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Relative chronology

You all know that the English language originated when Germanic tribes crossed the North Sea in the fifth and sixth centuries of our era. They encountered the Latin and Celtic speaking peoples who inhabited Britain at that time. The question now is: what can linguistics tell us about these migrations? The answer is based on a reconstruction of the prehistoric ancestor of the English language. This reconstruction is based on the comparative method in conjunction with the principle of relative chronology. These concepts will now be explained.

Looking at foreign languages, native speakers of English will find many words that resemble their own. The German word for 'father' is *Vater*, which sounds almost the same. The German word for 'mother' is *Mutter*, which also sounds pretty similar. The German word for 'brother' is *Bruder*, which again is very much alike. Since the resemblance between these words can hardly be accidental, we have to assume a historical connection between the two languages. Thus, a comparison between English and German leads to the hypothesis that there was a common ancestor of these languages in prehistoric times. This reasoning is called the comparative method, and the prehistoric ancestor is called Proto-West-Germanic.

Looking to the north-west of Europe, we see that the Icelandic word for 'father' is *faðir*, which is practically identical with the English word. The Icelandic word for 'mother' is *móðir*, which sounds very much like the English form. The Icelandic word for 'brother' is *bróðir*, which shows the same correspondence with the English as the word for 'mother'. We may therefore extend our hypothesis to Icelandic and call the prehistoric ancestor of English, German and Icelandic Proto-North-West-Germanic.

Looking to the south-east of Europe, we find texts in an extinct language called Gothic that was spoken in southern Romania in the fourth century of our era. The Gothic word for 'father' is *fadar*, which is almost identical with the English and Icelandic words. The Gothic word for 'brother' is *brōþar*, which closely resembles the English and Icelandic forms. This suggests the possibility of extending the hypothesis to include Gothic and to call the prehistoric ancestor of English, German, Icelandic and Gothic Proto-Germanic.

Looking beyond the Germanic languages, we see that the Latin word for 'father' is *pater*, the Latin word for 'mother' is *māter*, and the Latin word for 'brother' is *frāter*. The initial *p-* of Latin *pater* corresponds to *f-* in the Germanic languages while the initial *f-* of Latin *frāter* corresponds to *b-* in the Germanic languages. This calls for an explanation. There are three possibilities: either the Latin forms are original and Germanic developed *f-* from *p-* and *b-* from *f-*, or Germanic is archaic and Latin developed *p-* from *f-* and *f-* from *b-*, or both Latin and Germanic developed the initial consonants from a third source. The comparative method requires another language to be compared.

Turning now to classical Greek, we find the words *patēr*, *mātēr* and *phrātēr* corresponding to English *father*, *mother* and *brother*. These are almost identical with the Latin words except for the fact that we have Greek initial *ph-* for Latin *f-* and Germanic *b-*. This suggests that the word for 'father' had an initial *p-* in the proto-language and that the Germanic *f-* developed from this *p-*. Since Greek *ph-* in the word for 'brother' has become *f-* in the modern language, we may surmise that Latin *f-*

also developed from earlier *ph-*. We may then reconstruct either *ph-* or *b-* in the word for 'brother', or a third consonant from which these two developed.

Looking beyond Europe to the classical language of India, Sanskrit, we find the corresponding words *pitar* 'father', *mātar* 'mother', and *bhrātar* 'brother'. These forms corroborate the reconstruction of an initial *p-* in the word for 'father' and offer a solution for the initial consonant in the word for 'brother'. Since the Sanskrit form appears to combine the aspiration of Greek *phrātēr* with the voicedness found in Germanic, we may reconstruct an initial voiced aspirate *bh-* that lost its voicedness in Greek and Latin while it lost its aspiration in Germanic. This is the traditional reconstruction of the Proto-Indo-European consonant system. It has the advantage that the reconstructed development of *bh-* to *ph-* to *f-* is in agreement with the dates of the earliest texts in Sanskrit, Greek and Latin.

However, there are several problems with this reconstruction. First of all, the Sanskrit voiced aspirates *bh*, *dh*, *gh* are found nowhere in Europe and not everywhere in India. Is it probable that the aspiration was lost in Celtic, in Germanic, in Baltic, in Slavic, in Albanian, in Phrygian, in Armenian, in Iranian, and in the languages of northern India, everywhere yielding plain voiced *b*, *d*, *g*, and similarly in Latin in non-initial position, leaving the Greek reflexes *ph*, *th*, *kh* as the only supporting evidence for original aspiration? The alternative is to reconstruct plain voiced stops *b*, *d*, *g* for the proto-language and to explain the aspiration in Sanskrit and Greek as secondary, in spite of the fact that these are the oldest attested languages.

The obvious objection to this solution is that there is another series of plain voiced stops *b*, *d*, *g* in Sanskrit and Greek, corresponding to plain voiced *b*, *d*, *g* in Celtic, Baltic, Slavic, Albanian and Iranian and to voiceless *p*, *t*, *k* in Germanic, Phrygian and Armenian, which are traditionally reconstructed as plain voiced *b*, *d*, *g*. If the aspiration of the voiced aspirates is secondary, the traditional reconstruction of plain voiced *b*, *d*, *g* must be revised. This is the basis of the so-called glottalic theory of Indo-European, which claims that the plain voiced stops were actually (pre)glottalized *'b*, *'d*, *'g*. Interestingly, this glottalization is actually attested in Sindhi, which is an Indic language spoken in southern Pakistan, in Latvian and Lithuanian, which are Baltic languages, in Armenian, in the western dialects of Danish, and in English, as will be discussed presently. Moreover, the reconstruction of (pre)glottalized stops offers an explanation for unsolved problems in Indo-Iranian, Greek, Latin, German, Scandinavian, and Slavic.

While the "replacing" glottal stop (e.g. in *set off*, *water*) is spreading rapidly in the mainstream English of younger speakers, especially middle-class females, glottal "reinforcement" of intervocalic *p*, *t*, *k* is recessive. It is characteristic not only of Tyneside male speech but also of rather conservative rural varieties, such as those of south-west Scotland and much of Northern Ireland. Glottalization is pervasive in pre-1930 audio recordings of people born in the second half of the 19th century, even in formal delivery. It follows that glottalization was well-established in upper-class English speech in the 19th century and must have been widespread in the standard language of that time. It went unnoticed because it was not distinctive. Earlier scholars did not reconstruct glottalization because it was an unwritten feature before the rise of modern dialectology. Since preglottalization in English and Danish cannot be separated from preaspiration in the northern Scandinavian languages and from the High German consonant shift, I think that Old High German *helpfan*, English *hel'p*, Vestjysk Danish *hjæl'b*, and Icelandic *hjál*ʰ*pa* all developed from Proto-Germanic

hel'p- with a preglottalized *-'p-*, and that conservative English dialects have best preserved the original sound structure.

Thus, we have replaced a reconstructed system with voiced aspirates on the basis of Sanskrit *bh, dh, gh* by a system with preglottalized stops *'b, 'd, 'g* reflected as *'p, 't, 'k* in English. This has important consequences for the relative chronology of linguistic developments. According to the traditional view, the development of *p, t, k* to fricatives in Germanic must have preceded the devoicing of *b, d, g* to *p, t, k* and the latter must have preceded the loss of aspiration in *bh, dh, gh* to yield *b, d, g* because there was no merger, and the same holds for Armenian. It follows that the loss of aspiration in the voiced aspirates took place many times independently in the separate branches of Indo-European. This is especially awkward because such a development is unknown elsewhere in the languages of the world. Loss of aspiration implies loss of voicedness, e.g. in Panjabi *kòṛā* 'horse', which is the same word as Hindi *ghoṛā*. The converse development of voiced aspirates from simple voiced stops is attested e.g. in Middle Chinese.

According to the new theory, the rise of the voiced aspirates was a local development of the majority of Indic languages while the English preglottalization can be reconstructed for the proto-language and is reflected in all branches of Indo-European except Celtic and Albanian. Since every reconstruction is a hypothesis about a prehistoric language, it is not necessarily correct. When new data become available, reconstructions must be reconsidered. In the case of the glottalic theory, the decisive factor was the fact that ancient writing systems do not denote glottalization. Consequently, scholars assumed that it was a result of recent developments in the separate languages and therefore irrelevant to their reconstructions.

About a hundred years ago, two unknown branches of Indo-European were discovered, the Anatolian branch in present-day Turkey and the Tocharian branch in north-west China. The material of both turns out to be more archaic than that of the Indo-European languages known earlier. This creates both the possibility of confirming earlier analyses and the necessity to change our views conforming to the new data. On the one hand, the West Tocharian words *pācer* 'father', *mācer* 'mother', *procer* 'brother' offer a splendid confirmation of our earlier reconstructions. On the other hand, both Anatolian and Tocharian have voiceless stops only and exhibit no evidence of voicedness, nor of aspiration. It is therefore probable that they had a distinction between fortis and lenis stops which are reflected as voiceless and voiced in the other Indo-European languages, and a third class of glottalized voiceless stops. In fact, there are a number of phenomena that support this new reconstruction.

Thus far our analysis has been based on the words for 'father', 'mother' and 'brother', on the assumption that these are representative of a language. However, words may be replaced for social reasons. The Gothic word for 'mother' is *aiþei*, literally 'woman of oath', which implies that her children are legitimate. The Greek word *phrātēr* means 'member of a fraternity' and was replaced in its original sense by *adelph(e)ós*, literally 'from the same womb'. The Maltese word for 'father' is *missier*, which was borrowed from French *monsieur*, earlier *mon seigneur* 'my lord'. It is therefore of paramount importance to establish the relative chronology of both formal and semantic developments.

Relative chronology plays a central role in the establishment of prehistoric subgroups of Indo-European languages. It is now commonly recognized that there is a close relationship between Indic and Iranian languages, between Greek and Phrygian,

between Italic and Celtic, and between Baltic and Slavic. We may therefore try to reconstruct Proto-Indo-Iranian, Proto-Graeco-Phrygian, Proto-Italo-Celtic and Proto-Balto-Slavic. Within Germanic, it appears that North and West Germanic are more closely related than either is to Gothic. Within West Germanic, the oldest attested languages are Old English, Old Saxon and Old High German. Later attested are Frisian, which is closely related to English, and Dutch, which is closely related to German. There are two theories about the oldest relations between English and Frisian. Either English and Frisian have a common ancestor, appropriately called Anglo-Frisian, that was spoken in the northern part of Germany and spread westwards along the coast in the fifth century. Or there was a linguistic continuum along the North Sea coast with gradual transitions between the dialects from which English, Frisian, Saxon and Dutch developed simultaneously in the course of time.

Two years ago, Rebecca Colleran delivered a major contribution to the debate in her Edinburgh dissertation.[1] She points out that "Frisia's original population deserted Frisia almost entirely in the 4th century A.D. When Frisia was repopulated in the 5th century, it was settled by the same wave of Angles who were establishing a Germanic presence in Britain […]. The perfect similarity of the material culture and DNA in both places indicates that the same Germanic tribes settled both Britain and Frisia in the 5th century, proving that Anglo-Frisian existed" both as a linguistic family and as a genetic family. "Just as Frisia became depopulated in the 4th century, archaeology suggests that Angeln (now East Schleswig, Germany) experienced some level of depopulation in the 5th to 9th centuries, as Germanic people settled in England and Frisia. The archaeological remains in this part of northern Germany are similar to the ones found in Britain for the same time period". Moreover, "the Y-chromosome DNA in modern Frisia and from five locations across central England is statistically identical". Thus, the archaeological and genetic evidence supports the idea that English and Frisian have a common ancestor, appropriately called Anglo-Frisian.

According to Colleran, the main objection to Anglo-Frisian is "that no one has yet worked out a list of ordered sound changes for OE and OFris that everyone can agree on, in which all shared changes occur before any independent change". The cause of this unfortunate state of affairs is that most scholars start from the wrong assumptions. It is usually assumed that Proto-Indo-European $\bar{e}$ was retracted to $\bar{a}$ in North-West Germanic and later fronted to $\bar{æ}$ in Old English, e.g. Latin *sēmen* 'seed', Gothic *-sēþs*, Old Icelandic *sáð*, Old Saxon *sād*, Old High German *sāt*, Old English *sǣd*. Old English $\bar{æ}$ was again retracted to $\bar{a}$ under certain conditions, e.g. in *sāwon* 'they saw', *lāgon* 'they lay', Gothic *sētun*, *lēgun*, and again fronted by *i*-umlaut, e.g. Old English *lǣwan* 'to betray', Old High German *gi-lāwen*, Gothic *lēwjan*. This is a peculiar alternation of sound changes. Moreover, Julius Caesar refers to the Swabians as *Suēbi*, not *Suābi*, which shows that we must reconstruct a front vowel for an early stage of Old High German. I therefore think that Old English $\bar{æ}$ is an archaism and that the early retraction of $\bar{æ}$ to $\bar{a}$ did not reach Anglo-Frisian.

In my view, Anglo-Frisian can be defined as the variety of West Germanic where the reflex of Proto-Indo-European $\bar{e}$ is a front vowel in comparison with the reflex of the Proto-Germanic diphthong *ai* whereas the converse holds for the

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[1] Colleran, Rebecca A.B. 2016. *Keeping it in the family: Disentangling contact and inheritance in closely related languages*. Diss. University of Edinburgh.

German and Scandinavian languages, e.g. Old English *sǣd* 'seed', *dǣd* 'deed' versus *ān* 'one', *hāl* 'whole', *hātan* 'to call', Old High German *sāt*, *tāt* versus *ein*, *heil*, *heizan*, Old Icelandic *sáð*, *dáð* versus *einn*, *heill*, *heita*, Gothic *-sēþs*, *-dēþs* versus *ains*, *hails*, *haitan*. It appears that the retraction of Proto-Germanic *ǣ* to *ā* came to a halt by the monophthongization of *ai* to *ā* in Anglo-Frisian, but not in the other languages, where *ai* was fronted. The mistaken assumption that *ē* was retracted to *ā* in West Germanic and subsequently fronted to *ǣ* in Anglo-Frisian and again retracted to *ā* under certain conditions has confused many scholars. The correct establishment of a relative chronology requires a detailed examination of the separate developments and their interrelations.

There are two developments that preceded the monophthongization of *ai* to *ā* in Anglo-Frisian, viz. the rounding of low vowels before a nasal consonant, e.g. OE OF *mōna* 'moon', OS OHG *māno*, and the loss of a nasal consonant before a voiceless fricative, e.g. OE *tōþ*, OF *tōth* 'tooth', OS *tand*, OHG *zand*. Common Anglo-Frisian developments that followed the monophthongization of *ai* to *ā* include the early fronting of *a* to *æ* that was blocked under certain conditions, e.g. OE *dæg*, OF *dei* 'day', OS *dag*, OHG *tag*, and the early palatalization of *k* and *g* before front vowels, e.g. OE *cēace* 'cheek, jaw', *gēafon* 'they gave', OF *tziake*, *ievon*, Dutch *kaak*, *gaven*. All of these developments belong to the common Anglo-Frisian period, which was followed by a stage of dialectal diversification.

Did the Old English dialects first diverge in Britain or on the continent? I think that neither view is correct and that the early divergences between Anglian, West Saxon and Kentish are the result of a chronological difference between two waves of migration from the same dialectal area in northern Germany. In comparison with Anglian, West Saxon has preserved two structural archaisms: the nom.pl. ending *-a* of feminine nouns, e.g. *giefa* 'gifts', and the reflex *æ* of Proto-Indo-European *ē*. On the other hand, Anglian has preserved five accidental irregularities. Three of these retentions are also found in Old Norse, one in Gothic, and one in Old Saxon and Old High German. Besides, Anglian differs from West Saxon as a result of seven innovations shared with continental West Germanic languages, including the raising of *æ* to *ē*. These developments, all of which have at least left traces in Old Saxon, can be dated to the period after the early migrations.

According to the explanation put forward here, we must distinguish between an earlier, "Saxon", and a later, "Anglian" migration. One may wonder if there is any historical evidence for this view. The Saxons lived in present-day Holstein according to Ptolemy (second century) and appear to have been in control of the whole region between the Elbe and the Weser from the middle of the third century. They reached the Netherlands in the fourth century. The Angles can hardly be separated from the present-day district of Angeln in eastern Schleswig. The Old English historian Bede (around 700) does not always observe the distinction between Angles and Saxons, and the eventual preference for the term "Anglian" is probably due to its distinctiveness from the continental Saxons.

The traditional designation for the Germanic invaders in Celtic sources is "Saxons". This name was evidently established at the first stage of the invasion, which can be identified with the period from the time of Vortigern (around 450) until the battle of Mount Badon (about 500). There followed almost half a century of peace, the "Saxons" having settled in Kent and Sussex. In the north, the great gateway by which the Angles penetrated into the north Midlands and Yorkshire was the estuary of the

Humber. Though in the Yorkshire Wolds and at York itself archaeological finds seem to indicate a more or less unbroken continuity of occupation between the late Roman and pagan Saxon periods, there is no historical evidence for a kingdom of Deira before the second half of the sixth century. During the latter period Deira must have gained considerable strength in view of the spectacular expansion after the battle of Catterick (about 600) which is described in the Gododdin. It seems that the battle of Catterick can be viewed as the northern equivalent of the battle of Mount Badon, except for the fact that it was won by the other side. Thus, I suggest that the "Saxon" invasion yielded the conquest of Kent and Sussex in the fifth century, whereas the "Anglian" invasion can be connected with the subjugation of the north which started around the middle of the sixth century. There is no linguistic evidence for a different continental homeland, especially because the shared innovations of Anglian and Old Saxon point to geographical contiguity after the early migrations. Chronologically, the Kentish invasion can be identified with the "Anglian" invasion. The spread of "Saxon" features to the north can be identified with the West Saxon expansion.

It is important that at the time under consideration we have to reckon with small numbers of highly mobile people. Linguistic change is slow to the extent that the relevant populations are well established and bound by strong ties, whereas it is rapid to the extent that weak ties exist in populations. Societies undergoing social processes which entail social and geographical mobility and the dissolution of close-knit networks provide the conditions under which innovations can be rapidly transmitted along considerable social and geographical distances. In situations of mobility or social instability, where the proportion of weak links in a community is high, linguistic change is likely to be rapid. These considerations are fully applicable to the Anglo-Saxon invaders of Britain in the fifth and sixth centuries.

Rebecca Colleran incorrectly states that the first wave of migration settled in Frisia and northern England while the second wave settled in southern England and stemmed from a slightly different homeland, as a result of which the Saxon dialect of Old English was less similar to Old Frisian than the Anglian dialect. This is the opposite chronology of the one I maintain. In my view, the Anglian dialect is closer to Old Frisian than the Saxon dialect of Old English because the latter reflects an older stage of Anglo-Frisian than Anglian and Frisian, which exhibit the shared innovations mentioned above that can be dated after the first wave of migration. The Anglo-Frisian homeland on the coast of northern Germany was a typical bottleneck through which the migrants moved on their way to Frisia and Britain.

My theory is in accordance with the archaeological and genetic evidence. It appears that the first (Saxon) migrants followed the river Thames from Kent to Oxfordshire in the early fifth century. The first migration started when Germanic mercenaries were called in by the sub-Roman authorities and then rebelled against their employers, resulting in ethnically divided communities and regions, with limited mixing and intermarriage between immigrants and natives. The second migration, which attracted incomers from other Germanic tribes, offers a different picture for Northumbria, and more specifically Bernicia, where there was a noticeable Celtic contribution to art, culture and possibly socio-military organization. It appears that the immigrants took over the institutions of the local population here. At the same time, or perhaps slightly later, there was a second wave of migration to Kent, where the new settlers adjusted to the earlier immigrants. This is in agreement with the fact that Anglian has preserved five accidental irregularities that were probably introduced

from Old Norse, Gothic, and Old Saxon or Old High German by natives of these languages who took part in the second migration. It also explains that Anglian differs from West Saxon as a result of seven innovations shared with continental West Germanic languages.

The establishment of a relative chronology requires a sequence of interrelated developments yielding an outcome that is preserved in the historical record. Every development gives rise to an isogloss between speakers who did and who did not share the development. Consequently, the number of linguistic varieties that once existed is of a different order of magnitude than the number of stages in a relative chronology, which only registers varieties that eventually survived the course of history. In the case of Anglo-Frisian we can identify an initial stage with developments that were partly shared with some of the neighboring German dialects, followed by a formative stage with monophthongization of *ai* to *ā* and fronting of *a* to *æ*. Then followed the early migration to southern England and continental Anglo-Frisian developments such as the raising of *æ* to *ē*, which did not reach Insular North Frisian. These were followed by the second migration to Yorkshire and Kent, and by the development of breaking first in West Saxon and later in Anglian and Kentish. Finally there was a stage of independent developments in Old English and Old Frisian, such as second palatalization of *k* and *g* and palatal diphthongization in English, limited fronting of *ā* to *æ* and monophthongization of *au* to *ā* in Frisian, and umlaut (*i*-mutation) in both languages.

The reflex *æ* of *ā* from *ai* is found not only in Old Frisian but also in Kentish, where the earliest attestations have *ā*. This supports the idea that the Kentish migration was slightly later than the Anglian migration and after its initial phase shared the Frisian fronting of *ā* to *æ*. The relatively frequent occurrence of *ē* as the reflex of Proto-Indo-European *ē* in Wessex suggests that there was no early settlement of Saxons in Wessex but rather a late arrival of the Anglo-Saxons after the Kentish migration. This is in fact to be expected because Wessex was the heartland of the Celtic population.

The relative chronology advocated here does not of course imply that every speaker in the area belonged to one of these stages, on the contrary. Since every development created an isogloss, any number of speech variants may have existed. The claim is that every line of development that made it into the historical record belongs to this relative chronology. The nice thing about it is its perfect concord with the textual, archaeological and genetic evidence. The precise correspondences are the ultimate proof that a reconstruction of the early development of the English language allows us to arrive at a detailed understanding of the prehistoric migrations. This reconstruction is based on the comparative method in conjunction with the principle of relative chronology.