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References

Aktuell

Britton 2020

Tom Britton, Frank Ball & Pieter Trapman, *A mathematical model reveals the influence of population heterogeneity on herd immunity to SARS-CoV-2*. science **2020**, abc6810. DOI:10.1126/science.abc6810.

s2020-abc6810-Supplement.pdf

Despite various levels of preventive measures, in 2020 many countries have suffered severely from the coronavirus 2019 (COVID-19) pandemic caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus. We show that population heterogeneity can significantly impact disease-induced immunity as the proportion infected in groups with the highest contact rates is greater than in groups with low contact rates. We estimate that if Ro = 2.5 in an age-structured community with mixing rates fitted to social activity then the disease-induced herd immunity level can be around 43 %, which is substantially less than the classical herd immunity level of 60 % obtained through homogeneous immunization of the population. Our estimates should be interpreted as an illustration of how population heterogeneity affects herd immunity, rather than an exact value or even a best estimate.

Cornwall 2020

Warren Cornwall, *Officials gird for a war on vaccine misinformation*. science **369** (2020), 14–15.

Fears of a rushed COVID-19 vaccine and rise of social media demand new messaging strategy.

The Centers for Disease Control and Prevention (CDC) is now working on a plan to boost "vaccine confidence" as part of the federal effort to develop a vaccine, Director Robert Redfield told a Senate committee this week. Advocates urge campaigns that include personal messages and storytelling.

Fleming 2020

Nic Fleming, *Fighting Coronavirus Misinformation*. nature **583** (2020), 155–156.

Bogus remedies, myths and fake news about COVID-19 can cost lives. Here's how some scientists are fighting back.

Poletti 2020

Piero Poletti et al., *Probability of symptoms and critical disease after SARSCoV-2 infection*. arXiv (2020), 2006.08471. <http://arxiv.org/pdf/2006.08471>.

We quantified the probability of developing symptoms (respiratory or fever ≥37.5 °C) and critical disease (requiring intensive care or resulting in death) of SARS-CoV-2 positive subjects. 5,484 contacts of SARS-CoV-2 index cases detected in Lombardy, Italy were analyzed, and positive subjects were ascertained via nasal swabs and serological assays. 73.9 % of all infected individuals aged less than 60 years did not develop symptoms (95 % confidence interval: 71.8-75.9 %). The risk

of symptoms increased with age. 6.6 % of infected subjects older than 60 years had critical disease, with males at significantly higher risk.

Piero Poletti, Marcello Tirani, Danilo Cereda, Filippo Trentini, Giorgio Guzzetta, Giuliana Sabatino, Valentina Marziano, Ambra Castrofino, Francesca Grosso, Gabriele Del Castillo, Raffaella Piccarreta, A. T. S. Lombardy COV- Task Force, Aida Andreassi, Alessia Melegaro, Maria Gramegna, Marco Ajelli & Stefano Merler

Bibel

Joosten 2012

Jan Joosten, *Abram and Sarai in Egypt (Genesis 12: 10–20)*. Babel und Bibel **6** (2012), 369–381.

One can admire the architecture of our pencope, which "imbricates" three distinct literary projects without distorting any of them. To my mind, this property is not to be attributed to the genius of the author or final redactor. It seems likely that the layered composition of Gen 12:10-20 reflects the history of transmission over many generations. By the operation of intertextual relations, tradition produces narrative variants on a single theme. Not everything that is produced is necessary valuable, but only what is perceived as valuable is transmitted to the next generation.

Manning-Rozenblum 2020

Bronwen Manning-Rozenblum, *The Historical Probability of Hezekiah's Reform (2 Kgs 18:4) and the Character of Yahwism in the Late Eighth Century BCE*. (Jerusalem 2020).

From an archaeological perspective the research into the possible manifestations of a goddess by the name of Asherah in Judah in the Iron Age have been fraught with difficulties. After a review of the inscriptions, iconography and the Judean Pillar Figurines there appears no evidence to conclude as the popular theory does, that Judah worshipped another major deity by such a name. The references to an asherah of Yahweh are almost certainly vestiges of cultic worship of another deity, but one that appears by the late eighth century to be in the process of assimilation into the Yahweh cult. These conclusions cannot attempt to claim that the asherah tree/wooden object present in the regional sanctuaries was totally divorced from a female persona, it does however believe that there is a total lack of evidence that this persona was presented in the form of a full-fledged deity and in particularly in the status as a consort to Yahweh.

Judentum

Joosten 2015

Jan Joosten, *The Tiberian vocalization and the edition of the Hebrew Bible Text*. In: Innocent Himbaza (Hrsg.), *Making the Biblical Text, Textual Studies in the Hebrew and the Greek Bible*. Orbis Biblicus et Orientalis 275 (Göttingen 2015), 19–32.

The Tiberian pointing and other sources transmit early and valuable information concerning the vocalization of the biblical text. An eclectic edition aiming to reconstruct the oldest attainable phase of the text should not exclude this material but seek to integrate it in a critical way. Including the vowel points in a

critical edition of the biblical text is warranted, not because they will make the edition easier to use, but because the information they transmit is valuable and old, possibly reflecting the same age as the consonantal text.

Mathematik

Fort 1999

Joaquim Fort & Vicenç Méndez, *Time-Delayed Theory of the Neolithic Transition in Europe*. Physical Review Letters **82** (1999), 867–870. .

The classical wave-of-advance model of the neolithic transition (i.e., the shift from hunter-gatherer to agricultural economies) is based on Fisher's reaction-diffusion equation. Here we present an extension of Einstein's approach to Fickian diffusion, incorporating reaction terms. On this basis we show that second-order terms in the reaction-diffusion equation, which have been neglected up to now, are not in fact negligible but can lead to important corrections. The resulting time-delayed model agrees quite well with observations.

Fort 2020

Joaquim Fort & Maria Merce Pareta, *Long-distance dispersal effects and Neolithic waves of advance*. Journal of Archaeological Science **119** (2020), 105148, 1–11.

Mathematical models of Neolithic spread use dispersal histograms to estimate some of the parameters necessary to obtain quantitative spread rates that can be compared to those inferred from the archaeological record. However, it has been never determined if dispersal histograms are a reasonable approximation to the complete distribution of dispersal distances. Indeed, it is unknown if long-distance dispersal events are important in Neolithic spread, similarly to what happens in many ecological invasions. In this paper, we irst exemplify the possible importance of long-distance dispersal by using a detailed histogram for a modern, industrialized population. We show that using such an histogram yields substantially faster spread rates than those of Neolithic waves of advance, and that this is due to the existence of long-distance dispersal events (of several hundred kilometers). Next we address the question of whether such a behavior is also observed in pre-industrial populations. For this purpose, we use a complete set of dispersal distances for the individuals of a pre-industrial population for the irst time, and we ind that long-distance dispersal events (i.e., of several hundred kilometers) are absent. We also show that, using this complete set of dispersal distances, the spread rates predicted by a mathematical model are consistent with those of the Neolithic, both in continental Europe and in Scandinavia. Moreover we observe, quite surprisingly, that computing histograms (even with only 4 bins) from the complete set of individual distances introduces negligible changes in the results. We argue that these results (the absence of long-distance dispersal events, the agreement with the archaeological record, and the validity of the histogram approach) imply that the propagation of Neolithic waves of advance can be described using a sound mathematical approach, which also yields reliable estimates on the relative importance of demic and cultural diffusion. This is applied to several case studies (Europe, Scandinavia and some speciic ceramic cultures in Neolithic Europe).

Keywords: Neolithic | Long-distance dispersal | Waves of advance | Demic diffusion | Cultural diffusion

Neolithikum

Isern 2017

Neus Isern, Joaquim Fort & Víctor L. de Rioja, *The ancient cline of haplogroup K implies that the Neolithic transition in Europe was mainly demic*. Scientific Reports **7** (2017), 11229. DOI:10.1038/s41598-017-11629-8.

SciRep07-11229-Supplement.zip

Using a database with the mitochondrial DNA (mtDNA) of 513 Neolithic individuals, we quantify the space-time variation of the frequency of haplogroup K, previously proposed as a relevant Neolithic marker. We compare these data to simulations, based on a mathematical model in which a Neolithic population spreads from Syria to Anatolia and Europe, possibly interbreeding with Mesolithic individuals (who lack haplogroup K) and/or teaching farming to them. Both the data and the simulations show that the percentage of haplogroup K (%K) decreases with increasing distance from Syria and that, in each region, the %K tends to decrease with increasing time after the arrival of farming. Both the model and the data display a local minimum of the genetic cline, and for the same Neolithic regional culture (Sweden). Comparing the observed ancient cline of haplogroup K to the simulation results reveals that about 98 % of farmers were not involved in interbreeding neither acculturation (cultural diffusion). Therefore, cultural diffusion involved only a tiny fraction (about 2 %) of farmers and, in this sense, the most relevant process in the spread of the Neolithic in Europe was demic diffusion (i.e., the dispersal of farmers), as opposed to cultural diffusion (i.e., the incorporation of hunter-gatherers).

Sprachlehre

Joosten 2002

Jan Joosten, *Do the Finite Verbal Forms in Biblical Hebrew Express Aspect?* Journal of the Ancient Near Eastern Society **29** (2002), 49–70.

"Il n'existe pas." This is still a correct judgment on the state of aspect studies. Even if one sticks to main-stream linguistic writing and to what has been termed "viewpoint" aspect (as opposed to lexical aspect, or Aktionsart), no uniformity exists. Most experts will agree that aspect is a useful linguistic category and that it may be found, though not exactly in the same form, in such languages as classical Greek, literary French and Russian. There is no consensus, however, as to how aspectual oppositions are to be described. Definitions of perfective and imperfective are varied, and most of their authors would probably agree that they are tentative. Trying to determine whether something indeterminate is expressed in a given verbal system, and the verbal system of a dead language like BH at that, would seem to be quite a challenge.