

Lithic raw materials and Neolithic group identities

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Ethnic groups, lithic raw materials, flint mining, individual mobility, culture change, initiation, apprenticeship

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Introduction: Ethnic groups as political groups

In his handbook “Social anthropology” Edmond Leach states: “In practice, ‘a society’ means a political unit of some sort which is territorially defined. Very often it is a segment of some larger political unit which might, in some slightly different context, also be described as a ‘society’¹. The boundaries of such units are usually vague. They are determined by operational convenience rather than rational argument. But they are objective. This perception of societies, or tribes and peoples in older parlance, as political groups focuses on how a certain type of group works, rather than on what they ‘are’ – a group with a common descent, culture, traditions, or a group believing in a common descent, culture etc. It allows the investigation into how certain qualities, customs or beliefs are ‘used’ in day-to-day interactions and confrontations, and how this use changes over time. As the ethnologist Frederic Barth has underlined, ethnic groups and their features are produced under particular interactional, historical, economic and political circumstances: they are highly situational, not primordial².

Both in ethnography and archaeology, the definitions of peoples, tribes and ethnic groups have been discussed for a long time. All the terms used come with a

long history, and are highly loaded ideologically. “The key problem in describing” ‘peoples’ is that “we have no way of devising a terminology that is not derived from the concept of nation created during the French Revolution”, as the historian Herwig Wolfram noted³. In archaeology, as in anthropology, the term ‘ethnicity’ is increasingly dropped in favour of the term ‘identity’ or ‘group identity’. This takes into account that ethnicity is one type of identity among many others but does not solve the terminological problem of nested group identities of population groups.

In the following I am going to use the word ‘ethnicity’ according to the German usage as a synonym for what used to be called a ‘people’ or ‘tribe’ (Anthony Smith’s “ethnie”⁴), and not for minority groups inside a nation state as in the American usage⁵. I am also going to use the term ‘tribe’ in the sense of a self-defining political group of a size smaller than a people, or as a subgroup of a people, even if it is nowadays avoided in ethnography because of its colonialist and Eurocentric implications⁶. I take ‘population group’ to mean groups that include a cross-section of a biological population, irrespective of status-differences.

1 LEACH 1982, 42.

2 BARTH 1994, 13.

3 WOLFRAM 1988, 5.

4 SMITH 1986, 109; SMITH 2000; SMITH 2004; SMITH 2009, cf. GILWHITE 2005.

5 MORAN 2019, 172–173.

6 Cf. SOUTHALL 1970; NGARUKA 2007; CRAWFORD YOUNG 1986, 442–444; WRIGHT 1999, 420–421; SNEATH 2007, Chapter 3.

In a recently published article, the archaeologist Stefan Burmeister⁷, following the sociologist Stuart Hall⁸ characterised group identities as follows:

“Identities are not simply given, but are ‘created’ by social groups (my emphasis); Identities are expressions and projections of social and political ambitions; Identity-claims drive social change”.

Burmeister thus emphasises that group identities are not quasi-eternal traits inherited from remote ancestors or shaped by the environment but constantly contested and changing, used to actively shape the future. It is now generally accepted by progressive archaeologists that identities can be fluid and situational⁹ and are constantly negotiated. Because of this, both individual and group identities cannot be chosen freely. Identity is always a question of power. Identity is socially ascribed as well as individually developed in the course of adolescence¹⁰. Some authors have gone so far as to claim that the concept of personal identity is a product of modernity¹¹, or at least that choices for personal identities were far more restricted in the past. The archaeologists John Chapman and Bissierka Gaydarska¹², following the anthropologist Marilyn Strathern¹³, have used the term ‘dividuality’ to describe a state in which a person did not strive to differentiate him- or herself from a network of interdependencies both on people and on things¹⁴. It is problematic, however, to postulate a development of identity based on *a priori* reasoning. Uni-directional and evolutionary models of the development of social systems are part of the political discourse of their day, and often their value as descriptions of the past is extremely limited.

In common understanding, identities like ethnicity or national identity are often perceived as age-old, if not eternal and unchanging – an understanding produced in the course of 19th century Nation-building. “Raising national consciousness” normally meant creating national consciousness¹⁵. In Germany, linguists and folklorists like the Grimm brothers traced the yet to be created German nation back into the remotest past¹⁶, and the “historical school of law” of Friedrich Carl von Savigny and Otto von Gierke did the same for law and political economy.

The works of many 19th century Nationalist authors are political demands, however, not descriptions of the past or the future *sine ira et studio*. The creation of ‘modern nations’ perceived as ethnically and culturally homogeneous out of the multiethnic (or multinational) empires of early modern times involved the idea of tribes and people as homogeneous, long-lasting and unchanging. This situation is somewhat muddled by the fact that linguistics, prehistoric archaeology, ethnography and sociology were only constituted as independent disciplines in this period, using a terminology and concepts linked to this new type of nationalism.

Ethnic groups were seen as long-lasting and stable because they are supposed to be based on biological descent. There is, however, ample evidence from classical authors that this was clearly understood as a fiction. In the Kleisthenic reform of the Athenian constitution, the population was divided into tribes, defined by their abode, and each tribe was also provided with an eponymous hero¹⁷. Ethnogenetic narratives like those by Titus Livius for the Romans¹⁸ or Paulus Diaconus for the Lombards¹⁹ lay out the multiethnic roots of their peoples. The fluidity and malleability of aristocratic genealogies, which are constantly adapted to political realities has been described for many areas of the world²⁰.

Genealogical terms are thus an ‘idiom’²¹ to describe affiliations and dependencies. The terms used are biological, but this does not necessarily imply any biological descent or even the belief in a biological descent. The fact that only certain members of a group are able or expected to be politically active (often, but not necessarily upper-class older males) helps to mask this usage, as a family etc. gets reduced to the head of the family (*pater familias*) who has political agency. In the 19th century, these aristocratic genealogies were sometimes adopted for the whole people²², introducing an assumption of homogeneity that had not existed before.

As tribes became the main classificatory units of early ethnography, and tribal units the mainstay of indirect rule in the British and German colonies, people were routinely assigned to tribes, sometimes despite their self-classification²³. Working out the ‘correct’ classification was a standard task for any colonial administrator and ethnographer. Only in the 1950s, Leach²⁴ finally

7 BURMEISTER 2016, 47.

8 HALL 2004.

9 RIECKHOFF 2007.

10 ERIKSON 1959; ERIKSON 1968.

11 HABERMAS 1981.

12 CHAPMAN / GAYDARSKA 2011.

13 STRATHERN 1988.

14 Cf. FOWLER 2004; contribution of Bernbeck in this volume.

15 Cf. ANDERSON 1983.

16 GRIMM 1835.

17 DREHER 1993.

18 HILLEN 1974.

19 SCHWARZ 2009.

20 Cf. VANSINA 1961.

21 HOBSBAWM 1990.

22 HOBSBAWM 1990; SNEATH 2007, 181–204.

23 VAIL 1989; see LENTZ 2006, 72–103 for case-studies from West Africa.

24 LEACH 1964.

described the political situation in Highland Burma, a 'culture area' with very diffuse affiliations and a decided lack of clear tribal groups.

Nearer at home, each attempt at the 'raising of national consciousness' by creating a national language, history, art and folklore²⁵, normally either before the foundation of a Nation state (Germany, Czech Republic), to integrate newly acquired territories (Bavaria, Russia) or to better integrate an ethnically heterogeneous population into a new state (Switzerland) had illustrated the existence of people who were ignorant of their supposed ethnicity, did not agree with the ascription presented or did not perceive this group-membership as fundamental to their existence²⁶. This was a problem to be overcome, however, and not a cause for reflection.

The question of social organisation is, of course, highly charged territory: for early modern thinkers like the philosophers Jean Jacques Rousseau, David Hume, in the classical developmental schemes of the philosopher Georg Friedrich Hegel, the anthropologist Lewis Henry Morgan, the economists Carl Wilhelm Bücher, Friedrich List and the philosopher Friedrich Engels, and even in the neo-evolutionary schemes of the anthropologists Morton Fried²⁷ and Elmar Service²⁸, human development proceeds from savage, lawless individuals or groups through various stages of tribes and ethnic groups to the apogee of human development, the state. To state that tribes and ethnic groups were not in existence in a certain area can thus still be interpreted as a slight rather than a criticism of the Western ideologies of modern identity.

The anthropologist Mike Rowlands has characterised ethnicity as politically mobilised culture. This raises the possibility that the strength of ethnicity can vary through time for any given group, may be quite different for groups inside the same ethnic unit, and, presumably, can also disappear altogether. Looking at 19th century nationalism, the movement often started with the intelligentsia or even the aristocracy. Imbuing the 'peasant masses' with national pride or only the knowledge of their supposed ethnicity needed considerable effort and systematic education²⁹.

In a study on "Identity, Genocide, and Group Violence", the psychologist David Moshman establishes a stage-model of intergroup aggression³⁰. He interprets overlapping identities as the normal state of societies,

and confidently states that "social identity is typically multidimensional, involving connections and commitments to multiple overlapping groups"³¹. "Any two individuals [...] are likely to have affiliations and commitments in common and thus a shared social identity"³². A continuous dichotomisation within a given society will finally lead to a "reduction of categories salient for identification"³³. If this process continues, finally only one dimension is selected to demarcate boundaries which create two mutually exclusive groups. I found this rather an eye-opener, as Moshman's second-stage of dichotomisation between us and them, ignoring all other, cross-cutting categories, is often taken as 'normal'. This is, of course, true for the membership of a nation-state. Ambiguity is then seen as disturbing, a state that has to be eradicated and that creates unease and discomfort³⁴. Disgust and even hate can then be directed at people of an ambiguous state, more than at the 'true' other. Moshman is discussing modern examples of genocide, where this dichotomisation is clearly created by political pressure groups. How this process could have worked in pre-history is still open to speculation.

For Barth, ethnic identity "[...] classifies a person in terms of his basic, most general identity, presumptively determined by his origin and background"³⁵. In a contrasting view, one could state that ethnic identity is an extreme form of group identity that may emerge only in very specific situations. It is not necessarily a normal state of affairs, or a stage in a continuum. Political conflicts can lead to an emphasis in ethnic identity, but ethnic identity is only one idiom that can be used to express a political conflict. Descent, religion or sect, or a party in the chariot races in late antique Constantinople may be others. An opinion about the true nature of Christ in 6th century Byzantium (İstanbul il, Turkey) was not only a personal opinion but was also influenced by region of origin and social status, and it was used to pursue goals beyond purely dogmatic discussions. Since the 19th century, political parties are seen as the 'correct' way to form interest-groups in order to pursue political goals, but of course, these groups were not open to everybody but excluded women, religious minorities, people below a certain income, and often still do. Thus, ethnicity is one identity among others, and not necessarily the dominant one, dependent on social context. Ethnic identity can simply be one way of expressing and pursuing political goals³⁶.

25 ANDERSON 1983.

26 Cf. HOBBSAWM 1990, 46–79.

27 FRIED 1967.

28 SERVICE 1962.

29 HOBBSAWM 1990, 12; WEBER 1977.

30 MOSHMAN 2011.

31 MOSHMAN 2011, 617.

32 MOSHMAN 2011, 620.

33 MOSHMAN 2011, 621.

34 DOUGLAS 1966.

35 BARTH 1969, 13.

36 WELSH 1996, 485–489; CAMPBELL 1997, 74–87.

Abandoning the idea of an ‘exclusive’ ethnic identity allows to re-introduce a nested set of identities inside territorial groups that spans the continuum from family, village to subgroup(s), tribe and finally ethnic group. Units of different size will have a different importance depending on the situation, and, as outlined, ethnicity may only be relevant in situations of conflict – external or internal.

The anthropologist Martin Wobst³⁷ has described the different levels of identity which can be signalled by the use of “stuff”. Clothes, especially coats and hats, items visible from afar, are normally used to signal identity to outsiders. Archaeological examples would include horse gear and weaponry. Other types of artefacts are only used inside the village or even the house. They may signal identities inside the group, which are defined by age, occupation, gender, marital status or wealth/rank³⁸. Using only ethnic groups as the research-subject thus may mask in-group inhomogeneity. To cite Leach again: “Almost all empirical societies [...] are socially stratified – by social class, by hereditary caste, by hierarchy of rank etc. and each stratum in the system is marked by its own distinctive cultural attributes – linguistic usage, manners, styles of dress, food, housing etc.”³⁹. Often, only certain members of a group have political agency, and certain groups are partially or wholly disenfranchised.

The term intersectionality has been used to describe how certain groups can be disadvantaged in multiple different ways⁴⁰, for example, black women or gay men with a migration background. The psychologists Valerie Purdie-Vaughns and Richard Eibach⁴¹ also discuss ‘Intersectional invisibility’, which means that only certain groups – those that are seen as prototypical for a given group are visible in social discourse. As this theory has not been widely discussed in archaeology yet, it is difficult to say if and how this Intersectional invisibility will be present in the archaeological record, although it is certainly active in the interpretation of the archaeological record.

More importantly, however, the idea of intra-group harmony was an invisible and rarely discussed paradigm of most ethnographic and archaeological research. 19th and early 20th centuries ethnographers normally concentrated or restricted their research to a narrow segment of society, if they did not wholly depend on a limited number or even a single informant, mainly high status elder males. Social conflicts or acts of resistance by subordinate groups may have thus passed unnoticed, or they

were blamed on Western influences and therefore ignored by researchers mainly interested in ‘traditional and unspoilt’ ‘native’ societies. This corresponded to another prejudice, the perception of ‘primitives’ as unchanging and immutable⁴², remaining on a ‘prehistoric’ level of social and technical development. Social stability and ‘harmony’ were quasi inbuilt into the concept of primitive society, which was then contrasted to the rapidly changing modern society. In German research, the term ‘*Naturvölker*’, peoples living in harmony with the natural world, implied a long-lasting adjustment to local environmental conditions, that is, passive adaptation rather than any active attempt at change, whether of the environment or of the social structure of the group concerned. This idea of intra-group harmony has afflicted other schools of anthropology as well. Structuralists assumed unchanging ‘deep’ structures. The anthropologist Claude Lévi Strauss⁴³ described “cold societies” which actively resisted change, while functionalists were exploring how social systems were actively maintained. Thus, there was an inbuilt tendency to emphasise or overrate stability.

In this context, the short time-frame of normal fieldwork is not conducive to investigate social change. Indications of impending social change may pass unnoticed and can only be identified in hindsight. Only in postcolonial situations studies of the formation of new groups or the adaptation of existing groups to new circumstances came to prominence. There was also a growing realisation that the ‘traditional’ units of ethnographic research may have themselves been the product of the colonial situation, especially of the British and German system of indirect rule⁴⁴.

Barth’s⁴⁵ volume on ethnic boundaries presented studies on group formation and the fluid membership of existing groups which were in themselves quite stable, probably exactly because of the safety valve offered by the possibility of changing the ethnic affiliation in certain situations. The anthropologist’s Abner Cohen’s study of the urban Hausa in southwest Nigeria⁴⁶ showed how an occupational group created a new ethnic identity, based on membership in a specific sect of Islam, a pre-existing linguistic unity and specific behavioural rules, especially the strict, if temporary *pardah* of women. Certain imported items, like mass-produced coloured Czech enamelled bowls acquired new significance and were used as female status items.

37 WOBST 1977.

38 Cf. SØRENSEN 1997; SØRENSEN 2013.

39 LEACH 1982, 43.

40 CRENSHAW 1989.

41 PURDIE-VAUGHNS / EIBACH 2008.

42 Cf. ROBBINS 2016, 41.

43 LÉVI-STRAUSS 1962.

44 RANGER 1983; RANGER 1993; see MAMDANI 1996 on indirect rule.

45 BARTH 1969.

46 COHEN 1969.

| Great Hungarian Plain | | | | | | | | |
|-----------------------|------------------|------------------------------|---------------------------|---------------------------|------------------------------|--------------------------------------|----------------------------|-------------------------|
| | Serbia | Transdanubia | Middle and Lower Tisza | Upper Tisza | Eastern Plain | Transylvania | Bulgaria | Period |
| 3500 | Bubanj-Hum | Balaton-Lasinja | B Bodrogkeresztúr A | B Bodrogkeresztúr A | B Bodrogkeresztúr A | Pécska Bodrogkeresztúr A | ? | Middle Copper Age |
| 4000 | Vinča D2 | Lengyel III | B Tiszapolgár A | B Tiszapolgár A | B Tiszapolgár A | B Tiszapolgár A | Karanovo VI (Gumelnița) | Early Copper Age |
| 4500 | Vinča D2 | Lengyel III | Proto-Tiszapolgár | Proto-Tiszapolgár | Proto-Tiszapolgár | Proto-Tiszapolgár Petrești, Erősd | Karanovo VI | Final Neolithic |
| 5000 | Vinča D1 | Lengyel II | Tisza III | Csöszhalom (Oborin) | Herpály III | Petrești | Karanovo V | Late Neolithic |
| | Vinča C | Lengyel I Sopot-Bicske II | Tisza II Tisza I/II | Tisza I/II | Herpály I - II Tisza I/II | Zau | (Marica) | |
| 5500 | Vinča B2 | Sopot-Bicske | Tisza I | Szakálhát | Esztár | Precucuteni I-II | Karanovo IV | Middle Neolithic |
| | Vinča B1 | Zseliz- Notenkopf | Szakálhát | Bükk - Szilme | AVK | Criș IV | Karanovo III | |
| | Vinča A | DVK | AVK Körös IV | AVK | | | | |
| 6000 | Starčevo III -IV | Starčevo III | Körös III | Körös-Szatmár | Körös-Szatmár | Criș III Criș II Criș I | Karanovo II Karanovo I | Early Neolithic |

1 Chronological table of the South-eastern and Central European Early Neolithic.

In archaeology, conflict was also mainly perceived as inter-group aggression. Examples of in-group violence, for example the early Neolithic (*fig. 1*) Linearbandkeramik⁴⁷ (LBK in the following) mass-graves of Talheim (Baden-Württemberg, Germany)⁴⁸ and Schletz

(Niederösterreich, Austria)⁴⁹, changed the picture in the 1990s⁵⁰.

The archaeologist Johannes Müller⁵¹ has initiated a rare discussion of rebellion and the expression of internal dissatisfaction of archaeological cultures and groups.

Culture change in prehistory

In prehistoric archaeology, culture change has traditionally been explained as ethnic change, but any ethnic change was exclusively perceived as the change/replacement of whole populations.

However, as the archaeologist Hans-Peter Wotzka⁵² has pointed out, the 'territory' of almost all archaeological cultures is much larger than that of historically or ethnographically known tribes. While archaeological cultures have been subdivided into groups, substyles/

subgroups and varieties, there has never been any agreement on how to formally distinguish between these terminological levels, despite several valiant attempts⁵³. In ethnology, tribes are often described as the components of a culture area⁵⁴, where dialects and customs are similar and generally intelligible to neighbouring people. The ethnographer Michael Moerman discusses the example of Northern Thailand, an area that can be readily identified by shared customs, lan-

47 The LBK is the earliest Neolithic culture of central Europe (ca. 5400–4900 BC), found from the Ukraine to the Paris Basin.

48 WAHL/ KÖNIG 1987.

49 TESCHLER-NICOLA et al. 1996; WILD et al. 2004.

50 KEELEY 1996; WILD et al. 2004; GOLITKO/ KEELEY 2007; MEYER et al. 2015; GOLITKO 2015; see also GUILLAINÉ/ ZAMMIT 2001; ZEEB-

LANZ 2009; ORSCHIEDT/ HAIDLE 2012; CLARE/ WENINGER 2016, 41–45.

51 HANSEN/ MÜLLER 2017.

52 WOTZKA 1993.

53 See SIEGMUND 2014; HOFMANN 2016.

54 MOERMAN 1965, 1218.

guage, religion and dietary preferences. Within this area, however, individual tribes are defined by present or past political allegiances, and differentiated by traits that are selected more or less randomly. For an outsider, this culture area is far easier to discern than the actual tribes, and it seems reasonable to suppose that it is this culture area that actually corresponds to an archaeological culture.

Barth describes members of the same ethnic group as “playing the same game”⁵⁵, but in any contact-situation, it is normally several ethnic groups which play the same game: even if the specific customs and items of material culture are different from those of the in-group, their context and meaning is still intelligible. People belong to different teams but follow roughly the same rules. Specific elements of material culture can also be common to several separate archaeological cultures, they can define chronological horizons linking larger areas. Culture complexes/technocomplexes and periods or chronological horizons will thus contain several different archaeological cultures.

Till the advent of absolute dating, archaeology could rarely judge the speed and thus the nature of change. The idea of gradual change is built into any typological method, including statistics-based variants like seriation or PCA, for example. In addition, taphonomic processes may lead to a mixing of artefacts characteristic of different cultures, for example in a pit or a ditch, even if there was no direct contact between the people producing or using these artefacts. This is less likely to happen if the analysis is restricted to closed finds *sensu stricto*, but numerous hoards, and sometimes graves, contain older pieces that may have been included as keepsakes or simple curiosities. Standing structures like Neolithic megalithic graves can be kept in use over a long period of time, even if the specific type of structure is not being built any more. Thus, change will of necessity appear more gradual in the archaeological record than in reality.

The very terminology in use today originated under the gradualist paradigm and continues to influence the way we argue. We talk about the ‘development’ of material culture or the ‘development’ of a certain pottery shape or bronze tool, as if it was indeed evolving like a living organism, following rules inherent in its function, rather than being shaped by an active agent. While gradualism has come under quite a lot of criticism in biology (punctuated equilibrium, mass extinctions of many taxa

in quite ‘short’ time-periods), this changed view does not seem to have reached archaeology.

Dating with the help of the radiocarbon-method suffers from a similar problem. Dates deriving from long-lived substances like trees will artificially prolong the span of existence of a particular culture into the past, and the statistical nature of ¹⁴C-dates will lead to a ‘smearing’ both at the beginning and the end of a specific cultural phenomenon. In contrast, both dendrochronological dates, the hugely increased number of ¹⁴C-dates and especially Bayesian dating have indicated that in many cases, the ‘development’ of artefact and monument types during the Neolithic was much less gradual than hitherto expected. Rather than slow, small changes during the whole existence of an archaeological culture, short periods of synchronous change of many items of material culture, divided by longish periods of very slow change, seem the rule.

An emphasis on agency and the active use of material culture is seen as one of the hallmarks of postprocessual archaeology. In fact, this was already reiterated by the anthropologist Margaret Conkey⁵⁶ from the late 1970s onward. In 1982, the archaeologist Ian Hodder used ethnographic studies in the Baringo district of Kenya to show how material culture was used to display identity, challenge authority and ensure wellbeing in different ways by different social groups. He found that some items readily cross ethnic boundaries, like most pottery types. Ethnic styles were maintained nevertheless, as they indicated a certain way of pottery production and thus quality, or rather suitability for specific tasks. In this case, ethnic style could be seen as a form of commodity branding⁵⁷. Items like female ornaments and spears used by young males as well as stools and the position of the hearth conformed more closely to ethnic boundaries. These items often carried symbolic meaning. Adherence to the ‘proper’ ethnic group was more pronounced in areas where different groups were in competition. Items of material culture also played an important part in inter-group communication, for example between the genders and the different age groups. Hodder⁵⁸ rejected the view that material culture simply passively reflected the degree of social interaction and instead showed how different objects were actively used by different groups on different levels of social interaction. In her studies of bushmen in Botswana, Polly Wiessner demonstrated how the style of different items transported messages to different sets of population groups⁵⁹.

55 BARTH 1969, 15.

56 CONKEY 1978; CONKEY 1980; see also CONKEY/HASTORF 1990.

57 WENGROW 2008; BEVAN/WENGROW 2010.

58 HODDER 1982, 58.

59 WIESSNER 1983; WIESSNER 1984.

How do things change?

So, how do things change? The obvious answer is of course that things do not change. Things are produced and used by humans, and are replaced by new and potentially different things when the former, for whatever reason, leave the biocoenosis. Items of material culture can be reproduced with an identical outer form, but, unless casts are used⁶⁰, there will always be a slight difference between the old and the new item.

This can be caused by simple copying errors⁶¹, differing skill levels of the producers, or the availability of specific raw materials. Certain differences will probably pass unnoticed, because the traits in question are not seen as important by the society in question, which leads to slow, stochastic change that is mainly influenced by factors like the use-life of specific artefacts, learning networks and the intensity of communication between different members of the cultural group.

As outlined above, in previous paradigms change was described as gradual and cumulative. These minor and scattered mutations then presumably reached a point where intelligibility ceased, both in stylistic and linguistic terms, and new groups were created in analogy to speciation in biology. It often was presumed that ‘natural boundaries’ of whatever sort could create such physical discontinuities. In practice, however, normally evidence for some kind of contact (stylistic influences, borrowings etc.) was taken as the impetus for change. In the Settlement-archaeology model, almost the only mechanism discussed for culture change were invasions connected with population replacement. However, with an improved knowledge of the archaeological record and the increasing number of sites known, it became increasingly difficult to identify breaks that could be convincingly used to suggest a break in population continuity, not to mention the lack of indications of systematic and widespread violence. ‘Influence’ of neighbouring groups or trade was the only other factor suggested. This influence, however, does not really explain anything. Why is the material culture of other groups referenced at certain times and not at others? Sometimes, a difference in the level of culture (*‘Kulturgefälle’*) is suggested, with the implication that technical superiority or a more ‘advanced’, i. e. more hierarchical and less equal social structure will necessarily lead to the import or imitation of artefacts connected by them. This ignores the multiple examples of cultures that are ‘stub-

bornly’ resistant to outside influences (Egypt is usually cited; the ‘delayed’ acceptance of copper artefacts in some cultures of the European Late Neolithic⁶² would be another example). It also ignores the possibility that only artefacts that can be incorporated into the local social structure are accepted. In this case, it would be better to talk about translation than about simple borrowing⁶³. Roman Iron Age Hemmoor buckets⁶⁴ or Mycenaean drinking equipment used in the Late Bronze Age of the Levant⁶⁵ are examples of how only a limited range of items are adopted and used in a way totally different than in their ‘native’ context. It is difficult to believe that an artefact by itself will cause culture change. It seems likely that the idea is taken from a rather naïve observation of 19th century colonial or imperialist contexts, but even in this case, it normally took massive military intervention (Opium War, the ‘opening’ of Japan) to destroy local industries and enforce the introduction of foreign artefacts⁶⁶.

Environmental change was a causative factor popular in the 1970s and 1980s but has recently seen a renaissance. While it is clear that new needs may be produced by changes in climate etc., the exact mechanisms involved and the selection of items that are changed would still need close scrutiny, which is rarely the case.

All in all, the following factors are normally discussed:

- a. stochastic change, caused by error of transmission;
- b. external change/adaptation;
- c. interaction with neighbours;
 - competition
 - influence
- d. internal change.

If we take the claim about the active use of material culture seriously, a change of certain items of material culture could also be caused by political change, indicating dissatisfaction with the existing social order (before the revolution), demonstrating the allegiance to a specific party or faction (during the revolution) and accommodating new ways of living together (after the revolution). “Ethnic groups and their features are produced under particular interactional, historical, economic and political circumstances: they are highly situational, not primordial”, as Barth puts it⁶⁷. After a revolution, the mean-

60 As numismatists and ceramicists studying Samian ware (HARTLEY 1972) know, even then there is a discernible change.

61 TEHRANI / COLLARD 2002; BENTLEY / SHENNAN 2003.

62 STRAHM 1994.

63 HOFMANN / STOCKHAMMER 2017.

64 EGGERS 1951.

65 STOCKHAMMER 2011.

66 Cf. WALLERSTEIN 1974.

67 BARTH 1994, 13.



2 Sansculotte and aristocrat, English broadsheet from 1793, detail (Custine’s execution, by Isaac Cruikshaw, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Custine_in_english_journal.jpg).

ing of specific symbols and the need to show party-allegiance will slowly fade. The previously new forms of material culture will transfer from the doxic realm into the ‘Lebenswelt’⁶⁸ and will eventually lose their former emblematic character. Other items, used in day-to-day interactions or communal meetings, will become imbued with the meaning of normalcy and social coherence instead of rebellion and innovation.

To sum up, a rapid change of material culture may indicate political change. Emblematic items indicative of the new order are partly created by design, but are also haphazardly selected from items already around and imbued with new meaning. To take an example from the French revolution, the Jacobine cap was taken from a (misinterpreted) item from antiquity (the headcover of the Roman freedmen), while the sansculottes, the long trousers of the peasants and workers were consciously put into contrast to the culottes of the aristocracy (fig. 2).

As already outlined, signalling can occur on the level of any of the various identity groups discussed, and on any of the stages between the doxic realm and the ‘Lebenswelt’. Shapes and decoration can refer to past styles, items from neighbouring groups or other social groups, or they can actively transmute existing forms. Subaltern groups may express their opposition to the current social structure in ironic and subtle ways, ‘mis-using’ items and stylistic codes as well as referencing high-status items in different media. In addition to the use in signalling political allegiance, changes in use, manufacturing techniques and the availability of raw materials will influence the design of any item of material culture.

While it should be possible to disentangle this complex web by a detailed analysis of the chronological and chorological developments in small and well-documented areas, this is by no means an easy undertaking.

Trade and the distribution of lithic raw materials

In the second part of this paper I am going to argue that the selection of lithic raw materials can indicate group-membership, and that the acquisition of lithic raw

materials may be connected with rituals intended to create and maintain social coherence.

68 SOMMER 2001.

The choice of object may seem strange, but lithic materials have several advantages over pottery styles and bronze objects that are the more commonly used to identify archaeological groups. Firstly, the recognition of lithic raw materials is not dependent on any anthropogenic typological traits. Nevertheless, the working and shaping of flint follows specific rules, which often allow to identify the cultural context a given piece was shaped or used in. This provides a big advantage over purely 'stylistic' traits like the shape and decoration of pottery vessels or metal artefacts, where the degree of similarity is difficult to measure. Ideally, raw materials, decoration style and technical style⁶⁹ should be used in combination, of course. Secondly, as chipped stone tools are, on average, much lighter than ground stone implements, and their occurrence is linked to specific geological layers, they are transported over much larger distances than either pottery or groundstone. In contrast to metals, they cannot be re-cast or mixed. As siliceous stone tools are vital for most activities involving cutting or piercing, their distribution therefore offers the best evidence for the movement of or the contact between Neolithic people.

Despite recent advances in analytical techniques however, the sourcing of siliceous stones, that is, rocks with a predominantly cryptocrystalline structure that fracture conchoidally (Cretaceous and Jurassic flint, silicites, radiolarites, opals, obsidian etc.) is still mainly dependent on visual macroscopic comparison. Only obsidians can reliably be sourced by their chemical composition. The composition of most other silicates varies widely inside the same geological horizon. In addition, the criteria raw materials were selected for may not be well reflected in a chemical analysis.

Since the publication of the archaeologist Colin Renfrew's⁷⁰ seminal paper "Trade as action at a distance"⁷¹ in 1975, the archaeologically observed distribution of Neolithic raw materials and prestige items has been explained mainly by exchange in its various guises – down the line trade, central place redistribution etc. Most of these mechanisms do not involve any long distance movement of people. Specialised merchants who operate long distance trade are normally linked to state societies or empires. In fact, immobilism can be described as a key tenet of New Archaeology, a reaction against the

"History of cultures school"⁷² and earlier diffusionism, which explained almost all cultural changes by migrations⁷³. This was combined with a formalist outlook that saw prehistoric exchanges as mainly ruled by supply and demand, in analogy to the modern capitalist economy.

More recently, the archaeologists Kristian Kristiansen and Thomas B. Larson⁷⁴ have criticised this "peasant ideology of immobility", the idea that prehistoric people generally remained in one place for all of their lives. While the authors argue that high mobility – of highly select groups – is specific to the European Bronze Age⁷⁵, the phenomenon of high individual mobility seems far older, as an increasing number of both aDNA and isotope studies indicate⁷⁶. This individually mobile society would probably have rested on types of social relations not covered by our house- and nuclear-family centred way of thinking. The young people leaving home to find their luck somewhere beyond the horizon, familiar from many fairy tales, might be a better image of Neolithic people than the serfs of early modern times, who were tied to the soil by law and force. But even then, serfs tried to escape to the cities to gain their freedom, and journeymen and students roamed freely over large distances during their early adolescence. Pilgrimages offered socially accepted opportunities for extensive travel, and an infrastructure was in place to support it; while the aristocracy and scholars were fairly mobile and 'international' anyway⁷⁷. The archaeologist Margaret Midgley⁷⁸ has drawn attention to the material evidence of long-distance contacts in the Mesolithic and Neolithic periods, which she interprets not only in terms of economic relations but also as possible indication for a *rite de passage* involving journeys to 'foreign parts' and pilgrimage.

A recent project of extensive and wide-ranging isotopic analysis of LBK-burials has demonstrated a high degree of individual mobility of both sexes⁷⁹. The archaeologist Daniela Hofmann⁸⁰ even talks about a "mobility turn in the social sciences". This scenario is fundamentally different from the early twentieth century German archaeologist Gustaf Kossinna's marauding tribes spreading new ceramic styles all over Europe⁸¹. It also goes a long way to explain group cohesion over long distances. The social consequences of this mobility have yet to be worked out, however. There are some intriguing hints that in the LBK males remaining 'at home' had better

69 SILLAR/ TITE 2000; LEMMONIER 1993.

70 RENFREW 1975.

71 See also RENFREW 1969.

72 Often misleadingly called the cultural history school.

73 Cf. RENFREW 1976.

74 KRISTIANSEN/ LARSSON 2005, 32; 367–368.

75 See also KRISTIANSEN 2017, 152–172; KRISTIANSEN 2015.

76 OLALDE et al. 2018; MATHIESON et al. 2018; MITTNIK et al. 2018; GERLING et al. 2017, to cite just some recent publications.

77 STING 1991.

78 MIDGLEY 2013.

79 BICKLE/ WHITTLE 2013.

80 HOFMANN 2016, 236.

81 Cf. KOSSINNA 1902; KOSSINNA 1905; KOSSINNA 1911.

chances of acquiring a high status (i. e., being buried with a shoe-last adze⁸²) and longer-term resident families had access to better land⁸³. While this may indicate that ‘leaving home’ may lead to a loss of status and a lower economic status, numerous examples show that being well-trav-

elled and thus having many contacts bestows a status of its own: from wily Odysseus to the “Argonauts of the Western Pacific”⁸⁴. Xenogamy, to borrow a term from botany, was widespread among the Medieval European aristocracy as well as on Fiji⁸⁵ and parts of Polynesia⁸⁶.

Why ‘trade’ for siliceous materials?

The use of extra-local raw materials can be explained by a lack of local resources or the better quality of extralocal materials. On the social side of things, exchange is known to enhance prestige and to maintain contacts, as in the famous Kula-ring⁸⁷ of Melanesia (which is then also used to move everyday ‘gimwali’ items). The archaeologist Anders Fischer⁸⁸ has suggested that “the prestige of the new and the exotic”, in this case Neolithic polished axes, contributed to the acceptance of the Neolithic economy by the hunters and gatherers of Denmark. The third aspect of flint acquisition is the process of learning knapping techniques, which needs an abundant supply of raw materials and would thus most conveniently take place at the raw material source itself.

There are several reasons for ‘trade’ in siliceous materials:

The first would be the desire for better raw materials. The definition of ‘better’ of course very much depends on the knapping techniques used and the desired end-product. Actually, flint is not absolutely vital to the Neolithic economy. For many tasks, it can be substituted by ground stone (axes, adzes, chisels, arrowheads), bone and antler (axes, chisels, projectile points, perforators), wood (wedges) or even shell (axes, knives, drills). In areas such as north-eastern Scandinavia, Finland and north-western Russia, where siliceous stones are rare or non-existent, ground slate was used extensively⁸⁹. Shell axes are common in Oceania and parts of the

Caribbean⁹⁰. In the late Mesolithic of Central Europe, local lithic materials were used almost exclusively, and hafted microblades provided a maximal utilisation of raw materials that often came as small pebbles of inferior quality.

This was not, however, the policy adopted by the first Neolithic communities in Europe. They preferred large, regular blades for immediate use and tool production⁹¹. In the Starčevo-Körös-Criş⁹² settlement area (SKC from now on) in the Northern Balkans and the Carpathian Basin they were largely made of Blond Balcanic Flint⁹³ originating in Northern Bulgaria (Nicopol area)⁹⁴ (fig. 3). They were produced by punch or pressure technique and are, as most experts agree, the work of specialists⁹⁵. In the late Körös/Criş culture of the upper Tisa area, increasingly other raw materials are used, for example, limnic quartzites⁹⁶ (fig. 4) and obsidian (fig. 5) from the Zemplén/Tokaj area in Northern Hungary and Southern Slovakia (Carpathian I and II)⁹⁷, as well as material transported over larger distances, such as Volhynian/Prut/Dniester-flint from the southwestern Ukraine⁹⁸ (fig. 6). Unlike the Near East, obsidian was treated as a local resource here and may not actually have been the material of first choice, probably because the nodules are, on average, quite small. This pattern of local, low-skill production from local sources and imported high-quality raw material shaped in a more sophisticated manner is found in other areas and time periods as well⁹⁹.

82 BENTLEY et al. 2012; BICKLE / WHITTLE 2013, 368–369.

83 BOGAARD 2011; BOGAARD et al. 2011.

84 MALINOWSKI 1922.

85 SAHLINS 1991.

86 Cf. SHKALA 2006.

87 MALINOWSKI 1922; LEACH / LEACH 1983; WEINER 1992; DAMON 2002.

88 FISCHER / KRISTIANSEN 2002, 341.

89 SAPWELL 2014, 143.

90 SERRAND / BONNISSENT 2005.

91 KOZŁOWSKI 2001, 248–250; KACZANOWSKA / KOZŁOWSKI 2012, 162; KACZANOWSKA / KOZŁOWSKI 2008, 12–13; KOZŁOWSKI / RACZYK 2010, 120; MATEJCIUCOVÁ 2007, 684.

92 The earliest Neolithic cultures of southeast and eastern central Europe, between 6300 and 5600 BC, found between Macedonia and southwestern Hungary.

93 KACZANOWSKA / KOZŁOWSKI 1997; KACZANOWSKA 2001; ŠOŠIĆ KLINDŽIĆ 2011; BIAGI / STARNINI 2013; GUROVA / BONSALE 2014.

94 BIAGI / STARNINI 2010a; BIAGI / STARNINI 2010b; BIAGI / STARNINI 2011; GUROVA 2012.

95 KACZANOWSKA / KOZŁOWSKI 2008, 19.

96 CHMIELEWSKI / ASTALÓŠ 2015.

97 BIAGI et al. 2007; BIAGI 2011, 72; for more exact localisation, see GLASCOCK et al. 2016; GLASCOCK et al. 2017.

98 CRANDELL 2012, 72–73. For a recent overview of lithic raw materials in eastern Central Europe in general, see PŘICHYSTAL 2013.

99 Cf. BALCER 1983; SZMYT / CZEBRESZUK 2013, 200–201.



3 Blade, blond Balkanic flint from the Nicopol area (Bulgaria), SKC-settlement Tăşnad Sere, Romania.



4 Limnic quartzite, Moftiu Mare (left) and Satu Mare Orbital, site 9 (Baden).

Chapman¹⁰⁰ has drawn attention to the fact that for early Neolithic societies in the SKC area, the marriage networks would have had to extend over several settlements. His numbers work out at least 40 families involved. Reproduction could have been achieved by the permanent movement of one marriage partner into the other's family. Indeed the biologist Anna Szécsényi-

Nagy¹⁰¹, based on her a-DNA-results of SKC burials from Transdanubia, has argued for a patrilocal society. Maintaining such mating networks would either need periodic meetings of larger parts of the community, as has, for example been suggested by the archaeologist Thomas Saile¹⁰² as a use for the LBK earthworks and has been made very likely by the evidence for extra-regional mate-

¹⁰⁰ CHAPMAN 2008, 69.

¹⁰¹ SZÉCSÉNYI-NAGY 2015, 176.

¹⁰² SAILE 2009, 46.



5 Artefacts made from Carpathian obsidian, Tășnad Sere.



6 Volhynian flint from the Dnjepr-area, southwestern Ukraine.

rials in Herxheim¹⁰³ (Rhineland-Palatinate, Germany), or some kind of socially prescribed or at least encouraged individual mobility by some members of the community.

In the LBK, there is isotopic evidence for transhumance of cattle, probably accompanied by young boys¹⁰⁴, and of a high degree of personal mobility in general¹⁰⁵, with females more mobile (between loess and non-loess) than men according to the Sr-isotopes¹⁰⁶. This high individual mobility is also reflected in other artefact assemblages, such as pottery¹⁰⁷ and bone-tools¹⁰⁸. Transhumance could have been conducted at village level or could have included members of several different communities, which would have established individual contacts that might have been kept up later. The role of seasonal transhumant settlements for free sexual contacts has been immortalised by bad 1950s comedies and softporns (*„Auf der Alm, da gibt's koa Sünd“*) but would be difficult to verify archaeologically. In the LBK, males buried with shoe-last adzes seem to have moved less than those without¹⁰⁹. This could indicate that one of the sons – the oldest or the youngest – would inherit his parents' or his father's property, while most of the daughters and other male children would go off to seek fortune elsewhere.

Junior members of a family emigrating, establishing new ties for the family, could be linked to the transport and exchange of lithic and other, less visible raw materials. On the Sepik-coast of Northern New Guinea, a system of fosterage was maintained that connected trade partners from different ethnic communities, speaking different and unrelated languages, over several generations¹¹⁰. Personal mobility as the provider of Mesolithic flint has been discussed by the archaeologists Esa Hertell and Miikka Tallavaara¹¹¹.

The acquisition of knapping skills is rarely discussed for the Neolithic period¹¹². In general, the question of how flint knapping is taught and how much raw-material is needed to reach proficiency has not been explored in any detail. Ethnographic studies of the topic are quite rare and seldom systematic¹¹³. Based on a very limited sample, about 13 kg of flint were needed to teach knapping to modern US-American knappers¹¹⁴. This is much more material than has been found in the majority of Central European Neolithic settlements in total¹¹⁵.

While Neolithic knappers probably started to practice as children¹¹⁶ and had the advantage of frequently observing this activity in their daily life, it still seems unlikely that future flint knappers in areas without a direct supply learned their craft at home on precious imported flint¹¹⁷. Flint mines or axe-production sites, where raw material was present in abundance seem far more probable¹¹⁸. The archaeologist Dietz Stout¹¹⁹ describes in detail how mining and knapping of roughouts

103 ZEEB-LANZ 2009; ZEEB-LANZ et al. 2009.

104 KNIPPER 2011.

105 BICKLE et al. 2014.

106 OELZE et al. 2011; BICKLE et al. 2014, 367–368.

107 GOMART 2014.

108 SIDERA 2013.

109 BICKLE et al. 2014, 368–369.

110 WELSCH / TERRELL 1998; for the institution as such see PARKES 2006.

111 HERTELL / TALLAVAARA 2011.

112 APEL / KNUTSSON 2006; see PIGEOT 1990 for a famous example from the upper Palaeolithic.

113 STOUT 2002, 695.

114 JOHNSON 1976.

115 Cf. ZIMMERMANN 1995, 84 for the Aldenhovener Platte, North Rhine-Westphalia, Germany.

116 FINLAY 1997; FINLAY 2008; FINLAY 2015; ROUX et al. 1995; BAMBORTH / FINLAY 2008.

117 There is, however, evidence for the use of debitage for learning purposes, see HÖGBERG 2008.

118 Cf. BABEL 1997.

119 STOUT 2002.

on site is also used as a teaching-opportunity in Langda on Irian Jaya (Indonesia). Apprenticeships to axe-makers can last up to five years¹²⁰. The archaeologists Pierre and Anne Marie Pétrequin¹²¹ observed small children fashioning axes, but formal apprenticeship normally only starts around the age of 15, with the commencement of initiation¹²². No matter what the previous experience with the methods used are, there is probably a specific age when the necessary hand-eye coordination (dexterity¹²³) develops. Medieval children were apprenticed between the ages of eight and eighteen¹²⁴, with younger children having to serve longer apprenticeships¹²⁵, which indicates that the actual craft training probably only started in the late teens in general.

While the existence of full-time flint-miners¹²⁶ or axe-makers in the Neolithic has generally been considered unlikely, a formal apprenticeship is a possibility in both cases. In the few areas of the world where stone is still worked in a traditional way, mining can require special rituals¹²⁷, and access to mines is tightly controlled¹²⁸. A system of initiation and apprenticeship of young persons at the raw material sources would have helped both to train them in knapping flint in the culturally specific way¹²⁹ and helped to supply their home villages with lithic materials while establishing regional- and supra-regional contacts between individuals that would have been maintained later in life and eased the way for individual mobility both for them and the members of their families.

The mechanisms of exchange

In a number of cases, early Neolithic populations used material from sources outside their normal settlement area – or rather, outside the area where settlement traces in the form of ‘standard’ houses and pits have been found (*fig. 7*). This is the case for Carpathian obsidian¹³⁰, Prut-flint, Kraków chert and Szentgál- and other radiolarites in the SKC¹³¹, as well as for Rijkholt flint in the earliest LBK (*fig. 8*)¹³², for example. These raw materials could point to a pioneer phase of migration that is archaeologically almost invisible, to trade with Mesolithic populations or to organised interaction with the former. Trade with little known or almost invisible Mesolithic populations is the preferred explanation, however¹³³.

Carpathian obsidian was transported as raw material lumps¹³⁴. For the other materials, a systematic study of the distribution of the composition of the debitage and percentage of cortex etc.¹³⁵ would be needed to better understand the process. The archaeologists Annelou van Gijn’s and Karsten Wentik’s¹³⁶ studies also indicate the importance of looking at the actual use of artefacts.

Given the different technological traditions, it seems unlikely but of course not totally impossible that the hunters and gatherers supplied prepared cores or blades.

Raw material gathering expeditions by Neolithic groups would presuppose that the location of the source was known and that peaceful relations existed between the groups. At present, it is not possible to decide between the three alternatives.

There has not been much work on actual exchange mechanisms inside a cultural group. Generally, down-the-line trade seems to be assumed, with the archaeologist Andreas Zimmermann¹³⁷ claiming that some LBK-settlements like Langweiler 8 (North Rhine-Westphalia, Germany) functioned as central places with preferential access to raw material. That would imply that most of the actual extraction and may be the production of preforms would be done by the inhabitants of nearby settlements. There are indeed settlements near raw materials sources with knapping floors or extreme amounts of debitage, like the sites in the Góry Świętokrzyskie¹³⁸ (Województwo świętokrzyskie,

120 STOUT 2002, 702.

121 PÉTREQUIN / PÉTREQUIN 1993, 243.

122 Cf. PÉTREQUIN / PÉTREQUIN 1993, 355.

123 WENDRICH 2012, 3.

124 NICHOLAS 1995, 1107.

125 NICHOLAS 1995, 1120.

126 DE GROOTH 1991; LECH 2013, 244.

127 Cf. BURTON 1984a for a detailed account from Mt. Hagen, Papua New Guinea; s. a. VIAL 1940.

128 BURTON 1984b; PÉTREQUIN / PÉTREQUIN 1993; HAMPTON 1999; STOUT 2002, 700.

129 See WENDRICH 2012 for a very useful overview of learning processes and the importance of apprenticeship in maintaining

cultural cohesion. APEL / KNUTSSON 2006 look at the relation between production and social reproduction.

130 KACZANOWSKA / KOZŁOWSKI 2012, 162.

131 REGENYE 2010.

132 GRONENBORN 1997.

133 BÁNFFY 2006, 135.

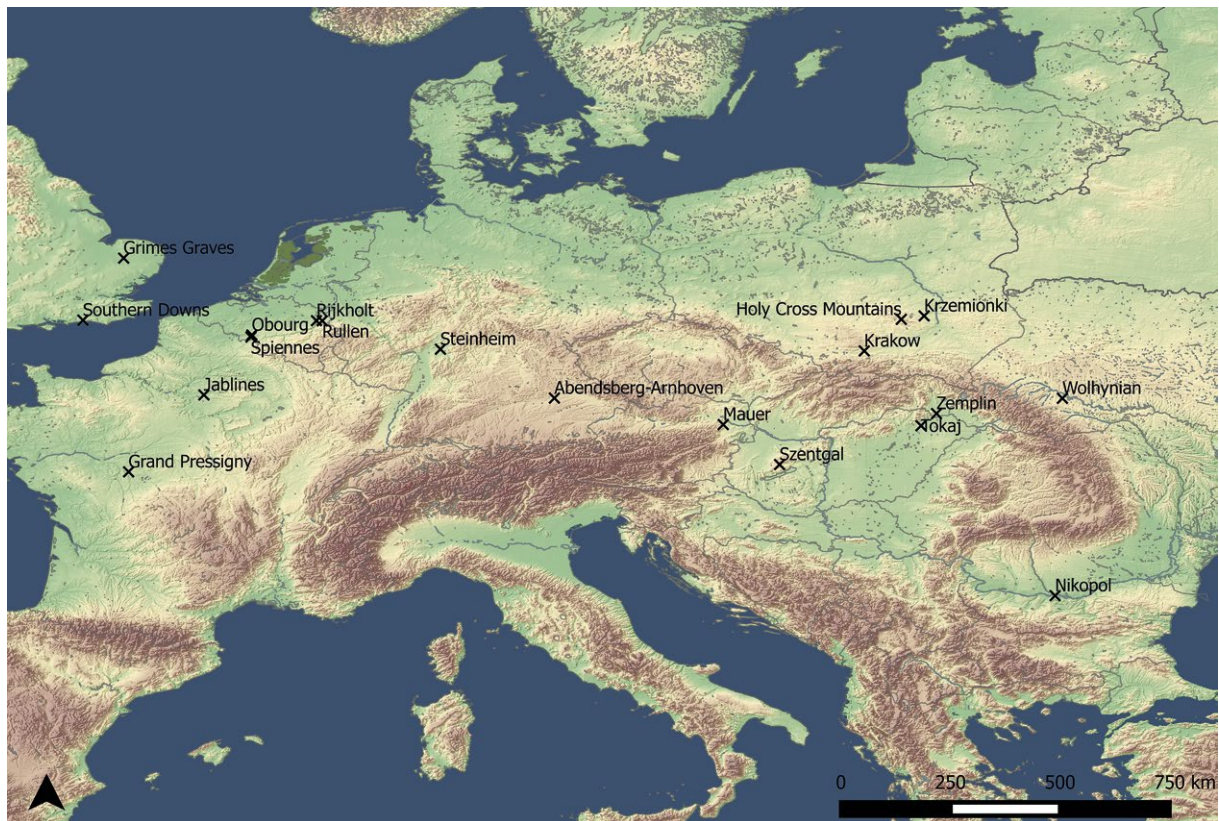
134 KACZANOWSKA / KOZŁOWSKI 2012, 163.

135 Cf. GEHLEN / ZIMMERMANN 2012; ŠOŠIĆ KLINDŽIĆ 2011.

136 VAN GIJN / WENTINK 2013.

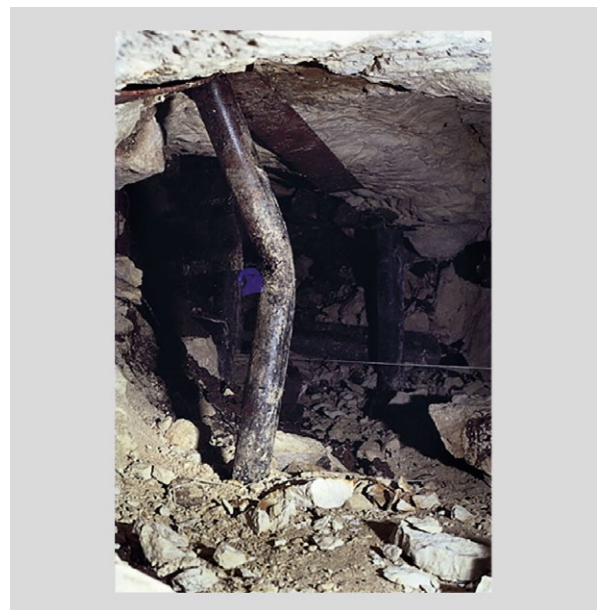
137 ZIMMERMANN 1995.

138 SZELIGA 2014.



7 Neolithic raw material sources and mining sites.

Poland), Geleen-Janskamperveld¹³⁹ (Limburg, Netherlands), Hanau-Klein Auheim¹⁴⁰ (Hesse, Germany) and Ver-laine Le Petit Paradis in the Belgian Hesbaye¹⁴¹ among others, for the LBK¹⁴². When the mines are not located in a landscape used for permanent settlement, as is common in the LBK¹⁴³, some type of expedition has to be assumed. There is some evidence for temporary settlement near flint mines, for example the LBK chipping floors and fireplaces at Sąsów near Kraków¹⁴⁴ (Województwo małopolskie, Poland). In later periods, as the amount of debitage produced increased, detection gets more difficult. The Globular Amphorae Culture¹⁴⁵ campsite excavated under the tip of mine 7/610 in Krzemionki¹⁴⁶ (Województwo świętokrzyskie, Poland) and Grimes Graves¹⁴⁷ (Norfolk, United Kingdom) are some of the few well-documented examples¹⁴⁸. Many South-English flint mines (South Downs) show traces of occupation but have been dug too early to have a



8 Rijkholt flint mine, shaft.

139 DE GROOTH 2003; DE GROOTH 2008.

140 SOMMER 2006.

141 BURNEZ-LANOTTE / ALLARD 2003; ALLARD 2005a; ALLARD 2005b.

142 Cf. BALZER 1995 for the Final Neolithic.

143 ALLARD 2005a; ALLARD 2005b.

144 LECH 2011; LECH 2013, 230.

145 A late Neolithic culture found from the Ukraine to north-western Germany between ca. 3000–2700 BC.

146 BORKOWSKI et al. 1991, 622.

147 LECH / LONGWORTH 2006.

148 See LECH 2013, 237 for an overview.

clear documentation¹⁴⁹. Normally, these ephemeral remains are not very easy to spot and notoriously difficult to date. Moreover, they will often have been obliterated or covered by later mining activities and the resulting debitage. In order to understand how the raw material extraction was organised, i. e., who took the material out of the ground and transported it to the final users, the distribution patterns of the raw material itself offer the best evidence.

It is well known that the distribution of some raw materials is related to cultural boundaries reflected in other items of material culture, like pottery or metal objects. Examples include the use of obsidian in the Alföld Linear Pottery culture¹⁵⁰ (ALP) while it is rare in the LBK to the West¹⁵¹, the change between Rijkholt and Rullen flint between the Early and Middle Neolithic in the Rhineland, and between Rijkholt flint and Abendsberg-Arnshofen banded flint in southern Germany. As many fieldwalkers know, lithic raw materials are sometimes a better guide to dating a site than sherds, with Rijkholt flint and quartz indicating the Late Neolithic Michelsberg¹⁵² horizon, and

dark yellow to orange materials like Spiennes flint dominant in the Final Neolithic. In France, there is a clear contrast between the raw materials of the Michelsberg and Chassey cultures¹⁵³. Zimmermann¹⁵⁴ has pointed out how the boundary between a preponderance of Rijkholt vs. Baltic flint in LBK-settlements in the North of Hesse (Germany) cuts across topographic units (Waberner Senke, North Rhine-Westphalia, Germany) but corresponds to a similar boundary between pottery styles¹⁵⁵. The archaeologist Tim Kerig¹⁵⁶ has claimed that these boundaries go back to the first LBK settlement of the area and persist to the very end of this culture. On a larger scale, Müller¹⁵⁷ has posited a Europe-wide cultural boundary based on the use of copper and of jadeite for prestige items.

Unfortunately, most studies concentrate on the lithics of one specific culture, recording systems vary between scholars and universities, there is no generally accepted terminology for raw materials, and raw data are rarely available, making cross-cultural comparisons difficult and often unreliable. The evidence available is thus rather impressionistic.

Raw materials and archaeological cultures

Both the Linearbandkeramik and the Alföld Linear Pottery culture are traditionally seen as derived from the Starčevo-Körös-Criş-complex of the northern Pannonian Basin, even if different scholars define the constituent groups and hence their influence on the later groups within the Linear Pottery Culture quite differently¹⁵⁸. While traces of a late Mesolithic population in the area¹⁵⁹ are exceedingly rare, their influence is often used to explain cultural change in both the early and middle Neolithic.

As the archaeologist Inna Mateiciucová¹⁶⁰ has pointed out, there is a sharp drop of the frequency of obsidian between the LBK and the ALP areas, perpetuating a divide already visible in the late SKC¹⁶¹. The picture is complicated by the influence of geography, with some of

the area between Tisza and Danube often almost devoid of permanent settlement throughout history and with only a few East-West corridors. As *figure 9* shows, obsidian is used in low amounts in the Mesolithic but becomes very common in the settlements of the Northern Körös, while small amounts are found even on sites in the lower Danube area. In the Middle Neolithic (*fig. 10*), obsidian is intensively used by the various Bükk-facies but almost totally absent in the LBK¹⁶².

The archaeologists Małgorzata Kaczanowska and Janusz Kozłowski¹⁶³ have traced the development of the raw material economy for the early Neolithic of the Carpathian Basin. There is a preponderance of foreign raw materials in the early phases, brought in as finished blades produced to a high technical standard¹⁶⁴. Over

149 RUSSELL 2001.

150 A middle Neolithic culture found in eastern Hungary, contemporary with the LBK to the west.

151 KACZANOWSKA 2001; ŠOŠIĆ KLINDŽIĆ 2014, 188; see below for a more detailed discussion.

152 'Late Neolithic' is used according to German terminology. The Michelsberg culture is found in Germany, France and Belgium between 4000–3600 BC.

153 MANOLAKAKIS / GILIGNY 2011.

154 ZIMMERMANN 2007.

155 KNEIPP 1995.

156 KERIG 2010.

157 MÜLLER 2010, 100.

158 See BĀNFFY 2006; BĀNFFY / OROSS 2009; BĀNFFY / OROSS 2010; DOMBORÓCZKI 2010 for an overview.

159 BOTIĆ 2016, 196–197.

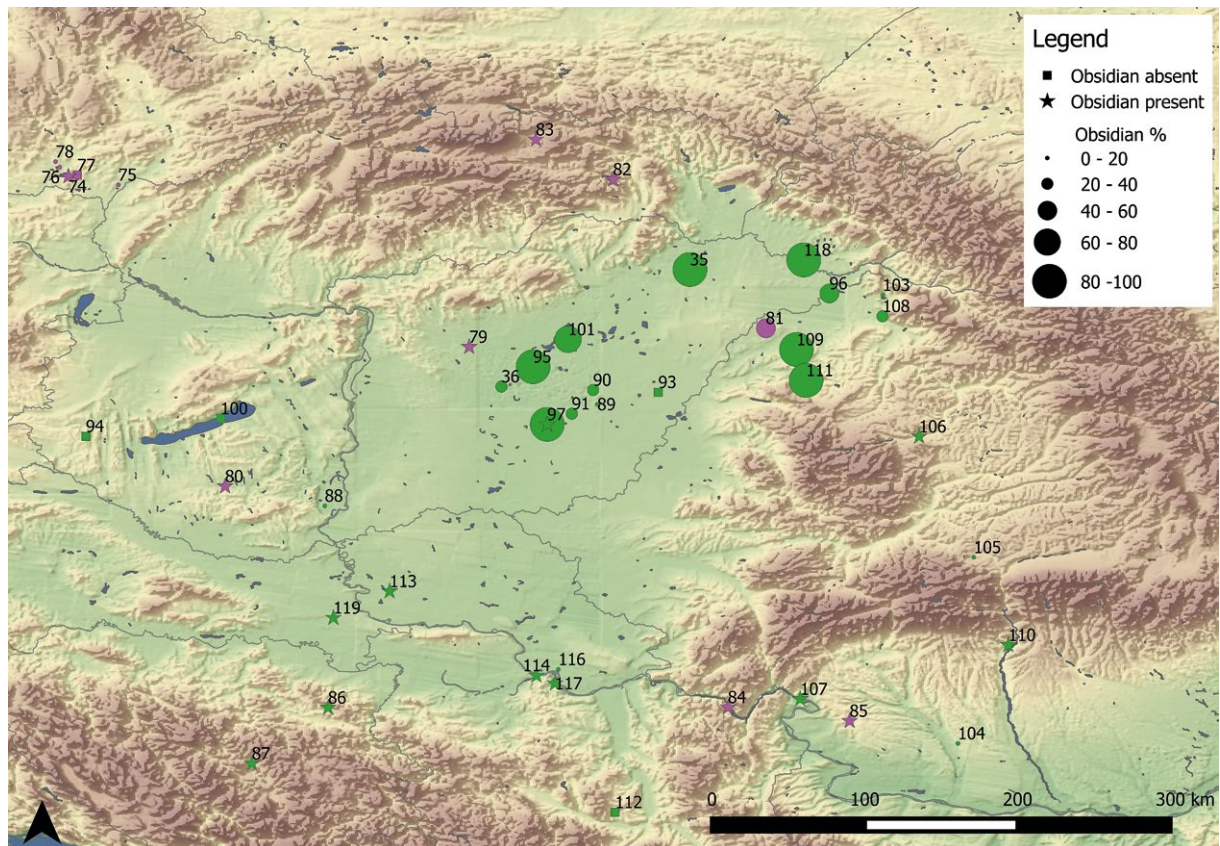
160 MATEICIUCOVÁ 2001; MATEICIUCOVÁ 2007, fig. 31,10; MATEICIUCOVÁ 2010, colour pl. 11,1.

161 The use of the obsidian from Samatovci near Osijek seems to be restricted to the later Neolithic (BALEN / ČATAJ 2014) but more research is needed.

162 For a more detailed analysis of early Neolithic lithic raw material acquisition and trade s. SOMMER / JOVANOVIĆ in press.

163 KACZANOWSKA / KOZŁOWSKI 2007; KACZANOWSKA / KOZŁOWSKI 2008.

164 KACZANOWSKA / KOZŁOWSKI 2008, 13–19.



9 Distribution of obsidian in the Mesolithic (purple) and early Neolithic (green) of the Carpathian Basin, Mesolithic and SKC.

time, these are increasingly replaced by local materials worked locally in a far less accomplished manner. A similar development can be seen in the Middle Neolithic Bükk culture¹⁶⁵ of northern Hungary and south-eastern Slovakia¹⁶⁶. Local raw materials also predominate in the Late Neolithic and early Eneolithic.

In the early LBK, Szentgál and Mauer radiolarites are brought to the west. Later on, their place is taken by Rijkholt flint (fig. 8), interestingly again a material derived from outside the original LBK-settlement area. The late LBK sees an increase of more local materials¹⁶⁷, for example Steinheim limnoquarzite¹⁶⁸.

This change can either be linked to a general decrease of specialisation and a concomitant loss of specialist knowledge¹⁶⁹ or a shrinking of the interaction sphere, which is also visible in the development of local pottery styles and which could be caused by a growing population density¹⁷⁰, making the maintenance of

long-distance networks for mating and other purposes increasingly redundant.

Places like Herxheim, with depositions from a range of different regions, and the continued presence of supra-local raw materials even in areas with a good supply of local raw materials show that long-distance contacts have not completely ceased in the late LBK, which is also evidenced by human skeletons¹⁷¹. However, the social pressure to maintain a homogeneous pottery style has certainly weakened¹⁷². If we take the idea of material culture as a marker of group identity seriously, this either indicates that the social controls were lessening, the awareness of artefact meaning was lost, or that the ideology at the base of the culture was losing its power. The sparsely decorated SKC material does lend itself to a comparable analysis, unfortunately.

Other examples of raw material distributions following cultural boundaries are the dominance of obsidian

165 Hungarian terminology.

166 See PLATNÍKOVÁ 2015 for an overview of the archaeological development.

167 GRONENBORN 1997; MATEICIUCOVÁ 2008; MATEICIUCOVÁ 2010; KERIG 2010.

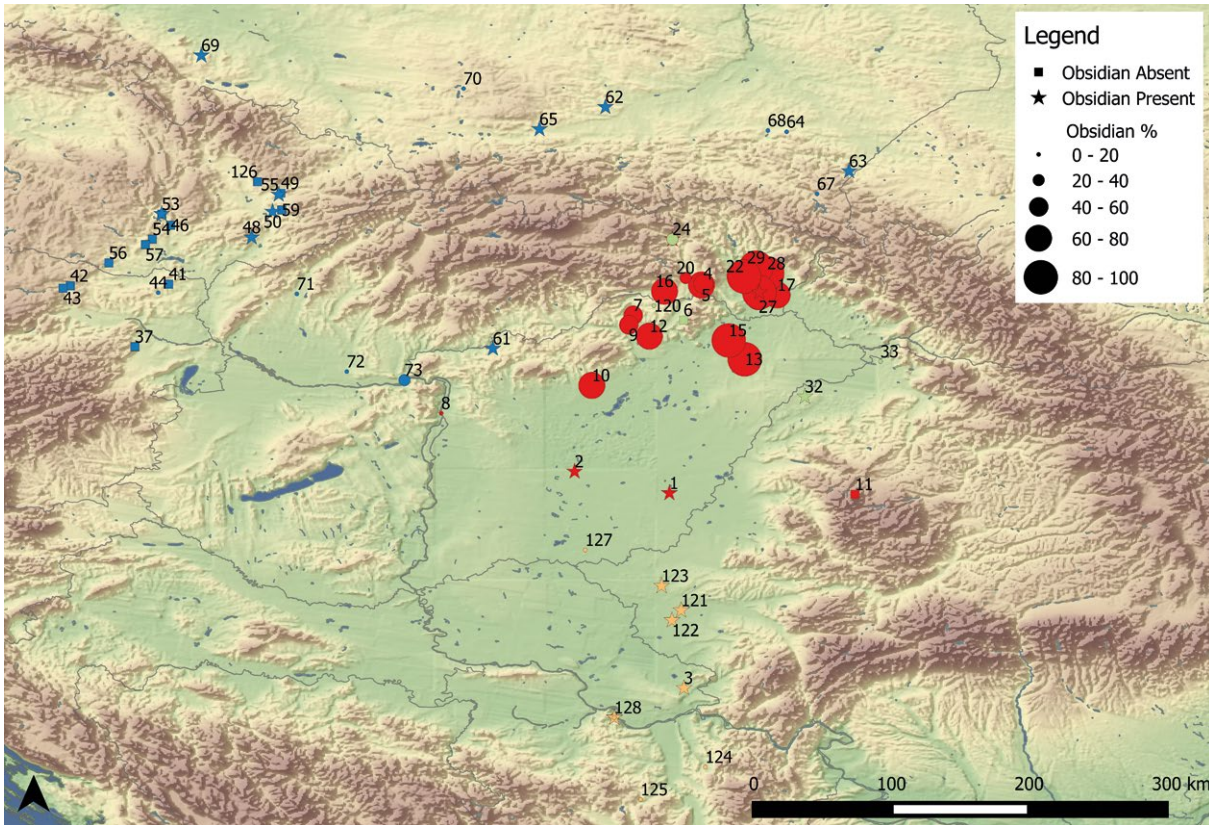
168 ZIMMERMANN 1995; SOMMER 2006.

169 KACZANOWSKA / KOZŁOWSKI 2008, 19.

170 KERIG et al. 2015, 122; MÜLLER 2009.

171 TURCK et al. 2012.

172 SOMMER 2001.



10 Distribution of obsidian in the middle Neolithic of the Carpathian Basin, LBK (blue), ALP (red), and Vinča (yellow).

in the area of the Bükk-culture¹⁷³ of Eastern Hungary and Slovakia, the preferred use of Krzemionki banded flint for square butted axes in the Late Neolithic Globular Amphorae culture¹⁷⁴, and the distribution of Bartonian flint in the late Neolithic, with a clear fall off between the Michelsberg and Chassey areas¹⁷⁵ in France and Belgium. In the latter case, this fall-off is much more pronounced for chipped tools than for axes¹⁷⁶, which may indicate the influence of raw material quality. The banded Krzemionki flint is highly distinctive. The way it is used shows a clear appreciation of the material's properties. In axes, for example, a natural swirl in the flint is often placed in the centre of the artefact. Kerig et al.¹⁷⁷ have drawn attention to how these “easily recognisable attributes” of raw materials proclaim their origin and thus contribute to the item's value.

There is no evidence for any underground mining of flint in the early Neolithic in SE-Europe. In central Eu-

rope, mines appear in the Middle Neolithic, for example in Abendsberg-Arnshofen¹⁷⁸ (Bavaria, Germany), and they become widespread in the late Neolithic¹⁷⁹. This may partly be related to the mass-manufacture of flint axes, which needed large pieces of very homogeneous raw material¹⁸⁰.

Tim Kerig et al.¹⁸¹ have identified several episodes of increased mining that seem to correspond to the beginning of major cultural periods of the Neolithic as defined by the archaeologist Jens Lüning¹⁸². They interpret this as evidence of demographic expansions or as economic cycles¹⁸³, but it could also mark the advent, or rather the formalisation and consolidation, of new political entities.

From a strictly utilitarian consumer perspective, the need for sharp cutting implements per user should remain constant as long as the economy remains roughly similar. The data collected by Kerig et al.¹⁸⁴ would, however, fit with a cycle of large-scale use of high-quality

173 KACZANOWSKA 1985, 54–73; BIRÓ 1998.

174 BORKOWSKI et al. 1991, 624–625, DOMAŃSKI / WEBB 2000, 831.

175 BOSTYN 2015, 79.

176 BOSTYN 2015, 79.

177 KERIG et al. 2015, 119.

178 ROTH 2008.

179 WEISSGERBER 1981; LECH / KOBYLINSKI 1995.

180 KERIG et al. 2015, 118.

181 KERIG et al. 2015.

182 LÜNING 1996.

183 KERIG et al. 2015.

184 KERIG et al. 2015.

raw material at the beginning of each chronological phase, followed by a more expedient use of more local materials, as has already been described for the early Neolithic. If the mining activity drops in the later parts of each chronological phase, an increasing use of low quality local materials follows if demand stays on the same level. Alternatively, the spoil-heaps of the mines would have offered a rich source of smaller but perfectly usable chunks of raw material for domestic needs, if not high prestige axes.

On a finer spatial scale, there seem to be specific flint mines for every local facies in the north-western European Michelsberg area. The division between the Michelsberg pottery style proper and the Spiere-group, for example, is echoed in lithic raw materials, with Belgian Spiennes flint vs Bartonian flint from Jablines¹⁸⁵ (Seine-et-Marne, France). It would be interesting to look at the chronological development in more detail, and see if there are smaller cycles linked to the splitting up of large scale cultural complexes.

Many authors have wondered why flint mines were used at all, as good quality raw material is often available near or on the surface¹⁸⁶ and mines represent quite a substantial labour input¹⁸⁷. It has been claimed that freshly excavated flint (*'bergfrisch'*) is of a superior quality, but this claim still awaits experimental proof. For the manufacture of axes, homogeneous raw material in large lumps is important¹⁸⁸, but, as the late Neolithic Grand Pressigny (Indre-et-Loire, France) daggers show¹⁸⁹, underground mining is not always vital for that purpose.

Kerig et al.¹⁹⁰ have also drawn attention to the symbolic dimension of mining, with the spoil heaps of cretaceous chalk widely visible and maybe even imbued with 'ritual significance'. The archaeologists Richard Bradley

and Mark Edmonds¹⁹¹ have claimed that at Great Langdale (Cumbria, UK) the very location of mining high up on precipitous mountain slopes imbued the raw material extracted (a fine grained rhyolite) with special significance.

The most striking example of Neolithic flint mining is probably Great Britain, where the dates for the early Neolithic flint mines of the Southern Downs are among the earliest from the Neolithic altogether¹⁹². Looking at historically and ethnographically attested migration events, mining is rarely at the top of the agenda of the new arrivals. Physical survival in a new and unknown environment normally comes first, linked to the creation of fields and temporary shelters. As good quality raw material is available on the surface in southeast Britain, mining can hardly have been vital. On the other hand, the establishment of a group-specific raw-material source, and a focus for the formation of group identity, may well have been. Access to the underworld would be established as a very tangible connection to a new territory and its products as well.

As far as it is possible to gauge from the published data, the development of British mines follows a rather unusual pattern, with a peak in the early British Early Neolithic and a subsequent decline, Grimes Graves (Norfolk, United Kingdom) being the only mine linked to the Late Neolithic Grooved Ware horizon. The peak during the Final Neolithic Beaker horizon¹⁹³ may be linked with the closing¹⁹⁴, rather than the operation of previous mines. This may indicate that communal activities like building cursūs and henges, forms of monuments restricted to Britain, may have supplanted mining as primary locales in the formation of group identities as the inhabitants were increasingly isolated from continental developments.

Flint mining and initiation

The creation of group cohesion by a common effort has been proposed for megalithic tombs and earthworks like causewayed camps, cursūs and henges, but not, to my knowledge, for flint mines. However, underground flint mining is an arduous and highly skilled task¹⁹⁵. With

mine shafts 9 m deep in Krzemionki¹⁹⁶ and up to 12 m in Rijkholt¹⁹⁷ (Limburg, Netherlands), for example, the excavations had not only to leave sufficient supports to keep the shafts stable but also to avoid solution holes filled with loose rubble whose collapse would have been

185 BOSTYN 2015, 78.

186 KERIG et al. 2015, 118.

187 LECH 2013, 234–235.

188 See DOMAŃSKI / WEBB 2000 for a more detailed treatment.

189 VERJUX et al. 2011.

190 KERIG et al. 2015, 117.

191 BRADLEY / EDMONDS 1993.

192 SYGRAVE 2011; KERIG et al. 2015; RUSSELL 2000

193 KERIG et al. 2015, fig. 3.

194 SOMMER 2017.

195 MIGAL 1997.

196 BABEL et al. 2005, 540.

197 FELDER et al. 1998.

fatal. Generally, there are very few collapsed shafts, and, up to now, no evidence for lethal accidents, the Obourg (Hainault, Belgium) miner being a fake. Mining demands a high level of skills and co-operation, and thus also taught respect for the experience of older members of the community. Mining fields like Krzemionki show a high degree of homogeneity in orientation and the technique used, indicating some form of co-ordination and planning¹⁹⁸.

Recently, a number of edited books and articles discussing the ritual use of caves¹⁹⁹ have been published. There are numerous ethnographic examples of caves used for initiation, that is, the ritual change from adolescents to adults. The ethnographer Arnold van Gennep's²⁰⁰ three-partite structure of initiation, consisting of separation, transition and incorporation can be enacted inside a settlement, but many ethnographically attested initiation ceremonies take the candidate out of his/her normal environment and aim to disorientate him/her, often by a loss of sight and orientation²⁰¹. The archaeologists Knut Andreas Bergsvik and Robin Skeates²⁰² outline how the disorientation and fear produced by the sensory deprivation and disorientation in caves could be used "during the course of controlled rituals"²⁰³. The psychologist Daniel R. Montello and the archaeologist Holly Moyes²⁰⁴ as well as the archaeologist Ruth Whitehouse²⁰⁵ discuss the phenomenology of caves and their use in initiation rituals in some detail. The cave environment can cause sensory deprivation and disorientation, which would heighten the effects of van Gennep's transition phase. Initiations are also often conceptually connected with rebirth²⁰⁶ which can be symbolised by the exit from the confined space and the darkness of a cave back to the surface and daylight.

While megalithic graves have been described as artificial caves²⁰⁷, the similarity is even more pronounced with flint mines²⁰⁸. Of Whitehouse's²⁰⁹ four criteria for caves potentially to be used for initiation: difficult access, minimal daylight, strong zonation in terms of height, flint mines lack only the stalactites and stalagmites. Structures that may be linked to initiation have indeed been described by the archaeologist Patrick C. McCoy²¹⁰ from the outer fringes of the large-scale adze quarry on Mauna Kea on Hawaii (USA). The site itself is

located 3750 m high on the flank of a volcano, high above the treeline²¹¹.

Initiation involves a change of status, but it also reinforces the power of the elders who inflict pain and trauma on the initiands, forcibly driving home their utter helplessness and lack of knowledge. Using a human-made, as opposed to a natural, cave is an even more impressive demonstration of the powers and knowledge of those who originally created this space. In the case of flint-mines, the incorporation-phase could be linked to the acquisition of knowledge on how to actually produce these threatening, yet also productive spaces. The social act of initiation could also be linked to the personal experience of *katábasis*²¹²: the heroic entry to the Netherworld and the return from there – with material evidence of the sojourn, a material reward that could be taken home as visible and tangible proof of the transformative experience, which provided an intangible connection to the high status of polished flint axes and their manufacture in general, even if the specific technique for axe-manufacture was probably not mastered by all participants.

The re-enforcement of group-identity would be especially important in the case of newly formed social groups. By using raw-material sources and mines, this identity is established by communal experience but also manifests itself in a material product, a raw material imbued with significance that can be shaped into tools and exchanged. In addition, and arguably more importantly, the initiation ritual also creates networks that can be used later in life to access raw materials, further individual mobility and probably also help t

o meet/acquire marriage-partners.

It is important to stress that identity is produced and re-enforced by the creation and use of the mine, the communal act of mining, not the use of a specific raw material as such. While the distribution of specific raw materials is influenced by cultural boundaries, as discussed above, it was not the material itself that acted as an ethnic marker. Cultural boundaries were not impenetrable. Raw material pieces were carried across borders, and probably also helped to establish cross-cultural personal ties. In some cases of long-distance transport, the specific link of a raw material with a group may even have remained completely unknown to the end-users.

198 BORKOWSKI et al. 1991, 613.

199 WHITEHOUSE 2001; CLACK 2009; CROthers 2012; MOYES 2012; BERGsvIK / SKEATES 2012; DOWD / HENSEY 2016; SKEATES 2015.

200 VAN GENNEP 1909.

201 LA FONTAINE 1986.

202 BERGsvIK / SKEATES 2012, 7.

203 BERGsvIK / STORVIK 2012.

204 MONTELLO / MOYES 2012.

205 WHITEHOUSE 2016.

206 LA FONTAINE 1986, 15.

207 BERGsvIK / SKEATES 2012, 6; OOSTERBEEK 1997; cf. BARNATT / EDMONDS 2002.

208 Cf. JAMES 2016 for the phenomenology of a copper mine.

209 WHITEHOUSE 2001, 162.

210 MCCOY 1999.

211 MCCOY 1999, 14.

212 BERNABÉ 2015.

Still, the possession of an exotic material may have conferred status²¹³.

Most probably not every member of a group was directly involved in mining. Unfortunately, there is no way of establishing gender or sex of the miners. Shoes in the

much later Late Bronze Age and Iron Age salt-mine of Hallstatt (Salzkammergut, Austria) prove the presence of women and children, so it was not necessarily an exclusively male activity²¹⁴.

Perspectives

In conclusion, I would claim that flint mining served a vital role in the formation of group identities in Neolithic societies of Central Europe. This is not to say that they were the only valid types of monuments. Earthworks may also have been important, but probably worked for a different age-group in a different stage of life-cycle.

Unfortunately, I can only present case studies here and no systematic treatment. The publication of the results of Stephen Shennan's EUROVEOL project²¹⁵ should allow for a larger perspective. There is also a need for systematic recording of siliceous stones, using the same system. 'Big data' for flint, especially for axes and their distribution on chronological phases should provide the missing consumer perspective. A detailed look at the production process and the knapping done at the mines – rarely studied, as any researcher is overwhelmed by the number of artefacts – would shed more light on potential differences on competence and hence on learning processes²¹⁶. There is also need for more modern excavations with good provenience data, and the exploration of the potential of flint mines for DNA-analysis.

The cyclical nature of episodes of increased settlement activity uncovered by Stephen Shennan et al.²¹⁷ as well as the development of raw material use and processing could indicate repeated processes of group formation and dissolution from the early till the late Neolithic. The 'stop-and-go' advance of Neolithisation may well be linked to these

cycles, rather than to any natural boundaries²¹⁸. I see them as linked more to the spread of specific ideologies, or new ethnic identities and their material correlates, as outlined above, than to population growth, however. The newly formed groups could not establish themselves inside the pre-existing settlements. They either founded new villages inside the core-settlement area, as in the case of Hinkelstein and Stroke ornamented pottery²¹⁹, or established permanent abodes in areas previously only used for transhumance mainly by adolescents²²⁰.

Stepping back from the teleological view of ethnic groups and tribes as a trajectory toward states/nations should enable a view of group identity and ethnic groups as a matter of changing intensity, rather than a developmental stage that is only 'lost' by foreign conquest or a lack of dedication and ethnic fervour. Monitoring group sizes as well as the expression and strength of group identity in different types of archaeological finds should help to develop a more detailed picture of the appearance and gradual disappearance of identity groups and the long-term trends they are rooted in. The long-term view that only archaeology can provide could then help to demonstrate that stable, clearly defined and self-conscious ethnic groups are not the apogee of human development as presumed in the 19th and 20th centuries, but rather an effervescent stage of limited stability and duration, in the past and maybe as well today.

213 Cf. TILLMANN 1993, more generally WEINER 1992.

214 Presumably, the pickled faeces could be subjected to DNA-analysis to quantify the contributions or at least presence of the different sexes.

215 KERIG et al. 2015.

216 MILNE 2012; WENDRICH 2012.

217 SHENNAN et al. 2017.

218 KERTÉSZ / SZÜMEGY 2001; BÁNFFY 2013; BÁNFFY 2014.

219 SOMMER 2011.

220 Cf. KNIPPER 2011 on LBK-transhumance in the hill-zone of southwestern Germany.

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Figs 1, 3–6, 8: Author. – Fig. 2: Custine’s execution, by Isaac Cruikshaw, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Custine_in_english_journal.jpg (last access: 20 April 2023). – Figs 7, 9–10: Author; map by Bruno Vindrola.

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Abstract

Lithic raw materials and Neolithic group identities

Ethnicity, that is, the membership of a group commonly described as a tribe or a people, is often seen as fundamental to human society in general. It is assumed to have been in existence from the earliest hominins onwards, an argument that is based on the organisation of many animals into herds or bands. In contrast, I argue that ethnicity is not a fundamental or even persistent trait of human social organisation. Differences in behaviour and material culture are only organised as criteria for distinction in certain situations, most importantly if there is long-term competition for scarce resources. Most of human history has probably passed without any permanent ethnic groups. I argue that the strength of ethnicity can vary through time for any given group, can be different for groups inside the same ethnic unit, or can be absent altogether. Ethnic identity is an extreme form of group identity that will emerge only in very specific situations.

Archaeologists identify archaeological cultures by a combination of specific artefacts with characteristic forms and decoration, as well as common house-forms, burial rites etc. Change in material culture is normally supposed to be slow and gradual. In certain cases of political change, when certain elements of material culture

are used in an emblematic way, such changes can be quite abrupt, however.

In a case study of the SE- and Central European Neolithic, I look at how the procurement of lithic raw materials could have been used to create and maintain group cohesion in times of mobilised ethnicity. The distribution of lithic raw materials is often interpreted as the result of unconstrained trade. In reality, however, certain raw materials are often preferred by specific archaeological cultures, and culture changes are accompanied by a change of raw materials.

I argue that knappers were apprenticed at flint mines and at other sources of lithic raw material. This established long-lasting and long distance social contacts that were fundamental for cultural homogeneity. As ethnicity faded, local materials and non-mined materials were increasingly used and long-distance contacts slowly abandoned. This led to an increasing local diversity of pottery styles etc., until the next wave of ethnic mobilisation came along, connected to a use of new lithic resources. These 400–500 year cycles of “expansion” can actually be distinguished in the course of the Neolithisation of Europe, but also in the intensity of flint-mining in general.

Zusammenfassung

Lithische Rohmaterialien und neolithische Gruppenidentitäten

Oft wird angenommen, dass Ethnizität, also die Mitgliedschaft in einer selbstidentifizierenden Gruppe wie einem Stamm oder einem Volk, zeitübergreifend in allen menschlichen Gesellschaften existiert und existierte, Letzteres in Analogie zu Tierherden oder Horden. Im Gegensatz dazu behaupte ich hier, dass Ethnizität *kein* grundlegendes Element der menschlichen Sozialstruktur ist, und dass Unterschiede in Verhalten und materieller Kultur nur unter ganz bestimmten Umständen als Unterscheidungsmerkmale organisiert werden, besonders bei einem langanhaltenden Streit um knappe Ressourcen. Über den Großteil der menschlichen Geschichte hinweg gab es vermutlich keine dauerhaften ethnischen Gruppen. Meiner Ansicht nach kann die Ausprägung von Ethnizität stark variieren oder völlig fehlen. Ethnische Identität ist eine Extremform von Gruppenidentität, die sich nur in sehr spezifischen Umständen herausbildet.

Archäologinnen und Archäologen identifizieren archäologische Kulturen anhand des Zusammentreffens spezifischer Gegenstände mit charakteristischen Formen und Verzierungen sowie bestimmten Haus- und Bestattungsformen usw. Der Wandel von materieller Kultur wird gewöhnlich als langsam und allmählich angesehen. Wenn bestimmte Gegenstände im Zuge politischer Veränderungen emblematisch verwendet werden, kann er jedoch auch sehr plötzlich sein.

In einer Fallstudie des südost- und mitteleuropäischen Neolithikums untersuche ich, wie die Versorgung mit Silex benutzt worden sein könnte, um in Zeiten mobilisierter Ethnizität Gruppenzusammenhalt zu schaffen und zu erhalten. Die Verteilung von Silex-Rohmaterial wird oft als Ergebnis eines ungehinderten Freihandels angesehen, aber häufig wurden bestimmte Rohmaterialien von bestimmten archäologischen Kulturen bevorzugt, und Kulturwandel wird oft von der Nutzung eines anderen Rohmaterials begleitet. Meine These ist daher, dass das Feuersteinschlagen im Zuge einer längeren Lehre in den Feuersteinbergwerken oder an anderen Rohmaterialquellen erlernt wurde, wobei dauerhafte Kontakte zu Jugendlichen auch aus entfernten Gegenden geknüpft wurden, die grundlegend für die Erhaltung der kulturellen Einheit waren. Wenn Ethnizität allmählich abklang und verschwand, kamen mehr und mehr lokale und Oberflächenmaterialien zum Einsatz, während die Fernkontakte erloschen. Dadurch bildeten sich zunehmend Lokalstile aus, besonders in der Keramik, bis sich die nächste Welle ethnischer Mobilisierung, verbunden mit neuen lithischen Rohstoffen, ausbreitete. Diese 400 bis 500 Jahre langen Zyklen von „Expansion“ sind sowohl in der Neolithisierung Europas als auch in der Intensität des Feuersteinbergbaus klar sichtbar.