.

Keywords: colour signal | anti-predator | aposematism | defence

Energie

GRAHAM 2021

Maggie Graham et al., *Partial shading by solar panels delays bloom, increases floral abundance during the late-season for pollinators in a dryland, agrivoltaic ecosystem*. [Scientific Reports 11 \(2021\), 7452. DOI:10.1038/s41598-021-86756-4](#).

SciRep11-07452-Supplement.docx

Habitat for pollinators is declining worldwide, threatening the health of both wild and agricultural ecosystems. Photovoltaic solar energy installation is booming, frequently near agricultural lands, where the land underneath ground-mounted

photovoltaic panels is traditionally unused. Some solar developers and agriculturalists in the United States are filling the solar understory with habitat for pollinating insects in efforts to maximize land-use efficiency in agricultural lands. However, the impact of the solar panel canopy on the understory pollinator-plant community is unknown. Here we investigated the effects of solar arrays on plant composition, bloom timing and foraging behavior of pollinators from June to September (after peak bloom) in full shade plots and partial shade plots under solar panels as well as in full sun plots (controls) outside of the solar panels. We found that floral abundance increased and bloom timing was delayed in the partial shade plots, which has the potential to benefit late-season foragers in water-limited ecosystems. Pollinator abundance, diversity, and richness were similar in full sun and partial shade plots, both greater than in full shade. Pollinator-flower visitation rates did not differ among treatments at this scale. This demonstrates that pollinators will use habitat under solar arrays, despite variations in community structure across shade gradients. We anticipate that these findings will inform local farmers and solar developers who manage solar understories, as well as agriculture and pollinator health advocates as they seek land for pollinator habitat restoration in target areas.

Maggie Graham, Serkan Ates, Andony P. Melathopoulos, Andrew R. Moldenke, Sandra J. DeBano, Lincoln R. Best & Chad W. Higgins

Klima

THOMPSON 2021

Jessica C. Thompson et al., *Early human impacts and ecosystem reorganization in southern-central Africa*. *Science Advances* **7** (2021), eabf9776. DOI:10.1126/sciadv.abf9776.

SciAdv07-eabf9776-Supplement.pdf

Modern *Homo sapiens* engage in substantial ecosystem modification, but it is difficult to detect the origins or early consequences of these behaviors. Archaeological, geochronological, geomorphological, and paleoenvironmental data from northern Malawi document a changing relationship between forager presence, ecosystem organization, and alluvial fan formation in the Late Pleistocene. Dense concentrations of Middle Stone Age artifacts and alluvial fan systems formed after ca. 92 thousand years ago, within a paleoecological context with no analog in the preceding half-million-year record. Archaeological data and principal coordinates analysis indicate that early anthropogenic fire relaxed seasonal constraints on ignitions, influencing vegetation composition and erosion. This operated in tandem with climate-driven changes in precipitation to culminate in an ecological transition to an early, pre-agricultural anthropogenic landscape.

Jessica C. Thompson, David K. Wright, Sarah J. Ivory, Jeong-Heon Choi, Sheila Nightingale, Alex Mackay, Flora Schilt, Erik Otárola-Castillo, Julio Mercader, Steven L. Forman, Timothy Pietsch, Andrew S. Cohen, J. Ramón Arrowsmith, Menno Welling, Jacob Davis, Benjamin Schiery, Potiphar Kaliba, Oris Malijani, Margaret W. Blome, Corey A. O'Driscoll, Susan M. Mentzer, Christopher Miller, Seoyoung Heo, Jungyu Choi, Joseph Tembo, Fredrick Mapemba, Davie Simengwa & Elizabeth Gomani-Chindebvu

WILLMES 2020

Christian Willmes et al., *State of the Art in Paleoenvironment Mapping for Modeling Applications in Archeology, Summary, Conclusions, and*

Future Directions from the PaleoMaps Workshop. Quaternary **3** (2020), 13, 1–25.

In this report, we present the contributions, outcomes, ideas, discussions and conclusions obtained at the PaleoMaps Workshop 2019, that took place at the Institute of Geography of the University of Cologne on 23 and 24 September 2019. The twofold aim of the workshop was: (1) to provide an overview of approaches and methods that are presently used to incorporate paleoenvironmental information in human–environment interaction modeling applications, and building thereon; (2) to devise new approaches and solutions that might be used to enhance the reconstruction of past human–environmental interconnections. This report first outlines the presented papers, and then provides a joint protocol of the often extensive discussions that came up following the presentations or else during the refreshment intervals. It concludes by addressing the open points to be resolved in future research avenues, e.g., implementation of open science practices, new procedures for reviewing of publications, and future concepts for quality assurance of the often complex paleoenvironmental data. This report may serve as an overview of the state of the art in paleoenvironment mapping and modeling. It includes an extensive compilation of the basic literature, as provided by the workshop attendants, which will itself facilitate the necessary future research.

Keywords: paleoenvironment reconstruction | paleoenvironment modeling | paleoclimate modeling | open science | human–environment interaction | archeological modeling

Christian Willmes, Kamil Niedziółka, Benjamin Serbe, Sonja B. Grimm, Daniel Groß, Andrea Miebach, Michael Märker, Felix Henselowsky, Alexander Gamisch, Masoud Rostami, Ana Mateos, Jesús Rodríguez, Heiko Limberg, Isabell Schmidt, Martin Müller, Ericson Hölzchen, Michael Holthausen, Konstantin Klein, Christian Wegener, Bernhard Weninger, Trine Kellberg Nielsen, Taylor Otto, Gerd-Christian Weniger, Olaf Bubenzer & Georg Bareth

Kultur Klima

SCHEFFER 2021

Marten Scheffer, Egbert H. van Nes, Darcy Bird, R. Kyle Bocinsky & Timothy A. Kohler, *Loss of resilience preceded transformations of pre-Hispanic Pueblo societies. PNAS* **118** (2021), e2024397118.

[pnas118-e2024397118-Supplement.pdf](#)

Climate extremes are thought to have triggered large-scale transformations of various ancient societies, but they rarely seem to be the sole cause. It has been hypothesized that slow internal developments often made societies less resilient over time, setting them up for collapse. Here, we provide quantitative evidence for this idea. We use annual-resolution time series of building activity to demonstrate that repeated dramatic transformations of Pueblo cultures in the pre-Hispanic US Southwest were preceded by signals of critical slowing down, a dynamic hallmark of fragility. Declining stability of the status quo is consistent with archaeological evidence for increasing violence and in some cases, increasing wealth inequality toward the end of these periods. Our work thus supports the view that the cumulative impact of gradual processes may make societies more vulnerable through time, elevating the likelihood that a perturbation will trigger a large-scale transformation that includes radically rejecting the status quo and seeking alternative pathways.

Keywords: archaeology | climate change | resilience | collapse

Significance: Collapse of civilizations remains one of the most enigmatic phenomena in human history. In this paper we provide quantitative evidence that loss of resilience systematically preceded collapses. We take advantage of unique time series documenting both construction activity and climate conditions for pre-Columbian societies of the southwestern United States on an annual basis over a period of eight centuries. These data cover five transformations encompassing shifts to novel constellations of beliefs, social practices, and styles of art and architecture. The remarkable high-resolution time series allowed us to quantify the dynamics of social fragility using numerical techniques for probing resilience. Our results demonstrate that all but one of these transformations happened after decades of rising social instability.

Methoden

TAFELMAIER 2020

Yvonne Tafelmaier, Guido Bataille, Viola Schmid, Andreas Taller & Manuel Will, *Methoden zur Analyse von Steinartefakten, Eine Übersicht.* (Wiesbaden 2020).

Mittelpaläolithikum

VERNOT 2021

Benjamin Vernot et al., *Unearthing Neanderthal population history using nuclear and mitochondrial DNA from cave sediments.* [science](#) **372** (2021), [eabf1667](#).

[s372-eabf1667-Supplement.pdf](#)

Bones and teeth are important sources of Pleistocene hominin DNA, but are rarely recovered at archaeological sites. Mitochondrial DNA (mtDNA) has been retrieved from cave sediments but provides limited value for studying population relationships. We therefore developed methods for the enrichment and analysis of nuclear DNA from sediments and applied them to cave deposits in western Europe and southern Siberia dated to between 200,000 and 50,000 years ago. We detected a population replacement in northern Spain about 100,000 years ago, which was accompanied by a turnover of mtDNA. We also identified two radiation events in Neanderthal history during the early part of the Late Pleistocene. Our work lays the ground for studying the population history of ancient hominins from trace amounts of nuclear DNA in sediments.

Benjamin Vernot, Elena I. Zavala, Asier Gómez-Olivencia, Zenobia Jacobs, Viviane Slon, Fabrizio Mafessoni, Frédéric Romagné, Alice Pearson, Martin Petr, Nohemi Sala, Adrián Pablos, Arantza Aranburu, José María Bermúdez de Castro, Eudald Carbonell, Bo Li, Maciej T. Krajcarz, Andrey I. Krivoshapkin, Kseniya A. Kolobova, Maxim B. Kozlikin, Michael V. Shunkov, Anatoly P. Derevianko, Bence Viola, Steffi Grote, Elena Essel, David López Herráez, Sarah Nagel, Birgit Nickel, Julia Richter, Anna Schmidt, Benjamin Peter, Janet Kelso, Richard G. Roberts, Juan-Luis Arsuaga & Matthias Meyer

Religion

KAŠE 2018

Vojtěch Kaše, *The Emergence of Big Gods in the Ancient Mediterranean.* [SocArXiv](#) **2018**, Dec. 31, 1–17.

Macro-historical data from several independent cultural environments reveal that the emergence of morally oriented religious systems, including representations of powerful and morally concerned deities, represents relatively recent development in human evolutionary history. The cultural evolutionary scholarship disagrees regarding what was the main factor responsible for the emergence and spread of these innovations over the past few millennia. Proponents of the Big Gods Hypothesis suggest that this development should be primarily associated with changes in social complexity, since representations of powerful and morally concerned deities represent a factor promoting cooperation among strangers in large-scale societies and thus a cultural selection advantage for groups adopting these innovations. Advocates of the Affluence Hypothesis suggest that the emergence and spread of morally oriented religious systems has to be primarily coupled with economic development, namely with an increase in affluence, which occurred during the so-called “Axial Age” period. According to this proposal, an increase in affluence enabled adoption of “slow” life-history strategies by certain proportion of the population, what led to emergence of new form of religion, emphasizing morality, long-terms goals and practices of self-control. This paper contributes to this debate by focusing on historical setting often referred to in both of these proposals: the ancient Mediterranean. Using quantitative text analysis methods in analyzing a corpus of ancient Greek texts from the period from 800 BC to 400 CE, this study offers a more nuanced view of the process under scrutiny than the one which has been proposed in previous ethnographic and comparative studies. Finding statistically significant differences in the context of usage of the Greek term *theos* (god) in the texts from the pre-axial and axial period, the obtained results can be more easily interpreted in terms of the Affluence Hypothesis than in terms of the competing account.

Keywords: Cultural Evolution | Cognitive Science of Religion | Life History Theory | Big Gods | Affluence Hypothesis | Axial Age | Vector Semantics | Quantitative Text Analysis.

Sprachlehre

PETRANTONI 2021

Giuseppe Petrantoni, *Corpus of Nabataean Aramaic-Greek Inscriptions*. *Antichistica* 28 (Venezia 2021).

The aim of the present study is to collect together all the Nabataean Aramaic-Greek epigraphic evidence existing in the Middle-East and Oriental Mediterranean areas and dating from the 1st century BCE to the 3rd-4th century CE. The volume contains 51 inscriptions written in Nabataean and Greek. The texts, which are mostly engraved on stones, have been accurately identified, transcribed and analysed through an historical and epigraphic commentary.

Keywords: Nabataean Aramaic | Greek. Epigraphy | Diglossia | Ancient Near East.

Story or Book

ROBINSON 2021

Andrew Robinson, *The people at the dawn of civilization, Sumerian language and culture take center stage in a new anthropological analysis*. *science* **372** (2021), 580.

The Sumerians. Paul Collins. Reaktion Books, 2021. 208 pp.

Sumerian art, literature, and theology had a profound influence on culture and religion, long after their language died, around 2000 BCE, serving as the prototype of Akkadian, Hurrian, Canaanite, Hittite, and eventually biblical literature. The Akkadian epic of Gilgamesh was based on a legendary Sumerian king of Uruk, and the Hebrew patriarch Abraham hailed from Ur, according to the Bible.