

**COMPARATIVE LINGUISTICS**  
**INDO-EUROPEAN AND NIGER-CONGO**

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**2004**

**Penny Farthing Press**

**Christchurch, NZ.**

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**1.The Comparative Method**

It is generally considered that Comparative Linguistics began when an English judge serving in Calcutta, Sir William Jones (1786) pointed out the similarities between Greek, Latin and Sanskrit, though less prominent savants such as James Parsons had previously reached the same conclusion. “Sanskrit”, Jones wrote, “bears a stronger affinity, both in the roots of verbs and in the forms of grammar, than could possibly have been produced by accident; so strong, indeed, that no philologist could examine them all three without believing them to have sprung from some common source”. He went on to add Gothic, Celtic and Old Persian to this list of languages having a common origin. The example illustrates the type of evidence on which this conclusion was based : systematic similarities. Grammatical similarities in particular were subsequently emphasised by both Rask (1818) and Bopp (1816, 1833).

<b>SANSKRIT</b>	<b>GREEK</b>	<b>LATIN</b>	Verb “to carry”
<i>bharami</i>	<i>phero</i>	<i>fero</i>	”I carry”
<i>bharasi</i>	<i>phereis</i>	<i>fers</i>	“You (sg) carry”
<i>bharati</i>	<i>pherei</i>	<i>fert</i>	“He, she, it carries”

This chain of reasoning lead to the Mother and Daughter hypothesis, the theory that Latin, Greek and Sanskrit had a common ancestor, now known as Proto-Indo-European. This relationship can be expressed by a tree diagram, with Proto-Indo-European at the top, and branches leading down to the daughter languages, Greek,

Latin and Sanskrit – and many others - below.

Tree theory as it is now known received its first explicit formulation by August Schleicher (1821-68), who was influenced by biology, and soon became an elaborate system embracing a wide number of languages. Schleicher carried his theory to its logical conclusion and wrote a fable in the protolanguage, which he regarded as close to Sanskrit, with only three vowel tambers (so too Bonfante 1964 : 22) :

*“Avis, jasmin varna na ast, dadarka akvams, tam, vagham garum vaghantam, tam, bharam magham, tam manum aku bharantam...”*

“A sheep, on which wool was not, saw horses, one, a wagon heavy pulling, one a load great, one a man swiftly carrying...”

The next major development however was a complete negation of the idea represented by Tree Theory. Linguistic trees are unambiguous and involve clear binary splits (indicating migrations) leading to distinct language groups, subgroups, and finally the actual languages. A single stem is progressively divided into greater and greater numbers of subdivisions and units.

Johannes Schmidt (1843-1901) however drew attention to the fact that languages do not only diverge, but also converge and influence one another. Thus Wave Theory was born and with it a diagram showing overlapping rings (Meillet 1950). This concept is based on the notion that languages occupy positions in space and contiguous languages influence each other, with changes radiating out from a centre,

and crossing language boundaries. This concept has become important in the study of dialectology, which has shown that individual language features have a life, and distribution, of their own. But it is not a good primary model for comparing distinct languages. Waves tend to spread over languages that are similar, especially where morphology is concerned (Weinreich 1954).

Wave theory had an interesting offshoot in the theories of Bartoli (1945) and the Italian Neolinguists, who sought to distinguish geographic areas retaining older linguistic material according to a schema. Isolated, Lateral, Areas of Colonisation etc. were identified. For a critique see Pisani (1940). The most extreme development of this system of Areal Linguistics is seen in the work of Trombetti, who identifies lateral areas at the ends of the earth which preserve words such as “water” from the original language of mankind. Recent scholars such as Greenberg have identified the words *tik* meaning “finger, five, point”, and *ma* “mother” as belonging to this primal tongue.

Modern genetics, it might be said, is closer in method to the Wave Theory model. Genetic features blend and flow across contiguous areas as people intermarry not only within their own group but across adjacent social and geographic boundaries. Human genes have undergone mixing and are no longer usually represented by simple trees.

Inevitably such developments as Wave Theory led the linguist Kurylowicz (1935) to question the concept of the Indo-European protolanguage. According to Kurylowicz, Indo-European, as far as it exists at all, consists of a bundle of features several of which are found in each of the European languages. His Indo-European arose by

convergence. This concept is not compatible with the clear cut divisions of Tree Theory, nor with the idea of an original protolanguage.

Numerous attempts have been made to reconstruct protolanguages, with remarkably divergent results. The “fables” written in various versions of PIE (see Devoto 1962) are now notorious. With each change in linguistic theory there is a change, often quite radical, in the reconstructed protolanguage. Pisani (1971) is critical of protolanguages.

Of course protolanguages are not real languages, just a set of equations relating data from the languages on which they are based. They are valuable as a summary of a large amount of complex information, but suffer from incompleteness and abstraction. They usually have an impoverished phoneme inventory, and limited morphology. Thus Proto-Romance, judging from Vulgar Latin (Herman 1967, Väänänen 1966, Grandgent 1934, Hall 1950) lacked the Latin *h* and the elaborate Latin system of cases (also the synthetic passive), although we suppose a type of equivalence between Latin and Proto-Romance. This is one of the few instances where we can compare our reconstruction with a real language, and it is very illuminating.

The assumption of a real common language corresponding to each abstract, reconstructed protolanguage is nevertheless valuable. Protolanguages make it possible to test various hypotheses about language relationships. The reconstruction of intermediate stages of the tree represents hypotheses about how protolanguages have divided into subgroups, which is a very important matter. Languages belonging to the same subgroup are believed to enjoy a common period of development and a special interrelationship. For a failed hypothetical protolanguage, Proto-Benue-

Congo, see De Wolf (1971). For a contested protolanguage see Benedict (1975), Austro-Thai. It has been said that anything could be derived from Benedict's complex reconstructions.

One of the more interesting developments of nineteenth century language theory was a (Schleicherian) thesis propounded vigorously by the Junggrammatiker such as Karl Brugmann (1849-1919). This thesis stated that sound changes operated without exception (Brugmann 1904: 41, 7) in accordance with 'Lautgesetze'. With this pronouncement comparative linguistics became an exact science.

In fact this statement is not strictly true. It is easy to document exceptions to this rule. Hence the further statement 'No exception without a rule'. There are exceptions to this corollary also, eg in the case of loan words, words of high frequency, words subject to linguistic taboo (Sturtevant 1947 :124 - 126, with bibl.) and so on.

But in practice best method requires us to accept the thesis of the Junggrammatiker as a working hypothesis and to incorporate the exceptions later.

The second primary thesis of comparative linguistics is that the ultimate determinant of linguistic relatedness is relatedness of morphology. Morphology is the bones of the language, which distinguishes it from all others. It is practically never borrowed from one language to another. It represents the underlying system, the identity of a language. Without morphology understanding is not possible. In comparative linguistics therefore morphology is king. Different morphology indicates different languages. The same morphology indicates that the languages are the same. Rask and Bopp founded comparative Indo-European linguistics on morphology.

Particularly important are shared innovations, especially in morphology, for establishing close relationship or a common period of development (Bender in Heine-Nurse 2000 : 54). Morphology retained intact from a remote ancestral language simply establishes general family membership.

## **2.Statistical Methods**

Recent attempts to introduce statistical methods into historical linguistics usually involve analysis of vocabulary. Greenberg's much criticised "mass comparison" is the most well known example. He takes a large sample of vocabulary across different languages and language groups, and relies on sheer weight of numbers to eliminate the disturbing evidence of loanwords and other words that do not fit the system. For a critique see Mark Rosenfelder's Home Page. Rosenfelder supplies binomial probabilities for numbers of lexical parallels in some hypothetical languages. He makes much of the phonetic and semantic variation that exists in real languages so that one might wonder if statistical methods should be used in this kind of work at all.

All language inquiry has to deal with variations of meaning, and sound. There is always a philological element, an element of judgement involved. Nothing is ever black and white. We do know however that the probability should decrease as the number of hits increases, which suggests the probabilities should be multiplied. We are often in ignorance of matters that are statistically relevant, such as the size of the lexicon, the numbers of dialects in the data, and so on. Often we have to rely on limited and ambiguous data. The situation differs greatly from that found in clear cut statisticians' models. De Saussure's (1960) chess analogy is relevant here.



If however all languages are related, and the "lumpers" are right (Ockham's razor suggests they are), the application of probability statistics to determining language relationships is called into doubt, as indeed is the evidence of control languages. If language similarities are not due to chance, should we be using probability theory at all? For we have an alternative explanation. Inheritance from a common source.

An example. Niger-Congo *ti* means "tree", but *ti* also means "tree" (Delitzsch 1914) in Sumerian (an isolate, perhaps influenced by N-C), and *ti* in NZ Maori (Biggs 1990) means "cabbage tree". If all languages have a common source this information cannot rightly be used as a control, nor is it statistically a chance similarity. It is inherited. In this case vocabulary is not a random bag of binomial balls after all. It is difficult to set up appropriate statistics if we do not know the answer.

In any case statistics, which describes populations, not individuals, is most reliable when dealing with large numbers. If such methods are used a very large data base is desirable, and one should test as many parameters as possible. Such methods may be the only ones available for deep reconstruction, which aims to arrive at the first language of mankind and its immediate derivatives, an objective that was once banned by the French Academy.

One should not be too eager to dismiss the work of Greenberg, which has attained results in line with the results of modern genetics. Greenberg is a giant who sees further than other mortals. If a method yields results we should use it. Counsels of perfection can become a straightjacket. Results are more important than methodological purity. An imperfect method can sometimes deliver excellent results.

Textbooks are simply stages along the road, and should not be erected into dogma. Nobody has a monopoly on truth. Different persons see different parts of the picture, sometimes different, equally valid pictures.

Ultimately the comparative method depends on the arbitrariness of the linguistic sign as defined by Ferdinand De Saussure (1960). Given the thousands of concepts in natural languages, and the thousands of possible sound combinations (words) available to represent these concepts, the match between concept and word expressing that concept in any given language is arbitrary. There is no necessary connection between a concept and the word which expresses it (Sechehaye, Bally, Frei 1969 : 191 - 195). It follows that the probability of the same word having the same meaning in two separate languages by chance is infinitesimally small. If this situation occurs it creates the presumption that the languages are related in some way or at some level. Borrowing must be ruled out however.

Consider for a moment the problem of an unidentified language X. What is the probability a word of X is the same as a word of language Y, which is known? Say we toss a coin. Heads it is Y, tails it isn't. The probability of a coin toss is 1/2. But if we stop to think that there are thousands of natural languages, each having thousands (or millions) of words of different meaning, the probability of the same phonetic word having the same meaning in two different languages is not really 1/2. It is 1/N where N is a number too large to contemplate. Statistics we should remember is the science of ignorance.

We may define a word for our purposes as a pattern of phonemes with an associated

meaning. The more words two languages have in common the more likely it is that they are related. An estimate (exact probabilities require a more sophisticated approach) of this probability of various numbers of words in common can be provided by n factorial. For 2, 3, 4, 5 words in common we calculate as follows :

$$2 \times 1 = 2$$

$$3 \times 2 \times 1 = 6$$

$$4 \times 3 \times 2 \times 1 = 24$$

$$5 \times 4 \times 3 \times 2 \times 1 = 120$$

and so on. Observe that we are multiplying, not adding, probabilities. The probabilities quickly become very small : two words  $1/2$ , three words  $1/6$ , four words  $1/24$ , five words  $1/120$ . If two languages have a large number of words in common we soon arrive at a very significant statistical probability. And it becomes reasonable to infer the languages are related. A stricter procedure would have to take account of the diagonals in the matrix, which reduce the probabilities somewhat. But this is not a book on statistics.

Take a more informal example. An English explorer is lost in the desert. He is lying on the sand, dying of hunger and thirst, when a Bedouin tribesman rides up on a camel. "Water ?" says the Bedouin. "Yes" the explorer gasps. The stranger gives him a water bottle. "Food?" asks the Bedouin. "Yes", he replies gratefully. And food is given to him. "Come with me" says the Bedouin. The explorer staggers to his feet. He follows the Bedouin to his camel. The camel stoops and the Bedouin helps him to mount.

The Bedouin has spoken only five words. But by now the desperate explorer is aware that this helpful stranger speaks English, and responds accordingly. This English explorer has not studied statistics. But he knows the Bedouin speaks his own language. As a rule of thumb, I consider five words is enough to identify a language. Mycenaean Greek was initially identified on the basis of one word, “tripod”.

Having conducted extensive tests with control languages as diverse as NZ Maori, Malay, Ancient Egyptian, Akkadian and Sumerian, I have yet to find as many as five exact (presumably random) matches on languages that are clearly not in contact. By this I mean exact matches on both meaning and phonetics, usually on monosyllables. But as I have said, we are not usually looking for exact matches, but for evidence of a relationship, which is a more complex matter.

To return to our linguistic argument, note that different languages are not usually strictly comparable on a simple straightforward basis. The sounds are seldom the same, and neither is the meaning. Whenever we do this sort of thing, we are making assumptions dependent on our linguistic sense. The unstated assumption usually implies a hypothetical bridge language such as a protolanguage. If we can make that assumption explicit we are on surer ground, and predictions may be made that can be tested.

So in fact “words in common” are unlikely to all be “identical” in both languages. If the languages are related the relationship will be more complex. Some words will be the same, others will show appropriate sound changes, representing relationships that are not so easy to decode. Compare eg Latin *pater*, Sanskrit *pitar*, both meaning

‘father’. Similar, not the same. Or Greek *pente*, Avestan *panèa* ‘five’, but Latin *quinque* ‘five’. We look for similarities, but also significant differences.

Real language relationships are like this, and more challenging. They are not mere chance similarities. Different but related languages are not normally identical. Even if we are dealing with the same language, variations due to script, dialect and development over time, will occur. Mycenaean Greek differs from Classical Greek..

The use of short lists of key words for comparative purposes is regarded as suspect (unless morphology is involved). A similar problem arises in statistical tests of authorship where the use of a large data base versus a few high frequency key words has been much debated (Herdan 1966 : 172 – 4). In practice content words, particularly nouns, are preferable, as the meaning can be reliably controlled.

Statistical tests are only as good as the data on which they are based (and the author’s understanding of the data) and may pose difficulties of interpretation. They do not always yield the clear-cut trees of traditional comparative linguistics, but put languages on a scale. Similar problems arise to those involved in the use of statistical genetic data. Conflicting results have often been attained by such methods in linguistics. By contrast grammatical comparison gives certainty.

Statistical methods have played a large part in the analysis of African languages, some of which lack morphology, leading at times to clear classifications, at times to confusion. Greenberg has been prominent in this area, reclassifying Niger-Congo to include Kordofanian, in which he applied not only statistical, but phonological and

morphological criteria (nasal prefix in Kordofanian), and relegating Bantu to a subgroup of a subgroup. He arranged African languages into four main groups : Khoi-San, Nilo-Saharan, Afro-Asiatic and Niger-Congo.

Sometimes statistical results are in conflict with those of the traditional comparative method. Eg an Indo-Iranian unity is posited on phonetic and grammatical grounds, but cannot be demonstrated statistically, as Renfrew (1987) observes.

In general statistical methods, many and varied, may be expected to throw up distant language relationships where comparisons of morphology are impossible. They are therefore useful in establishing superfamilies such as Dene-Caucasian or Nostratic. At present such entities are regarded as controversial. They are relevant to the larger question, raised for example by Trombetti, of whether all the languages of the world are related. And are relevant to questions of genetics, as Cavalli-Sforza (2000:107f.) points out. Darwin foresaw an alliance between linguistics and genetics.

### **3.The Search for the Urheimat**

The related subject of linguistic palaeontology has been used to locate the Urheimat, the original home of the Indo-Europeans. By taking names of animals, trees, plants etc which have cognates in all Indo-European languages, one tries to find a suitable place of origin for the languages. For a critique see Renfrew (1987 : 77 ff).

Guthrie (1967 : 10 - 11) applied statistical methods to the study of Common Bantu roots, and placed the origin of Bantu near the north west corner of the Bantu-speaking area ‘between the upper Lualaba in the east and the upper Kwilu in the west’. On

page 11 he cites names of animals and plants known to the Bantu, and establishes by similar methods that the early Bantu worked iron. He eventually settles on the Katanga region (Zaire) as homeland, near Greenberg' s source of Niger-Congo in the Cameroon-Gabon regions. Schuh (2004:2), using the diversity criterion, fixes on "the southern Nigerian/Cameroon border area". Harry Johnston (1919 - 22) puts the origin of his Bantu and Semi-Bantu languages west of Lake Victoria however.

The problem of the (Niger-Congo) Kordofanian languages spoken in the hills to the west of the upper Nile perhaps casts doubt on Greenberg' s conclusion. Kunama (Nilo-Saharan, but disputed) comes from this general region also, but has what appear to be some Western Niger-Congo features (Westermann 1911). It is "usually classified in the Chari-Nile group, but is very different from its claimed relatives" (Dalby 1998 : 453). Further "there would be much to be said in favour of a cradleland to the west of the Niger bend, around the headquarters of the Niger and the Senegal" (Oliver 1999 : 50) for Niger-Congo. Perhaps we are looking for a will o' the wisp.

There is also some reason to posit a focus of development for the Western Niger-Congo languages near Lake Volta (Blench). The Gur languages (Voltaic) show maximal variation. Almost anything is possible here (Naden in Williamson 1989 : 151), to some extent because of problems of inclusion and classification. Maximal variation tends to occur near the source in both linguistics and genetics.

Recent attempts have been made to derive Niger-Congo from Nilo-Saharan (Blench 1995 : 83 - 130), more specifically Central Sudanic, however, which also has implications. Perhaps the source was near Lake Chad. If one believes in the existence

of protolanguages, they must have once each occupied a specific place at a specific time.

Efforts to find the original home of the Indo-Europeans have not met with much success. See Mallory's (1989 : 144, 80) map of conclusions so far by various scholars using various criteria. Proto-Indo-European has been placed in the most diverse regions by different scholars, from northern Europe to India to Suez. Renfrew, and also Gray and Atkinson (Auckland University) on the basis of a large scale statistical analysis of vocabulary, have recently reverted to the old view of an Urheimat in Asia Minor, near the home of Hittite. Such diverse results do not inspire confidence.

We assume that PIE, wherever it was located, already showed some dialect variation. Variation is found in all real languages. See Meillet (1950) Les Dialectes Indo-Européens for an attempt to delineate Indo-European dialects. More recent work in Birnbaum & Puhvel eds. (1966), including an attempt by Winter to find four dialects within Armenian (p.208), which is relevant to sound correspondences.

A linguist's search for the protolanguage should be based on purely linguistic criteria. These include the relationship of the protolanguage to other protolanguages. But that is a difficult question and bears on the problem of distant relationships.

#### **4.Vocabulary**

Key words are significant for comparative study particularly if they incorporate structure. Thus personal pronouns and numerals (used by Trombetti 1908, 1912) form a system and are more significant than isolated words chosen at random See the



comments of Greenberg's student, Ruhlen (1991). Some of these lexemes are incredibly old and preserve evidence for remote relationships. To a lesser extent the same applies to colour words. Different languages divide the spectrum of colours differently (Gleason 1961 : 4). Words for parts of the body also form a system, and do not change much over time. All these and nature words referring to the sun, moon, earth, sky, water, fire etc differ from random vocabulary and are particularly significant in establishing relationships. Numerals and pronouns in particular tend to be preserved over long periods of time.

For this reason Swadesh drew up a list of basic vocabulary of 200, then 100 words (Renfrew 1987 : 114) for use in historical language study. This method has been questioned on mathematical grounds (Ross 1957). Swadesh's glottochronological method posits a rate of retention of basic vocabulary at 81 % per 1000 years, if one uses the 200 word list. See Hockett (1958: 526-535), with figures 61.1 & 61.3.

This is not a scientific law and is a rule of thumb only. But it has given surprisingly consistent and reliable results, eg for Indo-European as the diagram (Renfrew 1987 : 116, Fig. 5.4) shows. It enables us to put related languages in a time frame, and to calculate periods of separation. So we can use it in combination with tree theory.

The diagram suggests that Slavonic and Armenian occupy a central position, which, I consider, may represent the place of origin of Indo-European. If this is so we are close to Kartvelian (contiguous to Armenian), and Indo-European is related to Caucasian. The Caucasus is known as "the mountain of languages" from the great variety of languages spoken there. This variety suggests we are near the source. We are near the

Black Sea, the Caspian, Lake Van etc. Early civilisation was based on an aquaculture.

Herdan (1966 : 444 – 445) suggests that the method of Swadesh should be replaced, for comparative purposes, by the much more complex Factor Analysis ‘to estimate to what extent the parent language is correlated with the factor common to all languages in the group, and to what extent a language is to be regarded as specific or individual’.

In this he is not aligning himself with the position of Kurylowicz who reduces protolanguages to a bundle of features, but with the more sophisticated statistical methods which have since developed in modern genetics, for example.

Herdan, unlike most linguists, is a professional statistician. The title of his book (1966), The Advanced Theory of Language as Choice and Chance, puts the dilemma faced by statistical linguistics. Deliberate choice is always a disturbing factor. Language, like fashion, is subject to arbitrary, sometimes irrational whim.

More recently complex multivariate statistical methods have been made possible by the use of computers. Multidimensional scaling and principal component analysis are now used for example. These have been applied in genetics, and are much more powerful than factorial analysis, but require substantial mathematical knowledge to be understood. Fortunately the results can often be represented by maps and graphs, which are more accessible to the non-specialist. Generally there is a concentration on vocabulary in statistical work.

Monosyllables form a special category of evidence. Meillet (1954 : 39) opposed their use in comparative study because they have no morphology. But they cannot be avoided if the language or languages are monosyllabic or largely so, as Delafosse, Meillet' s pupil, realised from his studies of Western Niger-Congo. Sometimes dead morphology can be identified in monosyllables.

Monosyllables do differ in principle from acrophones (regarded as more statistically dubious) in having a preceding and following morpheme and word boundary, which gives some control over their identity. It is well known that acrophonic matches, ie matches of initial CV combinations are easy to find between any two languages if one uses a large enough lexicon. Polysyllabic words are to be preferred to monosyllables, and monosyllables are preferable to acrophones. Sometimes we are reduced in practice to comparing monosyllabic reconstructed roots which differ little from acrophones, (but come from a very restricted lexicon). This restriction is important however in lowering the probability of a match.

Onomatopoeic words have also been criticised (see Campbell 1997, Ch. 7 for a rigorous critique) when used for purposes of comparison. But if they are integrated into the phonological system of the language I consider they constitute valid evidence, for there is always choice, eg between *ku* and *bird*. Humans do not actually replicate bird cries etc, but use conventional schemata such as ‘bow wow’ (not used for ‘dog’ in English except in baby talk). What is conventional, conforms to a phonemic system, and has an associated meaning which is relatively arbitrary, should be considered, with an appropriate *caveat*. See Dalby (1998 : 268), quoting Emeneau.

Campbell also questions the use of terms for "father", "mother" in comparisons on the grounds that they are limited by small child phonology which favours nasals and labials. Not all languages have the same words here either. It is a question of weighing probabilities, for such words are fundamental, having relevance for distant language comparisons. Similar reservations apply. If morphology exists, we approach certainty.

### 5. Sound Correspondences

Another common problem is posed by the fact that sound changes, particularly after long periods of time, may have systematically destroyed the similarity between words in related languages. Words that were originally the same may come to appear totally different. An example of this is Armenian *erku* "two" which is related to Latin *duo*, Vedic Sanskrit *duvas* "two". To explain this situation we must have recourse to a regular sound correspondence: IE \*dw- = Greek *dw-* = Latin *du-* = Arm. *erk*. Thus Greek *dwa:ron* "a long time", Armenian *erkar* "long", Greek *dwi-* "fear, to fear", Armenian *erki-* "fear". This example appears to incorporate a prefix *er-* in Armenian, which is lost in Greek. Sound correspondences become particularly important when we are not dealing with obvious lookalikes.

Which of the various sounds in a correspondence is original may or may not be obvious. It is said that the *k* of *erku* is not original. Compare Armenian *erek'* "three" with Greek and Latin *tres*. Is it likely that *k'* should come from *s*, particularly when the reverse change is known to be common? Even if the final *s* the more common reflex in this word.

In general one looks for regular, repeated sound correspondences. How many examples are needed to make a sound correspondence regular has been much debated. Results with control languages indicate, as a rule of thumb, that over five occurrences are significant. Small numbers of verbal resemblances may be due to chance. In practice the number of repeats may be limited by limitations in the data. In general the best sound correspondences occur between dialects of the same language. The worst occur between languages that are only remotely related. Vowels, in particular, become more and more eroded and confused.

If systematic correspondences between two languages, or between a language and a protolanguage are identifiable across the entire system of vowels and consonants, this must be regarded as significant, even if large numbers of repeats cannot be found.

The key question is always ‘Could this be due to chance?’

Since the morphology of a language often employs a small subset of common phonemes, one must be especially wary of sound correspondences set up on the basis of grammar alone, as Bonny Sands (1998) points out.

This problem is compensated to some extent by the complexity and uniqueness of grammar in natural languages, and the fact that grammar is part of a system. One must match both form and meaning, and this is sometimes difficult in the case of grammar, as grammatical meanings may be ambiguous or abstract. Form therefore becomes most important in comparative grammar.

Initially, however, linguistic comparisons inevitably begin by examining lookalikes or

matchings such as Latin *unus* ‘one’ (masculine), Italian *uno* ‘one’, Spanish *uno* ‘one’, French *une* (fem) ‘one’ and so on. These matchings are tested for meaning and are used to set up preliminary sound correspondences of an obvious nature.

$U = u = u = u [y]$                        $N = n = n = n$                        $U = o = o = (#)$

One then must search for correspondences that are less obvious or defy the rule.

Unusual morphological correspondences are particularly convincing. Thus Sanskrit, Greek and Latin all have separate masculine, feminine and neuter forms for the numeral ‘one’: Sanskrit *ekas*, *eka:*, *ekam*, Greek *heis*, *mia*, *hen*, Latin *u:nus*, *u:na*, *u:num* ‘one’. This is what Meillet calls the ‘détail singulier’ (Meillet 1954: 3).

Such significant details however apply to all aspects of language, and offer valuable clues in investigating relationships.

Diop’ s (1981) attempt to link Ancient Egyptian and Wolof is I think, soundly based on verb morphology and sound correspondences. Russell Schuh (2004) of UCLA criticises Diop in ‘The Use and Misuse of Language in the Study of African History’, but does not refer to the morphological evidence (suffixes and infixes) which is fundamental to Diop’ s case

Diop cites forms of the verbs *feh* “go away” (Egyptian) and *feh* “rush off” (Wolof).

EGYPTIAN	WOLOF	
<i>feh-ef</i>	<i>feh-ef</i>	
<i>feh-es</i>	<i>feh-es</i>	
<i>feh-n-ef</i>	<i>feh-on-ef</i>	
<i>feh-n-es</i>	<i>feh-on-es</i>	
<i>feh-w</i>	<i>feh-w</i>	etc.

Diop gives the complete paradigm for these verbs, 22 forms in all. “All the Egyptian verb forms, except for two, are also recorded in Walaf” he states. See Diop (1977 : 43 46) for fuller information. Is not this the very same type of evidence originally used to show relatedness in Indo-European? Scholars find this embarrassing because it cuts across established language groups, in this case Afro-Asiatic and Niger-Congo.

## 6. Genetic Relatedness

We base the theory of a Niger-Congo protolanguage (denied by Fisher 1999 : 65, as ‘remote and nebulous’) on sound correspondences and morphology. Take Ake *ba*, Igbo *ba*, Efik *ba*, Ahlo *ba*, Temne *ba*, Mau *ba* all meaning “to be in a place”, Bantu *ba* “to become, dwell, come”. All these words have the *b* consonant and the *a* vowel. With this compare the morphological prefix *ba-*, used to indicate the plural of persons, most consistently in Bantu, but also elsewhere. This element has a consistent grammatical meaning and function.

The phonology of Proto-Niger-Congo has not been reconstructed, but there are reconstructions of Proto-Volta-Congo (Stewart) and Proto-Western Nigritic (Mukarovsky) which may be used as an approximation. Systematic reconstructions of the noun prefixes (Williamson 1989) have also been made.

Morphology supports our conclusion that Niger-Congo forms a language group. Thus Niger-Congo languages have an elaborate system of about 20 class prefixes on the noun, originally grouped into singular : plural pairs. Eg Swahili *mu-* (personal singular) : *wa-* (personal plural). In some of the languages these forms are used as suffixes, in some (Westermann 1922, Gurma) as both prefixes and suffixes. The suffixes are thought to be later, used for disambiguation. But reanalysis is also a possibility. See Manessy (1965/66) for a discussion.

The prefixes are best preserved in Bantu languages, but traces of them are found in all Niger-Congo languages. The nasal prefix *ma-* used with liquids for example even has reflexes in Kordofanian, which split off from the Group at an early stage. A special feature of Niger-Congo is that the nominal prefixes are attached not only to nouns but to pronouns, numerals and some nominal verb forms such as infinitives.

We quote a simplified reconstruction of the prefixes based on Williamson (1989 :38 - 39) and Dalby (1998 : 74, Bantu).

- |               |               |                   |               |               |               |                       |                |
|---------------|---------------|-------------------|---------------|---------------|---------------|-----------------------|----------------|
| <b>1. gwu</b> | <b>2. ba</b>  | <b>3. gwu</b>     | <b>4. gwi</b> | <b>5. li</b>  | <b>6. gwa</b> | <b>6A. ngma, ngwa</b> | <b>6B. nga</b> |
| <b>7. ki</b>  | <b>8. bi</b>  | <b>9. ni</b>      | <b>10. li</b> | <b>11. du</b> | <b>12. ka</b> | <b>13. ti, tu</b>     | <b>14. bu.</b> |
| <b>15. ku</b> | <b>16. pa</b> | <b>17. ku, ki</b> | <b>18. mu</b> | <b>19. pi</b> | <b>20. gu</b> | <b>21. gi.</b>        |                |



Meanings of prefixes : 1. person 2. people 3. animate agent 4. pl of 3, 5 sg of 6, 6. paired things, multiples 7. custom, method, tool 8. pl of 7 9. animal 10 pl of 9 11. one of many things 12 pl of 13 & 19 13. small thing 14 abstraction 15. verb infinitive 16. ‘bn’ 17 ‘outside’ 18 ‘in’ 19. diminutive 20. pejorative 21. augmentative.

Williamson distinguishes 6, 6A ‘liquids, blood, wine, water’, 6B ‘mass nouns, faeces’. In practice the system may vary according to language. Not all languages have all prefixes. Luganda (Campbell 1991: 166 - 167) has an early system.

The preprefixes given by Harry Johnston (1919 - 22 : 31) shed light on the original forms : **1. gumu, wumu 2. baba 3. gumu 4. gimi 5. didi, riri, lili, iri, eri 6. gama** etc. Harry Johnston treats these as Common ‘Bantu’, but in his day ‘Bantu’ was equivalent to Niger-Congo, as far as it was known.

Since the reconstructed prefixes include secondary consonants (the labiovelars *kw, gw* etc) one faces the conclusion that these were once full words. For secondary sounds do not occur in grammatical prefixes. The vowels reconstructed in the prefixes however are three only : *a, i, u*. These were the original three Afro-Asiatic vowels. No one reconstructs secondary vowels [*y, oe* etc] in the prefixes. Some reconstruct *o* and *e* however. See Welmers (1973 : 165).

In addition to prefixes, Niger-Congo also made extensive use of suffixes and infixes. Again, the suffixes are best preserved in Bantu, particularly in the verb. Hence the dictum of Stapleton (1903:11,20).

## NOUNS ARE FORMED BY PREFIXES

## VERBS ARE FORMED BY SUFFIXES

We assume therefore that the Niger-Congo protolanguage was agglutinative in nature, forming its words by free accumulation of affixes. These affixes appear to have originally been full words (eg *ke* ‘come’, *li* ‘be’), suggesting an even earlier isolating monosyllabic stage (Johnston 1919 : 22 : 35). Bourquin (1969 : 121) mentions Endemann’s theory of original monosyllables. Bulck (1949 : 59 60) lists CV and VCV as original forms of the Bantu root. But VCV forms are prefixed.

The mobility of monosyllabic elements or ‘roots’ (Westermann 1927) and their ability to appear at the front, middle or end of the word, supports this view that Niger-Congo was once monosyllabic. Homburger (1929 : 333) claimed that the same morphemes occurred ‘sometimes as prefixes, sometimes as suffixes, sometimes as infixes’. Central Sudanic from which Niger-Congo may have come, is monosyllabic. Guthrie treats the Bantu root as disyllabic, but notes that a second syllable, or extension, is rare in the Cameroon and Gabon regions (Guthrie 1967 : I, 29).

There is disagreement about the word order of Proto-Niger-Congo (Williamson 1989 : 28 - 29). Was it **SVO** (Heine & Reh) or **SOV** (Hyman, Givón)? A possible answer to this question is that like the monosyllables it was once free. Again this would fit a prehistoric isolating tongue. But the morphology of Bantu, which may incorporate old word order, suggests **SOV**. Thus the Bantu verb shows : subj. pref. + obj. pref. + verb root (Comrie 1981 : 210).

For Latin similar arguments have been made using the clitic order of Romance languages. Givón' s (1971) claim ‘Today' s morphology is yesterday' s syntax” requires some qualification, particularly where enclitics are concerned however (Comrie 1980 : 93). For more information on the word order of the actual languages see Westermann & Bryan (1952) and Hawkins (1983). For free word order in Indo-European see Lehmann (1974), Friedrich (1975), especially regarding SOV, SVO, VSO. Note that both Proto-Niger-Congo and Proto-Indo-European share this problem of fluctuation between SOV and SVO in their word order. Both have a minor order VSO.

## **7. Substrate**

A consideration to which we will pay special attention is the matter of substrate. This occurs when the language of a conquering population absorbs words, sounds and grammar from the tongue of a preexisting population whose language has been submerged. In this study we will be mainly concerned with Niger-Congo substrate in Indo-European languages such as Latin and Greek. What this substrate indicates is a question of major importance which requires investigation. Havránek (1966:81) calls substrate a “*deus ex machina*” however. He doubts the value of substrate as a concept.

In this connection it is noteworthy that the Russian linguist Vladimir Georgiev (1966) saw a relationship between Hittite, an Anatolian language that split off early from the Indo-European group, and Etruscan, which has now been shown to be a Niger-Congo language of the Mande group. He bases his argument on lexical evidence (p.270 - p.273), sound correspondences (p.265) and morphology (ps.267 - 269).

One might claim that insufficient reliable lexical items are cited to establish firm sound correspondences, and that some of the sound correspondences are doubtful. But the morphological data which covers inflections in the noun and verb cannot be explained away so readily (Georgiev 1966 : 267 - 268). He also cites evidence from the pronouns (Georgiev 1966 : 265). Compare Adrados' (1989) 'IEAnatolian' theory.

Georgiev raises the important question of how such morphological matches between a Niger-Congo language and what is essentially an Indo-European language are to be explained. Prominent scholars such as Vetter and Devoto have also pointed out affinities ("periindoeuropean", "paraindoeuropean"), including morphology, between Etruscan and Indo-European. Trombetti (1908 & 1912) considered that Etruscan had connections with Indo-European and Caucasian. We will return to Caucasian later.

One cannot dismiss the work of these scholars out of hand. What we propose to do here is investigate the question of Niger-Congo substrate in Indo-European languages such as Greek, Latin and Sanskrit. We will begin with the augment.

Most Congolese (Bantu) languages have an *a*-prefix (or augment) attached to past verbal forms : Kele *a-lembe-ke* "loved", Poto *a-kala-ka* "loved", Ngala *a-jinga-ka* "loved", Kongo *a-tond-ele* "loved" etc. The augment is thought by Torrend (1891 : 237) to be a reduced form of the verb *ya* "go". This feature is quite unusual and very significant. We assume Bantu has preserved a very ancient Niger-Congo characteristic here. The suffix *-ke*, *-ka* often cooccurs with this prefix.

Now Greek, an Indo-European language, preserves this augment : *e-ba* ‘he went’ (Homeric Greek), as do various other Indo-European languages (Meillet 1950 : 97) : Sanskrit *a-bharat* ‘he carried’; Old Persian *a-bara* ‘he was bringing’; Armenian *e-ber* ‘he carried’ .

Meillet (1936 : 41, 1964 : 246) points out that the same languages share the prohibitive particle \**me*, Sanskrit *ma*, Armenian *mi*, Greek *me*:. This ‘particle’ is also found in Niger-Congo as *ma* (Greek *me*: < *ma*:) for which see Westermann (1927 : 254 - 255) who cites 33 reflexes, including the development *me* in Kposso (Togo R.) and Senufo (Gur), in groups that are closely related. So Indo-Iranian, Greek, Armenian and, in the case of the augment, also Phrygian (Asia Minor), appear to constitute a subgroup within Indo-European, which has Niger-Congo characteristics. This subgroup extends from Greece in the west to India in the east, with Armenia near the centre.

Compare the comments of Pisani (1971 : 109) regarding the archaeological evidence in favour of just such a grouping : ‘I risultati dell’ archeologia ci rivela una antichissima civiltà locale, estendentesi dal Mediterraneo sino all’ India’.

In Homeric Greek and Vedic Sanskrit the augment is optional, rather like an adverb (Meillet 1964 : 242 - 243). This cannot be an accident, and clearly indicates agglutinative Niger-Congo substrate influence in Indo-European. In fact Etruscan (Niger-Congo, Mande) has vestiges of this augment also : *a-cas-ce* ‘made’. Latin does not have this augment on the verb, but does incorporate the Niger-Congo root *ba* ‘came’ into Imperfect (past continuous) verbs : *ama-ba-t* ‘he/she love d’. Compare Latin futures in *-bo*, such as *ama-bo* ‘I will love’, from Niger -Congo root *bo* ‘be’.

A curious fact is that in Homeric Greek the augment is obligatory in gnomic or timeless usages [past, present, future] (Chantraine 1958 I : 404). We compare the use of an augment on the present in Swahili *a-penda* ‘loves’ and on the future indefinite in Kele *e-lembe-ke* ‘will love’ and Ngala future remote *a-ka-jinga* ‘will love’.

African Niger-Congo languages align the past with the future as ‘unreal’ and do not have our modern concept of tense. Time was cyclic. We are reminded here that the Greeks thought of the future as being ‘behind’ them. Basque has no future tense.

Both Latin and Greek have a Perfect (completed past) tense terminating in *-ce* and *-ke* (third person singular) respectively. This derives from Niger-Congo *kia, ke* ‘go’ which lies behind Bantu *-ke, -ka* etc already cited, and is used to form past tenses in Western Niger-Congo. It also matches the regular past formant in Etruscan, *-ce*. This *-ke* is found in Herodotean Greek, in iterative formations such as *poieeske* ‘made’, *eske* ‘was’ (discussed by Goodwin 1966 : 56, Rosén 1962 : 125f, Untersteiner 1948 : 131f), which are Imperfects and Aorists. See also Slijper (1966 : 70).

Noteworthy however for the link between past and future is the frequent use in Greek of the particles *ke, ka* with the subjunctive, optative etc. to indicate modality or conditionality (eg Cunliffe 1963 : 220, Buck 1955 : 105-106). We have here a type of unreal applied to the future. I relate these to Niger-Congo *ke, ka* also. Bantu retains *ke* and *ka* in some future tenses (Ngala, Kele). This evidence suggests a fundamental similarity between Greek patterns of grammar and thought and those of Niger-Congo. There may even be a link between the Greek negative *ou* [o] and the Bangi negative *o* (Stapleton 1903 : 165). Compare N-C *ka* ‘hot’, Latin *haud* ‘not’ (< *ka + ta/da* ‘hot’).

## 8. Phonology

Phonological systems can be revealing, particularly if unusual, especially secondary, sounds are involved. The word ‘systems’ requires emphasis here. A systematic similarity may be more significant than a isolated phonetic feature. When systematic similarities accumulate they become increasingly important.

A distinctive feature of Niger-Congo languages is their use of tones (Williamson 1989 : 26f). There is much variation among the different languages (two, three, four, five tones), but Williamson (1989) thinks PNC had a system of two contrasting levels. Likewise Westermann. Lagdefoged (1964 : xiv) recognises three possibilities ‘high, mid, low’ in his study of West African Languages. Languages with more tones use them to make lexical distinctions. See Zima (1961 : 154 - 155), on Yoruba.

Now Classical Greek recognises high, low and high falling tones, called acute, grave and circumflex respectively (Allen 1968 : 106f). The original Indo-European system is thought to have been most faithfully preserved in Vedic Sanskrit (Renou 1952 : 68f), which also recognises a high and a low tone. The circumflex appears to have been a glide from high to low. The facts fit reasonably well with a Niger-Congo two-tone system. Lithuanian and Serbo-Croat have vestiges of this system.

Latin according to certain ancient grammarians, also had a system of tones (Allen 1965 : 83f), but it is not so well understood and often denied (Pisani 1962 : 11, with reasons). Brugmann (1904 : 63) thinks the ‘expiratory element’ predominated in the historical period, but has some doubts. Marouzeau (1957 : 3) however refers to ‘une prédominance de l’ élément de hauteur’ in ‘l’ époque ancienne’. French scholars are

more inclined to accept Latin tones. Greek and Sanskrit used notations for these tones, and their grammarians described them, so that we have a record of tonal behaviour for these languages.

Greek uses these tones to make grammatical distinctions : *oîkoi* (nom. pl.), *oíkoi* (loc. sg.) ; and lexical distinctions : *ō:mos* ‘shoulder’ but *o:mós* ‘raw’, *he:méra:* ‘day’ but *hé:mera:* ‘tame’. Compare Niger -Congo *bà* ‘thick’, *bá* ‘father’, *má* ‘mother’, *mà* ‘not’. The tone may systematically vary within the paradigm : Sanskrit *pitá* ‘father’ (nom.), but *pítar* (voc.), *pitré* (dat.). In the absence of native speakers of these ancient languages there is much that we do not know about this complex matter. In general however what we do know supports a possible link between the accentual systems of Proto-Niger-Congo and Greek, Sanskrit etc. The PIE sounds can be reconstructed (after Pisani 1947) as follows :

**VOWELS**, • , **ɑ** **ɔ** **ɛ** **α**, **α**, **ε**, **i**, **u**, **i:**, **u:** (colons indicate long vowels)

**SEMIVOWELS** **y**, **w**

**DIPHTHONGS** **ai**, **oi**, **ei**, **au**, **ou**, **eu**

**LIQUIDS** **r**, **l**, **R**, **L** (sonants), **R•** , **L•**

**NASALS** **n**, **m**, **N**, **M** (sonants), **N•** , **M•**

**LABIAL STOPS** **p**, **ph**, **b**, **bh**

**DENTALS** **t**, **th**, **d**, **dh**

**PALATALS** **k'**, **kh'**, **g'**, **gh'**

**VELARS** **k**, **kh**, **g**, **gh**

**LABIOVELARS** **qw**, **qwh**, **gw**, **gwh**

**FRICATIVES** **s** (**z**, **zh**) Doubtful.



There is some disagreement about the details, but the main features of PIE phonology are reasonably well established. Note however that extreme exponents of Laryngeal Theory not only reconstruct varying numbers of PIE pharyngeals, but reduce the vocalic system to one vowel, returning to Bopp' s position.

The PNC sounds are based on reconstructions of Proto-Voltaic (Stewart) and Proto-West Nigritic (Mukarovsky). A reconstruction of Proto-Mande (Dwyer) yields similar results (Williamson 1989 : 21 - 23). No PNC reconstruction is yet available.

**VOWELS** **a, A, e, E, i, I, o, O, u, U**, (the capitals indicate expanded ATR “advanced tongue root” vowels). Whether the nasalised vowels were phonemic is disputed.

**SEMIVOWELS** Semivowels in the Niger-Congo languages derive from PNC labiovelars. Mukarovsky alone reconstructs **y, w**. Not in Westermann.

**DIPHTHONGS** All diphthongs are secondary, **ai, au, ei, eu**. None in PNC.

**LIQUIDS** A liquid **l** is reconstructed by Stewart, Mukarovsky (non-phonemic) and Westermann. Developments of *l* to *r* and to retroflex *d*. are common.

**NASALS** These were **n, m, ng, ngm, ɪ̃** nasalised (Stewart),

[**m**], [**n**], [**ny**], [**ngm**] (Mukarovsky).

**LABIAL STOPS** **p, b, ph, bh, DENTALS t, d, th, dh** (Mukarovsky has **l** here)

**PALATALS c, j, jh.**

**VELARS k, g, kh, gh** (Mukarovsky), **LABIOVELARS kp, gb, khp, ghp,**

( in Mukarovsky **kw, gw, khw, ghw**).

**FRICATIVES** These are not found in PNC; secondary **f, s, z** from various plosives etc.

The consonants written with a following *h, kh, gh* etc, are “lenis”, much the same as aspirates, and tend to assibilation.

Regarding the vowels, it is noteworthy that the five expanded ATR vowels of Niger-Congo can be treated as corresponding to the long vowels of Indo-European. Which raises the question of a possible relationship. The PIE diphthongs are due to loss of Niger-Congo intervocalic consonants (*l, n*) and semivowels (*y, w*) and other sound changes.

Consonant clusters in European languages are attributed to loss of earlier intervocalic vowels. Since Niger-Congo showed vowel harmony and repetition of vowels there was much redundancy, which tended to be eliminated. Hence the changeover from an original Niger-Congo **CVCVCV** system to the more confusing IE patterns : **CV**, but now also **CCV, CCVV, VC, VCC** etc.

In the case of Greek the presence of aspirated stops is noteworthy. Armenian and Sanskrit have both aspirated stops and palatal consonants. And Sanskrit has both voiced and voiceless aspirated stops and palatals, all of which can be reconstructed for Proto-Indo-European. Retroflex sounds are well established as a system in Sanskrit. Of these three languages none retains the Indo-European labiovelars, with the possible exception of Mycenaean Greek *q* (see Vilborg 1960 : 45 - 47, Pisani 1961 : 47, Chadwick 1973 : 45). But other (western) languages such as Latin (*quis* “who”) preserve these.

This range of consonants closely matches that reconstructed for Niger-Congo. The lenis sounds of Niger-Congo are equivalent to IE aspirates. The Niger-Congo *d* is often retroflex. Sanskrit has only three simple vowels *a, i, u* (short and long) which match the three vowels regarded as primary in Niger-Congo by Westermann (1927). There were three vowels in Afro-Asiatic from which Niger-Congo came. If we take cognisance of these facts we are led to the conclusion that early reconstructions of Proto-Indo-European which made it similar to Sanskrit were perhaps not so misguided after all.

So we have found evidence for a "substrate" connection between Indo-European, particularly the Greek-Armenian-Indo-Iranian complex, and Niger-Congo languages. In our opinion this goes beyond mere "influence" from a conquered population. This is not confined to lexical borrowing, but involves the phonological system and the morphology.

We regard identical morphology, in particular, as highly significant, and requiring a deeper explanation. This is especially so now that the concept of "Mischsprache" has been discredited.

To account for this situation we therefore propose the hypothesis that Latin and Greek (inflected languages) evolved from a previously agglutinative language (Niger-Congo) by fusing the affixes.

## 9. Morphology

An important study by Cowgill (1966) investigates the history of the original prefixes, infixes and suffixes in Indo-European languages. The original prefixes have largely been eliminated. The augment, used mainly on preterite verbs, has survived only in Yaghnobi (Indo-Iranian) and Modern Greek. Reduplication, another aberrant form of prefixation, has tended to be progressively lost also. Examples Greek *tithe:mi*, 'I put', *dido:mi* 'I give', Latin *sisto* 'I stand', Greek *histe:mi* 'I stand', usually with the vowel *i*. The *-mi* conjugation with its old endings predominates here in Greek and Sanskrit. The long vowels in *histe:mi*, *dido:mi* may be due to the lost nasal infix discussed in the next paragraph. It is found in *-m(i)* verbs in Armenian. Grassman's dissimilation of Greek *\*thithe:mi* to *tithemi* (loss of aspiration) recalls Dahl's law of dissimilation in Bantu : *thathu* > *dathu* (Bulck 1949 : 69).

Infixes were prominent in Vedic Sanskrit (Cowgill 1966 : 132f.), but also occur in 'several other languages'. Cowgill recognises only one PIE infix, \* *-né-/n-* , used in present verbs - "about forty" of them - he surmises. Exs. Latin *mungo*, *tango* etc. He says that as far as he knows only Baltic still possesses a productive nasal infix. But Armenian has presents with a nasal syllable *ne*, *lk' anem* 'I leave', *lizanem* 'I lick' where other IE languages have the infix, Latin *linquo*: 'I leave', Greek *limpano*: 'I leave', Latin *lingo*: 'I lick', Greek *leicho*: (Meillet 1936 : 106). The original *-ne-* occurs, but in a different position in the word. It is the same infix.

Latin *mungo*, *lingo*, *pungo* correspond to forms without the *n* (*mucus*, *ligula*, *pepugi*). Similar infixes occur in Sanskrit, *muñcati* 'he loosens'. The Niger -Congo basis for this nasal is *na* 'to be', but also as Westermann (1927 : 260) says an 'Habitualform'.

This is the force of this infix, which also appears in present participles such as Latin *ama-n-tem*, Greek *phero-n-tem* etc. Compare Swahili continuatives with *-na-*, *-ni-na-penda* ‘I am loving’ (Stapleton 1903 : 148).

In fact Latin *pungo* is probably related to Niger-Congo *pua* ‘to strike’ (Westermann 1927 : 280) Bantu *pum* ‘to beat’ (Meeussen 1980 : 34), *lingo* to Niger-Congo *lima* ‘tongue’ (Westermann 1927: 251), Bantu *dimi* ‘tongue’ (Meeussen 1980 : 53), and *mungo* to Niger-Congo *mua* ‘to sieze, catch’ (Westermann 1927: 258).

This leaves the suffixes which alone are readily productive in the historical period and are the hallmark of Indo-European languages. These have become fusional, however, and lack transparency of boundaries. All this suggests to me that the Indo-European languages have undergone a long development, and were once agglutinative. They once had productive prefixes, suffixes and infixes.

If this is true IE languages such as Latin, Greek and Sanskrit were once agglutinative, as was Niger-Congo. But can we find more evidence for this ?

## 10. The Verb

Both Latin and Greek have subjunctive forms of the verb formed with the vowel *e* whereas indicatives are formed with *a*. Greek also forms an optative with *i* which recalls the Latin ‘subjunctives’ of the verb ‘to be’ in *i* (*sim, sis, sit*). There is an Old Latin subjunctive (see Elmer 1898/1965 and Ernout 1953) of the verb ‘to be’ however (*siem, sies, siet*). Harry Johnston in his article on ‘Bantu Languages’ in EB (1911 : 361) points out that the normal vowel of Bantu verbs is *a*, but that this

changes to *e* in the subjunctive, and to *i* “to give a negative sense”. This Bantu *i* occurs in other Niger-Congo languages outside the Bantu subgroup and its original force is something of an enigma. The Greek indicative, subjunctive and optative may be regarded as marking diminishing degrees of reality (Humbert 1960, Chantraine 1958). Much the same can be said of Sanskrit (Gonda 1959), where the subjunctive marker is *a* (due to a confusing Sanskrit sound change  $e > a$ ), but the optative preserves *i/y*.

It may be significant that the verbs for “be” and “eat” were originally the same in both Niger-Congo and Indo-European, but have tended to develop distinct forms. The common origin of these verbs applies however in many different languages. To early man eating was existing.

Thus Latin *esse* is the infinitive of the verb *sum* “I am”, but also of the verb *edo*: “I eat”. This infinitive begins with a vowel *e*- like the Niger-Congo infinitives, which are nouns and may therefore have a prefix : eg. Yoruba *bu* “to cry aloud” but Guang *i-bubu* “cry of distress”, Ewe *ka* “to speak” but Efik *i-ko* “an utterance”, Tshi *k'ia* “greet” but Guang *i-tsia* “greeting”. Compare Gothic *itan* “to eat”. Matters here are complicated by the presence of a similar vowel on the Latin third person singular, *est* “he eats”, also “he is”. But the third person plural is *sunt* “they are”, is contrasted with *edunt* “they eat”. Sardinian (Bonfante 1971 : 28) preserves the ancient Niger - Congo prefix on the infinitive *iscire* (Classical Latin *scire* “to know”). But most Latin verbs lack the initial vowel prefix, even in the infinitive.

In Greek the initial vowel occurs not only in *eimi* ‘I am’, in *einai* (Attic), *emmenai* (Homer), the infinitive of the verb ‘to be’, but in all personal forms of this verb. And the verb ‘to eat’ has forms *esthio*: ‘I eat’, *edmenai* ‘to eat’ (Homer), *edomai* ‘I will eat’. Again regular verbs lack this vocalic prefix.

But in Niger-Congo both ‘be’ and ‘eat’ are from the root *li, di, lia, dia*, which can hardly be an accident. Compare Sanskrit *asmi* ‘I am’, *admi* ‘I eat’.

Armenian (Meillet 1936 : 117) however has forms *gom, gos, goy* ‘I am, you (sg) are, he is’, alongside *em, es, e* ‘I am, you are (sg), he is’. What is the explanation? Niger - Congo not only has *gi* ‘be in a place’ but also *gia* ‘be in a place’.

Niger-Congo also has *li, di, ri* ‘be in a place’, alongside *le, de, re* < \**lia, \*dia, \*ria* ‘to be in a place’. Not to mention *li, di, ri* ‘to eat’ alongside *lia, dia, ria* ‘to eat’. The last two of these are found with prefixes for nominal forms :Igbara *a-ri* ‘food’, *i-li* ‘eating’ etc. These forms will account for the *d* of Latin *edo* :.

As for the labiovelars, one would expect them to be lost, particularly if unaccented. And they are : N-C \**g* gives *y* in *gi(a)* ‘to be’; but zero however in *gu* ‘he’, except in Ewe *wo* ‘he’, which incidentally has the *o* found in *gom*. Armenian *gom, gos, goy* is best explained as *gw* > *g*. Are we then to posit *s* > *gw* to explain Latin *sum*, Armenian *gom* ? The reverse is far more likely : *gw* > *g* > *k* > *s*. In any case so many anomalies (and correspondences) can hardly be due to chance. Comparative linguistics is concerned above all with phenomena that cannot be due to chance.

Latin *sum* ‘I am’ preserves the first person singular ending *m*, which comes from *mi* (compare Greek *eimi*, Sanskrit *asmi*, Hittite *ešmi*). This however must be the Niger-Congo first personal pronoun *mi* ‘I’ for which Westermann (1927 : 256 - 257) gives over 40 reflexes (Bantu *ni*). This ending is well established in the so-called *mi*-verbs of Greek and Sanskrit (Slijper 1966: 78 - 82, Greek). The same word *mi* means ‘I’ in Etruscan. This is evidence that inflectional endings come from independent words, in this instance pronouns.

## **11. The Noun**

The identifying formal characteristic of Indo-European languages is the system of nominal cases, comparable in some ways to the Niger-Congo prefixes. The case suffixes are fusional endings on the noun. These carry several categories at once (number, case, gender) which are formally opaque and cannot be separated out. They share with the Niger-Congo prefixes the parameters of number (sg. vs pl.), animacy, gender, place, grammatical (abstract) relations. The eight cases of Indo-European, singular and plural, might be argued to match the Bantu 16/17 non-local prefixes.



The following table presents forms from Buck (1933 : 172) with some simplification.

<b>The PIE Cases</b>	<b>Singular</b>	<b>Plural</b>
<b>Nominative “agent”,</b>	<b>s,#, a:,os,is,us</b>	<b>es,a:s,o:s, eyes,e</b>
<b>Vocative “address”,</b>	<b>#, a,ai,e,i,ei,u,eu</b>	<b>” “ “ “ “</b>
<b>Accusative “object”,</b>	<b>m,a:m,om,im,um</b>	<b>Ns,a:s,ans,ons,ins,uns</b>
<b>Genitive “possessive”,</b>	<b>es,os,os,a:s,osyo</b>	<b>o:m,io:m,yo:m</b>
	<b>oso,eis,ois,eus,ous</b>	<b>uo:m,wo:m</b>
<b>Dative “to, for”,</b>	<b>ei,ai,a:i,o:i,eyei,ewei</b>	<b>bhos,mos,a:bhos,obhos</b>
<b>Ablative “from”,</b>	<b>o:d,e:d</b>	<b>” “ “ “</b>
<b>Instrumental ”by”.</b>	<b>a:, o:, e:,i:, u:</b>	<b>bhis,mis,a:bhis,o:is</b>
<b>Locative “in, at”,</b>	<b>i, #, a:i, o:i, ei, eyi, ewi</b>	<b>su, a:su, isu, usu</b>

The distinct formal markers from this confusing mass of data are :

#### **SINGULAR**

<b>Nom. s,</b>	<b>Voc. #,</b>	<b>Acc. m,</b>	<b>Gen.Vs,</b>	<b>Dat. Vi,</b>
<b>Abl. od, ed,</b>	<b>Ins. bhi,</b>	<b>Loc. i.</b>		

#### **PLURAL**

<b>Nom. Vs</b>	<b>Voc. Vs</b>	<b>Acc. ns</b>	<b>Gen. om</b>	<b>Dat. bhos, mos</b>
<b>Abl. bhos, mos</b>		<b>Ins. bhis, mis, o:is</b>		<b>Loc. su</b>

It will be noticed that most of these plurals end in -s.

A Latin Example (Second *o*-stem Declension) :

	Singular	Plural	
Nominative	<i>dominus</i>	<i>domini</i>	(subject)
Vocative	<i>domine</i>	<i>domini</i>	(address)
Accusative	<i>dominum</i>	<i>dominos</i>	(object)
Genitive	<i>domini</i>	<i>dominorum</i>	(possessive)
Dative	<i>domino</i>	<i>dominis</i>	(to, for)
Ablative	<i>domino</i>	<i>dominis</i>	(by, with, from)

Traces of a Locative *domi* “at home” (place where) and Ablative *Romam* “to Rome” survive in certain words.

Semantically the cases are something of a rag bag, each having multiple uses or functions, often of an abstract nature. Different Indo-European languages have different numbers of cases, which vary with stem type (in *a*, *o*, *i*, *u*, consonant), with confusing syncretisms. Much phonetic erosion causing confusion has occurred. Greek has five cases, Latin has six (orthodox version), Sanskrit has eight. But there are different stem classes with different declensions and different numbers of cases in all the languages, often less in the plural. Which may be significant.

Tocharian (Krause & Thomas 1960) exhibits various quasi-case suffixes as does Homeric Greek, (*-phi*, *-thi*, *-then*, *-de* etc in Homeric Greek, see Shipp 1972, also Hudson-Williams 1961 : 59 - 60)), which are not sensitive to number (Burrow 1955 : 238 -239, on Sanskrit), and are relatively transparent in meaning (mainly local).

Compare the local prefixes of Bantu. For a brief account see also Buck (1933) on Greek & Latin, Misra (1968) on Sanskrit, Greek & Hittite.

The most natural assumption is that the I-E cases, like the Basque ‘cases’ (really suffixes) of disputed number, but the same for all nouns, were agglutinative in origin, were once transparent suffixes of clear meaning (like the quasi-cases), and were once the same for all stem classes in both singular and plural (Mareš 1966 a : 164, 1, g, on Proto-Slavic). A brief summary of the main features of the system follows :

The I-E nominative singular was originally *-s*, which we take from Niger-Congo *-k(V)*. The Basque ergative retains the *k*, but elsewhere it has developed to *s*, even in Etruscan. Exs. Latin *dominus, civis*. Original Niger-Congo *ke* ‘make, do’ (< *ki-a*), Bantu *gid* ‘to act’, *kit* to do’, Bangi, Lolo, Ngala, Poto, Soko, Kele *kela* ‘to do, make’. We know that historically ergative systems can change into nominative/accusative systems and vice versa, Anderson (1980 : 58 - 59) on Tongan, Harris (1985 : 4), on Kartvelian, for example. Compare Comrie (1978 : 368 - 380). This typological shift presumably happened to the I-E nominative, which we take from an old ergative. In neuters the nominative is the same as the accusative (compare ergative systems). Some Indo-Iranian (I-E) languages have ergative systems.

The I-E accusative singular was *-m* from Niger-Congo *mi* ‘in’. Indeed the prepositional phrase with *in* tends to replace this case in Latin. Exs. Latin *dominum, civem*. Latin *in* probably from N-C *ni*, Nupe *nimi* ‘in’, or N -C *ni* ‘in’, Tobote *en, Adele ani*.

The I-E nominative plural has an *-i* in declensions I & II which matches Niger-Congo plurals in *-i*, probably from *-hi* < *-ni* (Westermann 1911 : 45 -46), in Ga, Efik, Kunama, Yoruba. Exs. Latin *domini, mensae* < *mensai*. Declension III has animate *-s*. But note that Armenian shows *k'* here, thought to derive from *s*, but probably the original sound was a voiced stop *g* < *ghw* or *kw*, Ewe *kpi*, Yoruba *kpi* "much, all". Head counts are an easy but not always reliable means of reconstruction.

For nominative/accusative neuter plurals in *-a* (Latin *flumina* etc), which do not fit the general pattern of animate nouns, compare Ewe plurals in *-a* (Westermann 1911 : 44) and the Togo Remnant (Westermann 1927 : 110, 14, 4 "Mz von Dingen").

The corresponding accusative plural was once *ns*, (> *s*), formed by adding a plural *k* > *s* to the singular: *mi* > *m* > *n* (*n* is then lost). Exs. Latin *domino:s, mensa:s, cive:s*.

The I-E genitive singular was formed in *-s* like the nominative, from which it came ? Compare *civis* (nominative) and *civis* (genitive). The first declension had *-a:s, familia:s*. Compare Latin *Caesar-us* (third declension !), Greek *kunos*. Possession may have been originally shown by word order. Unless this case is from N-C *gi* "to buy", *ki* "market". Note the N -C tendency to devoice voiced plosives, *g* > *k*.

The I-E dative singular was *-i* from Niger-Congo *mi* or *ni* meaning "in, towards". This dative form in *-i* is found also in Etruscan and Basque. Exs. Latin *civi, mensae* < *mensa:i, domino* < *domino:(i)*. Plural forms obscure. Perhaps *bhos* from N-C *bo* "to have", and *mos* from N-C *mua* [*ua* > *o*] "to take", + plural *s*.

The I-E ablative singular ended in *-d*, Latin *tuba:(d)*, *domino:(d)*. Greek *-then*, *Iliothēn*, N-C *te, tem, ten* “to cut, separate, pluck”. Plurals are not distinct in form from the datives. Sanskrit *senā:bhyas*, *senā-* “army”, *agnibhyas*, *agni-* “fire”.

The I-E instrumental was *-bhi*. Greek *iphi* “mightily”, Mycenaean *a-ni-a-pi* “with reins”. Compare N-C prefix *bi*, *bi* “pl. of tool”, but postposed. The N-C root is *bi* “child”, *pi* “small”, Bantu *pi* “Deminutivpräfix”. Plural *s* in *bhi-s*, Sanskrit *senā:bhis*, *senā;-* “army”, *agnibhis*, *agni-* “fire”. Westermann (1927 : 49, 12, d, 110) gives *pi* as “Mehrzeit von Menschen, Tieren, Dingen” in Togo R. The same elements serve as both prefixes and suffixes.

The I-E locative *-thi* is cognate with Etruscan *-ti* and N-C *ti* “in, middle”, PWN *THI* “put, put into”. Greek *Iliothi* “at Troy”. Plurals have *su* (perhaps from N-C *tu* “to approach, within a little of”).

The Greek quasi-case *-de* “towards” is N-C *de* “to be in a place”, Bassa *de*, Akassele *de*, Ahlo *de*, Ewe *le*. These quasi-cases are often added on (agglutinated) after normal cases, eg Greek *oikon-de* (“house” + accusative case + quasi-case *-de* “towards”).

The local meaning of quasi-cases *phi, then, thi, de*, is generally transparent, unlike that of the true cases which have multiple, abstract meanings. But they were felt to be an anomaly, lacked number, and tend historically to be replaced by prepositions.

The quasi-cases indicate that the cases of I-E were once suffixes, the same for all stem classes and insensitive to number, as in Basque. Proto-Slavic retained traces of the original situation in the plural : “the whole plural had originally the same endings for

nouns and pronouns” (Mar eš 1966 : 164, 1, g). The vexed problem of the I-E word classes (parts of speech) should also be explained historically in terms of agglutination (Regula 1951 : 72f, with bibliography). It is due to the fossilisation of N-C affix patterns.

The problematic imparisyllabic forms of nouns found in both Greek and Latin are evidence too for an agglutinative origin (Greek nouns in *-ma*, *-matos* for example). These may incorporate N-C prefix *ma* used with mass nouns and liquids : Greek *kuma*, *kumata* ’wave, waves’, Latin *flumen*, *flumina* ’river, rivers’, *fluenta* ’streams’. Discussion in Benveniste (1968 : 170f) *ma*, *ti*, *to*, and Perrot (1961) *-men(tum/ta)*. We derive *-ma*, *-ma-to-s* from Niger-Congo *ma + ta/to + s (< k)* and identify Latin *-men* with Greek *-ma*. Most derivational suffixes are listed in Renou (1952 : 170 - 186), for Vedic Sanskrit, Buck (1933 : 316 - 348), for Latin and Greek. In general they can be explained as Niger-Congo monosyllabic roots : *ta*, *ti*, *tu*, *ka*, *ki*, *ku* etc. used grammatically. See Westermann' s (1927: 304) list of ’Sudan’ suffixes.

Words such as Latin *iecur*, *iecineris*, *iter*, *itineris*, *femur*, *feminis* constitute another type of evidence. Are these heteroclite forms really due to “*contaminatio*”, or is there another explanation, namely deployment of what were once different affixes.

## 12. The Article

It is well known that Latin does not have an article. But a fossilised Niger-Congo article appears on Latin words such as *anim-al*, *vectig-al*, *Bacchan-al*, *Luperc-al*, *lupan-ar*. Compare placenames ending in *-al* in Kartvelian. The Niger-Congo postposed article could take the forms *al* or *la*.

The Niger-Congo definite in postposed *-i* should probably be identified on Greek *houtos-i, haute-i, touton-i* “this” etc., found for example in Plato. Forms without the *-i* are far more common in Greek. Latin nouns with a plural in *-ia* may incorporate this suffix, and once had a nominative singular in eg *\*-l-i*, eg *\*animal-i*.

The Romance languages (Hall 1957, Lausberg 1971) however have a preposed definite article *la, le* etc, which is known to derive from the Latin demonstrative *ille, illa*. This however can be identified as the Niger-Congo postposed article *la*, which was also used as a demonstrative, and could show a prefix (Nya *ale*, Logba *ole*, Kposso *ola*). This word always has a prefix in Mande. Since Niger-Congo is agglutinative the word may be preposed (dem.) or postposed (hence Arabic preposed article *al*). Rumanian, a Romance language, has the article postposed, *frate-le* “the brothers”, from *frate, carte-a* “the books” from *carte*. Compare South Italian *iddu* with prefix *i-* and with a long retroflex *d* from original *l*, a common development in Niger-Congo. (Compare Latin *iste, ista, istud* “that of yours”).

Particularly interesting is the Armenian article in *-e, -n*, which is postposed, like the Niger-Congo article, and is the same for singular and plural (Feydit 1969 : 21, 25). In fact it is added after the plural endings. This is clearly a reduction of the Niger-Congo article *-la, -ra, -na*, which takes the form *na* on occasion (Westermann 1927 : 261), or is reduced to a vowel in some N-C languages such as Kongo *a, e, o* (Stapleton 1903 : 50, par. 161). We are reminded here of the Attic Greek article, *ho, he, (to)*.

### 13. The Noun Prefixes

The noun prefixes are the diagnostic feature of Niger-Congo languages. Thus Latin *anima* ‘soul’ (whence *animal*) can be further analysed as *a-* (prefix) *ni* (‘soul’) *ma* (suffix). The word has cognates not only in Latin *animus* ‘spirit, courage’ but in Greek *anemos* ‘wind’, Sanskrit *anilas* ‘breath’, Irish *anal* ‘breath’. The Sanskrit and Irish forms share the *l* of *animal*. Basque has *arima* ‘soul’ (with Akpafu  $n > r$ ). Both Greek *anemos* and Latin *animus* share the *mo/mu* suffix. Which suggests a common source, rather than localised substrate. The same could be said of Latin *animal*, Irish *anal*, with fewer (agglutinative) affixes. A common source is indicated.

The vowel prefixes are characteristic of the Western group of Niger-Congo. But these prefixes appear to be optional. Compare Latin *stella* ‘star’, Armenian *ast*<sup>3</sup> ‘star’, Greek *aster* ‘star’. Also Latin *Nero* ‘man’, Greek *a-ner*, Armenian *ayr* ‘man’, Oscan *niir* ‘man’, Vedic Sanskrit *nar-* (often of gods), N-C *nir* ‘man’, Kele *nir*, Dagomba *nire*, Gba *niri*, Konkomba *o-nir*, Yoruba *e-ni*, Gbari *u-nu*, Ekoi *ni* ‘man’, *ni* being common in Western N-C languages. Such problematic prothetic vowels are often explained by the ‘Laryngeal Theory’ first proposed by De Saussure’s Mémoire sur le système primitif des voyelles dans les langues indo-européennes (Leipzig 1879), but subsequently greatly elaborated. Much of Laryngeal Theory (see Lehmann 1955, Ch. 3) in its diverse forms, should, I think, now be abandoned.

In the Devanagari alphabet used to write Sanskrit the syllabic signs for *a*, *i*, *u* come first, which indicates, I think, that these vowels once had a special importance in Sanskrit, and were somehow primary. Notable is the very high frequency of Sanskrit initial *a-*. In western Niger-Congo this vowel has the highest frequency, and is the



commonest prefix. I think the *a-*, *i-*, *u-* of Sanskrit were the Niger-Congo vowel prefixes. In fact the phoneme inventory of Sanskrit, which is rather unusual, including voiced and voiceless aspirates, palatals, retroflex including dentals, a variety of nasals (labial, dental, velar, palatal, retroflex), has striking resemblances to the phoneme inventory reconstructed for Proto-Niger-Congo. The Devanagari script incorporates the word for ‘god’, *deva*, and derives from the ancient Mohenjo-Daro and Harappa script which was a syllabary (undeciphered) related to the African syllabaries.

To illustrate the vocalic prefixes we list some Indo-European words with Niger-Congo prefixes and etymologies :

**Prefix a-**

Latin *acus* ‘needle’, Greek *akis*, *ake* ‘point’, Sanskrit *açanis* ‘mythical weapon’, Armenian *ase<sup>3</sup>n* ‘needle’, N -C *kin* ‘needle’, Bassa *aki* ‘needle’, Kupa *atši* ‘needle’, Nupe, Gbari *eki* ‘needle’, Bantu *con* ‘be pointed’ (Meeussen 1980).

Latin *abolla* ‘mantle of thick wool, used by peasants’, N -C *ba* ‘wide, thick’, & N -C *ba* ‘mat’, Ewe *aba* ‘mat’, Yoruba *aba* ‘mat of coarse grass’, Kupa *aba* ‘mat’, Zema, Afema *be* ‘mat’.

Latin *agger* ‘rampart’, N -C *gil* ‘wall’, Ewe *agli* ‘wall’, Lofana *agli* ‘wall’, Nya *gli* ‘wall’, Avatime *liglile* ‘wall’.

Latin *amata* ‘vestal virgin’ (also woman’s name, the mother of Lavinia), N-C *ma* ‘mother’, Indiki, Korop, Kebu, Konyagi *ama* ‘mother’, Kusassi *uma* ‘mother’, elsewhere *ma*. PWN *MA*, *MAMA* ‘mother, grandmother’. Compare Latin *amma* ‘mother’.

Latin *amurca* ‘lees’, N -C *mu* ‘the inner’, Tschì *emu* ‘the interior’, Bassa *mu* ‘in’,  
Bantu *mu* ‘in’, Kuku ruku *emi* ‘in’.

Latin *anus* ‘old woman’, N -C *ni* ‘mother’, Atjulo *anum* ‘mother’, Kasima *enu*  
‘mother’, Bamana *nu* ‘mother’, Bantu *ngoko* ‘your mother’ (Meeussen 1980), Bola,  
Pepel *ani* ‘mother’, often *ni*. PWN *NINA*, *NINU* ‘mother’.

Latin *aqua* ‘water’, N -C *gia* ‘wa ter’, Yoruba *ogi* ‘water’ (dial), Igbo *u~~o~~i*, *igi*  
‘water’, Akwa *aya* ‘river’, Kpelle *ya* ‘water’, Mende *yia* ‘water’, Sussu *ye* ‘water’.

Latin *aquilus* ‘brun noir’, N -C *gi* ‘black’, Ewe *yi* ‘black’, Dahome *wi* ‘black’,  
Grebo *yidi* ‘dark, black, blue’, Gbari *o~~o~~-hi* ‘black’, Igbo *o~~o~~i* ‘black’, Kposso *we*  
‘black’, Bantu *jid-o* ‘dark’ (Meeussen 1980). Compare the related word for ‘eagle’,  
Latin *aquila*.

Latin *araneus* ‘spider’, N -C *na* ‘spider’, Guang *nare* ‘spider’ (dial), Kandjaga *ni-*  
*nara* ‘spider’, Bargu *nara* ‘spider’, Sobo *a-ne* ‘spider’, Yoruba *e-na* ‘spider’, Tschì  
*a-nanse* ‘spider’, Ga *a-nanu* ‘spider’.

### **Prefix i-**

Latin *imago* ‘image, portrait’ is without etymology. The word is from the common  
Niger-Congo root *ma* ‘mother’, which is found with prefixes : Indik, Korop *ama*,  
Kussassi *uma* etc. Compare *matrix* for the meaning.. The imagines were ancestral  
images kept in the atrium. These go back to the days when the ancestors were female  
like the African ancestors. The Etruscans still used matronymics in the historical  
period. The meaning ‘phantom’ (poetic) herein finds its explanation.

Latin *ida* ‘territory’ is said by Ernout not to be Latin, perhaps Iberian. From Niger -  
Congo *la, da* ‘earth’, with prefixes, eg Yoruba *ile* ‘ground, earth’, Igbo *ala* ‘ground’,  
Bulom *alo* ‘below’. It may or may not be Iberian.

Latin *imber* ‘rain’ (which falls), Greek *ombros* ‘rain’, Sanskrit *ambras* ‘water’, Armenian *amb, amp* ‘cloud, nuage’. The word survives in Logodurian. Niger -Congo (*m*)*bi* ‘dew’ (Westermann 1927 : 208), Igbo *imu*, Nupe *emi*, Okuloma *obut* ‘dew’, Temne *kebi* ‘dew, mist’, Bute *mmi*, Gbe *ami* ‘dew’.

Latin *imus* ‘bottom’, Oscan *imad-en* ‘ab imo’, Niger -Congo *mi, mu* ‘in, inside’, (Westermann 1927 : 258), Tshi *emu* ‘the interior’, Kukuruku *emi* ‘in’, Bassa *mu* ‘in’, Nupe *nimi* ‘inside’. Compare Latin *in*, Greek *en* ‘in’.

### **Prefix u-**

Latin *uber* ‘udder’, ? Greek *outhar* ‘udder’, ? Sanskrit *udhar*, Serbian *vime*. The Latin and Serbian is from N-C *bi* ‘breast’, Nupe *ebe*, Edo *evie*, Eafeng, Akurakura *ebi*, but Limba *hubi*, Kissi *bir*, Kandjaga *bisiri* ‘female breast’. PWN *BIL, BID* ‘female breast’.

Latin *ulcus* ‘wound’, Greek *helkos* ‘wound’, Sanskrit *arças* ‘hemorrhoides’, Niger -Congo *ku* ‘kill’ (Westermann 1927 : 237), Nupe *eku* ‘carcass’, Bowili *eku* ‘death’, Kposso *iku* ‘death’, Lefana *kukpi* ‘death’, Akassele *ukpi* ‘death’. PWN *KU* ‘kill’.

Latin *umidus* ‘moist’, Greek *hugros* ‘moist’, (*g > m*), Niger-Congo *mi* ‘fat, oil’ (Westermann 1927 : 257), Igbo *omi* ‘marrow’, Nupe *emi* ‘oil’, Gbe, Ebe *ami* ‘oil, fat’, Avatime *kumu* ‘fat’.

Latin *uncus* ‘hook’, Greek *ogkos* ‘hook’, Lithuanian *anka* ‘buckle’, Old Slavonic *okoti* ‘hook’, Sanskrit *ankas* ‘hook’, Niger -Congo *mu, mua* ‘to catch’, Bantu *guid* ‘to catch’, Gbe, Igbo *mwa* ‘to catch’, Igbo also *ngwua*, which suggests an original underlying labiovelar, as does the Bantu, Lolo *kumba* ‘to catch’.

Latin *unda* ‘wave’, Umbrian *utur*, Greek *hudor*, Sanskrit *udakam* ‘water’ (as an object), Linear A *RA* ‘water’, compare PWN *GWAL, GWYEL* ‘to flow’, with \**gwy >*

*rw > r > d* (retroflex). Compare N-C *la, da* ‘to lie’.

Latin *urbs* ‘city’, Niger -Congo *bia* ‘place’ (Westermann 1927 : 209-210), Yoruba *ibe* ‘that place’ (cf L. *ibi*), Gbe *aba* ‘place’, Igbo *ebe* ‘place’, Efik *ebie-t* ‘in a place’ (with ‘locative’), Gola *kobe* ‘place’. A form *ba* meaning ‘here’ is common in N -C.

As is clear from the above examples *e-* and *o-* prefixes are also common. These are developments of *a-, i-, u-* due to phonetic change.

### **Prefix o-**

Latin *ovum* ‘egg’, Greek *o:ia* ‘eggs’, N -C *gia* ‘egg’, Igbira *e-ge* ‘egg’, Opanda *a-gie* ‘egg’, Dagarti *gya-le* ‘egg’, Dagomba *ga-le* ‘egg’, Akpafu *o-yi* ‘egg’ has kept a Latin reflex *v* of the labiovelar palatal in MEDIAL position. Doric Greek *o:bea* has *b* for the labiovelar. PWN *GILA* ‘egg’.

### **Prefix e-**

Latin *epulum, epulae* ‘banquet’ (at festivals, funerals etc), *ops* ‘abundance’, Sanskrit *a:pas* ‘religious ceremony’, N -C *pu* ‘stomach’, Guang *i-pu*, Mekibo *epu* ‘stomach’, Dagomba, Kissi *pu-li* ‘stomach’. PWN *PUT* ‘stomach’. Self -indulgence was the rule at banquets, originally often held after times of famine.

### **Consonantal Prefix 6 ma-**

Prefix used with mass nouns, liquids, pairs etc. in Niger-Congo.

Latin *Ma-nes* (Etruscan *Mani*) ‘ancestral spirits’, N-C *ni* ‘soul’, *mani* ‘people’, as in *Ma-n-d-e* (with intrusive *d*), Bamana, Djula, Sussu *ni* ‘soul’, Gola *o-ngin, o-ngi:* ‘soul’, Santrokofi *ku-ni* ‘soul’ (singular prefix). The same prefix (used of liquids, eg

*mana* 'wine') on Latin *ma-re* 'sea', N -C placename *Mali* 'water', Bangi, Ngala, Poto *mai* 'water'. PWN *LINGI* 'water'. Compare Greek *magganon* 'philtre', *madao* 'I am wet', *malthakos* 'soft'. Latin *manus* 'hand', Greek *mare* 'hand' from N -C *nu, ni* etc 'hand'. Compare Sanskrit *manusha* 'a man' (from having two hands). Greek *mallos* 'fleece' perhaps belongs here. Sanskrit *mañg-i:ra* 'anklet', *mataki:* 'hail', *mani-ka* 'water-pot', *manda* 'scum of boiled grain', *manda-ika:* 'group, crowd', *mad-ira* 'spirituous liquor', *madh-u* 'nectar, mead, soma, milk, butter, honey', *mas-tu* 'sour cream'.

### **Consonantal Prefix 7 ki-**

This prefix used of custom, method, tool, in Niger-Congo.

Latin *celtis* 'sculptor's chisel'. Greek *kibisis* 'haversack', *kigklis* 'grille', *kidaris* 'diadem', *kithara* 'type of lyre', *kikkabos* 'small coin', *killibas* 'tripod', *kiseris* 'pumice', *kiphos* 'garland' (Messinian), *kion* 'column', Latin *ce:ra* 'wax', Greek *ke:ros* 'wax', Latin *cignus* 'measure' (8 scruples), Latin *ci:mussa* 'cord' (gloss). Latin *cincinnus* 'hair brooch', Greek *kikinnos*. Allegedly borrowed from the Greek. Latin *cippus* 'boundary marker, gravestone'. Old High German *chipfa* 'cippus'. Sanskrit *ki-ta:* 'pile of wood, funeral pyre', *kira* 'strip of bark, cloth', *ki:-vara* 'iron file'.

### **Consonantal Prefix 10 ri-, di- ?**

This prefix is a plural of animals in Niger-Congo.

Latin *ricinus* 'tick' (on cattle), N -C *ki, ku* 'small, tick, louse', Bantu *kupa* 'tick', Bangi *losisa* (*si > ki*) 'louse', Poto *n-chi-di* (*ch = k*) 'louse'. Compare Greek *diza* 'goat', *diktus* 'Libyan animal', perhaps *diphthera* 'leather'. Latin *rotta* 'kind of

fish”, Latin *rubeta* ”type of venomous frog”, Latin *rumica* ”kokkux” (gloss), ie a cuckoo.

### **Consonantal Prefix 9 n(i)-**

This prefix is used for animals in Niger-Congo.

Latin *ni:te:la* ”field mouse”. Latin *ni:dus* ”nest”, Sanskrit *ni:d.as* ”place where one sits”, Old High German *nest*. Latin *nepa* ”scorpion”. African, acc. to Festus.

Latin *natrix* ”water snake”.

### **Consonantal Prefix 13 ka-**

This prefix used of small things in Niger-Congo.

Latin *calamus* ”reed”, Greek *kalamos*. Allegedly borrowed from Greek. Sanskrit loanword *kalamas*. Greek *kanthelia* ”panniers”, Greek *kanon* ”rod, ruler”.

Latin *calamatus*, *calamaucus* ”bonnet”. Greek *kantharos* ”scarab”. Latin *caliga* ”sandal”, Greek *kaligion* ”shoe” (from Latin). Greek *kaltios* ”shoe”, Greek *kairos* ”cord”. Greek *kalauirops* ”shepherd’s crook”, Greek *kamara* ”vault”,

Latin *calo:* ”wooden shoe”, Greek *kalopous*. Greek *kamax* ”pole” (for vines),

Latin *calathus* ”basket”, Greek *kalathos*. Latin *calathus* is borrowed from Greek.

Greek *kados* ”jar”, *kakkabe* ”cauldron”, *kalpis* ”jug”. Greek *kaminos* ”furnace”,

Greek *kapa:na:* ”chariot” (Thessalian). Latin *calix* ”drinking cup”, Greek *skalis*,

Sanskrit *kalaças*. Latin *ca:mus* ”muzzle”, Greek *kamos*, *ke:mos*. Latin *canaba* ”tent”

(military), Greek *kannabos*. Compare Latin *capanna* ”cabin” and Greek *kalia* ”hut,

cabin”. Sanskrit *kamsa* ”goblet”, *kaksha* ”hiding place”, *kan.kana* ”bracelet”,

*kan.kata* ”a comb”, *kan.kala* ”skeleton”, *kaga* ”a lotus”, *kata* ”a mat”, *kati:raka* ”loin

cloth”, *kattara-ka* ”dagger”, *kana* ”a grain, drop, flake”, *kanisa* ”ear of corn”,

*kanu:kaya* ‘à den’, *kanthara-ka* ‘travelling bag’, *kandola* ‘reed basket’.

### **Consonantal Prefix 19 pi-**

This marks diminutives in Niger-Congo.

Latin *pila* ‘ball’, English *pill*. Greek *pinax* ‘writing tablet’, Greek *pissa* ‘pitch’,

Greek *pistake* ‘pistachio nut’, Greek *pittakion* ‘tablet, receipt’, Latin *pilleus* ‘hat,

bonnet’. Greek *pi:los* ‘felt’, Latin *pilus* ‘hair’. Latin *pinna* ‘feather’.

Latin *piper* ‘pepper’, Greek *peperi*, Sanskrit *pippali*: ‘grain of pepper’. Greek *pitura*

‘ball of grain’, Latin *pisinnus* ‘small, small boy’. Latin *pisum* ‘pea’. Greek *pisos*,

*pisson* ‘pea’. Allegedly borrowed from Greek. Sanskrit *pikkha* ‘tail feather’, *pita*

‘basket’, *pidaka*: ‘à boil, pimple’, *pi-pl-u* ‘à mole, freckle’.

### **Consonantal Prefix 20 gu-**

This prefix is derogatory in Niger-Congo.

Latin *gula* ‘gullet’. Greek *gugai* ‘grandfathers’, Greek *gumnos* ‘naked, unarmed’,

Latin *gumia* ‘glutton’. Greek *gups* ‘vulture’, Greek *gupsos* ‘plaster’, Latin *gurdus*

‘coarse, gauche’. Latin *gurgustium* ‘low lodging house’, ‘doss-house’. Sanskrit

*ghuna* ‘wood worm’, *ghura-ghura-ya* ‘rattle in the throat’, *guha* ‘hiding place,

cave’, *gudha-agara* ‘prison’, *ghurna* ‘vacillating’,

The Greek word for ‘woman’, *gune*: (γυνή), perhaps has this prefix, for the ancient

Greeks, having a warrior mentality, regarded women as cowards and inferior. The

root *ne*: would then be from N-C *na* ‘mother’, which is found with prefix *u-* (from

*gu-*) in Western Niger-Congo (Westermann 1927 : 262, Igbo *u-ne*, Kposso *u-na*,

Guang, Gola, Igbara *o-na*). The word once had a labiovelar in PIE, as can be seen

from Boeotian *bana*: ‘woman’, Avestan *gəna* ‘woman’, Vedic Sanskrit *gna*:- ‘woman, goddess’. If this is accepted, we must posit a very early labiovelar consonant on this prefix, at least in some Niger-Congo languages. Meinhof reconstructs  $\gamma$  (= a labiovelar) in this prefix : *u $\gamma$ u*.

**The discovery that the Niger-Congo prefixes can be found, albeit fossilised, in Latin, Greek and Sanskrit, has major implications. These languages are African in origin.**

In Western Niger-Congo prefixes on the noun appear to have been optional. Some Latin and comparative examples :

#### **Without Prefix**

Latin *mater* ‘mother’, Greek *meter*, Sanskrit *matar-*, N-C *ma* ‘mother’, often prefixed (with *a-* etc), but never with a following suffix as in Indo-European. Thus Bantu *nina* ‘his/her mother’, *maama* ‘my mother’, *ngoko* ‘your mother’. Greek *ma ga* ‘mother earth’ (female exclamation), *maia* ‘little mother’ (to old women).

The following examples illustrate a sound correspondence :

#### **Latin p = Niger-Congo \*b**

Latin *pater*, ‘father’, Greek *pater*, Sanskrit *pitar-*, N-C *ba* ‘father’, also *baba*, Latin *pappus* ‘grandfather’ (Greek *pappos*). PWN *BHABHA* ‘father’. Perhaps *-ter* = N-C *ta* ‘father’ + *r* = N-C article. Bantu *taata* ‘your father’. But compare Latin *mater*, ‘mother’, *frater* ‘brother’ etc.

Latin *palus* ‘swamp’, Sanskrit *palvalam* ‘sea, swamp’, Old Slavonic *plakati* ‘to



wash”, N-C *ba* ‘swamp’, Ewe *ba* ‘swamp’, Gola *eba* ‘swamp’, Gagu *gi-bala* ‘swamp’. The Latin *ri-pa* ‘river bank’ (Edo *i-ba* ‘mud seat’) is the same word, with consonantal prefix. Greek *pontos* ‘sea’ and *potamos* ‘river’ are probably likewise from N-C *ba* ‘swamp’, (also *bat*) with *a > o* ; compare N-C *pa*, *pat* ‘swamp’, Temne *e-pat* ‘mud of fresh water’.

Latin *pannus* ‘rag’ (pejorative), N -C *ba* ‘mat of coarse grass’, Ewe, Yoruba, Kupa *aba* ‘mat’.

Latin *pario* ‘I give birth’(humans, animals, birds), N -C *ba* ‘big, thick, large’, Tshi *ba* ‘to extend’, Igbo *oba* ‘big and round’.

This suggests sound correspondences can be set up even for languages that differ in structure (inflectional Latin, agglutinative Niger-Congo), and are not directly related.

The following examples illustrate a sound correspondence of :

### **Latin *v* [w] = Niger-Congo *gi***

(Westermann' s *gi* is now interpreted as a lenis voiced labiovelar stop)

Latin *via* ‘road’, Umbrian *via* ‘road’, Gothic *wigs* ‘road’ from N -C *gia* ‘to go’, Ga *ya* ‘to go’, Nki *djia* ‘to go’, Tivi *dza* ‘to go’, Korop, Pepel *gia* ‘to go’, Bantu *γia* ‘to go’. PWN *GWIA* ‘go’.

Latin *vates* ‘prophet’, Irish *faith* ‘poet’, Gothic *wods* ‘inspired’, possibly Sanskrit *api-vatati* ‘he understands’, compare Vaticanus ?, from N-C *gua* ‘grey hair’, Efik *i-wat* ‘grey hair’, Ga *wan*, Ewe *wo*, Yoruba *e-wu* ‘grey hair’, Igbo *a-wo* ‘white hair’.

Latin *vapor* ‘vapor from a liquid’, N -C *gia* ‘water’, Akwa *aya* ‘river’, Kpelle, *ya*, Mende *yia* ‘water’.

Latin *vas* ‘bail, guarantee’, N -C *gia* ‘to speak’, Abriwi *ya* ‘to speak’, Mende *yia* ‘to speak’, Edo *we* ‘to say’. PWN *GWAM* ‘speak’, *GWA* ‘answer’.

Latin *veho* ‘I carry, transport’, N -C *gia* ‘to steal’, Agni *wa* ‘to steal’, Guang *wi, yi* ‘to steal’, Bantu *ɣiva* ‘to steal’ (with Me inhof ‘ɣs for a labiovelar). PWN *GHIU* ‘steal’.

Latin *velabrum* ‘winnowing fan’, N -C *gi* ‘air’, Tschì *e-wi* ‘air, atmosphere’, Akpafu *ka-yi*, Santrokofi *ka-yi* ‘world’. PWN *GULU* ‘sky’.

Latin *vello* ‘I pluck’ (fleece, hair, feathers), N -C *gel* ‘skin’, Ewe *ɣe, we, wo* ‘cast off snakeskin’, Guang *o-welo* ‘skin’, Bamana *wolo* ‘skin, leather’.

Latin *villus* ‘hair’ (of animal etc), N -C *gi* ‘skin’, Dahome *we* ‘skin’, Abriwi *a-we* ‘skin’, Akassele *tu-we* ‘skin’. PWN *GWENDI* ‘mane’, *GHW(Y)ILI* ‘hair’.

Latin *velum* ‘cloth, drape, veil’, N -C *gu* ‘clothing’, Yoruba *e-wu* ‘loose garment, shirt’, Likpe, Ahlo, Kposso *a-wu* ‘garment’. PWN *GWUB* ‘cover’.

Latin *vox* ‘voice’, Sanskrit *va:k* ‘voice’, Tocharian A *wak*, B *wek* ‘voice’, Greek *opa* ‘voice’ (acc.), Armenian *ɔœm* ‘I shout’, N -C *gue* ‘voice’, Ewe, Ga *gbe* ‘voice’, Yoruba *i-gbe* ‘loud shout’, Gbari *e-gbe, e-gwe* ‘mouth’, Gba (language name). The word has religious overtones. PWN *GWAM* ‘speak’.

The following examples illustrate the sound change :

**Latin/Greek # = Niger-Congo kw/ku/gw/ku/ngw.** [Fluctuations of voice in Niger-Congo].

Latin *o:s* ‘bone’, Greek *osteon* ‘bone’, N -C *kua* ‘bone’, Okoy *kwa* ‘bone’, Atjulo *kuo* ‘bone’. PWN *KHWUPA* ‘bone’.

Latin *os* ‘mouth’, Vedic *a:sa:* ‘mouth’, Old Icelandic *oss* ‘mouth of a river’, N -C *nua, nwa* ‘mouth’, Agni, Zema *nwa* ‘mouth’, Avikam *e-no* ‘mouth’, Gbe *nwo* ‘mouth’. Niger -Congo *w < \*ngw*. PWN *GWAM* ‘speak’, *GWAN* ‘tella tale’.

Greek *hodos* ‘road’, Old Slavonic *choditi* ‘to go’, Armenian *otn* ‘foot’, N -C *kua*

‘road’, *gua* ‘gate, entrance court’, Guang *o-kpa* ‘road’, Lofana *ogba* ‘road’, N -C *kua* ‘foot’, Numu, Huela *kpo* ‘foot’, Igbo *okpa* ‘foot, leg’. PWN *KHWOT, KHWOD* ‘return home’. Bantu has *padi* ‘foot’, compare Latin *pes, pedis*, Greek *pous, podos*, Sanskrit *pa:t* ‘foot’.

Latin *ovis* ‘sheep’, Greek *o(F)is* ‘sheep’, Sanskrit *avis* ‘sheep’, N -C *gua-ni* ‘sheep’, Ewe *gbo* ‘sheep’, Dahome *u-gwa* ‘sheep’, Agni *bwa* ‘sheep’, Sya *gwa, gba* ‘sheep’. PWN *GWU* ‘sheep, goat’.

Latin *nares* ‘nose’, Vedic *na:sa:*, Lithuanian *nosis* ‘nose’, Armenian *unkn* ‘nose’. N-C *nwua, nyua* ‘nose’, Kusassi *nyo-re* ‘nose’, Dagarti *nyoa-re*, Barba *nywe-ru* ‘nose’, from a labiovelar *gw*. PWN *NGWA, NGWYA, NGWUNA* ‘nose’.

Latin *auris* ‘ear’, Greek *ous* [o:] ‘ear’, Avestan *uši* ‘two ears’, Armenian *unkn* ‘ear’, Lettish *ausu* ‘ear’, N -C *nu* ‘to hear’, Abr *iwi nwa* ‘ear’, Grebo, Barba *nua* ‘ear’, but Animere *nyu* ‘to hear’, *ku-nyu* ‘ear’, Kwa *nyung* ‘to hear’, with velar/palatal nasal from labiovelar *gw*.

Latin *oculus* ‘eye’, Greek *omma* ‘eye’, Old Slavonic *oko* ‘eye’, Sanskrit *aši* ‘evil eye’, N-C *nì, nù, nìa* ‘eye, see’, Tschì *e-nua* ‘eye’ (dial.), Santrokofi *nyu* ‘see’, Akpafu *nya, nyo:* ‘see’, with *ny* > labiovelar *gw*.

#### 14. Prepositions and Postpositions

The fact that some Indo-European languages have both prepositions (more common) and postpositions such as Latin *causa*, Greek *heineka*, indicates original agglutinative syntax. Thus we find L. *cum patre meo* but *mecum, tecum* for example. *Cum* = N-C *ku* ‘companion, with’. Such behaviour is typical of agglutinative languages. Greek (Herodotus III, 122) has *heineken chremato:n*, but elsewhere *pollo:n heineka* (I, 109). This word is probably from N-C *heneka* ‘stand up’ (Johnston 1919 - 22 : 52,

note). Prepositions such as Greek *apo* = Latin *ab*, Old Irish *abu* ‘from’, are sometimes postposed, eg in Homeric Greek *philo:n apo* (Odyssey I, 49), Old Irish *mullac abu* ‘onward and upward’. Armenian mostly uses postpositions (Feydit 1969) however.

In fact most of these words, with some variation of meaning, are found as both prepositions preceding nouns, with which they are included for purposes of accentuation, and as prefixes on verbs etc. Examples : Latin *in*, Greek *en*, Sanskrit *ni*, from N-C *ni* ‘in’ (Westermann 1927 : 265) : *in templum* ‘into the temple’, but *inficio* (from *facio* ‘I make’) and *inimicus* ‘enemy’, from *amicus* ‘friend’; Latin *ab*, Greek *apo*, N-C *po* ‘to take off, separate’ (Westermann 1927 : 274) : *abduco* ‘I lead away’ but *ab templo* ‘from the temple’ and *abductio* ‘carrying off’. Likewise *conficio* (from *facio*), but *cum patre*, *confectus* ‘exhausted’. Compare N -C *ku* ‘with’ (Westermann 1927 : 235).

An interesting situation prevails in Old Irish where the prepositions are ‘conjugated’ (Lehmann 1975 : 14). Examples :

*frium(m)*        ‘to me’

*frit(t), friut(t)* ‘to you’ (sg)

*fris(s)*        ‘to him/it’

*frie*            ‘to her’

The *m* postposed to *friu* is the first personal pronoun, the *t* added to *fri* is the second personal pronoun and so on. This suggests agglutination as a process is not entirely dead. The preposition *fri* is from IE root *wert* ‘to turn, go’, Latin *verto*, N-C *gia* ‘to

go” (Westermann 1927 : 223), Pepel *gia*, Bola *ya*, Bantu (Meinhof)  $\tilde{a}\sigma$  ‘to go’.

## 15. Pronouns

Even the personal pronouns of I-E have links with Niger-Congo, as we have seen in treating the verb (*-mi* ending meaning ‘I’). Thus Latin *me* ‘me’ (also *med*, *mepte*, *memet*) = N-C *mi* ‘I, me’. The form *me-me-t* recalls Niger-Congo (Bangli and Ngala) *me* suffixed to pronouns (Stapleton 1903 : 76). Greek has *e-me* ‘me’ (with a prefix as in Armenian *im*, Hittite *ammuk*, Greek *emege*, with both prefix and suffix, Gothic *mik* with suffix), Sanskrit *mam*, *ma* ‘me’. Niger-Congo *mi* means both ‘I’ and ‘me’. But the Sanskrit for ‘I’ is *aha-m*, suggesting a prefixation, with loss of the final vowel of *mi*. Compare Avestan *az • m*, Old Persian *adam*. Greek also has a form *ego-n* (*ego* is more common) with final nasal. Latin *ego* has a short *o*, but a long *o* occurs in verse and Old Latin (Plautus), suggesting a lost final *-m* (known to be weak in Latin). The forms with *h* and *g* in Sanskrit and Greek recall Niger-Congo *n-gi*, *n-gu* ‘I, me, my’ (Johnston 1911 : 362).

The plural pronoun ‘we’ is Latin *nos*, Sanskrit *nas*, Greek *noi(n)* ‘we two’. Again we can cite Niger-Congo *na* ‘I’ (Westermann 1927 : 261), which has 18 reflexes in Westermann. Mende has *nya*, Kpelle *na* > \*ni-a. We conclude this word once had a final consonant in N-C. Bantu has *ni* however, another common form without the extension in *-a-i*. Niger-Congo pronouns did not originally distinguish singular and plural, so the example we have given is pertinent.

## 16. The Numerals

The Niger-Congo numerals were based on the fingers and the hand. Words : *gua, ka* 'hand, arm, finger, five', *ta* 'hand', *na, nan* 'four', *ni* 'four', *nu, lu, ru* 'five'. The 'hand', *ta*, was thought of as having four fingers or five (four + thumb). The word *bua* means 'upper arm, shoulder, arm, hand, finger'.

The N-C word *nù, nùà, niua* 'two' (Westermann 1927 : 271) has an earlier velar nasal, as the most frequent reflex *ng* shows. The following *u/w* in Zema, Gwa, Likpe etc suggests an old labiovelar *gw*. Forms with *a* are also common. Perhaps from *gua* 'many', as early counting was imprecise : one, many ; one, two, many etc. But an early form *tu, tudu* 'we' cannot be ruled out. This would then have been changed to *nu* by a preceding labiovelar > nasal prefix. Bantu has *bidi* (Meeussen), *BADE* (Guthrie) which attests the dental, and *bi-/ba-* for this word. We are always dealing with prefixes, but should remember the prefixes were once probably full words as Kolbe and Torrend thought.

The lower Indo-European numerals can all be successfully derived from Niger-Congo.

The first four I-E numerals were inflected, ie suffixed. The question arises whether the I-E numerals were also prefixed, as eg Niger-Congo *a-ba, i-ba* 'two'.

Sanskrit *ekas* 'one' incorporates the N -C root *ka* 'finger' together with a prefix.

Yoruba *i-ka* 'finger', Brong (Akan) *eko*, 'one', Ga *eko* 'one'. Compare Greek *mia* (fem) 'one' which has lost the *k > s > #*, and Latin *mica* 'small, insignificant',

German *mikke*, Armenian *mi* .N-C *mu* (> *mi*) is sometimes used for “one”, sometimes for “half”, Kele, Swahili *mia* “one hundred”.

“Two” is Latin *duo*, Greek *duo* but Armenian *erku*, which preserves the Niger-Congo *e-* prefix, and has lost *t(u)* before *r*. (Perhaps *ku* from N-C *ku* “companion”). Sanskrit (Vedic) has *duvas* “two”. These forms with *du* are from N-C *tu* “we”, Mossi *tudu*, *tidi*, Gurma *tu-kuli* “we”, with a Latin change *t > d*. Prefixes occur on Sanskrit *ubha-* “both”, Greek *ampho*, Old Slavonic *oba*, Lithuanian *abu*, Gothic *bai* are from Niger-Congo *ba* “two”, (Westermann 1927 : 204), with 21 reflexes. Bangi, Ngala, Kele *bale*, Poto *wali*, Swahili *wili* “two”. The prefixes *o-*, *a-* both occur : Gbari, Kupa, Kakanda *aba* “two”, Avatime *oba* “two”, also Nupe *guba* “two”, Djola *luba* “two” with *lu-*. English *both* is also from *ba*, but lacks a prefix. Latin *bi-* “two”, *bini* “two” from N-C *bi*, Yoruba *bi*, Dinka *bi-rou* “a pair” (Westermann 1911 : 114), as in *bi* “breasts”.

“Three”, Latin *tres*, Greek *treis*, Sanskrit (Vedic) *trayas*, Armenian *erek'* “three”, corresponds to N-C *ti* “middle” (of hand), Bantu *kati* “middle” (of the hand). Forms with a long *e*: are found in N-C, Gola, Malike, Vai *te:*, Siti *te:gi*. The capacity of this word to be extended shows in Ewe *titi-na* “middle”. Prefix on Igbo *e:kiti*, *e:titi* “middle”, Likpe *n-tinti*, Akessele *tji-ga*, *kiketši*, Ada *kpe-ti*. The plural *k'* has changed to *s* in Latin, Greek, but is preserved in Armenian *erek'*, which has lost before *r*, and has a prefix *e-*. Compare Etruscan *ci* “three” from *ki(ti)*, with *c = k*. The *r* in this and the following words is an old plural marker (N-C pl. *ri*), as can be seen from Basque. It does not occur on words for “one”. The Congolese forms are from *tatu*, *satu*, literally “hand middle” (*tu = ti*).

‘Four’ is Latin *quattuor*, Greek *tessares*, Sanskrit (Vedic) *catvaras*, Armenian *՛՛՛՛*. This incorporates N-C *ta, te*: ‘hand’ (four fingers), Temne *ka-ta*, Baga *ke-tsa*, Akpafu *k-ro* ‘hand’, with preceding *ka* ‘hand, finger’, or else *ka* is a small plural prefix (four small fingers). The *t = ta* is the essential element here. Niger-Congo forms include Agni *sa > ta*, Nalu *n-te*, Bulom *a-ta-lang*. Plural markers *-r-* and *-s < k*. The other N-C word for ‘four’ *na* (Westermann 1927 :263 - 264) may have developed from *ta* due to nasal prefixation, Yaskwa, Lofana *n-na*. The prefix is from *ka*. But Latin *quattuor* may incorporate *gua* ‘many’.

‘Five’, Latin *quinque* from N-C *gua/gue* ‘hand’ *>que*. Likewise Armenian *hing*, with apocope. The first part of these words is usually taken to be assimilated : *p > qu, h*, as most languages have *p*. But this *p* could be from a labiovelar. In which case the Latin word would be reduplicated : ‘hand five hand’. Compare however Konyagi *na-ǃ*, Soninke *na-ɔto* ‘four’ with a labiovelar postfix, perhaps the same as the prefix. Greek *pen-te*, Sanskrit *pañca*, appears to be from N-C *pi* ‘small’ (diminutive prefix) or *pa* ‘full’ (or *ba, bat* ‘count’) + *nu* ‘five’, + *ka* ‘finger, hand’ (Sanskrit) or *ta* ‘hand’ (Greek). Bantu *tanù, sanù* confirms this interpretation, with *nù = no*: ‘five’ (Johnston 1911 - 1919 : 32). The essential original element here is *nu > n* ‘five’. Niger-Congo low numerals show great variation, and resist standardisation.

‘Six’, Latin *sex*, Greek *hex, Fex*, Sanskrit *sas*, Armenian *vec’*, Old Bulgarian *šes-ti*, is from N-C *ka* ‘hand’ *> sa > se*, Agni *sa* ‘hand’, Tshi *n-sa* ‘hand’, Nalu *n-te* ‘hand’, Kongo *sambanu*, Poto *samano* ‘six’, Bangi and Ngala *motoba* ‘six’, Bantu *tanda-tu*. The *x* of Latin etc = *k-s*, ie *ka* ‘finger’. So the meaning is ‘hand’ + ‘finger’ (+ plural *s < k*). The *ti* of Lithuanian means ‘small thing’. The prefix *ti-* according to



Greenberg (1949 : 310) means "plural of diminutives". The Greek digamma *F* [w] is a remnant of the nasal prefix *m* seen in Bangi and Ngala *motoba*, Soko *mbalomoi* "six".

Greek initial *h* < *s*. Proto-Kartvelian \*eks<sub>1</sub>w- "six" is not from Kartvelian (Klimov, on phonological grounds), but not from Armenian, also on phonological grounds. It appears to have postposed the affix *m* > *w*. From Niger-Congo ?

"Seven", Latin *septem*, Greek *hepta*, Sanskrit *sapta*, Armenian *ewt'* ṅGothic *sibun*, Lithuanian *septyni*, Old Bulgarian *sedmi*, (Avestan *xšvaš* "six") is from N-C *ka* "hand" + *bi* "two" + *ta*, that is "hand + two + hand". Congo Languages have *sambo* "seven", but Bangi, Lolo *ncambo* (with *c* = *k*), Swahili *saba* "seven", with *ba* "two". The PIE reconstruction with a syllabic nasal \*septM is probably wrong. I prefer \*septa-C (where C = a consonant *n/m/l/r*, as in Nde *i-bal* "two", Temne *ka-bari* "twins") Or the nasal comes from N-C plural *ni* as in Lithuanian and Bulgarian (*n* > *m*).

"Eight", Latin *octo*., Greek *okto*., Sanskrit *as.t.au*, Gothic *ahtau*, Armenian *ut*, which includes *ka* + *ta* "four", with a prefix *o/a*. Bulom *a-ta-lan* "four", Soko *olimbongawe* "eight". Kartvelian uses a similar word to Latin for "eight", but with a dual suffix *o:w* as in Sanskrit. So the word is the word for "four" used in the dual to indicate two "fours", two "hands" of four fingers each. Bantu languages have *nana* "four-four", with similar reasoning. Kartvelian \*otxo- "four", "a very early Indo-European loanword" according to Klimov. I doubt this.

‘Nine’, Latin *novem*, Sanskrit *nava*, and with prefix, Greek *ennea*, Armenian *inn*. This appears to incorporate N-C *na* ‘four’, with a Greek and Armenian prefix as in Ewe, Abure *e-na*. Kongo *vwa* ‘nine’, elsewhere Congolese *libwa* ‘nine’. The nasal in the Greek and Armenian prefixes has changed the root from *ta* to *na*, so ‘hand’. The second part of this word is N-C *bua* ‘hand’. Possibly *ta* ‘hand’ = ‘four’ + *bua* ‘hand, arm’ = ‘five’, makes ‘nine’. For numeral formation morphology compare Ahlo *u-ka-li* ‘nine’ (*li* means ‘ten’), Ewe *a-si deke* ‘nine’ (with Ga *de* < *ta* ‘hand’).

‘Ten’, Latin *decem*, *decim*, Greek *deka*, Sanskrit *daça*, Armenian *tasn*, Gothic *taihun*, Old Bulgarian *desê-ti* ‘ten’. Ga has *de*: ‘hand’ (the right hand), but Ewe, Kwa *de* ‘one’. Latin, Greek, Sanskrit *t* > *d* here. So *ta* ‘hand’ + *ka* ‘hand’ = ‘ten’. Ngombe *do-mi* ‘ten’, with *d*- < *t*. The *-n* may be a plural suffix *n(i)*, indicating ‘hands’ (plural). Mande-tan has *tan* ‘ten’ (*ni*-suffix), which is related. Again the value of reconstructing a PIE syllabic nasal in this word is in doubt : \*dek' M. The ‘syllabic’ nasal is from N-C *ni* ‘plural’. Real language phonology is preferable to abstract symbols.

For ‘one hundred’ Latin has *centum*, Greek *hekatón*, *hekoton*, Sanskrit *çata-* ; Armenian *hariwr*, Gothic *hund* with *k* > *h*. Old Bulgarian *suto* has the intermediate stage. Most Congolese languages have forms of *-kama* ‘one hundred’, often with a prefix *n-*, *mon-*, *bon-*, *mo-*, as in Greek *he-*. The word *mia* means ‘one hundred’ in Kele and Swahili. Niger-Congo *ga*, Bantu *gana* ‘one hundred’. PWN (Mukarovsky) *KHAN*, *KHYAN* ‘sand’ may be relevant to the meaning of ‘one hundred’. Armenian has a form without the element *tan/tum*. All languages except Armenian and Albanian have this element, consisting of *ta* + *ni*. Again I doubt the value of reconstructions

with a syllabic nasal : \*k' Mtom.

The traditional PIE reconstruction of ‘ten’ as \*dekM (with syllabic nasal), likewise of ‘hundred’ as \*kMtom, and other such ‘syllabic’ phonological reconstructions should now be called into question. We have already cast doubts on the consonants of Laryngeal Theory and the associated theory that PIE (and Proto-Caucasian according to some) had only one vowel. Reconstructions must fit into a plausible phonemic system which exists in actual languages (Jakobson 1974 : 53 - 54).

For discussion of the I-E numerals see Szemerényi (1960). See Johnston (1919 - 22 :52, note) for some methods of numeral formation in ‘Bantu’. These procedures are confusing to the modern way of thinking. Early people did not have a sophisticated concept of number. Great variation occurs, especially in the numbers above ‘five’.

From the examples listed thus far, we can identify about 60 semantic items on the Swadesh 100-word list as having Indo-European forms (in Latin, Greek and Sanskrit), which can be derived from Niger-Congo roots given by Westermann (1927). These include personal pronouns, numerals, body parts, terms of family relationship, verbs and adjectives, conjunctions (Greek *te* = N-C *ta* ‘and’, Greek *kai* ‘and’ = N -C *ka* ‘say, and’). The negative (Swadesh 107 ) can also be identified. We conclude that we have good evidence that Indo-European comes from Niger-Congo.

### 17. Proto-Indo-European, Armenian, Kartvelian

Now that we have established a link between the Indo-European languages and Niger-Congo, we are faced with explaining this link. The answer is to be found where the argument began, with the augment and the prohibitive particle *ma*.

Armenian lies near the geographic centre of the Indo-European subgroup which retains the agglutinative augment, inherited from Niger-Congo. We regard this subgroup of languages, Greek, Armenian, Phrygian, Iranian and Indian, as the core from which Indo-European evolved, a matrix preserving ancient Niger-Congo characteristics. Armenian lies in close contiguity to Kartvelian (South Caucasian) which is agglutinative in structure, and also has Niger-Congo features, such as inclusion of direct and indirect objects within the verb (Stapleton 1903 : 63 - 70).

Kartvelian has shared vocabulary in common with Greek and Iranian. Like Armenian it lacks grammatical gender (Meillet 1936 : 64, 92) and the dual number (rare but extant in Hittite). Like Armenian Kartvelian has no *f*- sound. And Proto-Kartvelian seems to have originally had five vowels, like the five vowels of Western Niger-Congo (and of Basque).

Gamkrelidze illustrates the agglutinative structure of Kartvelian with the words *kartvel-i* ‘Georgian’, *sa-kartvel-o* ‘Georgia’, *çer-s* ‘he writes’, *da-çer-s* ‘he will write’, *da-çer-a* ‘he wrote’. The prefix + root + suffix structure is evident in both .

Kartvelian for ‘T’ is \**men*, (Sanskrit *mam* ), Georgian *me*, Svan *mi*, which is cognate with N-C *mi*, Temne *min*, *mine* (compare Etruscan *mi, mini*), with 44 reflexes in Westermann (1927 : 256 - 257), usually *mi*, sometimes with a prefix *a-mi*. But any

possible connections in the other personal pronouns are less obvious. Armenian has *mek'*, *mer*, *me* in the first person plural pronoun (Meillet 1936: 91). The Kartvelian numerals are largely opaque in terms of our hypothesis.

Kartvelian has a "verbal negative particle" \*ma -d (Klimov 1998 : 113), Laz *mo(t)*, Svan *mad(e)*, *mod(e)*. Laz *mo ècrum* "Do not write", Svan *isgu dagra maku made* "I don't want to kill you". Compare Niger-Congo *ma* "not" (Westermann 1927 : 254 - 255), Temne *a-mam* "no". Both these usages have close parallels in ancient Greek. The other Niger-Congo negative *na*, *ne* (Westermann 1927 : 261, groups I, III, IV) may have a derivative in Kartvelian \*nu-ma "prohibitive particle", Megr. *n•m•*, Svan *noma*, Latin *ne*.

Armenian retains the Niger-Congo postposed article as *-e*, *-n*, originally *la*, *al* (also *ra*, *na*, *a* etc). A postposed article also is found in east Slavic, Albanian and Danish (postposed *-inn* < *na*). Evidence from placenames ending in *-al* indicates that Kartvelian once had this feature. Klimov records a deictic particle *i* in Kartvelian which we identify with Greek *-i* added to demonstratives, with the Georgian "nominative" and source to the Niger-Congo postposed definite *-i* seen in Mende (Niger-Congo) *hindo* "man", *hindo-i* "man" (definite), compare Sussu *ku-i* "the inner", Sussu *bu-i* "the under", also used with ordinal numbers (Westermann 1927 : 177, 12, 2 & 4).

Georgian shows a genitive case in *-s* (as in I-E), but ergative in *-m*, instrumental in *-it* (cf I-E *-d*, Old Latin *dominod*).

Kartvelian has much the same verbal categories as Greek, Sanskrit etc : number, person, tense, aspect, mood, voice and so on, which does not seem accidental. It also includes subject and object pronouns as prefixes within the verb, as do Bantu and Basque. It is even possible that the long vowels of old verbs such as Greek *dido:mi*, *tithe:mi*, interpreted as once having an infix, might have included lost object pronouns, (or a feminine *na*, as in Basque).

The argument for a close relationship between Proto-Kartvelian and Proto-Indo-European, as suggested by Gamkrelidze & Ivanov (1985), relies mainly on a reconstruction of PIE glottalised voiced plosives, which they match with the glottalised plosives of Kartvelian. If this reconstruction is correct it could be used to explain why most Indo-European languages do not have voiced aspirated stops. These sounds are found only in Sanskrit. Greek has voiceless aspirates for PIE \*bh, \*dh, \*gh, \*ghw etc. The other Indo-European languages have plain plosives. These rare sounds have been a problem in Indo-European, and correspond to Proto-Niger-Congo voiced lenis stops, which are also a problem. Clicks (implosives) have even been suggested as a possibility. They sometimes occur in Niger-Congo. For clicks ‘claquantes’ in Peul (Fulani) see Cremer (1923). Clicks also occur in Edoid (Elugbe 1989). Clicks could easily change to glottalised plosives.

Was there then a common development in Proto-Kartvelian and Proto-Indo-European of original voiced aspirates to glottalised voiced stops, which subsequently lost the glottalisation in Indo-European languages ? One would have to assume that the Indian languages including Sanskrit separated from PIE before this happened, likewise that Greek also separated before this development. But that Proto-Kartvelian broke away

later. This is not impossible, especially as we have seen Sanskrit has only three base vowels, which is characteristic of very early Niger-Congo.

Another curious matter is that Kartvelian, like PIE, has grammatical Ablaut (Buck 1933 : 106f, Misra 1968 : 25f), or vowel alternation (apophony). [Mareš (1966 a : 167) uses the term ‘introflexion’]. An English example would be *sing, sang, sung*, German has *trink, trank, getrunken*. Qualitative, as opposed to quantitative (change in length but not tamber) Ablaut changes the vowel phoneme. Ablaut is also found as a grammatical device in Semitic however. Ablaut is not compatible with Niger-Congo vowel harmony. If PIE derives from Niger-Congo therefore Ablaut must be an innovation common to PIE and Kartvelian.

One could also argue for the notoriously archaic nasal infix already mentioned as Indo-European as existing in Kartvelian. Thus there is a Proto-Kartvelian root \*b seen in Old Georgian *mun eba* (with augment !) ‘there was attached’. But Kartvelian also has a root \*bam ‘bind’, (= N -C *bali* ‘to bind’) and another root \*bandā ‘to twist, tie together’ (Klimov 1998 : 6 - 8). Compare Proto-Kartvelian \*k.ek ‘to poke with beak’, and PK \*k.enk ‘to peck out’ (Klimov 1998 : 88 - 89). [The *k.* in this root has a subscript dot].

Personal pronouns in Kartvelian are : *men* ‘I’, *sen* ‘you’, *əwen* ‘we’. Only *men* ‘I’ resembles I-E (= I-E \*me ‘me’, N -C *mi* ‘I, me’). Words for ‘father’ = *mama* ; ‘mother’ = *nana* ; ‘brother’ = \*~~ca~~na (compare Greek *noi(n)* ‘we two’) ; ‘wife’ = \*c<sub>1</sub>ol, in Kartvelian are also very different from those of Indo-European. But the words Kartvelian \*pesw ‘foot’, Latin *pes*, Greek *pous, pod-*, likewise Kartvelian

\*puturo ‘rotten’, Latin *putidus* ‘rotten’ are cognates. N -C has *buo* ‘to rot’. Compare also Kartvelian \*o(m)pe ‘navel’ with Greek *omphalos*, PIE \*ombh- ‘navel’. Very close indeed. The feet and navel are body parts, seldom borrowed. Niger-Congo has *pu* ‘belly’ (Westermann 1927 : 278), and, with prefix, Guang *ipu*, Mekibo *epu*, Igbo *afo*. Some languages have the following *l* of Greek, Dagomba *puli*, Kussassi *pole*, Kissi *puli*, Djula *fulu*.

That PIE and Proto-Kartvelian (Southern Caucasian) both came from Niger-Congo appears likely. If so this conclusion has implications. Should we look for a confluence of PIE and Proto-Kartvelian, leading back to Niger-Congo?

### **18. The Indo-European Urheimat**

It might be thought from this that Proto-Indo-European originated between the Black Sea and the Caspian. Gamkrelidze and Ivanov choose the area directly to the south of this as their PIE Urheimat. Chariots were used in Iran. Gimbutas, who researched the question with great thoroughness, chooses an area to the north of our region, and identifies the PIE people with the Kurgan (‘mound’) Culture, which has almost attained the status of orthodoxy.

Cavalli-Sforza (2000 : 117) identifies a third principal component indicating an expansion from north of the Black Sea and Caspian towards Europe, which supports Gimbutas. The horse was domesticated in this area. The Indo-Europeans were associated with the chariot, later (1000 BC) the ridden horse. Indo-European languages travelled with the wheel.



Gender we have seen, is lacking in Kartvelian and Armenian. It appears to have been in the early stages of development in Proto-Slavic (Mareš 1966 a : 169). Our Niger-Congo source language did not have grammatical gender.

One should perhaps resist the temptation to put PIE in India because labiovelars are found mainly to the west of Armenia, and were undoubtedly original in PIE. The picture this conjures up is of westward and eastward expansion out from an Armenian centre. Both the name Armenia, and Mt. Ararat, have preserved Niger-Congo *a*-prefixes. So have various names of Caucasian languages (Dalby 1998 : 109) : Agul, Andi, Akhvakh, Archi, Avar. Sapir looked to the centre for the Urheimat.

The alternative is to suppose the Indo-European languages originated in India, and spread westward. A problem with this is that the genetic constitution of India is not ‘Mediterranean’. It would have produced a genetic cline extending out of India into southern Europe, if it had happened. Indo-European was introduced into India.

As far as case systems are concerned, Italic (7 cases) and Sanskrit (8 cases) might both be treated as marginal areas which, like Tocharian (12 cases), have preserved ancient patterns. Tocharian has seven secondary or quasi-cases (Krause - Thomas 1960 : 78 - 79), which lie between flexion and agglutination. Quasi-cases also in Greek and Sanskrit. Remember that Kartvelian (near Slavic) is agglutinative, and that Proto-Slavic had a limited case system, especially in the plural (Mareš 1966a : 164).

Much the same could be said of the Middle Voice, best preserved in Indo-Iranian and Greek. In Armenian ‘la diatesi è indicata nel tema, e quindi non esiste, salvo alcuni

resti, una distinzione di desinenze attive e mediali” (Pisani 1947 : 34). The Passive is a late development in Indo-European. Its gradual emergence can be traced in Greek (Chantraine 1963 : 179 - 180). Not in Armenian however.

The Dual number which is very old, survives only in traces in most languages, but has nominal and verbal forms in Greek and Sanskrit, where it is partially preserved. It does not exist in Armenian (Meillet 1936 : 93, 117). Tocharian (Krause-Thomas 1960 : 76) has both Dual and Paral (natural pairs). Again Armenia occupies the centre.

It also lies between languages using pictographic, syllabic scripts, Linear B, Luvian, Sumerian (“their” pictographs were not invented by the Sumerians), Sanskrit. The Devanagari script, we now know, derives from the Mohenjo-Daro pictographs. Semitic writing also appears to have developed from African pictographs.

We know that there were once Niger-Congo languages in Iran from the evidence of placenames (I-ran, compare I-raq), perhaps also in western India (Pakistan). Iran is nearer to Africa, and like India, has a prominent river system. The early Africans originally travelled by boat. They settled near lakes and rivers, and practised fishing as a way of life. So a position between the Black Sea and Caspian, which must have reminded them of Lake Chad (once as big as the Caspian) seems likely. In antiquity the Armenians were settled near Lake Van. The Caucasus, the “mountain of languages” exhibits a great variety of languages, and might be regarded as a likely place of origin for PIE. Variety is greatest at the source. We regard the Caucasus therefore as the best candidate.

## **19. Conclusion : Pelasgians and Indo-Europeans**

Niger-Congo languages existed in Greece and Rome before the coming of Latin and Greek. In the case of Greek Niger-Congo has left a legacy of placenames : Dodona, Larissa etc, associated with the Pelasgians. The word Pelasgian incorporates the Niger-Congo personal plural prefix *ba-*, which has become *pe-* through sound change.

There is a tradition of Pelasgians in Italy also, not to mention a number of African placenames from the Niger-Congo area : Po, Como, Bari etc. Indeed we know that the Etruscans were in Italy before the Romans and spoke a non-Indo-European language. So we posit two main waves of migration into Europe.

I. Migration of Africans directly from Africa into Spain (Basques), Italy (Etruscans ie Pelasgians), Greece (Pelasgians).[Niger-Congo]. Travel by open boat, on foot. This began in the Stone Age.

II. Migration out of Asia, of a mixed Afro-Asiatic people, into Europe (6000 BC-). Travel by ship, wheeled vehicles (3000 BC), chariots (2000 BC-), horseback (1000 BC-). [Indo-European].

Ships seem to have been invented at or before 3000 BC in or around the Persian Gulf (Blaklock 1976 :1, 410). The horse-drawn, two-wheeled chariot (Thompson 1976 : 5, 780 - 783) is known mainly from 2000 BC on. In most references it is associated with the Egyptians, and was used for warfare, but also ceremonial purposes. It must have been invented initially for hunting, to transport game, in a place where wood was available. Trees are lacking in Sumeria and Egypt. Bow and arrows, twin spears

(African) and axes were attached to such chariots, all suitable for hunting.

In Homer each chariot is crewed by a warrior and younger squire, who tended to homosexual involvement. This would develop when they were alone on long hunting trips. The light chariots were designed to carry dead game animals. The squire minded horse and chariot while the "warrior" searched out and slew the game. In this way he gained experience, eventually becoming a warrior himself.

The original African migration of hunter-gatherers into Europe took place in the Palaeolithic Period and earlier. About 6000 BC or earlier immigrants started arriving on foot from Asia, and with them came farming and livestock. Then, about 3000 BC, Indo-European languages were introduced, and with them the horse and the wheel. But the speakers of these did not differ genetically from the earlier mixed Asian immigrants. Their change of language was like a change of clothes, so to speak, relatively superficial.

The result was the modern genetic constitution of Europe, 35% African, 65% mixed Mediterranean or Afro-Asian. This is in accord with the genetic evidence which testifies to the unity of the Mediterranean peoples and does not recognise a separate "Indo-European" stock. Arnaiz-Villena, Gomez-Casado and Martinez-Laso (2002) state clearly that there is no genetic trace of an Aryan migration, and that if it occurred, it must have been a domination by a small élite.

Asia Minor, before the coming of the Afro-Asiatic farmers, was also colonised by African peoples, as Runoko Rashidi (1993) has argued in a recent publication by

Karnak House. The survival in antiquity of a Niger-Congo language on Lemnos, which was closely related to Etruscan is proof of this. And Minoan Crete, as we now know, (Campbell-Dunn in Minoan Linear Scripts : The Niger-Congo Context), was African (Niger-Congo). A non-Indo-European language was still spoken at Praesos on E. Crete in the fourth century BC (Stanford 1948 : II, 322).

The shores of the Aegean and Mediterranean therefore were originally occupied by Africans, and subsequently overlaid by Afro-Asiatic farmers. It follows that the Mediterranean was once, in the remote past, the home of African blacks. No doubt this is the reason that the Mediterranean peoples are olive skinned, a blend of Afro-Asiatics and of black Africans, from closer to the equator. But this is not a linguistic question, and raises controversial issues outside the ambit of our inquiry. So we will not pursue it further.

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EB Encyclopaedia Britannica

The importance of the work of Alfredo TROMBETTI, who wrote in the early years of the 20th century, is only now being recognised. His books were published in Bologna by Beltrami.

**RECENT GENETIC RESEARCH AT UNIVERSIDAD COMPLUTENSE,  
MADRID, HAS SHOWN THAT THERE IS NO GENETIC EVIDENCE FOR  
AN ARYAN INVASION OF EUROPE. THIS INVASION IS A MYTH.**

**WE DEMONSTRATE THAT THE INDO-EUROPEAN LANGUAGES CAME  
OUT OF AFRICA. THEY DERIVE FROM THE NIGER-CONGO GROUP.  
THE INDO-EUROPEAN ‘INVADERS’ WERE NOT STRANGERS, BUT  
WERE GENETICALLY RELATED TO THE ORIGINAL BLACK AFRICAN  
INHABITANTS OF THE MEDITERRANEAN. GENETICS AND**

**LINGUISTICS NOW LEAD US TO THE SAME CONCLUSION. AFRO-ASIATIC FARMERS, NOT CONQUERING ARYANS, GRADUALLY OVERLAID THESE BLACK ABORIGINAL INHABITANTS, GIVING RISE TO THE OLIVE-SKINNED MEDITERRANEAN RACE.**

**Rask and Bopp founded Indo-European comparative linguistics on morphology. Morphology remains the strongest weapon in the armoury of comparative linguistics. We use morphology (prefixes, infixes, suffixes) to demonstrate that there is a genetic linguistic relationship between the inflectional Indo-European and the agglutinative Niger-Congo languages.**

**We also find a linguistic solution to the problem of the Proto-Indo-European Homeland. Indo-European can now be linked on linguistic grounds with Kartvelian (Southern Caucasian). Kartvelian likewise derives from Niger-Congo, but at one remove. In showing this we also invoke morphology. Following Gamkrelidze and Ivanov, and also Maria Gimbutas, we can now put the**



**Homeland of Indo-European in the Caucasus, the “mountain of languages”.**

**The common period of Indo-European and Kartvelian appears to postdate the separation of Sanskrit and Greek from Indo-European, but not Hittite. It follows therefore that the Anatolian languages were not involved in the primary division of Indo-European.**

**The script used to write “Hieroglyphic Hittite”, really Luvian, which is closely related to Hittite, evolved from a system of pictographs. The Devanagari syllabary used for Sanskrit evolved, it seems from the pictographic script of Mohenjo- Daro, which is also a syllabary. These syllabaries were of African origin, and go back beyond the Indo-European period.**

## **SYMBOLS**

**ɕ = shwa**

***kw, gw* etc = labiovelars**

***ng* = velar nasal**

***ny* = palatal nasal**

***N, M* = syllabic resonants**

***A, E, I, O, U* = expanded vowels in Niger-Congo**

**The colon : indicates lengthening of a preceding vowel**

**Square brackets [ ] indicate phonetic transcription**

**Accents *é* (*acute*) indicates high pitch, *è* (*grave*) indicates low pitch**

**Sanskrit *-s* = visarga**

**\* = reconstructed form**

**The stop after a letter = subscript dot under a letter**

**C = consonant, V = vowel**

**SVO = subject, verb, object**

**I-E = Indo-European**

**PIE = Proto-Indo-European**

**N-C = Niger-Congo**

**PNC = Proto-Niger-Congo**

**PWN = Proto-Western Nigrific (Mukarovsky), italic caps**

**PWS = Proto-Western Sudanic (Westermann), italic lower case**

**Words in foreign languages are cited in italics**

**COMPARATIVE LINGUISTICS : INDO-EUROPEAN  
AND NIGER-CONGO**

**© 2004 GJK Campbell-Dunn**

**ISBN 1-877211-59-1**

**Published by Penny Farthing Press**

**29 Aorangi Road**

**Bryndwr**

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