

# New Questions instead of Old Answers: Archaeological Expectations of aDNA Analysis

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Traditional views and ›master narratives‹ have long been outdated by recent research. Identity has become a keyword in social research. It means the self-consciousness of groups. Ethnic identity therefore characterises the perceptions of a people and their particularity, and varies among every other nation. Nevertheless, this is a social and cultural construct depending on each group's specific situation. Ethnic identity has to be flexible and appropriate to the necessities and interests of each group. Genes are a matter of biology. Ancient DNA is preserved in smaller fragments which mainly allow approximations of population development. Modern DNA reflects actual distribution and the complex, but overlapping historical information at the population level. Expecting any direct accord between population history and social history would be a fall-back into nineteenth century conceptions of the ideal nation state: homogeneous in space, race, culture, language and people. This could only be a rare historical exception. The complex relations between both research fields provide promising perspectives, which can be followed only by a narrow exchange between biological and historical disciplines. Together, new and adequate questions should be developed.

*Keywords: chronology; typology; spatial analysis; contextual analysis; isotope analysis; aDNA analysis; early middle ages; methodology.*

Recent interpretations of scientific isotope and aDNA analysis tend to reconstruct ›peoples' migrations‹ which can be demonstrated by archaeological as well by scientific publications. This view follows ›master narratives‹ created by ancient ethnographers – refreshed by nineteenth century researchers and general public, which presents a simple but suggestive world view, considering the congruence of space, culture, people, race and language – giving ›old‹ answers by new methods (section 1). In contrast, modern humanities disproved such concepts and demonstrated that – instead of culturally homogenous ›people‹ – the self-consciousness of groups is decisive. Groups at different levels are bound together by their identities, which means by concepts of themselves defining differences to others (section 2). For archaeological research this shift means that traditional ›ethnic interpretations‹ of material culture have come to be challenged. Instead of interpreting regional ›cultures‹ as ›peoples‹, new insights have been achieved, mainly within local societies or by characterising supra-regional elites (section 3). Exemplifying these fundamental methodological problems

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of ›old questions‹ seen against the actual state of the art in Roman and medieval archaeology, some historical interpretations of scientific data need further discussion and some revision.

Genetic analysis in archaeology looks for kinship in local societies as well as for population history. In the first case, only biological descent is detected, while social alliances are established by marriage. For population development (not that of ›people‹), the second case, the number of aDNA samples seems to be quite small yet, and the comparison with recent distributions lead to a-historic results (section 4). The Lombards have been the subject of recent studies which demonstrate that the outcome of isotope analysis reflects much more local mobility than ›migration‹ – which is very interesting for the reconstruction of marriage patterns. aDNA analysis will probably achieve similar results if we take into consideration the cultural and political heterogeneity of the Lombards according to the written record (section 5). Summarising these observations, it has to be emphasised that the identity of social groups cannot be reflected in the genes – or at least that identity will be demonstrated by genetic diversity. In general the archaeological as well as the scientific record rather complement than confirm each other (section 6). In this view ›old‹ answers have become doubted, and should be tested in detail and replaced by more balanced interpretations.

Therefore archaeologists as well as scientists are being challenged to develop together new research questions instead of trying to verify old answers in reconstructing once again ›peoples' migrations‹ in antiquity and the middle ages, especially given today's global political situation. A precondition will be a sufficient mutual understanding of methods and research agendas – laying the ground for a promising interdisciplinary cooperation and research (section 7).<sup>1</sup>

### *1. Traditional views and ›master narratives‹*

›Master narratives‹ do not only guide the public perception of history, but sometimes research too. They usually present simple, general explanations for very complex developments, and they appear to be very influential. At the present time, ›peoples' migrations‹ are very frequently mentioned in the news, often also simultaneously referring to late antiquity and the collapse of the Roman Empire. But are the ideas of the nineteenth century in fact a solid basis for our understanding of history and politics?

It is obviously the idea of the modern national state which constitutes the basis for such suggestions. Implicitly, inward homogeneity and outward distinctiveness represent the starting points for several considerations. But even in modern states, with their extensive administrations and bureaucracies, far-reaching similarity or even ›equality‹ has not yet been achieved; instead ›nations‹ and populations today are characterized by many social, cultural and religious differences – and they can successfully handle them. We should therefore doubt that early societies were homogeneous in any substantial way – the larger they were the more complex their differences must have appeared.

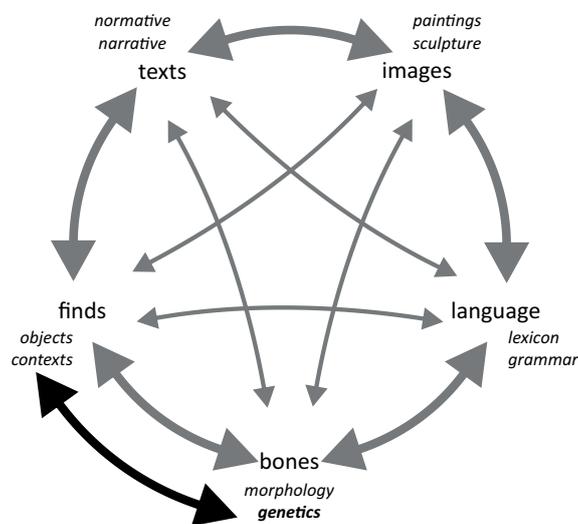
Albeit at first hand ›archaeological cultures‹ seem to represent homogeneous regional societies, they remain classifications of research and nothing more. By definition, both the term and the concept look for similarities and marginalize differences. That ›cultures‹ of this kind do not represent past societies or ›peoples‹ can be demonstrated by simple cases: for Central Europe several culture groups have been described for the first to fourth centuries

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1 For biomolecular analysis in archaeology see Brown and Brown, *Biomolecular Archaeology*.

AD, but they do not fit at all to names which appear in written sources of that time. Apparently different aspects are concerned – on one hand the perception from outside, reflecting the search for order within the barbarian world (possibly indirectly reflecting the political situation), and on the other hand, structural relations and communications over larger distances reflected in the archaeological record.<sup>2</sup>

The traditional ›ethnic interpretation‹ in archaeology (or its ethnic focus) apparently depends on several circles of data and their interpretations; but this is impossible without a written record which localizes a specific group. Starting from the reconstructed territory, comparisons to selected archaeological distribution maps are made, leading to the suggestion of ›ethnic symbols‹ and the identification of ›foreigners‹ somewhere else. The circles become more numerous and puzzling when further data are included. Relations between material culture and languages cannot be reconstructed, because we do not have any dating and localization of dialects and languages (Indogermanic, Celtic or Germanic) in European prehistory. Considering images, antique topoi of barbarians obscure the interpretation, and one should be aware of the transformation of meanings and media. Bones have led to some misinterpretations too which could easily be exemplified by the suggested plan-occipital skull of the bell-beaker ›people‹<sup>3</sup>, or the postulated long skull of ancient Germans (both still relevant in research literature).<sup>4</sup> Recently, aDNA and isotopes have also been included (*Fig. 1*). This traditional view has been challenged and changed fundamentally. Archaeology, influenced by historiography as well as by ethnology and the social sciences, has developed new concepts. ›Peoples‹ no longer represent the main object of research, but the players and their agencies are the focus now. Social groups are another focus, and their cohesion by interests and identities.



*Fig. 1: Circles of misleading ›mixed‹ interpretations. The archaeological record, texts, images, and scientific samples are often combined, but instead of mutual confirmation the sources and their interpretation represent different perspectives which complement each other. Therefore no direct conclusion can be made from one record to the other*

2 Cf. Brather, In stammeskundlichen Fragen, 57, fig. 3.

3 Gerhardt, *Glockenbecherleute*.

4 Ecker, *Crania* (›Reihengräbertypus‹).

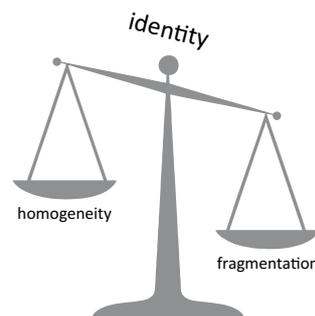
## 2. Identities and ethnic groups

During the last decades ›identity‹ has become a keyword in social research. One gets the impression that everyone has to have an identity, and identity can explain everything. Common sense suggests that a sense of identity characterises every group, and that it is just this consciousness that is necessary for the existence of social groups and their characteristics. While on one hand this perception has been established by research, on the other, politics and politicians as well as specific interest groups claim certain identities (and for the right to make that claim). Both perspectives underline that identity is more a political statement than a social reality.<sup>5</sup> It is the earmarked enhancement of existing characteristics and differences.

Identity is not a given, but constantly evolves. Its general function is to establish the impression of a definite and stable group. Therefore, identity is primarily a suggestion; furthermore, it can be used to hide important differences within groups and to emphasise their characteristics in comparison to other groups. Because groups, interests and situations change, identities change too. For this reason it would be an unfounded expectation to presuppose that continuous identities would exist over long periods of time without modification. Quite the contrary: steady change reflects a ›normal‹ social and cultural situation and its perception.

The American sociologist Rogers Brubaker wrote recently: »What cognitive perspectives suggest, in short, is that race, ethnicity, and nation are not entities in the world but ways of seeing the world. They are ways of understanding and identifying oneself, making sense of one's problems and predicaments, identifying one's interests, and orienting one's action. They are ways of recognizing, identifying, and classifying other people, of constructing sameness and difference, and of ›coding‹ and making sense of their actions. They are templates for representing and organizing social knowledge, frames for articulating social comparisons and explanations, and filters that shape what is noticed or unnoticed, relevant or irrelevant, remembered or forgotten.«<sup>6</sup>

In principle, identity has to establish a balance which allows a group to exist. Complete homogeneity is practically impossible as is extensive fragmentation (*Fig. 2*). In theory (and in theory only), both situations represent the two ends of a continuous scale. The necessary



*Fig. 2: Social identity as a specific balance between homogeneity and fragmentation. Depending on the actual situation and on the function, the ›place‹ of identity may be closer to homogeneity or nearer to fragmentation – in order to hold a group together (arranged after Straub, Identität)*

5 Niethammer, *Kollektive Identität*.

6 Brubaker, *Ethnicity*, 81 (my emphasis).

balance has to mediate between too much fragmentation in order to keep the group together, and at the same time too much homogeneity because then the group would be too small (and at the end limited to a single individual only). Which aspects shall be used and how, and how a group should be characterised, depends on the situation as well as on perception and function.<sup>7</sup> Generally, identity provides integration and separation and is of fundamental importance. Separation can range from alterity (which can be retranslated) to alienity (radical strangeness).

Groups as well as individuals possess identity, yet groups possess their own relevance through the actions of their members. Because every individual belongs to different groups everybody has a complex identity, each with some aspects different from those of others – or, if you will, some identities. Many groupings and identifications compete with each other, depending on the specific circumstances of relevance and effectiveness. Various aspects overlap each other, and their emphasis depends on each situation and the necessity of demonstrating specific characteristics. As such, all ›identities‹ exist at the same time, but only one is stressed in a specific circumstance, while others are of secondary or tertiary importance.

Because of this flexibility of identity, it cannot be named in one situation and analytically transferred to another. Analysis has to acknowledge the contexts and processes of identification when it tries to understand its function and contents. Research is open to changes and to flexible use, instead of expecting a hard ›traditional‹ kernel of identity from every group. According to Brubaker, relevant studies should concentrate on »identification and categorization, self-understanding and social location, commonality and connectedness«<sup>8</sup> – i.e., the ways in which people and groups perceive their reality.

Ethnic identities represent a specific case. Contrary to suggestions made in the wider public, for most individuals, ethnic identity is not the most important aspect of one's identity. But because it is the context in which a certain identity becomes important, ethnicity is emphasised in confrontation with other ethnic groups. For Patrick Geary, ethnic identity should be characterised as »a situational construct« and does not fundamentally determine one's consciousness.<sup>9</sup> In every-day life it is of secondary relevance at most. To look only at ethnicity over-estimates its relevance in terms of the national lenses of the twentieth century in Europe as well as globally.

Ethnic names which appear in written sources during antiquity and the middle ages do not necessarily meet modern expectations. Of course they have been understood as labelling specific groups in certain regions, sometimes ›migrating‹. In several cases this entails a misunderstanding because often the names are regional descriptions referring to populations in certain areas (e. g. Celts, ancient Germans or Slavs as well as Franks and Alemans). In other cases, such names mainly reflect political situations and relations, such as those which can be argued for the early medieval Frankish kingdom(s). In all of these situations ›ethnic‹ names do not signify a culturally and socially homogeneous reign but its political claims, labelling and belongings. The engaged search for these names by historical and archaeological research often meant a misunderstanding of the context which the names described and explained a long time ago – as can be shown by recent concepts of identity.

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7 Straub, *Identität*.

8 Brubaker, *Ethnicity*, 4.

9 Geary, *Ethnic Identity*.

### 3. *Past identities in archaeology*

As in other disciplines ›identity‹ has become an important topic in archaeology over the last few decades. In many studies, it has developed into a term often used, but too often not combined with any specific concept. There, it is simply applied to certain observations of similarities in space and time, but whether there was any consciousness beyond that is not reflected. The advantage of using ›identity‹ as an analytical tool lies in the research perspective. Instead of reconstructing ›real‹ conditions directly as is reflected in the archaeological record, they are filtered through the ideas and perceptions of past groups and societies. So, burials do not directly inform us about social structures of local societies, but mainly about the way the dead were buried and which concepts may have been behind that.

Archaeology has to make a principal assumption when it is asked about identity: if groups had a consciousness and identity, then they had to express these by signs of material culture that can be reconstructed. There are several ways to act according to one's group identity; these can be described by Pierre Bourdieu's concept of habitus. People can use different elements of cultural practice – from language and behaviour through religion and up to burying the dead. But the material representation is of fundamental importance, as otherwise any archaeological attempt will fail. If so, the material expression might be seen as placing special emphasis on these elements – according to Jan Assmann's hypothesis that identity has to be a clear enhancement of reality and its perception.<sup>10</sup>

Apparently material symbols were not the usual expression of ethnic identity. When we look in antique and early medieval texts then there are indeed some descriptions of such material markers. The most famous is Tacitus' mention of the Suebic hair knot. But in the following sentence the author explains that other tribes (we do not know who the Suebi were really) were imitating this prestigious symbol, and moreover it had been a sign of an elite. Similarly the typical Frankish axe called therefore francisca (Isidor of Sevilla), the seaxe of the Saxons (Widukind of Corvey), or the long beards of the Lombards (Paul the Deacon). All of these material symbols represent interesting stories and were obviously recorded later than when they happened, but provide no starting point for any historical research.<sup>11</sup> People in antiquity and the middle ages referred to relevant characteristics in a more flexible way.

To come closer to past identities additional and independent information is necessary. Only when skeletons have been biologically sexed, can archaeology identify gender specific grave furnishings that reflect gender roles. Similarly, age determination helps us see whether there were social positions dependent upon the age of the deceased. Further information comes from religious symbols (known for Christianity, but unknown for pagan beliefs), as well as from instruments (indicating smithies and other craftsmen). Groups of graves may indicate families but have to be checked further. What can be analysed by this approach is focussed on the individual, local level, but is not valid for larger populations. Instead of regional identities, groups within local societies can be reconstructed and assumed to have had specific identities.<sup>12</sup> Any ethnic labelling in archaeology refers to the so-called ›geographic argument‹.<sup>13</sup>

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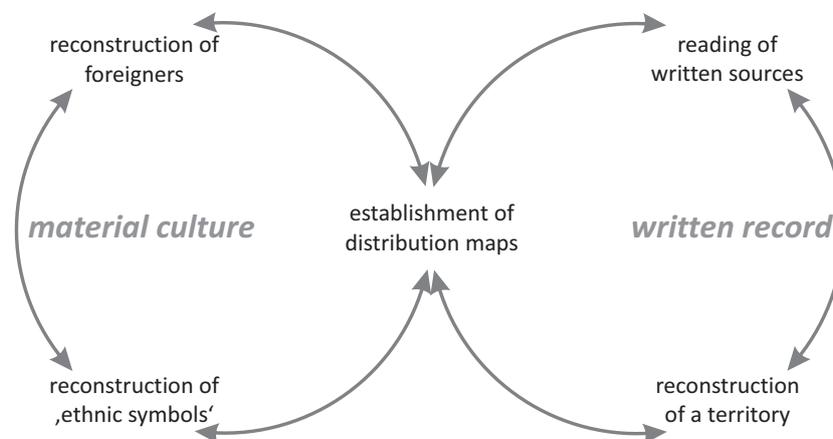
10 Brather, Identity.

11 Brather, *Ethnische Interpretationen*, 310-317.

12 Brather, Alteritäten.

13 Martin, Ethnic Identities.

Elements of material culture which seem to be regionally concentrated and typical are very often archaeologically interpreted as specific to a people or tribe. The information given simply becomes a distribution map. What is effectively reflected by mapping is hardly ever asked. One would expect greater communication. Eventually everything in archaeology has its localisation and space, but not everything can be called ›ethnic-specific‹ (as additional and specific information would be needed). There are two opposing opinions: one argues that only when the names of certain tribes in specific regions are known can an ethnic interpretation become possible for archaeologists.<sup>14</sup> The other is satisfied with the geographic argument and calls the cultural grouping the reflection of an ›archaeological ethnos.‹<sup>15</sup> The former hypothesis is the most common (*Fig. 3*) but does not escape from fundamental methodological problems. It is often combined with the hypothesis of far-reaching ›peoples' migrations‹, but we mainly observe the mobility of individuals.



*Fig. 3: Two circles of ethnic interpretation in archaeology, mixing the reading of written sources with the archaeological record. The geographic distribution remains the central and only argument – showing that the search for ›people‹ is not an archaeological question, but induced by the written record (rearranged after Hakenbeck, *Roman or Barbarian?*, 39 fig. 1)*

When we look at the written record then the meaning of suggested ›ethnic‹ names becomes questionable. Celts, ancient Germans and Slavs had been terms to describe the ›others‹ outside the Mediterranean world. They have been turned into a modern linguistic nomenclature but reflect nothing less than the identities of the people described. But too, names like Franks and Alemans were not the self-descriptions of two Germanic tribes, but, at least at the beginnings of the Roman administration, inventions used in order to regulate the opposite side of two provinces along the river Rhine. Such descriptions much more reflect the view and identity of the authors than that of the people concerned (and sometimes, the expectations and identities of the wider public, including some archaeologists). Self-perception possessed a much more political rather than cultural meaning; the Franks were the elite

14 Bierbrauer, *Ethnos*, 5.

15 Siegmund, *Alemannen*.

of the Merovingian and Carolingian kingdom(s) and their people. The name thus refers to the actual political framework, and does not imply that the whole population was culturally homogenous and saw themselves as being of Frankish ›origin‹. For ethnicity in its strict sense these groups are much too large; cultural anthropology has extensively shown that only smaller face-to-face societies of some thousand members develop an identity in this way.<sup>16</sup> Ethnicity is therefore situated at a much smaller spatial scale than all of the archaeological observations made so far.<sup>17</sup>

Material culture too does not primarily nor only reflect an identity.<sup>18</sup> It may have – beyond its practical function – many and manifold meanings depending on the context in which it is situated. But not always and not every object or decoration has much or any cultural meaning, and even that may not have been stable over a longer period of time. Therefore no direct link can be made per se from an element of material culture to some socially or culturally important meaning or identity.<sup>19</sup> What is needed is both information on material identity markers and the existence of such markers that represent identity: »Representation is the process by which members of a culture use language (broadly defined as any system which deploys signs, any signifying system) to produce meaning. Already, this definition carries the important premise that things – objects, people, events, in the world – do not have in themselves any fixed, final or true meaning. [...] Meanings, consequently, will always change, from one culture or period to another. [...] So one important idea about representation is the acceptance of a degree of cultural relativism between one culture and another [...], and hence the need for translation«, as Stuart Hall has expressed it.<sup>20</sup>

If this balanced view, referring to the complexity of ancient and medieval history, is challenged and falsified by modern scientific analysis, it would be a big surprise for both archaeologists and historians. It would not only contradict the results of decades of research, but also provide history with a decisive biological basis. Can this be possible? A cursory view may suggest direct relations between genes and culture, but every careful study will show that the past was much more complex. In the following, a few arbitrary examples will be shown in order to present methodological problems of some arguments based on biological information – and not the scientific method itself, which would not fit to my expertise and is much better explained by other studies.<sup>21</sup>

#### 4. *Genetic analysis in archaeology*

In recent years, not only has the analysis of ancient DNA undergone fundamental improvements, it also has been applied in a number of archaeological studies.<sup>22</sup> Research on cemeteries is particularly interested in individual relationships, as earlier epigenetic studies have been. In most cases so far possible kinship can be established, and even a genome-wide

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16 Müller, *Magisches Universum*.

17 Wotzka, Maßstabsprobleme.

18 Cf. Jones, *Archaeology*; Brather, *Ethnische Interpretationen*.

19 Hahn, Eigensinn.

20 Hall, *Work of Representation*, 61.

21 As a helpful introduction see Brown and Brown, *Biomolecular Archaeology*.

22 Cf. Brown and Brown, *Biomolecular Archaeology*, 9-37, 173-189.

analysis would identify just two degrees of relationship.<sup>23</sup> The results concern and illustrate biological kinship among local societies (if we may expect a reasonable sample of a local society to be buried at a cemetery).<sup>24</sup> This is just one half of kinship – biological descent. The other half is represented by affiliation, mainly by marriage patterns which establish alliances between families and social groups (in the Middle Ages, there would also be cases of spiritual relationship). Archaeology argues on the basis of grave groups within cemeteries (though there might be other reasons too for their being together), or with similar grave furnishing (which may have been a matter of chronological background). Only both aspects seen together may lead to a complex understanding of kinship in past societies – both perspectives complement each other.<sup>25</sup>

On a population level – beyond the micro-regional scale – it becomes difficult to reconstruct patterns of kinship in this historical sense. There are two main reasons: (1) the aDNA is so fragmented that the results so far present only indications instead of certainty – but this is to be improved now by genome-wide analysis, (2) Beyond very close relationships of just a few (perhaps up to three) grades of relationship we only acquire general information about relationships. In most cases the analysis detects mitochondrial DNA, which reflects descent along the mother's line. This may be interesting for the general genetic composition of a population, but from a historical perspective we come no closer to looking at kinship and marriage patterns because there are too many possibilities of explaining the genes historically. DNA from the cell nucleus provides much more detailed information, but again often in a broader statistical sense. Additionally, social reality makes the situation more complex: family structures could have included patchwork families, and cultural norms competed with deviations and violations.

Studies of DNA in modern populations appear completely different. They use the distribution of genes today and want to reconstruct their ›history‹, and alongside that the ›history‹ of the populations. The main methodological problem is that the ›historical‹ information is mixed and can hardly be separated and dated.<sup>26</sup> The supposed sensation, e.g. that ›the British are more Germanic than thought before‹ – dating back the similarities between the British Isles and the continent to ›the Germanic invasion‹ of the fifth century – is problematic.<sup>27</sup> 1500 years would have heavily influenced and changed the distribution of genes, and there might also have been earlier connections. Furthermore, the size of the samples is not yet very large and their reliability is disputed – as well as the establishment of the population samples themselves, suggesting relatively homogeneous groups at the beginning in order to detect admixtures. Therefore the actual situation is not very appropriate if one wants to reconstruct and explain certain historical events by them or to reconstruct the development of cultures.

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23 Personal communication Johannes Krause, Jena. For interpretive implications see Brown and Brown, *Biomolecular Archaeology*, 168-189.

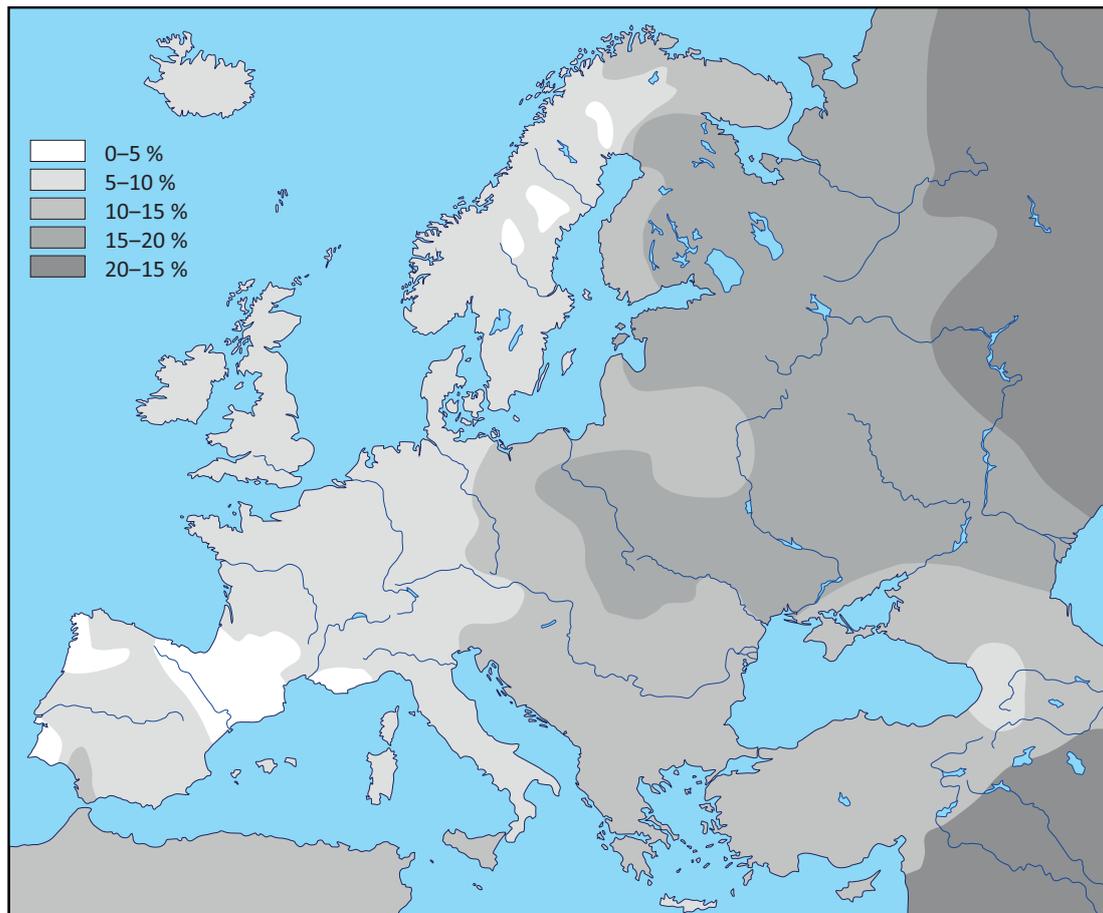
24 In the seventh century there have been ›complementary‹ burial places which only together represented the local societies; cf. Theuvs, *Changing settlement Patterns*.

25 Brather, *Verwandtschaft*; Alt and Röder, *Biologisches Geschlecht*.

26 Cf. Harding *et al.*, *Viking DNA*.

27 Devlin, *Genetic Study*.

The approach resembles the analysis of blood groups made decades ago. Blood types apparently vary in their geographic distribution today (*Fig. 4*). How old these patterns are and how they can be interpreted, remains a disputed matter although geographic distance and intensity of interactions are apparent. Sometimes the frequencies have been used for the ›reconstruction‹ of the spread of languages and migrations. As Luigi Luca Cavalli-Sforza and others have argued, blood types would reflect the spread of Neolithic agriculture and also that of the ›Indo-Europeans‹, but this is only plausible when an accordance is principally expected and assumed – a self-fulfilling prophecy.<sup>28</sup> The assumptions remained disputable, probably because many reasons lay behind the modern (!) distributions of blood characteristics, and they can hardly be arranged chronologically.



*Fig. 4: Frequency of blood group B in Europe, simplified twentieth century distribution. How this map can be interpreted is an interesting, but complex challenge because of several factors lying behind it: space as the most important factor and individual mobility as another (though social) factor; different time spans during which the actual distribution may have developed in different regions; and genetic drift as a biological cause. Therefore no simple explanation is possible (e.g., only immigration from the east or Asia) (draft: [www.nap.edu/openbook/0309045878/xhtml/images/img00013.jpg](http://www.nap.edu/openbook/0309045878/xhtml/images/img00013.jpg))*

28 Cavalli-Sforza, *Genes*.

Modern national states are hardly a solid frame when historical developments in populations are addressed. Differences between modern nations are assumed, but really there is much differentiation within them, regionally as well as chronologically. Modern countries developed in the course of the nineteenth century, and they included very different regions, cultures and populations, even though homogeneity was theoretically and politically intended. Populations and cultures, languages and societies show many similarities crossing modern boundaries, and sometimes the differences within a state are larger (on average) than between states (a well-known statement for the comparison of populations).

But ethnic identities in pre-modern societies were spatially much more restricted than in modern states of the twentieth century. New modes of communication and larger political units enable identity constructions (›invented traditions‹) which connect people not just over long distances, but also people who have never met or even seen each other, but now constitute the population of a nation. Before, consciousness could be established only in face-to-face societies where members at least potentially met and interacted. Elite identities could reach much further, reflecting political interests and alliances. Genetic relations could be analytically detected when marriage interlinked elite families of different regions; but this is true for individual cases and not for larger populations.

For the general public, the bio-sciences are very attractive. They seem to present ›objective‹ data which leave no room for discussion. But this is not true for several reasons. Data range from the fragmented preservation of aDNA to the many possibilities of explaining certain results: e.g., a common descent along the mother's line may have meant several very different individual variants of kinship. Furthermore the ›scientific‹ interpretation depends on the model of historic and cultural development which derives from historic and archaeological research. Therefore even the suggested ›objective‹ data remain a matter of interpretation. They are no more reliable than any other information from historiography and archaeology – nor are they superior to other arguments and models. The interrelations and dependencies of written, archaeological and biologicals record can be exemplified by the case of the Lombards during the sixth century – a ›people‹ thought to present a famous example of large scale migrations.

### *5. The Lombards as a recent case study*

The Lombards have recently become the object of some scientific projects, and I will comment on two of them because of their suggestive agendas. Both projects promise and provide new and unexpected insights. The first focuses on isotope analyses at different places in Bohemia and Hungary and wants to reconstruct the Lombard migration from the lower Elbe up to northern Italy.<sup>29</sup> The central interest of the project follows thus a traditional ›master narrative‹ which has already been challenged; a recent exhibition catalogue on the Lombards doubts the migration theory and suggests the re-appearance of the name only in the fifth century, probably as a link to old traditions.<sup>30</sup>

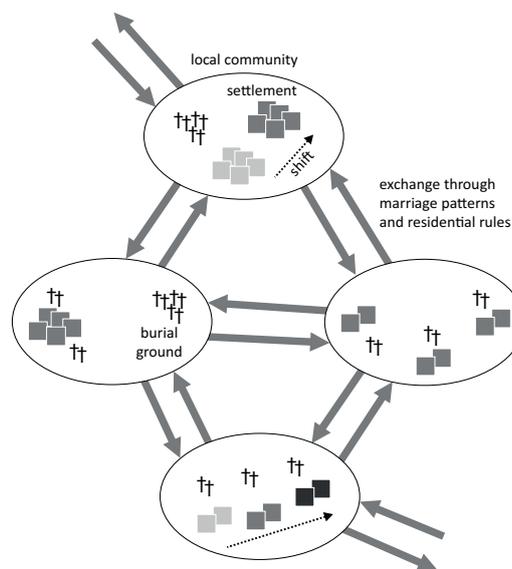
Until now only the data of one graveyard have been published: Szólád in Hungary, where about 45 people were buried during the sixth century. According to the grave furnishings, such burial sites are called ›Lombard‹, but we do not know how the dead saw themselves and whether they were immigrants or not. Beyond this fundamental historical question the

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29 That two Thuringian gravefields are included too, is not justified in any relation to the Lombards.

30 Pohl, *Die Langobarden*, 25–26.

Strontium isotope ratios do not reflect ›migration‹ or mobility directly as has often been suggested; instead they point to nutrition. Mobility could be established if information regarding nutrition was local. But when cereals were exchanged between the regions or the cattle was fed in the mountains, then the isotopes would reflect the origin of the food instead that of the people. The supply of the Roman troops would also be revealed in the isotopes, not the regional ›origin‹ of the soldiers.<sup>31</sup> Interpretation has to consider this carefully. The results of the study are surprising at first sight. Nearly no indication of long-distance mobility could be detected although this was the aim of the project. Instead, much small/regional mobility was observed; this referred to the relations between neighboring places and settlements.<sup>32</sup> This result is very interesting for archaeology because it offers new insights which, moreover, fit on actual concepts. It focuses on local societies represented by graveyards and settlements, which are a primary source for archaeologists. Much mobility between neighbouring communities should be the normal case – and probably reflects marriage patterns and kinship.<sup>33</sup> Every settlement, depending on residential rules, exchanges brides and grooms with surrounding places. The interesting question would be what percentage of non-locals represents stable populations, and what minimum number of non-locals has to be exceeded when we look for immigration? Above all, how graveyards were related to settlements remains an open question in general (*Fig. 5*).



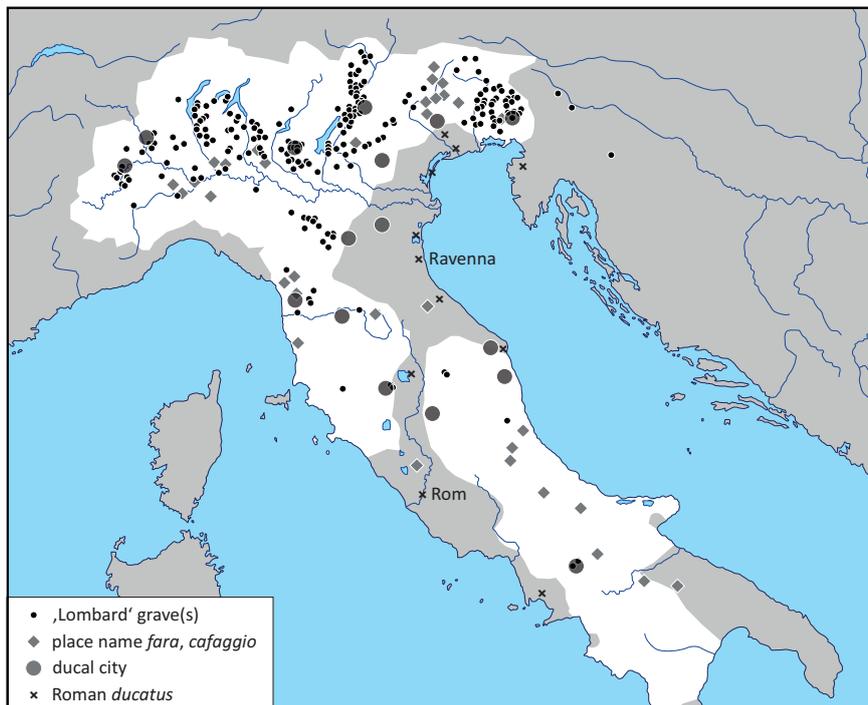
*Fig. 5: Schematised interactions between neighboring settlements within local societies. They exchange individuals following specific marriage patterns and residential rules. The archaeological reconstruction according to graveyards only may become complicated because it remains unclear how they were related to settlements as shown here. There could have been more than one burial ground per settlement and vice versa; the situation becomes more complex when settlements shifted. Not shown here is the location of fields and meadows*

31 Cf. Pollard, *Isotopes*; Gruppe and McGlynn, *Isotopic Landscapes*; Brown and Brown, *Biomolecular Archaeology*, 79–88, 190–209.

32 Alt *et al.*, *Lombards*.

33 But cf. in a different context Gehlen, *Nahrungstabus*.

The second project is coordinated by Patrick Geary at Princeton University and uses genetic data for the reconstruction of the ›Lombards‹ migration between Hungary and Italy in 568.<sup>34</sup> So far no detailed results have been published, but the general approach deals with a situation which at first sight seems to be clear.<sup>35</sup> Following the passage by Paul the Deacon, the migrants from Pannonia were a very heterogeneous mixture consisting of Gepids, Bulgars, Sarmatians, Pannonians, Suebi, Norici and others.<sup>36</sup> Furthermore, the archaeological ascription of burials with grave goods to the Lombards remains problematic; following actual research it is more the periphery that is characterized by grave furnishing (in Northern Italy as well as in Northern Gaul or Pannonia as well as Spain). This fits the observation that the ›Lombard‹ finds are concentrated mainly north of the river Po while specific place names referring to mobile groups appear mainly in Central Italy, and the political centers (ducal seats) were established throughout the Lombard Kingdom (*Fig. 6*).<sup>37</sup>



*Fig. 6: The early medieval Apennine peninsula with ›Lombard‹ graves (defined by specific grave furnishing), specific place names (of unsecure chronology), and the political centers of the Lombard reign (ducal cities). The different records do not fit well together, and the grave furnishing in the north seems to be a peripheral phenomenon rather than specifically ›Lombard‹. The Lombard territories of the early seventh century are highlighted (according mainly to Menghin, *Langobarden*, 105 fig. 88; Scardigli, *Cultura orale*, 157)*

34 See Geary and Veeramah in this issue; and Brown and Brown, *Biomolecular Archaeology*, 9-37.

35 Geary, Genetic data; Vai *et al.*, *Genealogical Relationships*.

36 Paul the Deacon, *Historia Longobardorum* II, 26, ed. Waitz, 87: *Certum est autem, tunc Alboin multos secum ex diversis, quas vel alii reges vel ipse ceperat, gentibus ad Italiam adduxisse. Unde usque hodie eorum in quibus habitant vicos Gepidos, Vulgares, Sarmatas, Pannonios, Suavos, Noricos, sive aliis huiusmodi nominibus appellamus.*

37 Cf. Scardigli, *Cultura orale*, 157; Menghin, *Die Langobarden*, 105 fig. 88.

Not all Lombards are therefore represented in so-called ›Lombard‹ graves (which apparently differ from their Pannonian counterparts, and both represent heterogeneous situations too), and not all individuals buried in them had been (immigrated) Lombards.<sup>38</sup> What is to be expected is complex genetic data (due also to the small distances in space and time between them), carefully interpreted through intensive discussions by archaeologists, historians and geneticists – a real challenge for the project according to its presentation. What we should expect is again much data on local populations and their small-scale descent and affiliation.

Despite the Lombards and similar case studies, languages are sometimes looked for in certain studies, but in general they have no correlation in the material record because they leave no traces. Furthermore (Indo-European) language stages cannot be dated before their first appearance in inscriptions or texts. And the reconstruction of a ›proto-language‹, based on similarities with later languages, represents just one single possibility of interpretation: relations could have been established by overlapping dialects as well as by mutual influences between languages too. Therefore language reconstructions are more complicated than often thought, and they do not have any ties to material culture nor to biology. Therefore genes cannot be linked directly to culture and identity.

### 6. *Identities ≠ genes*

Identities and genes are two very different things. Identities reflect the consciousness of social groups and societies under specific circumstances. They are developed in certain situations when social cohesion on one side and distinction on the other become important; these lead to flexible emphasis and response, and change with such situations and in time. Genes are exchanged through marriage and they reflect biological descent. Behind them lies a biological population history which again differs depending on the situation: when we look at the local level family relations should become visible, while at the regional level general trends and differences can be recognised apart from the people themselves. A good example of this fundamental difference in disciplinary perspectives is seen in kinship.

Genes reflect descent and therefore the biological line of ancestors. This is perceived by people over just a few generations. Beyond the communicative memory a rather mythological series of ancestors can be constructed.<sup>39</sup> The social aspect of kinship is marriage alliances – this means regulations as to who can marry or not marry whom. Families' relationships are therefore defined as being culturally-specific. How alliances between families shall be arranged is then a matter of social actions. During the early middle ages there was a long debate as to how to count the nearest relatives; two methods competed – ›Roman counting‹ and ›canonist counting‹. The latter dominated since the eighth century and doubled impossible marriage partners – including spiritual relationships.<sup>40</sup>

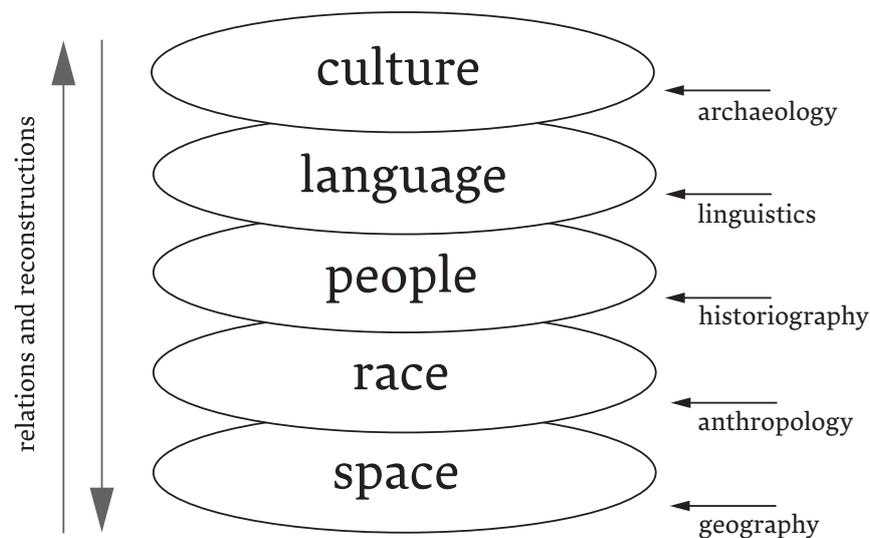
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38 Barbiera, *Changing lands*. Cf. Possenti, *Necropoli Longobarde*; Paziienza, *Identity*.

39 Cf. Assmann, *Kulturelles Gedächtnis*, 48-56.

40 Ubl, *Inzestverbot*.

The central point of many recent debates seems to be to avoid the methodological misunderstandings so often made in the nineteenth and twentieth centuries. The national idea – referring to the perceptions of modern national states – is responsible for a wide-spread but mistaken notion (*Fig. 7*): that the accordance of space, race<sup>41</sup>, language, culture and people (and identity?!) inspires national fantasies. But this is not a historical fact. Even modern states with bureaucracies and administrations, including protected borders, could not homogenise their inhabitants to such an extent. The notion is true if one wants humankind and its history to have a biological basis; but history is made by economy, culture and politics – its social formations are determined by economic conditions, social interests and cultural practices. Therefore identity is not a matter of genes but of social circumstances.



*Fig. 7: Suggested accordance of space, race, language, culture and people. It is based on the idea of homogeneous and distinct modern national states developing during the nineteenth century – and a misleading starting point for any historical analysis. In fact, these aspects are far from being directly linked and explaining each other*

The other way round, genetics and history (including archaeology) represent each other very well by complementary perspectives. Both disciplines possess their own sources, methods and views – and neither confirms each other directly. Seen from the archaeological point of view, analysis is focused on the local level simply because individual data from a neighbourhood population is collected there. Identities within local societies can be reconstructed because differences between social groups were shown during burial – when they were demonstrated at all. At the regional and supra-regional levels, identities remain more than vague because the ›geographic argument‹ is very weak and reflects nothing more than communication. But biological trends can be analysed at the population level to, reflecting

41 Cf. Caspari, *Deconstructing Race*.

gene drift rather than any perception by the people themselves. It is important to differentiate between ancient and modern DNA: both provide us with specific, but different information.

Because both perspectives – the historical and the biological – are complementary, intense research cooperation is necessary and welcome. It has to be combined with a careful discussion of methodological approaches and interpretive models; this would be the essential precondition in order to prevent fundamental misunderstandings by either side, funding institutions and the wider public. There needs to be opportunities for the discussion of problems concerning research, methodology and other questions. On such a basis the combination of a biological and a historical approach should be very successful. The historical and biological results will not (directly) confirm each other (as with other disciplines like philology) but will together draw a much more complex and therefore ›realistic‹ image of the past. Archaeologists have to have an idea of the principal methodological aspects of genetics today, and biologists have to develop a fundamental understanding of recent archaeological interpretations. Together we have to develop adequate questions which will remain historical questions. What we can achieve together is to find new answers to newly developed questions.

When, for example, we do not expect homogeneous ›tribes‹ but political interest groups in the early middle ages – what this would mean for the genetic record and its interpretation? Is there any realistic biological approach possible at the regional population level, or should we concentrate much more on local societies and their marriage patterns? Locally, the methodological approach can be much more precise and comprehensive because it captures individuals in their social setting. Culturally expressed roles of sex and gender can only be reconstructed archaeologically when we have the biological determination of sex, and can combine it with their possible expression in grave furnishings. When we study past societies, the biological perspective seems to be vertical (by descent), while the archaeological is rather horizontal (by alliance). Bringing both perspectives together offers really new insights – much more than explaining one by the other.

### *7. Preconditions and Perspectives*

To recapitulate, I am pleading for an intense cooperation between bioscience and archaeology which promises many new insights instead of old answers, new perspectives instead of traditional narratives. It may be useful to repeat some of the ideas mentioned above concerning medieval archaeology. To be successful, our auspicious interdisciplinary cooperation has to consider a few principles in order to avoid any misunderstanding of data and interpretations delivered by the other side:

- orientation of archaeologists as well as of biologists as to the actual status of knowledge, and discussion by each side – and a willingness to understand each other<sup>42</sup>;
- methodological transparency and strong debates, even if it is very laborious and extensive;
- avoiding biological explanations for cultural history – otherwise facing the danger of obsolete and outdated biologism;
- both perspectives tend to complement each other rather than to confirm the other, which is the legitimization of every research perspective.

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42 Cf. Müldner, Diet, 342.

Instead of asking ›old‹ questions, which in many cases seem to be outdated by actual later research, now many interesting new insights should become possible because of new scientific analytical methods. To develop the ›right‹ questions – those adequate to the sources available – will be a promising challenge for future research. These may include:

- nutrition and social status in the biographical change of individuals in their setting;
- heterogeneity and stability of local populations incompletely represented in graveyards;
- long-term and long-distance relations between populations beyond cultural history;
- local as well as global studies (without direct connections between different spatial ranges);
- complex instead of simple explanations in a careful and well-discussed interdisciplinary analysis.

Together we should avoid simplistic answers. When the biological record is complicated in itself and also in its understanding, then the archaeological and written record possesses no less complexity. Therefore different disciplines have developed and established their own methodologies. Together we will make further progress when we agree that »biology and culture are dialectically intertwined« rather than being directly linked.<sup>43</sup> Some interpretations of scientific data may be possible but historically implausible because of new archaeological research and theory. Furthermore, »the reporting and interpretation of biological information is unavoidably a political act«, which underlines the necessity of truly interdisciplinary research.<sup>44</sup> My critique does not question scientific methods, which I appreciate very much, but simplistic interpretations of complex information. The problem is especially apparent for Roman and medieval times with their dense written records, while for prehistoric times research is focused on long-time and wide-ranging population developments.

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43 Goodman, *Traversing the Chasm*; Leatherman, *Chasm*, 5.

44 Leatherman, *Chasm*, 24.

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