

JOHANNES KRAUSE (with THOMAS TRAPPE), Die Reise unserer Gene. Eine Geschichte über uns und unsere Vorfahren. Propyläen, Berlin 2019. € 22.00. ISBN 9783549100028, 288 pages, 12 maps (of which 2 in colour), 24 b&w illustrations.

For this volume, the well-known geneticist Johannes Krause has teamed up with journalist Thomas Trappe to produce an engaging, highly readable German-language work on the development of archaeogenetics and its contribution to our understanding of the past (or, as the subtitle promises: ‘a history of ourselves and our ancestors’). The collaboration has paid off, as the duo pull all the stops to ensure readers share in the excitement of discovery, from the arrival per mail of the first Denisovan finger bone to the identification of the plague virus in prehistoric skeletons. Each chapter contains lively episodes of methodological breakthroughs, unexpected scientific twists, and painstakingly solved conundrums. Clearly written additional box sections explain the technical detail, and the text is accompanied by useful maps and well-chosen illustrations (but no index). This is a book that can be consumed on the commute to work, which is how I mostly read it, or while relaxing with a cup of tea, but in spite of the easy style, some sections also provide plenty to think about. The narrative moves roughly chronologically, with most attention accorded to the Palaeolithic and Mesolithic as well as the two large-scale Neolithic migrations from Anatolia and the Eurasian steppes. The Bronze Age is discussed mainly from the point of view of hierarchy, while later periods (Medieval and Early Modern) are treated mostly in relation to infectious diseases. These latter chapters dwell not only on the scientific processes and results but also on the consequences of infection for sufferers, making this a very humane narrative. Especially the section on syphilis also shows how complex the development and spread of diseases can be. Given the increasing importance of micro-organism aDNA, the amount of space devoted to these matters is justified, although the book’s omission of plant and animal DNA is rather puzzling.

The best section of the book is the final chapter, where the authors provide strong statements on how archaeogenetic results interleave with modern political debates. This is a very brave step that helps to set this apart from other similar publications, where these issues often remain much more on the side-line. The scene is set in the foreword, which states that genetic data can be used by any political camp, depending on interpretation. This primes the reader to look out for such interpretations throughout the volume, and even past political misuses of archaeology get a brief mention (p. 124). In the final chapter, we are then furnished with clearly phrased and pertinent arguments on why, for instance, the highly divisive writings of economist and politician Thilo Sarrazin must be read very critically from a genetic standpoint, why the identification of constructs like ‘Jewish intelligence genes’ is not warranted, or how ‘race’ is a political category not based on evident genetic distinctions. Also, the past migrations revealed by aDNA show that population movements are a recurrent and deeply rooted part of the human story that should neither be vilified nor romanticised – such processes were not necessarily peaceful and equitable, but they brought innovations and new possibilities. All this makes for gripping reading and is exactly the kind of discussion that archaeogeneticists should take a leading role in.

In sum, this is a compellingly written account of key discoveries, which explains a lot of complex information in an entertaining and engaging manner. For all those new to the archaeogenetics discussion, this is a highly recommended starting point, while more experienced readers are still likely to gain new information on some aspects (in my case for instance the range of work on diseases). For all these reasons, the book amply deserves its place on *Der Spiegel*’s bestseller list of non-fiction.

The one aspect that is still being short-changed, often to a quite significant degree, is archaeology. This happens at various levels, not all of which are equally justifiable, and it is worth spending

a little time in unpacking these. The first is the narrow range of archaeological models presented for certain events and phenomena. There are not so many archaeological texts in the suggested further reading, but in the acknowledgements the authors mention conversations with several archaeologists. Harald Meller is singled out as particularly influential in shaping their ideas. He certainly does not need much introduction in this setting, and readers will be aware of what this means for the resulting narratives, particularly of the Bronze Age. However, this is understandable. After all, this is a book mostly about the genetic side of the equation, and it would be too much to ask a team of non-archaeologists to enter too deeply into all the debates at our end, in particular as the strong, clear narrative lines are one of the features that make this book so readable. If we therefore have to live with priest kings in the Bronze Age, then so be it. At least, these are interpretations actually supported by some archaeologists, and at other times – for example when discussing the mass grave at Eulau (pp. 128–129) – Krause and Trappe are refreshingly critical of dominant interpretations. So far, so good.

Far more worrying, and far less excusable, is that while the authors do cite some archaeological works (about 40 of the 200+ references), this is highly selective, while at other times, they seem unaware that archaeology as a discipline managed to collect some relevant data in an age before molecular techniques. This results not only in smaller or larger inconsistencies between chapters of the volume but also in a whole host of unnecessarily sloppy interpretations.

To begin with the former, we are told for example that Final Neolithic steppe migrants (annoyingly referred to as ‘Bronze Age’ in the text, e.g. p. 118, although on p. 156 the authors acknowledge that bronze and the connected main social transformation appear later) effectively entered an empty landscape. There are no pre-Corded Ware burials, and indeed ‘hardly any archaeological evidence from this period’ (p. 120; all translations from the volume are my own), so a plague must have swept central Europe clean. This not only neglects other possible reasons for archaeologically invisible burials but also the fact that we do have pre-Corded Ware evidence, albeit unevenly studied across regions. It also begs the question of how a plague which elsewhere in the book is characterised as less virulent than later strains (p. 186) could cause this enormous devastation, and evidently only for males, as female Early Farmer DNA remains present (p. 128; note that Daniel R. CURTIS and Joris ROOSEN showed that ‘The sex-related impact of the Black Death and recurring plagues in the southern Netherlands, 1349–1450’ [Am. Journal Physical Anthr. 164, 2017, 246–259. doi: <https://dx.doi.org/10.1002/ajpa.23266>] was more in favour of male survival), and there are actually some cultural continuities (p. 130). How the women supposedly survived long enough to pass on their genes but without leaving archaeological traces is not explained. Overall, this does just not add up, and while there is not yet a consensus answer that takes all data into account, papering over the cracks is not terribly helpful.

Similarly, disciplines like archaeozoology are largely ignored, to the detriment of the text. On p. 81, we are told that the Early Neolithic Linearbandkeramik cattle economy was primarily based on the exploitation of milk. Actually, as recently detailed in Rosalind E. GILLIS ET AL. (The evolution of dual meat and milk cattle husbandry in LBK societies. Proc. Royal Soc. B 284, 2017, 20170905. doi: <https://dx.doi.org/10.1098/rspb.2017.0905>), we have a mixed exploitation pattern with much regional variation, including a meat focus in some areas. Indeed, in a later chapter (p. 130), Krause and Trappe claim that large-scale dairying is only introduced towards the end of the Neolithic. A little more attention to the archaeozoological literature could also have avoided the strange idea that once farming is introduced, hunting is no longer practised because that would require a lot of knowledge, and this was lost (p. 100). The many wild animal bones on Neolithic sites all across Europe are simply ignored, as is the fact that hunting continued all throughout pre-history, the Roman period, and the Middle Ages, albeit with varying economic and social roles.

If it is any consolation to archaeozoologists, the work of human osteologists fares no better. For instance, it is stated that tuberculosis reached Europe at an uncertain point but is attested from the Middle Ages (p. 217) – with no mention of the previously suggested Neolithic cases, sometimes identified using both osteology and aDNA (e. g. Annamária PÓSA ET AL., Tuberculosis in Late Neolithic-Early Copper Age human skeletal remains from Hungary. *Tuberculosis* 95, Suppl. 1, 2015, S18–S22. doi: <https://dx.doi.org/10.1016/j.tube.2015.02.011>, to name one of a flood of articles).

If archaeological science gets such short shrift, there is little hope for the rest of us. To mention only a few examples at random (no doubt the intrepid reader will identify many more, depending on their period specialism), we find the quaint idea that the tell settlements of south-eastern Europe were created through shoddy building. Every now and again, houses would simply collapse around their inhabitants, who then felt compelled to build equally unstable successors right on top of the ruins (p. 89). Decades of research on the social importance of house burning and of tells (e. g. by John Chapman, Pál Raczky, or Ruth Tringham) have been totally passed by. In a similar vein, the question of Bronze Age metal hoards finds a surprising twist. It is the Bronze Age kings who conceal the weapons of their standing armies, so that the rebellious and oppressed farmers could not get hold of them (p. 166). There is now well over a century of archaeological writing on hoards, including some recent and very readable summaries (David FONTIJN [Sacrificial Landscapes: Cultural Biographies of Persons, Objects and “Natural” Places in the Bronze Age of the Southern Netherlands, c. 2300–600 BC (Leiden 2002)] and Richard BRADLEY [A Geography of Offerings: Deposits of Valuables in the Landscapes of Ancient Europe (Oxford 2017)] spring to mind), and I hardly need to explain why this particular reading does not feature. Or did the kings’ hold on power eventually fail because they hid so much of their war gear in locations utterly inaccessible to themselves in times of need? Other examples abound, from the idea that cave art may well be due to boredom (p. 54) to the notion that the megalithic architecture of northern and western Europe can be explained by farmers needing to get stones out of their fields (p. 104; although in fairness ‘some archaeologists’ are cited as a source for that one). In sum, one is left with the distinct impression that the authors did not even run a simple Google search and just wrote down what popped into their heads as a common sense solution.

This should be more than a mild irritant (or alternatively a source of hilarity) for the archaeological community, for two main reasons. First, it shows how widespread the idea has become among our scientific collaborators that while science is a difficult and rigorous endeavour, archaeology and the humanities are ‘just’ about interpretation, whereby anyone’s guess is as good as anyone else’s. This is a rhetorical shift that serves the sciences extremely well but also seriously underestimates the challenges – and crucially, the value – of working with multiple sources of data and a range of approaches (for a discussion, see e. g. Tim Flohr SØRENSEN, The two cultures and a world apart: Archaeology and science at a new crossroads. *Norwegian Arch. Rev.* 50, 2017, 101–115. doi: <https://dx.doi.org/10.1080/00293652.2017.1367031>).

Second, the near total lack of engagement with archaeological debates and results also leaves obvious gaps in the narrative which can then be filled by familiar stereotypes. And while in particular racism is tackled head-on in the final chapter, some of the other cherished tropes of modern Western culture remain alive and well, apparently now proven by science. Thus, hunter-gatherers are described as living particularly nasty, brutish, and short lives (p. 46) but at the same time blissful ones, constantly on the move, unfettered by possessions or hierarchies, and with a healthy diet. Hunter-gatherer diversity and complexity, such as at Lepenski Vir or on the Baltic coast, are not included in this clash of clichés. The Stone Age as a whole is described as ‘potentially lawless’ (p. 165) because centralised and large-scale political entities are absent, an assertion reinforced

later (p. 236) when it is argued that there were probably no rules or norms and everyone could be as bloodthirsty as they wished. This not only mischaracterises small-scale societies, it would ideally also need to be balanced by an account of the abuses of power of centralised state societies, including against their own citizens. European exceptionalism is also alive and well, praising the continent's 'extraordinary history of progress' (p. 235), which readers will find hard to judge given the absence of information on, say, Asia. Finally, gender roles are given the usual and all too familiar spin. Patrilocality is (convincingly) argued for on the basis of aDNA and isotopes, but this is then treated as a synonym for 'patriarchy' (p. 158). While past societies, including patrilocal ones, certainly did not correspond to our modern notions of gender equality, this neglects a wide range of possible social formations, with a concomitantly wide range of possible influence by women themselves (for a recent summary see e.g.: Catherine J. FRIEMAN ET AL., Bodies in motion: narratives and counter narratives of gendered mobility in European later prehistory. *Norwegian Arch. Rev.* 52, 2019, 148–169. doi: <https://dx.doi.org/10.1080/00293652.2019.1697355>). This, contra Krause and Trappe (p. 159), is not exclusively limited to the status of motherhood, important though that may have been. What we see here is the oft-criticised but still strongly rooted idea that prehistory was a rough and warlike place in which a strong man could do whatever he liked, including of course moving women around, and in which social sanctions, emotions, morals, or any complicating factors were quite simply absent (for a critique see e.g. Catherine NASH, Gendered geographies of genetic variation: sex, power and mobility in human population genetics. *Gender, Place and Culture. Journal Feminist Geogr.* 19, 2012, 409–428. doi: <https://dx.doi.org/10.1080/0966369X.2011.625085>). How this can be scientifically proven remains open to question.

So, overall, what to make of this book. It is very well written. In some sections, notably when tackling widespread racist stereotypes, it is necessary and brave. I wanted to like it, and over large parts I did. But I am left disappointed and, truth be told, somewhat stunned that authors of this calibre are, without evidently reflecting on this, convinced that a sister discipline like archaeology will have so little to tell them, even in a book that wants to ask 'where we come from' and 'how we became who we are today' (p. 18) – something which surely is not just an issue of DNA. This view is so deeply engrained that the authors need not even check simple details (let alone complex arguments about social structure). After so many years of collaboration between archaeologists and archaeogeneticists, this is disheartening indeed.

In this indirect fashion, the book – for me at least – makes one final, compelling argument. It is time for archaeologists themselves to write accessible, high-quality *archaeological* narratives for the public – not the usual lavish coffee-table productions but in a portable, entertaining format. No-one else will do it for us. Krause and Trappe have shown how this can be achieved, with clear storylines, engaging writing, and an evident desire not to 'dumb it down' for the public (as far as the genetics are concerned). Now it is our turn.

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