

References

Anthropologie

LI 2018

Xuelong Li et al., *Punishment diminishes the benefits of network reciprocity in social dilemma experiments*. *PNAS* **115** (2018), 30–35.

Xuelong Li, Marko Jusup, Zhen Wang, Huijia Li, Lei Shi, Boris Podobnik, H. Eugene Stanley, Shlomo Havlin & Stefano Boccaletti

Network reciprocity has been widely advertised in theoretical studies as one of the basic cooperation-promoting mechanisms, but experimental evidence favoring this type of reciprocity was published only recently. When organized in an unchanging network of social contacts, human subjects cooperate provided the following strict condition is satisfied: The benefit of cooperation must outweigh the total cost of cooperating with all neighbors. In an attempt to relax this condition, we perform social dilemma experiments wherein network reciprocity is aided with another theoretically hypothesized cooperation-promoting mechanism—costly punishment. The results reveal how networks promote and stabilize cooperation. This stabilizing effect is stronger in a smaller-size neighborhood, as expected from theory and experiments. Contrary to expectations, punishment diminishes the benefits of network reciprocity by lowering assortment, payoff per round, and award for cooperative behavior. This diminishing effect is stronger in a larger-size neighborhood. An immediate implication is that the psychological effects of enduring punishment override the rational response anticipated in quantitative models of cooperation in networks.

Keywords: cooperation | defection | node strategy | payoff | evolutionary selection

Significance: The evolution of cooperation has a formative role in human societies—civilized life on Earth would be impossible without cooperation. However, it is unclear why cooperation would evolve in the first place because Darwinian selection favors selfish individuals. After struggling with this problem for >150 y, recent scientific breakthroughs have uncovered multiple cooperation-promoting mechanisms. We build on these breakthroughs by examining whether two widely known cooperation-promoting mechanisms—network reciprocity and costly punishment—create synergies in a social dilemma experiment. While network reciprocity fulfilled its expected role, costly punishment proved to be surprisingly ineffective in promoting cooperation. This ineffectiveness suggests that the rational response to punishment assumed in theoretical studies is overly stylized and needs reexamining.

SANJAK 2018

Jaleal S. Sanjak, Julia Sidorenko, Matthew R. Robinson, Kevin R. Thornton & Peter M. Visscher, *Evidence of directional and stabilizing selection in contemporary humans*. *PNAS* **115** (2018), 151–156.

pnas115-00151-Supplement1.xlsx, pnas115-00151-Supplement2.txt

Modern molecular genetic datasets, primarily collected to study the biology of human health and disease, can be used to directly measure the action of natural selection and reveal important features of contemporary human evolution. Here we leverage the UK Biobank data to test for the presence of linear and nonlinear natural selection in a contemporary population of the United Kingdom. We obtain

phenotypic and genetic evidence consistent with the action of linear/directional selection. Phenotypic evidence suggests that stabilizing selection, which acts to reduce variance in the population without necessarily modifying the population mean, is widespread and relatively weak in comparison with estimates from other species.

Keywords: natural selection | stabilizing selection | complex traits

Significance: Combining high-throughput molecular genetic data with extensive phenotyping enables the direct study of natural selection in humans. We see firsthand how and at what rates contemporary human populations are evolving. Here we demonstrate that the genetic variants associated with several traits, including age at first birth in females and body-mass index in males, are also associated with reproductive success. In addition, for several traits, we demonstrate that individuals at either extreme of the phenotypic range have reduced fitness—the hallmark of stabilizing selection. Overall, the data are indicative of a moving optimum model for contemporary evolution of human quantitative traits.

Archäologie

LANGLEY 2018

Michelle C. Langley, *Magdalenian Children, Projectile Points, Portable Art and Playthings*. *Oxford Journal of Archaeology* **37** (2018), 3–24.

Children, no doubt, were a significant component of Upper Palaeolithic societies. Despite this fact, however, serious identification and consideration of material culture which may have belonged to children – at least at one time during their use-life – have not been undertaken. This situation extends to the best represented and most intensively studied of the European Palaeolithic techno-complexes, the Magdalenian (c.21,000–14,000 cal BP), and consequently, we know very little about the children of this enigmatic people. As play, including object play, is a ‘true cultural universal’, we can be certain that Magdalenian children integrated objects into their games, with these playthings later incorporated into the archaeological record. Through examining ethnographic accounts of recent hunter-gatherer children and reconsidering archaeological assemblages in light of these data, this paper suggests that Magdalenian playthings probably included full-sized adult weapon tips and – more significantly – pieces of what archaeologists term ‘art mobilier’.

Bibel

ALSTOLA 2017

Tero Esko Alstola, *Judeans in Babylonia, A Study of Deportees in the Sixth and Fifth Centuries BCE*. Dissertation Universiteit Leiden (Leiden 2017).

The thesis shows that most Judeans were settled in the Babylonian countryside, especially in marginal regions where land was abundant but the population was small. The deportees were settled in communities according to their geographic origin and integrated into the land-for-service sector of Babylonian agriculture. The deportees were given plots of land to cultivate, and in exchange they were obliged to pay taxes and perform work and military service. Some Judeans were able to profit from the system by working as middlemen between the royal administration and their fellow landholders, while other Judeans worked as minor officials in local administration. Nevertheless, the majority of small farmers lived at a subsistence level.

Not all deportees were settled in the countryside, as their labour was also needed in cities. Foreign craftsmen and soldiers worked in royal service, and a number of deportees made their way to local and regional administrations in Babylonia. A couple of Judean alphabetic scribes are attested in Babylonia, indicating that some Judeans were literate. Judean merchants were involved in long-distance trade, which suggests that they were in contact with regions outside Babylonia as well. Members of foreign royalty were deported to Babylon, and the Judean king Jehoiachin and his retinue were held hostage there in order to prevent rebellions in the vassal state of Judah.

The Babylonian practice of settling deportees in ethnically homogenous rural communities supported the survival of their culture and traditions in the countryside. Although the deportees were integrated into the Babylonian economy and they were closely supervised by the officials in the land-for-service sector, there is less evidence of social and cultural integration. Judean farmers continued to nurture their traditional naming practices still in the late fifth century BCE. Adoption of Babylonian names and culture was faster among those Judeans who lived in cities and were in regular contact with the native population. For example, a family of Judean royal merchants in the city of Sippar was deeply integrated into the local community of traders, and their daughter was able to marry into an upper-class Babylonian family. Very little can be said about Judean religious practices, however. The available sources hardly ever touch upon this issue, and naming practices only indicate that the worship of Yahweh probably continued in some form in the late fifth century BCE.

DALMAN 1924

Gustaf Dalman, *Orte und Wege Jesu*. Schriften des Deutschen Palästina-Instituts 1 (Gütersloh ³1924).

DELITZSCH 1921

Friedrich Delitzsch, *Die Grosse Täuschung, Zweiter Teil, Forges. Kritische Betrachtungen zum Alten Testament, vornehmlich den Prophetenschriften und Psalmen, nebst Schlußfolgerungen*. (Stuttgart 1921). Reprint 2017.

Klima

BEREITER 2018

Bernhard Bereiter, Sarah Shackleton, Daniel Baggenstos, Kenji Kawamura & Jeff Severinghaus, *Mean global ocean temperatures during the last glacial transition*. *nature* **553** (2018), 39–44.
n553-0039-Supplement.xlsx

Little is known about the ocean temperature's long-term response to climate perturbations owing to limited observations and a lack of robust reconstructions. Although most of the anthropogenic heat added to the climate system has been taken up by the ocean up until now, its role in a century and beyond is uncertain. Here, using noble gases trapped in ice cores, we show that the mean global ocean temperature increased by 2.57 ± 0.24 degrees Celsius over the last glacial transition (20,000 to 10,000 years ago). Our reconstruction provides unprecedented precision and temporal resolution for the integrated global ocean, in contrast to the depth-, region-, organism- and season-specific estimates provided by other methods. We find that the mean global ocean temperature is closely correlated with Antarctic

temperature and has no lead or lag with atmospheric CO₂, thereby confirming the important role of Southern Hemisphere climate in global climate trends. We also reveal an enigmatic 700-year warming during the early Younger Dryas period (about 12,000 years ago) that surpasses estimates of modern ocean heat uptake.

STANLEY 2018

Rachel H. R. Stanley, *Ocean thermometer from the past*. [nature](#) **553** (2018), 30–31.

The most surprising revelation from the temperature record is the extent of ocean warming during an event called the Younger Dryas, which occurred about 13,000–11,500 years ago. This event was an interruption in the overall warming trend, during which scientists think that temperatures dropped by a few degrees in the Northern Hemisphere but continued to increase, perhaps even at an accelerated rate, in the Southern Hemisphere. Bereiter and colleagues report that the mean ocean temperature (which reflects the global ocean, but is weighted towards the Southern Hemisphere) increased substantially during the Younger Dryas, much more than had been estimated: the temperature increase was a whopping 1.6 °C in only 700 years. This is about 1.7 times faster than the ocean is warming now because of global climate change. The reasons for this large warming should be investigated.

The authors also show that the ocean warmed faster than the atmosphere during the Younger Dryas, and then stopped warming before the atmosphere did. By contrast, there was a remarkable synchronicity between Antarctic air temperature, mean ocean temperature and atmospheric CO₂ levels at all other times in the new record. Researchers must now find an explanation for the unusual asynchronicity during the Younger Dryas.

Kultur

KLEJN 2017

Leo S. Klejn et al., *Are the Origins of Indo-European Languages Explained by the Migration of the Yamnaya Culture to the West? Discussion*. [European Journal of Archaeology](#) (2017), preprint, 1–15. DOI:10.1017/eea.2017.35.

Leo S. Klejn, Wolfgang Haak, Iosif Lazaridis, Nick Patterson, David Reich, Kristian Kristiansen, Karl-Göran Sjögren, Morten Allentoft, Martin Sikora And Eske Willerslev

Two co-authored articles in *Nature* (Haak et al., 2015; Allentoft et al., 2015) caused a sensation. They revealed genetically the mass migration of steppe Yamnaya culture people in the Early Bronze Age to central and northern Europe. The authors considered this event as the basis of the spread of Indo-European languages. In response, the Russian archaeologist, Leo S. Klejn, expresses critical remarks on the genetic inference, and in particular its implications for the problem of the origins of Indo-European languages. These remarks were shown to the authors and they present their objections. Klejn, however, has come to the conclusion that the authors' objections do not assuage his doubts. He analyses these objections in a further response.

Keywords: Indo-European languages | migration | Yamnaya culture | Bronze Age

ROSENSTOCK 2017

Eva Rosenstock & Alisa Scheibner, *Fermentierter Brei und vergorenes Malz, Bier in der Vorgeschichte Südwestasiens und Europas*. [Mitteilungen der Anthropologischen Gesellschaft in Wien 147 \(2017\), 31–62](#).

This article presents a possible classification of different types of beer according to materials used, ways of saccharification, as well as fermentation processes, while also characterising beer as both food and alcoholic beverage. These suggestions are based on a rather broad definition of beer, which also takes into account recent, ethnographically attested beer-like beverages in order to approach the prehistoric drink more closely. Ingredients, production and consumption of recent traditional beers are described and serve as a framework for interpreting the evidence for beer in prehistoric Southwest Asia and Europe known to date – including data on bread as its close relative.

Chemical evidence for the knowledge of making beer from malt appears first in the Middle Eastern Pre-Pottery Neolithic, only to vanish again in the Pottery Neolithic period, until it is attested anew from the 5th millennium BC onwards by actual finds of malt and written sources. However, the archaeological record for beer making is still rather patchy, allowing only educated guesses about the possible consumption of raw-fruit-based beers or bread-based beers, or the development of brewing technology.

Zusammenfassung: Dieser Beitrag stellt mögliche Klassifikationen von Bier nach verwendeten Rohstoffen, Verzuckerungswegen und Gärmechanismen vor und charakterisiert Bier als Lebensmittel und alkoholisches Getränk. Dabei wird hier von einem breiten Definitionsvorschlag ausgegangen, der auch rezente ethnographische, als Bier bezeichnete Getränke berücksichtigt und somit prähistorischen Verhältnissen eher gerecht wird. Zutaten, Herstellung und Konsum solcher Biere werden beschrieben und dienen als Rahmen, innerhalb dessen die bisher bekannten Hinweise auf Bier – auch unter Berücksichtigung des eng verwandten Brotes – in der Vorgeschichte Südwestasiens und Europas gedeutet werden können.

Erste chemische Hinweise auf die Kenntnis von Bier aus Malz existieren im vorkeramischen Neolithikum Vorderasiens, verlieren sich jedoch im keramischen Neolithikum wieder, bis ab dem 5. Jahrtausend auch Malzfunde bzw. entsprechende Schriftquellen auftreten. Das Fundbild ist jedoch noch zu lückenhaft, um zu möglichen Rohfrucht- oder Brotbieren oder zur zeitlichen Entwicklung von Bier in der Vorgeschichte mehr als Vermutungen und neue Fragestellungen formulieren zu können.

Mittelalter

COLLINS 1999

George W. Collins II, William P. Claspy & John C. Martin, *A Reinterpretation of Historical References to the Supernova of A.D. 1054*. [Publications of the Astronomical Society of the Pacific 111 \(1999\), 871–880](#).

In this paper we reexamine historical references to the supernova event of A.D. 1054 with a view to establishing a sequence astronomical events that minimizes apparent conflicts between the various sources. We find that the explosion of the supernova is likely to have occurred weeks to months before the commonly accepted date of 1054 July 4. This view is strongly supported by a number of European references to events visible in the evening sky during the spring that are likely to be associated with the appearance of the supernova. We find that the best fit to the light curve based on Chinese observations and a maximum visible

apparent magnitude for a supernova located at the distance to the Crab Nebula also confirms the earlier explosion date.

STEPHENSON 2003

F. Richard Stephenson & David A. Green, *Was the supernova of AD 1054 reported in European history?* [Journal of Astronomical History and Heritage](#) **6** (2003), 46–52.

The bright supernova of AD 1054, which produced the Crab Nebula, was extensively reported in East Asia and there is also a brief Arabic reference. Whether the star was recorded in European history has long been a matter of debate. In this paper we investigate in some detail purported European accounts of the supernova. We conclude that none of these are viable. The new star probably escaped notice in Europe because at the time astronomical knowledge was generally very limited.

Keywords: calendar | chronicles | Crab Nebula | Europe | history | Moon | supernova

Story or Book

ANDERSON 2018

James Anderson, *Universal Parking, Inc. Driving a hard bargain.* [nature](#) **553** (2018), 122.

This scam works only with entities at or below the level of business acumen of the primitives from your planet who traded prime Manhattan real estate for a handful of transistors.