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Towards a generalised continuity model for Uralic and Indoeuropean languages

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1. Introduction

In my opinion, in the last thirty years there have been two major breakthroughs in the research on European origins: (1) the development of the Uralic continuity theory, starting in the years Seventies (e.g. Meinander 1973) and continuing to this date (e.g. Nuñez 1987, 1989, 1996, 1997), and (2) Colin Renfrew's successful criticism of the traditional IE Chalcolithic invasion theory (Renfrew 1987). The Uralic continuity theory anticipates many of the critical arguments against the invasion model, albeit only for the Uralic languages, and represents the first claim of uninterrupted continuity of a European people from Paleolithic, thus opening the way to a similar solution for IE. Colin Renfrew has shown the failings and the contradictions of the traditional IE theory, though in my opinion his proposed Neolithic dispersal theory lends itself, in turn, to similar questioning.

Whether or not my evaluation is correct, after the elimination of the traditional theory as a viable reconstruction of IE origins, two alternative theories are now confronting each other: the Neolithic dispersal theory (from now on NDT), first presented in 1987 by Colin Renfrew and now supported by many scholars, and the Paleolithic continuity theory (from now on PCT), first independently presented by Marcel Otte (e.g. Otte 1995), by Alexander Häusler (e.g. Häusler 1998), and by myself (Alinei 1996, 2000) in the years Nineties, and the support of which is now growing.

To my knowledge, the first detailed presentation of the generalised PCT is my book in two volumes, the first of which came out in 1996 (*Origini delle lingue d'Europa 1: La teoria della continuità*, Il Mulino, Bologna), and the second of which has just appeared (*Origini delle lingue d'Europa 2: Continuità dal Mesolitico all'età del Ferro nelle principali aree etnolinguistiche*, Il Mulino, Bologna). A shorter English version is in preparation.

2. The generalised Paleolithic Continuity Theory

I will now try to summarise some of the main points of the Continuity Theory as I have presented it in my two books, but at the same time I would like to stress that it is not easy to condense 2000 pages in an article.

2.1 Questions of theory and method

I will begin with the illustration of some theoretical and methodological principles I have used to address the problem of European linguistic origins.

2.1.1 Lexical self-dating

Any theory of linguistic origins makes use of the so called Linguistic Archaeology (better name than the traditional Linguistic Paleontology), which aims, basically, at a periodisation of the linguistic record. Owing to the too short chronology, however, traditional IE studies have not been able to fully develop this periodisation system, and in particular to make full use of one of the simplest and most powerful dating methods inherent to it, which I have tried to make explicit and have called 'lexical self-dating'. According to this method, names of datable notions (i.e. tools, techniques, social institutions and the like) can be automatically assumed to have been created at the moment of the given innovation. In other words, the lexicalisation of datable referents can be assumed to have the same date as that of the referent. As a consequence, 'lexical self-dating', applied with the due constraints (see further), is a powerful enough tool to produce a 'lexical periodisation' system, parallel to that of archaeologists and prehistorians, but at the same time much more detailed than theirs.

Here are some international example, taken from Italian (but their equivalent and their date can be considered as approximately the same in other European languages), and from Latin, and which are ranged from modern to ancient times:

modern inventions: *televisione* 1961); *astronave* 'spaceship' (1961), *radio* (1918), *cinema* (1918), *automobile* (1892); *macchina* 'car' (for automobile: 1918), *aeroplano* (1898) e *aereo* (1918), *telefono* (1878); *film* (for camera) (1889), (in cinema) (1918), ; *treno* (1826), *telegrafo* (1805).

Modern dances: *rock and roll* (1957), *fox trot* (1915), *samba* (1890), *tango* (1836), *polka* (ca. 1831), *mazurka* (ca. 1800), *valzer* (1781).

New World products: *patata* (1525), *pomodoro* 'tomato' (*ante* 1597), *granturco* 'Indian corn' (1542) , *tabacco* (1550-58), *cioccolato* (1606; in Spanish *chocolate* is first attested in 1580).

Medieval inventions: *occhiali* 'glasses' (1305-6: similar dates for French *lunettes*, German *Brille*, English *spectacles* and *glasses*.

University terminology (universities started in the Middle Ages): Medieval Latin *universitas*, *facultas* 'type of study', *vacatio* 'holiday', appear in the 13th century, *baccalarius baccalaureus* 'advanced student' in the 14th.

Feudal institutions: Medieval Latin *exarchatus* (Ravenna) (end of 4th century), *exercitus* 'army' (6th), *feodum* (8th), *cancellarius* 'chancellor' (8th), *mariscalcus* 'marshal' (11th), *curtis* 'royal and palatial court' (9th), 'tribunal' (11th), *minister* (7th), *palatinus* 'paladin' (8th), *vassallus* (8th), *vestitura* 'investiture' (8th), *villa* 'royal residence' (8th), *dux* 'duke' *ducalis*, *ducatus* (8th), *comes,-itis* 'count' (10th), *marchisus* 'marquis' (10th , *corrogata*, from which Fr. *corvéee* (9th), *caballarius* feudal knight' (end of 11th c.).

Church institutions: Late Latin *basilica* (4th), *dominica* (*dies*) (from which It. *Domenica*, Fr. *dimanche*, Sp. *domingo* etc.) (4th), *ecclesia* (from which It. *Chiesa*, Fr. *église* etc.) (4th), *episcopus* (from which It. *vescovo*, Engl. *bishop* etc.), *evangelium* (from which It. *vangelo*) (4th), *heremita* (5th), *monachus* (4th), *pascha* (from which It. *Pasqua* etc.) (4th), *praesbyter* (from which It. *prete*, Eng . *priest* etc.) (2nd), *sabbatum* (from which It. *sabato*) (4th), *soror* (da cui It. *suora* 'nun') (4-5th), *missa* (from which It. *messa*, Engl. *Mass* etc.) (6th), *monasterium* (6th), *oratorium* (6th), *ordo* 'religious order' (6th), *parochia, -ale*, *-anus* (6th), *immunitas* (6th), *ministerium* (6th); more terms belong to a later period, when the Church became a secular power: *synodus* (8th),

cappella (8th), *cappellanus* (9th), *domus* 'cathedral' (8th), *eleemosyna* (from which It. *elemosina*, fr. *aumône*, ingl. *Alm*) (8th), *claustrum* (9th), *patronus* (saint) (10th), etc.

The same principle can be and has been applied –albeit not systematically- to the names of metals, metal techniques and metal instruments, obviously dating to the Metal Age. Because of the assumption of a Chalcolithic PIE, however, traditional Linguistic Archaeology has limited its dating research to Chalcolithic and to some basic terms of Neolithic, and thus has not studied systematically all the numerous terms that designate farming tools and techniques, types of earthen ware, weaving, house construction and the like, in principle all dating to Neolithic; and names of earlier innovations, such as fire, navigation, hunting, fishing, burying, the use of skin, magico-religious terms for animals and other natural and human phenomena, production of tar, etc., all datable, in principle, to Paleolithic and Mesolithic. Finally, no dating has ever been proposed for terms referring to the most elementary aspects of nature (such as 'water' 'wind' 'sun' 'moon', animal and plant names etc.) and life (such as 'eating' 'drinking' 'sleeping' 'dying'), as well as for the grammatical terms that are essential for relating human beings to one another and to the surrounding world (personal pronouns, prepositions, conjunctions, adverbs and the like). In terms of periodisation, these terms should be projected back to the beginning of *Homo loquens* (irrespective of the question whether this coincides with *Homo sapiens sapiens* or with earlier species). So, for example, the formation of a common IE personal pronoun such as **eg-, *eg(h)om, *ego* (Pokorny 291) (from which Lat. *ego*, It. *io*, Fr. *je*, Sp. *yo* etc., Gr. *egó*, Engl. *I*, Germ. *ich*, Scand. *jag*, etc., Slovn., Russ., Pol. *ja* etc., Lith. *àš*, Latv. *es*, etc.) should be considered as the awakening of human consciousness in a specific group labelled *Homo loquens indoeuropaeus*, parallel to *Homo loquens uralicus*, *Homo loquens altaicus* etc., and as such could only be dated back to the beginning of language. Otherwise, we would be forced to assume that *Homo loquens* went through the cognitive structuring of the world several times during his development!

Of course, any original lexicalisation can be replaced by new ones, and the possibility of such a replacement would considerably weaken the method I have illustrated, if we could not eliminate the risk of dating lexical later replacements, rather than the original word. Fortunately, there are at least three methods to eliminate such a risk: (A) the most well-known, and the most frequently used method in historical linguistics is the one I have used in the exemplification, namely written attestations. Obviously, this method is limited to 'history', i.e. to the presence of written language, and therefore has no value for prehistory. (B) For prehistoric phases, a guarantee of antiquity is provided by the results of the comparative method: if a given prehistoric notion has the same name in a representative number of cognate languages, then it presumably belongs to the common vocabulary and thus can be considered as the original name. (C) A new method, which I have illustrated in my first volume (Alinei 1996), and which I can only briefly summarise here. It is based on the 'semantic congruence of the motivational history' of the given word. Consider a word such as It. *penna* 'pen', which results from a semantic change from It. *penna* 'feather'. Since we can easily prove that in the Middle Ages goose feathers were used as writing tools, the semantic congruence of the sequence <'feather' > 'pen'> represents an adequate guarantee that the word *penna* for 'pen' is the original one, and not a later replacement.

2.1.2 The relationship between 'culture' and 'language'

The relationship between 'culture' and 'language', more specifically between prehistoric cultures and language areas, forms a well-known problem of research on language origins. For its solution, I have profited a great deal from the pioneer work done by Uralic archaeologists and linguists, even though their methodology has not been made explicit. I have based myself on a twofold consideration: (1) it is of course impossible to posit a one-to-one relationship between a specific language and a specific culture, but it is legitimate to posit the presence of a linguistic aspect in any new culture, in the sense that since any culture necessarily begins within a linguistic area, at least in its initial phase it will 'speak' a specific language. Only in its later phases, if successful, can a culture expand beyond the original linguistic area and so lose its initial identity with the original language. This phenomenon can repeatedly be observed, at any time and in any area: Renaissance 'spoke' Italian in its initial stage, and only later, when it spread to other areas, gave birth, for example, to a German and a French Renaissance. The same applies to Romanesque, to Gothic, to Baroque, even to 'Scandinavian design', which after its initial phase has certainly influenced modern design the world over. Today, we speak of the danger that what we call the 'American culture' might submerge the different European cultures, by which we implicitly admit that the former 'speaks' the American language, and the latter the different European languages. In short, not only is it absolutely justified to assume the linguistic character of any given culture, but we do it all the time also in ordinary discourse. In the light of this observation, research aiming at identifying the linguistic character of a given culture is perfectly justified, provided we can avail ourselves of a proper method, capable of 'capturing' it.

(2) Linguists have given insufficient attention to the heuristic value of the chrono-topological charts that archaeologists normally use to represent the cultural sequence in a given area. These charts are characterised by columns, which represent the cultural sequence in a given territory, and by rows, which represent archaeological periods (fig. 1), and thus provide a synthetic view of the cultural development and differentiation in a given area during a given period. The more detailed the differentiation of the area, the greater is the value of the chart for our knowledge. It is interesting to note that these charts were introduced in the field by Gordon Childe –the founder of modern archaeology--, and since Childe was originally a philologist, well acquainted with language trees, the hypothesis can be advanced that in creating the new chart he had been inspired by the language tree. Whatever the case, careful scrutiny of these charts reveals that: (A) the territories that are specified by each column and thus are represented by a specific cultural sequence, are not subjectively chosen by the archaeologist, or by local geographic conventions, but are 'governed' by the very character of each cultural sequence, which is by definition unique. In other words, each territory is uniquely determined by each cultural sequence, which, as it were, has shaped the territory, and can be identified with it. (B) When an interruption of the linear sequence of a column/territory occurs, owing to the development or intrusion of a new and important culture that eventually spreads over larger territories, and thus over several columns of the chart (as is the case for example for cultures such as Bell Beaker, Corded Ware, Urnfields, Hallstatt and the like), this phenomenon has usually a transitory character: in the following stages the new, wider culture fragments itself again, and the identity of each territory re-emerges, sometimes to appear more

fragmented. (C) By carefully comparing the columns of each chart with the local linguistic areas, and by cross-checking and cross-linking the different charts that cover the whole of Europe, at the same time making use of the available known factors (e.g. the already established correspondences between certain Uralic languages and certain cultures), and of the best diagnostic areas (see the next section), in a sort of gigantic puzzle, it is possible to reach some major conclusions for the different areas of Europe. The overlapping of the different correspondences and cross-links progressively obtained for the different prehistoric periods increases the global solidarity of the results, confirming the final picture for the whole of Europe.

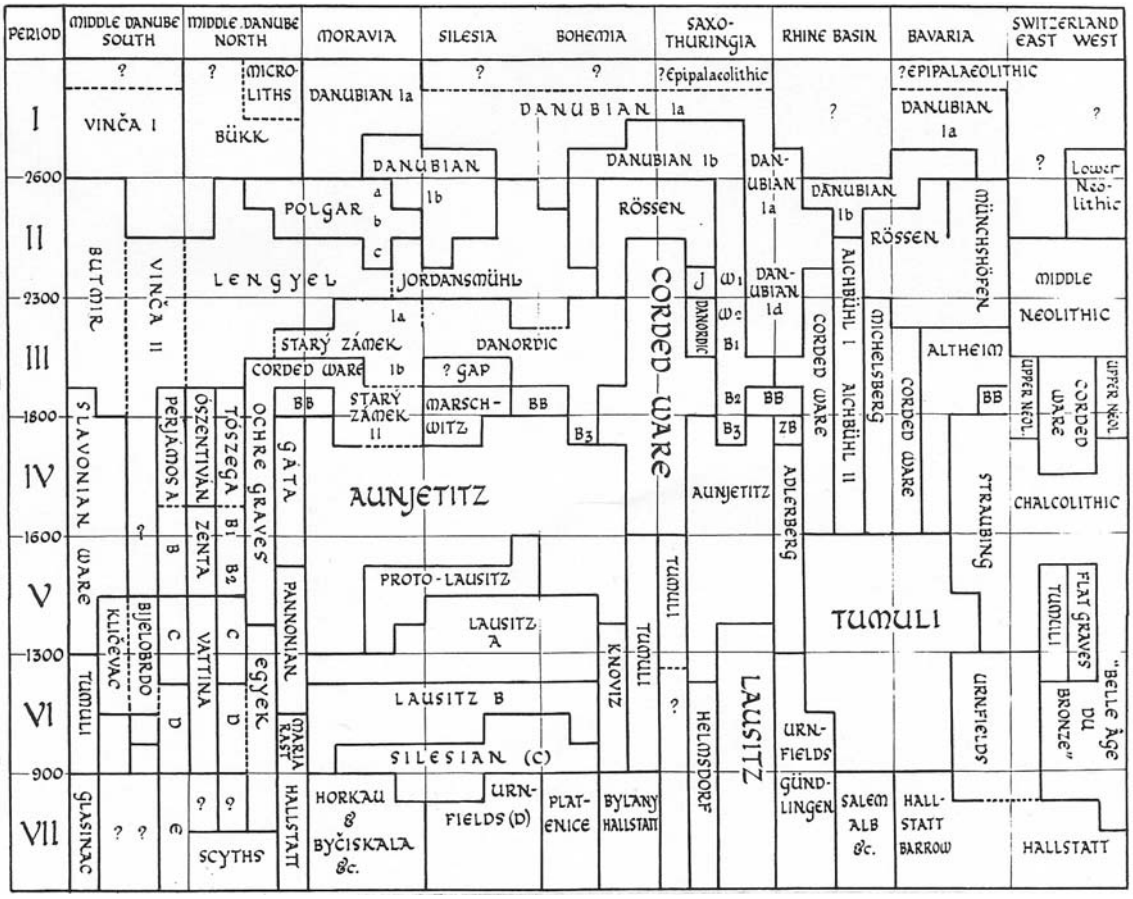

Fig. 1: The first prehistoric chart, published by Gordon Childe in *The Danube in Prehistory*, 1929

2.1.3 'Diagnostic' areas': the North, mountain areas and islands

In attributing linguistic labels to the cultural areas of prehistoric Europe, some European archaeological areas can be given a diagnostic value, and thus a higher status in the research. These areas are: (A) the areas of Uralic cultures, most of which can now be attributed with certainty to the Uralic languages or dialects, owing to the pioneer work of the Uralic specialists; (B) Northern areas in general, which differ from the rest of Europe in that they were peopled only after deglaciation, i.e. ca. 10.000 BP, and thus have a much shorter and simpler prehistory than the remaining areas. Attributing a language label to these areas is at times a rather straightforward procedure, as proved by the Uralic continuity theory. (C) Alpine areas, for the same reason as Northern Europe, have also been peopled only in Mesolithic times. Moreover, their subsequent

development is even simpler than that of Northern Europe, owing to their unique nature; (D) Islands, in particular the small ones and those far from the continent. These also have been peopled in recent times, and owing to their isolation have undergone a very linear and uncontroversial line of development.

In general terms, the heuristic value of these diagnostic areas for the problem of the attribution of linguistic labels to European prehistoric areas to can be described as offering a considerable degree of certainty, to which the research can be anchored. They thus function as constants in a complex of variables.

In the survey of European areas that will follow, some of these diagnostic areas and their value will be underlined.

2.1.4 There is no more need for IEs to "arrive" from somewhere than for any other people

From any point of view, whether archaeological, anthropological, linguistic or epistemological, there is no more need for the Ies to "arrive" from somewhere, than there is for Uralic people, or for any other people in the world. The first peopling of Eurasia by *Homo sapiens sapiens* is unquestionably the simplest and most logical starting point for all Euroasiatic languages, just as it is assumed to be for Uralic and for most world languages (exceptions confirming the rule).

2.1.5 The major role of substandard dialects in the reconstruction of the prehistoric picture of Europe

Once any large-scale, ethnic invasion has been eliminated from our scenario, the only genuine picture of the ethnic and linguistic distribution of prehistoric Europe is provided by the distribution and by the linguistic features of substandard dialects spoken in the different regions, often without any written form. Their substandard character must be seen as the relic of their subordination to elites in Bronze and Iron Age, and not (only) to national elites of medieval or modern times. Going back from substandard dialects to proto-languages, it becomes possible to reconstruct the differentiation process undergone by the widely spread prehistoric communities of hunters and gatherers. Incidentally, the use of the word 'dialect' in a purely geovariational sense, quite frequent in Anglo-American literature, and often referring to written languages (by definition elitaire), is highly misleading, and should be avoided. The word should be restricted to designate substandard, 'folk' variants, while terms such as *lingueme, geovariations* or *lects* should be used for the geographic fragmentation of proto-languages (Alinei 1980).

In the framework of the PCT, focus on substandard dialects replaces the exclusive attention given to the location of historical people as they emerge from pre- and proto-history. Also the NDT has acritically inherited this approach. Proper consideration for the stratified character of Metal Age societies should, instead, provide the correct approach: since societies of proto-historical times already had a very strong elitaire character, ethnic groups emerging in these times usually represent the expansion movement of the most powerful elites, and not autochthonous people. At the most, in their expansion they might have been able to exercise a linguistic influence on the subordinate ethnic groups they conquered or assimilated, the heirs of which are represented by substandard dialects. A good example of this wrong approach is shown by the current interpretation of the Celts: as they emerge in proto-history, they appear to

cover a vast territory, from France to Bohemia and northern Italy. Automatically, their ancestors are projected onto, or within, the same territory, in a very naive and unsophisticated application of the continuity approach and the retroactive method. The truth is that in the Bronze and Iron age, when most societies are highly stratified, the Celtic have become the most powerful and prestigious among them, extending their economic and social dominion or influence way beyond their original 'home' in Northern Western Europe.

2.2 Questions of fact

I will now illustrate a few major points of fact, which seem to point to a Paleolithic continuity of the extant populations of Europe.

2.2.1 Archaeological evidence of continuity

Modern archaeology has definitively ascertained the absence of any large-scale invasion in European prehistory, and the basic continuity of European Metal Ages from at least Mesolithic and Epipaleolithic. Prof. Renfrew also has had to revise his first model of Neolithic "demic diffusion" to adjust it to the conclusions reached by Marek Zvelebil and other scholars on the transition from Mesolithic to Neolithic (Renfrew 1999, forthcoming). Unfortunately, in order to replace the Neolithic demic diffusion with a "convergence and contact" acculturation process, the NDT has lost some of its original simplicity and elegance. Moreover, as I will try to show, some major problems block the way to an acceptance of this model.

2.2.2 Genetic evidence points to Paleolithic

Although genetic research has often reached contradictory conclusions with regards to linguistic origins, two major results can be considered as ascertained by means of both classic and DNA research, and both provide a twofold confirmation of the basic assumption of Paleolithic continuity of IE:

(A) the basic identity of the world genetic populations with the world linguistic phyla, as argued by Cavalli Sforza and his school, confirmed by other genetists, and admitted by most interdisciplinary scholars. Needless to say, this conclusion implies synchronism of the linguistic differentiation, including that of IE, with the genetic differentiation of *Homo sapiens sapiens*, and thus the identification of Paleolithic as the main background of both processes.

(B) The much higher significance of the Paleolithic genetic contribution to European populations (80%), compared to that of Neolithic (20%), as now recognised also by Colin Renfrew (Renfrew forthcoming). Prof. Renfrew is of course right in commenting that "most linguists would hesitate to make linguistic correlations for so early a date" (ibidem), but we should add that all Uralic linguists already make just these linguistic correlations for Paleo- and Mesolithic, and we should also remind ourselves that even Neolithic is early enough to frighten most traditional historical linguists. What is now required is to convince IE linguists to reach Paleolithic, rather than to focus on a problematic period and on a problematic process of Indoeuropean dispersal.

2.2.3 Paleoanthropological and cognitive evidence for the antiquity of human language and languages

On the problem of language origin, there is a growing consensus, based on independent evidence from various fields, that language origins are much earlier than it was ever thought. Phillip V. Tobias, one of the leading authorities in paleoanthropology, has recently written: " the ability for spoken language has been a characteristic of the hominids at least since the emergence of the genus *Homo* in the Later Pliocene, about 2.5 myr." However, "We know that about 2 1/2 myr ago there was a great cladogenetic split in hominid phylogeny. Hominids were faced by one of these evolutionary choices". The new question then arises: "Did brains capable of articulated language first appear before or after the split? If they arose after the split, then it is a special uniquely derived trait, an autapomorphic trait, of the genus *Homo*. We have on the other hand to countenance the possibility that this faculty might have appeared before rather than after the bifurcation. If it arose in an advanced *A. africanus* before the split, it is likely that the propensity to speak would have been handed on to both or all lineages derived from the split. Several lines of evidence suggest that the rudiments of speech centres and of speaking were present already before the last common ancestral hominid population spawned *Homo* and the robust australopythecines (Broca's bulge in *A.africanus*; tool-making perhaps by a derived *A.africanus* and a hint of an inferior parietal lobule in one endocast, SK 1585, of *A.robusts*). Both sets of shoots would then have inherited the propensity for spoken language. The function would probably have been facultative in *A.robusts* and *A.boisei*, but obligate in *Homo*" (Tobias 1996, 94).

This conclusion, of extraordinary importance for our evaluation of the antiquity of language, has been reached on the basis of independent evidence also in the field of cognitive sciences, by Steven Pinker, in a masterly book on 'language instinct', inspired by Chomsky's theory of language (Pinker 1994): "a form of language could first have emerged [...] after the branch leading to humans split off from the one leading to chimpanzees. The result would be languageless chimps and approximately five to seven million years in which language could have gradually evolved" (Pinker 1994, 345). In short, language would indeed be innate in humans, but only as the result of a much longer evolution than traditionally thought, beginning with some *Australopithecus*.

While Tobias' and Pinker's independent research proves the great antiquity of language, at the same time providing an adequate solution to the problem of reconciling evolutionary theory with Chomsky's well-founded innatism, the new dating of language origin confronts traditional historical linguists with a radical change in their views about language development and language differentiation. I will return to this point in the following section as well as in my conclusion.

2.2.4 Linguistic evidence for Meso- and Neolithic differentiation and for Paleolithic depth

The extremely rich IE linguistic record available to scholars, including that of substandard dialects spoken in the different European regions, if examined with a fresh eye and with modern methods, reveals a high degree both of prehistoric depth and geographic differentiation. This is of course the part of my book on which I have concentrated, with thousands of examples, and which I cannot possibly summarise, but I would like to mention at least three general conclusions, with a few representative examples:

(1) The high degree of differentiation of Neolithic terminology in the different IE subfamilies, recognised also by an IE traditionalist such as Francisco Villar: “in the common [Indoeuropean] language a lexicon connected to farming does not exist or hardly exists” and “the common IE terminology for farming is so scarce to allow a dilemma to rise: it is possible that the IEs’ knowledge of farming was modest, […] but it is even possible that they had no knowledge of farming at all ” (Villar 1991, p. 81 of It. ed.). While this finding can be easily explained within the continuity framework, it becomes a huge problem once Neolithic intrusive farmers have been assumed to be the Proto-IEs: “This hypothesis clashes with the Neolithic thesis… according to which IEs would essentially be the inventors of farming, which would be the most important and characteristic activity of their society”, and “It is unthinkable that the people who invented and diffused farming would not have a rich and specific lexicon to designate the elements and the techniques of farming” (ibidem). As a supporter of the Chalcolithic invasion theory, Villar is of course only interested in refuting the NDT, and therefore does not mention the most relevant fact concerning farming terminology: every IE language has its own, extremely rich farming lexicon, most of which is independently coined with IE material. And this fact cannot be explained either with the Chalcolithic invasion or with the Neolithic dispersal, while it is a direct consequence of the pre-Neolithic differentiation of IE implied by the PCT.
(2) The differentiation of IE final Paleolithic and Mesolithic terminology, which owing to the too short chronology of current views has not been the object of studies until now. There are scores of examples, out of which I choose two.

Table 1 shows the different IE names for ‘bury’ and ‘grave’ -- which, as is known, only began in Upper Paleolithic (cemeteries begin still later, in Mesolithic) --, as opposed to ‘dying’, for which there is a word in the common IE vocabulary:

TABLE 1
NAMES FOR ‘DIE’ AND ‘BURY’

MIDDLE/LOWER PALEOLITHIC Common IE **mer*- 'die'
BEGINNING OF RITUAL BURIAL IN UPPER PALEOLITHIC
Grk. *tápto*; Lat. *sepelīre* OIr. *adnaicim*; Swed. *jorda*; Engl. *bury*; OIcel. *grafa*; OSlav. *pogreti*; Lith. *(pa)laidoti*, *pakasti*; Latv. *aprakt*, *apbedīt* etc., all 'bury'
Most IE languages show different words also for 'grave' and ‘cemetery’

Examined at their face value, these data indicate –quite simply-- IE differentiation before Upper Paleolithic.

Table 2 shows the terms for the production of tar from trees, a typical Mesolithic invention:

TABLE 2
NAMES OF ‘TAR’

MESOLITHIC: BEGINING OF TAR PRODUCTION FROM TREES, AND DIFFERENT NAMES OF TAR:	
Germanic: Engl. *tar*, Germ. *Teer*, Du. *teer*, Dan. *tjære*, Swed. *tjära*, Norw. *Tjøra* 'tar' (> Finn. *terva*.) etc; OIcel. *tjorr* 'wooden haft glued to a weapon':	**< Germ. *_ter_ ‘tree’**
Latin *pix*, *picis* 'pitch':	< **Lat. *pinus* ‘pine’**
Celtic *bitumen* 'tar':	< **Celt. *betulla* ‘beech’**

Evidence of this kind is inevitably ignored by traditional IE research, and it forms a major block for the NDT, while it can be quite simply explained within the framework of the CT,.

(3) Not only the IE record, but also substandard dialects and oral and folk traditions throughout Europe have preserved countless relics of an archaic, totemic conception of nature and human life, which I have illustrated both in my research for the *Atlas Linguarum Europae* (Alinei 1983, 1986, 1996, 1997a, Barros Ferreira & Alinei 1990) and in a number of studies (e.g. Alinei 1984, 1985, 1988, 1997b, 1997c). Table 3 shows that the common name for ‘bear’ was replaced by so-called noa names owing to a magico-religious conception of natural and human life, which begins to be attested only in Upper Paleolithic. The different noa names for ‘bear’ in many IE sub-families prove that by Upper Paleolithic, when the first attestations of bear cult appear in Europe, IE was already differentiated.

TABLE 2
NAMES OF ‘BEAR’

MIDDLE PALEOLITHIC:
Common IE **rkÞo-s* 'bear' (cp. Lat. *ursus*, Grk *árktos* etc.).
FIRST ATTESTATIONS OF BEAR CULT IN UPPER PALEOLITHIC:
DIFFERENT NOA NAMES OF 'BEAR’, REPLACING THE TABOOED ONE: **Germanic** 'brown': OIcel. *bjorn*, Dan. *bjørn*, Swed. *bjorn*, AS. *bera*, Engl. *bear*, OHG. *bero*, *bär*, Du. *beer*; **Slavic** 'honey eater': OSlav. *medvjed*, Cz. *medved*, Pol. *niedzwiedz*, Russ. *Medved’*, (> lit. *meška*); **Baltic** probably 'hairy': Lith. *lokys*, Latv. *lacis*, OPruss. *clokis*; **Celtic** 'good calf': OIr. *mathgamain*, Ir. *mathghamhain* (from *maith* 'good' and *ghamain* 'calf').
Different noa names of animals, different ‘totemic’ names for animals, different zoomorphic names for natural and human phenomena also in most European substandard dialects.

2.3 A survey of European areas

I will now briefly review the main European areas as they can be seen in the light of the PCT, at the same time pointing to the problems that the NDT encounters in the same areas.

I will begin with Southern Europe (fig. 2), which plays a fundamental role in the NDT. For it is here, according to this theory, that the earliest farmers coming from Anatolia have supposedly introduced IE, as well as farming, into Europe, in particular into the areas of the the three main Neolithic cultures of the Balkans Complex, the Mediterranean Impresso/Cardial Ware and the central European LBK.

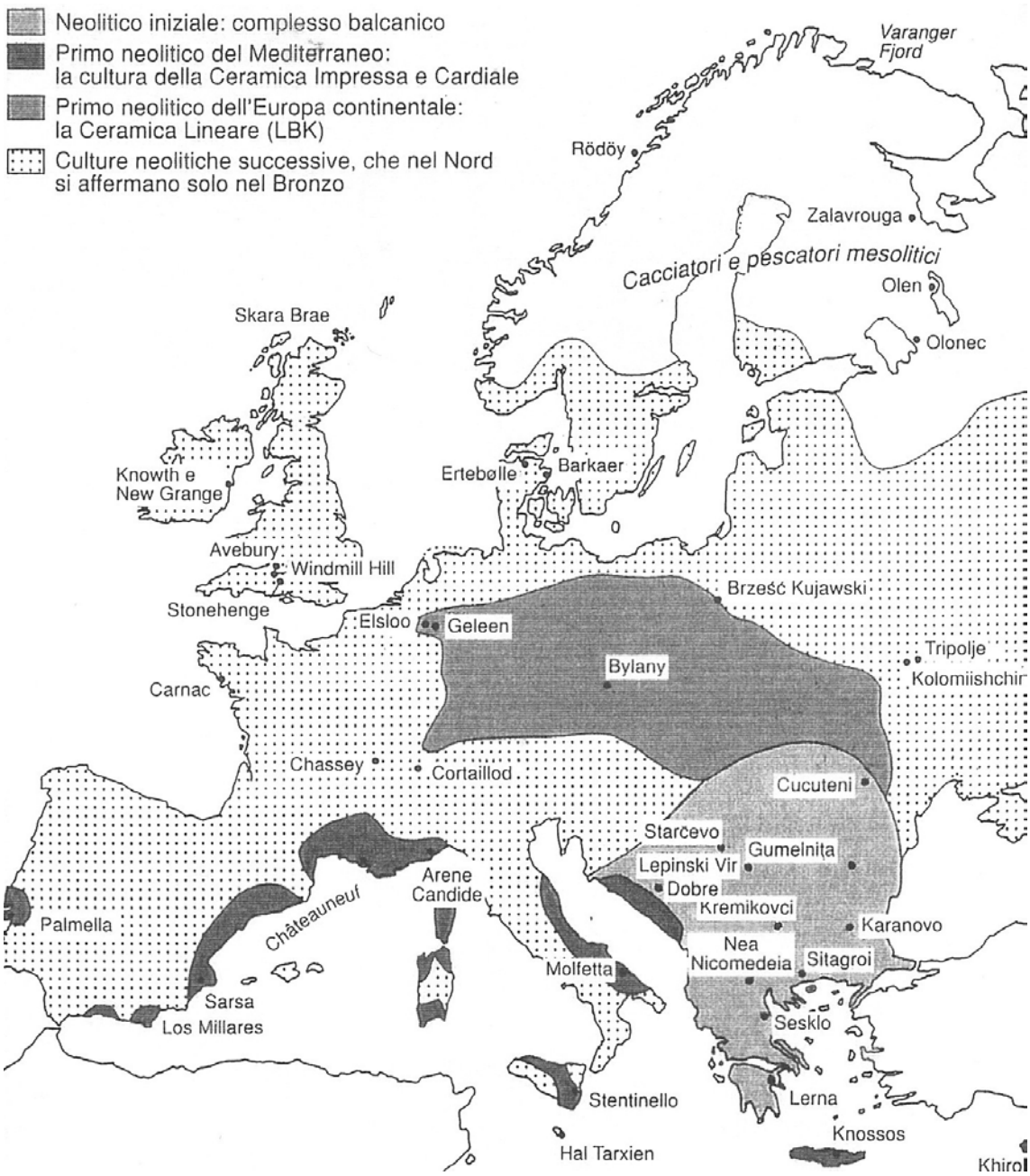

Fig. 2: The three earliest Neolithic cultures of Europe: the Balkans Complex (chequered), the Impresso/Cardial Ware (black) (both VII millennium b.C), and the LBK (grey) (V millennium b.C.).

2.3.1 The Italic area

The Continuity theory reverses this assumption, by arguing that the first farmers who arrived in Southern Europe and introduced farming techniques were not Proto-IEs, but non-IE people, whose linguistic contribution was simply that of a superstratum on the already IE autochthonous people. The evidence for this claim is provided by geolinguistics: precisely in Southern Europe there is a well-known concentration of non-IE elements, which contradicts the basic tenet of the NDT. For following the NDT, we would expect the non-IE substratum to be concentrated both in Northern Europe and in those areas of Southern Europe where the intrusive farmers had a minor, or later influence. Prof. Renfrew is partly aware of the problem, and in a recent article (Renfrew 1988) has attempted to solve it by envisaging Greek loanwords from surrounding non-IE languages. Unfortunately, even if this hypothesis were sufficient to solve the problem for Greece –which it is not (Alinei forthcoming a)- the major problem is that also Southern Italy and the islands are characterised by highly peculiar phonetic features –namely the retroflex or cacuminal rendering of /l/, /d/ and /tr/- which are totally alien to Latin phonology, and which are usually considered a typical trace of the so called "Mediterranean", non-IE substratum. The following figure shows the distributional area of these retroflex sounds (fig. 3). Notice that this area comes very close to that of the earliest spread of the Impresso/Cardial Ware –that is Southern Italy and the islands-, and that this is in total contradiction with what the NDT predicts, namely that the concentration of non-IE features ought to appear especially in the areas not or little touched by the Impresso/Cardial culture. But the oppposite is true: not only do we not find any trace of non-IE influences in the areas not or little touched by the Impresso/Cardial Ware, but we find them only precisely where the impact of this culture was the earliest and the greatest! Only if we assume the Continuity Theory, and thus the reverse hypothesis that the autochthonous people were IE, and the intrusive farmers were non-IE, can we explain the coincidence between the area of retroflex sounds and that of the earliest spread of Impresso/Cardial.

In the PCT framework, the separation of an Italic subfamily (which in my book I have called Italide) from the rest of IE can be dated back at least to the final Paleolithic Epigravettian culture (fig. 4), from which, in Mesolithic and in about the same area, first the Sauveterrian then the Castelnovian cultures developed, and finally from these, in Neolithic, the Impresso/Cardial culture. This would be seen as the result of the intrusion of farming from a non-IE area, followed by the assimilation of the newcomers by the Mesolithic autochthonous Ies. The well-known regional fragmentation of the Impresso/Cardial culture would reflect the previous differentiation of the Italic subfamily.

Consider that this model is further confirmed by the archaeological record of a highly diagnostic island such as Corsica, which was peopled only in Mesolithic by Castelnovian groups, and for which recent archaeological research has excluded any later large-scale immigration (Lewthwaite1983, Camps 1988). Greece (Alalia) and Rome (Aleria) certainly did not alter its prehistoric picture (Camps 1988). In Corsica, therefore, the dialects spoken would have to be considered as variants of a pre-Roman Latin, precisely what we expect by adopting the PCT. For the important linguistic evidence of this claim I refer to my book (Alinei 2000, ch. XV) and to a more recent article (Alinei forthcoming b).

Fig. 3 Distribution area of retroflex sounds in Italy, traditionally considered as non-IE.

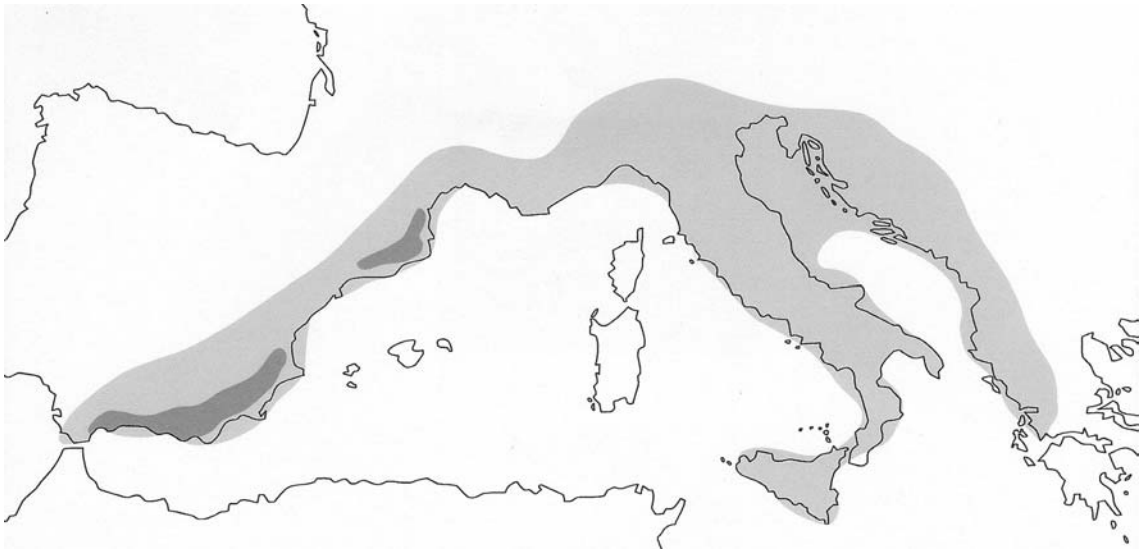

Fig. 4 A differentiated Italic subfamily (*Italide* in the writer's terminology) could be identified much earlier than in the period of the Neolithic Impresso/Cardial Ware, as shown by the distribution area of the Paleolithic Epigravettian culture (ca. XXV-XV millennium b.C.), as well as by the subsequent Mesolithic cultures.

2.3.2 The frontier between Italic and Germanic and the internal frontiers of Italic in the Western Alps

Another argument for Italic continuity from Meso- and Paleolithic can be found in the striking coincidence between archaeological and linguistic frontiers in the Western Alps region. Observe the distribution area of Romance substandard dialects in Western Switzerland and adjacent regions (fig. 5). In this small region no less than four different groups of substandard Romance dialects –namely Franco-Provençal, Occitan, *oïl* and Gallo-Italic, meet the regional variety of German called Swiss-Deutsch. This corresponds exactly to the frontiers of the French, Swiss-Romance and Italian cultures of respectively Cortaillod, Chassey and Lagozza, all deriving from Impresso/Cardial, on the one hand, and the Swiss German culture Pfyn, derived from the LBK, on the other (fig. 6). Moreover, the same coincidence appears both on the Ligurian coast, where the frontier between the French Chassey and the Italian Square Mouth Vase culture corresponds exactly to that between Occitan and Gallo-Italic, and inland, in the Western Italian Alps, where the frontier between Occitan and Gallo-Italic –which is located to the East of the political frontier- corresponds exactly -once again- to the frontier between Chassey and the Square-Mouth Vase.

So what we see here is the coincidence of Middle Neolithic archaeological frontiers not only with the linguistic frontiers between Italic and Germanic –which could be explained also in terms of Renfrew's NDT-, but also with the frontiers of the internal differentiation of the Italic group, which can be adequately explained only in terms of the PCT, because it implies a much earlier beginning of Italic differentiation than the NDT would allow.

2.3.3 The Celtic area

In North-Western Europe, the continuity framework allows the attribution of all cultures of the area to the Celts, starting at least from Mesolithic times, and thus, for example, from the earliest megalithic structures of Brittany, of the VI millennium b.C., in the fishing settlements of the islands of Téviec and Hoëdic. Then the concentration of the earliest megalithic monuments on the Atlantic façade (V millennium b.C.), and their later spread westwards (IV and III millennium b.C.) (fig. 7) can be identified, respectively, with the Celtic nuclear area, and with the first major Celtic expansion eastwards and southwards, which would be followed by the Bell Beaker as an internal development of megalithic cultures. The megalithic spread, in turn, would have introduced into Western Europe a typical Celtic phenomenon such as the so called lenition of unvoiced consonants between vowels (fig. 8). Also traditionally, consonantal lenition is attributed to a Celtic influence. Its identification with the Gallic expansion of proto-historical and historical times, however, does not account for the appearance of the phenomenon in Denmark, in southern Sweden, in Corsica and in Sardinia. The explanation provided by the PCT, on the contrary, is based on the close coincidence of the areas interested by both phenomena, and thus has a more general value.

Note that as to the origins of megalithism, Renfrew himself asks: "Why, in a specific area -western Europe- do we find such a concentration of megalithic tombs, while in other regions of Europe and the Near East there are hardly any comparable monuments?" Does this distribution not suggest "a spread from a single centre of the idea of collective burial in built tombs?" (Renfrew 1973, 156).

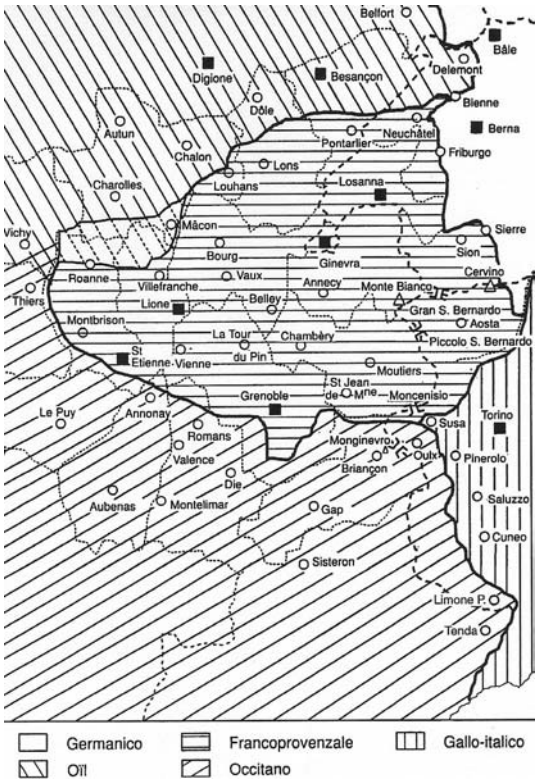

Fig. 5: Linguistic differentiation in Western Alps: four groups of substandard "Italic" dialects, and one "Germanic".

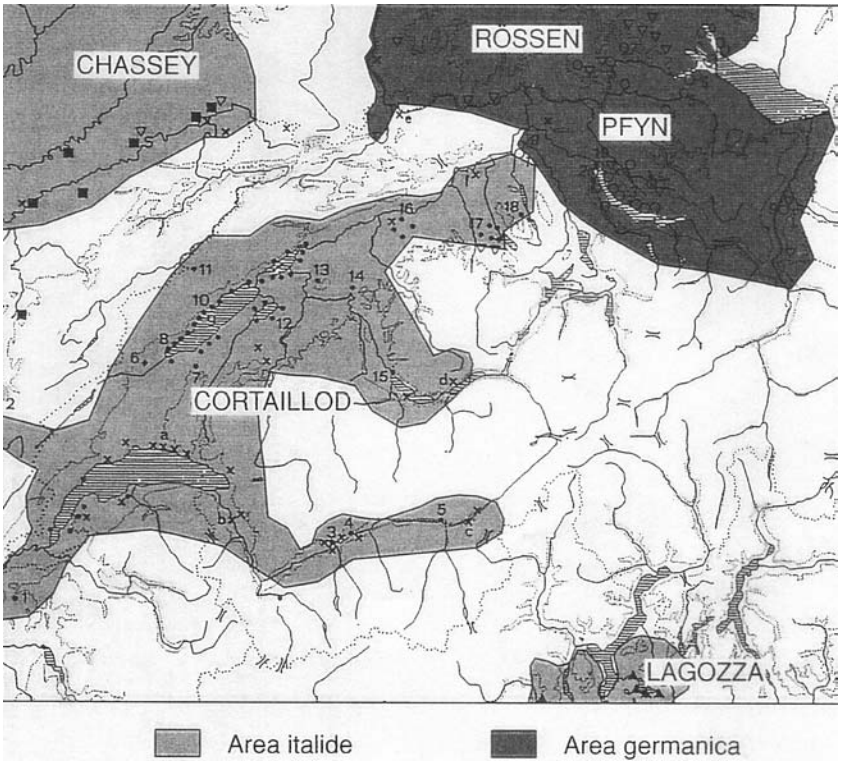

Fig. 6: Four Middle Neolithic cultures meet in the same alpine area: Cortaillod, Chassey and Lagozza, all derived from Impresso/Cardial Ware (Italic for both the NDT and for the CT), and Pfyn, derived from the LBK (Germanic for both theories).

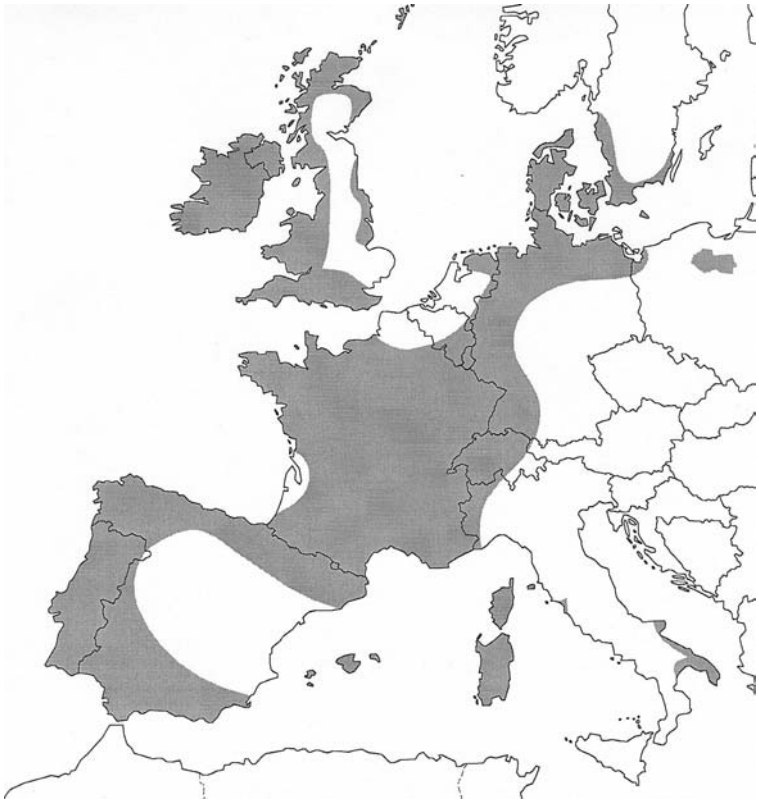

Fig. 7: Spread of megalithism.

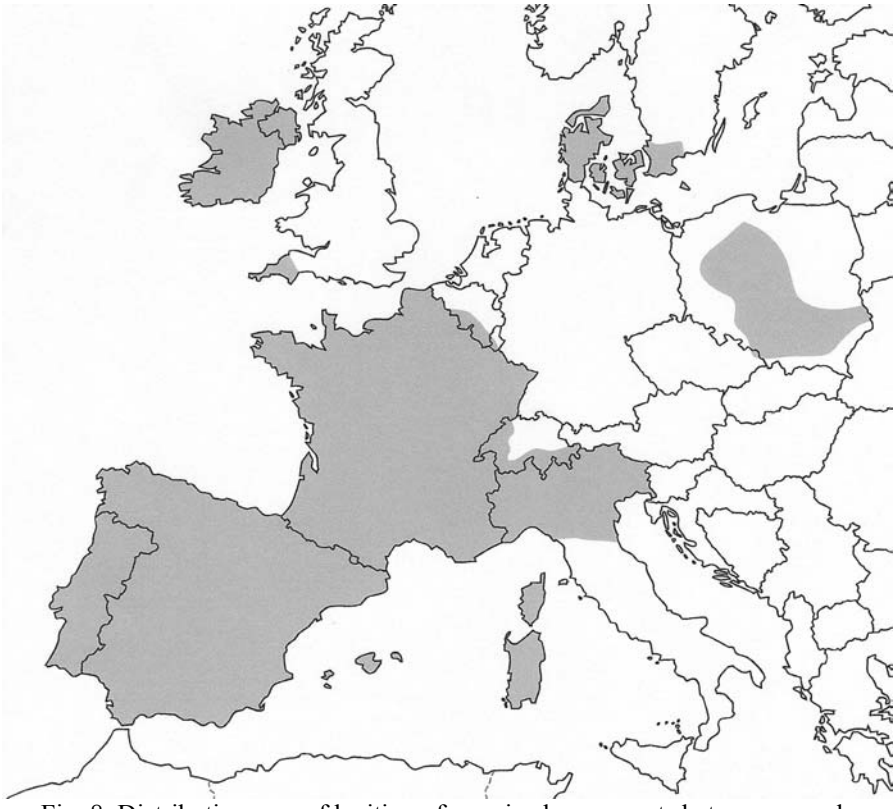

Fig. 8: Distribution area of lenition of unvoiced consonants between vowels.

Forced by the constraints of his own theory, Renfrew answers that the concentration of megalithic tombs on the Atlantic is not due to this 'single spread', but to the existence of an 'Atlantic façade', on which the farmers coming from East would eventually be forced to stop and to amass. Yet, the dating of the different megalithic monuments clearly indicates a spread from West to East and not viceversa! In short, the NDT has to rely on exactly the same scenario of the so called 'coming of the Celts' from East into their area as the traditional theory, producing exactly the same intractable problem: at no time and in no place can this supposed 'arrival' of the Celts be detected. In the new version of his theory Prof. Renfrew now assumes that the Bell Beaker is the first manifestation of the Celts , which implies that Megalithism and the preceding cultures of Western Europe were pre-IE: a very strong claim, which, again, has no straightforward justification in the archaeological record of the area, and which – incidentally-contradicts his own reading of megalithism.

Moreover, three diagnostic areas point to the reconstruction of the Celtic expansion I have just summarised: (A) the Isle of Man, between Ireland and Scotland, where the Celtic language Manx was spoken until recently. Its archaeological record shows an uninterrupted line of cultural development from Mesolithic to the Middle Ages (there was neither Roman occupation nor early Christian influence), which implies the continuity of the local language throughout the same period. Moreover, the cultural development of the island shows exactly the mixture of Irish and Scottish elements, plus local innovations, which characterises Manx, a language that belongs to the same Goidelic subfamily as the Gaelic languages of Ireland and Scotland. (B) The small island of Arran in Scotland (Firth of Clyde), where Gaelic is spoken, and (C) that of Rousay in the Orkney, where at present Scots, but originally Celtic was spoken. As precisely Colin Renfrew has shown, the archaeological record of these two islands permits to observe the uninterrupted continuity of the present farms from the Neolithic ones, and at the same time the strict relationship between megalithic monuments and ploughable fields (Renfrew 1987b, 134 ff) (v. map in Renfrew 1987b, 135). In fact, what we observe here is the uninterrupted continuity of the material culture from Neolithic to the present date.

Nothing, then, could have 'brought' Celtic languages into these three islands, during the period of the assumed Neolithic dispersal.

2.3.4 The Germanic area

The attribution of the LBK culture to the Germanic group is shared by both theories (fig. 9). But major differences emerge in the interpretation of the preceding cultures, and consequently of the following ones. In the light of the PCT, the highly specialised fishing cultures of Mesolithic northern Europe and postglacial Scandinavia would naturally be assumed to be Germanic and Uralic. The Maglemosians who peopled Scandinavia after the deglaciation would then be Germanic (fig. 10). This reconstruction would finally explain the well-known, and until now problematic, absence of non-Scandinavian and non-Uralic elements in Scandinavian place-names as well as in the fishing and hunting terminology of the area. In the NDT, which also in this case coincides with the traditional theory, the Mesolithic fishing cultures of Northern Scandinavia must be assumed to be pre-IE, and to have survived until the definitive introduction of farming into Scandinavia with the Battle Axe cultures, that is until the Bronze Age. However, it would still remain a mystery how these highly

developed cultures –whose fishing tools and techniques have survived to this day- could have vanished without leaving any trace in the toponymy, and why Nordic Bronze Age sophisticated élites would have chosen to become fishermen in the forbidding areas of Northern Norway, and could have done so without adopting at least some of the pre-IE terminology.

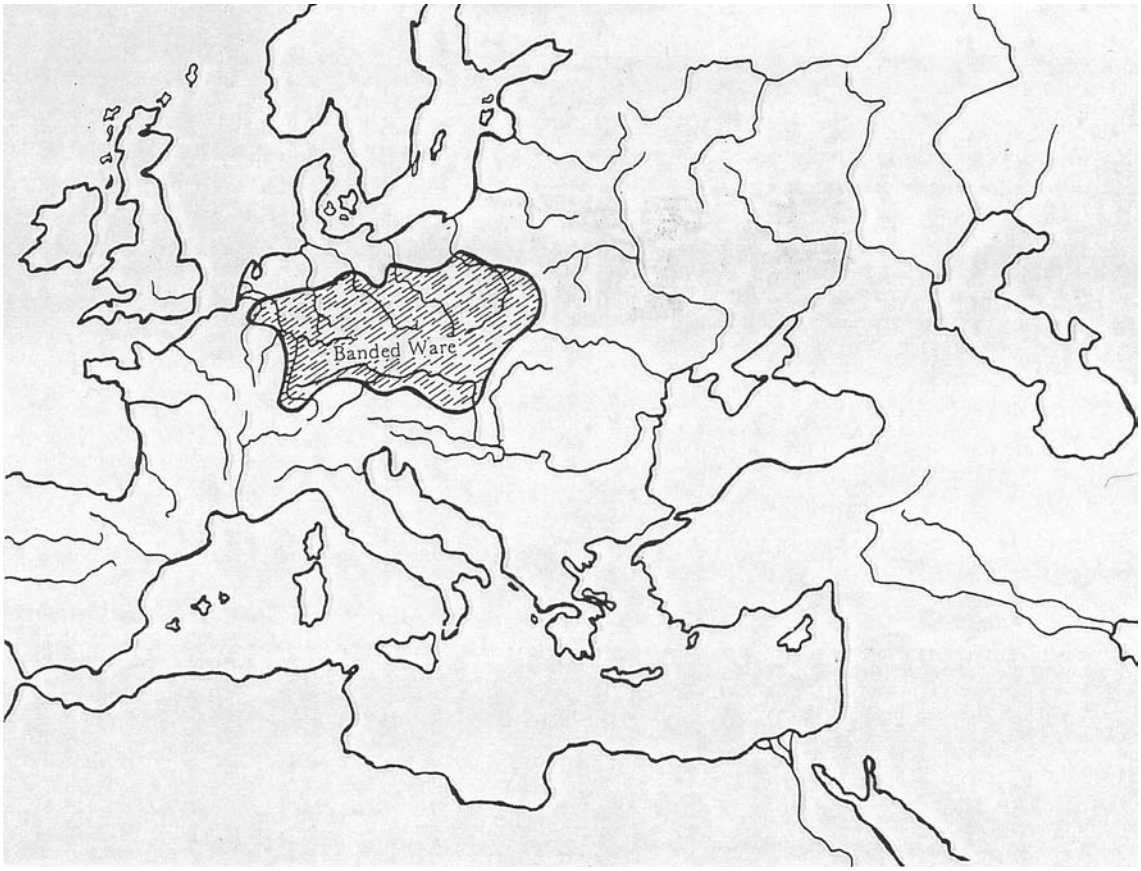

Fig. 9: Distribution area of the LBK.

Some Uralic specialists (e.g. Viik this volume) now propose a variant of the NDT, according to which the whole Scandinavia and even Northern Europe was peopled by Uralic people prior to the "arrival" of the IEs, conceived in terms of the NDT. The role of the pre-IEs in Northern Europe would then be assumed by the Uralic people. However, while this variant of the NDT encounters the same problems I have already pointed out, it is also contradicted by the sequence of cultural development in Northern Europe. If studied globally, and with the methods which have made the Uralic continuity theory possible, this reveals: (A) the formation of proglacial bacins precisely in the middle of northern Europe, between the icecap and the Alps, which made communications and exchange between western and eastern Europe very difficult if not impossible in the course of the last Glacial, as underlined by several prehistorians (Nunez, Koz¤owski and Otte 1994). In the light of this observation, the hypothesis that Uralic people would have occupied the whole of northern Europe is not a realistic one. (B) More important, the existence of at least one permanent cultural frontier largely coinciding with the present language frontier between Baltic and Uralic: this frontier appears clearly already in Mesolithic times, dividing the Uralic culture of Kunda from the Nemunas culture; then it continues, dividing the Uralic culture of Narva

from the neolithic culture of Nemunas; and finally it divides the Pit and Comb Ware, Early Comb Ware and Typical Comb Ware from the Globular Amphora and the Corded Ware (which only for a short period occupied also Estonia). Since Uralic specialists –in my opinion quite correctly- consider it unquestionable that the sequence from Kunda to the Comb Ware forms the background for the development of the Uralic languages, it would be contrary to the same logic, and in fact to any logic, to attribute to Uralic also the cultures to the south of this frontier, especially in view of the fact that there is overwhelming evidence that the Globular Amphora and Corded Ware are certainly IE, and probably already Baltic. This, plus the preceding point, make it altogether impossible to postulate that Uralic occupied the whole of northern Europe. (C) The cultural sequence of Northern Western Europe, from the end of Paleolithic to the Bronze Age, shows unquestionably exclusive characters, besides absence of any discontinuity. All this makes their attribution to different IE subfamilies much more plausible than to Uralic.

The importance of the Uralic influences in Scandinavia is, of course, beyond any question. But these must have come from Finland, either by land or by see. Maglemose remains beyond any possible attribution to Uralic, and therefore its role in the peopling of Scandinavia should be read in a Germanic key, whatever are the complexities of the outcome of its eventual meeting and mixing with the Uralic groups.

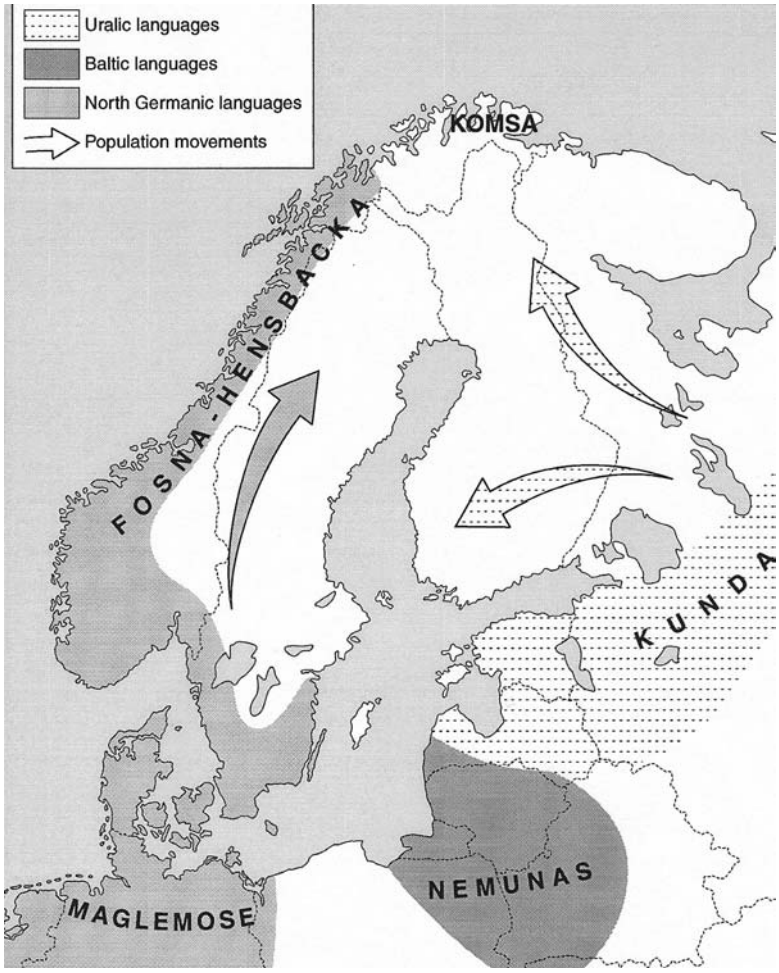

Fig. 10: The peopling of Fennoscandia after deglaciation in the light of the CT.

2.3.5 The Baltic area

The arguments I have just summarised can also be used to briefly illustrate the Baltic area. In the framework of the PCT, the cultures of Nemunas, Globular Amphora and Boat Axes, which are separated by the already mentioned permanent frontier from the Uralic cultures of Kunda, Narva, Pit and Comb Ware, Early Comb Ware and Typical Comb Ware, can be most productively attributed to the Baltic sub-family. This hypothesis is enhanced by recent archaeological research that has proved the continuity of the Boat Axes culture from the previous ones (see also Zadroska in this volume). In the light of the archaeological record, the position of the linguistic frontier between Baltic and Uralic in prehistory should be placed more to the west than the present one, i.e. in Latvia. In turn, this would explain the evident Uralic features of Latvian.

2.3.6 The Slavic area

As is well-known to European archaeologists, the Neolithic of South-Eastern Europe is characterised by the formation of *tells*, that is by artificial hills resulting from the remains of successive settlements on the same site during millennia. Many of these *tells* continue until the end of the Metal Ages. As such, *tells* not only prove cultural and linguistic continuity through millennia, but are also an indication of extraordinary stability. Within the framework of the CT, this picture of continuity and stability of South-Eastern Europe explains perfectly well the little internal differentiation of Slavic, compared to that of the other IE subfamilies, and in turn implies continuity of Slavic, Illyrian and Greek from Mesolithic, in conformity with the archaeological record. In the new version of the NDT, on the contrary, Prof. Renfrew has to postulate an IE Balkans *Sprachbund*, which would represent the first stimulus to further IE differentiation through convergence and contact (Renfrew 1999). This scenario, however, is in total contrast with the above mentioned formation of *tells*, which implies stability and continuity. Notice, moreover, that while the newly postulated IE Balkans *Sprachbund* is a speculative construct, there exists a real, well-known and well-studied Balkans *Sprachbund*, which, however, is characterised, among other things, by features totally alien to the IE languages of the Balkans, such as postposition of the article. Once again, these features can be explained only in terms of the non-IE superstratum brought in by the intrusive farmers.

2.3.7 The Altaic area

In the Continuity framework, all cultures that develop in the steppe area (fig. 11), from Seredny Stog (IV millennium b.C) to the Middle Ages, and which are characterised by nomadic horse-riding stock-raisers, can most productively be interpreted as Altaic in origin. Curiously, no one seems to have noticed that *kurgan* is a Turkic word with a wide diffusion area in Southern Europe, and not an IE word, and that the use of building *kurgan* on burial sites has always been one of the most characteristic features of Altaic nomadic populations of the steppes, from the moment they can be identified in history. Among other things, the Altaic origin of these steppe cultures would explain the presence of the numerous ancient Turkic loanwords for horse terminology in both branches of Samoyed, as well as in Slavic, and the spread of Turkic neolithic terminology in South-Eastern European languages. Moreover, it would eliminate some of the contradictions of the traditional reconstruction of Iranian prehistory, well-known to specialists (Alinei 2000)

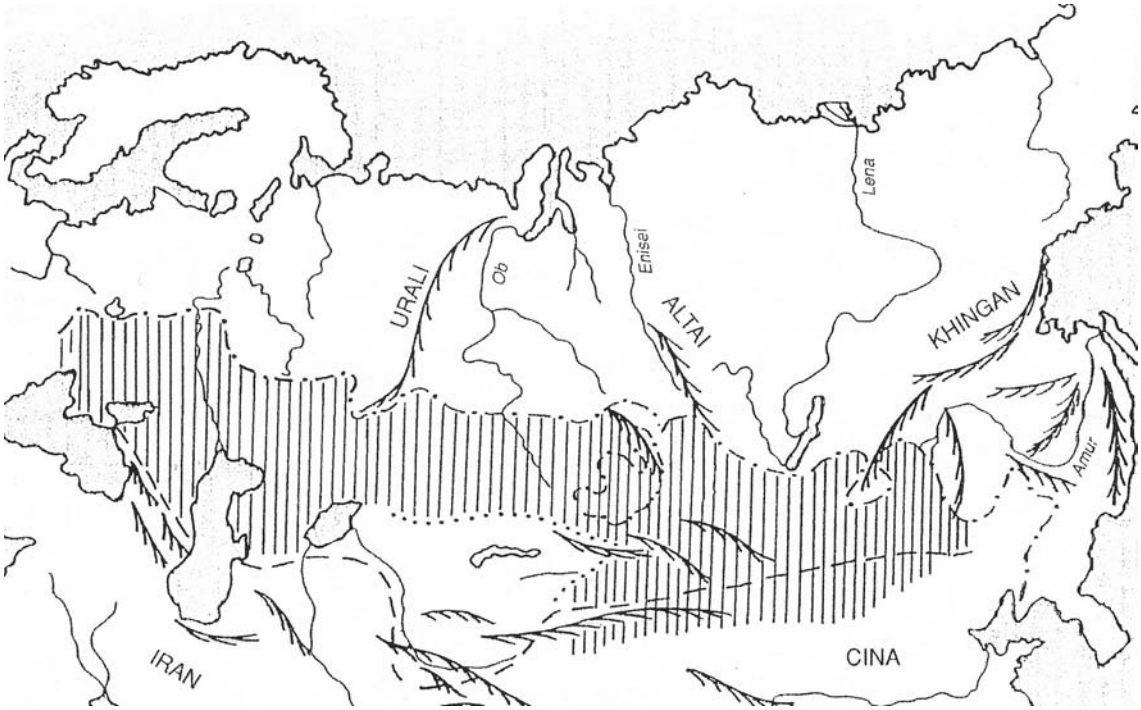

Fig. 11: The cultural area of nomadic horse-riding stock-raisers in prehistory.

2.3.8 The Uralic area

In the Uralic area, the generalised continuity model produces a more coherent picture, with a better synchronism of IE and Altaic prehistoric developments with Uralic loanwords from the different IE and Altaic languages. In general terms, my claim is that it is impossible to assume an advanced stage of Uralic differentiation already in Mesolithic, as the Uralic continuity theory necessarily does, and at the same time project a Proto-IE still compact, or almost so, in Neolithic times. More concretely, it is impossible to correlate Arian loanwords with Proto-Finnic-Permic; Baltic ones with Finnic and Lappish; Germanic with Finnic; and Scandinavian with Finnish, as all specialists in Uralic languages do, without assuming a higher or equal degree of differentiation of IE, compared to that of Uralic. Another contradiction that the NDT cannot solve is the rich record of loanwords from IE languages that Uralic languages show specifically for farming terminology. These loanwords not only differ in the different Uralic subfamilies, but they come from already differentiated IE languages, namely from Baltic, from Germanic and from Slavic. In short, the scenario presently accepted by both traditionalists and followers of the ND model contradicts much of what we know about the relationship between the two families in terms of loanwords. More plausibly, Uralic and IE must have began their differentiation and their contacts during their common diaspora from Africa, and their respective subfamilies must have continued to exchange loanwords after their settlements in Europe, with a decided increase of IE loanwords in Neolithic times.

3. Conclusion

To conclude, the CT offers a very straightforward solution of all the major problems which have invalidated the credibility of the traditional theory, and which in my opinion

weaken the NDT as well. The only problem which hinders the CT for the moment is the one mentioned by Prof. Renfrew, namely the hesitation of many linguist to correlate the linguistic record to early periods of human prehistory. But since Uralic specialists have already taken this step, there is no reason why IE and other specialists should not follow the same path, in the light of so many arguments that impose this change. In fact, I would like to define this change as a sort of belated adjustment of historical linguistics to the Darwinian revolution, which on the one hand would impose on linguistics the use of the uniformitarian principle, namely the present is the key to the past, and on the other it would synchronise the development of all of our languages with the entire evolutionary history of *Homo sapiens sapiens*, if not of earlier species. It is my deep conviction that Uralic historical linguistics has begun a new chapter of the history of our field by making this adjustment for the first time.

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