

MERITS AND LIMITS OF RENFREW'S THEORY

By Mario Alinei

(Translation from Italian, with revisions, of Chapter 10 (*Meriti e limiti della teoria di Renfrew*) of *Le origini delle lingue d'Europa. Vol. I. La teoria della continuità* (Origin of European Languages. Vol. 1. The Continuity Theory), Bologna, Il Mulino, 1996. English translation by S. Kostić).

1. The merits of Renfrew's Theory

As we know, Renfrew's main thesis is that there is a coincidence between the Indo-Europeanization of Europe and a part of Asia, and the process of Neolithization. In spite of certain contradictions which seem to me to impair Renfrew's theory, I believe that it represents a fundamental contribution to the history of research, both because of its critical comments and because it makes some fruitful theoretic suggestions.

1.1. Archaeological and anthropological observations

The fact that Renfrew's theory is the first modern theory to show, with incontrovertible arguments, the necessity to raise the date of the IE diaspora would be sufficient in itself to secure a distinctive place for it. But his contribution goes much beyond that.

Renfrew was the first scholar to point out the circularity in the interdisciplinary relationship between archaeology and linguistics, the circularity which had contributed to the crystallization of the traditional theory. Archaeology started from the assumption that the linguistic conclusions regarding the IE prehistory were reliable and based itself on them in elaborating its own ideas. Linguistics relied on archaeological interpretations of IE, considering them independent and objective, although they were derived from linguistics [Renfrew 1987, 18-19]. This critical observation is of great importance because it provides the only possible explanation of the mystery of statements like "as it has been demonstrated by archaeology" or "as it has been demonstrated by linguistics", which are totally unfounded, but which have found their way into innumerable manuals of historical linguistics and archaeology.

Renfrew was, together with the French archaeologist Demoule, one of the first scholars to point out the importance of the Aryan and racist ideology in the formation of the traditional theory and to clarify the direct relationship between the period of the first formulation of racism at the end of the 19th century and the archaeological and linguistic theories which were to be fully elaborated by the Nazi archaeologist Gustav Kossinna. Besides, he has shown that even if the premises of Kossinna's theory (i.e. racial superiority, capacity for conquest and expansion, etc.) are accepted, it will not be clear why the IEs "should choose that particular moment to break out", or, in more figurative terms, "why these Indo-Europeans had hidden their light under a bushel for so long upon the steppes of south Russia, before setting out to fulfil their fateful destiny" [1987, 94].

Renfrew was also the first scholar to show that the archaeological, anthropological and cultural premises of the traditional theory are still those of the late 19th and early 20th century [ibidem, 41] and to insist on their re-assessment [ibidem, 18]. Of fundamental value in this respect is Renfrew's criticism of the historical role attributed to pastoralism, which is still interpreted, as in the 19th century archaeology and anthropology, as an intermediate stage between hunting and agriculture. According to the modern view, pastoralism depends on agriculture for its existence, it is born from its matrix, and it must continue to co-exist with it in order to establish itself [ibidem, 83]. It was actually only in the late European Neolithic that the "secondary revolution of products" [Sherratt 1981] took place, with innovations such as the use of milk products and animal traction. It is therefore probable that transhumation developed only in that period. Nomadic pastoralism develops either where agriculture does not produce satisfactory results, or, more frequently, on its

margins [Renfrew 1987, 96]. The attainment of a higher level of nomadic pastoralism in the late Neolithic is therefore seen as the filling of a previously empty ecological niche and as a corollary of the existing economy, and not as a substitute for it [ibidem]. In any case, it is a local development, and not the consequence of the arrival of new groups of population. The Kurgan culture itself, to which such great importance is attached in Gimbutas's theory, is seen as a local development on the margins of primary agricultural cultures (ibidem, 97). It should be emphasised that these are not assertions of a controversial archaeologist, but fruits of archaeological research which Indo-European research should accept without hesitation.

Although Renfrew is wrong in seeing the Neolithic cultures of Cucuteni and Tripolye as the primary cultures of Kurgan, and in his consequent assumption that the language of the bearers of the Kurgan culture must have been the same as that of Cucuteni and Tripolye (ibidem, 97), his point, methodologically, remains of fundamental importance. As I have argued in the second volume of this work, the Tripolye culture must have been Slavic, whereas the Kurgan pastoral culture – as well as its predecessor Serechnyi Stog - must be seen as *Turkic* local developments on the margin of the Central Asiatic *Turkic* Neolithic cultures, in the ecologically favourable steppe area.

As regards the traditional linguistics, which has always looked to migrations for the principal cause of change, Renfrew finally brings into the horizon of IE research the interest of processual archaeology in internal, ecological, social and economic processes, which explain, according to the New Archaeology, the greater part of prehistoric developments [ibidem, 3-5, 29]. If there were large-scale movements of ancient peoples, so extensive as to establish a completely new linguistic pattern, archaeology should be able to reveal them [ibidem, 11]. Besides, even if the hypothesis of large-scale movements of populations is accepted, it is not explained why "the speakers of all these languages should be wandering around Europe and western Asia so tirelessly, in a series of migrations, thus setting up the pattern of different languages which we see today" [ibidem, 75].

From that point of view the Kurgan hypothesis is obviously very vulnerable: the similarity of the mounds of the Beaker Folk in western Europe to the mounds of the Kurgans, supposed to prove the IE wave, demonstrates absolutely nothing since collective burial mounds had existed for two thousand years before then. The great cultural complexes of that period (Corded Pottery, *Trichterbecher* (TRB), Funnel Beaker, Battle-Axe) represent local processes, the interaction of which contributed to the territorial expansion of the new ideologies. Nothing indicates ethnic and linguistic changes [ibidem, 93]. This view can be fully endorsed by the TC: the cultures of this period represent already differentiated IE groups and their collocation within this framework represents an enormous advance not only for linguistics, but also for archaeology.

Also interesting is the discussion of the principle adopted by the traditional IE theory and the archaeology which inspired it, beginning with Kossinna, according to which the IEs can be identified by a particular type of pottery (in the case of Kossinna, the corded ware, supposed to have spread from a centre in Germany) [ibidem, 15]. Other syntheses, such as those by Childe himself (later refuted by the author, but taken over by Gimbutas), by Bosch-Gimpera, Giacomo Devoto, Hugh Hencken and others [ibidem, 17] also followed this tradition in trying to identify a hypothetical material culture characteristic of the IEs [ibidem, 17]. Renfrew justly points out that there are many other things apart from pottery or manner of burial behind ethnic identity. Differentiations of this type are too late in comparison with such primordial phenomena as ethnic differentiation.

1.2. Linguistic observations

Renfrew's theory has considerable merits on the linguistic level, too. First of all, Renfrew has made some very important critical observations concerning linguistic palaeontology and he has shown that many of the erroneous conclusions of the traditional theory should be attributed to its misleading evidence [ibidem, 18, 75]. In particular, Renfrew has justly observed that each

innovation is usually diffused under its name, so that it is perfectly legitimate to take borrowings into account every time new technologies, such as copper, bronze, the cart, the wheel, are introduced in Europe [ibidem, 80]. Renfrew's discussion of this problem shows that he is much better acquainted with linguistic phenomenology than Mallory and Gimbutas.

Renfrew also stresses the importance of the role of social factors in linguistic change [ibidem, 117], which is almost always grossly undervalued or even ignored by the traditional theory. Archaeology, even when it lacks linguistic evidence, can furnish first-class documentation on the social organization of prehistoric communities, and, consequently, it can integrate sociolinguistic and archaeological data [ibidem, 113].

2. Critique of Renfrew's invasionist theory

If one of Renfrew's chief merits is the demolition of the model of the pastoral-warrior IE invasion in the metal-working ages, the model of peaceful invasion coinciding with the Neolithization of Europe and Asia, which he suggests in its stead, is also liable to criticism. My basic objections are the following.

(I) First of all, it is open to the same kind of anti-invasionist criticism which he himself levels against the traditional theory. As we shall see shortly, it was precisely the New Archaeology which has put forward the hypothesis, based on much more solid arguments, that the Neolithization of Europe was at least partly a result of the diffusion of ideas and of processes of local acculturation, and not of colonization by alien invaders.

(II) The traditional theory postulates at least some sort of a coherent cause and effect relationship between the blitz-invasion by superior warrior shepherds on the one hand, and the total disappearance of the indigenous peoples on the other hand. Much less logical is the cause and effect sequence suggested by Renfrew, according to which the same effects were caused by the representatives of a fundamentally pacific farming culture. The Neolithic Revolution was carried out by missionaries, promoters, colonizers, or whatever one wishes to call them, whose message took root in the autochthonous ambience, and not by merciless colonialists who perpetrated genocide or enslavement and the acculturation of the indigenous population. Besides, as we shall see, archaeology itself finds no trace of a Neolithic invasion. To make a phenomenon of such revolutionary momentum as the arrival of a new economy coincide with the introduction of a new culture is a legitimate and attractive hypothesis, but it becomes very costly if the coincidence must imply the total disappearance of advanced populations like those of the Mesolithic, with all their languages. No modern economic revolution, neither that which heralded the end of feudalism in the Low Countries and England, nor the English industrial revolution, nor again the French or Russian revolution, was caused by invasions or ethnic changes, and none of them has had linguistic consequences apart from merely cultural ones. In short, the scenario of the traditional catastrophe is discarded to make place for a new type of catastrophe, which, being associated with a pacific economy, is even less convincing.

(III) If then one wanted to admit, in spite of these difficulties, that the representatives of the new economy had actually caused, by the novelty of their economy and culture, the disappearance of the autochthonous cultures and languages, the question must be asked why there should be language replacement in the entire northern Europe, too, i.e. in the area where specialized Mesolithic fishing and hunting cultures were the most prosperous and where they survived until the metal-working ages, before they allowed themselves to be integrated into the new agricultural economy? More specifically, why is there not a single trace of the non-Scandinavian or non-Uralic languages in Scandinavia, the par excellence area of specialized Mesolithic hunting and fishing? I shall return to this point, which seems to me to be of fundamental value for a theory of Scandinavian continuity, completely parallel with Uralic continuity, in the last chapters of this book and in the second volume.

To summarise, the difficulties of Renfrew's theory are precisely those which Renfrew himself has criticised so tellingly. This is so obvious that we wonder what may have induced him

to choose another version of the theory of discontinuity. In the following chapter I shall try to give an answer to this question. For the moment, I shall discuss in greater detail the position of the most recent archaeology in relation to the problem of the Neolithization of Europe, i.e. of its transition to agriculture. We shall see that there are other options in addition to that chosen by Renfrew.

3. From the Mesolithic to the Neolithic: break or continuity?

As we have seen, the Mesolithic is not distinguished by striking specific traits in archaeological periodization: it is actually defined as the age of the "middle" Stone Age, halfway between the "early" Stone Age, or Palaeolithic, and the "new" Stone Age, or the Neolithic. Besides, it is the last prehistoric period recognized as such [Rowley-Conwy 1986, 17], and its origin seems to be vitiated by errors of assessment. The first and chief student of European Mesolithic, Grahame Clark, who has also recounted the history of the emergence and development of that concept, concludes that it was defined by the so-called "hiatus theory", based first on the belief that there were few archaeological traces of this period (occupation gap), and later also on the belief that the cultures of that period were of minor importance (cultural gap). The theory of discontinuity, according to Clark, "can be shown to have warped much of our thinking" [quoted in Rowley-Conwy 1986, 17]. There were additional difficulties later: the introduction of the term Epipalaeolithic, used to designate the end of the Palaeolithic and superimposed ambiguously upon the Mesolithic; and the occasional use of the term Neolithic to indicate not only the new economy, but also those hunting cultures which are still Mesolithic, but which already use pottery.

What is then the modern meaning of the concept of the Mesolithic? From the chronological point of view, it is easy to describe, since it coincides with the end of the glaciation in Europe and the beginning of the postglacial period, i.e. of the climatic conditions of the Holocene. In this sense, it is possible to argue that the Mesolithic is the first archaeological period of the Holocene, which began about 11,000 years ago, and comprised the last European fishing and hunting cultures, highly specialized and extremely productive particularly in the area of northern Europe, recently freed from ice. In fact, agriculture emerges as the dominant economy immediately after the Mesolithic cultures.

Nevertheless, the problem of the Mesolithic is not in its chronology, but in the evaluation of its role. Therefore, some fundamental questions have to be asked: is the Mesolithic merely a period of highly specialized postglacial fishers, or something much more? Is it simply a continuation of the Upper Palaeolithic (Gamble), somewhat more advanced in some western parts of northern Europe, but static in central Europe (Vencl), or a period of major innovations leading to the development of agriculture and facilitating its adoption? What was the role of the Mesolithic in the transition to agriculture: a passive role in face of an invasion and colonization, or an active role, involving contribution and collaboration?

Seen within the framework of the current archaeological research, the transition from the Mesolithic to agriculture can be explained in two radically different ways: by giving western Asia, as the fountainhead of agriculture, the chief role in this transition, effected in the course of the colonization of Europe, or by assigning that role to Europe, and assuming that the transition was the result of a supposed process of adoption and/or active development by European Mesolithic hunters and gatherers. According to the former view, the cultivators migrated and colonized Europe, and the European hunters and gatherers were mere survivors, destined to be absorbed by the newcomers; according to the latter view, the cultivators and the hunters-gatherers were the same persons, and agriculture emerged as a result of an active process during the transition from one economy to another. In the former case, all the innovative developments took place in western Asia, and the role of the Mesolithic hunters and gatherers of Europe was limited to that of assisting the inexorable advance of the oriental Neolithic civilization. In the latter case, the autochthonous hunters and gatherers were the principal factors responsible for the transition, which was carried out with an equipment of the do it yourself type, adapted to intensify the practices of the management of groups of animals, practices which, according to this view, can be traced back to the Upper

Palaeolithic and which had been experimented with in connection with all animals, from snails to sheep, well before the Neolithic [Zvelebil 1986b, 175].

At the centre of this controversy concerning the Mesolithic and its role in the transition to the Neolithic, which is still going on, is the thought of an entire archaeological school, represented by scholars like Clarke, Ashbee, Dennell and Price [Vencl 1986, 43], which maintains that the Mesolithic hunters and gatherers made a fundamental contribution to the process leading to the emergence of agriculture in Europe, and which arrives at the conclusion that there was not a break, but only, or at least predominantly, continuity. Typical of this school is the assertion: "In virtually every area of Europe, the transition from Mesolithic foragers to Neolithic farming witnesses distinct aspects of continuity in human adaptation... The end of the Mesolithic is not brought about by an advance of invading farmers but rather reflects a period of readaptation and adjustment to changing environment and new subsistence practices, often within the context of existing societies" [Price 1983, 771].

It is quite clear that the new view of the Mesolithic is a typically processual one, which opposes continuity and processes of local development to the hypothesis of an invasion from the east. As an archaeologist has said: "continuity, rather than contrast, is the fashion of the day" [Zvelebil 1986b, 168].

The study of continuity, naturally, leads to two different results depending on the context. Where continuity is an already existing phenomenon, i.e. in the substantially unitary long periods of prehistory (the Palaeolithic, the Neolithic, the metal-working ages) the tendency is to find elements which anticipate the next period and prepare the transition to it. Where discontinuity is implicit, i.e. in the transition from one period to another, the tendency is to look for continuity and downgrade the disruptive elements.

As regards the transition from the Upper Palaeolithic to the Mesolithic, for example, research has brought to light numerous traits which link these two periods in spite of their discontinuity. The technological ones include the bow and arrows, harpoons and tools made of polished stone. Among the traits concerning the use of resources are fishing, gathering of sea food, and, possibly, domestication of the dog. The organizational traits include logistic mobility, storage of products for later use, tendency towards sedentarism and specialization of labour.

As regards the Mesolithic, the traditional view, which interprets the postglacial socioeconomic developments as a later elaboration of patterns already emergent in the Upper Palaeolithic and postulates a neat break at the beginning of the Neolithic, is opposed, as I have already said, by scholars who see the postglacial period as an age of such fundamental innovations that it led inevitably to the agriculture of the Neolithic [Zvelebil 1986b, 168].

4. The Neolithization of Europe: Zvelebil's theory

Confronted with the two opposed theories of the Mesolithic - either exclusively indigenous development or exclusively external colonization - one may naturally ask: is it really necessary to adopt one of these two models? Would it not be possible to take a less clear-cut view, without abandoning completely the model of colonization, and also leaving place for local processes [Zvelebil 1986b, 167-168]?

Among the members of the innovating school, Marek Zvelebil stands out especially because he advocates an intermediary position of this type, which seems to me particularly congruent with facts and free from apriorism.

Zvelebil directs his criticisms primarily against the traditional invasionist approach, which is in his view impaired by too reductive a view of the hunting-gathering cultures. Actually, Zvelebil, too, shares what is today, as mentioned in the preceding chapter, the common view of archaeologists and historians of archaeology: the identification of colonialism as the source of many ideas, ideological rather than scientific, which persist in archaeology to the present day. To him, the endurance "of prejudices towards recent hunters-gatherers [is] itself a consequence of the European colonial expansion" [Zvelebil 1986b, 6-8].

This constant emphasis on ideology as an explanatory factor is in my view one of the major merits of modern archaeology. According to Zvelebil, it was only with the publication of *Man the Hunter* [Lee and De Vore 1968], which introduced the conception of the affluent forager, that an approach not vitiated by ideology was adopted in the study of the hunter-gatherers' cultures. The discovery of the economic prosperity of the forager of the Upper Palaeolithic and the Mesolithic led to the discovery of his social complexity and to the emergence of the notion of the complex forager, and that in turn was followed by the resumption - after a long interval - of comparative studies of ethnographic and archaeological cultures of hunters and gatherers. These studies gave rise to a new conception of the hunting-gathering cultures, the basic traits of which are: 1) a remarkable degree of sedentarism; 2) increase of demographic density; 3) socioeconomic differentiation with consequent division of labour; 4) development of trade; 5) emergence of war; and 6) intensification of social and ritual life [Zvelebil 1986b, 8]. In other words, traits previously attributed solely to the revolutionary cultivators of the Neolithic were now recognized as existing also in the immediately preceding societies of hunters and gatherers. Seen in this light, the postglacial hunters and gatherers represent, needless to say, the necessary "prelude" to the cultivators.

Zvelebil then makes some lucid comments on certain factors of innovation which emerge as a result of the great ecological changes at the end of the glacial: the awareness of the seasonal character of resources, the risk and effort involved in the exploitation of resources within such seasonal limits, the development of important technical innovations for the more efficient use of the time available for exploitation. The new implements for fishing (ditches, traps, dams and nets) can be in fact seen as means of saving time and ensuring storage [Zvelebil 1986b, 169-170], serving the same purpose as composite tools (microliths set into wooden or bone handles) [ibidem, 168-169]. I mention these details because we shall need them in the final part of the book for a new interpretation of the linguistic material related to these Mesolithic innovations.

The relationship between the increase of sedentarism and the increase of population is also important. Among the modern ethnographic populations, the demographic increase of fishers, leading a sedentary life and using storage of resources typical of the Mesolithic, is equal to that of the simple farming populations, and it is much higher than the increase in the hunting-gathering societies [ibidem, 172].

Recent research has identified some Mesolithic technical innovations which were unknown in the Upper Palaeolithic, but are common in the Neolithic: new flint working techniques, some types of bone and antler tools such as axes and sickles; nets, fish traps and other sophisticated implements for fishing and hunting, pottery, means of transportation like sledges and skis, the majority of objects of adornment, new burial rites, etc. [ibidem, 168].

Other scholars (Higgs) have identified pre-Neolithic forms of managing herds of ungulates, which show that it may be possible to trace the beginnings of the techniques of domestication to the early postglacial, and even to the late glacial, in geographical areas which include the Mediterranean and parts of temperate Europe [Zvelebil 1986a, 9; cf. Forni 1990].

Accordingly, European agropastoralism might represent a continuation of tendencies which asserted themselves in the Mesolithic. This is particularly apparent in south-eastern Europe and in the western Mediterranean, where it assumed the form of a replica and development of the already existing systems of the exploitation of resources [Zvelebil 1986b, 181].

The transition to agriculture took place against this complex and innovative background. Zvelebil distinguishes a number of approaches to this problem, which I shall reduce, for convenience sake, to the two already mentioned opposite views: the traditional invasionist model, and the innovative model based on the principle of continuity.

The traditional diffusionist and invasionist model is based on the idea of the absolute superiority of agriculture, as an economic system, to hunting and gathering, and, consequently, of the invaders to the natives. The adoption of agriculture is seen as a more or less automatic process, followed, after the conversion, by the colonization of new areas by the neo-agricultural

communities, and by the dislocation and assimilation of the surviving groups of hunters [Zvelebil 1986a, 8-9].

Zvelebil is critical of this model of the Neolithization of Europe, and particularly of that based on the so-called "wave of advance", proposed by Ammermann and Cavalli Sforza [Ammermann and Cavalli Sforza 1973; 1984], which has inspired Renfrew, too. According to these authors, the wave-like spread of agriculture is compatible with the real dates of the diffusion of agriculture as established by archaeology, as well as with the patterns of genetic variation of the European population, as established by geogeneticists. Zvelebil considers this as a more sophisticated variant of the traditional model in so much as it assumes a uniform diffusion of agriculture in Europe from its centre in western Asia, with a gradual colonization of areas increasingly remote from the original source of diffusion. His objection is that this model is too reductive as regards the hunting-gathering cultures and that it assumes a "normal" (instead of "exceptional") discontinuity between the Mesolithic and the Neolithic, in spite of the fact that there are many evident forms of overlapping and continuity between the cultures belonging to these periods [Zvelebil 1986a, 10-11].

It may be useful to enumerate at this point both the responses of the supporters of the invasionist model and Zvelebil's counter-arguments [Zvelebil 1986b, 177-178].

(1) The wave of advance of agriculture clearly spread from eastern Mediterranean northwards and westwards, which proves the eastern provenance of the colonizers.

Counter-argument: the diffusion might have been a diffusion of new traits of economy, not necessarily of people.

(2) There are notable similarities between the material culture of the cultivators from western Asia and that of European cultivators, particularly in pottery and stone technology.

Counter-argument: there are equally numerous proofs of continuity between the material culture of the European Mesolithic and the Neolithic. One thing does not exclude the other.

(3) It may be expected that the superior numbers of the farming populations led to the assimilation and disappearance of the less numerous autochthonous communities.

Counter-argument: the Neolithic demographic potential has been over-estimated, and that of the Mesolithic under-estimated.

Zvelebil adds to these three counter-arguments two arguments of a different kind, but in my opinion of considerable weight.

(4) It has been established that the wild ancestors of some species domesticated later were present in the Mediterranean, too, so that it is possible that there was a local development of the process of domestication.

(5) There is no proof of demographic pressure in western Asia which might have driven colonizers to migrate, and there is little proof of early Neolithic settlements in western Turkey, supposed to be the base for the colonization of Europe [ibidem, 178].

Elaborating further his model, Zvelebil [ibidem, 178-179] distinguishes four types of habitats in Europe.

(A) Areas ideal for agriculture and not suitable for hunting and gathering: the Thessalian plain, the Tavoliere in Puglia, the *loess* regions of central Europe, the basins of great rivers such as the Danube, the Rhine or the Seine. It is not by chance that these were the first areas to be cultivated.

(B) Areas suitable for both farmers and hunters-gatherers: river valleys and large coastal plains. These areas witnessed the introduction of agriculture immediately afterwards.

(C) Areas very suitable for hunting and gathering, but rather unsuitable for cultivation: the coastal zones of Scotland, estuaries, river gorges and lakes. They were the last to adopt agriculture in the initial period.

(D) High and mountainous zones, which were cultivated or exploited for stockbreeding only in the stage of the secondary expansion of agriculture, in the late Neolithic.

Hence Zvelebil's important conclusion: *the expansion of agriculture did not follow the wave model, but had a mosaic-like pattern.*

Natural factors, on the other hand, do not explain everything: the boundary of agriculture remained stationary in the north European plain for a long time, as it might be expected, but there was a long delay in the adoption of the new economy even in some areas suitable for cultivation, like the river valleys and the terraces of Ukraine and the southern Urals. Variations of this type can be explained only by assuming that they were caused by local factors, such as the favourable socioeconomic conditions of the local hunters and gatherers [ibidem, 180].

The originality of this analysis consists in the new general interpretation of the Mesolithic and Neolithic economy: the highly specialized Mesolithic hunting and gathering and the Neolithic agriculture are no longer seen as "stages" of an evolutive sequence with a predictable outcome, but as specialized systems of exploitation, alternative and parallel, and both conditioned by the varying ecological factors prevailing in the difficult post-glacial conditions: in western Asia there was genetic domestication of mutually complementary animal and plant species, while moderate Europe saw only an advance in technological specialization and intensification of exploitation, without any form of animal or plant domestication [ibidem, 173-174]. In western Asia there were both wild cereals and gregarious ungulates, amenable to domestication; in Europe, on the other hand, there lived red deer, roe deer, the stag, the elk, the gazelle, none of them responsive to domestication. The only European animals which could be domesticated were the wild pig, the wild ox and the goat. Hence the hypothesis of a limited domestication of the goat, bovine cattle and the pig in eastern Europe and on the southern fringes of central Asia. The picture is not different as regards the domestication of plants.

On the basis of this, Zvelebil argues that agriculture could not have developed in temperate Europe. Besides, agriculture had a decidedly minor role in the European areas where the hunting-gathering economy attained a high level of productivity (i.e. along the Atlantic coast and the ice cap, as well as in the valleys of great rivers and lakes - all habitats rich in aquatic resources), because the level of prosperity achieved by the Mesolithic economy favoured the continuation of specialized hunting and gathering [ibidem, 181]. Nevertheless, there were always contacts and mutual influences between the two systems, since the boundary between the two areas was not closed, but "porous" [ibidem 182-183].

To conclude, Zvelebil [ibidem 175] advocates a regional model of transition to agriculture, which combines and integrates the invasionist and evolutionist approaches, and leaves the determination of their respective shares to the interpretations of objective archaeological data. As a result, we have the following situation.

(I) In the eastern Mediterranean (Greece), in the Balkans and central Europe archaeological evidence indicates that the introduction of agriculture was a rapid process developing on the foundation of a complete "package" of cultivated plants and domesticated animals, with the appertaining techniques of exploitation, introduced from the outside. Consequently, the Neolithic cultures of Tripolye in Ukraine, the Linear Bandkeramik (LBK) in central Europe, the Funnel-Beaker culture (TRB) of Scandinavia, the Impressed Ware culture of southern Italy are seen as intrusive cultures and products of colonization [ibidem, 184]. The important consequences of this conclusion will be discussed in the second volume.

(II) The archaeological documentation for the second group of areas shows that a rapid process of local adoption took place, i.e. that agriculture was taken up by the indigenous populations in a local Mesolithic context. The most likely area in this group is the western Mediterranean, where agriculture appeared too soon to be a result of migration [ibidem, 175, 184].

(III) In the two lateral areas, on the shores of the Atlantic and in eastern Europe, archaeological evidence indicates a much slower process of local adoption, protracted over millennia. We shall discuss the consequences of this phenomenon, too, in the second volume.

Besides, in the areas where archaeological evidence indicates colonization, the most likely explanation is not a wave-like invasion, but a limited, regional immigration, followed by the adoption of agriculture by local hunters and gatherers [ibidem, 185]. There is in fact much more archaeological evidence of population movements in temperate Europe and Asia during the late

Neolithic, Eneolithic and the Bronze Age than at the beginning of the Neolithic. The processes of proper colonization seem to begin only after the initial period [ibidem, 186].

To sum up, the Mesolithic can no longer be considered as a lull, as maintained by the traditional theory, nor, as the most radical innovating school asserts, as an epoch which saw a uniform and smooth development of the Neolithic from a Mesolithic base [ibidem, 167]. It is rather a period of transition, which lasted much longer than it was thought previously and which was of an extremely complex nature. The hunters-gatherers of the Mesolithic adopted cultivation selectively and not indiscriminately and not everywhere.

Accordingly, the general principle of continuity remains valid: the Mesolithic "prepared" the Neolithic, just as the Upper Palaeolithic "prepared" the Mesolithic. But Zvelebil also admits, and that seems to me the principal contribution of his theory, the possibility of intrusive ethnic contributions, limited to certain areas, which were, it should be nevertheless supposed, re-absorbed by autochthonous populations. In the second volume I shall show in detail how this model can serve to shed light on an entire series of linguistic phenomena.

5. Assumption of "Language Replacement" in the traditional theory and in Renfrew's theory

Zvelebil's model seems to me to be superior to the exclusively migratory model of Neolithization, adopted also by Renfrew; it is also more plausible than the model based on a radical conception of the role of the autochthonous population. It does not reject a priori either migration or autonomous development, and it makes use of both processes only when this is warranted by archaeological documentation and a careful study of evidence.

The defect of Renfrew's theory consists, in short, in its catastrophism, which is in strong opposition to the peaceful character inherent in a Neolithic invasion.

We can ask ourselves again the previous question: why Renfrew, who is such a careful interpreter of archaeological evidence, has allowed himself to be convinced by such a radical thesis? How do we explain the fact that an archaeologist who has made such a fundamental contribution to the "processual" reinterpretation of prehistory and who takes great pains to assess all the local evidence, has accepted the least processual scenario that exists, that of the total replacement of the language and culture of the entire autochthonous population of Europe and a part of Asia, in what would have been the most comprehensive process of acculturation ever seen in the history of mankind?

To my view, there can be only one reply to these questions: Renfrew has fallen into the trap of the circularity of relations between archaeology and linguistics, first observed by himself, by borrowing from traditional linguistics the idea, which he believed demonstrated, of total language replacement, i.e. of the existence of a "pre-IE", totally different from IE. Consequently, he did not consider that this "pre-IE" may well have been a "peri-IE" and that it may represent a normal ethnic, geocultural and geolinguistic discontinuity in relation to IE and other linguistic phyla. If Renfrew had not believed into this assumption of the traditional theory, he would have had to conclude that the only possible theory of the origin of European languages is the Theory of Continuity.

In the following chapter I shall try to show what may have contributed to the origin of this theory of total ethno-linguistic discontinuity, on which the traditional IE theory is based and which Renfrew has mistakenly taken as proven truth.

BIBLIOGRAPHY

- Ammerman A.J., Cavalli Sforza L.L. (1973), "A population model for the diffusion of early farming in Europe", in Renfrew C. (ed.), *The explanation of the culture change*, Duckworth, London, pp. 343-57.
- Ammerman, A.J. , Cavalli-Sforza, L.L. (1984), *The Neolithic transition and the genetics of population in Europe*, Princeton University Press, Princeton, N.J.
- Forni, Gaetano (1990), *Gli albori dell'agricoltura. Origine ed evoluzione fino agli Etruschi ed Italici*, Reda, Roma.
- Lee, Richard B. & De Vore, Irven (eds.) (1968), *Man the Hunter*, Aldine De Gruyter, New York.
- Price, T. Douglas (1983), "The European Mesolithic", in «American Antiquity», 48, pp. 761-778.
- Renfrew, Colin (1987), *Archaeology and Language. The Puzzle of Indo-European Origins*, London.
- Rowley-Conwy, Peter (1986), "Between cave painters and crop planters: aspects of the temperate European Mesolithic", in Zvelebil (ed.) (1986), pp. 17-32.
- Sherratt, A. (1981), "Plough and pastoralism: Aspects of the Secondary Products Revolution", in Hodder, I., Isaac, G., and Hammond, N. (eds.), *Pattern of the Past*, Cambridge university Press, Cambridge, pp. 261-305
- Vencl, Slavomil (1986), "The role of hunting-gathering populations in the transition to farming: a Central-European perspective", in Zvelebil (ed.) (1986), pp. 43-51.
- Zvelebil, Marek (ed.) (1986), *Hunters in Transition*, Cambridge.
- Zvelebil, Marek (1986a), "Mesolithic prelude and neolithic revolution", in Zvelebil (ed.) (1986), pp. 5-15.
- Zvelebil, Marek (1986b), "Mesolithic societies and the transition to farming: problems of time, scale and organisation", in Zvelebil (ed.) (1986), pp. 167-188.