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# **Present pasts in the archaeology of genetics, identity, and migration in Europe: a critical essay**

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***Please note that author order is alphabetical, authors contributed equally.***

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# **Present pasts in the archaeology of genetics, identity, and migration in Europe: a critical essay**

## **Abstract**

In this essay, we interrogate how aDNA analyses have been blended with the study of migrations in European prehistory. Genetic research into ancient populations has given archaeologists and geneticists a new and rich data-set that sparks media coverage and public fascination. Yet far right wing and racist political activists also report on and repeat the results of archaeogenetic studies because it bolsters their image of 'Fortress Europe' under threat from biologically distinct non-Europeans. We worry about the lack of action, even discussion, we perceive among archaeologists and archaeogeneticists faced with this ugly appropriation of their research. In order to address these concerns, we have taken a deliberately provocative style. Even as we realise that the politically questionable interpretive implications of aDNA research are most likely unintended, we strongly believe that we must acknowledge their power before we can ameliorate our approach.

**Key words:** archaeogenetics, racism, migration

## **1. Steppe Migrant Thugs**

In April 2017, a new article by Kristiansen et al (2017) argued that linguistic evidence about the spread of proto-Indo-European, isotopic mobility data and archaeogenetic data all supported a model of male migrants invading northwest Europe from the Steppe before intermarrying (or at least reproducing with) local women and settling down. Like many of the other aDNA papers published in peer-reviewed journals or on pre-print databases, it received considerable media attention. Headlines ranged from *The Daily Mail's* lurid "Stone Age farming women tamed Nomadic warriors" (Liberatore 2017) to *The Register's* more disturbing "Steppe thugs pacified by the love of stone age women" (Hall 2017). Both of these headlines, and in particular the latter, drew on the provocatively-titled press release prepared by the University of Copenhagen ([http://geogenetics.ku.dk/latest-news/alle\\_nyheder/2017/steppe-migrant-thugs-pacified-by-stone-age-farming-women/](http://geogenetics.ku.dk/latest-news/alle_nyheder/2017/steppe-migrant-thugs-pacified-by-stone-age-farming-women/)).

As is to be expected of university media offices, this press release recast a complex and deeply academic piece of research in simple and accessible terms, but did so by employing highly inflammatory terminology. Yamnaya migrants were portrayed as 'thugs'—a strongly derogatory

term with racial connotations in North American English (e.g. Adamson 2016; Smiley and Fakunle 2016). This choice of terminology was reinforced by the subheading (drawn directly from Kristiansen and colleague's research) naming these violent migrant bands "black youth", an infelicitous translation of an Armenian folk legend about young male warriors. Although used by Kristiansen and colleagues without racial intent, this creates a vivid image in the modern reader's mind about who was invading Western Europe in the Neolithic and how they behaved. This is particularly ironic because geneticists suggest that the subsequent Corded Ware period was characterised by a population of tall, light-skinned and often blue-eyed people (Allentoft et al. 2015; Reich 2018, 20, 110–21). In other words, these eastern migrants were masculine and violent, while western Europe was productive, technologically advanced, stable, and feminine (cf. Whitaker 2019). Therefore, this model of violent invasion from the east on the one hand plays on fears about cultural extinction fomented by demagogic and right-wing reporting about contemporary migration, while on the other also promotes a narrative of (biological and social) domination by pale, blue-eyed men. It is perhaps unsurprising that this research was rapidly adopted by modern racists and neo-Nazis in online forums like Stormfront and 8chan "to demonstrate that Hitler was 100% right about them [Ancient Aryans] and how we ARE them" (<https://8ch.net/pol/res/10540451.html>).

Of course, this is 'only' a university press release, perhaps one over which the original authors had little control; and, of course, there are few forums these days which remain free from far right commentary. However, we must ask how much the original research is to blame for these muddled, but undesirable misappropriations. Which assumptions, choices of research questions and interpretative foci are being foregrounded, and why do these lend themselves particularly well to inflammatory headlines?

Decades of research into the production of scientific data make clear that Science is neither objective nor politically neutral. Just as the methods we apply reflect the state of technological development and disciplinary consensus around best practice, the questions we ask of our data (and, in fact, the very data we choose to analyse) also emerge from present-day concerns, researchers' social and professional networks, and unconscious assumptions about the reality of nature based in the researcher's own cultural context (Bösl 2017, 46; 242-83; Knorr-Cetina 1981; Latour and Woolgar 1979; Polanyi 1946; Sørensen 2017). Certainly, our research priorities are explicitly framed by and responsive to government policy and the aims of funding bodies, many concerned with supporting work deemed to be in the public interest. Over and above this financial context, human genetic science in particular is intrinsically entangled in highly politicised discourses around race, identity, and affiliation (Wailoo et al. 2012). Nevertheless, as a laboratory discipline, archaeogenetics is still seen—not just by many of its practitioners, but also by archaeologists—as providing more objective and, therefore, more relevant data, even though it addresses only one aspect of past identities (Bösl

2017, 123; Ion 2017; Sørensen 2017). However, we argue that archaeogenetic studies both reflect and are influenced by contemporary conceptions of migration, genetics, identity, and geopolitics.

At the moment, migration and population movement seem to be the headline in every international newspaper. Whether it is the USA separating asylum seeker families, Angela Merkel putting her leadership in peril by accepting large numbers of migrants from war-torn Syria, or Australia incarcerating legal asylum seekers in offshore detention centres, migration events are sparking both popular anxiety and (often reprehensible) political action. The European far right has identified migration into Europe as a major threat to their conception of the ideal European society—white, Christian, patriarchal and culturally homogeneous; and they are winning elections based on nativist and xenophobic fearmongering about immigrants. Perceptions of large numbers of eastern Europeans moving to Britain seem to have motivated at least some of the population to vote to leave the European Union (Virdee and McGeever 2018), and racist incidents against migrants have sky-rocketed in Britain since the June 2016 Brexit vote (Burnett 2017). In this climate, we can surely not expect that research into and reports on ancient genetics will somehow be insulated from these larger social currents. Yet we worry that the authors of this research so rarely seem to question the link between their attention to waves of migration into Europe and present-day anxieties.

Certainly, archaeogenetic research is rapidly reshaping not just our knowledge base about the ancient past, but also the narratives with which we can communicate about it with a public for whom personal genetic information is increasingly available, via Ancestry.com and other sources. It is arguably the most dynamic and highest profile research being conducted with archaeologists in the present moment and is, consequently, attracting considerable research funding and popular attention. Over the last two decades, archaeogenetic information has forced archaeologists to revisit or return to debates about identity, mobility, and social and technological change which had long been thought resolved. It is precisely for this reason that we need to think very carefully about how this new evidence is reshaping our field and its public impact. In particular, we perceive a number of interrelated problems: the conflation of genetic ancestry and essentialized identity; the mis-use of fuzzy archaeological concepts as fixed analytical categories within admixture models; and the reification of (frequently racialized) us–them dichotomies, often quite against the authors' stated aims. We trace these problems from uncritical press releases and narratives for public consumption back to the scientific publications in which they are rooted and use this to note specific steps which we think need to be taken to improve both interdisciplinary dialogue and communication with the public.

## **2. You don't *look* Neolithic...**

Perhaps the clearest example is the issue of appearance, routinely taken up in the media. A recent and highly publicised (although not yet peer reviewed) study suggested that a Mesolithic (ca. 8000 year old) individual recovered from a cave in Britain's southwest had blue eyes but dark skin (Brace et al. 2018; for popular reporting see Barras 2018), a combination that could be used to challenge some received public assumptions about race and geography. And yet, nowhere amidst the wider discussion of these results (part of a publicity campaign for a TV programme), did the researchers grapple with whether dark skin would have been at all significant during the Mesolithic, or why whiteness and Britishness are so closely aligned that the results produced a media uproar. Instead, their unpublished research was used to promote a TV show problematically titled "First Brit" (even beyond the fact that Britishness is a historically contingent and socially constructed contemporary identity, at this time Britain was not yet even an island separate from the European continent), and a university press release (<http://www.ucl.ac.uk/news/news-articles/0218/070218-Face-of-cheddar-man-revealed>) trumpeted that comparisons between this individual and the modern British population indicated that contemporary Brits were "10% indigenous", a meaningless conflation of population genetics and individual identity, not to mention a misuse of the term 'indigenous'.

Of all the aspects to talk about, skin, eye and hair colour have certainly been prominent in recent press releases and, more worryingly, have apparently become an unquestioned output from whole genome studies. We can now say that (some) Mesolithic Europeans (likely) had the currently rare combination of blue eyes and dark skin, although variation existed (Brace et al. 2018; Günther et al. 2018). While Neolithic individuals of ultimately Near Eastern descent had dark hair and eyes, but fairer skin (Krause and Haak 2017, 30), people assigned to the Corded Ware culture more often had blue eyes than their Yamnaya counterparts (Allentoft et al. 2015). Medieval blue-eyed and blond 'Bavarians', meanwhile, seem to have fancied brown-eyed women from south-east Europe (Veeramah et al. 2018). What remains unaddressed, to date, is why we would wish to know this in the first place. In general, no associated research question or context is presented, apart from occasionally the adaptation to northern environments – an issue not terribly relevant for either central Europe or the Middle Ages.

Certainly, one could investigate whether eye, hair or skin colour did matter to prehistoric societies and influenced their treatment of individuals in some ways (i.e. were they 'racist' in ways similar to contemporary or Ancient state societies). So far, this important question has (to our knowledge) not yet been attempted in writing, at least for European prehistory, and would indeed require some careful handling. The second possible reason for highlighting data around pigmentation and appearance is that this kind of information is thought to appeal to the public. By personalising the past in this way we can make our research emotionally appealing.

After all, the contemporary population seems to be yearning for connection to the past. Genealogical research is an exponentially expanding hobby, and low-cost DNA-tests have allowed members of the public to send their own genetic material off for testing to illuminate their biological ancestry as well. These services, much decried and vilified by archaeogeneticists, compare individual genetic profiles to (often flawed) population data in order to return results declaring one's genetic makeup by proportion, e.g. 20% West Cork, 20% East Midlands, 30% West Midlands, 30% East Asia. While these tests feed into the public desire for connection with the past, they concomitantly reinforce the concept that who you are is simply what is in your blood. Clearly, in the popular discourse at least, the biological and ethnic identities of past people continue to be conflated in ways that lend disproportionate credence to discredited and intensely racist conceptions of self, identity, and kinship (see Scodari 2017 with references). It is easy to see how biological traits, such as appearance, will feed these trends.

We pander to this at a cost, and archaeogenetic research tends also to uncritically reinforce other already existing imbalances in archaeological discourse. A recent survey has found public engagement with archaeology to be high across Europe, but much less so for those on low incomes, ethnic minority groups, and women (Kajda et al 2018; van den Dries and Kerkhof 2018). This is exemplified by the one-sided focus of archaeogenetic research on those actors perceived to have had the highest 'impact'. For example, in a recent book aimed at explaining archaeogenetic research to the interested public, we are told that high-status men, being able to produce more children than high-status women, had a much greater impact on human history (see Reich 2018, 235) <Note 1>. This narrative only works if the genetic contribution is self-evidently seen as superior to anything a child's upbringing within a social context can achieve. A similar point can be made regarding the narrative focus on male conquering warrior hordes, particularly where the implication is that these warriors enjoyed a revered status in society (as in, e.g., Kristiansen et al. 2017; Kristiansen and Larsson 2005; Ling et al. 2017). It is time to question whether the almost exclusive emphasis in our narratives of the past on successful, conquering, increasingly whiter and male individuals, the classic winners of (pre)history, is terribly well thought out, or indeed an objective representation. <Note 2>

### **3. Conflated narratives**

Why do these archaeogenetic-influenced narratives for public consumption seem so skewed? It would be worrying enough if this was simply a case of 'feeding the public what it wants', while 'real' research was more complex. Instead, these press releases actually rather accurately reflect the main foci of current research, along with a set of assumptions regarding attitudes to 'indigeneity', the role and modality of migration processes, and the nature of past societies as bounded wholes.

In short, we see complex scientific data and equally complex social processes collapsed into simple narratives which echo extremist ideas about European identity, even if unintentionally so.

### *Narrative 1: Populations and Cultures*

A considerable amount of aDNA research in Europe has concentrated on correlating models of gene flow with the migration of specific populations, with the diffusion of techno-social developments, or with known environmental phenomena (e.g. Pickrell and Reich 2014; Richards *et al.* 2000; Soares *et al.* 2010). Most pertinently, gene flow has been correlated with the diffusion of archaeological Cultures—regionally and temporally bound patterns of material culture and the residue of shared practices, including similar burial rites, settlement structures, etc. So, the appearance of new genetic lineages is named a “migration” and these are then mapped onto, for example, the Corded Ware to argue that the appearance of these latter could be related to new populations from the east reaching Central Europe (Haak *et al.* 2015; critically e.g. Furholt 2018). Archaeological cultures, meanwhile, although treated as fixed analytical categories by non-archaeologists, are nothing more than modern inventions used to group similar (fragmented) archaeological data. Within archaeogenetic models, these form the ethnic equivalent for the ‘populations’ which serve as comparanda for genetic ancestry analysis, but whose internal coherence is rarely questioned (for critique, see Fullwiley 2014). <Note 3>

Of course, both geneticists (e.g. Eisenmann *et al.* 2018) and archaeologists know that this is an oversimplification. The problem is that the archaeological Culture is short-hand for a presumed-to-be-real ancient population which is then directly correlated with a particular genetic grouping whose gene flow is assumed to result from specific and identifiable migration episodes. This chain of causality is remarkably tenuous when compared to the social reality in which people live. Certainly, as people move, genetic patterns shift, but to equate genetic patterns with analytical categories derived from pottery typologies and grave morphology and thence to ethnic identities—complex, shifting, shared ways of being—and, moreover, to use this as mechanism to explain technological and social change (effectively what is occurring when a new archaeological Culture emerges in a region) is highly reductive, especially where explanatory models focus on only a small subset of the population (e.g. male migrants). As recent work in the Pacific has made clear, language and other cultural elements are frequently maintained, even as migration events result in large-scale genetic turnover (Lipson *et al.* 2018; Posth *et al.* 2018).

Even in academic writing, we certainly see historic and ancient DNA research being used, with and without explicit agenda, to reify and bolster contemporary (often highly politicised) identities by biologizing them. An example can be seen in a recent letter to Nature regarding the genetic relatedness of ancient and modern peoples in mainland Greece and Crete (Lazaridis *et al.* 2017). As



Hamilakis (2017) notes in his public critique, the authors go out of their way—both in the scholarly text and in press interviews about their research—to emphasize continuity, downplay outside gene flow, and portray a modern Greek population with close affinities, including physical appearance, to ancient populations. In doing so, they produced research which not only echoes white supremacist narratives but was championed by the Greek fascist Golden Dawn party. Here, again, at least part of the problem lies in the uncritical acceptance of archaeologically defined groups or phenomena (in this case, Mycenaean and Minoan) and their conflation with both bounded genetic populations and a shared ethnic identity.

Similar flaws are present in many other genetics papers, although they are apparently unintended. For instance, Krause and Haak (2017, 31, our translation) state that the Mesolithic–Neolithic transition brought new populations and innovations without which “we would probably still be roaming the forests as hunters and gatherers today”. But who precisely is “we” with whom one is primed to identify? It cannot be any of a number of increasingly complex Palaeolithic or Mesolithic populations, all of which have relatively little direct genetic impact on modern-day central Europeans. Even though the agenda here is to cast migration in a positive light, the link between it and a rather one-sided view of innovation remains, as does a muddled picture of who is ‘us’ and who ‘them’ in this context.

The issue of indigeneity is one that is often raised and rarely reflected upon in European genetic research. For example, recent research into the genetic profile of the British early medieval population contrasts whole-genome sequences of a small sample of early medieval and Iron Age individuals to the modern European genetic pool to quantify the impact of migration on the genetic composition of Britain (Schiffels *et al.* 2016). The Iron Age individuals were referred to as the ‘indigenous British’, in spite of the facts that several large pre-Iron Age population turnovers have already been identified (e.g. Olalde *et al.* 2018), that Iron Age connections between Britain and the continent were frequent and intensive, and (again) that the idea of Britishness is a recent historical invention and certainly not an Iron Age identity. The repetitious identification of so-called ‘indigenous Brits’ from vastly different periods as well as highly variable cultural and geographical contexts underscores the lack of understanding of social identities that the authors of these studies bring to their publications. Indigeneity is used to convey purely the idea of ‘an earlier population’ even though, beyond the realm of ancient DNA research, it is a fraught and politically contested identity. By contrast, the early medieval group examined by Schiffels and colleagues were collectively termed Anglo-Saxon (an archaeological period, but also a manufactured culture-grouping which one of the authors of this research has elsewhere disputed; Sayer 2017). The complexity of Early Medieval ethnic constructions and their intricate relations to biology and to archaeological material (ably summarised for instance in Burmeister 2000) was, for the moment,

sidelined. It is therefore not surprising that the associated media and university press releases touted the claim that contemporary English people were “38% Anglo-Saxon”—a sort of “genetic astrology” (*sensu* Raff 2019) which provides no meaningful relation to identity past or modern and seems to do little other than evoke the ugly and deeply racist idea of blood quantum (TallBear 2013, 63-64).

### *Narrative 2: Migration and gene-flow*

As a last example, the possible impact of a migration during the Mesolithic–Neolithic transition on the European gene pool has long been controversially discussed. The arguments have recently been ably summarised by Brandt (2017, 38–44), who traces how, depending on the indicators used, models oscillated between demic diffusion (Ammerman and Cavalli-Sforza 1984) and substantial population continuity since the Palaeolithic (Richards et al. 1996). This latter narrative coincided with a surge of archaeological work that was critical of migration, even in such apparently clear-cut cases as the beginning of the central European LBK (e.g. Kind 1998; Tillmann 1993; Whittle 1996; Zvelebil 2001). By this time, migration as a viable explanation had, in any case, long been out of fashion.

The tide turned with the extraction of genetic material directly from ancient skeletons, showing a dramatic break between hunter-gatherers and Neolithic populations, but also between the Neolithic gene pool and that of today (e.g. Bramanti et al. 2009; Brandt et al. 2013; Haak et al. 2010). Since then, the picture has been continuously refined through additional studies, providing an increasingly large background sample of individuals from specific areas and time periods against which new data can be matched. For different regions of Europe, different narratives are emerging. On a background of ever more finely textured hunter-gatherer diversity (Fu et al. 2016), it is now possible to show that hunter-gatherer involvement in the transition was greater in south-east (Mathieson et al. 2018) as well as south-west Europe (Szécsényi-Nagy et al. 2017) and northern Europe (Malmström et al. 2014; Mitnik et al. 2018) and that groups from the latter two regions could have contributed to a subsequent re-introduction of hunter-gatherer haplogroups in central Europe in the Michelsberg (Beau et al. 2017) and Bernburg (Brandt 2017, 180–82) cultures. How can this be interpreted?

In his thesis publication, Brandt (2017) concludes by offering a series of contextualisations of his genetic data from the Middle Elbe-Saale area. Not much is made of the potential for integration with archaeological narratives; indeed, the contribution of archaeology is limited to brief references to one culture group ‘having affinities to’ or ‘influencing’ another. As in other archaeogenetic research, the assumption of bounded social groups that comes with this paradigm remains unchallenged. Brandt is to be commended for including linguistic, demographic and environmental data, but he does so highly selectively, for example including only those linguistic models which allow the

conclusion that languages and people spread together (see Pereltsvaig and Lewis 2015 for alternatives). Similarly, demographic boom-and-bust cycles (here following Shennan et al. 2013) are tentatively correlated with the identified migration events without discussing possible caveats of the methods involved in reconstructing them (see e.g. Contreras and Meadows 2014). From there, despite the rather coarse dating available for most archaeological cultures, it is but a short step to link migration events to climate-induced crises. In the end, Brandt concurs with Gronenborn et al. (2014) that cycles of population increase probably led to greater cultural complexity (again a debatable correlation, see Premo 2016) and eventually to cultural collapse related to climatic deterioration, leading to mass migrations.

These selective readings result in a one-dimensional view of migrations as a form of crisis response: something atypical and disruptive that will only be attempted when the evidently preferable alternative of staying put will no longer work. This attitude emerges from contemporary Western popular (and to an extent academic) discourse (as e.g. criticised extensively in Glick Schiller and Salazar 2014; Lehnert and Lemberger 2015) and tends to neglect other possible reasons for, and social consequences of, migration from the outset. If we therefore end up with an apparently unshakable reading of objective genetic data reflecting the struggle of (homogenous) peoples for survival against adverse circumstances, and either acculturating others or becoming swamped, then in reality there was considerable interpretative shorthand along the way. It simply shows that a certain style of argument (working at large spatial and/or temporal scales, including plenty of statistics, and so on) is more easily appreciated and shared by people whose discursive conventions were already similar, who publish in the same range of journals and who have been trained to aim for the same kinds of explanations and arguments (also note Bösl 2017, 46 on citation networks within the field).

A similar example is Mathieson and colleagues' (2017; 2018) <Note 4> recent assessment of south-east European population history across the Neolithic. We are treated to a regionally nuanced discussion of diverse haplotypes being introduced at various points and, in some cases, even differing quite strongly between sites of one and the same time horizon or even 'Culture'. Problems begin where, rather casually, specific interpretations or hypotheses of these patterns are highlighted over others. For instance, the higher proportion of hunter-gatherer input at the Bulgarian Neolithic site of Malak Preslavets apparently struck the authors as odd, as they provide a justification: it was "likely driven by the high local hunter-gatherer population density" (lines 423f.). Actually, situations of possible long-term coexistence without interbreeding, as for example in central Europe (postulated, e.g., by Bollongino et al. 2013), are in far more need of explanation, but pass without any in Mathieson and colleagues' text. It seems accepted that people of different genetic ancestry should behave in this way. The fact that, when admixture occurred in the south-east European

Neolithic, it was mostly male hunter-gatherers moving into farming communities (Mathieson et al. 2018, 201) is also not discussed further, although it directly contradicts prior expectations. Needless to say, issues of groom price or selective raiding for husbands are not mentioned in this context.

### *Narrative 3: Genetic admixture and Europe under threat*

What is clearly stated by Mathieson and colleagues, however, is that this genetic isolation meant “northern and central European hunter-gatherers were protected from the demographic impact of farming migrations” by persistent frontiers, allowing them the time to “interact in a different way”, unfortunately unspecified (lines 430–34). This idea of “protection” from foreign genetic input, in line with the characterisation of south-east Europe as a whole as a “beachhead” in the spread of agriculture (Mathieson et al. 2018, 197), creates a strong analogy of war and threat. This is not an isolated instance. For example, ‘How Britain Succumbed’ is the title chosen by Reich (2018, 114) as a chapter heading for the introduction of new genes associated with the Bell Beaker phenomenon <Note 5>.

This is somewhat at odds with the perceived benefits of admixture when it does take place. South-east Europe was a “*genetic* contact zone between different populations. This role likely contributed to the extraordinary series of *cultural* innovations that characterize the region” and include clay figurines and precious metalwork (lines 470–73, italics added). While admixture thus emerges as a “good thing”, this latter statement effectively claims that the capacity for cultural innovation is rooted in genes. It is, then, no longer surprising that the likelihood of different linguistic hypotheses for the spread of Indo-European is assessed based on genetics alone (Mathieson et al. 2018, 201): inheritance, cultural capacities and language quite self-evidently go together. As a general statement, this could easily be spun in a worrying way.

What this ends up doing, unintentionally, is, first, projecting into the past modern fears about the embattled “fortress Europe” which is constantly in danger of being over-run and, second, linking genes and culture, biology and identity in highly questionable ways (for a very pertinent recent example, see discussion in Brophy 2018). By neglecting so completely the contribution that the social sciences and humanities can make, even by ‘only’ providing readings and narratives, these archaeogenetic accounts leave obvious blanks which can then be filled by the unreflected press releases provided by our universities and labs—and into poisonous tweets and racist blog posts.

## **4. Blame and reflexivity**

Archaeogeneticists are very much aware of their narratives being potentially useful in dispelling the myth of a timeless ancestral past for specific nations or population groups. Thus, Brandt (2017)

presents evidence for the continuous and varied influences to the gene pool of his study region, the German Middle Elbe-Saale area, at least throughout the Neolithic and into the Early Bronze Age. Similarly, Krause and Haak (2017, 31 our translation) point out that “all modern-day Europeans are a potpourri of genes from different parts of Eurasia” without any hard and fast boundaries, and certainly not ones corresponding to nation states; and Reich (2018, xxv, 82, 97, 121, 163 among other places) is at pains to stress that admixture is a fundamental factor of human existence and that there are no ‘pure’ populations in the world which would lend themselves to racist foundation myths. Yet, following Benjamin (2015), the (false) allure of objectivity offered by genomic research allows otherwise well-intentioned scientists to build unconsidered, unreflective assumptions into their models and interpretations, all potentially leading to the reproduction of out-dated and racist modes of thought cloaked in the credibility of science (see Kohli-Lavin 2012 for an example of how this feeds into nationalist discourse).

Having pointed long and hard at archaeogeneticists, it is only fair to stress that archaeologists have their share of the blame for any miscommunication that is taking place. From its birth as a circumscribed discipline, archaeology has been fully entwined with nationalist and colonialist projects (Díaz-Andreu García 2007; Trigger 1984). The discourse of European superiority was bolstered with archaeologically derived data about ancient European civilisations; and the history and ancestors of colonised peoples were appropriated and stolen for Western museums, where many still languish to this day. The Nazi use and misuse of archaeological data, narratives and sites to support claims to land, to power, and to racial superiority is well known (Arnold 1990, 2006; Härke 2014), a particularly virulent version of the longstanding and intentional conflation of archaeological and ancient historical concepts and the ethnic identities of contemporary peoples struggling for recognition (Collis 2003; Dietler 1994, 1998; James 1999).

Gustaf Kossina’s *Siedlungsarchäologie* (or settlement archaeology, in English) was built on the principle that material culture could be used to map the movements of past people, up to the historic period. Biological (racial) distinctions between these groups were sought in skull shape and other physiological attributes (Harlan 2018), and the appearance of new physiologies (races) was mapped alongside changes in material culture and compared to contemporary European populations. We have long denounced the racist motivations and skewed results of Nazi archaeology; but, at least as far as northern and north-west Europe are concerned, critiques of nationalism tend to be written in the past tense. If nationalist appropriation is acknowledged to be ongoing, then it must be elsewhere in the world, or at most at the very edges of a “Europe” implicitly defined from a hegemonic northern and western perspective, for instance in Russia (Chernykh 1995), the Caucasus (Kohl and Tsetskhladze 1995), Greece (Kohl and Fawcett 1995, 11), Hungary (Bánffy 2013), or Italy (Guidi 1996, 117), after yet another worryingly right-wing election result (as if those are not also

happening in Britain, Scandinavia, Austria, and Germany). Yet archaeology is unavoidably political in ways far subtler than we European prehistorians are used to considering, and there are no grounds for complacency. Even now, parts of the heritage discourse still lean heavily on the personal, biological, and cultural connections between specific modern and ancient populations. Archaeology remains part of nation-building campaigns, and state support of heritage activities waxes and wanes with nationalistic tides (Arnold 2015; Frieman and Janz 2018). For instance, the Swedish democrats, a populist right-wing party in the Swedish parliament, explicitly considers culture a part of the 'inherited essence' of a particular nation and, therefore, as worthy of preservation and in need of defence against outside influences. Archaeologists benefit from this directly, for example through calls for increased heritage funding by this and other similar parties in Denmark and Norway; although there is a clear bias towards sites which can be linked to idealised 'national origins' or idyllic, rural ways of life (Niklasson and Hølleland 2018, 125–26, 130). As Niklasson and Hølleland (2018, 133) point out, archaeologists could, in many cases, be far more vocal in criticising these overt connections between heritage and nationalist politics. This is rendered particularly difficult as personal connections to the past are sought and touted as one means of demonstrating both the engagement of archaeological research with the wider community and its ongoing relevance (Ireland 2012).

It also remains true that, while recognising the historically constructed and, hence, malleable nature of entities such as 'Europe' and its archaeology (see e.g. Babić et al. 2017; Champion 1996, 140–42; Dennell 1996; Shore 1993), as a profession we are not consistent enough in transcending these boundaries in our everyday research. For all the critique of the culture concept, these entities remain strong factors in structuring research (Roberts and Vander Linden 2011), as are modern nation states, thereby reproducing the methodological nationalism we are otherwise so happy to critique.

This may be part of the reason for the easy acceptance of some of the terminology developed by archaeogeneticists. If they speak of someone having 'Near Eastern ancestry', then we must be aware that this generally means a genetic timescale quite at variance from any past individual's sense of immediate descent. <Note 6> It does not necessarily imply either a direct migration by that person, or an explicitly remembered origin, let alone any kind of felt identity (see also Hofmann 2015; 2016 for discussion). This does not always receive sufficient recognition with the results that certain strands of identity tend to be represented as essentialised, removing the historical processes of their (re)creation. Although it is precisely this kind of debate that would bring out the contribution of archaeology most strongly and which should not now be side-lined simply because migration is back on the agenda.

If, concerning the importance of migrations in prehistory, we must indeed ask ourselves why so many archaeologists could be “so wrong for so long” (Kristiansen 2017, 122), then, having retrieved the jettisoned migration baby from the spilled bathwater (with a nod to Anthony 1990), we should not now drop all sorts of other infants instead. If we were wrong for a long time in some things, this is because we actually got some others right. It was vitally important to critique the alleged objectivity of science and to introduce into our narratives a sense of the diversity of past communities and the many ways in which their social organisation and internal logics differed from our modern-day ‘common sense’. A critique of culture history and ultimately of migration was a core part of that; and, even if it went too far in places, the many thoughtful theoretical and methodological points made during this process still stand (e.g. Burmeister 2000; 2016; 2017 and references therein). Moreover, these discussions brought a lasting interest in the identification of power structures and their legitimation, both in past societies and in present research contexts. In this way, one can only concur with Niklasson (2014) that ontological and terminological reflection is not an add-on, an optional step tacked to the end of the main business of retrieving ‘real’ data but should be a fundamental concern of each stage of research.

## **5. Call to arms**

So, where can we go from here? If, according to Burmeister (2017, 66), the archaeological contribution to migration research should be to provide high-resolution chronologies, furnish evidence on the strategic use of material culture in identity creation and develop sophisticated theoretical models on how migrations and the following interactions may have worked, then we must add to that a clear obligation to also stand by these conclusions, and argue them confidently both with our non-archaeologist collaborators and in the public sphere. Combining the still relatively coarse coverage of genetic data with details of individual biographies or regional narratives of material culture change is a crucial task that still needs to be accomplished but will lend itself far less well to hyperbole. This is vital for any form of comparative research we may wish to undertake, for instance into the diversity of or motivations for migrations – a topic so far not high on the archaeogenetic agenda (but see Veeramah 2018). We cannot avoid the challenges of new data by remaining stuck in outdated paradigms. But, as David Clarke (1973, 8) already noted with regards to the acceptance of processual archaeology, this does not mean that there is no longer a place for the humanities within our discipline. On the contrary, it is more necessary than ever.

Over the last few years, genetics has vastly enriched archaeology and the kinds of data (and, therefore, interpretations) on offer, to the great benefit of archaeology. Whenever we have worked with archaeogeneticists ourselves, there has also always been dialogue and a genuine desire to

listen on both sides. Yet if the full potential of interdisciplinary research is to be realised, then there is a long way to go. In particular, we must move from well-intentioned, individual comments about the benefits of migration and admixture to a critical examination of the theoretical underpinnings of archaeogenetic research as a whole. The first steps along it are to think about individual responsibilities and structural pressures. As some initial commentators to this article have pointed out, there is little room in journals such as *Nature* for in-depth interpretative debate, and a university press officer may not have understood the brief. In the end, however, our universities demand high-impact journal articles and, increasingly, measurable public engagement. What is one to do?

We would like to point out, however, that such constraining structures are kept alive by individuals, not all of whom are equally powerless. Some, at least, are in a position to start thinking about long-term benefits as opposed to short-term fame. Heads of large laboratories could mitigate against the sole focus on article metrics by, for example, encouraging researchers in their groups to write more reflective and collaborative pieces and to change their hiring policies to explicitly demand those, taking into account the longer time these may take to write and the reduced measurable 'impact' of humanities journals. Some archaeogenetic research groups are already making the effort to publish in traditional humanities kinds of publications, such as edited volumes (e.g. Krause and Haack 2017; Szécsényi-Nagy et al. 2014), but such publications could easily be expanded and diversified in the future by moving interdisciplinary collaboration 'upstream' from the interpretation of archaeogenetic results already achieved to the model-building itself (cf. Benjamin 2015: 140), a collaborative process likely to be messy, multivocal and contested. For this to work, archaeogeneticists must become better-versed in the intricacies of archaeological argument, much as they are asking archaeologists to work at understanding genetic data. We must also ask why migration as a research question has monopolised quite so much of the attention while, for instance, questions of kinship and its relation to status, individual mobility, or burial rites are less frequently addressed (Bösl 2017, 233, 248). Here, too, the attention a question might generate is not the same as its relevance, and we must keep an even more careful eye on current political discourse, take action to vet press releases and develop responsible outreach and social media strategies (see e.g. Hawks 2019; Bonacchi et al. 2018).

The resulting discussions, debates and more or less informal compromises must be made more transparent, particularly also in our communications outside academia. We need to work together to develop clear terminology and a targeted communication agenda. Although genetic research has been a part of archaeology for two decades, it is only recently that there has been a substantial attempt to develop a terminology acceptable to both (Eisenmann *et al.* 2018), and only in the last year that archaeologists and geneticists have begun to engage in nuanced public dialogue about the ethics of the field (Bardill *et al.* 2018; Prendergast and Sawchuk 2018). We find it telling, though



unsurprising, that this discourse is being developed by archaeologists and anthropologists working among and with indigenous and African communities, where exploitation and racist power hierarchies are familiar and well-understood. As far as we are aware, no ethical standards have yet been proposed for the archaeogenetics of European prehistory, an obvious gap. The establishment of an interdisciplinary research network centred around the ethics and communication of ancient genetic data might be one productive step forward.

We are responsible for the co-created pasts we present to the world, and history will take note of the influence they have. For this, we must remember that our research having *impact* is more wide-ranging and consequential than its journal metrics or citation rate. If we are willing to sacrifice the more flattering media hype for a time, for the sake of a much-needed (and, one hopes, also publicised) dialogue on our aims, the narratives we create, and the kinds of politics we feed, then there is much to gain. We cannot control the *Daily Mail*. But we have hardly done everything in our power.

## Notes

1. Reich himself remains committed to an equal-opportunities society in the present (Reich 2018, 245–46) and does not deny that some individual women in the past may have held important social roles. However, as this would not have left marked genetic effects (Reich 2018, 241), it is of no further interest to his arguments. Genetic and social impact are conflated throughout the discussion, in line with the wider discourse within the field of population genetics regarding assumptions about male and female reproductive choices, heterosexuality, and their impacts (see e.g. Nash 2012).

2. Perhaps this choice also has something to do with how the authors of this research see their own role. For instance, Reich (2018) consistently stresses the 'disruptive power' (xxiii) of the archaeogenetic field and how it has blown 'traditional' (i.e. archaeology- or linguistics-derived) narratives clean out of the water. Indeed, 'we geneticists may be the barbarians coming late to the study of the human past, but it is always a bad idea to ignore barbarians' (Reich 2018, 128). At least some archaeogeneticists thus quite explicitly see themselves as aggressive, war-like heroes, sweeping away stuffy, ivory-tower humanities research. Also, as a laboratory discipline, archaeogenetics is seen by some practitioners as providing more objective and, therefore, more relevant data than, for instance, isotopic or morphological information (Bösl 2017, 123; for a counter-example, see Halcrow et al. 2018). This attitude goes back to the discipline's founding father, Luca Cavalli-Sforza (Cavalli-Sforza and Cavalli-Sforza 1996, 118), who has recently been likened to Moses, leading his disciples to a promised land (Reich 2018, xvi-xvii).

3. Following Fullwiley's (2014) critique, the constitution of these genetic clusters into bounded types or admixture groups is itself problematic in ways that parallel the reification of archaeological cultures. Rather than pre-existing entities, these genetic types derive from complex statistical analyses informed by outdated models of social analysis which see people existing in bounded, biologically separable units. For Fullwiley, this paradox, whereby uncritically used racist conceptions of identity and relatedness are enfolded into scientific models intended to have no racial (or even anti-racist) effects, is the flaw at the heart of much of the New Genetics. She describes it as "an absorption of the old race thinking into modern race projects of a liberal persuasion" (Fullwiley 2014, 804).

4. In this case, we are working from a pre-print of the paper posted on BioArxiv (May 2017). In fact, peer review seems to have resulted in much of the problematic material being removed from the published version (2018); but we feel that it is necessary to highlight as an illuminating insight into the state of archaeogenetic model-building since obviously the social assumptions about marriage, identity and ethnicity motivated the original research. Line numbers refer to the pre-print version (2017), while we also highlight which conclusions were retained in the published paper (2018).

5. This kind of rhetoric, in turn, lends itself to further dissemination. In a recent popular piece mid-third millennium migrants to Britain—who made and used Bell Beaker pottery but were of eastern European ancestry—were named as “Yamnaya Beakers”. This is a nonsense descriptor that represents exactly the sort of confusion that results when complex social processes are grafted onto models of geneflow, themselves interpreted using existing, rather blunt culture historical terminology. Indeed, the whole tone of the article was inflammatory with the so-called “Yamnaya Beakers” described as the “most murderous people of all time”, responsible amongst others for the destruction of Stonehenge (Barras 2019). In this case, both the original publication (Olalde et al. 2018) and the geneticists quoted were circumspect in their interpretations, while the archaeologists proved rather more fanciful.

6. Indeed, many archaeogeneticists’ main aim is to reconstruct the make-up of present-day populations, rather than understanding social processes in the past (Veeramah 2018, 85).

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