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REVISITING INDREKO'S CULTURE HISTORICAL MODEL: "ORIGIN AND AREA OF SETTLEMENT OF THE FINNO-UGRIAN PEOPLES"

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Abstract. In my contribution, I evaluate Richard Indreko's hypothesis about the origin and settlement of the Finno-Ugrian peoples in the light of contemporary archaeological and genetic evidence. First, I consider the intellectual and political context of Indreko's original publication, and discuss the weaknesses of the culture historical approach and the normative concept of culture, which provided the conceptual framework within which Indreko operated. I then go on to compare and evaluate Indreko's original hypothesis against three other hypotheses relating to the original homeland and dispersal of Finno-Ugrian speakers in the light of most recent archaeological and genetic findings.

I conclude that Indreko's original model remains alive and thought-provoking, but untested. Modern archaeological assessment of his hypotheses leads inevitably to the conclusion that archaeological evidence is far too multifaceted and complex to be simply interpreted as representing group identity such as ethnicity. Equally, prehistoric archaeology alone cannot prove linguistic hypotheses, although it can provide secondary, supporting or contradicting evidence. All suggestions that identify archaeological cultures with specific ethnic or linguistic groups must retain the status of speculative hypotheses of relative veracity until a carefully considered combination of archaeological, genetic and linguistic data are brought to bear upon them in a methodologically sophisticated assessment.

Introduction

Richard Indreko was one of the most distinguished Estonian archaeologists, whose work was widely known not only in Estonia, but also abroad. As a student of Graham Clark's, I remember Clark explaining to me in the early 1970s the personal landscape of research in the eastern part of the Baltic. From the earlier generation of scholars, it was Äyräpää and Luho in Finland, Indreko in Estonia, and Šturms in Latvia that Clark relied on in his investigations of prehistoric

hunter-gatherers in the east Baltic. Indeed, this is evident from Clark's writings, for example "The Earlier Stone Age Settlement of Scandinavia", where Indreko's work is discussed on four different occasions (1976:115, 144, 226, 232). Perhaps the best known internationally among Indreko's publications was "Die mittlere Steinzeit in Estland", published in 1948, which comprehensively described the Mesolithic finds from Estonia known at that time. Little less known is the fact that Indreko has also written more general papers concerned with the prehistory of Estonia, inspired, in part at least, by the urgent need to draw attention to Estonia as a sovereign polity with its own cultural heritage and long history – a project all the more urgent in the political context of post-war Europe. The article on "Origin and area of settlement of the Finno-Ugrian peoples" represents such a paper.

The article was published in Heidelberg in 1948 in a series "Science in Exile". By this time, Indreko was in exile himself with his work being published mainly in Sweden and Germany. So it is clear that Indreko was writing in a specific historical context and political climate. In this short essay on Indreko's paper, I would like to situate his work in its broader social and intellectual context, although I cannot claim to do this exhaustively, and to compare the content of his paper to the present state of knowledge on the subject of Finno-Ugrian origins from an archaeological point of view.

The intellectual context: Finno-Ugrian origins and the normative concept of culture

In the post-war period, European archaeology in general, and Central European archaeology in particular, was dominated by the culture historical paradigm and the normative concept of culture. The emergence of processual, "New Archaeology" which caused a fundamental revaluation of explanatory frameworks in archaeology, was still 15–20 years away, and the only other major alternative, the functionalist ecological and economic approach, promoted by the Scandinavian archaeologists and Graham Clark in Britain was just in its beginnings (Clark 1947, 1952, 1953, see also Clark 1976: 1–31, Troels-Smith 1953, Iversen 1941, 1949, etc). Marxist explanations, inside the Soviet Union as well as outside it, adhered to the normative concept of culture as the principal framework for explaining cultural homogeneity, differences and diffusion – a feature shared with the culture historical paradigm (i.e. Childe 1925, 1926, 1928, 1947, 1950, 1957).

The organising principle of the normative concept of culture was the belief that archaeological artefacts by their shape and decoration symbolise ethnic identity, and that the distribution of key artefacts or their salient features identify ancient settlement areas of tribes or ethnic groups in prehistory. Following this principle, cultural homogeneity becomes a signature of an ethnic group, differences in material culture can be explained in terms of ethnic variation, and the replacement of one set of cultural features by another identifies migration and population

replacement. In this way, the normative concept of culture became the principal framework for explaining culture change (although in Marxist archaeology, dialectic tensions between structures such as means and relations of production were used in explanation as well – Childe 1942, 1951, 1956, 1957).

In archaeology, the normative concept of culture was first clearly articulated and vigorously promoted by Kossinna: (1911:3) "in all periods, sharply delineated archaeological culture areas coincide with clearly recognisable peoples or tribes", and "clearly defined, sharply distinctive, bounded archaeological provinces correspond unquestionably to the territories of particular peoples or tribes" (1926:21, see Veit 1989).

This was later re-defined by Childe in 1929 and 1956 to incorporate a more realistic understanding of the archaeological record and to insert some distance between an archaeological culture and an ethnic group (although not a population):

"We find certain types of remains – pots, implements, ornaments, burial rites, house forms – constantly recurring together. Such a complex of regularly associated traits we shall term a "cultural group" or just a "culture"... We assume that such a complex is the material expression of what would today be called a "people" (1929:v–vi); and "distribution changes (in diagnostic types) should reflect displacements of population, the expansions, migrations, colonisations or conquests with which literary history is familiar" (Childe 1956: 135).

Despite Kossinna's ardent promotion of the normative concept of culture in the service of German nationalist archaeology (1911, 1914, 1919, 1926), and later, its abuse by the Nazi ideologues and archaeologists (Rosenberg 1930, Beck 1944, Jahnkuhn 1937, Luck 1934, Schlief 1942, Zotz 1939, Menghin 1934, Reinerth 1936, 1945, etc., etc.), the normative concept of culture continued to be used extensively in the post-war period, almost to the exclusion of any other, and to some extent this is the case today. This is partly because of the elegant simplicity of the normative model, and because of its potential for easy exploitation for nationalist political agendas. Partly, this is because more recent conceptions of culture, generated since 1960s – whether functionalist-ecological, processual, or post-modern – do not offer any clear explanations in terms of identity; rather, they complicate the issue.

Indreko's paper is no exception to this general intellectual climate:

"Supported by plenty prehistoric discoveries we are now able to clear up the movements of the tribes at that time and thereby to establish quite new and different opinions concerning the origin and the extension of areas of settlement" (1948:3).

In the passage above, Indreko clearly adheres to the normative concept of culture and sets out his principal methodology for identifying ethnic ("tribal") areas of settlement. The assumption of a direct relationship between ethnic groups and their material culture attributes as ethnic identifiers is then repeated as proof

throughout the paper (1948:15, and in passim 9–14 on the Finno-Ugrians, and 15–17 on the Boat Axe/Indo-Europeans).

In a series of bold hypotheses, Indreko goes on to reconstruct the postglacial colonisation of temperate and northern Europe, and, using historical linguistics, identifies the resulting population movements with different language groups: Finno-Ugrian, Lapp-Samoyed (related to Finno-Ugrian, but different in origin and culture), Indo-European.

In his first hypothesis, Indreko argues that northern and eastern Europe was settled from the west by the descendants of "the original Europeans" at the end of the Ice Age as they colonised the lands newly freed by the retreating northern ice margin:

"The same hunters who descended from the Cro-Magnon man of the early Stone Age and who had followed all the time the receding ice together with the reindeers, now came from western and central Europe to southern Scandinavia and eastern Baltic countries, also to Estonia and southern Finland ... The very same descendants of the Stone-Age men, of the original Europeans, who had got to Balto-Scandinavia, the area most abounding in rivers, lakes etc., now began to apply themselves to fishing and bird-catching in addition to hunting" (1948:5–6).

Indreko finds support for this premise in shared technology and patterns of tool use between the late glacial Magdalenian culture of western Europe, and the early post-glacial Maglemosian tradition, which covered mainly the Baltic Sea basin. Implements such as the "command-staff" (baton de commandment, sometimes referred to as "shaft straightener" in English literature), "ice-picket", conical arrowheads, harpoons and various stone tools are presented as indicators of such culture historical continuity. At this point, it should be noted that Indreko (a) has interpreted diachronic similarities in cultural traditions as markers which charted the spread of a people, and (b) that he does not consider an alternative functional explanation for such similarities: people carrying out similar tasks use similar tools.

According to Indreko, original Proto-Europeans also colonised regions of central Asia and southern Siberia up to the Yenisei River, which they reached at the end of the Palaeolithic. There they came into contact with the original Mongolic people and hybrid cultural traditions resulted from the ensuing exchanges (1948:9).

Later, these hunters and gatherers who have occupied the forested regions of Eurasia so successfully, invented their own pottery, marked by the conical shape and pit and comb decoration (1948:11). Tentatively but persistently, Indreko associated these "original Europeans" with Finno-Ugric speakers:

"As I have mentioned above already, the culture of the comb-ceramics developed from that of the original Europeans and belongs, though not to its full extent, to the Finno-Ugrians. The origins of the Finno-Ugrians could have their roots in the early sections of the same culture which developed from the centre of European Palaeolithicum, whereas the middle and older sections should belong to

another culture" (1948:13); and ... "we saw that the culture of the Finno-Ugrians' forefathers arose from the culture of the hunters which prevailed in Europe towards the end of the early Stone Age (Magdalenian period)" (1948:14).

In his second hypothesis, Indreko postulates a displacement of population from Asian homelands northwards towards the Arctic Ocean and north-east Europe. This is a similar process of recolonisation of northern regions, only from a different geographical centre. Indreko notes that "these tribes ... migrated along the coast in western direction farther on to Europe, even as far as Scandinavia. They hunted for sea animals, but of course also for reindeers, and had a peculiar, primitive civilisation" (1948:9–10), marked by the lack of effective tools such as the axe. Indreko sees the bearers of this culture as Mongolic, who, as in the Yenisei region, came into contact with Europeans on entering north-east Europe:

"In the course of millenaries (sic) thus a mixed race came into being in the north, of the original Mongols and original Europeans, as we recognise it still today in the Laplanders an the Samoyeds" (1948:10).

In his third hypothesis Indreko develops the argument that the Corded Ware/Battle (boat) Axe cultural tradition, originating in central Europe and spreading to the east, represented the ancestral Indo-European speakers:

"Between 2000 and 1800 B.C. the cord-ceramic folk (*Schnurkeramiker*) or bearers of boat-axe culture ... pressed forward from central Germany to Scandinavia and the eastern Baltic. ... The bearers of the boat-axe culture brought with them their own culture when invading the east Baltic and other countries, a culture quite different from the native one. These cord-ceramic folks are considered to be the original bearers of the Indo-European."

The Indo-European bearers of this culture then proceeded to settle in the east Baltic and mix with the local population, establishing its own hybrid culture, marked by the development of farming adapted to local conditions and by commerce based on exchange of furs and other products of hunting-gathering for metal goods and products of farming. This process continued through the Bronze Age and Iron Age (1948:17–18).

In advancing these hypotheses, Indreko laid down the basic framework for the cultural development and ethnohistory of the east Baltic region, including the ancestors of modern Estonians. He states explicitly that the ethnohistorical boundary ("the national boundary line") was well established by the end of the Neolithic, and changed little since then (see below, 1948:19–20).

Indreko's use of the normative concept of culture is unsurprising, entirely within the intellectual tradition of the time. Yet this basic premise and the archaeological arguments arising from it are flawed. We now know that archaeological cultures do not, as a rule, correlate with ethnic groups, although there are exceptions. Problems emerge at both ends of the direct equation between archaeological cultures and ethnic groups. The correlative nature of this relationship has now been evaluated and mostly discredited by anthropologists, archaeologists, and linguists (for example, see Clarke 1968, Binford 1962, 1965,

1983, Hodder 1978, Shennan 1989, Graves-Brown et al 1996 and Jones 1997 for archaeology, Ehret 1988, Bateman et al 1990, and Thomason and Kaufman 1988 for linguistics, and Fried 1967, 1968, Barth 1969, 1994, Moore 1994, MacEachern 2000, or Terrell and Stewart 1996 for ethnography). In archaeology, the criticism has come from both, the processual and post-modern school of thought.

David Clarke, in his seminal essays (1968, 1972) rejected Childe's approach. He noted that ethnographic case studies of cultural variation showed considerable heterogeneity (Clarke 1968). Even within "homogeneous cultures" there was polythetic variation between assemblages from different locations, with overall affinity level ranging from 65–95%. Assemblages sharing 65–30% of traits tended to belong to separate social groups with a considerable degree of contact and communication. Assemblages sharing 30% or less of attributes tended to reflect only common functional purpose or a response to similar ecological conditions, lending some empirical support to the notion of techno-complexes (Clarke 1968: 387–388, 398). Such ethnographic observations, methodological considerations and archaeological case studies (Clarke 1970, 1972) convinced Clarke that archaeological cultures should be re-defined as polythetic sets of attributes representing cultural traditions of human groups with different sets of meaning (i.e. trade and contact areas, techno-complexes, cultural identity areas). As Shennan notes, both Childe and Clarke "adopted classificatory expedients to remove the untidiness in the cross-cutting distributions, rather than taking the more radical step of recognising that this untidiness is, in fact, the essence of the situation, arising from the fact that there are no such entities as "cultures", simply the contingent interrelations of different distributions, produced by different factors" (Shennan 1989:13).

Other workers broadly within the processual school of thought, have drawn attention to patterns of deposition and to post-depositional processes which selectively accord archaeological materials their patterning and distribution (i.e. Binford 1962, 1965, 1968, 1972, 1983, Shiffer 1972, 1976, etc). The essence of the processual critique of the normative concept of culture was that variation in material culture arises from a wide range of different factors, operating at the original time of deposition as well as post-depositionally; that such factors are both human and non-human, and that variation caused by humans may be intentional or incidental. Together, all of this generates varying combinations of cultural patterning in space with very different meanings.

Post-modernist deconstruction of the concept of archaeological culture has been led by Hodder (1982, 1992, etc), Barrett (1994), and Shanks and Tilley (1987). In summary, culture is represented as a social tradition in a constant state of change, and material culture is perceived as an active agent, employed by "knowledgeable human actors" in reproducing culture as a social tradition. It is stressed that situationally embedded symbolism and ideological variables have a decisive influence on the spatial patterning of material culture attributes such as shape and decoration of objects. Because the meaning of things is situational and

dependent on social context, an object can be loaded with several meanings, whose significance will change with the context of use and with time. Artefacts are not merely used as tools or symbols, but are actively manipulated in the creation of identities, negotiation for status and power, negotiation for resources, and negotiation of the meaning of things and events (as, for example, in the re-presentation of the past). It follows then that artefacts do not reveal the past in the way it was, but are "meaningfully constituted" by a double process of inter-pretation, "double hermeneutic". The first occurred through the agency of human actors in antiquity in the specific context of the ideologies of the past, the second is imposed by the ideological codes and knowledge of the contemporary investi-gators. Archaeologists are clearly not in a position to understand the full range of meanings embedded in an object's attributes under these conditions.

This is not the place to explain in detail the enormous amount of work carried out in archaeology about the nature of archaeological cultures in the last 40 years. We are far less naive today, and the problem of understanding archaeological cultures is far more complicated than under the culture historical paradigm. At minimum, we know that the constitution and meaning of archaeological culture can reflect a wide number of variables, such as patterns of discard and deposition reflecting ecological conditions, existing levels of technology, function, cultural tradition and patterns of inter-generational transmision of knowledge, patterns of trade and exchange, social status of artefacts, routine activities in the landscape, a range of overlapping symbolic activities, post-depositional processes of selective destruction and relocation, and the selective interpretation and re-interpretation of cultural remains, mediated by strategic, ideological and political agendas of humans as social actors. Cultural variation symbolising ethnicity is merely one among many variables, which play a role in the composition of an archaeological culture.

At the other end of the equation, the concept of ethnicity generates its own problems (Barth 1969, Moore 1994, Pluciennik 1996, MacEachern 2000). These are both temporal and spatial. Historically, we cannot assume that notions of ethnicity, as we understand them today, can be projected into the past. Ethnic groups are subjective, constructed and situational, deeply embedded in economic and political relations. As Barth (1969, 1994) demonstrated, ethnicity is a changing phenomenon, which tends to attain greatest expression in situations of conflict, competition and cultural change. As such, ethnic groups can be characterised as interest groups competing for economic and political resources and territory. This adduces a degree of opportunism to ethnicity in the characterisation of it as a situational resource. It follows that identity, including ethnic identity, must be at least partly understood as a strategic resource, with its definition, membership, symbolic power and material expression changing situationally and with the historical conditions. This fluidity of boundaries of social identity is particularly true among hunter-gatherer societies and other groups with low population densities (Hodder 1978, MacEachern 2000, Pluciennik 1996, Wobst 1978).

Furthermore, it is incorrect to assume that language, genes and cultural identity (as a broader definition of ethnic identity) are coevally overlapping in space. First, we are not dealing with corresponding units of definition or analysis (Moore 1994, MacEachern 2000). Second, genetic populations, linguistic areas and archaeological cultures, however defined, overlap in space at any one time only rarely, if ever (i.e. see Clarke 1968 and references above). In other words, it is difficult to identify which, if any of such elements specify population's ethnic sense of belonging in its historically situated context.

The political context: The ascendancy of Soviet power and the loss of identity

Indreko's text has a number of political implications and includes a subtext, intelligible in the political circumstances of the day. These circumstances need hardly be explained: Soviet armies occupied Estonia at the end of 1944, Estonia lost its independence and was declared a Soviet republic in 1945. In an effort to validate this conquest, Soviet propaganda employed historical sciences to represent Estonia as historically and culturally an integral part of the Soviet empire and of its predecessor, the tsarist Russia (see also Ligi 1993, and Matiskainen 1998).

As a discipline investigating the (prehistoric) past, archaeology plays a key role in the validation of cultural or ethnic identity, and legitimises control over land and resources. This is especially true in situations of ethnic nationalism, whose very coherence depends on validation by ancestral shared values and common origin (Anttonen 1994, Hobsbawm and Ranger 1983, Anderson 1983, etc).

Indreko's text can be found to contain subtle messages challenging Soviet hegemony over the east Baltic and the attendant loss of identity for the Finno-Ugric speakers of the area. In arguing that Proto-Finno-Ugrians were the original inhabitants of Palaeolithic Europe, Indreko lays a claim to a European homeland for Estonia's ancestors, and emphasises the point that the Estonians as their descendants hailed from west – not east, the traditional centre of Russia's power.

In his description of the linguistic and cultural relationships between the Proto-Finno-Ugrians expanding from Western Europe and the "Mongoloids" penetrating north-east Europe from Asia, the superior value of European culture becomes clear:

"In the course of thousands of years, ... the mixed races had accepted linguistic and religious features from the Finno-Ugrians, when living with them side by side, and above all, most of their material culture" (1948:15).

The "Mongoloid" and "mixed" races are represented here as possessing primitive culture, lacking in technological features such as axes (this is, in fact, no longer true; the "peculiar, primitive civilisation" (Indreko 1948:10) of these cultures reflected the use of local, non-flint stone resources and the poor state of field research at the time of Indreko's writing). In fact, Indreko said, they adopted technological advances and language from the superior original proto-Europeans. We now know that the north Scandinavian and north-east European cultures

represented an adaptation to the available resources, not degeneration or retention of archaic traits (Gjessing 1944, Fitzhugh 1975, Clark 1976, Hvarfner 1965, Nygaard 1989). But the impression created here was that the influences from the east, from Russia, always had little or nothing to offer in terms of cultural or technological advancement.

Towards the end of the paper, Indreko makes an undisguised plea for the historical validity of Estonia's national boundaries:

"The national boundary line, which had already formed itself towards the end of the Neolithic Period, remained the same for a longer time and only advanced slowly towards the north under pressure from the Baltic people" (1948:20).

This meant that Estonia's identity was long-lasting and rooted in history. Its national boundaries were fixed and validated by ancestral possession. In short, Estonia was rightfully the ancestral land of the modern Estonians.

Indreko's model today

I have placed the original study by Richard Indreko in its social and political context, "deconstructed" it along these lines in order to illustrate how the political context, the ideological framework and the knowledge of the investigator informed his conclusions. I have argued that Indreko's archaeological argument was based on the flawed premises underlying the normative concept of culture, upon which much of the culture historical approach is based. So how do Indreko's views about the origin, provenance and cultural prehistory of the Finno-Ugrian speakers compare with recent interpretations?

It is impossible within the space here to review the full range of recent culture historical, linguistic and genetic theories regarding the origin and dispersal of Uralic, (Proto)Finnic and Finno-Ugrian speakers. Most archaeologists, however, have adopted the view that the homeland of the ancestral Finno-Ugric populations was located either in the region of south Urals, or in the forest-steppe north of the Black and Caspian Seas (see Hajdu 1976, Dolukhanov 1986, 1998, Nuñez 1998 for a summary). Indreko's model was not generally accepted.

Recent developments in DNA analyses, however, have given an unexpected support to Indreko's model. The analyses of the genetic composition of modern European populations can be interpreted in a way that would not contradict the hypothesis that European populations of the Late Palaeolithic north of the Mediterranean basin were ancestral to Finno-Ugric speakers. This, however, does not constitute an unqualified support for this hypothesis. The different alternatives are illustrated in figures 1–4.

Figure 1 illustrates Indreko's model reconstructed from his 1948 article. As noted above, Indreko associated the "original Europeans" of the Magdalenian culture with Finno-Ugric speakers, who spread across Europe as they followed retreating ice-sheets at the end of the Ice Age. While the recolonisation of

northern and eastern Europe has now been clearly documented and dated archaeologically (Otte 1990, Housley et al 1997, Nuñez 1987, 1999, Matiskainen 1996, Dolukhanov 1998, etc), there is no reason to suppose that this task has been performed by a single people with a common sense of identity. Given its size and internal variation, the Magdalenian culture can be best regarded as a cultural tradition, sharing through contact social and technological similarities, which represented, at least in part, adaptive responses to the periglacial environment. The succeeding cultures of the final Palaeolithic and early Mesolithic, also employed by Indreko in his model, were partly derived from the Magdalenian tradition. The Hamburgian, Ahrensburgian, Bromme, Lyngby, Komsa, Fosna, and Maglemosian cultures represent the material record of the recolonisation of northern Europe and the cultural adjustments to the postglacial conditions that followed. Expanding, genetically linked populations created these cultures over many generations between 14 000 and 8000 BP and in that sense, there is genetic continuity and inter-generational transmission of knowledge.

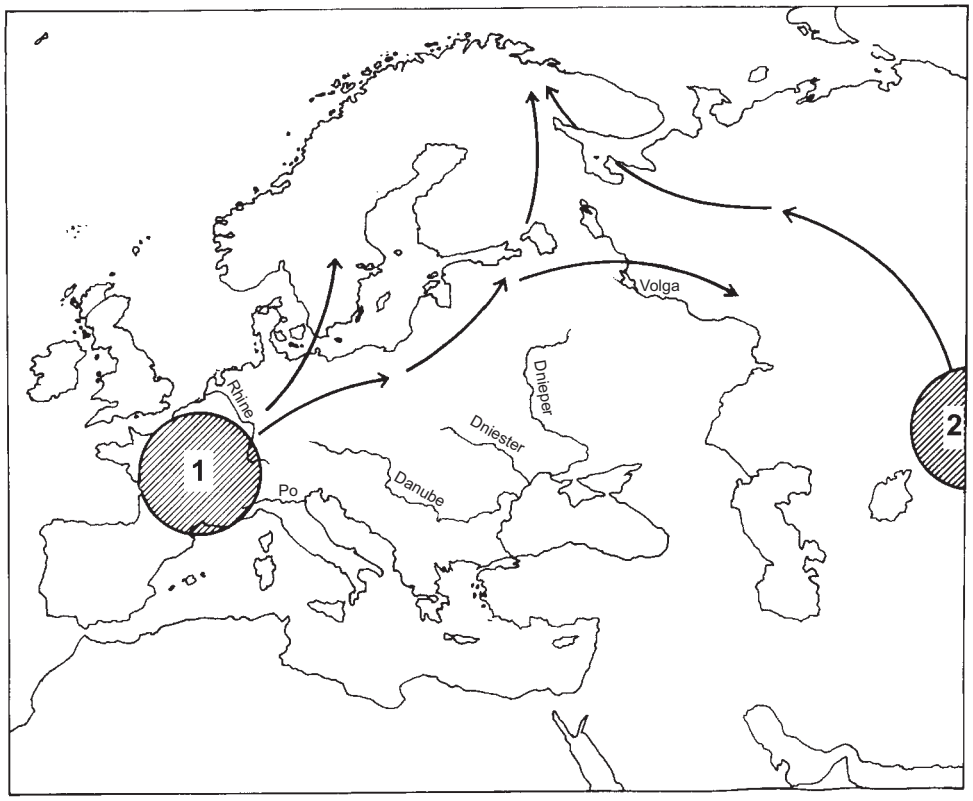

Fig. 1. Indreko's model for the dispersal of Finno-Ugrians. 1: Homeland of "original Indo-Europeans" – ancestors of Finno-Ugrian speakers – in Western Europe and the pattern of their dispersal in the final Palaeolithic and early Mesolithic. 2: Homeland of "Mongoloids" in the "Asiatic Area" and the pattern of their dispersal. Inter-breeding between the two groups in north-east Europe gave rise to Lapps and Samoyeds. After Indreko 1948.

Yet, there are also cultural links to another centre of cultural development, located in the pontic steppes of the modern Ukraine. These are evident in stone technology, burial rites, exchange of traded items, and other cultural features from the final Palaeolithic through the Mesolithic. They have clearly contributed to the formation of tanged point industries of the north European plain, and to the Maglemose culture of the Baltic Sea basin. They become more marked in the eastern Baltic, in cultures which are broadly a part of Maglemosian cultural tradition, but which are locally known as Janislawice, Neman, Narva, Kunda, and Suomusjärvi. It is the presence of these cultural attributes that account for the geographical variation within the Maglemosian and which gives the east Baltic assemblages their regional character, leading some specialists to regard them as separate cultural entities. Do these cultural influences represent a movement of population from the pontic steppes north, or do they represent a cultural interaction zone, marked only by limited individual mobility?

Figure 2 represents an interpretation based on the "dual centre" model for the recolonisation of northern parts of Europe at the end of the Ice Age (Otte 1990, Nuñez 1987, 1999, Matiskainen 1996, Dolukhanov 1979, 1998, etc). Here, two regions of relatively high population density in the late Palaeolithic, one in Franco-Iberia, the other in the Ukraine, served as centres of dispersal for the re-colonisation of periglacial and recently deglaciated areas of northern and eastern parts of Europe. Within this model, then, the cultural patterns originating in central Ukraine are accepted as indicating population movement. A number of linguists and archaeologists (i.e. Wiik 2000, Dolukhanov 1998) regard the Ukrainian centre as the original homeland of people ancestral to Finno-Ugric speakers.

It is clear that the periglacial and formerly glaciated zones of northern and eastern Europe had to be populated from somewhere. Chronologically, the archaeological record of recolonisation of eastern Europe shows progressive settlement from the south (i.e. the north pontic region). In terms of cultural similarities, the settlement of regions broadly to the east of the Vistula (Wisla) and the Carpathians shows greater links to the north pontic region than to the west of Europe. The common features shared within the Maglemosian tradition, used by Indreko as proof of dispersal from western Europe, (harpoons, fish-hooks, bow and arrow, projectile darts, stone axes) are in fact very broad technological innovations representing more efficient use of resources of the sea, lakes and rivers, and of adjustments to living in a forested environment (Clark 1952, 1976, Dennell 1983). The implication of this argument is that eastern parts of Europe including eastern Baltic were re-colonised principally from the north pontic region, although contact, inter-community gene exchange and mixing of population no doubt had occurred within the Baltic region as a whole (see figure 2). This does not imply that people who re-colonised these regions had a common ethnic identity. On its own, the archaeological evidence is in no position to rule on the question whether the bearers of this colonisation process were Uralic/Proto-Finno-Ugric speakers.

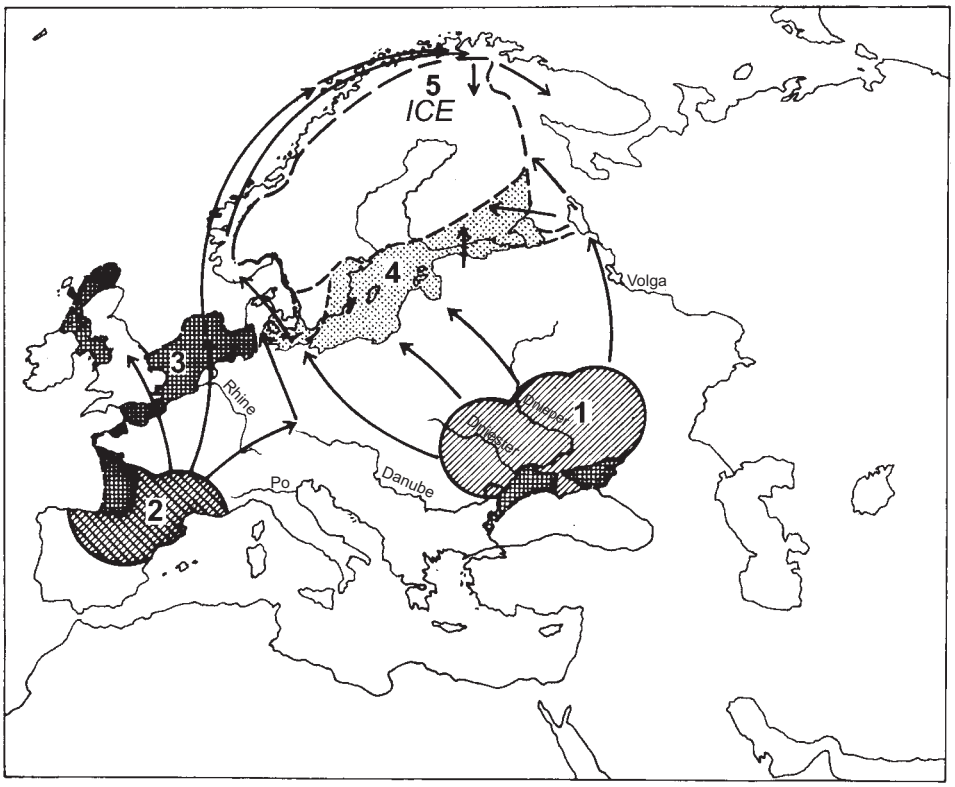

Fig. 2. Dual centre model for the recolonisation of northern parts of Europe. 1: North pontic/Ukraine population centre during the late glacial and the pattern of subsequent dispersals, 14 000–8 000 years ago. Attributed to Proto-Finno-Ugric speakers. 2: Franco-Iberian population centre during the late glacial and the pattern of later dispersals, 14 000–8 000 years ago. Attributed to ancestral European populations (non-Indo-European) of which the Basques are a modern isolate, or to Proto-Indo-Europeans. 3: Dry land, now flooded, at the end of the Ice Age, ca. 10 000 years ago. 4: Ice-dammed lake and Yoldia Sea in the Baltic basin ca. 10 000 years ago. 5: Receding Scandinavian ice cap, ca. 10 000 years ago. After Housley et al 1997, Dolukhanov 1998, Matiskainen 1996, Nuñez 1997, Wiik 2000.

Figure 3 illustrates the "Uralic homeland" model for the origin of Uralic speaking people, which is the most-established, conventional explanation for the Finno-Ugric origins. While apparently acceptable linguistically and ethnographically (i.e. Chernetsov 1973, Hajdu 1976, 1977 but see Fodor 1998, Samallahti 1995, Thomason and Kaufmann 1988), the archaeological support for this model has to be qualified by the fact that relatively little is known about the past of the forested regions on either side of Ural Mountains. We know that this vast region was one of considerable population and cultural stability in the early postglacial period; it also served as a recipient of cultural traditions and innovations from regions in the south as well as from the arctic regions to the north. These cultural contacts were absorbed and served to promote local cultural

development, rather than indicating population replacement. If there was a population movement, it occurred to the north-west, into north-east Europe and the sub-arctic regions of Scandinavia, as noted by several authors, Indreko including (Gjessing 1944, Indreko 1948, Fitzhugh 1975, Hvarfner 1965, etc.).

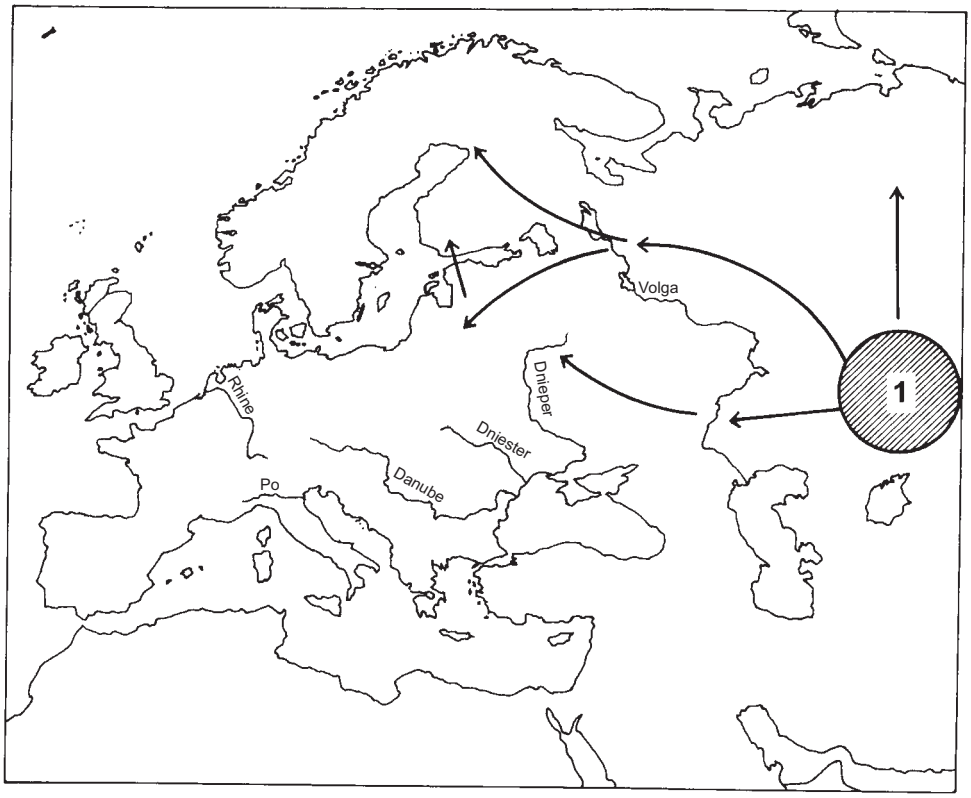

Fig. 3. Uralic homeland model for the origin of Finno-Ugric speakers. 1: The original homeland of Uralic speakers, including proto-Finno-Ugric, and pattern of their dispersal. After Hajdu 1976, 1977, Chernetsov 1973, see also Fodor 1998.

One of the cultural innovations of great significance was the adoption of ceramics by the hunter-gatherer communities in the forest zone of eastern Europe about 6500 years ago. The ceramic technology, believed to have been adopted through contact from the farming cultures in western Ukraine (Dolukhanov 1979, Timofeev 1998, etc), was adapted to produce highly characteristic pointed-based pots with pit and comb decoration. In his model, Indreko uses the Pit-Comb Ware tradition as an indicator of the distribution of the Finno-Ugric speaking people (see hypothesis 1, above). While this may well be the case, since no population movement seems to be associated with this innovation and the hunter-gatherers in question are often identified with the Finno-Ugric speakers, the development and distribution of this type of pottery was a technological and stylistic innovation of

great practical value. Its adoption and dispersal must have reflected a whole number of practical considerations and symbolic expressions of identity. As such, it alone cannot stand as a signature for the dispersal of Finno-Ugrians.

Figure 4 represents the reconstruction of population movements at the end of the last Ice Age and at the beginning of the postglacial period based on recent analyses of the DNA from modern European populations. The sample so far is small, and the results are preliminary for various methodological reasons. The evidence as it stands at present indicates that, more than any other demographic event, the late glacial population expansion and colonisation of areas freed by deglaciation accounts for the modern genetic composition of European populations (Richards et al 1996, 1998, Torroni et al 1998). This is based on mitochondrial, Y-chromosomal and classical marker evidence (Torroni et al 1998:1149). According to Richards et al (1996, 1998), around 85% of European mitochondrial sequences probably originated in the Upper Palaeolithic. The genetic evidence corroborates the archaeological sources showing that the late Palaeolithic hunter-gatherers of the Magalenian tradition, originating in south-west France/Northern Spain (where the concentration of the key genetic variants is the highest), moved north between 15 000 and 10 000 BP, colonising areas hitherto covered by ice, water or polar desert.

The pattern of genetic hyplotype distributions indicates that it was primarily the areas of *western* Europe that were principally affected by this process of dispersal. In the mitochondrial DNA, which is passed on in the female line only, the key hyplotype groups are H and V. Haplotype V group is not uniformly distributed, but shows highest concentration in northern Iberia/southwest France and among the Saami populations in northern Finland (Torroni et al 1998:1139–1145). It is the variation in frequencies of this haplogroup that led Torroni et al to suggest a "major late palaeolithic population expansion from south-western to north-eastern Europe" (ibid. 1998:1137). This seems to lend strong support to Indreko's model. However, this is not the full story. There are very few samples for eastern Europe, and those taken record very low frequency values for haplogroup V, reaching 0 in Estonia, Bulgaria and Caucasus (ibid. table 2 and figure 1). This leaves open the possibility that areas of north-east Europe with relatively high frequencies of haplogroup V were colonised by the western route along the Scandinavian Atlantic coast into northern Finland and Karelia as indicated here in figure 4. The western dispersal route is reinforced further by the distribution of haplotype 15 on the Y-chromosome (passed in the male line only). As Torroni et al note, this haplotype is virtually absent in the Near East and *eastern* Europe, but it shows a clear gradient of frequency centred in western Europe, specifically again in the Iberian Peninsula/ south-western France (ibid. 1998:1149). Finally, the veracity of haplogroup V as a marker of a late Palaeolithic migration has been questioned by Izagirre and de la Rua (1999), who analysed *ancient* skeletal samples from four prehistoric Basque sites and found that haplogroup V was absent. They suggest that variation in haplogroup V frequencies is best explained as a result of genetic drift in small and isolated populations: a scenario which could also apply to the Saami case.

Fig. 4. Recolonisation of northern Europe at the end of the glacial and during the early postglacial era (ab. 14 000–8 000 BP) based on the genetic patterning in the modern DNA of European populations. 1: Franco-Iberian region of highest frequencies of genetic mutations suggesting dispersal from this region. 2: The geographical source of genetic mutations found on the Y chromosome among males in Finland, located in eastern-central Asia/eastern-central Siberia. Broken line indicates two possible pathways of gene flow from western Europe to north-eastern Europe, based on the genetic evidence (see text). After Richards et al 1996, 1998, Torroni et al 1998, see also Niskanen 1998, Villems 1998, Künnap 2000).

As Torroni et al note, "haplogroup H is the most common haplogroup in all European populations and reaches its highest frequencies (40–60%) in western and northern Europe" (1998:1146). The expansion of the population with this haplotype has been dated to the Upper Palaeolithic, and would have included communities in both the western (Franco-Iberia) and eastern (Ukraine) refuge areas. The frequency distributions of haplogroup H then, although a broad indicator of late glacial/postglacial expansion into the north of Europe from the southern refuge areas (Richards et al 1998), cannot reliably identify the west or east as the donor centre: a late glacial population dispersal from both Franco-Iberia and the pontic region remain a possibility.

Finally, let us focus on north-east Europe in a greater detail. In the second hypothesis of his model, Indreko interprets the Saami and Nentsy people as

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