

**Time Depth, Convergence Theory, and Innovation  
in Proto-Indo-European:  
'Old Europe' as a PIE Linguistic Area**

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In this paper the language/farming dispersal hypothesis for the distribution of the Indo-European languages is revisited, taking into account recent work in historical linguistics in the field of convergence theory, and recent re-evaluations concerning the place of the Anatolian languages within the Indo-European family. The importance of time depth within Proto-Indo-European is stressed, and the possibilities of regions where a real convergence will have taken place is underlined.

It is proposed that one such convergence area during the later neolithic and chalcolithic periods was the region originally defined by Marija Gimbutas as 'Old Europe', although she would not have been happy with the proposal that this represents already a developed phase of Proto-Indo-European.

An outline of the internal relationships among the subfamilies of the Indo-European language family is offered, on the basis of the historical scenario adopted. It is suggested that this view may conform more effectively with the family relationships within Indo-European than have earlier proposals.

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*(Respectfully dedicated to the memory of Marija Gimbutas, creative scholar and good friend)*

“While the majority of Indo-European linguists still adhere to the traditional assessment of the relationship between Hittite and the other Indo-European languages, it cannot be denied that a more complex view of this relationship, according to which Indo-European should be analyzed into several strata and Anatolian should be taken as representing a much earlier stratum than the conventional Indo-European, has gained more adherents in the last decades. This view [was] recently referred to by the president of [the] Indogermanische Gesellschaft, Wolfgang Meid, as ‘ein revolutionäres Thema, das traditionelle Denkkategorien und Methoden transzendiert’.”  
(Finkelberg 1997:12)

INTRODUCTION

In this paper two developments in recent historical linguistics are applied to the problem of Indo-European origins, towards a reformulation of the theory of Anatolian origin in a way which meets a number of criticisms leveled against its initial formulation. The first development in question is a recognition that the flat view of Indo-European as a single language from which different, more or less contemporary “sister” branches sprang by a series of migrations is an over-simplification; and that it is necessary “to map out a history of the development of the theory of IE. conceived of as a series of successive strata” (Adrados 1992: 2), with a much greater time depth than has sometimes been allowed for. The second is a renewed appreciation of the importance of convergence processes in the formation of languages, and of the view that family tree models, with a number of daughter languages diverging from a common proto-language are only appropriate in certain circumstances. As Dixon (1997) has stressed, in equilibrium periods, linguistic areas are built up by the diffusion of features, and rather different models are appropriate.

Over a decade ago (Renfrew 1987) I elaborated an earlier proposal (Renfrew 1973) that the geographical extent of the distribution of the Indo-European languages was in the first instance to be understood as the result of a farming/language dispersal process associated with the spread of the neolithic way of life from Anatolia to Europe. This formulation met with two

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principal criticisms. The first was that the emphasis on the movement of farmers was exaggerated, at any rate for some parts of Europe, and that instead of relying upon the "demic diffusion" model of Ammerman and Cavalli-Sforza (1973) for the spread of farming it was more appropriate to think in terms of the adoption of farming by the indigenous mesolithic populations and of contact-induced language change (Zvelebil and Zvelebil 1990; Zvelebil 1995). I now feel that the position as stated by Zvelebil and Zvelebil (1990) in seeing a process of demic diffusion in the Balkans and Linearbandkeramik areas, with contact-induced language change beyond these limits was broadly correct. The second criticism was that the dispersal of a single language or proto-language was insufficient to account for the complexity of the patterning of the subsequent Indo-European languages, and that the account which had been offered was in linguistic terms too simplistic, too uni-dimensional, to carry plausibility. This criticism too had considerable justification.

In looking in more detail at the long processes of language development in the Aegean (Renfrew 1998) I have come to see that my previous formulation did not indeed entirely escape the "flat" view which some linguists have come to question. Instead I hope now to develop further the notion of linguistic strata, and to suggest that an important episode in the development of Proto-Indo-European was the emergence of a linguistic area in the Balkans in the later neolithic and copper age (from around 5000 BC to 3000 BC) in precisely the area which Gimbutas sometimes referred to as "Old Europe" (Gimbutas 1973). Towards the end of this period, the interactions which gave this region some cultural (and, it is here hypothesised, linguistic) coherence diminished in their effectiveness, and culturally and linguistically the area fragmented. It is not suggested that this fragmentation was the result of the arrival of new migrant peoples, nor was the process accompanied by migrations or dispersals *from* the Balkans. It is suggested simply that a period ended during which convergence processes had been important and was succeeded in this area by one of increasing divergence. The dialects of the Balkan Proto-Indo-European at this point thus developed into the languages of the late Proto-Indo-European phase which followed, without the need of population movements or migrations, and with a decrease rather than an increase in diffusion or lexical borrowings.

This view clearly reverses that of Gimbutas, for whom the end of "Old Europe" was the moment when Proto-Indo-European speech entered the region, brought by her Kurgan culture incomers from the steppes. But it does accept the significance which she attached to the south-east European copper age as a formative period when the region had its own distinctive character. As Finkelberg (1997: 15) has indicated, such a reversal now calls into question the conventional opposition of patriarchal vs. matriarchal, warlike vs. agricultural, and nomadic vs. sedentary, as characteristics which

are markers of Indo-European vs. non-Indo-European societies. In this way it undermines the criteria for identifying the Indo-Europeans from which Gimbutas' hypothesis proceeds.

It is suggested moreover that during the succeeding late Proto-Indo-European phase further convergence episodes took place to the west, to the north and to the east, responsible respectively for the formation of the Celtic, Germanic, Indo-Iranian (and other) language families (or subfamilies) respectively, which crystallised (if that is the word) after this time. These require careful consideration, and indeed a better knowledge of the linguistic evidence than I can marshal. But the approach does, I believe, offer the possibility of accounting for the complexity in the known linguistic picture without relying by way of explanation upon the sequences of migrations which formed the explanatory basis for an earlier generation of scholars and for which there is little archaeological evidence. What one envisages rather is a series of transformations from one "stratum" of Proto-Indo-European to the next, each with its own regional morphological and lexical innovations. There is the expectation of regional as well as temporal variety within 'Proto-Indo-European', which is a term no longer to be seen as describing a single linguistic entity, but one which refers rather to the complex series of changes in different regions and periods, both in Europe and in western Asia, between the earliest Anatolian Pre-Proto-Indo-European (or Proto-Indo-Hittite) on the one hand, and the earliest languages for which we have actual documentation in each region on the other. A preliminary three phase development for Proto-Indo-European will be proposed, taking account of geographical diversity.

In this way I believe that an account can be offered which not only responds better to the richness and variety of the archaeological record over these long time periods, but offers sufficient scope also for the complex linguistic processes responsible for the varied linguistic patterning which we see by the time of the Romans and subsequently. It can also be brought into more effective relationship with the evidence from molecular genetics now becoming available.

#### DIVERGENCE AND CONVERGENCE

The Comparative Method of Indo-European linguists, which has become the widely accepted paradigm for historical linguistics in general, is based upon the principle that related languages diverge with the passage of time, particularly when isolated from each other. In consequence the family tree model is regarded as the appropriate way to approach the question of the origins and formation of language families. Divergence processes, the moving force behind the family tree model, are usually given precedence.

That is not, however, to say that convergence processes are ignored. Every textbook on historical linguistics deals in some detail with the wave

model introduced by Johannes Schmidt (1872), and the notion of the linguistic area is everywhere acknowledged. At the same time, however, it is rarely suggested that a language family (or what appears to be a language family) could come about simply as a result of convergence processes operating among spatially adjacent languages without their sharing a common descent. Recently, however, the Australian linguist R.M.W. Dixon has done just that, seeking to explain the formation of the Pama-Nyungan "family" of some 100 Australian languages as the product of convergence processes working within a long-term diffusion area. There was thus no Proto-Pama-Nyungan ancestor in some localised homeland area, and no family tree (Dixon 1997: 90). In the course of his analysis he develops a general model of long-term linguistic equilibrium within an enduring linguistic area, followed by an episode of drastic change:

"These punctuations to the state of equilibrium are likely to trigger dramatic changes within and between languages. They give rise to expansion and split of peoples and of languages. It is during a period of punctuation — which will be brief in a comparison with eras of equilibrium that precede and follow — that the family tree model applies." (Dixon 1997: 4)

He sees the punctuation episode, when the dispersal is actuated that triggers the divergence underlying the family tree formation, as a rather special event. The more normal situation is one where convergence processes prevail:

"Over most of human history there has been an equilibrium situation. In a given geographical area there would have been a number of political groups, of similar size and organisation, with no one group having undue prestige over the others. Each would have spoken its own language or dialect. They would have constituted a long-term linguistic area, with the languages existing in a state of relative equilibrium." (Dixon 1997: 3)

Dixon (1997: 31) is quite categorical that "the genetic relationship of Indo-European languages, in a family tree model, has of course been eminently proved" by the relevant criteria. Indeed the only linguist to have questioned this seems to have been Trubetskoy (1939) in a paper still well worth reading for its eloquent advocacy of convergence models. But in a later section here Dixon's hint will be taken up that his model, outlined above for the evolution and split of languages, can also be applied at other levels.

Another important point is that the punctuation episode underlying the split, which gives rise to the family tree, may be expected to have taken place for well-defined and comprehensible reasons:

“The punctuation may be due to natural causes such as drought or flooding; or to the invention of a new tool or weapon; or to the development of agriculture; or of boats, with movement into new territories; or to the development of secular or religious imperialism.” (Dixon 1997: 3)

Here Dixon is taking what I would term a processual approach, and one with which I am very much in agreement (Renfrew 1987: chapter 6; Renfrew 1990). Any linguistic event as radical as the spread of the languages (or of the protolanguage) of an entire language family over a very wide area must have significant causes which will have a social and demographic dimension as well as a purely linguistic one. Indeed it seems likely that many of the major language families of the world owe their distributions to the dispersal of a recently-developed farming economy from the region where it first developed, and where the plant and animal prototypes were to be found for the principal domesticates upon which it depended. (Bellwood 1996; Renfrew 1992; Diamond 1997)

The initial farming dispersal of Proto-Indo-European which is re-asserted here falls naturally and obviously within the sort of punctuation described by Dixon’s model, which is typically at the source of most genetically-related language families. Here however it is the convergence, which comes along with the relative equilibrium of languages co-existing within a long-term linguistic area, which is of particular interest here. For, as will be discussed further in the next section, the story of Indo-European is a long one, and the principal punctuation episode already commenced some 9000 years ago. That was not, however, the end of the matter. It is likely that there have been subsequent episodes of convergence in some parts of Europe and western Asia, and probably a further (and relatively late) episode of punctuation which brought the Indo-Aryan languages south to the Indian sub-continent. Dixon’s model, in giving as much weight to convergence processes on the one hand as to divergence processes and dispersal on the other brings the two together into a more coherent framework.

It will be suggested below that the Balkans, in the period following the initial dispersal of archaic Proto-Indo-European, formed a region in which several dialects of that Proto-Indo-European co-existed for at least two thousand years in what Dixon would term “a state of relative equilibrium”. This became a linguistic area in which innovations took place, diffused and were shared, so that from around 5000 BC what may be regarded as a more evolved Proto-Indo-European developed from its predecessor. By then it was no longer a single language, but an assemblage of dialects, or even separate (but genetically related) languages. It will be further suggested that at the end of that period, around 3000 BC, this episode of convergence came to an end as a result of a diminution of social interactions among the societies

concerned, but that this ending of convergence was not in this case marked by a further punctuation episode with a further consequent dispersal. Instead the constituent languages stayed where they were, held their ground. But with the diminution of interactions they became more isolated, and began to diverge. The prehistoric Balkan Sprachbund had ended and the constituent languages became more clearly separated. Among them were early Greek (or Proto-Greek), Illyrian, Dacian, Thracian, Armenian and Phrygian and perhaps, at the northern edge, Proto-Baltic and a language ancestral to the Slavic languages. It is possible also that, on the eastern part of this Balkan linguistic area there was located the ancestor of the Indo-Iranian languages.

The essential point here is that Dixon's model allows one to draw both on dispersal and divergence (for the initial spread of archaic Proto-Indo-European), and then on convergence within a linguistic area (for the subsequent Balkan Proto-Indo-European), and then again for subsequent linguistic divergence without necessarily any further dispersal, although dispersal is certainly one necessary ingredient to account for early Indo-Iranian. It is not necessary to choose between divergence and convergence models, but to recognise that both are relevant processes which may be dominant at one time or another.

#### TIME DEPTH AND THE INDO-HITTITE HYPOTHESIS

The problem of time depth is a crucial one for any consideration of the Indo-European languages. When it seemed that Proto-Indo-European could be dated as late as 3000 BC the choice of explanatory possibilities offered by the archaeological record was a somewhat restrictive one. If an earlier date be adopted, then the archaeological context is very different, and there is more scope also for the sort of time depth within Indo-European for which a number of scholars have recently been arguing.

But how does one date Proto-Indo-European? I have tried to show (Renfrew 1987) that the traditional date of c. 3500 BC for the Proto-Indo-Europeans in their hypothesised steppe homeland north of the Black Sea is based upon a circularity. My own proposal of c. 7000-6500 BC is based upon an assumption, namely that Proto-Indo-European is to be equated with the agricultural population in central and western Anatolia which was the proximate source for the origins of farming in south-east Europe. Again Dixon has some pertinent comments:

“What has always filled me with wonder is the assurance with which many historical linguists assign a date to their reconstructed proto-language. (And these are, by and large, people who firmly reject the glib formulas of glottochronology.) We are told that proto-Indo-European was spoken 6,000 years ago. What is known with a fair degree of certainty is the time between proto-

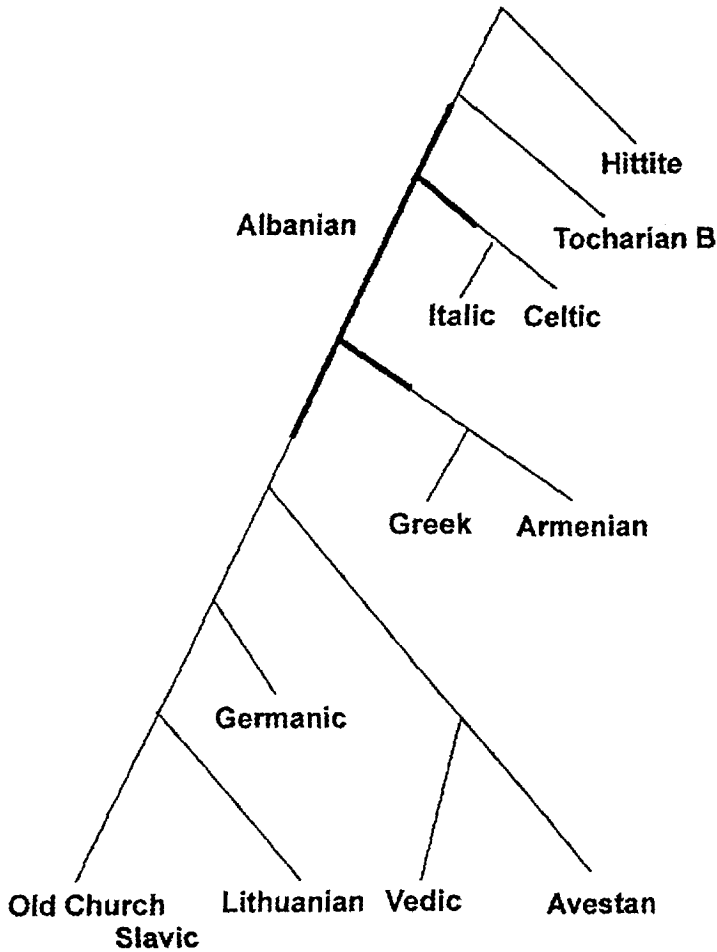


Figure 1. The typology of the rooted evolutionary tree for Indo-European derived by Ringe and Warnow using a mathematical approach (from Warnow 1967, 6588). It supports the Indo-Hittite hypothesis that the first subfamily to break off from the stem of the Indo-European evolutionary tree should be the Anatolian branch.



Indo-Aryan and the modern Indo-Aryan languages — something of the order of 3,000 years. But how can anyone tell that the development from proto-Indo-European to proto-Indo-Aryan took another 3,000 years? . . . Why couldn't proto-Indo-European have been spoken about 10,500 years ago? This would correlate with a major socio-economic development, the introduction of agriculture, which archaeologists date at about 10,500 BP for this part of the world . . . The received opinion of a date around 6,000 BP for proto-Indo-European — with dates for other proto-languages being calibrated on this scale — is an ingrained one. I have found this a difficult matter to get specialists to even discuss . . . This is a question that demands careful re-examination with a full range of possibilities being discussed and compared.” (Dixon 1997: 47-9)

It is at this point necessary to turn to the Indo-Hittite hypothesis, first clearly formulated by Sturtevant (1962), but discussed subsequently by Adrados (e.g. 1982) in a series of papers, and then by other scholars including Meid (1975; 1979) and Schmid (1979), as recently conveniently reviewed by Adrados (1992) and by Finkelberg (1997). Adrados (1992) has effectively stressed that by the time Hittite came to be recognised by scholars as an Indo-European language, the basic reconstruction of Indo-European had already been undertaken. Moreover the theory of a steppe homeland north of the Black Sea had already been formulated and widely accepted.

“Hittite thus pays the price for having been deciphered after the work of Bopp, Schleicher and Brugmann, who reconstruct an IE. that is considered to be untouchable and who make Hittite adapt to it *velis, nolis*.” (Adrados 1992: 5)

As the Anatolian languages, particularly Hittite, became better understood and their differences from the other Indo-European languages more apparent it became necessary to decide between two opposing hypotheses: either that Anatolian had lost the feminine, the aorist, the subjunctive etc., or that the remaining languages had created them. Initially the majority of linguists took the former view, and it is only more recently that the Indo-Hittite hypothesis has gained ground. It has recently gained notable support from the quantitative analysis of Warnow and Ringe (Warnow 1997) which gives rise to the diagram seen in figure 1.

If Anatolian was the first language to break off from the Indo-European “evolutionary tree”, then either this event took place in Anatolia, with the ensuing dispersal to south-east Europe and beyond of the Proto-

Indo-European language destined to become ancestral to the other Indo-European languages, or the speakers of Anatolian themselves departed from some other location, yet to be determined, which was their homeland and migrated to Anatolia. The latter has often been assumed, but the realisation that the spread of farming to Europe was a process which began in Anatolia (Ammerman and Cavalli-Sforza 1973) opened the way to the suggestion that it carried with it the initial dispersal of Proto-Indo-European (Renfrew 1973). The Anatolian origin for Indo-European (Gamkrelidze and Ivanov 1995; Dolgopolsky 1987; 1993) or of Pre-Proto-Indo-European (Diakonov 1990) has now been argued by a number of eminent linguists. It is no longer contradicted by the early presence of Hattic, a non-Indo-European language, in the archives at Boghazköy following the realisation that Hattic belongs to the North Caucasian language family (Ivanov 1985; Diakonov 1990) and is therefore itself likely to be intrusive to central Anatolia. Moreover Carruba (1995: 18) has drawn attention to the so-called "Anatolian diagonal" (between the Bosphorus and the Gulf of Alexandretta), to the west of which the ancient toponyms are said to be so profoundly Luwian as to make difficult if not impossible the detection of any "pre-Luwian" substratum. It is difficult in these circumstances to see Luwian and the other Anatolian languages as intrusive to Anatolia.

That the Anatolian languages represent what is left in Anatolia of the earliest Proto-Indo-European speakers who were at home there is a matter of inference, as is the hypothesis that the earliest Indo-European dispersal is to be equated with the dispersal of farming from Anatolia to south-east Europe. What is much more certain, however, is that if these two assertions are accepted, the date of the early Indo-European dispersal from Anatolia can be precisely fixed within a few centuries of 6500 BC. For the date of the spread of farming to such early sites as Sesklo in Thessaly and Nea Nikomedeia in Macedonia can be precisely determined by the application of radiocarbon dating. So too can the date of earliest settlement at Knossos in Crete, and it is at least arguable that the language first spoken there was also descended from the earliest Proto-Indo-European spoken in Anatolia (Renfrew 1998a, 259) and in that sense was itself Indo-European. This then leaves an enormous span of time for the further evolution of Proto-Indo-European until the first documented Indo-European languages, including Hittite and Mycenaean Greek make their appearance after 1500 BC.

This alone makes necessary some approach towards an understanding of the notion of time depth in Proto-Indo-European. It was such considerations, at least in part, that led Adrados (1992: 1, fig 1) "to attempt to reconstruct not one sole type of Indoeuropean without spatial or temporal definition, but three". His proposal is seen in fig. 2. Phenomena such as the loss of the laryngeals, the creation of oppositions of quantity in vowels and above all the creation of morphological oppositions between

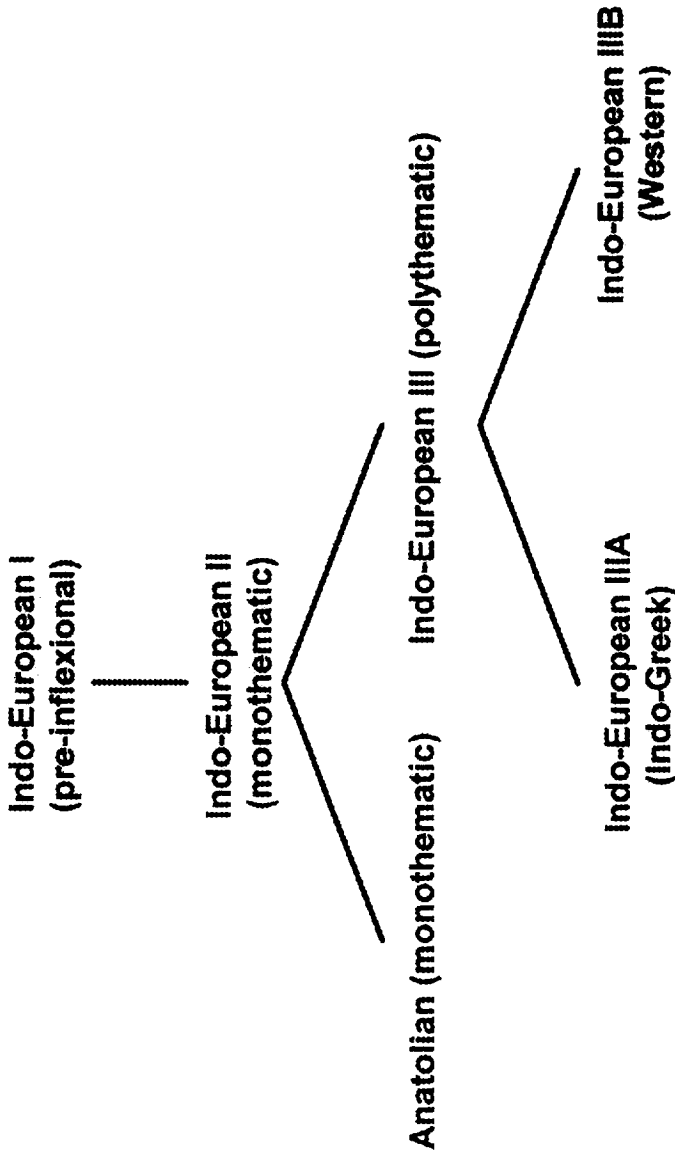


Figure 2. 'Indoeuropean' (or 'Proto-Indo-European' in the terminology adopted here) conceived by Adrados (1992) as a series of successive strata.

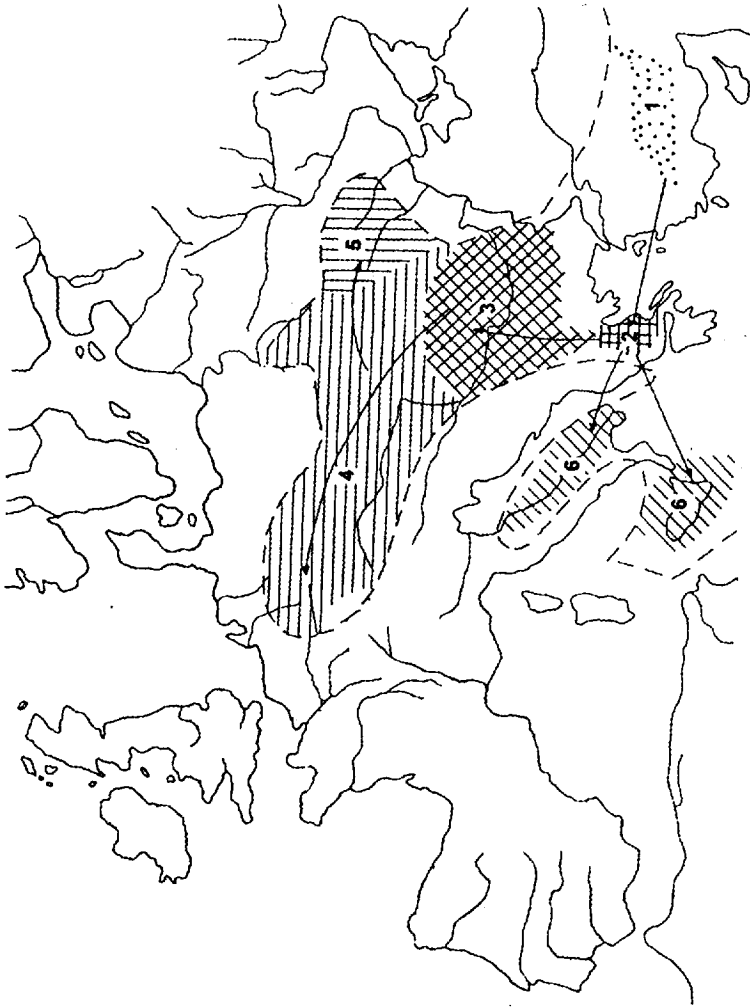


Figure 3. The initial farming dispersal from Anatolia, broadly equivalent to the distribution of Archaic Proto-Indo-European (c. 6500 to 5000 BC) and to the hypothetical Early West Mediterranean Proto-Indo-European.

different stems were an innovation of what Adrados terms IE. III. By the "monothematic" system of Anatolian Adrados intends one single stem per verb, and a lack of temporal and modal stems; a lack in turn of oppositions of stems in the noun to mark masculine/feminine and in the adjective to mark degrees of comparison.

Looking at the archaeological record, and taking into account the criticism of the initial language/farming dispersal hypothesis (Renfrew 1987) by Zvelebil and Zvelebil (1990) and by Sherratt and Sherratt (1988) it is still possible to suggest that there was indeed some movement of a population of farmers from Anatolia to Greece with the coming thither of a farming economy (the Proto-Sesklo culture), and that this process continued to the Balkans with the first neolithic of temperate Europe (the Starcevo-Körös-Cris culture of Yugoslavia-Hungary-Romania) and to the Danube Valley with the Linearbandkeramik culture. It may be possible to include also the Bug-Dniester culture, on the very threshold of the Pontic-Caspian steppe lands. A comparable process took the farming economy to parts of the central Mediterranean with the Impressed Ware culture. The spatial extent of this initial dispersal is seen in fig. 3. The farming areas on this map conform to stage I of the modification by Zvelebil and Zvelebil (1990: 266, fig. 2) of my own original proposal (Renfrew 1987: 160, fig. 7.7), although the position for France could be modified to include the Late Linearbandkeramik of the Paris Basin and the Cardial-Impressed ware culture, as indicated by Zvelebil and Rowley-Conwy (1986: 71, fig.2). It is here suggested that the Balkan-Danubian farming dispersal defines the geographical extent of the dispersal of what we may term Archaic Proto-Indo-European, in the time range beginning c. 6500 BC down to c. 5000 BC. This represents phase I of the Proto-Indo-European succession proposed here. At the same time we may hypothesise that the farming dispersal in the south may have given rise what may be termed the Early West Mediterranean Proto-Indo-European (also phase I).

At this stage it is important to accept that Zvelebil and Zvelebil may prove to be correct that the "demic diffusion" model of Ammerman and Cavalli-Sforza (1973) should not be applied to Europe as a whole. Zvelebil (1986) and others have argued rather for an "Availability Model" of acculturation, where the local mesolithic populations acquired the domesticated species necessary for farming from their neighbours, without significant movement of human population.

Modern genetics can shed some light upon questions of population movements, although at the moment the evidence seems contradictory, and no clear outcome can be reached. Menozzi, Piazza and Cavalli-Sforza (1978) using classical genetic markers from recent populations were able to present maps showing pronounced clines from south-east to north-west which they claimed were the product of neolithic demic diffusion. More recently Richards et al (1996) using evidence from mitochondrial DNA have shown that the greater part of this variability has its origins in much earlier, palaeolithic movements, although they do recognise the genetic traces of some incoming neolithic population from Anatolia, and have been able to support that observation with analyses of ancient DNA from burials in Linearbandkeramik cemeteries. But, perhaps confusingly, Chiki et al. (1998) have now undertaken a study of nuclear DNA markers which supports the initial view of Cavalli-Sforza and his colleagues. The matter is not yet clear. But even if we take the cautious view, following Richards et al. (1996) and Zvelebil (1995), we find general agreement that there was indeed a spread of farming accompanied by some human population which can be summarised in figure 3, which, as noted above, is in part based on the diagram by Zvelebil and Zvelebil (1990: 266, fig. 2: "Stage 1, Introduction of agro-pastoral farming 6500 - 5000 BC").

Beyond the limits of farming shown on this diagram, the picture may be more complicated, and the linguistic process of Indo-Europeanisation may have been one of contact induced language change. The situation up to this point can be summarised in figure 4.

It should be noted that this view conforms with that of Dolgopolsky (1987 and 1993), although not entirely with that of Gamkredlidze and Ivanov (1995). It does significantly harmonise with the opinion of Diakonov (1984: 1990) as we shall further see below. The term "Pre-Proto-Indo-European" is his. As he saw the position in 1990:

"It seems established that grain cultivation and cattle breeding reached Macedonia and Thrace from Asia Minor at some moment in the seventh millennium BC. It is the palaeobotanists and palaeo-zoologists who have the word here; but if this is actually the case, then the Çatal-hüyük proto-urban farmer culture of the eighth-seventh millennia BC in Asia Minor might have been the homeland of pre-Proto-Indo-Europeans *et al.*" (Diakonov 1990, 57)

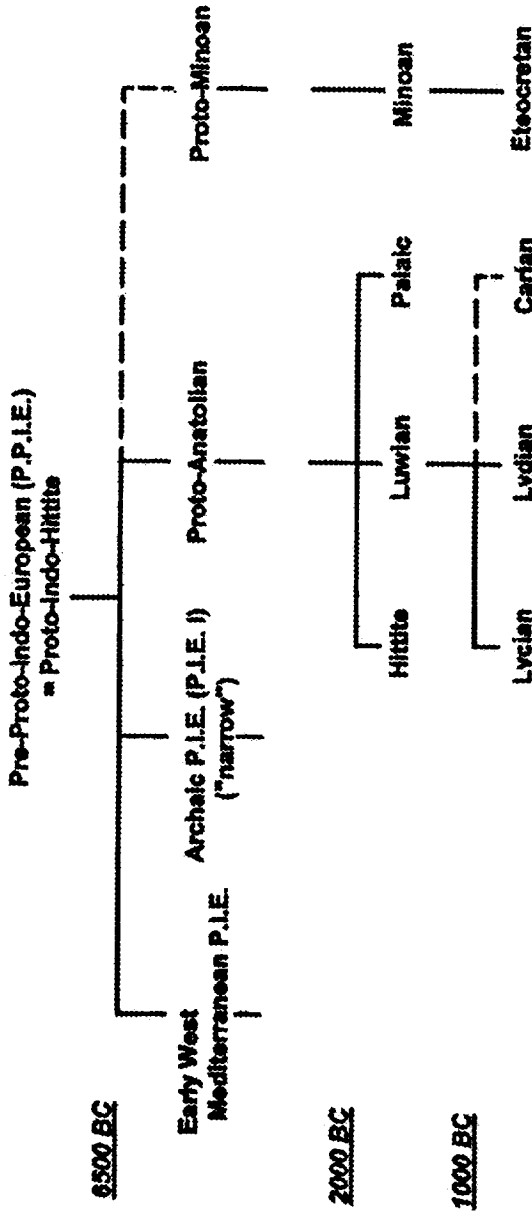


Figure 4. The initial branching of the Indo-European family tree. PPIE and Proto-Anatolian were spoken in Anatolia; the distribution of Archaic Indo-European and Early West Mediterranean Proto-Indo-European is seen in figure 3.

FROM ARCHAIC PROTO-INDO-EUROPEAN (Phase I) TO BALKAN PROTO-INDO-EUROPEAN (Phase II).

The concept of Archaic Proto-Indo-European is an unsurprising one. It refers to the range of dialects or of languages spoken across the south-east and central European region seen in figure 3 after the initial farming spread from Anatolia, starting around 6500 BC. It implies an ancestral Pre-Proto-Indo-European language in Anatolia before the branching episode, and a sister Proto-Anatolian (or Anatolian Proto-Indo-European) in Anatolia after the dispersal, likewise the descendent of Pre-Proto-Indo-European. The status of the Minoan language of Crete, which may be presumed to derive from an early south-west Anatolian ancestor, is not yet clear: we do not know whether that ancestor was Pre-Proto-Indo-European or some quite different "Asiatic" language.

The concept of Balkan Proto-Indo-European, as formulated here, is based in part on the work of Marija Gimbutas, who laid great emphasis (Gimbutas 1982) on the richness, the diversity and the coherence of what she termed the "civilization" of "Old Europe". The term "Old Europe" is perhaps a controversial one, since it had already been employed by Krahe (1954; 1957) in a different sense, and in reference to north and north-western Europe rather than the Balkans. For that reason, other than in discussing the work of Gimbutas, I shall refer to the Balkan later neolithic and copper age rather than to "Old Europe". Most archaeologists these days reserve the term "civilization" to the urban and often literate societies which we first see in Sumer and which are not found in Europe until the time of the Minoan and Mycenaean palaces. And yet the term does have a certain resonance in the Balkans, as the following passage shows:

"A new designation, *Civilization of Old Europe*, is introduced here in recognition of the collective identity and achievement of the different cultural groups of Neolithic-Chalcolithic southeastern Europe. The area it occupied extends from the Aegean and Adriatic, including the islands, as far north as Czechoslovakia, southern Poland and the western Ukraine. Between c. 7000 and c. 3500 BC, the inhabitants of this region developed a much more complex social organization than their western and northern neighbours, forming settlements which often amounted to small townships, inevitably involving craft specialisation and the creation of religious and governmental institutions. They independently discovered the possibility of utilising copper and gold for ornaments and tools . . ." (Gimbutas 1982: 17)

It is to be noted that she includes the early neolithic phase within her definition. But here I am stressing the late neolithic and copper age, and find



that her second map (Gimbutas 1982: 21) showing "Chalcolithic Europe at the climax of development in the fifth millennium BC" has proved a very good basis for the map seen here as figure 5. I would, however, exclude Crete and possibly the Cycladic Islands from the ambit of "Old Europe", since it is clear that Crete at least followed a different cultural tradition and almost certainly maintained its own linguistic autonomy (leading to the Minoan language of the bronze age, attested in the Minoan Linear A tablets). I am uncertain also whether the heel of Italy should be included in what, it is proposed, we may also regard as a linguistic area at this time. The region of north-west Anatolia should be added to "Old Europe" in view of recent work by Turkish archaeologists (see Özdugan 1998).

I accept therefore the broad outlines of the cultural description offered by Gimbutas, although not the specifics of her religious interpretations, and not, of course, her views on Indo-European matters. Indeed it is perhaps ironic that one uses here a concept proposed by Gimbutas who would certainly have been opposed to the suggestion that the society of "Old Europe" should in any sense be regarded as Indo-European. Such a view is, however, a necessary consequence of the Indo-Hittite hypothesis, as Finkelberg (1997: 15) has pointed out :

"Indeed neither Gimbutas herself nor those scholars who support her views seem to be aware of the linguistic evidence as to the Anatolian, that is Indo-European, character of the very societies on the basis of which the picture of the characteristic non-Indo-European society was once drawn . . . new assessment of the same data, which has become possible with the decipherment of the Anatolian languages, has rendered obsolete the very assumptions from which many current theories of the Indo-Europeans, including that of Gimbutas, still proceed." (Finkelberg 1997: 15)

Gimbutas made an important contribution to the archaeology of the prehistoric Balkans, which she knew exceptionally well, and I would like to feel that her identification of the special character of "Old Europe" continues to have resonance and validity. What she would not have accepted, however, is the view implicit here that the societies of the Balkan chalcolithic were transformed without significant change of populations in the successive couple of millennia into societies of a very different kind. But that did not, I would argue, entail the arrival at the end of phase II of immigrants from the steppe with a new and "patriarchal" mind set. There is rich evidence in the succeeding bronze age for the development within Europe of militarism, with an emphasis upon male beauty (Treherne 1995), with an increasing wealth of weapons, and from about 1600 BC with the use of horse-drawn war chariots, and from about 1200 BC with the development of warrior horsemanship. These were indeed later developments, but it seems that they

were the result of fundamental transformations within societies which from a very early date were already Indo-European. The "patriarchal" qualities which Gimbutas recognised in the Indo-European societies of the bronze age were not importations to Europe but the products of a series of developments and transformations with "Old Europe" as their starting point.

The view taken here is that the demise of the south-east European copper age was not brought about by the arrival of Kurgan invaders from the steppe lands to the east, as Gimbutas (1973) consistently argued, but through internal factors which are now difficult to determine. Although this sounds rather a vague formulation, the phenomenon of system collapse is a familiar one in the archaeological record. And although archaeological features relating to the steppe cultures of the Ukraine are indeed subsequently found in Bulgaria and Romania and as far as eastern Hungary (Ecsedy 1979), their appearance is likely to be the consequence of the decline of "Old Europe" rather than its cause. The concept of the "Secondary Products Revolution" (Sherratt 1981) may be of relevance here, but it should be seen as a process of local intensification (with some innovations from the east) rather than as externally motivated. It is indeed the case that the archaeological record in the Balkans, and particularly in the Aegean, is less rich in some senses in the centuries prior to 3000 BC than it was in the fifth millennium. But that is in itself partly a measure of the richness of the record at the height of the copper age.

It is permissible to think of the different parts of this Balkan chalcolithic interaction zone of phase II as involved in a series of peer polity interactions. Among the features of note are the wide distribution of painted pottery (not least the graphite-painted ware of the Gumelnitsa culture of Romania and Karanovo VI in Bulgaria, seen also in north Greece at such sites as Dikilitash and Sitagroi), the whole precocious copper industry of the Balkan copper age, and the figurines and other symbols so comprehensively discussed by Gimbutas. The extent at this time of artefacts made from the marine shell *Spondylus gaederopus* should also be noted. All of these features disappear, following the end of phase II, during the fourth millennium BC.

A clear distinction should be drawn between those lands and communities within the bounds of "Old Europe", as seen on figure 5, and those outside. It should be noted that significant parts of the region of Archaic Proto-Indo-European fall outside the zone of the subsequent Balkan Proto-Indo-European of phase II. These peripheral areas include the extent of the Linearbandkeramik culture, and those Mediterranean coastal areas beyond the heel of Italy manifesting the Impressed Ware culture, and also the steppe lands east of the Cucuteni-Tripolye culture. At this point it should be stressed that the concept of "phase" as used here does not mean a strictly defined chronological period. It implies also a tradition, so that phase I can persist in the peripheral areas while the innovations of phase II make their

appearance in the Balkan linguistic area, leading to the emergence of the new Balkan Proto-Indo-European.

In linguistic terms this Balkan Proto-Indo-European area of phase II is likely to have seen the innovation of a number of features reflecting the polythematism stressed by Adrados (1992), whose absence is characteristic of the Anatolian languages — as discussed above. Beyond this linguistic area, in the further lands of the Archaic Proto-Indo-European which were not incorporated within it, a number of features often considered as archaic or peripheral, are likely to have survived. The familiar, and perhaps sometimes over-emphasised *centum/satem* distinction may perhaps be approached in this way. Most of the languages descended from the Balkan Proto-Indo-European (Albanian, the Indo-Iranian, the Baltic and the Slavic languages and perhaps Armenian) fall within the *satem* category, while Hittite and those of the Archaic zone beyond the Balkans (Latin and the Germanic and Celtic languages) are *centum* languages. So too is Greek, but it may have participated a little less fully in the prehistoric Balkan Sprachbund, standing perhaps closer to the Anatolian languages. The old view that *centum* is western and *satem* is eastern can be replaced by the (perhaps also oversimplified) position that *centum* is early (from Archaic PIE and its contemporaries of phase I) and *satem* is late (derived from the Balkan Proto-Indo-European of phase II).

The position of Tocharian as a *centum* language, with other archaic features, is an interesting one. Its relations with Celtic have been discussed by Schmidt (1988: 194). My suggestion is that there were early agro-pastoral adaptations in the steppe lands, perhaps influenced by the Bug-Dniester economy, and that perhaps during the fifth millennium BC and certainly during the fourth millennium there was an eastward dispersal of a new economy adapted to the steppe lands. It would have been based upon many of the domesticated plant and animal species which originally came to the Archaic Proto-Indo-European zone from Anatolia. But there could have been further additions, including the horse, domesticated as a food resource, and not yet significant either for traction or for cavalry purposes. The site of Dereivka in the Ukraine is one of those showing extensive horse hunting during the fifth millennium BC (but claims for early domestication there have been discredited). This earlier phase of steppe exploitation by early Indo-European speakers, which we may designate Early Steppe Proto-Indo-European, would be an early eastward dispersal, during phase II. It is to be distinguished from the subsequent Indo-Iranian phenomenon of phase III which, as we shall see, finds its origins in the eastern part of the Balkan Proto-Indo-European Sprachbund of phase II. Following the dissolution c. 3000 BC of the Balkan Proto-Indo-European linguistic area it seems likely that there was some further and significant punctuation episode in the Pontic steppe area which motivated the eastern dispersal of early Indo-Iranian into areas where the Early Steppe form of (Proto) Indo-European had already

been spoken for some time. Early Indo-Iranian is often correlated with the Andronovo culture of the Eurasian steppes, seen after 2000 BC (Kuzmina 1994).

It is likely that the desiccated "mummies" of the Tarim Basin in east-central Asia, dating from around 1800 BC, which are widely recognised as the predecessors and possibly the ancestors of the Tocharians (Mair 1998), represent the eastern (and later) extent of the earlier phase of dispersal (i.e. of Early Steppe Proto-Indo-European). It may be traced back to the Archaic Proto-Indo-European of phase I, and developed further in the steppes while the innovations of Phase II were developing in the Balkans.

It will be noted that this proposal of an early eastward dispersal from the Ukraine across the steppes in a sense fulfills the same linguistic purpose as that of Gamkrelidze and Ivanov (1995) when they bring Proto-Indo-European along their long march from eastern Anatolia, moving east and then north along the *east* side of the Caspian Sea, dropping off Tocharian on the way, as it were, and then proceeding in a westward direction across the Pontic steppes to the Ukraine. While sharing their view about the approximate location of the original Proto-Indo-European homeland, I have always felt that this particular migration lacked historical plausibility, and would like to persuade them that my own proposal for Tocharian is more probable. I defer entirely to their linguistic analysis, but would argue that it is better served by the geographical distribution argued above for Archaic Proto-Indo-European, and the ensuing early eastward dispersal across the steppes.

My proposal for the distribution of Archaic Proto-Indo-European (phase I) meets the point raised by Finkelberg (1997, 12) about the existence of similar morphological features (such as medio-passive verbal forms in *-r-*) in such geographically remote languages as Anatolian and Tocharian on the one hand, and Italic and Celtic on the other. She cites the observation of Crossland (1967: 866):

"The peripheral distribution of these features within the early historical region of Indo-European speech strongly suggests that they are archaic. If this is accepted, several features which have generally been regarded as primitive because they are common to Greek and Sanskrit (e.g. the special feminine forms of the participles) will more reasonably be explained as innovations, which developed in a number of dialects which remained in the original continuum and in contact until a late stage, while other dialects, which were at the periphery or had already been carried outside the continuum, were unaffected and preserved the characteristics of an early phase of Indo-European."

The “continuum” of which Crossland speaks here is equivalent to the phase II Balkan Proto-Indo-European linguistic area discussed above. We shall return below to the question of Greek and Sanskrit affinities. The notion of Germanic, Celtic and Italic as “peripheral” seems a natural one when one considers the spatial configuration of figure 5.

These views are in harmony also with the observation by Polomé (1987: 235) that Proto-Germanic left the Indo-European community before the “preterital” development into an imperfect and an aorist, and before the formation of the subjunctive and the future, but after the optative had been constituted into a separate modal form. Again the concept of the “Indo-European community” in Polomé’s sense can readily be interpreted. As argued here, the Indo-European “community” is a movable feast, and during the fifth and fourth millennia BC one central locus was the Balkans.

#### THE LATE PROTO-INDO-EUROPEAN GROUPS: Phase III.

With the end of the south-east European chalcolithic, the “Old Europe” of Gimbutas, it is no longer possible to say that a single restricted geographical area could represent the “Indo-European community” or an Indo-European “continuum”. Certainly such terms can still be used, as we shall see, when one comes to speak of the Indo-Aryan or Indo-Iranian sub-family, with its vast extent. But in Europe as a whole the different communities have become dispersed, and the geography of the continent is such that it is difficult to conceive of the whole of Europe as a linguistic area, in Dixon’s sense. Of course one can still see the spread of material innovations, such as the chariot around 1600 BC, and the slashing sword. So it is not difficult to imagine the wide diffusion also of linguistic innovations operating on the wave model. But henceforth there will be no primary Proto-Indo-European at a notional centre (i.e. the Balkans) with a periphery to west, north and east, where archaic forms survive.

Instead there are various local areas of innovation and evolution, each with its own pattern of development.

#### *Greek*

The fragmentation of the Balkan Proto-Indo-European Sprachbund of phase II around 3000 BC led gradually in the succeeding centuries to the much clearer definition of the languages of the constituent sub-regions. It is probably at this time that Greek finally defined the morphology and much of the lexicon which we recognise in the Mycenaean Greek of the Linear B tablets seventeen centuries later. In the case of Greek there was strong influence from Minoan during the bronze age (probably from 2600 BC

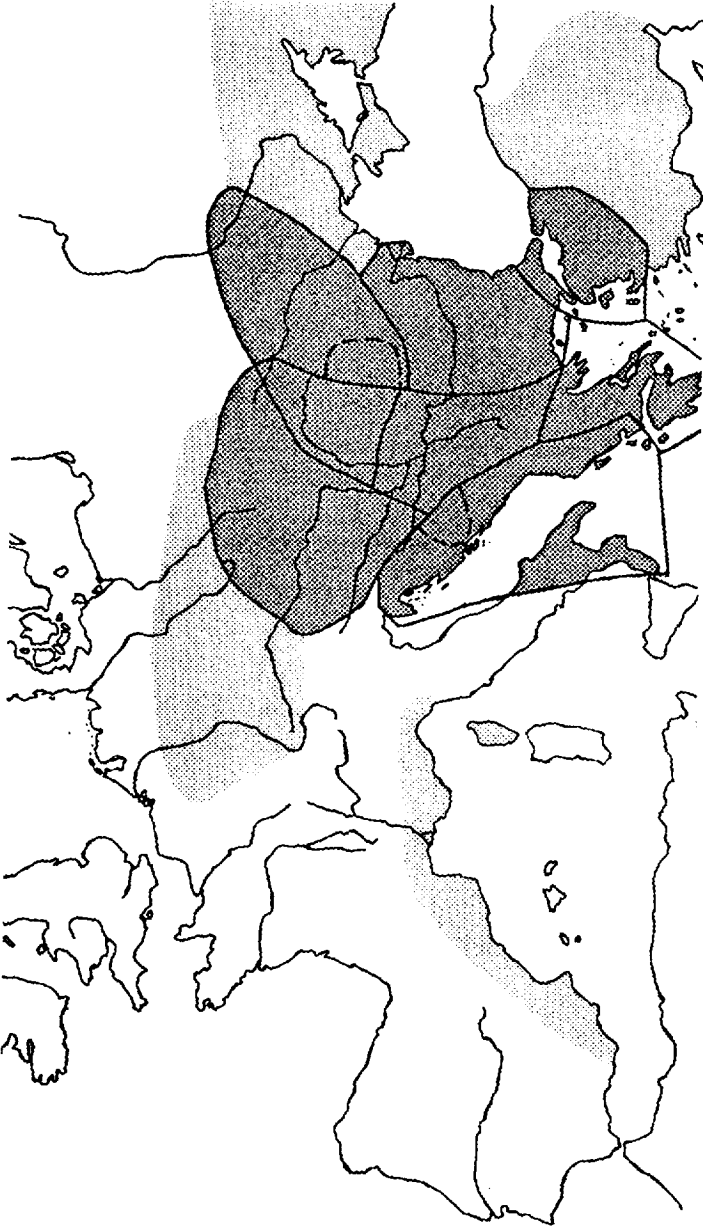


Figure 5. The proposed linguistic convergence area of Balkan Proto-Indo-European of phase II, c. 5000 BC to c. 3000 BC, (dark shading), based upon the regional divisions within the archaeological cultures of chalcolithic 'Old Europe' proposed by Gimbutas (1982, 21, map III). To the north and west the Archaic Proto-Indo-European tradition of phase I persisted and expanded, laying the foundations for Proto-Celtic, Proto-Germanic and Proto-Baltic. To the east, Early Steppe PIE, ancestral to Tocharian.

onwards), and I have argued (Renfrew 1998a) that much of the vocabulary previously regarded by scholars as “pre-Greek” is in fact an adstratum of loanwords from Minoan. There are also loanwords and place names which can be associated with the Luwian language of the eastern Aegean. The earlier (i.e. pre-Greek) Indo-European phase, detected by various scholars since the time of Kretschmer and sometimes termed “Pelasgian” would, in the context of the present discussion, be the Archaic Proto-Indo-European of phase I which came early to Greece, and which no doubt left its traces in both the vocabulary and the toponyms.

In this perspective the formation of Greek would not be the result of any specific “coming” of the Greeks, but nor would it be simply a matter of independent innovation and evolution from (Archaic) Proto-Indo-European within the current territories of Greece, as I had earlier suggested. The proposal above suggests instead a period of convergence for the Proto-Greek language, together with its sister languages within the Balkan Proto-Indo-European linguistic area (phase II), during which there would be shared innovations of a morphological nature as well as of lexicon. It is here that some of the often cited resemblances or affinities between Greek and Sanskrit may have their origin. As we shall see below, it is reasonable to suggest that Proto-Indo-Iranian developed during phase III on the Pontic steppes in a territory that may have included the Ukraine. Until 3,000 BC this ancestor language and Proto-Greek will have been sister languages within the (phase II) prehistoric Balkan Sprachbund, and this association may account for the observed similarities. Certainly, as noted above, Crossland (1967,866) is right to correct the widely-held view that the features common to Greek and Sanskrit might be regarded as “primitive”, residual from a very early phase of development, and rather to see them as innovations among dialects which remained in the original continuum until a late stage, at the end of phase II.

The decisive moment then is not the arrival of a new population in Greece in the early third millennium BC but the effective severing (or diminution) of ties between Greek and its sister languages in the Balkan continuum at the end of phase II which effectively brought Balkan Proto-Indo-European to an end. This position is therefore not far from that of Crossland (1967), although it avoids a migration, a “coming”, and is quite close to that formulated by Chadwick (1963).

*Illyrian, Thracian, Dacian, Phrygian (and perhaps Armenian)*

The other languages (as opposed to language families) which will have moved toward better definition following the conclusion of the Balkan Proto-Indo-European phase are Proto-Illyrian (in the Butmir/Hvar zone), Proto-Thracian in the Karanovo portion of the East Balkan zone, Proto-Dacian in the Gumelnitsa portion of the East Balkan zone, possibly Proto-Messapic in southern Italy, and Proto-Phrygian in Turkish Thrace and

perhaps already in north-west Anatolia. From the linguistic point of view it might be possible to include Proto-Armenian with these, but that is less clear in geographical terms, and the question of Armenian will not be further considered here.

### *Indo-Iranian*

Scythian, documented in the north Pontic area in the first millennium BC, is generally classed as an Indo-Iranian (or Indo-Aryan) language. It was suggested above that the first farming settlement of the steppe lands originated much earlier, towards the end of the initial Archaic Proto-Indo-European dispersal of phase I, and it may be appropriate to think of an Early Steppe Proto-Indo-European occupying quite a wide area of central Eurasia during phase II. This could help account for some of the archaic features later seen in Tocharian. The Indo-Iranian languages however represent a later development, and their immediate ancestor may perhaps find its material counterpart in the (phase II) Cucuteni-Tripolye culture of the Ukraine. As noted above the participation of Proto-Indo-Iranian and Proto-Greek in the Balkan-Proto-Indo-European linguistic area prior to about 3000 BC may serve to explain some of the features common to both. It seems necessary to propose a punctuation episode (in Dixon's sense) beginning in the Pontic steppes shortly after 3000 BC which would underlie the eastward dispersal of Proto-Indo-Iranian in subsequent centuries. The social and economic innovations underlying such an episode are not yet clear — horse drawn chariots were not developed until c. 2000 BC and the horsemanship of mounted warriors was a still later development. It should be noted, however, that this eastward movement can indeed appropriately be equated with aspects of the Kurgan theory of Gimbutas as it applies with respect to areas east of the Ukraine (Mallory 1989; 1997)

The subsequent history of the Indo-Iranian languages is thus a complex one, worked out during phase III: the first sign of Indo-Iranian occurs in the charioteering terms in the letter of Kukkuli from the Land of Mitanni, found in the archive at Boghazköy dating after 1500 BC. This is an indication that some form Indo-Iranian was already spoken at that time (during phase III) on the Iranian plateau. Horse-drawn chariots had only recently been introduced to Anatolia, but they occur earlier, in the Sintashta phase of the Andronovo culture, east of the Urals, after 2300 BC, which has plausible predecessors in the Yamna culture north of the Black Sea after 3500 BC. For Gimbutas the Yamna culture represented the third and most expansive wave of the (Indo-European) Kurgan Tradition. Here, however, it is seen instead as an important component of the *eastward* dispersal of the Proto-Indian-Iranian language following the fragmentation of the Balkan Proto-Indo-European at the end of phase II from which it was in part derived. As noted earlier there was an earlier dispersal (phase I) following the impetus of Archaic Proto-Indo-European representing the earlier Indo-



European tradition in the steppes as ultimately exemplified by Tocharian (although this language is not yet documented before the seventh century AD). If the view advanced here is correct, Proto-Tocharian will have been spoken in these areas some two or three millennia earlier.

It seems likely that the southward dispersal of Indo-Iranian into the Indian sub-continent around 1700 BC, giving rise to the Indic sub-family, unlike the others of which we have been writing, was not one activated primarily by improvements in techniques of food production. This was probably an episode of elite dominance, and it may be that the horse-drawn chariot, which figures so prominently in the *Hymns of the Rig Veda*, played a significant role. It should be noted that this is the only occasion that one has here had to have recourse to the elite dominance model (Renfrew 1990) for language replacement. But the model became increasingly significant during phase III, and there were no doubt many other more localised episodes. A fuller account would have to take note of such geographical outliers as Sinhalese.

In this paper it is not proposed to seek any more precise correlation than this between hypothetical linguistic strata and specific archaeological cultures. The aim rather is to establish a framework for further discussion by defining a basic Proto-Indo-European sequence and defining the approximate geographical extent of each phase. One simple point is that Proto-Indo-Iranian and the Indo-Iranian languages probably emerged rather late in the steppes, after 3500 BC and long after the original steppe dispersal which led later to Tocharian far in the east. Proto-Indo-Iranian in some early form emerged and had a place in the eastern segment (probably the Ukraine) of the Balkan Proto-Indo-European linguistic area of phase II. A supporting argument advanced by Makkay (1987; quoting J. Harmatta) is the continuous and apparently unbroken archaeological, and presumably ethnic, development east of the Dnieper from the earliest Kurgan period to the appearance of the Iranian-speaking Sarmatians.

In the steppe lands it thus still seems appropriate to speak of more than one dispersal. The first (Early Steppe Proto-Indo-European, during phase II) may in part have been aided by the intensive exploitation of the horse as a food resource. (Claims for the very early domestication of the horse at the site of Dereivka in the Ukraine have now been abandoned (Mallory and Adams 1997: 156), and certainly there is no clear evidence that horse-riding was widely used for military purposes until the late second millennium BC). The second dispersal, that of Indo-Iranian during phase III, may have been associated with the innovation of the horse-drawn chariot around 2000 BC. But in general the significance of the horse for the understanding of the distribution of early Indo-European has been much exaggerated (Renfrew 1998b).

*Proto-Baltic and Proto-Slavic*

The discussion has not so far dealt with two further language families whose ancestors will probably have participated in the Balkan Proto-Indo-European phase: the Baltic and the Slavic languages, which are generally regarded as part of the "continuum" discussed above. It may be permissible to equate the coming of Indo-European speech to Lithuania and Latvia with the acquisition of a farming economy by the mesolithic inhabitants of those lands along with an episode of contact-induced language change in the period after 2000 BC (see Zvelebil 1998: 13). The immediate source of both will have been the communities to the south, themselves lying immediately to the north of the Middle Danube segment of the earlier Balkan Proto-Indo-European linguistic area. Without being at this point very specific about details, it seems appropriate to situate Proto-Baltic speech in this area, close to the general ambit of the former Proto-Indo-European linguistic area. The same is true of Proto-Slavic, which might be located a little further to the east, in Poland and the western Ukraine, and thus adjacent to the former Balkan Proto-Indo-European linguistic area.

*Proto-Italic (and Iberia)*

At the moment it does not seem at all clear on archaeological grounds whether the Italic languages derive ultimately from the initial Mediterranean farming dispersal and the Early West Mediterranean Proto-Indo-European of phase I which, as suggested above, might hypothetically be associated with it, or from the Archaic Proto-Indo-European of Central Europe, likewise of phase I, discussed above.

The matter is further complicated by the presence in Italy of Etruscan. Some authors have sought to emphasise the non-Indo-European status of Etruscan (Orel and Starostin 1990), comparable perhaps to that of Basque in north Iberia, while others have argued for an Indo-European status (Adrados 1989). If the former, as has been widely assumed, Etruscan would remain, like Basque and Iberian, as one of the few European languages to survive the initial impact of the farming dispersal and the subsequent contact induced language changes which brought so much of the population of Europe to Indo-European speech: If the latter, Etruscan may reflect many archaic features of the Early West Mediterranean Proto-Indo-European of phase I, while other Italic languages may owe more to interactions with and diffusion from areas north of the Alps.

It should be borne in mind also that Gimbutas included Apulia and the heel of Italy within her "Old Europe" and this region may have formed part of the Balkan Proto-Indo-European linguistic area of Phase II.

This is not the place to discuss the early languages of Iberia. The situation there is complicated by the presence in Roman times of several non-Indo-European languages. But it is worth noting that Anatolian affinities have also been claimed for Tartessian (Villar 1990: 376), which might have

an analogous status to Etruscan if that be considered to fall within the Indo-European family.

*Beyond the Balkan Proto-Indo-European linguistic area: Proto-Germanic and Proto-Celtic*

Issues of linguistic time depth in north-western Europe have been carefully examined by Eric Hamp (e.g. Hamp 1990) and Edgar Polomé (Polomé 1990) and also by W.P.Schmid (1986). Much has been written about the Old-European hydronyms of the area, studied by Krahe (1954: 1957) and identified by him as representing a very early Indo-European linguistic stratum. Such a view might well harmonise here with the notion of an Archaic Proto-Indo-European phase (phase I), earlier than the Balkan Proto-Indo-European linguistic continuum of phase II and certainly older than the formation of Proto-Germanic and Proto-Celtic during phase III. However Vennemann (1994) has recently suggested that the Old European hydronyms might represent an altogether pre-Indo-European linguistic stratum. Peter Forster (pers. comm.) has suggested to me that this might be correlated with the late palaeolithic population spread from southwestern to northern Europe now documented by DNA studies (Torrioni et al. 1998). But Schmid (1987) has counselled caution on this matter, pointing out that a corpus of hydronyms is not a sufficient basis with which to reconstruct a language. This is not a problem to be tackled here, but it is clearly one of great interest.

Hamp has written of linguistic substrata referring, to Meillet's Northwest group, and to his own Northern European group: "we are speaking of an area grouping that reflects, if viewed descriptively and contemporaneously, a *Sprachbund* relation, but if viewed diachronically, the result of contact with a substratum" (Hamp 1990: 295). These are clearly complicated issues here.

The evidence from prehistoric archaeology however sets certain constraints. It is well established that the Linearbandkeramik expansion reached central Germany and central Holland by c. 5000 BC, but that farming was not adopted in north Germany, Denmark and south Sweden until a millennium later (Zvelebil and Rowley-Conwy 1986: 79). This delay in the adoption of a farming population by the mesolithic Ertebølle population is one of the best examples of the "availability model" of Zvelebil and Rowley Conwy. If the working of contact induced language change brought Proto-Indo-European speech along with the farming, then this area makes an excellent candidate for the formation of Proto-Germanic.

In effect there were two farming dispersals potentially relevant for the formation of proto-Celtic. The first involved the adoption of farming (and contact induced language change) by the western neighbours the Linearbandkeramik farmers of central and northern France. The second

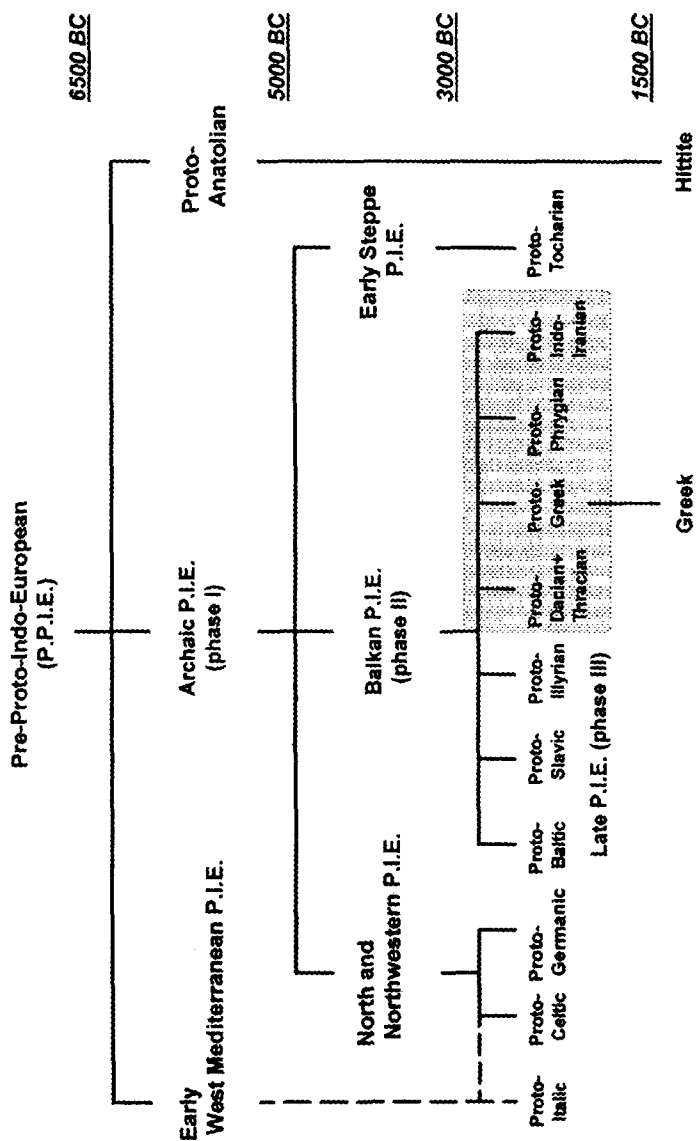


Figure 6. The proposed temporal and spatial relationships of Proto-Indo-European (PPIE; PIE 1; PIE 11; PIE III etc.) in tabular form, simplified.

involved comparable processes in relation to the northern neighbours of the Impressed Ware cultures of southern France. Behind the first would lie the Archaic Proto-Indo-European of the Danubian tradition, and behind the second the Early West Mediterranean Proto-Indo-European. But during phase III there would be contact and convergence between the developing Proto-Celtic and Proto-Germanic. Out of this complex situation would arise some of the particularities of Celtic and Germanic.

The intention here is not to seek to equate particular archaeological cultures with specific linguistic phases. It is, however, pertinent to note that there were episodes in this area where Dixon's convergence principle could well apply, as Hamp has indeed foreseen in the passage quoted above. Recent archaeological research has tended to look on the Corded Ware and Beaker phenomena not as migratory episodes, but rather as phases when networks of social and material exchange were established. This sort of peer polity interaction may well be appropriate to the establishment of a linguistic area, and hence to the development and diffusion of linguistic innovation over a considerable region. It is tempting to see the Corded Ware episode acting in this way, after the development there of the neolithic TRB culture and the early introduction of Proto-Indo-European speech to north Germany and south Scandinavia. Some such processes may well underlie the development of (phase III) Proto-Germanic from the (phase I) Archaic Proto-Indo-European ancestor produced by the first early dispersal. (Phase II is lacking since the area falls outside that of the early Balkan Sprachbund.)

Similar arguments may operate where Proto-Celtic is concerned. The Bell Beaker network was an extensive one, and may have fulfilled an analogous role for Proto-Celtic to that of Corded Ware for Proto-Germanic. The arrival of farming in northern France, signalled by the advent of the Linearbandkeramik culture, and in southern France by that of Impressed Ware may mark the westernmost extension of Archaic Proto-Indo-European (Zvelebil and Rowley-Conwy 1986: 71) although it should be noted that the Iberian situation is a complicated one. Atlantic France, Britain and Ireland may have adopted Proto-Indo-European speech at an early date, through the working of contact induced language change. Certainly the interactions accompanying the Beaker network may have laid the foundations for Proto-Celtic.

Of course these processes did not stop with the neolithic period, and further interactions of different types developed during the ensuing bronze and iron ages. Many of these will have played a role in the linguistic development of Europe

## CONCLUSION

The arguments set out here would lead to the configuration seen in figure 6 for the sequence of the different phases of Proto-Indo-European

following its separation in Anatolia from the parent Pre-Proto-Indo-European, or Indo-Hittite.

What is offered here is a framework, with a palpable time depth, for Proto-Indo-European in place of the "flat" Proto-Indo-European commensurate with the specific homeland and single dispersal view and its later elaborations which generally accompany the hypothesis of a steppe dispersal c. 3500 BC. If the Indo-Hittite hypothesis is accepted and with it an Anatolian origin for early Proto-Indo-European, then the spread of farming is the most obvious mechanism for the first stages (although of course other models cannot be excluded). This then requires a firm chronology, which can in fact readily be supplied by means of radiocarbon dating (although, as always, the claim to be dating linguistic phases rests on the assumption that these may indeed be correlated with archaeological ones).

The assessment of these proposals is primarily a matter for competent linguists. It has not been my purpose here to set out original linguistic arguments, for, as Dixon puts it (1997: 48): "Renfrew . . . has an agile mind but lacks an appropriate training in the methodology of historical linguistics for his work to constitute a linguistically significant contribution to the debate". The aim rather is to set out a framework which would be consistent with the information to be gleaned from the archaeological record and with the Indo-Hittite hypothesis, which linguists might find useful in establishing some sort of historical context for their work. As Mallory 1997, 111) comments, in a recent survey: "If demic diffusion be limited to western Anatolia, the Balkans and Danubian Europe, and this be regarded as a linguistically interactive zone from the 7th to the 4th millennium BC, then it might be possible to envisage the dissemination of cultural terms within this region that are reconstructed to the proto-language".

What is proposed here is hypothetical in a number of respects, some of which I have sought to emphasise. But the idea of a Balkan Proto-Indo-European linguistic area, intermediate chronologically between an early Archaic phase and a late phase of Proto-Indo-European which would see the development of Indo-Iranian to the east and Proto-Celtic and Proto-Germanic to the west and north, finds some support in the evidence for the archaeological interaction zone which Marija Gimbutas herself described and named as "Old Europe". It would be pleasant indeed, although the Indo-Hittite hypothesis may invalidate in some respects her Kurgan theory, if this element of her work found a place in the emerging picture of a Proto-Indo-European phase more complex than has hitherto been supposed.

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