Coherence and preservation in Sanskrit

N. Kazanas, Athens, June 2006 (updated February 2012)

1. Argument. This paper examines more than 400 Indo-European lexical items denoting, as far as possible invariable things, qualities and activities (bodily parts, relations and actions like breathing, dressing, rising etc). Sanskrit appears to have lost far fewer items and preserves much greater inner organic coherence than the other branches. This supports the general idea that Sanskrit is much closer to Proto-Indo-European and that, since this could happen only in sedentary conditions, the Indoearyan speakers of Sanskrit did not move (much) from the original homeland. Moreover, the criticism that this conclusion does not take into account the large literature in Sanskrit is shown to be fallacious.

2. Introductory. In 2003 I published a small collection of words denoting “invariable” items (to be explained shortly). This was in response to J. P. Mallory’s charge (2002) that I was being ‘unscientific’ in claiming that since the Vedic Tradition retained many more theonyms (see Kazanas 2001; 2005) and other linguistic and cultural aspects of proven Indoeuropean provenance, it had moved very little, if at all, in any case the Indoearyans were indigenous from the beginning of the 5th millennium at least (Kazanas 2002). This I called the P(reservation) P(inciple). Mallory (2002) argued that if the Indoearyans had preserved most because they had not moved (much) then the Iranians who were very close to them in the west should have the second biggest stock of retentions, while the Celts (Ireland), and the Norsemen (Iceland) should have the least having moved most of all. I had not implied that losses were directly proportional to distance away from the proposed homeland and I had explicitly stated that such calculations are not valid (Kazanas 2003) but this was ignored. Mallory further added the indices of Gamkrelidge and Ivanov (1995) showing that Greek had 2441 retentions, Baltic 2376 and Indo-Iranian 2139: thus Sanskrit was, in fact, third in preservations. Taking Mallory at his word, I did not think then to check these figures. Instead I examined 50 words, nouns and verbs, denoting things like head, mouth, etc, and actions like begetting, breathing, dressing etc, all of which remain constant however much social conditions change. I abandoned several problematic cases and the stems that were common to all branches and was left with 26. Of these 26, S lacks 3, Gk 10 and B 16. I put these finds in my paper “Final Reply”, kindly published by the Journal of Indo-European Studies, 2003, of which Mallory is the editor.

3. More than a year later I had to consult Gamkrelidge and Ivanov’s book. I looked then at the indices only to discover that the figures Mallory had given were utterly wrong. They were right as sum-totals but many words were duplicated, given in, say the gen, voc, etc, sometimes repeated as many as five times! I wrote to Mallory warning him of those misleading and unacceptable figures. We exchanged some email messages on the subject and eventually (Nov 2004) he cited M. Swadesh and his 100 “basic words”, where the Indic branch has 82, Italic also 82, Gk 80, (Irn 76,) Gmc 75, B 71, C 64 and the others below 50%. Here again S does not have most retentions. I knew of Swadesh’s work in Glottochronology (i.e. how fast words wear out or disappear and so a language changes) and that the whole subject is now thoroughly discredited. In any event, these numbers do not tally at all with the figures I had obtained in my small test and the general feel I had of the languages. So I began new research.

4. Mallory had added: “I believe basically that we will find the greatest conservatism/retention

1 Abbreviations: adj = adjective(s); AIT = Aryan Invasion/Immigration Theory; Alb = Albanian; aor = aorist; Arm = Armenian; Av = Avstean; Av = Avesta; AV = Atharvaveda; B = Baltic (=Lth, Ltt, Opr); Br = Brāhmanas(s); C = Celtic (=OIr, Welsh, etc); cf = compare; cogn = cognate(s); cpd = compound; dial = dialect; E = English; exc = except; f = feminine; F-U = Finno-Ugrian (=Finnish Hungarian etc); gen = genitive; Gk = Greek; Gmc = Germanic (=Gth, OE, OHG etc); Gth = Gothic; Hes = Hēsychios (a Gk lexicographer); HG = High German; Ht = Hitite; IA = Indo-Aryan; IE = IndoEuropean; IEL = IndoEuropean Linguistics; Ir = Irish; Irv = Iranian; Ks = Kassite; L = Latin; lex = lexicon; Lth = Lithuanian; Ltt = Lettish (=Latvian); m = masculine; M = Middle; Mcn = Mycenaean; Md = Modern; Mt = Mitanni; n = noun; nt = neuter; N = Norse; NIGT = Native Indic Grammarian Tradition; O = Old (before other designations, like OIr = Old Irish); OC(P) = Organic Coherence (Principle); Osc = Oscan (=an Old Italic language); pas = passive; perf = perfect; PIE = Proto-Indoeuropean; pl = plural; PP = Preservation Principle; Pr = Prussian; R = Roman; Rs = Russian; RV = Rigveda; S = Sanskrit (and Vedic); Sc = Scandinavian; sing = singular; Sl = Slavic (=O Bulgarian, Serbo-Croatian, Russian, etc); T = Tocharian A or B, or both; Umb = Umbrian (old Italic); V = Vedic; vb = verb; voc = vocative; VT = Vedic Tradition.
among those languages that are earlier attested and have the largest vocabularies i.e. Vedic, Greek and Latin”. Presumably, this prediction is thought to be more “scientific”.\(^2\) But as the results show, the prediction is quite wrong. Of 404 significant words examined, S lacks 53, Gmc 145, Gk 149, B 185, L (=Italic) 207, C 210, Sl 215. Although Gmc has a comparatively late attestation and a comparatively smaller literature, it is just before Gk and way ahead of Italic both of which have an early attestation and an enormous literature. The matter will be discussed at length below.

Another interesting aspect is the low percentage retained by the Slavic people. The Slavs may not have moved quite as far from Saptasindhu (assuming this was the PIE homeland) as the Irish and Norsemen, but they did move very considerably back and forth in the regions they now occupy, i.e Poland, Czechia, Slovakia, the Balkans etc, and the vast expanse of European Russia. In contrast, the Old Norsemen remained in Scandinavia for many centuries until a contingent sailed in a very short time to Iceland in the 9th cent CE (during the oppressive reign of Harold Haarfagur). The Celts too kept moving across Europe, then to the British Isles and finally to Ireland (some even to Iceland, long before the Norsemen). So movement does play a significant role in lexical retentions. But it is not a simplistic equation ‘farther distance from homeland, bigger losses’. Once people move, many other factors come into play. The people themselves may be more or less retentive or they may want to reject completely the culture at home; then, they may go through many vicissitudes the worst being subjugation; in any case, as they meander about, they may find other cultures much more attractive and surrender to them completely – as the Vikings did in N-W France (Normandy) or in Kiev, where they had set up their own kingdom.

However it is interesting that Mallory shifted somewhat his position. Although he continued to abjure vigorously lexical counts as unscientific, he was now trying to show that S does not have most retentions. He wrote that according to the Swadesh counts, Indic is at the top “but it is sharing first place with a language [i.e. Italic] that was not seriously attested for about 1000 years later ... and is quite a distance from its putative homeland in India”. This means that he takes my PP a little more seriously. But I must observe that here he slips dangerously. Italic is attested by 500 BC and more seriously c 300. Greek is attested c 650 in epigraphies across the country and more “seriously” by 550 when Homer is thought to have been put in writing by Peisistratos. According to the Aryan invasion / immigration Theory, the RV was composed c 1200 BC. But there is no attestation of a written RV before the 14th cent CE (with Sâyana’s commentary), if then! The first IE writing in

\(^2\) What is scientific? Everybody loves to use the term but I can’t help wondering about its use. Telepathy is a well established phenomenon frequently occurring between twins and sometimes between a mother and her child(ren) or, more seldom, between other persons. Yet, at present, there are no scientific means to verify it, other than ordinary observation and common sense or reason. A modern scientist, J. M. Schwartz, an American neurophysiologist, wrote of “the cult of scientism” as “the fallacy of believing that the method of science must be used on all forms of experience and, given time, will settle every issue” (2002: 6). Five decades earlier another American scientist wrote: “expressions such as ‘scientific truth’ should only be taken in a very limited sense... There is no scientific truth in the absolute sense. The phrase Ad veritatem per scientiam [=To truth by means of science] is an absurdity” (du Noûy 1949: 23). Again: “Physicist Wolfgang Pauli once put it that scientists went too far in the seventeenth century when they attempted to make everything understandable strictly as objective science. By denuding the subjective view from any firm ground, much was lost”: a contemporary physicist (Wolf 2001: 6).

In any case, the scientific method like every successful method in any human enterprise requires three ingredients: interest, observation and reasoning. Interest directs attention to the particular field and keeps it there against all difficulties. Observation collects data related to the subject under research. Reasoning discriminates between relevant and irrelevant, accurate and inaccurate premises and data and so arrives at (correct) conclusion(s) (Beveridge 1968). This holds for every discipline in the sciences and arts. The fact that a science like molecular biology uses many and complex instruments does not alter the three basic aspects common to all human enquiry. Because of faulty reasoning or inadequate observations, scientists make as many and big mistakes despite their instruments (Cohen 2001: 32–34) as investigators in other fields. Furthermore, insight or inspiration and luck, all of which are out of one’s control, play important part in sciences (Beveridge, 27ff, 68ff) no less than in the humanities.

Some more on science and mainstream views. An eminent biochemist, Dr C. B. Pert, writes: “Do not accept the conventional [=mainstream] wisdom. Do not accept the idea that something can’t be accomplished because the scientific literature says it can’t... Don’t depend on the literature – it could be right or it could be wrong. Spread all your hunches before you...” (2002: 40). The AIT is the backbone of “conventional wisdom” in Indology. Once you examine the “evidence” you find it is “thin” or “hot” *air: there is not a scrap of solid evidence for it (Kazanas 2001b, 2002).
India is Aśoka’s prākṛta (not Vedic/Sanskrit) Rock Inscriptions after 300 BC but manuscripts survive “seriously” only after the 14th cent CE. So in no way is the Vedic Tradition favoured by writing. These facts were spelled out in the paper published (2003) in the Journal of Indo-European Studies.

5. Leaving aside the fact that mainstream scholars (Swadesh and Mallory and just about everybody else) are under the spell of the AIT, there are two serious difficulties with past counts, apart from the wretched AIT which has, since the second half of the 19th cent, coloured every aspect of Indology and IE studies but scholars do not take this into account. The other two difficulties are linguistic.

First, some stems are arbitrary and need not be PIE even though they are found in two or more IE branches. As was observed early in the 20th cent (Bloomfield 1933; see also §9, below) a word is not valid if it is found only within the Italic or Romance languages (Latin, Oscan, Umbrian, Italian, French, Spanish, Rumanian, etc) or the Germanic family (Gothic, Old Norse, Old English, Old High German, etc) or Slavic (Old Church Slavonic or Old Bulgarian, Russian, Serbo-Croatian, etc). Even when a cognate stem is found in altogether different branches like, say, Greek and Baltic, it is not necessarily PIE: e.g. Gk daimôn and Lth denomas, where the Lth word is borrowed from Gk (also in L and other branches).

Then, Italian giardino, French jardin and Spanish jardín, all ‘garden’, come from OHG garto. Similarly ON mürr, OE mur (rare) and OHG müra come from L müra (older moerus). Another difficulty related to this is that a stem occurring in a branch in a form not easily recognizable may be missed. A. Meillet, e.g., listed many words occurring in the languages of N-W Europe exclusive of Sanskrit, but, while he mentions several only to reject them as invalid, he includes L homo ‘man’ and L vas (gen sing vadis) ‘pledge’ (1922) without mentioning that the first is connected with S ksam ‘earth’ and the second probably with S vad ‘speak’. (For more, see §9.)

6. Variables and invariables. The second difficulty is that very many words in the total vocabulary of a language denote things that are variable. If the people move to a different, distant region, or if social conditions change, these terms may well change. This aspect was well-described by P. Thieme (1953). But there are also non-variables. I use the terms in a relative sense, of course. For instance pots are made from different substances (clay, wood, metal, etc) and in different shapes (bowl, jug, pitcher, urn, etc); the words describing them can over a long period change in meaning and the word for ‘jug’ may come to denote an ‘urn’ or vice-versa. An ear on the other hand, remains an ear without the danger of changing like a pot. Now, there is a difference between “variable” and “basic” vocabulary. Swadesh chose initially 200 basic words but later reduced them to a 100. Basic items are not necessarily invariable. Tea is basic to the English way of life and a kilt is basic to Scotsmen but neither is invariable. Swadesh includes words like ‘bark, grease, root, sand, yellow’, etc. These may be regarded as ‘basic’ but although the bark of trees may be used for medicinal purposes, for writing and clothing, it will be so used by specific people in specific conditions (literacy required for writing) and from specific trees; move to a different area, where no bark is useful and the word will be forgotten or changed. The colour ‘yellow’ sometimes fades into white and sometimes into green or lemon. Sand is plentiful on beaches and in deserts, but it would hardly be known in central Turkey, in north Greece, in Slovakia or Czechia. Then, people might well know bulbous roots, dug up for food or medicine, but would hardly know of the roots of other plants. As for grease, this can come from different substances and have different uses so that different terms may well be ascribed to it.

Consider the case of a common stem denoting six different tools: S matya ‘harrow, roller’; L mateola ‘mallet’; Gmc mattoc ‘mattock’ & medela ‘plough’; B matara ‘pole, rod’; Sl motyka ‘hammer, hoe’. This, I trust, shows clearly what I mean by “variable”. Some comparatists made studies of arboreal terms (and Mallory used this in his criticism of my paper) but these are utterly unreliable. Pines often look like cypress-trees and these like cedars or firs and so on. As one moves from one landscape to another and the vegetation changes, (say from south to north), one may well use a particular name for a tree that is only similar. Studies have been made also for fishes and birds. Here again we find variability. Consider L juni-perus ‘juniper’, Gmc fysr ‘gorse’ and Sl prosó ‘millet’; if the cognition holds, then we have also Arm her ‘bristle, hair’ and S para ‘sheaf’! Fishes in rivers, lakes and seas are mostly different and fishes in the Baltic are different from those in the Aegean sea or in the Indian Ocean. Thieme and others argued about the salmon (PIE *laks?) – and trees like the
aspen. All these studies are not particularly useful and I disregard them.3

7. The Method. I decided to examine what would be as much as possible stems denoting invariables. Certain close and common relations in society like husband, wife, mother, son and so on would be invariable: these are roles that men and women play in all known societies in all regions. Invariable are also certain properties of the human being that enable him/her to play those roles – mind, intelligence, love, etc. There are also the parts of the human body – and these are probably the most invariable of all: wherever people go, they have a head, arms, feet, blood, heart and the like; we could never, under all normal circumstances, mistake hair for fingers and an eye for an ear or a mouth (though cheeks could be con-founded with jaws and the lower jaw with the chin). Then, there are many invariables in all environments where IE languages exist: existence itself of multifarious creatures and things and death, the cessation of that existence; sun, moon, stars; day and night; earth, water, fire and wind; cloud, rain and snow; river (or stream) and lake or sea; mountain, field, forest; cold and heat; the tree, its branches and leaves; fruit and seeds; etc. Certain animals also prove to be quite constant: cow, bull, goat, sheep; dog, donkey, horse; bear, fox, wolf; etc. Birds, being more distant, like fishes, are not easily distinguishable. A good example is the bird S pika = ‘cuckoo’; in L picus is ‘woodpecker’ and so is Gmc specht; but another L form pica is ‘magpie’ and OPr pic-le is ‘fieldfare’. The same stem denotes four different birds in different languages. Certain meanings (expressed by adjectives) are quite invariable: bright, dark; light, heavy; long, short; old, young; alive, dead; and so on. Invariable in all conditions are, of course, many acts and conditions of man, denoted by verbs: being, breathing, drinking, eating, dressing, sleeping, waking, moving, thinking, remembering, speaking, carrying, cutting, cooking, etc, etc.

I took many of Swadesh’s words but also used C D Buck’s index (1988) to select invariables (adornment, alive, all, anger, animal, etc). I gathered over 500 stems and looked them up in Buck, Pokorny (1956), Mann (1984–7, somewhat substandard) and Rix (1998). I also used GEL, Frisk and SGD (Greek), OLD (Latin), MSD and Mayrhofer (Sanskrit). For C, Gmc, B and Sl I relied on Buck, Pokorny, Mann and Rix.

8. Since my purpose was to discover which branch had most retentions, or fewest losses, I left out of detailed consideration all stems common to all branches. Now by “all branches” I mean the seven major IE branches: Indic, represented by S; Gk, including all Greek dialects (but not Mcn); L(atin) representing the Italic branch, but also Osc(an) and Umb(rian) if they have a stem where L fails; C(eltic) with all sub-branches from Gaul to Ireland; Gmc, covering all the Germanic sub-branches – Gth, ON, OE and OHG; B(altic) for Lith, Ltt and OPr(ussian); S(lavic) including even Polish, Serbian etc. In citing the cognate stems I follow the order S, Gk, L, C, Gmc, B, Sl (then Alb, Arm, Ht and T A/ b). Although Alb, Arm, Ht and T A/B are not in the race because of their meagre retentions, nonetheless they are cited in many cases for the sake of completeness and in some cases to supply the third or fourth citation that makes a stem eligible as an inherited cognate.

9. Eligibility is determined by the presence of the particular stem in at least three branches. If a stem is found in only two branches it is rejected even if one branch is in the east, say S, and the other in the west, say C. The Avestan, Old Persian and kindred sub-branches of the area are not used because of their closeness to Sanskrit. If S and Av were used as two branches with any other branch as a third, the balance would lean too heavily in favour of S. Av is used in 2-3 cases where S is missing, in order to underline the absence in S. The presence of a stem in two or more sub-branches of one of the main branches counts as one. E.g. the word for a plain or large expanse of ground in Gallic is -magus, in Ir mag, in Welsh maes etc. All these are cognates with S mahu ‘earth’ (and, of course, the IE common stem for ‘great, large’ S mah- / Gk meg-/ L mag-). However, all the variants in the sub-branches of C count as one. In this instance therefore we have two occurrences, one C and one S. This is not included in the list. Obviously, as was mentioned earlier, loanwords do not count. All European cognates of ‘oil’ and ‘olive(-tree)’ come from Gk and L (which borrowed from Gk). Then, the Gmc rik-r/rice ‘rich’ meant originally ‘mighty’ and is thought to derive from C r i-g. All such cases are ignored. I know that ceteris paribus the presence of a correspondence between two geographically remote languages is not likely to be an intrafamilial loan and that the presence of a correspondence in 3 or 4 contiguous languages may well be a common loan (cf Bloomfield 1933: 350–60). However, I allowed the latter situation (say L, C, Gmc or C, Gmc, B, Sl) to avoid accusations

3 One short old example from A. Meillet should suffice – the tree ‘alder’: L alnus; OHG elin; Lth elknsis; OSl jelika. Even if the cognates could be fully established, we have here only L and North people. This could well be a post-dispersal development. But I don’t accept such cognations because they are so dissimilar and I don’t see why L and Lth have -n while Lth and OSl have -k/x-. There are no such regular correspondences.
that I favour S or Gk (or anything), and express my doubt in brackets.

Meaning is another criterion. If a cognate stem has in a particular branch a meaning different from that of the others, or from what seems to be closest to original PIE (though here one can never be absolutely certain), then this does not ultimately count. It is taken into account as a cognate and so helps establish the IE nature of the stem, but it is considered as absent and does not count in favour of the branch. A good example is the cogn for ‘bird’ (196). The stem appears as S vis/ves and L a-vis, but a trace of this is found also in the Gk αἰφέτος, ‘eagle’ and οἰό-νος, ‘auger’. Phonetically the stem is a genuine IE cognate, but I consider Gk not to have the cognate itself; despite the presence of the stem, semantically it is considered absent and so Gk is said to have suffered a loss.

I apply a similar criterion for nominal and verbal stems. If in the examination of a verbal stem found in some branch(es), a cogn stem appears in another branch but only as noun, then the latter does not count for its branch and the branch is considered to have suffered a loss. The same applies when a noun is being examined and only a verbal stem appears in a particular branch. A good example is ‘carpenter’. The cognate appears as S taksan, Gk tektōn and Sl tesar. A cognate vb appears in L as tex-o, ‘weave, join’ and B tašyti ‘cut, hew’ but these do not count: L and B have a loss. Furthermore, Gmc has dehsa(la), ‘axe, chopper’ – obviously cogn with S etc, but it is only the instrument, not the agent; so this too doesn’t count.

10. As one proceeds in the consultation of the various publications it becomes obvious that all these eminent authorities do not agree among themselves in some cases. Sometimes it is easy to make a decision in favour of one or another. For instance, one lexicographer does not connect C mligin with S mjati, ‘rub, wipe’. The C and S forms are, for me, very obvious cognates. Other cases are not so simple. For ‘hide, skin’, some make cognates L corium, S skura, ‘pelt’ and S carman. Others ignore this and see as cognates S carman ‘hide’, OHG skirm, ‘umbrella’, OPr kērmens ‘body, frame’ and Sl črěmũ’tent’. Although IE phonetic changes often occur according to certain laws within a well defined frame of time and conditions, there are also so many strange unaccountable exceptions that I would not be surprised if all these words turn out to be cognates. I can suppose too that ‘skin’ could become ‘umbrella’ or ‘tent’ (or vice-versa) but can’t see why the sound -sc- and -sk- should be preferable to -sk- and -c- (or vice-versa). Equally perplexing is the case of the cognates of ‘hand’: some see Gk cheir linked with Alb dare and Arm jern, others with S har- ‘take, hold’, still others with S has-ta ‘hand’ (not har-) and yet others only with Ht kešar. For the last two options it was necessary for IEL to postulate a (totally imaginary) proto-Greek *chesr-; this was necessitated only by S has-ta and Ht kešar. Surely here S har- is closer to cheir and Ht is either a corrupt form or another stem like has-ta. (I would suggest yet another possibility: S kara ‘[the hand as] maker.’) I steer clear of such disagreements.

Apart from the cases mentioned just now, I ignore of necessity all stems where no clear common cognate emerges – always with the criterion formulated in § 9, i. e. a stem should appear at least in three of the IE branches. There are many stems that appear in only two branches (sometimes in several sub-branches): adornment, aid, army, battle, blind, cloth as distinct from ‘clothing’, dance, enemy, friend, forest, happy, hole, island, neighbour, etc, etc. This is surprising. These entities are invariant – except perhaps army and battle. Even in most ancient societies people used some decoration and clothing, they had friends and enemies and neighbours and they saw a hole, or a forest, distinct from the bare plain. Yet a consideration of ‘neighbour’ shows enormous divergences. Thus, S prati-/vāsin/ vēsin, ‘one who dwells/settles near’; this may be connected with L vicīnus; but not Gk geiton, C comarsa, Gmc nēalgibūr etc, B kaiminī Sl susje etc. Obviously, our modern views on such social matters are not the same as those of the early IEs.

A third category of stems not recorded here are pronouns and numerals. From my survey of the publications, it became apparent that on the whole these stems were fairly common to all branches. Some numbers like ‘twenty’ do show important variations or are not so widespread, but nothing significant is lost by these omissions.
11. The List.

1) Parts of the human body. Here stems for several members of our body are common to all branches:

eye (S aksī, L oculus etc); navel (S nabha, Gmc naba-la, etc); tooth (S dant- , L dens, etc); udder (S udh-, Gk outhen, Gmc ḥlaun, etc); hip/buttock (S ṛophi, Gmc ḍlaun, etc). Some have no sure common stem: chest, hand (S hastā or hara, Gk cheir and Ht kešr are not necessarily cognates as some claim), finger, lip(s). This is surprising since the parts of the body cannot alter in any environmental or social conditions. We must assume then that at different periods and/or places a member like the 'hand' was regarded as something different according to the function it was thought to perform mainly; for the hand does many things: it takes, gives, holds, touches, makes and so on.

1. arm: a) S bahu; Gk pēchus; Gmc buog; T AB poke. Not L, C, B, Sl.
2. b) S dos (fore-arm); C doē; B ā-pāuse; (SI paz-duha ‘armpit’). Not Gk, L, Gmc.
   (The group of cognates S īrma, L armus, etc denote ‘shoulder/forepart of animal’, exc Gmc arm ‘arm’!)
3. beard: a) S bhṛṣṭi ‘bristle, point’; L barba; Gmc barth/beard; B barzda; Sl brada. Not Gk, C.
4. b) S śmaśru; (L mula, maxilla ‘chin, jaw’; C smēch ‘chin’); S smakra- ‘chin, beard’; Alb mjekrēi; Arm mauro-k; Ht zamangar. Not Gk, L, C, Gmc, Sl.
5. belly: S udara; Gk hoderos (=gastēr ‘belly’); Hes (venter?) uteus; B vēderas. Not C, Gmc, Sl.
6. blood: S asrē; Gk ear; L as(s)er; B asius; Ht ēeś-ḥar; Toch Asāyār. Not C, Gmc, Sl.
7. body: S kṛp (and ‘appearance’); L corpus; Gmc href. No Gk, L, C, B, Sl.
8. bone: S asthi (gen ‘thanas’); Gk osteon; L os(s)-; Alb aṣṭ; Ht hastai. Not C, Gmc, B, Sl.
9. ear: a) Gk ovs; L auris; C au; Gmc ear; B ausis; Sl ucho. Not S!
   b) S śrōtra; C clua-/clyst; Gmc hlyst (and hliu-ma ‘hearing’) hearing. Not Gk, L, B, Sl.
10. elbow: S aratni; Gk óll(e)n-; L ulna; Gmc elina; Sl aršin. Not C and B.
11. eye brow: S bhru; Gk o-phrus; C brād; Gmc brān; B bruvis; TA pārwān, B pārwāne. Not L, Sl.
12. face: S an/prati-iķa; Gk pros-ōp-on; C en-ech. Not L, Gmc, B, Sl.
13. female breast: S stana; Gk stenion (ståthos, Hes); Gmc šhane, etc; Arm stin. Not L, C, B, Sl.
14. flesh: S māṃsa; Gmc mīns; B mesa; (O Pr mensisā) Sl mesa; Alb mishis; Arm mis; TB misa. Not Gk, L, C.
16. hair: a) Gk ianthos; C find(a); Gmc wint-brawa ‘hair-brow (=eyebrow, eyelash)’. Not S, L, B, Sl. (doubtfull PIE)
   b) S ṛoma(n): 1r ruaim-neath; Gmc rogg (so several scholars); Sl runo ‘fleece’. Not Gk, L, B.
17. head: a) S śiras; Gk kara, etc; C ker-n ‘top of head’; (L cere-brum ‘brain’, cernuus ‘head-first’; Gmc hirn̄ ‘brain’). Not L, Gmc, B, Sl.
   b) S kapāḷa ‘skull, cup’ (cf L capis ‘cup’); L caput; Gmc hēfuđ, hafola, etc. Not Gk (kehpalē’?), C, B, Sl.
18. heel: S pārṣṇi; Gk ptēnē; L perna; Gmc fiern; Ht parsna-. Not C, B, Sl.
19. jaw: S haunu; Gk ganus; C gen; Gmc cin/kin; B žān-das(?); TA šanwem (fern dual). Not L, Sl.
20. knee: S jānu; Gk gonu; L genu; Gmc kniu. Not C, B, Sl.
21. liver: S yakrt (gen ‘knas’); Gk hēpar (gen ‘patos’); L iecur; B jaknos. Not C, Gmc, Sl.
22. marrow: S majā; Gmc mar(a)g; Sl mozzō ‘brains’; T A māssun. Not Gk, L, C, B.
23. mouth: S ās-; L oas; C ā; (Gmc āss ‘rivermouth’). Not Gk, Gmc, B, Sl.
24. nail: S nakha; Gk onux; L unqu; B nag(a)s. Not C, Gmc, Sl.
25. neck: a) L collum; Gmc ḥals; B kaklas; Not S, Gk, C, Sl where the stem denotes ‘circle’ (S cakra, Gk kuklos, etc).
   b) S manyā; (L monile necklace): C main(ĕ); (Gmc men(ĕ) ‘necklace’, mana ‘mane’). Not Gk, L, Gmc, B, Sl.
   c) S ārīvā; Gk derfā (Arcadian), derē; B ārīva ‘river-mouth’; (Sl grīva ‘mane’). Not L, C, Gmc, B, Sl.
26. nose: S nas-; L nāris; Gmc nasa; B nasis; Sl nosī. Not Gk, C.
27. palm of hand: S prthā; Gk palamē; L palma; Ht pal-tana. Not C, Gmc, B, Sl.
33. penis: S pasas; Gk peos; L pênis (*pes-ni*); Gmc fásal. Not C, B, Sl.
34. shoulder: S amhsa; Gk ômos; L ume-rus; Gmc ̃ams; Arm us. Not C, B, Sl.
35. sinew, tendon: S snâvan, Gk neuron; L nervos; Gmc snuor; B snawara; Arm neards. Not C, Sl.
36. spleen: S plîhan; Gk splê̂n; L lièu; Arm plaîcaln; etc; all exc Gmc.
37. testicle: Av arâzi (dual); Gk orchis, C virige; (B erzîlas ‘ungelded horse’), Alb herde; Arm orfî. Not S, L, Gmc, B, Sl.
38. throat: S gala; L gula; Gmc ceole; B ger-kle; Sl grâlo. Not Gk, C.
39. tongue: S jihvâ; OL dingua; C teng(e); Gmc tuggo; B liézûvis; S jezykâ; Arm lezu; T kânîto. Not Gk.
40. tooth, molar: S jambha; Gk gomphos; Sl zebü; Alb dhîmîb; T AB am/kîme. Not L, C, Gmc, B.

II) Man’s properties and conditions. Here we examine cognates of man’s properties or attributes. Very few properties like ‘name’ (S nâma, L nomen, etc) and ‘thirst’ (S trś(n)-ā, C tart, etc) have common cognates in all seven branches.

42. anxiety: S an̄has; Gk agchos, achos; L angor, anxiétas; Gmc ang(u)st; Sl quezos-tâ. Not C, B.
43. care, consideration: S smaranqa, smrî (and ‘memory’); Gk merimna; (L memor ‘remembering’). Arm mormok. Not L, C, B, Sl.
44. debt: C dlîg/dyl-ēd; Gmc dülgs; Sl dlûgû. Not S, G, L, B. (Not PIE probably.)
45. desire, love: S lobha ‘longing, greed’; L lu-/li-bido ‘desire, pleasure’; Gmc lûfr/liubi ‘love’; Sl ljubi. Not Gk, C. (There are many other stems for this but all diverse.)
46. dominance: C flâth ‘soverignty’; Gmc waldan; B waldan; Sl vâla. Not S, G, L.
47. energy, force: S vayâs; Gk is; L vi-res (pl). Not C, Gmc, B, Sl.
49. guilt: S âgas; Gk (h)lagos (and ‘pollution’); Gmc acce (vb acan) ‘pain, wrong’. Not L, C, B, Sl.
50. life-time): S âyûs; Gk aûn (and ‘vital power’); L aeuvum; Alb eshê; T A âym. Not C, Gmc (but aîes ‘time, eternîty’), B, Sl.
51. mind: S manas; L mens, ’ntis; C men-me; Gmc munr (ON); myne (OE: ‘desire’ and sometimes ‘mind’; cf Goth mans ‘thought, intention’). Not Gk, B and Sl. (Interestingly the Greek cogn menos means ‘might, force’ showing that the Greeks took only this quality for the stem that originally denoted ‘mind’ believing that might came from mind?)
52. power, prevalence: S ʾsah n, vb; Gk isch- ‘power’, e(s)chô ‘possess’; Gmc sig-e/or ‘victory’. Not L, C, B, Sl.
53. reward: S mîdhâ; Gk mîsthos; Gmc mîzdô; Sl mîzdha. Not L, C, B.
54. toil, tiredness: S ʾsâm; Gk kam- toîl, a-kama- ‘tiredless’; C cuma ‘grief’. Not L, Gmc, B, Sl.
55. vehemence: S ʾyrj-î; Gk orqî (and ‘fury’); C ferc ‘anger’. Not L, Gmc, B, Sl.

III) Human relations. Here all the closest ones – father, mother, etc – appear in almost all the branches except Ht which has noel! Surprisingly, on the other hand, we find no sure cognates for ‘compatriot, enemy, friend, guest, neighbour, stranger’ and many others. At that early period, it seems people had different ideas about such social relations.

56. brother: S bhrâtri; etc; in all exc Gk (phratâr only as a member of ‘brotherhood’ phratria) and Ht.
57. chief, king: S râj-; L rex, regius; C rî(ī)-x. Not Gk, Gmc, B, Sl.
58. child, son: S putra; (Gk pûlos ‘foal’); L puer (pullus ‘young animal’); B putytis ‘chicken’; Sl pta-k ‘bird’. Not Gk, C, Gmc, B, Sl.
59. carpenter, fashioner: S taksan-; Gk tekton; (L tex- ‘weave, fit, plait; Gmc dehsa ‘axe’;) Sl tesar (vb tesati and B tashûti ‘cut, hew’). Not L, C, Gmc, B.
60. clan/tribe: S jana/jatî (<vjan); Gk genos (phulē); L gēns (tribus); Gmc kyn/cyn(n). Not C, B and Sl.
61. companion: S sakhā; L socius ‘common’; Gmc seggr (ON); Arm and Iran ašakert ‘disciple, follower’.
62. daughter: S dâhîr; etc; for the italic branch Osc futir; the cogn is not in C and Ht.
63. daughter-in-law: S snaṣṣā; Gk nuos; L nurus; Gmc snur; Sl snâčha; Arm nu. Not C, B (and Ht).
64. father: S pîtr; Gk patēr; L pater; C athir; Gym falūr. Not B, Sl and Ht.

65. fortified community: S pur; Gk (akro)-polis; B pilis/pils. Not L, C, Gym, Sl.

66. husband/master: S pâtī; Gk potos; (L potis ‘capable’ only); Gym -fâbs (Gth); B pats; Sl -podī. Not L and C.

67. husbands’ brother: S devr; Gk daër; etc; in all exc C (and Ht).

68. inspired one, poet: S api-vatat- ‘one understanding’; L vates; C fáith; Gym wōd ‘one possessed’.

Not Gk, B, Sl.

69. man: a) S nēr/-nar; Gk a-nēr; Osc nér-am; C nér; Sl -ner; Gk njēr. Not Gym, B and Sl. Cf also S sānara ‘mighty’ and Gk ἐν-ἀνήρ ‘vigorous’ (where ἐν- links with ἀνήρ, giving another stem).

b) S man-u; Gym man-n; Sl mozi; Not Gk, L, C and B.

c) Gym homō; Gym gum-; B žmogus; Toch A/B šom/šaum; Not S, Gym and Sl.

d) S viro ‘hero’; L vir- and Umb veiro ‘man’; Gym wair; B vyra. Not Gym, Sl.

70. mother: S mātr; etc; in all, exc B (but mote ‘wife’), Alb (but motrē ‘sister’) and Ht.

71. people: (Swu > taviti ‘has authority’); L totus ‘whole’, Osc touto ‘populace’; C tuath; Gym ṣunda; B tuato. Not S, Gym, Sl.

72. sage, silent one: S munī ‘seer, silent’; Gym mun-ros ‘silent one’ (Hes), mun-dos ‘mute, silent’; Sl munč(a) ‘mute’. Not L, C, Gym, B.

73. settlement: S ā-sāya ‘place of rest, retreat’; Gym vb kei-mai ‘lie, rest, settle’, kōmē village; Gym haimos, heimir; B saime ‘family’. Not L, C, Sl.

74. sister: S svasr; etc; in all exc Gym (xor ‘daughter’ in Hes) and Ht.

75. son: S sānu; Gym sunu(s); B sānu; Sl sym; in Gym hui- and Toch B so- both questionably related being decayed forms. Not Gk, L, C and Ht.

76. settlement: S sānu; Gym sunu(s); B sānu; Sl sym; in Gym hui- and Toch B so- both questionably related being decayed forms. Not Gk, L, C and Ht.

77. twin: S yama; Gym geminus; C emon; B jumis. Not Gym, Gym, Sl (and Ht).

78. uncle (father’s brother): S pîtrya; Gym pâtrōs; L patrius; Gym fêtiro (and ‘cousin’). Not C, B, Sl (and Ht).

80. wife/mistress: Here again one would expect an etym related to no 66. Indeed –

S patti; Gym potnia; B patti. Not L, C, Gym and Sl which have mostly disparate stems.

81. woman: now, if the stem for man is nar/ner, then it would not be surprising to have a related stem for woman; but only S has this as nāri. We find: S jani (f of jana ‘creature, man’) also gnā ‘divine woman’; Gym gunē; Gym qinō, swenē; Sl žena; Arm kin. Not L, C and B.

IV) Environment Natural

Here again several stems are common to all branches: ‘light’ (S ruc, L lux etc); earth (S ksān-, Gym chthon; etc, but not Gym, where guma = man); month (S mās, Gym mēn etc); snow (L nix, Gym snē, etc, but not S, where sneha ‘sticky substance, love’); night (Gym nux, L nox, etc); dawn (S sūsā, Gym aura, etc); sun (Gym hel, L sol, etc but not Gym). But again many things have no sure common stem – forest, lake, island, medicine, etc.

6. apple: C aball, aval; Gym ap(p)el; B ?att(u)los; Sl (j)ablako. Not S, Gym, L. (I doubt this is PIE.)

82. ash(es): S āsā; Gym as-ca, az-go; Arm aē-cum; (cf Sl oz-diti ‘malt’; TA āsā ‘be dry’). Not in Gym, L, C, B, Sl.

88. being, creature: S bhūti; Gym physis ‘nature, essential being’; B bu(l)itis ‘existence’; Sl bytā ‘being, creature’.

Not L, C, Gym.

89. blade, thorn: S trâna ‘blade, grass’; Gym þaurrns; Sl trānā. Not Gym, L, C, B.

90. bottom: S budhā, Gym pathmēn; L fundus, Gym bodam; Not C, B, Sl.

91. branch: a) S sakhā; (C ceht ‘forked stick, plough’; Gym hoха ‘plough’); B šakā; Sl socha; Arm sax. Not Gym, L, C, Gym.


93. cold, frost, winter: S himā / heman; Gym chime-, -chimo ‘storm, frost’, cheima, ‘mōn’; L heims;
135. **tree**: S dru- *ma*; Gk *dru-σ* 'oak', *dru-mos* 'forest'; Gmc *tré* (ON), *drom* 'thicket, forest' (OE); Sl *drev* (?). Not L, C, B.

136. **water**: a) S *udan*; Gk *hudór*; etc, in all exc L (*unda* 'wave').

b) L *aqua*; Gmc *ahuwa/iá* 'river'; Ht *eku/aku*; T *yok* 'drink'. Not S, Gk, C, B, Sl.

c) S *ap-* (*āpas* pl); B *ape*; OPr *ape*; T *AB ap* (f). Not Gk, L, C, Gmc, Sl.

d) S *vār-*; Gk *our-* (and *urine*); (L *ūrina* 'urine', *ūrinor* 'dive') Gmc *var/-ūr*; B *jūra* 'sea'. Not L, C, Sl.

140. **wave**: S *ūrmī* (*v*/*val* 'turn'); (Gk *eilô* 'roll, turn'; L *volvo* 'turn';) Gmc *wylm*; B *vilnis*; Sl *vlūna*. Not Gk, L, C.

141. **wind**: S *vāta*; etc, in all exc Gk (*ane-mos*, cogn *with L anima* and S *ana* 'breath') and B.

142. **wound**: Gk *oulē* 'scar'; L *vulnus*; *iou*; Gmc *woal* 'pestilence'; Not S, B, Sl.

143. **year**: S *vatsra*; Gk *fotos*; L *vetus*; B *vetušas*; Sl *vetuču*; Alb *vit*; Ht *uitt* . Not C, Gmc.

V) **Environment Man-made.** Several stems are common to all seven branches: axle, door, edge/rim, wool, etc. But just as many have no common stem - army, battle, cloth as distinct from 'clothing', etc. Apart from some exceptions, foodstuffs, clothing, tools and various utensils are not examined since they are highly variable.

144. **awl**: S *ārā*; Gmc *al, ālā*; O Pr *ylo*; B *yla*. Not Gk, L, C, Sl.

145. **axe**: Gk *axinē*; L *ascia*; Gmc *oex*. Not S, C, B, Sl.

146. **band**: S *bandh-a/ana*; Gk *peisma* (?); C *buinna*; Gmc *bandi*. Not L, B, Sl.

147. **beam**: Gmc *balca*; B *balkis*; Sl *balka*. Not S, Gk, L, C. (Highly doubtful PIE.)

148. **bed**: Gk *lechos*; L *lectus*; etc, all exc S, B.

149. **belt, girdle**: Gk *zöstēr*; B *juosta*; Sl *po-jasu*; Av *yāḥ-*. Not S, L, C, Gmc.

150. **board**: S *phalaka*; Gmc *fjol*; Sl *pol*. Not Gk, L, C, B.

151. **bowl, cup**: S *kalaśa*; Gk *kalux*; L *calix*; OE *caelica*. Not C, B, Sl. (The words 'cup', *C copan*, Gmc *cuppe* etc are thought to derive from L *cuppa*.)

152. **bread**: (Gk *klib-anos* 'oven for baking bread';) Gmc *hlafl*; B *klaisp*; Sl *chlebū*. Not S, Gk, L, C. (Highly doubtful PIE.)

153. **buckle, fastening**: S (*ā)sañjana*; C *sēn* 'harbour-net'; Gmc *senkel* 'shoe-fastening'; B *segu*. Not Gk, L, Sl.

154. **butter**: S *sarpis*; Gk *helpos* (Hes); Gmc *sálba*; Alb *gjalp*; T *sālipe*- . Not L, C, B, Sl.

155. **cask, covering**: S *kosa* 'cask (for valuables)'; Gmc *huz-d* (Gth), *hauss* (ON) 'skull', *hosa* (OE) 'husk'; B *kaiaše* 'skull (=brain cask)'. Not Gk, L, C, Sl.

156. **copper, ore**: S *loha* 'red metal'; L *rūdas*; Gmc *a-russi*; Sl *ruđa*. Not Gk, C, B.

157. **cord**: S *sināti/sinotí/syati* 'bind' (*sīman* 'hair-parting, boundary'); Gk *himas*, *mant*; C *sīm* 'chain, cordon'; Gmc *sim-*/o*; B *sai-te* 'bond'. Not L, Sl.

158. **cover, shelter**: S *şarman*; Gk *kalumma*; (L *celô* 'cover' vb; C *celim* vb) Gmc *hilm* 'helmet', vb *helan*; Not L, C, B, Sl.

159. **curve, hook**: S *aṅka*; Gk *ogkos* 'hook'; L *uncus*; C *ekath* 'hook'. Not Gmc, B, Sl.

160. **dough**: C *tāiz*, *toaz*; Gmc *thēisma*; Sl *testo*. Not S, Gk, L, B. (Improbable PIE.)

161. **edge, tip**: S *aśani*; Gk *akōn* 'lance' (akonē 'whetstone'); L *agna* 'ear (of corn)'; B *aśnis*. Not C, Gmc, Sl.

162. **fight**: S *yudh-* and vb; Gk *husminē*; (L *luboe* 'command!';) C *-iud* 'fighter'; (B *judeti* 'agitate!'); Sl *ojūminē* 'warrior' and judzē 'excite'. Not L, Gmc, B.

163. **floor**: S *tala* 'surface'; Gmc *dil*; OPr *talus*; Sl *tilo*. Not Gk, L, C.

164. **flour, meal**: C *blend*; Gmc *melu*; B *milit*; Ht *mēmal*. Not S, Gk, L, Sl. (I doubt it is PIE.)

165. **grain, barley**: a) S *yava*; Gk *zevai* (pl); B *javas*; Sl *jevin, ovin*; Ht *əna* (?). Not L, C, Gmc.

b) S *dhāna* 'corn'; Gk *danakē*; (B *duona* 'bread') T B *tāno*. Not L, C, Gmc, B, Sl.
167. **honey**: a) Gk meli; L mel; C mil; Gmc milti (Gth only); Arm melr. Not S, B, Sl.
168.  
169. **house**: a) S dama; Gk domos; L domus; Sl doma. Not C, Gmc, B.
170.  
171. **incision, line**: S rekha; (Gk ereikō 'rend';) C ṛhwgg; Gmc rīga; (B riektī 'cut(bread)'). Not Gk, L, B, Sl.
172. **metal**: S ayas; L aez; Gmc aiz. Not Gk, C, B, Sl.
173. **mill-stone**: C breuan; Gmc quīrn; B girmos; Sl žrūny; Arm erkan. No S, Gk, L. (Despite its incidence in the 5 branches this stem may still not be PIE. The S grāvan has now been shown to mean 'singer' not the stone for pressing Soma: see Thomson 2001.)
174. **plough**: Gk arōtron; L arātrum; C arathar; B ar-kl- (?) ; Sl radlo. Not S (vb S vrka ?), Gmc (Gth arjan 'plough, cultivate').
175. **pot**: S caru; C coire; Gmc hwer(r). Not Gk, L, B, Sl.
176. **price, roof**: S vsthag; Gk steg; etc, all exc B, Sl.
177. **value**: S vasna; Gk ονῆ; (L veno 'sale';) Arm gin; Ht uṣ- 'buy'. Not L, C, Gmc, B, Sl.
178. **shield**: L scūtum; C sciaith; (Gmc scī-d/t 'board';) B skydas; Sl štiti (?). Not S, Gk (unless aspis, 'tidos'), Gmc.
179. **sickle**: S srūṇi; Gk har-pē; (L serra 'saw';) B sirpe; Sl sūrpu. Not L, C, Gmc.
180. **soup/broth**: S yūs; L īās; B jūse; Sl jucha. Not Gk, C, Gmc.
181. **spare**: a) S šula 'spike'; Gk kelon 'shaft'; C cail; OPB kelian. Not L, Gmc, Sl.
182.  
183.  
184. **spindle**: a) S tarku; Gk a-trak-τos; (L torqueo 'twist';) Sl trakā 'girdle'; TA tark 'earring'. Not L, C, Gmc, B.
185.  
186. **thread**: S snūyu 'si’new, string'; Gk nēma; C snāthe; Sl niti. Not L, Gmc, B.
187. **wheel**: a) S cakra; Gk kuklos; Gmc hwēol; T AB kukāl/kokale. Not L, C, B, Sl.
188.  
189. **[piece of] wood**: S dāru; Gk doru 'shaft, spear (tree)'; (C daur ‘acorn’); Gmc triū ‘tree’ (Gth); Ht taru. Not L, C.
190. **work**: S āpas; Gk aph(e)nos ‘wealth’, oμpnh ‘livelihhood’; L opus , ops ‘aid, wealth’; Gmc uoba ‘festival’, wob n ‘farmer’ (OE æfnan ‘to work’). Not C, B, Sl.

VI) **Animals.** Some animals’ names present a sure common stem: cow (S gau, L bos, etc), sheep (S avis, B avis etc), swine (Gk, L sā- etc), dog (S svan, Gk kuōn etc), horse (S asva, Gmc eoh etc), flea (S pluṣi, Gmc floh etc), ant (S vamra, L formica etc, but not B). Many, like donkey and camel, have thoroughly disparate stems. Most birds too belong to this category with the notable exception of goose/swan (S hamsa, Gmc gans etc) and duck (Gk nēssa, Sl aty etc; not C). Fishes also have diverse stems.

191. **animal**: a) Gk zōon; C bea-thach; B gyvolis; Sl životu. Not S, L, Gmc.
192.  
193.  
194. **bear**: S rıkṣa; Gk arktoσ; L ursus; C art; Arm arj-; Alb ari-. Not Gmc, B, Sl.
195. **beaver**: L fiber; C befer; Gmc bikar; B bebrus; Sl bobr. Not Gk and S, which has babhru 'red-brown' and babhruka 'ichneumon', which is of this colour.
196. **bird**: S vis/ves; (Gk aiētos 'eagle', oiōnos 'augur';) L avis. Not Gk, C, Gmc, B, Sl.
197. **cow**: S ahi (lex); (Av: az‘- (cow/mare) with young’); C āq; Arm ez-n. Not Gk, L, Gmc, B, Sl.
198. **deer, elk**: S rýsa 'male antelope'; Gk ela-phas; C elain; Gmc elch; etc, all exc L.
199. **feather, wing**: S patra; Gk petri-; L –piter, (C atar 'bind'); Gmc fjaðr. Not C, B, Sl.

201. **fish**: L piscis; C ḫaṣ; Gmc fisk. Not S, Gk, B, Sl.

202. **fox**: S lopasa; Gk a-lopex; (L vulpes) C louarn; B lape. Not L, Gmc, Sl.

203. **goat**: S ṛṣa (some prefer aja); Gk aix (gen aig-os); B oṣys; O Pr wosee; Arm aic. Not L, C, Gmc, Sl.

204. **hare**: S šasa; C cœnach; Gmc haso; O Pr sasius. Not Gk, L, Sl.

205. **horn**: S śrīga; Gk keros; L cornu; Gmc haurm. Not C, B, Sl.

206. **louse**: S yākā; Gmc lās; C lean; B ute, liule; Sl višu. (So several scholars.) Not Gk, L.

207. **meat**: S kravis; Gk kreas. (L cruar ‘blood from wound’; C crō ‘blood’); OE hrǣow ‘bloody, raw (meat)’; B kruvinas ‘bloody’. Not L, C, Sl.

208. **mouse**: S mīs; Gk mūs; L mīs; etc, all exc C, B.

209. **nest**: S nīda; L nidus; C net; Gmc nest; B lizdas; Sl gnězd, Arm nist. Not Gk.


211. **pig**: L porcus; C oca; Gmc fearh; B paršas; Sl prase. Not S, Gk.

212. **serpent**: S sarpa; Gk herpeton, L serpens; C sarff. Not Gmc, B, Sl. (In C and Gmc only the cognates nathir (Ir) and nadr (ON)/nadra (OE).)

213. **snake**: S ahī; Gk echi-/ophi-; L anquis; B angis; Sl už/waž. Not Gmc, C.

214. **worm**: S knrdm; C cruim; B kirmis; Sl crūvi. Not Gk, L, Gmc.

**VII) Qualities (adjectives)**: Many ajectives have sure cognate stems: alive (S jīva, L vīvus etc); big (S mah-, L mag- etc, but not B, Sl); narrow (S amhu, B ank- štas, etc); light (of weight: S laghu, Gmc leiths etc); right (of direction: S daks, L dex, C dess etc); new (S nava, Gk neo- etc); old (S sana, L sen- etc but not Sl); grey/hoary with stem pal- (not Gmc, where fāl ‘fallow’). But some common terms like those denoting ‘far’ and ‘near’ have no clear common stems. Colours and the generic term itself are on the whole very unclear: white (not ‘bright-white’ S arjuna, Ht harkii etc), yellow (often as ‘green’), brown, black, blue etc; exception is ‘red’ (S rudhira, Gk eruthro- etc). Stems for directions east, west etc are very diverse.

215. **all/every/whole**: a) S viśa; O Pr wissa; B visas; Sl vesič, viši. Not Gk, L, C, Gmc.

216.  b) S sarva; Gk holos; L salvus; C (hu)ile. Not Gmc, B, Sl.

217. **bitter, sour**: S amla; L amarus; Gmc ampfaro; B amuols; Alb ēmbē; Arm amok. Not Gk, C, Sl.

218. **bright**: S bhrāj-a; C berth; Gmc bairhts, beraht; Ht parkwis ‘pure’. Not Gk, L, B, Sl.

219. **daring**: S dhṝṣṇu; Gk thras / thars-us; Gmc gu-dars; B drasus; Sl drzā. Not L, C.

220. **dark**: S tamasa; C temen; Gmc din-star; B tamsas; Sl taman. Not Gk, L.

221. **deaf**: S badhira; C bodar etc; Gmc baups; Arm bot ‘blunt’. Not Gk, L, B, Sl.

222. **dead, intimate**: a) S priya; C rhydd (=priya)‘free’; Gmc fri ‘free’, frijōn ‘dear’; Sl prija-je. Not Gk, L, B.

223.  b) S śeva; (L (e)vis ‘citizen’) Gmc heiwa-(fрауja) ‘host, master’; B sieva ‘wife’. Not Gk, L, C, Sl.

224. **deep**: C dwf-n; Gmc dēop; B dubus ‘hollow’. Not S, Gk, L, Sl. (PIE very doubtful.)

225. **dense**: S vita(n)tc-; C teṭh; Gmc pettr (ON); B tankus. Not Gk, L, Sl.

226. **difficult, ill, mal**: S dus; Gk dus-; C do/da; Gmc tuz/zur; Sl dāž. Not L, B.

227. **dirty, black**: S malina; Gmc melas; L malus ‘bad’ etc; (Gmc mäl ‘blemish’;) B melna ‘black, dirty’ and melsvas ‘bluish’. Not C, Gmc, Sl.

228. **dry**: S śuṣka; Gk havos; Gmc sear (OE); B sausas; Sl suchū. Not L, C.

229. **empty**: S tucchya; (L tesqua ‘desert’); B tuščias; Sl tūštē. Not Gk, L, C, Gmc.

230. **fast**: S āṣa-; Gk oκω-; L ecir ‘faster’ (compar); C di-auc. Not Gmc, B, Sl.

231. **firm**: S dhruva; Gk droon ‘strong’ (Hes); Gmc triw ‘true, staunch’; B drutas; Sl sū-dravū. Not L, C.

232. **first, former**: S pārva; Gmc forw – (OE dial); Sl prūvā; Alb pare; T AB pārwat/pārve. Not Gk, L, C, B.
233. foreign, next, other: S arāṇa, ari; Gk ἀλλός; L al·lus 'that (other) one', ālius 'stranger'; C allūs; Sl lani. Not Gmc, B.

234. 266. be silent: a) S vasu; C -vesus (in names); Gmc wisu-. Not Gk, L, B, Sl.
235. 265. be faint, stunned: b) prefix S su-; Gk hu/ue-; C su/so/hy-; B su; Sl sā-. Not L, Gmc.
236. green(-ish): S hari-(-ta); Gk chlōro-; B želvas, Sl zeleni. Not L, C, Gmc.

237. heavy: S guru; Gk barui-; etc in all exc C, Sl.

238. lesser: S hrasva 'short, weak, unimportant'; Gk χεριόν; C gair, garait 'short of life'. Not L, Gmc, B, Sl.

239. long: S dīrgha; Gk dolichos; B ilgas (loss of d); Sl dlągą; Ht dālugaes. Not L, C, Gmc (unless loss of d in stem lang-?).

240. low: a) Gk ch(th)amalos; L humilis; B zem(a)s: all from stem for 'earth'. Not S, C, Gmc, Sl.
241. 263. y: b) S nītara-; Gmc niperlić; Sl nizǎkǎ. Not Gk, L, C, B.

242. many, much: S puru-; Gk polu-; L plus 'more'; C il, ile (pl); Gmc filu. Not B, Sl.

243. much, thick: S bahu(la); Gk pachu-; (cf ON bingr 'heap'); B biezs thick; Ht pankus 'whole'. Not L, C, Gmc, Sl.

244. paternal: S pitrāya; Gk patrio-; L patriarch; C aithre. Not Gmc, B, Sl.

245. perpetual: S nītya; Gmc nībris, nīrī; C nītio-. Not Gk, L, B, Sl.

246. quiet: S sama 'calm, even'; C sām (sām 'rest' n); Gmc sōm (OE) 'agreement'. Not Gk, L, C, Sl.

247. raw: S āma; Gk ōmō-; C om; Arm hum. Not L, Gmc, B, Sl.

248. slow: (Gk lēd- 'be lethargic' STG but now deleted in GEL; L lassus 'tired') Gmc lat(r); B letas. Not S, Gk, L, C, Sl.(PIE doubtful.)

249. smooth: a) Gmc gla-t-d; B glad(u)s; Sl gladākā. Not S, Gk, L, C.
250. b) Gk leios; L levis; C llyf-n; Gmc s-letrr. Not S, B, Sl.

251. sparse, thin: S vi-rala; L rārus; B ret(a)ls; Sl rēdākā. Not Gk, C, Gmc.

252. 261. y: b) S manāk; Gk mano-; C men-b; B menkas; TA mānk 'lack(ing)'. Not L, Gmc, Sl.

253. sweet: S svādu; Gk hēdus (Fadus); L suavis; Gmc svēte. Not C, B, Sl.

254. thin: S tanu; Gk tanu-thrix 'thin-hair'; L tanuis; Gmc dunni. Not C, B, Sl.

255. true: a) S vērus; C fīr; Gmc wür. Not S, Gk, B, Sl.
256. b) S satya; Gk eteos; Gmc sođ. All originally 'existing'. Not L, C, B, Sl.

257. wicked: S piśuna; Gk pikros 'caustic'; Gmc fahu hostile; B piktas 'angry'. Not L, C, Sl.

258. wide: S prthu-; Gk platus; C lethan (?); B plat(u)s; Ht palhis. Not L, Gmc, Sl.

259. young: S yuvan; L iuvienis; C oćac etc; Gmc jugs etc; B jaunas; Sl junǔ; Arm yavanak. Not Gk.

VIII Actions, processes and states (verbs). Many verbs (activities and states of being) have common stems: be (S asti, Gk esti, etc); live (S vūj, Gk biōidōz̄, L vivere etc); stand (S vūthā, Gk histē-, L stō etc); sit (S sadid-ō, Gk hez, Gmc sit etc but not C); spread/strew (S vstr, L ster, B stīr etc); turn (S vyr, L vert but not Gk); bear/carry (S vēhr, Gk phere- but not B); lick (S vlieh, Gk leich- etc); eat (S vād Gk ed-, Gmc etat etc); drink (S vphā, Gk pi, L bi etc); urinate (S vṁh, Gk omich-, Sl miž- etc); break wind (S pard-, Gk perd- etc). But many more show great diversity: bow, create, dig, fight, gather, halt, hang, etc. etc.

260. anoint: a) S vāñj > añjana; L unguere, unguen; (C imb & OHG ancho 'butter'). Not Gk, C, Gmc, B, Sl.
261. b) S vilp > līpti; Gk aleipō, lipos 'fat'; B lepti. Not L, C, Gmc, Sl.

263. b) S budhi-bodhi-; (cf Gk peith-, punth- 'learn'; Gmc biudan 'bid'); B budeti; Sl buditi; cf T AB pot/paut 'revere'. Not Gk, L, C, Gmc.

264. be excited/angry: S kupyati; (L cupio 'desire vehemently'); Sl kypěti 'be agitated, seethe'; Ht kap-pila 'be angry'. Not Gk, L, C, Gmc, B.

265. be faint, stunned: S tam-/tāmya-; (L temulentus 'befuddled, drunk'; C tām 'death') Gmc dam-līch stupified, dām-eln 'deaden'; Sl tom-iti 'drudge, oppress'. Not Gk, L, C, B.

266. be silent: S tūṣṇṁ bhū-; C toaim; B tusan; Sl Tsna 'Silent' name of river. Not Gk, L, Gmc.

267. become: S bhū-bhavati; Gk phōu, phuomai 'grow, appear'; all others have cogns of asti/esti etc 'to be' but not of bhū/phu- except various forms which have become integral parts of 'to
296. beget: S jan; Gk gen-gignomai; L genere; C -genathar/geni. Not Gmc, B, Sl.
296. blow: S vā; Gk aē-mi; Gmc waian/wajan; Sl vējati. Not L, C, B.
297. boil: S vīyas; Gk zeō; Gmc giest, jastr. Not L, C, B, Sl.
298. break/shatter: a) S vrj; (Gk leuga- 'ill-luck-'; L liūgeo 'mourn'; C luch-t 'piece'); Gmc tō-lūcān; B lаužti. No Gk, L, C, Sl.
299. burst: S vōr; Gk derō 'flay'; Gmc ga-taurnan; B dirti; T tsar- 'separate'. Not L, C, Sl.
300. buy: S krīnāti; Gk priasthai; C cith 'purchase' n; (B kricus 'money'); Sl krānūti; TB krayar as C. Not L, C, B.
301. care for, rescue: S nas-ate 'approach, join with'; Gk neomai 'mind/reduce (home)'; Gmc gensjans 'rescue'; genisan 'recover'; Alb knellen (=*knes-l-) 'restore oneself'. Not L, C, B, Sl.
302. cook: S pacati; etc (with Alb and T AB); all exc Gmc.
303. cough: S vōkās; C cas-/pas-; Gmc hōsta etc; B koseti; Sl kasiljati. Not Gk, L.
304. crackle, thunder: S vspūrj; Gk spherag-; Gmc spraka (ON), but (OE) sprecan 'speek'; B sprageiti. Not L, C, Sl.
305. crush/grind: S pinasṭi; Gk ptissō; L pinserē; B paisiṣti; Sl pūchatī. Not C, Gmc.
306. cry(out), weep: S vruđ-; L rudere; Gmc riazan; B raud-; Sl rydattā. Not Gk, C.
307. cure: S viš 'invigorate'; Gk iaínō; (Gmc eisā 'dash forward'). Not L, C, Gmc, B, Sl.
308. cut: S krynati; Gmc scirindan 'burst, split'; Sl črēsti; Ht kartai. Not Gk, L, C, B.
309. cut free: S vlra 'cut free/off'; Gk luō 'loosen'; L luō expiate, pay off'; Gmc lun-, liusan. Not C, B, Sl.
310. despise: S vnind; (Gk aneidos 'disgrace'); Gmc ga-naitjan 'slander'; B niedeti 'detest'; Arm a-nican-em 'curse'. Not Gk, L, C, Sl.
311. die/perish: a) S mṛf- / mar-f -mri-; (Gk only e-mor-ten 'died' Hes; mara-inō 'wither'; a-m-brotos 'immortal'); L morior; B mīrti; Sl mrēti. Not Gk, C, Gmc.
312. enjoy: S vbhuj; L fungor and 'be busy with'; Alb bungē. Not Gk, C, Gmc, B, Sl.
313. extend/stretch: S vțan; Gk tan-, tein-; L ten-dō; etc; all exc C, Sl.
314. faith, trust: S kradhā (also vb 'showing faith, entrusting'); (Gk krad-, kard-ia 'heart, seat of faith'); L credo 'believe' (*cret-do 'give trust'); C cretim 'believe, trust'. Not Gk, B, Sl.
315. fill: S vpr > piparti; Gk pimplēmi; L plere (in cpds im/com-); C linaim; (Gmc fulls, B pilnas, Sl plānu - all 'full' adj). Not Gk, B, Sl.
316. find: S ūmi; Gk inda-llomai 'turn up'; C ro-finnadan 'find out'; Arm egit aor 'found'. Not L, Gmc, B, Sl. (I suspect Gmc finna /ON, findan (OE) etc, are related despite the IEL rules that forbid the S v/Gmc f correspondence.)
301. **flow**: S sru/-sra-; Gk rheō; C sruaimm; B sraveti ‘ooze out’. Not L, Gmc, Sl.

302. (The C and Gmc branches have the cognate stems for ‘running’: C rethim; Gmc rinnaan/renna which are linked with S vr > ranoti, Gk ornumi, etc, ‘stir’. The Gmc stems flowan etc ‘flow’ are linked wit S plr, Gk pleō ‘float’.)

303. **fly**: S pat-; Gk pet-; C hed/-eth-; Ht pet-. Not L (petere ’seek’), Gmc, B.

304. **follow**: S sac-ate; Gk hepomai; L sequor; C sechitir; B sekt-. Not Gmc, Sl.

305. **forget**: S mṛṣ-; B mirṣ-; Arm moromam; T A/B mārs-. Not Gk, L, C, Gmc (perhaps marjān ‘vex?’).

306. **free/release**: S muc/-mučca-; Gk apo-mussō ‘blow/free nose’; L ē-mungere ‘blow/free nose’; B mautki ‘strip off/wipe’ and smukti ‘slide off’. Not C, Gmc, Sl (but smykti-‘crawl’).

307. go: a) S ví; Gk eisi; L it; etc, all exc Gmc.

308. b) S výā; (L iānus ‘god of passages’; C āth ‘crossing’;) B joti; Sl jachati; Ht iya; Not Gk, L, C, Gmc.

309. **go ahead/after**: Gk hege-omai; (L sægire ‘perceive, discern’;) C saigim ‘seek’; Gmc sokjan, sēcān.

310. S, L, B, Sl.

311. **grab, take**: S grabh-; Gmc gr(e)ipan, garva; B grābt; Sl grabiti; Ht karp- ‘take away’. Not Gk, L, C.

312. **groan, roar, thunder**: S vstan (and ‘thunder’); Gk stenō; L tonare ‘thunder; Gmc stenan; etc, all exc C.

313. **grow**: a) S viükš; Gk auxō; L augere; Gmc wahiśjan; B augt; T A okšis. Not C, Sl.

314. b) S vrūh (-rodhati); (Gk e-leuthe-ro; L liber ‘free’; C luss ‘plant’;) Gmc liudan; Sl ljudiđe. Not Gk, L, C, B.

315. **grow old**: S vjr > jar-; Gk gēr-ō/askō; (Gmc karl ‘old man’;) Sl züreti ‘ripen’; Arm cer ‘old man’.

316. Not L, C, Gmc, B.

317. **have sex**: S vāabh; Gk oiphō; Sl jebati. Not C, L, Gmc, B.

318. **harm, injure**: Gk skeda-nnumi ‘grind, scatter’, a-skēthēs ‘un-hurt’; C scathaim ‘injure, mutilate’; Gmc skāda, scadōn; B & Sl borrow Gmc. Not S, L, B, Sl.(pie doubtful.)

319. **hear**: S śri/ṣr-; Gk klūa; L cluo; C clui-/clyw-; Gmc hlyōa, hlystan ‘listen’; (B slu-dinat, Sl slu-ti, T ABL klāw- last three ‘inform, make known’). Not B, Sl.

320. **heat**: S tapati; L tepeo; C tē ‘heat’; Sl top-lū ‘hot’. Not Gk, Gmc, B.

321. **increase, thrive**: S vsphāy; (L pro-sperus ‘favourable’;) Gmc spuon; B speti; Sl spēti. Not Gk, L, C.

322. **join, yoke**: S vāyuj > yanakti; Gk zeug-na-mi; L iungo; B jungiu. Not C, Gmc, Sl.

323. **jump, mount**: S skand; (Gk skandalon ‘trap’;) L scando; C se-scaind. No Gk, Gmc, B, Sl.

324. **know**: S vid/-ved-; Gk oida (perf); C fet-ar; Gmc witan; Sl vēdēti. Not L (but vidēre ‘see’), B. (The stems S jñā-, Gk gnō-, etc, is common to all.)

325. **lead**: C fedim; B vedu; Sl vedā, vod-. Not S, Gk, L, Gmc.

326. **lessen**: S minati; Gk minu-thō; L minu-ere. Not C, Gmc, B, Sl.

327. **lie down**: S lecho-; Gmc leigion; Sl ležati; Ht laki. Not S, L, B.

328. **lift**: S vṭul; Gk tēnai; L tollo; Gmc ūlana. Not C, B, Sl.

329. **march, walk**: S vsth; Gk steichō; C tiagn; etc, all exc L.

330. **milk**: Gk amelgo; L mulgere; etc; all exc S, where mṛj- ‘rub/stroke’ (cf Gk o-morg-numi ‘rub/wipe off’).

331. **overpower**: S vjī = ja-y/jinā-; Gk biao (bineō?); Gmc kveita (ON). Not L, C, B, Sl.

332. **praise**: S gr-nāti (and ‘call, invoke’); C bar-dus (Gaul) ‘bard, praiser’; (Gmc quaran ‘sigh, moan’); B giriu; Sl granā ‘verse, form-[ula] (of praise?)’; Alb gri-sh ‘call, summon’. Not Gk, L, Gmc.

333. **pull**: Gk helkō; B vilkt; Sl vēštē; Arm helk. Not S, L, C, Gmc.
334. **push**: S vā́́d; (L tundo ‘strike, pound’); Gmc stautan; Alb štum. Not Gk, L, C, B, Sl.

335. **put**: S vḗ́hā-; Gk ti-thē-mi; C dodí/dede; B dēti; Sl děti; Ht dāi; T A/B tās/tēs. Not L (but con-dere ‘found’), Gmc (but tuon ‘do’).

336. **question**: S prach/prch-; L posc/-prec-; etc; all exc Gk.

337. **rage**: S vī́́rūş; Gk alu(cc)ā ‘be beside oneself’; Gmc riisen; B rusti. Not L, C, Sl.

338. **reach**: S āp-noti; L ṣp-iscor, ad-ip-iscor; Arm unus ‘possess’; Ht ep-mi ‘take’; (TA oppāssī ‘fit, able’.) Not Gk, C, Gmc, B, Sl.

339. **remember**: S smr/smar-; (Gk mer/-imna/mēra ‘care for’) L memor; Gmc gemonar. Not Gk, C, B, Sl.

340. **rest**: S vā́́ram; (Gk ē-rēm-a ‘calmly’) –C fo/foi-(i)mic; (Gmc rimis n); B rimti; Not Gk, L, Gmc, Sl.

341. **rip, tear**: S vā́́r; Gk derō ‘fly, tear away’; Gmc teran; B dir-; Sl dirati. Not L, C.

342. **ride**: C riadā́; Gmc riðā(n); B raid. Not S, Gk, L, Sl. (I doubt this is PIE.)

343. **rise**: S ut-thā; Gk an-istha; Gmc us-stand; Sl vā́́-stan-. Not L, C, B.

344. **roast**: S bhrjī; Gk phrāgō; L frīgo. Not C, Gmc, B, Sl.

345. **satisfy**: S vā́́tṛp; Gk terp-ā ‘thrive’. Not L, C, Gmc, Sl.

346. **say/speak/talk**: a) S vī́́vac; Gk eipon ‘spoke/said’; (L vox ‘voice’, voc-are ‘call’; C foccul ‘word’); Gmc gi-wañ-anne; O Pr en-wākk-ēmai. Not L, C, Sl.

347. b) S vā́́vd; Gk aud-ā; B vādinti; Sl vāditi; (cf Ht uttar ‘word, speech’;) T AB wātōk ‘bid, tell’. Not L, C, Sl.

348. c) S vbhā-s (also bha-n/n); Gk phā-/phē-mi; L fārī; Gmc boian; Sl ba-jati. Not C, B.

349. **see**: a) S drs/darś-; Gk derk/drak-; Umb terk-antur ‘should foresee’; C e-drzych ‘look’, adcin-darc ‘have seen’ perf adcin-); Gmc ga-tarhjan. Not B, Sl.

350. b) S lok-lol-; Gk leusso; C lyyagad; B laukti. Not L, Gmc, Sl. (There are other stems for ‘seeing’, vid – in L vī̀́dērē is primarily for ‘knowing’ and even L has no other cognates. Then S *[s]paś; Gk *spek-t ‘for skept- ‘visualize, think’; L spec- ‘see’; Gmc spēhōn.)

351. **sew**: S vā́́siv; L suō; Gmc sūjān; B siutī; Sl sīti. Not Gk, C.

352. **shine**: S vā́́svit; B švīste; Sl svūtēti. Not Gk, L, C, Gmc.

353. **show**: S dī-āti; Gk deik-numi; L in-dico; Gmc zeiğōn; Ht tekku-. Not C, B, Sl.

354. **slay/strike**: S vā́́han; Gk thein-o; etc; all exc Gmc.

355. **sleep**: a) S vā́́vap-; C sū-an; Gmc svefan; Sl sēpati: Ht šup-. Not Gk (but hupnos m ‘sleep’), L (but sopor ‘sleep’, sopire ‘put to sleep’), B (but sapnas ‘a dream’).

356. b) S drā-; Gk e-drā-thōn ‘sleep’; L dōr-mire; Sl drēmati; (Arm tartan ‘drowses’). Not C, Gmc, B.

357. **slide**: Gk olishanā; C līthro; Gmc slidān, B slystī. Not S, L, Sl.

358. **smile**: S smī/-smay; Gk mei-deāo; B smiet; Sl smijati; T smī. Not L, C, Gmc (but ME and Norwegian. smi-l ‘smile’).

359. **sneeze**: S vā́́kṣu; Gmc hnjosa; B ciande; Sl si/ky-chat. Not Gk, L, C.

360. **soar**: S viyati; Gk di-neō; (C dian ‘fast’); B diet ‘dance’. Not L, C, Gmc, Sl.

361. **strike**: S vī́́tuj; C tuagaim; Gmc stozan. Not Gk, L, B, Sl.

362. **suck**: a) S dhayati; Gk thē-sato (aor); Gmc dadjjan; B deju; Sl dojo; Arm diem. Not L, C.

363. b) L suō; C sūgam; etc; all exc S, Gk.

364. **swim**: Gk nē-nā/-chā; L nāre; C snā(i)m. Not Gmc, B, Sl and S, which does have snā-ti ‘bathe, wash’.

365. **taste**: S vī́́jus ‘enjoy’; Gk gev-omai; L gust-; Gmc kausjan. Not C, B, Sl.

366. **think, reflect**: S vī́́man; C de-moin-ir; Gmc munan; B manyti; Sl māñāti. Not Gk (only ‘remember’ mnā- and ‘be enraprured, enraged’ maino-), L (only ‘remember’ me-min-esse).

367. **tie up**: a) S nah-yatt; L nec-ter (nodus ‘knot, bond’); C nascim . Not Gk, Gmc, B, Sl.

368. b) L suō; B siyēt; Ht hīshī-. Not Gk, L, C, Gmc, Sl.

369. **vomit**: S vam-iti; Gk emeō; L vomere; B venti. Not C, Gmc (but ON vama ‘sickness’), Sl.

370. **wash**: S vnīj > nenek-ti; Gk nizō; C nīj-id; Gmc nīh-. Not L, B, Sl.

371. **weaken**: S vra(n)d- (only in RV); Gk rhada-naomai ‘be weak, unsteady’; Sl vrěđu etc ‘harm’. Not L,
372. **weave**: \( S \) **vú(m)bh, ve**; \( Gk \) **huph -ainò, C figim**; \( Gmc \) **wefan, weban**, \( B \) **aust**; \( Alb \) **ven**. Not L, Sl.

### IX. Indeclinables.

Here are 20 adverbs and prepositions. Some few stems are common to all branches, like that for 'round about' (\( S \) **pari**, \( Gk \) **peri(x),** etc) or the base for 'how, when, who?' (\( S \) **ka**, \( B \) **ka-** etc). Some claim that \( L \) **com/con/cum-** (and \( C \) **com-** etc) ‘together with’ is linked with \( Gk \) **kata** ‘downward, against, according to, during, almost’; it is obvious there is neither phonetic nor semantic proximity but IEL invented \( *kmt \) and \( *kom \) as sources. Just as unacceptable is the proposed link between \( Gk \) **dia** ‘right through, by means of’ and \( L \) **dis** and \( Gmc \) **twis/z(w)is** ‘in, between, two’, where again there is neither phonetic nor semantic affinity. I ignore all such cases.

373. **above, over**: \( S \) **upari**; \( Gk \) **huper**; \( L \) **super**; etc, all exc \( B, Sl.**

374. **against, toward**: \( S \) **pratti**; \( Gk \) **proti**, **pros**; \( B \) **pret**; \( Sl \) **protivi**. Not L, C, Gmc.

375. **also, upon**: \( S \) **api**; \( Gk \) **epi**; (\( L \) **ob** ‘against’); \( C \) **oi-** intensifier in \( cpds; Gmc \) **if-** as with \( C; B \) **api**; \( Arm \) **ev** ‘and’. Not L, Sl.

376. **and, further**: \( S \) **ati**; \( Gk \) **eti**; \( L \) **et**; \( C \) **eti** ‘also’; \( Gmc \) **ið** ‘but’; **OPr et**. Not Sl.

377. **before, near, opposite**: \( S \) **anti**; \( Gk \) **anti**; \( L \) **ante**; **Arm and**; \( Ht \) **hanti**. Not C, Gmc, B, Sl.

378. **down, off**: \( S \) **ava**; \( Gk \) **av**; etc, all (including \( Ht u/wa \)) exc Gmc.

379. **farther, beyond**: \( S \) **para-**; \( Gk \) **pera(n)**; **Osc perum**; **Arm heri**; \( Ht \) **pará**. Not C, Gmc, B, Sl.

380. **forth, before**: \( S \) **pra-**; \( Gk \) **pro**; etc, all exc \( Gmc \) **fra-** as intensifier as in \( MdG \) **ver-**. Not Gmc.

381. **here**: \( S \) **iha**; \( Gk \) **itha-**; **L ibi**; **C id**. Not Gmc, B, Sl.

382. **in, between**: \( S \) **antah**; \( Gk \) **entos**; **L inter**; **C eter**; **Gmc unter**. Not B, Sl.

383. **near to, from low**: \( S \) **upa**; **Gk hupo**; **L sub**; **C fo**; **Gmc uf** ‘onto’. Not B, Sl.

384. **off, away**: \( S \) **apa**; **Gk apo-**; **L ab-**; **Gmc af**; **Ht apa’ again, behind’. Not C, B, Sl.

385. **thus**: \( S \) **iti**; \( L ita**; **C yt**; **B it**. Not Gk, Sl.

386. **to, toward**: \( S \) **abbi**; **Gk amphi-**; etc, all exc B.

387. **together, with**: \( S \) **sa-**, **sam**; **Gk ha-**, **sun**; **B sam**, **san-**; **Sl sp-su-**. Not L, C, Gmc.

388. **tomorrow**: \( S \) **usar, usra**; **Gk avrion** (\( Gmc \) **easte** ‘goddess of spring’; OE) **B austra**. Not L, C, Gmc, Sl.

389. **up(ward)**: \( S \) **as-**; **Gk ku**: **L us-**; (\( Gmc \) **as** ‘outside’); **B u ż**; **Sl vůž**. Not C, Gmc.

390. **where, how**: \( S \) **ku**- (**tra**, etc); **Gk o-pui** (**Cretan** etc); **Osc puf**; **B kur**; **Alb ku**. Not C, Gmc, Sl.

391. **without**: a) \( S \) **rte**; (**Gk erēmo** ‘solitary’; adj); **L rāro** ‘rarely’; (**B irti** ‘to separate’); **T AB** **arts** ‘any’(?). Not Gk, C, Gmc, B, Sl.

b) \( S \) **nih**-; **Gk a-nis**; **Sl nis-tū**. Not L, C, Gmc, B.

392. **yesterday**: \( S \) **hyas**; **Gk ser-**, (**e)chthes**; **L her-i/e**; **C in-de**; **Gmc ges-**, **i-gar**; **Alb dje**. Not B, Sl.

### 12. The Results.

The list contains numbered stems examined in detail. But there are a few more in the introductory paragraph to each section which show absences in one or other branch. So the total with significant differences is 404. Obviously, stems common to all seven branches have not been counted; so also stems that have no clear common cognate (§ 8-10) or do not yield a clear central meaning.

Of these 404, S lacks 53; \( Gk \) **149**; **L 207**; **C 210**; **Gmc 145**; **B 185**; **Sl 215**. Thus, in a descending sequence: **S -53; Gmc -145; Gk -149; B -185; L -207; C -210; Sl -215**.

Obviously, Gmc and Gk are very close but quite far from \( S \). The difference is enormous. B is on its own but nowhere near \( Gk \) and Gmc. These two large gaps between \( S \) and Gmc/Gk and Gmc/Gk and B would not be bridged even if 50 or 100 more words were to be examined. There is only a good possibility that \( Gk \) might overtake Gmc by a short head (and \( L \) might creep close to \( B \) or even ahead of it).

Here clearly Mallory’s notion that early large literatures (Vedic, Greek, Latin) preserve more is not borne out by these results (§4). Other factors are more important, the main one being a secure oral tradition which can be established only in conditions of settlement not movement. To forestall many empty or idle arguments I take the Hittites as a prime example. The language of the Hittites has very few IE retentions and their culture scant IE elements. Yet this people produced many texts very early c1600. Why the discrepancy then?... To this question Mallory replied “Obviously
Anatolian [=Hittite varieties] documents are so riddled with Sumerian... [etc] ... that it is reasonably obvious that it is not comparable”. I wouldn’t disagree in the least. But there is no point in repeating this very condition as an answer to the question which asks for an explanation of the problematic condition. Why is Hittite so riddled with extraneous, non-IE elements?...Obviously this is an anomaly: it is not at all accommodated by the prediction. Why is Hittite in such a sorry state regarding IE retention?... (An answer is given in §15.)

13. Objections. It may be objected that someone else with a different choice of items would produce different results, with S after Gk. I do admit that it is possible that I omitted some items: the list is not complete by any means. Even if I had rigged the choice of items in favour of S and 50-60 stems were replaced, the gap between S and Gmc/Gk would remain quite large. From the general feel I obtained about the languages through constant consultation of the publications mentioned in §7, I can state with certitude that a significantly different choice could not be made without a gross violation of the simple principles set out in §§ 6-10. After all, I could have included Av(estan) and taken Av with a third branch (Gk, L, C, Gmc, B or Sl): e.g. S aparā , Av aparā , Gmc afar ‘farther, later, next’; S navya , Av nāvaya , Gk naio - ‘navigable, of boat’; S sūma , Av sāma , Lth šemā ‘dark-coloured’; etc, etc. This would enlarge the gap in favour of S enormously. I could also have taken only S and another branch; even without the pairing of S and Av, S would gain an incalculable advantage. Consider: – S anu ‘fine, minute’, Gk alinos ‘barely visible’; also S dramati/drāti , Gk dramain ‘run’ or S dhavati/dhāvate, Gk theō ‘run, flow’ (cogns in Gmc mean ‘stop, trample’). There are many more: S vārḥ , Gk alpein ‘be worth, deserve’; S jaran, Gk gerōn ‘old’; S damaśa ‘wondrous power, act’, Gk dēn-, S maha-yati, L mac-tare ‘glorify’; S ākṣa, L alea ‘die (dice)’; S vaṣṭi, L vēn/śīcā ‘bladder’; etc. Or take S šāk-ti and C cēcht ‘force, power’, etc. Then, S aru ‘wound’, Gmc orr ‘scar’, S druḥ-yati ‘harms’ and droṣṭa ‘false, harmful’, Gmc triogon ‘deceive’ and draug ‘ghost’; S piyati ‘revile’, Gmc fien, fijing ‘blame’; etc, etc. Moreover: S aśru, Lth aśara ‘tear’, S vāra, Lth vāla ‘horsehair’; etc. Also, S pitu, Sl piś-ta ‘nourishment’; S vākliś ‘torment’, Sl klešitā ‘jam, press’; etc. And S dāra, Ht tūya ‘far’; etc. And of course one could take S and Av only: atharvan/aḥrvā ‘priest’, iṣe/is ‘is master’, godhumā/gantumot ‘wheat’, dasyū/dahyu- ‘demon’ etc, etc. Had I done this, the gap between S and the second, whether Gk or Gmc, would increase astronomically. And, in any case, I have included stems found only in 3 European branches that we know inter-borrowed – like L, C and Gmc or Gmc, B, Sl: such stems I suspect are not PIE.

Nothing could be more certain and invariable in all conditions than the parts of the human body. Of the 40 stems examined, S lacks 4, Gmc 12, Gk 13, L 19, B 20, C 23 and Sl 29. Thus, apart from the positions of L and B which are very close with L slightly ahead, the percentages seem to be very similar to the overall picture with the 404 stems. There is a large gap between S and Gmc/Gk and between Gmc/Gk and L/B. (Yes, 2 or 3 cognations – no more – might be disputed but this would not alter much the general situation.)

14. Another objection may be (and has been stated by Mallory) that S, Gk and L have very large literatures from early on; to those should be added Hittite. This is true, of course. It is true also that social or religious changes (subjugation or the advent of Christianity) affected seriously the language and culture of many European communities – as Zarathustra’s religious reform affected ancient Iran. These may account for some of the decays and losses in some branches but they are not alone responsible for all the observable disparities in preservation. The Greeks stayed under the not very enlightened rule of the Ottomans for 4 centuries but they did not lose their religion in the slightest and, although several words were borrowed from Turkish, changes in the language had begun long before the Ottomans. Mallory wrote that S, Gk and L would, because of their early and large literatures, show more retentions than the other branches. He should have included Ht also which appears much earlier than Gk, L and S; but because Ht disproves most flagrantly this notion, it is never mentioned, or it is mentioned only to be covered over with irrelevancies. However, Mallory’s prediction is most obviously wrong, as is shown by the figures in §12 where Gmc, despite its late literacy, is slightly ahead of Gk and leaves L far behind, both so rich linguistically. So let us look at this rationally.

All IE branches had an oral tradition before the adoption of writing. The Indus-Saraswati culture had writing c3000 but we don’t know for certain whether it was Sanskritic or some other language. In India, writing in recognizable IE (or Middle Indoeuropean) appears in 260-250 (or perhaps a little earlier), particularly in Ashoka’s Rock-Edicts. We also have ample evidence that the sacred

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4 For details and references see Kazanas 2003: 209-210; also especially 2005 (in press).

5 This in the private communication to me, Nov 2004: see §4, above.
texts (RV etc) were being transmitted orally in the 7th cent CE and even in the early 20th cent: generation after generation of brahmin families specialised in this task (Winteritz I, 29-32, 51-2).

Caesar reported a similar practice among the Celts who “learnt by heart many verses” studying under a teacher “for twenty years” and, although they made use of Greek letters, in most other matters, the Druids did not “think it fit to put these utterances into writing” (De bello Gallico V1, 14).

The Greeks too had an oral tradition and some esoteric cults maintained it well into Roman times (Kingsley 1995: 332ff; Murray 1993:100). Indeed all IE branches maintained an oral tradition, otherwise we would not know about their early period, before the advent of literacy.

Hittite texts written on tablets from c1600 BC. Mycenaean texts come from c1500 BC, also on tablets; Greek epigraphic material appears from c700 BC on stone and pottery and various (fragmented) texts on golden plates and even papyrus from c400 BC – while manuscripts become plentiful the first cent CE. Roman written material is just as plentiful from the same period and epigraphic material (Oscan, Umbrian have only such) goes back to c 500 BC (O Latin). Literacy in the other branches, Gothic, then other Germanic, Slavonic and finally Baltic came some centuries later (though some Gmc runes appear from c 100 BC). In India writing is attested seriously only c 260-250 BC in Aśoka’s Rock-Edicts which are in prākṛta. No doubt writing was used perhaps extensively in the state administration, literary compositions and commerce. But the sacred Vedas (from which more that 90 % of the Indic material has been drawn) were transmitted orally even in the 7th cent CE. Although there was writing (on palm leaves and birch bark), very few manuscripts survive from before the 14th cent CE. So in this respect, even if the Vedic sacred texts had been committed to writing (Sāyana wrote his commentary on the RV in the 14th cent CE), the Indians are no better off than any other branch (except the Balts) and are certainly worse off than the Hittites, the Mycenaeans and Greeks and the Romans with their early literacy.

15. Yet, despite its early and vast literature, Gk lost the IE stems for flesh (15), mouth (26), nose (31) and tongue (39), desire/love (45), man (70b and 72d), twin (81) and widow (83), to mention few stems that are retained by non-literate Gmc and in some cases even ‘poor relatives’ like B, C and Sl! How does a language lose its own words for mouth, nose and tongue? Surely no religious or social change can account for this. Only a weak oral tradition and a long trip away from the homeland would be responsible here. Then the Greeks changed the meaning of their own IE: stem for mind (51) to ‘force’, for brother (56) to ‘member of a brotherhood’, for sister (77) to ‘daughter’, etc. Again, these stems are retained in branches that acquired literacy much later (eg C, Gmc, B and Sl – except ‘mind’ in the last two). Then, despite its early and large literature (consider too the expanse of the Roman Empire from Persia to Britain), L lost the IE stems for arm (1,2), eyebrow (12), flesh (15), fear (48), vehement (55), sage (75), son (78), woman (85), etc – stems retained in many cases by C, Gmc, B and/or Sl.

As for Hittite, it lacks both stems for arm (1, 2) and for ear (9, 10), head (19, 20), knee (23), mouth (26), nose (31) etc. It also lacks the stems for the eight closest human relations: brother (56), daughter (62), father (64), husband (66), mother (73), sister (77), son (78) and wife (84) – almost all common to most branches. Please note certain facts. The Hittites are mentioned in near-Eastern documents by c1900. So they were in Anatolia somewhat earlier and established a kingdom which by c1600 expanded to form an Empire; this threatened peoples as distant and mighty as the Egyptians and lasted down to the 12th century (Dunstan 1998). They were dominant conquerors. Thus they had not been coerced into abandoning their IE heritage and adopting new cultural features. They did this because they found the new culture(s) just as good, if not better than, the one they had brought. They had travelled far from their homeland and obviously were not numerous enough to impose their own culture on the indigenous people some of whom were already literate and highly cultured. I would add that they were an elite dominance group and had brought no families or not many (wives and children) with them: so they lost the terms for these intra-family relationships and adopted the corresponding words of the local languages. They preserved very few IE theonyms (Agnis, ‘Sīu – Zeus/Dyaus, and perhaps Inara = Indra/Andarta) and adopted deities prevalent in the area. No other explanation will fit the data that we have.

Now all the words examined in this section denote well-known bodily parts that every human has everywhere (arm, flesh etc), common feelings (fear, love) and concrete figures (man, sister, son, woman). It is not likely that Gk, L and Ht had them but somehow failed to record them; for they have other, non-IE substitutes. The stems were lost before literacy. Now, undoubtedly, the presence of literacy and a large literature will support the continuity of language and culture, but the examples just quoted are not really affected by such factors. The non-literate languages preserved most of these stems and Gmc preserved about as much as Gk and certainly more than L and
incomparably more than 

16. Just as important, is the principle of O(rganic) C(oherence) of a language, something which IEL usually overlooks. It is doubtful whether any language can exist without it. Take as example the non-inflected English language. When we see scattered through a text the words acted, activity, action, active, actionless and actively, or enacted and reactivates, we know that there is a root stem to which all of them are related: act, both noun and verb. Moreover we know that all these forms have been generated by the addition of various endings and prefixes to the root act. Thus, we also have created, creativity, recreates, pro-creation, creative, creationless, creatively, from the root stem create, which is only verb. Being non-inflected and largely consisting of loans from other languages (both act and create come from Latin), English has no elasticity and great generative ability: thus it has action and procreation but not increation and proaction. Nonetheless, it has some generative power which gives it O C, however limited. Thus, in a limited frame, fear-less-ly, hope-less-ly and mind-less-ly are organically coherent with root-stems fear-, hope-, and mind- (which will generate further fear-fully, hope-fully, mind-fully, and some other forms). The important point is that in the language we find clusters (or families) of words, nouns, adjectives, verbs and adverbs, which are all related together, having been generated from a root-stem. A word becomes thus an integral part of a lexical family and of a lexical family and of the language.

17. However, a language has also isolated words, not related to a root-stem. In English, we have several such words: aegis, again, can, canabis, den, denim, javelin, lady, etc. They too are integral parts of the language, but some are loans from other languages, others are changed forms of older words that belonged to a family and had other - now lost - connections. E.g. aegis comes from a Gk word that denoted the terror-striking shield of Zeus. Then, take lady: it is a decayed form of an OE word hlæfdige: this is a cpd hlæf-dig and means 'one kneading (=dig) the loaf-of-bread': that is what a ‘lady’ did in old times. In Sanskrit too we find many words that stand isolated, evidently unrelated to dhātus or even other isolated words: ambā (mother), ukā (sky-fire), khara (rough), jūta (hair), pika (cuckoo) etc. etc.

To illustrate this further, let us take the common stem for 'light'. S has a root ruc ‘shine’ and derivatives ruca, rocis ‘light’; also ruk-ma ‘what shines, golden ornament’ and ruk-min ‘wearing gold ornament’, ruc ‘brightness’, ruca ‘bright’, roka ‘lustre’, roca ‘radiant’ etc. This root has also a full conjugation – pres rocate, perf ruroca, causative rocayati; etc. This is Organic Coherence. In contrast, Gk leuko and L lux has no apparent root; any cognates in their respective languages are secondary derivatives produced from themselves. Here, Gk and L has no OC. Let us explore this further.

18. The POC operates revealingly in the old languages. L serpēns ‘serpent’ (212) is a present participle of vb serpo ‘1 crawl’. L repō ‘creep’ also may belong to a family (an older *srepō?), but it merely duplicates the verb serpo which has no other derivatives. Gk has a slightly larger family with vb herpō (I creep), herpeton (serpent: 212), herpēs ‘shingles’ and secondary vb herpuzo (I crawl), which could generate more forms. S has a much larger family with (vserpo) spra ‘oily, smooth’, sarpa ‘serpent’ (212), sarpana ‘the act of crawling’, sarpin ‘creeping/gliding’, sarpis ‘clarified butter (what glides)’, etc. The L cogns tell us that (some) verbal forms end in -o and (some) present participles in -ens. The Gk cogns have a regular m ending in -ēs, adjectival noun in -to- and secondary vb in -uzō (or -izō); thus nau-t-ēs ‘sailor’ cogn with nau ‘boat’; lu-to ‘loosened’ < luō; plo-izō ‘navigate’ < ple-o ‘sail’. The S family shows more endings for primary derivatives and the regular change of the root-vowel 

→guṇa ar: thus vṣrp → sar and common endings -a m (vchi d split’ > guṇa ched-a; vṭṛp ‘enjoy’ > guṇa tarp-a), the n -ana, the adjectival -in, the n -iś (hav-is ‘oblation’ < vihū) and the less common -ra , added directly to roots (chid-ra, trp-ra). Note that except sarpin (in Br) all other S words are in the RV.

supported' and bhār-yā 'wife'; also bhār-ṛ 'brother (one who supports secondarily). In S, except for bhār-in (post-V) and bhāryā (in Br) all the others are in the RV.

We learn a little more from the Latin group but it is difficult to see how the stem fer- becomes für 'thief' (e > ã). Just as difficult is the Gk phar(-etra) and phōr 'thief' from 'phar-'; otherwise the endings and the other vowel changes are regular for Gk: n-ma (der-ma 'skin', pneu-ma 'breath, breeze'); n-tron (aro-tron 'plough'); f-a after r- is usually f-ē (bor-a 'prey' but men- > man-ē 'a stay'); m-os (leg- > log-os 'proportion, word'). These terminations are recognizable relatives of S ones: Gk n-ma, -tron, f-ā/-e and m-os correspond to S-man, -tran (in bhar-i-tran), f-ā/-i (bhāryā, bharini) and m-as (bhār-as). In S we see again the endings -ana denoting 'act of' and -in adjectival, etc.

S has also -ṛ (bhar-ṛ) which with the guna gradation gives an agent-noun. The n-tra commonly gives the instrument of the activity (state or condition) denoted by the dhatu: thus viṣas 'throwing' > as-tra 'instrument of throwing, a missile'; vr- moving > ar-i-tra 'instrument promoting movement, an oar'; vṛnī 'leading' > netra 'instrument leading, the eye'; etc. The agent nouns are even more numerous: as-tr (tar, voc) 'thrower'; ar-ṛ (tar) 'mover, rower'; ne-tr (tar) 'leader'; e-ṛ 'goer', kar-ṛ 'maker', je-ṛ 'conqueror', etc. To this S ending corresponds Gk -tēr-, -tōr and L -er, -or; thus S dā-ṛ (tar, voc) 'giver' (<vādā) has Gk correspondences do-tēr and dō-tōr and L dater, all 'giver'; cf also S pi-ṛ (tar), Gk pa-tēr and L pa-ter, all 'father'.

Apart from bhar-ṛ 'master, supporter', S has also bhrāṛ 'brother'. This (i.e. -r > -a) is not a very common formation and IEL does not (fully) accept that this noun comes from ṣbr, again, Whitney has it in the derivatives under ṣbr but with a question-mark (p 114). NIGT accepts it, however, and since IEL can offer no explanation and, in any case, most of these S relation nouns (pi-ṛ 'father', svāsā 'sister' etc) entail something anomalous in their formation. I think it is mere pedantic quibbling not to accept ṣbr > bhrāṛ. Cf ṣbr > kra-ṛ-tu 'power, will', ṣbrh, ṣbrh/graḥh-'taking, grabbing', ṣbr > drā-ṛ 'seer' etc. (Perhaps the implication is that the brother is the secondary supporter of his sister(s), the primary one being the father or the husband).

20. As a further example, we take 'dressing' (293). Here L has only the vb vestio 'I dress' and vestis 'attire'. Gk has the vb ennumi and several words for garment eima/emma, es-thēs (< es-thiō 'I dress') and gestra (Hes). The S family of vvas is again larger: vasa, vasana, vasti (lex), vastr, vastra, vāsas, vāsin, etc. Here, apart from vesti (lex), vastr (post-V) and vāsin (in Br) all others are in the RV. We recognise all the endings we have already met: -a, -ana, -ṛ, etc. We also see -as (=n; cf aj- as 'strength') and -ti (mf; cf bhṛ-ti, above, also kr-ṛi 'a creation', etc). Note that Gth (=Gmc) has only the vb wāṣjan and the noun wāṣion 'cloth(es)'. Hittite and Tocharian are very poor— we shall see many such cases further along. But here we have another interesting aspect to consider. It is unanimously agreed that the PIE root here (*wes?) is akin to S vvas, Gk stem es (*es-nu-) and Ht uās. How then does it become L vesti- and Gth wāṣj? How does it become Gk *es-νυ-μι (= en-νυ-μι)? I think there is only one explanation. L and Gth have not retained the pristine root-form but made a new verb-form from a PIE oblique form, derivative of the root, as in S vast-i, vast-ṛ, vast-ra and vas-y-a. The Gk vb with -nu- is also derivative. This we shall meet in other cases too. One clear, simple example is L cas-tr-āre 'clip, castrate', which is cogn with Gk keaz-ō 'split, cleave' and S sās- 'cut, slaughter', neither of which has -ṛ; but S has sāstra (< sās-tra, i.e. instrument) 'knife, sword' and the L verb most probably comes from some such a stem.

21. So far we see two interesting aspects. One, even basic verbal forms in some branches are not the pristine PIE stem, as clearly reflected in other branches, S being the most conspicuous. Two, while S displays fully OC having a large range of lexical items, in verbs, nouns, adjectives and adverbs, other branches show a lack of these and often tend to have either the verb with very few nominal forms or the reverse, or mere traces of the stem. This too shows that S is closer to PIE. Let us see more cases.

22. We now turn to 'mind'(51). S has manas, a neuter like ojas 'strength', tāmas 'darkness, inertia' etc, from vman 'think, reflect' (366). S has also the causative vb mānayati and desiderative māmāṣate 'wish-to-think-on' and nouns manana 'act of thinking', manu 'man' (70) and Manu, the

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* The Gk thematic -nu- may be inherited but no other branch has any trace of this and although S certainly has -nu/no- for class V dhatu, -n- for VII and -nā/mī- for IX, the Vvas does not belong to these classes. Gk does the same with deik-nu-mi 'I show' while, again, neither S nor any other branch has any trace of -nu- in the cogn verb (S vālī > diēṣīi/disāti, L -dicare 'indicate, show' etc.). These forms in Gk are not therefore original but subsequent Gk developments by analogy or contamination.
sage, mantu, 'counsel', mantra 'thinker', mantra 'verse, word-for-reflecting', manman 'concept', manyu 'ardour, mood', māna 'idea, opinion', mānin 'having opinions', etc. Consider now the poverty in the other branches, not excusable cases like B and C but Gk and L with their early and rich literatures. Consider also that except mantra and mānin (in Br) all the S words are in the RV.

B has the vb manyti (366) but no cognates for 'mind' or other mental aspects. Sl too has only the verb. C has the vb in do-moin-iur and n memne 'mind, spirit' but little else.

L has mens with the stem ment- (cf S man-tu, etc); also com-men-tor 'contriver' (cf S man-tr-tar). But the L cognate vb is me-men-is 'remember' (cf S mi-mān-sate) showing semantic change while 'thinking' is expressed by cogitare, putare, arbitrare. Thus in this case, the descent from PIE has resulted in a considerable breakdown and losses.

Gk is in no better position. Its word for mind is nous (unconnected with any IE stems unless perhaps S ēnu 'praise'), while its IE cogn menes means 'force, might' (also mania 'frenzy', mantis 'prophet, seer' and some other secondary formations). It has several cognate vbs none of which means exactly 'think': main-o- 'be enraged/enraptured', memona (perf with pres sense) 'desire', mi-mnē-skō 'remind' and mna-o- 'remember' (cf S ēmnā 'hand down [by memory]'), etc.

Gmc is, despite its later literacy, in a happier condition. ON has munr for 'mind'; OE has myne 'desire, mind'; Gth has muns 'purpose' and man 'opinion'. Both OE and Gth have vb munan 'think', Here we witness slight divergencies but both noun and verb.

23. How are these phenomena to be explained? ...

We could suppose that S innovates and by analogy generates all its numerous forms in contrast to the very frugal C and Gmc. But cognates of some of the S nouns are found also in other branches, Gk, L, etc: cf S manas /Gk menos, S mant-u/ Gk mant-ıs/ L ment-; S māna/ Gth man 'opinion', etc. Thus we cannot resort to this supposition about innovations. Rather we must take it that S plainly retains many descendants from PIE while the other branches suffered losses – as was evident with 'creeping, dressing, bearing' above. The full explanation for this will be given later, after we have examined more cognates.

24. A different case is that of 'son' (78) – yet confirming our finds. It appears in S, Gmc, B and Sl roughly as sānu- (su- in Gmc, sy- in Sl). The S word is obviously the sā and the ending –nu > sāmi – like grāh-nū 'greedy', bhā-nū 'shining, sun', etc. No other cognate appears in the European branches. C has sath 'birth, fruit' (cf S sātu-) but no cognate for 'son!'

S sā gives vb sūte 'engenders' and is obviously linked with s/su-suvali 'energises, vivifies' as well as su-no-ti 'presses out'. No such cogn vbs appear in the other branches to link with and explain the stems for son. C has sō(æ)id and B sukti, both 'turn, twist'; these are linked rather with sunit or suvati and really indicate nothing except the fact that there is a breakdown. Gk has (like the T AB soy-) the decayed form hui- but, again, no other cognate. Considering how common and important the son has been in any society, irrespective of religion and other conditions, we must wonder that some IE branches do not have the cogn stem at all (e.g. L, C and Ht) and, in any case, none has any other cognates. In contrast, S has a very large family, as usual: apart from the verb and its compounds (pra-sā- etc), it has sū, sūtī, sūtikā, sātu, sūtri, sānu- all from the RV and AV. Consequently, we must conclude, here also S displays the PP and OCP, while the other branches suffered big and varied losses.

With this should be connected S sā-kara ' hog, swine'. Like 'son' this word also stands isolated in the IE languages: Av hu-, Gk and L sūs, Gmc sū(-gu), etc. Some scholars claim that sūkara is onomatopoic, meaning 'the animal that makes the sound sū'. This may be true but to me it sounds like one of the numerous explanations that scholars give in like situations in order not to face the obvious or to cover up the fact that they don't know. Swines do not hiss (s-s-s or su-su-su) but grunt. So, in this case, the obvious is that S sā is cognate with the stems in the other branches. They all come from some original vsā (and only S has –kara 'making, producing'). So the swine is the 'begetter' su-, since it gives birth to more litter than any other domesticated animal, like cattle, goat or sheep. Thus S again provides a solution to the linguistic problem of the apparently isolated stems for 'son' and 'sow'.

25. With the cognates of 'mother' (73) we meet difficulties at the very start thanks to IEL. The cogn stem is common to all, except that in B moti is 'wife': thus Gk mētēr, L māter, C māthir, Gmc mōðir/ mōðor (ON,OE), Sl mati. The NIGT recognizes that S mā-tr- /-tar is a regular formation: vīmā (> mimāti/mīmite/mātē) 'measuring' and the common -tr giving the agent 'measurer'. Other similar formations
act of e accepted as cogn with S Sl has course, the connection is ev daug see pr guar else, in S w course j Perhaps absence of any other evidence, I accept this. F the 'pr deriv v AB 'measuring'. E.g. ho not found in any of the IE br our modern sc question-mark). I find nothing peculiar in the concept of mother being the 'measurer', i.e. the one who holds and gives measures to the household. As far as I have seen and can still see that is exactly what a mother does with her children, and husband - most of the time. I suppose the reason our modern scholars reject the Indic tradition is because the equivalent to the S verbal forms are not found in any of the IE branches except L mētior 'measure, survey' (and T AB me/mai 'measure') and, in any case, there is no obvious cognition between the nouns for 'mother' and the verbs for 'measuring'. E.g. how is L mētior related to S vīmā? Where has the -c- come from (not present in T AB)? And how does it relate to L mātēr? How does the equivalent Gk metrōē relate to S vīmā or to Gk mētēr? The difficulty in Gk is greater because apart from the -c- we have a short -e- in the stem of the verb. The same holds for Gmc where 'mother' is mōðir/mōdīr/muotar (preserving the long stem-vowel) and 'measuring' is mālā/metan/mezzan (with different vowels and consonants).

I submit that L mētior, Gk metrōē and Gmc metan/mezzan are secondary degenerate forms that derive not from the PIE root itself (as S vīmā does) but from a PIE derivative noun or verbal form like S māt-f (or māt-rā or verbal mātī (or -mīte) etc. IEL posits here two PIE roots: *mē (>) S vīmā) and *met (Gk metrōē). This again enables scholars to ignore the obvious facts, indulge in their complicated conjectures and secure their "reconstructions". But, of course, this hypothesis leaves unexplained the short and long radical vowels in the L, Gk, Gmc verbs and the intrusion of -c- in Gk, of -l- in ON and of -zz- in OHG. In fact, here too S presents a more reasonable picture while the other branches seem to come from derivatives containing -c- and show break-downs and losses.

26. What of S pītr (64) and the cognates in the other branches? The short -l- contrasts strongly with the -c- in the others; even Av has the stem patar- (and pitar). The stem pi- in S can only be connected with that of pi-bati 'drinks': this does not mean much. The evidence of the other stems, Gk and L pa-, Gmc fa- etc, suggest an original stem *pa for S too. Indeed, NIGT accepts this in saying that father is the 'protector' and that the noun has changed from *pā-tr the root being vpa 'protect'. In the absence of any other evidence, I accept this. For unknown reason, S *pā-tr 'father' decayed into pītr. Perhaps pītr prevailed in one dialect and subsequently became dominant. Strangely, pār as 'drinker' and 'protector' survives in Vedic texts. Note also that apart from Av pītar, the -i- vowel is found in L jū-pīter (and Mars-pīter) cognate with Gk Zeus-pater. S Dyaus-pīter. We don't know. (IEL gives of course phāter with laryngeal.) But while the stem in the other branches is not linked with anything else, in S we find a plausible connection. There is nothing strange in regarding the father as guardian and protector with all that this entails. The mother gives measure and the father protection. In this case, S suffered decay in the form of the noun but it has a verb conjugation for vpa and nouns connected with it in full OC.

27. The cognates of 'daughter' (62) are not connected with any other stem in any branch. Only S has vduh 'extract milk'. The formation here is also very clear: duh-i-tf. The intrusive -l- is not unusual: see as-i-tf < √as 'eat', tar-i-tf < √t 'pass across', math-i-tf < vma/nth 'agitate' etc. The S vb vduh > dogdhī has no equivalents in the other branches. Attempts have been made to link S duh/dagh- with Gk teuchō 'make, build' and tughanō 'meet, happen', C dual, Gmc daug and B daug, all meaning 'be suitable'. Even if these cognations are right, it is obvious that, e.g., Gk thugatēr 'daughter' cannot be cognate with Gk teuch-ō or tugha-n-ō – neither semantically nor phonetically. (Incidentally if tughanō is cogn with S duh > dogdhī where has the Gk -n- come from?) It is easier to link phonetically Gth daug 'to suit' and dauh-ter but not so with OHG toug and tother or B daug and dukte. Semantically, of course, the connection is even more difficult, since it is not easy to see how the daughter 'is suitable' when in very ancient times the son was far more desirable and suitable. Then, again, C has the vb dual 'it suits' but no cognition for 'daughter' (=ingen/merch, which are unconnected) and Sl has dāštī 'daughter' but no other cognate. Osc has futīr 'daughter' but L has no cognates at all.

The idea of the daughter being 'the-girl-who-milks' may sound strange to us but it is not strange for those far-off times; even we had 'milkmaids' not so long ago. Further, if Gk tughan-ō be accepted as cogn with S vduh, then it could only come from a secondary PIE form like the V dōhṇa 'act of extracting': so, 'that which befalls' in Gk would be that which is extracted from the run of life

7 IEL says that the PIE stem for 'father' had the sound s; this developed into i in S and a in the other branches. This could be true, of course, but in languages of historical times s turns out to be a degeneration of a and perhaps other vowels; so while this IEL supposition seems quite clever, it is groundless.
and is suitable (?).

28. Scholars are not clear about S pur ‘stronghold’ (65) and vpur ‘fill’ (299). S pur is universally accepted as cognate with Gk polis and B pil(i)s ‘fort, town’ (65). This may well be so and the later use of pur > pura > purī certainly justifies the cognition. However in the RV pur denotes simply ‘defence’ or ‘defensive field of force’ with magical and occult connotations (Kazanas 2002 and Forthcoming) and only later came to mean ‘fort, town’ (pura, purī). Mayrhofer rightly rejects the connection of pur with piparti (and causative pūraya-) ‘fill’ but he is not justified not to link pur with piparti ‘protects, saves’. The Dhātupātīha gives vpur pūrana-pālana-yoh ‘in the sense of filling and protecting’. In S we find numerons relatives of vpur and pur: paranā, partr, pārā pārin, pūrana etc. When we look for cognates of polis and pil(i)s in Gk and B (or other branches) we find none. Scholars give some verbs as cognates of piparti in the sense of ‘filling’ and similar: thus Gk pim-plē-mi, L plērē, C linaim – all ‘fill’ (299); C, Gmc, B and Sl have stems for ‘ful’ (ful-, pil-, plū-); also perrō ‘pass through’, L portare ‘convey, lead’, Gth farān ‘travel, pull’ (all the latter questionable for me). But clearly there is no cognition for ‘defend, protect’. It is difficult to connect the concept of Gk polis ‘fort, town’ with ‘filling’ in –plē-. True, a town is full of people but the very ancient polis was not so thickly populated. In any case, a forest (full of trees and vegetation) or a lake (full of water) would qualify better for the term polis, if we cling to this meaning. But in S the idea of ‘defence, safety’ in vpur and pur has no difficulty.

Incidentally, it is worth noting that although Gmc, B and Sl do not have the IE vb stem for ‘fill’ (329), they have the corresponding adj Gmc fulls, B pilnas, Sl plūnā, all ‘full’. Here we have loss of the vb. But B has vb pil-dit and Sl plūniti / purity. The first may be an extension with dental like Gk plētho ‘be full, many’ and the second severely decayed forms. Or both could be of non-IE provenance.

29. Very instructive is the case of ‘foot’ (16). S has the stems pad/pād- (weak/strong) ‘foot’ and also vpad > vb padyate ‘falls, befalls’. Since the foot is the bodily part that constantly (rises and) “falls” we have semantic as well as phonetic agreement. Gk has pous (gen pod-os) and L pes (gen ped-is), Arm, Ht and T similar cognates, but none has a cogn vb similar to S pad-. Only Gmc shows ge-fetan ‘fall’ (OE) and has cogns for ‘foot’ (fot, fioz). Corresponding to S pada ‘step, site’, Arm has het ‘foottrace’, and Gk has pedon ‘ground’ but Gmc does not have this. Then Sl has pada/pasti ‘falls’ but no cogns for foot. Lth has the vb peduoti but its noun padas is ‘sandal, shoe’ (not ‘foot’). Ht and TA/B have the noun but not the verb. S has also adj padya ‘of foot’, so Gk in pezo- ‘on foot’ and Lth lengua-pedis ‘light-footed’.

Thus Arm, Ht, T, Gk and L have the cogn noun but not the vb while B and Sl have the vb but not the noun. C has neither noun nor verb. Only Gmc shows some OC while S, as usual, has a large cluster of derivatives: pat-ti, pat-tr, padana, -padi, pādin, pāduka ‘shoe’, etc.

30. The stem for earth is another interesting case – with some problematic variants: S ksam-, Gk cththón (dialectal xdan-, xan-, xem-), L humus, C dī (Oir: ‘place’ rather than ‘earth’), B žemē, Sl zemlja, Alb dher; perhaps with metathesis, Ht tegan and TAB tkem/kem; not Gmc. S has the adj ksamyja and Gk chthonio-. S has ksam too for ‘earth’ which means also ‘endurance, patience’. That the earth abides, endures and is patient is a very old idea, of course, found in the earliest traditions. In Hesiod’s Theogony Mother Earth endures all the ill treatment of Ouranos (II 159-160). In the Old Testament one of the Psalms says that ‘the earth abideth’ (119:90) and Ecclesiastes affirms that ‘the earth stands for ever’ (1,4). However, IEL decided that ksamā ‘earth’ is one word of uncertain origin (other than kṣam-‘earth’) and ksamā patience (attested in the epic) is a different one, derived from vksam ‘being patient, enduring’. Again, vksam > ksamate etc ‘endure’, found in the RV, is not found in any of the other branches. The obvious conclusion is, as Whitney and the MSD recognize, that vksam generates all the others -ksam/ksamā ‘earth’, ksama ‘enduring’, ksamā ‘patience’, ksamtr ‘one who endures’, ksāman ‘soil’, etc and the vb conjugation(s).

31. The curious development of cognates like L humus ‘earth’ may constitute another difficulty for the thinking of IEL. For in parallel, we find L homo ‘man’ and cogns in other branches: Gth guma, B žmoqas and TAB som/soamo, all ‘man’ (71). This is indeed curious since there is no early IE text presenting man as springing out of, or being generated in some other fashion by, Earth. This notion is prevalent in the Near East: in Mesopotamian AttraHashis, IV-V, Mother Earth or Womb-goddess, wise Mami Belet-ili fashions humans out of lumps of earth (but mixed with the substance of a god killed for the purpose: Dalley, 14-7); in the Judaic Old Testament early in ‘Genesis’, God makes man out of earth and breaths life into him; in Egypt, potter-god Khnum fashions men out of mud on his wheel. In a Greek myth, the survivors of the Flood, Deukalion and Purha, throw stones behind them and these become human beings; in the Vedic Tradition, the baby-girl Sūtā is discovered in a furrow in a
field: neither myth suggests the spontaneous generation of mankind from earth. So it is difficult to see why the same lexical entity refers both to ‘earth’ and ‘man’. We must assume that this occurred when people thought that man was constituted only of earthly materials. Here S perhaps suffered the loss of this stem for ‘man’. But there is another curious aspect. T A/B have for ‘earth’ tkam/kem which are not necessarily cognate with ‘man’ som/saumo. Gmc has not the IE stem for ‘earth’, only guma for ‘man’. Lth žēme ‘earth’ and žmogus ‘man’ may not be cognates. The case is not at all clear.

Be that as it may, this aspect does not nullify the generation from ākṣam of the other nouns (including ksam- ‘earth’) and the vb conjugation or the fact that the other branches lost their cogns of vb kṣamate and other derivatives.

32. Of the animals, a most revealing case is the mouse (208). The cogn stem does not appear in C and B; S has mūs, Gk mūs, L mīs, Gmc mus, Sl myša, Alb mī and Arm mu-kn. These stems hang isolated in all these languages. In S again we find a full vb vēmuš > muš-nā-ti ‘steals’ and a large family of related words: mūs-aka ‘stealer, mouse’ (cf vēcar ‘move’ > caraka; vēāc ‘ask’ > yācaka); muš-īvan(t) ‘robber’, muška(ṛa) ‘testicle’, muṣṭi ‘clenched fist’; etc. Again S displays OC whereas the others show break-down and heavy loss(es).

33. The European branches fare worse with ‘rain’ (118). Only S, Gk and C have a cogn stem with a sibilant ñ/s before the final vowel. Some would include ON ur ‘fine rain’ but this should rather link with vār/our- ‘water’ since it lacks the sibilant. Only S has a cogn verb vēyr > varšati and other forms (with pra-) and words like vrṣṭi ‘rainfall’, vrṣan ‘(impregnating) strong, bull’, vrṣni ‘manly, varṣuka ‘full of rain’, vrāṣṭr ‘rain-maker’ etc. Here, the loss is total in L, Gmc, B and Sl and quite severe in Gk and C where the nouns for ‘rain’ stand quite isolated.

34. Consider also ‘wind’ (141). Apart from Gk, all branches have the common cognate: S vāta/vāyu; L ventus; C gewynnt/awel (avel); Gmc wind-s (Gth, OE); B vej-(a); Sl vētr. Yet Gk does have the cogn verb aē-mi ‘blow’, as do S, Gmc and Sl (269). But some details are worth examining further. The stems in L, in C gewynnt and in Gmc have n unlike S, B and Sl and C avel. It may be argued that the -n- is original and was lost in the other stems. But the four stems of the vb, S vā-, Gk aē-, Gmc wai (Gth)/ waw (OE) and Sl veja- have no -n-. So it is much more probable that the original root had no -n- and that this is intrusive. Frankly, I suspect that the L vent-, C gewynnt and Gmc wind/wind are not true or immediate descendants of PIE. It is possible that this stem (with -n-) came from a non-IE language and was adopted because of its similarity to the IE one. Be that as it may, Gk has no IE stem for ‘wind’ although it has the IE cognate vb ‘blow’ with which is linked with aēr ‘air/dampness’; L, C and B have the IE stem for ‘wind’ but not that of the vb ‘blow’. Here again, while C and B lacked an early literature, L certainly did not. S vā-yu is a regular formation, like pā-yu, man-yu etc; so is vā-ta, of course, with the participial -ta (as in āp-ta, kr-ta, mr-ta etc etc).

35. Latin shows a similar loss in ‘curve, hook’ (159) and the vb ‘bend, curve’ – and so does Gk. Gmc, B and Sl lack the common cognate, but not the others: S aṅka, Gk ogkos, L uncus, C ēkath. Here only S has a cogn verb ‘bend, curve’ in vā(n)ic > a(n)cati. Ignoring other branches we see that L has additional cognates ancora ‘anchor’, ancus ‘servant (= one who bows)’, anculus ‘angle’; Gk too has additionally āgkalē ‘crook of arms (for embrace)’, ākōn ‘elbow’, ākōs ‘valley (=hollow in ground)’, āgkalō- ‘curved’. But neither has a verb related to these stems. The S vb a(n)ic- has an early Vedic pedigree and is quite productive: aṅkasa ‘horse-trapping’, aṅkura ‘sproat, swelling’, -aṅc ‘turned toward, aṅcala ‘garment-border’ etc. No cogn verb appears in any other branch.

36. The act of ‘seeing’ (349) reveals much the same. A stem darsā/derk/tarh- is common to all except B and Sl. Of the five, S has dṛṣṭi, Gk dēris and C ro-darc for ‘sense of sight’. Some branches have a participial adj but with differentiated meaning: S dṛṣṭa ‘seen’ fully coherent with the root; C an-draict ‘dark, not lit’ (obvious deviation from vb and ‘sight’); Gmc tarht ‘bright’ (also deviation and different from C); Alb drit ‘light’ (deviation); C has also noun drec ‘eye’. Again only S has a large family with consistent meaning ‘seeing’: apart from dṛṣṭi it has ḍṛṣ, ḍṛṣi, dārṣa(na), diḍr-ṣu ‘desiring to see’, dṛvrṣ, etc, and cpds like tā-ṛṣ ‘such-like’. On the other hand, S does lack the present tense of dṛṣ- having pasyati instead. (This situation is very much commoner in other branches, as we have seen.)

37. In this cognition we observe again the phenomenon of vowel gradation. The S medial -r- develops into -ar-, -ār (guna and vṛddhi) and sometimes into -ra- (see §19, end). The -ra- may seem unexpected in place of *darṣ (like vṛks ‘ploughing’ > kar-ṣt, vṛṣ > varṣt etc, but it is an alternative formation (perhaps different dialect) as with bhr > bhrāt ‘brother’, vṣṛj ‘emitt’ > sṛṣ-t ‘creator’, vṣpr ‘touch’ > spras-ṛ etc. However, there is no regularity in the Gk dērk/dērk/ΔΚ- or C darc/drec/drac. The changes in these branches are in fact haphazard and do not merit the term gradation which should properly apply only to S vowel-changes. (This is an issue discussed at length in}
38. The nouns denoting ‘stream’ (131) and the cogn verbs ‘flow, stream’ (301) show a similar picture. The nouns S s-ru-, Gk rheu-, rho-, C srma-, sr- thu- and Lth sraw-, sriov- are truly cognate. Gmc s-ru- and Sl sr-ru- may be related to the others but they have the intrusion of –e-. Which of the two groups is right and represents the original stem? This is not difficult. S s-ru > vb sarvati, ‘flows’, Gk vb rheo- (and rheiō) ‘flow’ and Lth sraweti ‘ooze out, run’ have no –e-; moreover, no other branch has a cognit verb with –e-: So the Gmc and Sl stems of the noun should be discounted. It lacks the cognition totally. But here S, Gk, C and Lth support one another finally.

Here we note again the disparities in gradation. C, Gmc and Sl have no other cogn nouns or vbs to provide evidence. Lth also provides no evidence of gradation. But Gk, apart from vb rheo- and m rhoos, has the n rheuma and rhxox. Since the Gk usual gradation is verb-stem vl –e- → noun-stem vl –o- (e.g. leg-o- ‘say’ etc → logos ‘word’ etc; nem-o- ‘apportion’ → nomos ‘custom, law’, etc), one wonders how we got –eu- and –u-. The perfect of this verb has also –u- in errhēkα. We meet such developments with Gk cheo- ‘pour (in sacrifice)’: n cheuma, chuma, m chutē and f chutra; this vb also has its perf with –u- in ke-chu-ka. I suspect that this u (and the Lth av in sraw) represents like S s-ru a truer line of descent than all the other forms which must be decayed or distorted. In the circumstances this vl u would seem to have no other good or legal reason for being there: it is there as an inheritance from PIE.

39. It is difficult to see how from an original PIE *sreu (as IEL gives this stem) came S s-ru > s-ru-, sraw-, sr-, C sru, Lth sraw- and sru- and Gk rheu-, rheu-, rhoe- and rho-. On the contrary, it is very easy to envisage a process as in S s-ru > s-ru-, sr- (the regular gradation) developing gradually into all the other related stems including Gk rheu- (by corruption of au or by analogy with m log-< vb log-). The same holds for S s-ru > ju-ho-ti and Gk cheo-. IEL gives as PIE the “root” *gheu. But apart from the che(u)- no other branch has, or needs, e or eu. S has hu-/ho-; L has fūt; Gth has qu- and Arm jo-. Now, as was said, apart from nouns with –u- in their stem, the Gk rheo and cheo have their perf in errhēkα and ke-chu-ka. The vl –u- appears generally in the perf of vbs with –u- in their present stems: lu-ō ‘loosen’ > le-luka, pho-ō ‘grow’ > pe-phu-ka, etc. Gk verbs in –eō form their stem differently. Thus deō ‘tie’ > dēδεka and deō ‘lack, need’ > dēδεka; neō ‘swim’ > nneu-ka; plēo ‘float, sail’ > pepnεu-ka; pneō (and pneiō, like rheo- rheiō) ‘blow, breathe’ > pepnεu-ka. All these vbs (and others) have no derivative stems with u. Only rheo/rheio and cheo show the –u- development. Is this corruption or innovation? Neither. It reflects the true original stem as in S s-ru and vhu (the –u- or other labial vl being present in the cognates of other branches).

These Gk relics, retained by accident contrary to the tendencies of the language, show clearly that the original roots were not *sreu and *gheu, and that the S dhātus sru and hu are much closer to PIE.

40. A most interesting case is that of ‘smoke’ (127). All branches have the IE common stem but in Gk thūmos means ‘spirit, soul, passion’ and Gmc tōm is ‘steam’. Apart from S Vādū and Gk thū-νō no other branch has a cogn verb. The L suf-fire ‘fumigate, scent’ is supposed to be a cognate but this shows a phonetic (tāmus and fire) and semantic (‘smoke’ and ‘fumigation, perfuming’) deviation. However, S dhīma comes from Vādū ‘shake (off)’; another derivative is dhū-pa ‘perfume, scent’ and

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8 The gradation in Gk goes as follows with the vb (pres) derr-omai, aor edra-kon, perf de-dork-a . Vb perthō ‘besiege, sack’ similarly has aer e-prath-on, perf pe-porth-a . But perd-omai ‘break-wind has aer e-pord-on, perf regular pe-pord-a . Then terp-ō ‘delight, satisfy’ has aer e-terp-sa and passive aer e-terp-ēn (no perf attested). Vb ster-ō ‘care for, love’, aer aer-strog-a, (later) perf e-strog-a . But we find a similar perf with vb tikhō ‘produce’, aer e-tek-on, perf te-tok-a and I can’t but wonder at the gradation of –e- in the aorist! Now, this is not at all regular because rhipt-ō ‘throw’ has aer er-rhip-sa and perf er-rhiph-a, where the –i- is maintained on the –t- is lost. Then pinō (pōnō in Aedic) ‘drink’ has aer e-pinn-on and perf pe-pō-a – where the –n- vanishes (the –ō- of the perf may come from the Aecim stem). For klin-ō ‘incline’ has aer a-klin-a and perf ke-klī-kα . Then again deīd-ō ‘be fearful’, aer aer-dei-sa, perf de-doi-ka; but ktei-ō ‘kill’, aer e-kte-ka, perf ek-te-a; klei-ō ‘close, shut’, aer ekleis-a, ke-klei-sa; leip-ō ‘abandon’, aer e-leip-a, perf le-lopa; petith-ō ‘persuade’, aer e-pith-on, pe-pēla; speir-ō ‘sow, aer aer-espir-a, perf e-spear-ka . Consider too : spha-ō ‘err’, aor esphē-α, perf e-sphalak-α; spha-ō ‘flourish’, aer aer-θal-α, perf te-thē-a ! There is so much confusion here that even a totally verifiable lack of memory cannot account for it and, of course, we cannot talk of gradation except as a farce.

9 Gk plēo ‘float, sail’ is cogn with S s-plu > plavati, Lth plauti, etc. This vb has no derivative stems with –u- (unlike rhe- and che-). It follows the pattern of neō and pneō. Some claim pneō is cogn with ON fnysā/OE fnōsan ‘sneeze’ but I doubt this cognition because of the –s- in both Gmc stems.
vb dhū-ya- ‘fumigate’: so S covers the L fīmus/-fire (if this cognition is valid). The Gmc to-um ‘steam’ is also covered by S dhā-māya- ‘steams’ (as well as ‘smokes’). It is not difficult to see how \( \sqrt{\text{dhū}} \) generates in S all these derivatives. Smoke is shaken off by something burning and people often burn herbs or powders to fumigate or create a pleasant scent or a medicinal inhalation. Gk, be it noted, has a secondary derivative thu-mia-na denoting ‘(the smoke of a) burnt offering’. What is intriguing at first sight is the Gk meaning which refers to man’s psychological make-up.

Now the MSD gives also ‘a saint’ for dhūna, as well as ‘smoke’. This surely touches on man’s inner make-up. The adj dhūnra means ‘smoke-coloured’ but also ‘dim (of intellect)’. And dhūnôti/dhūnuté can, and at times does, mean ‘shake off, remove, liberate oneself from’ (MSD under dhū). Thus Gk thumos ‘spirit’ is not a deviation – provided we stop thinking all the time of smoke. But Gk preserves another tell-tale detail. It has two verbs thuo, or one verb with two different semantic lines: one ‘sacrifice’ the other ‘rush, attach, etc’. It has also thu-mia-ō ‘burn offering(s)’ (>thu-mia-ma) which may correspond to S dhūmāya-. One would think here are enough verbs. But no, proxii Gk gives us another one, thunô/thunô ‘dash, attack’. These forms retain the [-n] which is also the mark of S dhātus of class V, VIII and IX. \( \sqrt{\text{dhū}} \) is both class V and IX (and VI). So the S \( \sqrt{\text{dhū}} \) covers all the different developments in Gk and Gmc.

41. Let us look more closely at the cognates of ‘dying’. We have death (98) and the vb dying (291). The cogn noun for ‘death’ is found in S, L, B and Sl – S mṛtyu etc. The vb ‘to die’ is in S mr-/mar-/mri-, in Gk e-mor-ten only (in lex), L mōrīt, B mṛti and Sl mrēti. Gmc know nothing of this stem. The ‘one dead’ is in S mṛta, L mortuus and Sl mṛtītum; Gk has only brotos and ambrotos ‘mortal, immortal’. Gk, despite its early and redoubtable literature, has preserved only a few and mostly decayed traces (see also mar-ainō ‘wither’). Sl, despite its late and not all that rich literature has preserved the full gamut and here displays Organic Coherence. B (where this is Lth) has preserved both noun and verb but not the participial adjective. L too here displays OC. But, again, neither L nor Sl retain the range of verbal and nominal derivatives found in S (all Vedic forms): mara-ti/te, etc; mara-(nā), maraṷu ‘perishable’, marta ‘mortal, (Gk mortos) māra ‘death, pestilence’, mārin ‘killing’, mumārṣu ‘wishing, about to, die’.

42. Much more revealing is the examination and comparison of the survivals of the root for ‘freeing’ (305). S has the vb \( \sqrt{\text{mu}}(n)\rightarrow \sqrt{\text{mu}}(n)c\) and Lth mautki ‘strip off, wipe’. Gk and L preserves the stem only in a compound and have no other cognates; moreover, the compounds in both languages denote the cleaning or wiping of the nose. In contrast S has its usual range of derivatives, all Vedic: -mu ‘freeing, sending’, mukti ‘liberation’, mumukṣu ‘eager to free’; moka ‘deliverance’, mokṣā ‘lifter’, mokṣa ‘release’, etc.

43. The cognates for ‘shield’ (179) provide much food for puzzlement. S does not have this cognate (and Gk aspīs, dos gen sing, may not be acceptable, which is unimportant). We have L scutum, C sciath, Lth skydas and Sl šitāti. Lth skydas comes from the Gmc sci-d’t ‘blank’, which comes from Gth skaidan ‘to cut’. The Sl stem seems to be related to C sciath (despite the difficulty of sc- and št-). But now the C and the L stems come from a proto-Celtic *scôto-m or a proto-Italic *scôto-m which in turn came from a PIE root *sken- as in S všku > skunati/skunoti/scauti ‘cover’. Indeed, a shield offers cover against missiles of all kinds. There are other theories too, but we can skip them. Therefore, is ‘shield’ really PIE?

Now, the fact is that no sort of weapon has a common cognate. So the shield is hardly likely to be so lucky. We have only some pairs: S ašani ‘tip, bolt’, Gk akôn ‘javelin’ (cf Lth ašnis ‘blade, edge’); S īṣu and Gk iōs ‘arrow’; S dāru, Gk doru ‘piece of wood, club, spear’; C gae and OE gar ‘spear’ (?); S parašu, Gk pelektus ‘axe’ (probably a loan from non-IE?). Little else worth discussing. There are not clear inherited cogn stems for knife, sword, axe, javelin, bow and arrow, sling, breastplate or corslet and helmet. Most of the cognates of these items are intra-familial loans.

All this is quite extraordinary because the evidence we have from the Celts, the Italic and Germanic people, the Greeks, the Hittites and so on, indicates fairly warlike, rapacious people. So one would expect some at least of the stems denoting weapons to be common to 4 or 5 branches if not all (and here I include Alb, Arm, Ht, Iran and Toch). Yet, apart from ‘spear’ (182-183) and the questionable ‘shield’, not one stem is common to 4 branches (only one third of the total)! Were the PIEs really bellicose fellows? We know the IEs in late proto-historic times when they had already dispersed. What of the common condition before the dispersal? Well, we don’t know but the evidence of the cognates for military matters is decidedly negative.

44. Another field where there is great divergence of stems is religion. Apart from the stem for
‘god’ which is common in more or less in all branches (S deva, L deus, B dievas etc)\(^{10}\) no other entity idea or item can be found in three or more instances. The cogn ‘altar’ found in L, C, Gmc, B and Sl is, in fact, the L word. Close to forming a cogn group is on the one hand L precārī ‘pray, beg, beseech’ and Sl prositi ‘ask for’ and on the other S prach-/pre- and Gmc fraı̈hnan ‘question’. But, of course, ‘ask’ in the religious sense of ‘ask for, beg’ in prayer (< precārī) is very different from ‘ask-question’. For ‘beg’ and ‘beseech’ S has prir̩thaya-, bhiks- and yāc.- (And Gk arFa ‘prayer’, L orare ‘plead’, a legal term primarily and secondarily ‘pray’, and S āryati ‘acknowledges, praises’ are not really related, as some have claimed.)

Here too we find some pairs only that are true cognates: S yaja-te/ ti ‘worships, sacrifices’ and Gk hazo-mai ‘I worship’. From these we have S yajina/yajiyina ‘holy, sacrificial’ and Gk hagio- ‘holy’ and hagio- (cf S yāga-) ‘holy, sacred’. Then there is S ither/ohate ‘praises’ and Gk eucho-mai ‘I proclaim’ > pros-eu ‘I pray (to god)-s; also Arm uzem ‘I intend, will’. But note here the great semantic differences. With the stem is connected S vāghat ‘sacrificer, supplicant’ and L vovere ‘pledge, vow’. We also find for ‘heaven’ (in the sense of ‘paradise’) C nem and Sl nebo from the cogn stem as in S nabhas ‘sky (cloud, mist)’. In other cases the apparent cognates turn out to be loans or derivatives. Thus the cogn stem for ‘devil’, found as deouful and variants in Gmc, dijavolu and variants in Sl, diabul in C and so on, they all eventually come from Gk diabolos ‘slanderer, disturter’. The C sacart ‘priest’ is a loan from L sacerdote and the Sl ierefi from Gk hierheus ‘priest’.

Generally, there are disparate terms for ‘altar, anchorite, demon, devotion, heaven, hell, prayer, priest, religion, sacrifice, ritual, saint and sanctity, worship’ and the like. This diversity shows that the religion and rituals we find in the branches were developed after the dispersal and that the original PIE religion was quite different from what we know of pagan polytheisms. That there was polytheism and henotheism (=worship of one deity above others in a specific place at a specific time) is undoubted: we find, e.g., the common name S Aryaman, Mcn Areimene, C Ariomanus and Gmc Irmin, or S Parjanya, Sl Perun(u), B Perkunas and Gmc Fjorgan, or S Dyaus, Ht Stu, Gk Zeus/Dia-, L Ju[s], Gmc Tiwaz. This shows multiplicity. On the other hand, there must have been a kind of monotheism, since many IE traditions make some effort to define or at least indicate a Primal Source for all cosmogony or a Progenitor for theogonic generations: in Greece, in Homer it is Ōkeanos ‘ocean-water’, in Hesiod Chaos and in Orphism Chronos ‘time’; in the Scandinavian Ædda it was a Chasm-of-nothing; and so on. In the RV it is stated explicitly that all gods are expressions of That One, which is before all creation and all creation evolves from It (RV I·146. 46; III· 54. 8; VIII· 58· 2; X·129). Here too, the Vedic Tradition probably retained more faithfully the PIE religious views.

45. I could certainly continue with many more PIE stems like those for heating (S tap- etc), fainting (S tām- etc), tying (S nah- etc), moving (S mīv- etc), growing (S vṛdh- etc), remembering (S smr- etc) and so on. In all these cases we shall observe what was established much earlier (§ 21): one, S reflects more clearly the pristine PIE roots than any other branch; two, while S has OC in most cases with the full gamut of lexical items in verbs, nouns, adjectives and adverbs, the other branches show severe break-downs and losses in one or more categories.

Of course S is not perfect and I stress this. It, too, has break-downs and losses and innovations. Very curious is the case of S praśna ‘turban’ which is thought to be connected with plaiting (331), Gk plekō, etc. It is curious because praśna is also ‘question’ and is a derivative of vṛpach (prch) ‘ask’. Of old, Meillet would not accept Gk plekō and S praśna as cogn with L plect, Gmc fleht- and Sl plest- (1908:37), but this doesn’t explain S praśna. Just as curious are S snīh- and mrj-: the former means ‘be moist, be fond of, attached’ while in all the other branches the cogn stem means ‘snowing’(!); in S the latter denotes ‘rubbing, polishing’ while the others refer to milking! I give no answer here to

\(^{10}\) The Gk stem theos is doubted and has been rejected by most scholars; this is based on the notion that Gk theta (θ) corresponds only and invariably to S dhr- It is true that almost invariably Gk -th- = S -dh- but there is also S dvār ‘door’ which appears in Gk as thura. Then, the conjectural postulate *thesis as source of theos is based only on theses-phatos which is hardly a secure basis. The linking with L fēs-tus (note the long e as opposed to the short e in Gk and an additional conjecture of a PIE root dhēs cannot be taken seriously. So theos is not impossible. After all Gk has several aberrant cogns like hippos ‘horse’ (S aśva, L equus etc, fairly ‘lawful’ correspondences) or o-noma ‘name’ (S nāman, L nomen etc), etc.
the question which meaning is original\textsuperscript{11}. As S (or Vedic) is not the PIE language, it is natural that it too should suffer losses (and show innovations). But these are comparatively few.

46. The S \(\sqrt{dṛś} \) is a good example. It lacks the forms of the present which are supplied by \(pāṣyatī\). (IEL regards \(pāṣyatī\) as a decayed form of \(\sqrt{spāṣyatī} \) and connects it with L specio, Gmc spehōn ‘espy, watch’ and Gk skept- (‘*spekt-’) ‘view’. This may be correct but the Dhāṭu-pāṭha gives both \(\sqrt{vāś} \) and \(\sqrt{v\sqrt{spāś} } \) so that the Vedic perf \(pā-\sqrt{spāś} \) (as \(v\sqrt{spāś} \) ‘touch’, perf \(pā-\sqrt{spṛṣ} \)) may be from \(\sqrt{v\sqrt{spāś} } \) which has the same meaning. Then Tocharian AB have \(pāk- \) ‘intend’ not \(\sqrt{spāk}-\). So there probably were two dhātus in S – but only one elsewhere. In any event, \(\sqrt{v\sqrt{dṛś} } \) lost its present tense.

47. The case of ‘ear’ is instructive. We have two stems. One is the Gk \(ou\-s\), L \(aurīs\), etc. Here S probably suffered the loss of this stem. It has the \(\sqrt{va} \) which includes among its meanings that of ‘grasping, perceiving’ and also ‘hearing’. But surprisingly, in no branch where this stem is found, are there any cognates. In each branch, the vb for ‘hearing’ (see 318) is unconnected with this stem. Gk has beside \(\text{kluō} \) (the vb \(\text{akouō} \) and \(\text{akrhoas̄} \) ‘listen’ in which some see the cpd \(\text{akro} \) (edge, end) \(\sqrt{\text{ous} } \) (ear) + \(\text{thai} \) (vb-ending), which, being a derivative, does not explain \(\sqrt{ous} \). L fares no better; it has \(\text{audire} \) ‘hear’ and \(\text{aus culture} \) ‘listen’. Here some take \(\text{audire} < \sqrt{\text{aus-dh}} \) with \(\sqrt{\text{aus}} \) as the origin of \(\text{aurīs} \) ‘ear’; in \(\text{aus culture} \) they see again \(\sqrt{\text{aus-} } \) and \(\text{cult-} \) as with metathesis from \(\text{clu-} \) (= \(\sqrt{\text{svr}} \)). But again we have no explanation or cognate for ‘ear’. (All these conjectures seem true, and it is interesting that scholars seriously toy about with such complications yet refuse to see the simple formation \(\text{mā-tṛ} > \text{mātī} \) ‘mother’, §25.) On the other hand, C has both the cogn \(\text{au} \) ‘ear’ and \(\text{clu-clus} \); its vb ‘hear’ is \(\text{clui/} \) \(\text{cluy-} \), unrelated to \(\text{au} \) but related to \(\text{clu} \)- Gmc has \(\text{au} \) (Gth) and variants \(\text{eyr}-/\text{era} \) (ON, OHG) but also \(\text{hlyst} \) (ON); its vb ‘hear’ is OE \(\text{hýran} \) and OHG \(\text{höran} \) and its vb ‘listen’ is ON \(\text{hýldan} \) and OE \(\text{hlyst-tan} \) – neither group connected to \(\text{aus}-/\text{eyr-} \) but connected to \(\text{hlyst} \).

What do we learn from these data? Obviously the \(\sqrt{ous}/\text{aurīs} \) stems derived from a root like S \(\sqrt{va} \) and developed in parallel with the stems \(\sqrt{srōtra} /\text{clyst/} \) \(\text{hlyst} \)- in some branches then took over. As the S stem \(\text{srōtra} \) indicates, the ear was the instrument (\(-\text{tra}\) for hearing (\(\text{srō} > \text{srō} \)), as \(\text{ar-i-tra ‘ear’} \) is the instrument (\(-\text{tra}\) for propelling (\(r > \text{ar-} \)) a boat, or \(\text{vas-tra ‘garment’} \) is the means whereby one dresses.

S supplies the probable explanation (not entirely unnoticeable by IEL). S has the indeclinable \(\text{āvīs} \) ‘evidently, manifestly, observably’ related to Au \(\text{āvis} \) and Sl \(\text{avē/javē} \) ‘evidently’. IEL suggests that the cognates \(\sqrt{ou-/au-\text{ris}} \) etc are related to this \(\text{āvīs} \); so also the prefix in L \(\text{au-dīre ‘hear’} \), in Gk \(\text{ais-thanomai ‘observe, take notice} \) and Ht \(\text{uh-hi ‘I see} \). \(\text{Āvīs} \) is related to \(\sqrt{va} \) which has several meanings: one group is ‘favour, promote, protect’, the other ‘observe, notice’ (Mayrhofer). The Dhāṭupāṭha gives a long list including \(\text{raksana ‘protecting, prītī ‘favour, vrddhi ‘increase, promotion}, \) also \(\text{avāgaṇa ‘perceiving, understanding, and śravaṇa ‘hearing}. \) It is very likely that the stem in \(\sqrt{ous}/\text{aurīs} \) etc appeared before the IE dispersal and many branches retained it (in one or other form), while others retained the ‘instrument for hearing’ like S \(\sqrt{srōtra} \). C retained both \(\text{au} \) and \(\text{clu-} \). S probably reflects the true primitive situation with \(\sqrt{\text{svr}} > \text{srōtra} \) for hearing and \(\sqrt{\text{va}} > \text{āvīs} \) for general perception\textsuperscript{12}.

There are several other decays and losses in S but as was said these are few in comparison. After all, the numbers in §12 are quite eloquent. Of the 404 stems examined, S lacks 53; next is Gmc with 145, Gk with 149 and so on.

48. \textbf{Oral Tradition and the AIT}. How did the Indoaryans manage to maintain an oral tradition of such quality that their culture retained more cultural elements (eg names of deities) and many more lexical items (and grammatical features as any text on IE philology testifies: see Kazanas 2004)?\textsuperscript{12}

The only explanation I can think of regarding the superiority in retention of Sanskrit is that

\textsuperscript{11} Leaning in favour of Sanskrit after all the items examined, I could opt for this language and show speculatively how from the meanings in Sanskrit the other meanings were derived. But this is not the point. To say that the majority is right and therefore Sanskrit meanings are subsequent innovations it too facile; ‘democratic’ majorities are not necessarily true. So I leave it.

\textsuperscript{12} Indian philosophy states that the first manifestation is in \(ākāśa \) ‘ether, space’ and this is a vibration of sound in silence. Clearly the bodily sense connected with this phenomenon is hearing. Is this idea so ancient as to belong to PIE thinking? For this is suggested by the S \(\sqrt{va} > \text{āvīs} \) and the ramifications in the other branches. How old is really Indic philosophy (and its systems) – after putting aside later developments and the AIT chronology?...Tantalizing questions.
the Indoaryans moved very little or not at all. We saw earlier that they had developed an oral tradition that now seems definitely to have been far more efficient than any of the other branches (§14), since, even as late as the 7th cent CE and even in the 20th, the sacred texts were transmitted orally from one generation to the next within brahmin families. It was an incomparable systematic tradition as we saw in §14, above.

The Aryan Invasion/Immigration Theory has the Indoaryans enter Saptasindhu (which was allegedly populated by Dravidians, Mundas and/or, other speakers of South Asian languages) c 1700-1500 BC. But they did not arrive after a few months’ travel from the PIE homeland: they made, according to some recent theories, stops at the Ural where they indulged in cultural exchanges with the Finno-Ugrians, and in Iran in common with the Iranians from whom they had not as yet separated. Let us now assume that, as most Indo-Europeanists claim, the homeland was the Pontic or South Russian Steppe – even though there is no evidence of any kind for this. The Indo-Iranians move eastward to the (southern) Ural and stay there for three or four generations (or ten: who knows?) in proximity to the Finno-Ugrians, then move south, either over the Caucasus west of the Caspian (less likely since Vedic has no evidence of lexical loans from Caucasian languages) or down along the eastern shores of the Caspian, to Iran. Then, after some decades again, the Indoaryans alone move further south-east (in waves?) and settle in Saptasindhu, whence, since by general agreement there was desiccation, they moved eastward to the Ganges basin following the natives who were at the time (c1700) doing just that.

Now, it should be obvious to any unprejudiced mind that a people in continual move over thousands of miles could not maintain the unique systematic oral tradition associated with the Indoaryans. On the other hand this tradition could not have developed after they reached the Ganges basin because the RV mentions far too often the 7 rivers (1.32.12; 34.8; 35.8; etc, etc) – and even M. Witzel admits that the RV was composed round the river Sarasvati area (2001 §3). So when did it develop since the RV already contains the references to the area and all those inherited cultural treasures in religion and language?

It is a well known fact of history that people on the move for a long period tend, especially if they are non-literate, to lose elements of their culture, while their language suffers decay and losses. much more than a people remaining sedentary, as several Indo-Europeanists have stated (Hock 1991: 467-9; Burrow 1973: 10; Lockwood 1969: 43); and this because they have little leisure to pass their lore to the new generation and/or they meet with, and absorb elements from, alien cultures. Therefore, either we hold onto our habitual notions and deny the fact that the PP and POC favour the Indoaryans, or we accept the fact that the Indoaryans preserved (in that astonishing RV) much more than any other branch and therefore moved very little or not at all.

49. It could be argued that the IAs developed their complex but secure system of oral transmission while on the move. In fact, Mallory did so (Nov 2004 : see §4 above) – and cited as example the Jews. But these people were literate certainly when they first appear in history (11th cent BC: Dunstan 1998) or from the time of Moses c1200 BC(?). But, if that were so, what would the IAs (or Indo-Iranians, since they were one people, according to the AIT) be transmitting and thus preserving? Their sacred RV was composed in the Saptasindhu. If they had developed their superb system while on the move, then they would have at least a few tales of their adventurous trekking and these would have been embodied in the hymns of the RV. The Jews indeed wandered about for many centuries in the Near East, from the time when Abraham and his clan left Ur, c1900 BC (if all this is historically true: opinions are divided for and against), until they finally settled in Judea; so their scriptures tell us. (But note here that Ur in Mesopotamia had literacy for 1000 year earlier, so the Jews probably have had it also.) Not so the RV: in the hymns there is not even a hint of this hypothetical travel and its (mis-)adventures. We can therefore forget this empty argument.13

50. It may also be argued, as was done by Mallory (2002), that if the Indoaryans retained most and their historical seat (or its environs), is the PIE homeland, then the people who moved a little distance, like the Iranians and the Tocharians, should have retained more than other branches, and those who moved farthest, the Celts and the Germans, should have retained the least. This is not the case, of course, and I certainly mean no such thing by the Preservation Principle. Once a people starts moving away, many other factors come into play and we cannot apply the simplistic formula

13 A much more valid parallel would be the Gypsies who left India in the early centuries CE, moved northward through Persia and spread in the Near East, to North Africa, the Balkans and Europe (Hock 1996; Fraser 1995; chs 1-2). Now, they have legends of their travels (at least in Greece) but their language has only just sufficient elements to indicate its Indic origin (like the older one of the Kassites and Mitannis).
“more distance, fewer retentions” enacting the ‘scientist’ (whatever this means). The Tocharians provide a good example. They moved comparatively little but their retentions are meagre. Their written records show that they adopted Buddhism. There is no trace in them of the IE polytheist religion, and therefore of IE elements other than linguistic ones. One can only speculate that even before Buddhism came there the people had already forgotten much of their culture.

People leave their native land in large numbers for various reasons. The Pilgrim Fathers left Britain seeking mainly religious freedom. In pre-classical Greece, people left and formed colonies for economic and political reasons. Sometimes some few people may leave for exploration and adventure while others seek to spread their (superior as they think) culture – like buddhist and christian missionaries. Thereafter other factors will influence all these categories (the devoted missionaries to a lesser degree). They may be subjugated; they may meet a very attractive alien culture; they may be very sensitive and may succumb easily to a foreign culture; and so on. Nobody now can know what the Celts, the Germans, the Balts or the Slavs met in their travels across Europe before they settled in their historical homes. Nobody knows why they left in the first place. The pre-historical archaeological researches that trace various movements of people in Europe like the Kurgan ones from the Pontic steppe, as is commonly claimed (i.e. before say 1800 BC) cannot really identify any IE people. Any so called identifications are conjectures in a world of speculation – no more. (It is curious that mainstreamers do not apply ‘scientific’ standards here also).”

Here let me use an analogy. If one stands precisely on the North Pole of our planet, then one can only move southward: there is no other direction. But once a few steps south are taken, then one can move in many different directions. The simplistic formula “more distance, fewer retentions” does not hold. But, in the circumstances, the PP, exemplified in the Vedic tradition, does hold: most retentions, least or nil distance travelled. So, of course does the POC.

**Conclusion**

51. Here I rest. I have shown with a large number of lexical items that Sanskrit has many many more retentions of PIE than the other branches. This confirms what my earlier studies had already disclosed. There may be some errors or omissions in my examination of all these cognates but my survey of the Dictionaries and the comparative tables in various publications suggests that if I added more items the gap would widen in favour of Sanskrit. The difference between Sanskrit and the second and third branch is so great that it cannot be ascribed to chance, nor reasons like early literacy. The only plausible explanation for this that I can think of is a strong, systematic oral tradition. Such a tradition could not flourish nor be maintained by a people on the move. So the Indoaryans are indigenous, certainly at the beginning of the 5th millennium and possibly very much before that. I have discussed at length many other aspects that support this conclusion in many publications since 1999.

52. I should add two more arguments. They will not mean much to the prejudiced minds of mainstream scholars (indologists, indoeuropeans, archeologists or whatever) but I think these details also add strength to the view against the invasion/immigration theory. I am referring to the absence of clear common cognates regarding military matters (see §43). This suggests to me that the PIEs were not at all bellicose (though dissensions and even fights should not be ruled out) – at least not as the IEIs appear after dispersal in (proto-)historical times. This view is very different from that of other indoeuropeans who saw war and weapons as an important aspect of PIE culture (e.g. Hencken 1955:44; Childe 1926: 85). A relevant peaceful region for 6 millennia is the area in today’s Afghanistan where the culture of Mehrgarh developed and gradually spread south-eastward to

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14 Not without good reason, Mallory wrote to me ($3,4) that we need a time-machine to go back and check the total vocabulary for Vedic, Greek, Latin, Germanic etc, at a given date and then draw conclusions about retentions. This would of course be ideal! But he makes no similar suggestions for so many other AIT areas where arbitrary conjectures with hardly any evidence are rampant. For instance, archaeological evidences regarding identifications of ancient peoples, their movements and languages are very fragmentary and highly dubious. The fact that through mechanical repetition these conjectural identifications are generally accepted (see, e.g. §54, n 16) means nothing in fact. Surely, here also the time-machine is necessary.

Then there is the other grand conjecture taken as proven fact by indoeuropeans and indologists of the AIT persuasion – the common or primitive Indo-Iranian period ($48). Apart from linguistic conjectures and theories of convenience there is not a scrap of evidence that the Indo-Iranians came as a unified (or closely related) people with a single or common culture from the Steppe, through the southern Urals to Persia and (the IndoAryans) to Saptasindhu. On the contrary, the actual linguistic evidence (not conjectural reconstructions) shows that the Iranians had lived in Saptasindhu and moved north-west. See §54.
Saptasindhu and became there the Indus-Sarasvati Civilization. Archaeologists specialising in the region like M Kenoyer, G.L. Possehl and J. Shaffer, have emphasized its unbroken continuity and its peaceful character – so much so that J R Mcintosh termed her study of it A Peaceful Realm (2002).

53. Another argument comes from the field of religion. The Veda has more common IE theonyms than any other branch and fills lacunae in the other branches. V Agni, Ht Agnis, Sl Ogón; V Aryanam, Mnci Armeine, C Arionanus (and Eremen), Gmc Irmin; V Parjanya, Sl Perinú, B Perkunas, Gmc Fjorgym; V Dyaus, Ht *Sū, Gk Zeus, L Jupiter, Gmc Tiwaz, Sl divá V Ušas, Gk Éós, L Auśšíra, Gmc Eos-tru; V Bhaga, Sl Bogu, Phrygian Bagaios; Gk Phoibos (where S bh = Gk ph and S g= Gk b are frequent correspondences). These 6 correspondences show the situation adequately; in fact, only the Dyaus cognates are found in 6. (For a full discussion of this matter see Kazanas 2006a.) Moreover, as I have argued elsewhere following K Werner (1989), the all-inclusiveness of the RV (in contrast to the other branches which have only polytheism) contains also a kind of monotheism or monism (Kazanas 2001: 288-9): this universe with its multifarious manifestations came from an original unity (RV X, 129) which is no different from the upanishadhic Absolute: ‘It being One has variously become this All (and Everything) – ēkam vā idāṃ vi babhuva sārvam’ (VIII, 58, 2). Then, while wise poets speak of It, being One, in many ways and name It Agni, Indra, Yama etc (I 164, 6; X 114, 5), the different gods are gods by virtue of a single godhood or god-power, as the refrain in III 55 reminds us clearly: mahád devámām asuratvām ēkam ‘Single is the great god-power of the gods’. It was, I suspect, this religion, containing the One and the many as expressions of the One, as indicated in the RV, that was fragmented into the many different polytheist cultures of the Indo-Europeans after their dispersal.

54. One may still entertain doubts about my thesis. But, while the Kurgan culture of the Steppes as the PIE source is a mere nebulous supposition, held on tiers of conjectures, no other early IE tradition contains so much evidence in its language and culture as to surpass the Indoaryan claims for the more faithful inheritance of the PIE civilization 16.

Another aspect mainstream indoeuropeanists and indologists (of the AIT persuasion) often stress is the common Indo-Iranian period (§48 and n 15). This too is based on tiers of IEL conjectures. On the contrary, the actual linguistic evidence (not conjectural reconstructions) shows that the Iranians had lived in Saptasindhu and at some date moved away, north-westward. The Avesta, as has repeatedly been pointed out (e.g. Kazanas 2002), refers to a region formerly inhabited by the Iranians by the name Hapta-Handhu. Now this is as close to the Vedic Sapta-sindhavah ‘7 rivers’ as one can get – and there are many occurrences of this phrase in the RV (I. 32.12; II.12.3; IV.28.1; VIII.24.27, etc). V sindhu is a common term for ‘river’ and for the river Sindhu which even Greeks named Indōs; but in Avestan ‘river’ is denoted by ṇraotah- and rauvā- (perhaps from the PIE root seen in S všřu/sř, Gk rheó etc; VIII.301 in §11) thus it is not likely that the IAIs left the Iranians taking with them this isolated name Hapta Handhu which then they foisted onto the 7 rivers in Punjab and the second component onto the Indus itself. Rather, the Iranians left the region of the 7 rivers and held the name in their memory. Something very similar happens with the V river-name Sarasvati and Av Harahvaiti-. Avestan has no other cogn with harah- whereas S has všr > sārti/sisarti, saraṇa, saraś, sarit, etc, and of course cognates are found in other IE branches: (Kazanas 2003: §43e): here again it is the Iranians that took with them the memory of the Indic river and gave it to a river in their new habitat. Then, we have the alleged loans from the Finno-Ugrians: one of them is V čhāga ‘he-goat’. But it is curious that Avestan does not have this stem: its own stem for goat is only bůža-. Are

15 E. C. Polomé made a survey of ‘Indo-European Religion and the indo-European Religious Vocabulary’ (1991). In it he examined many studies on this subject by G. Dumézil, J. Gonda, P. Chantraine, H. Hubert, Gamkrelidze & Ivanov, et al, but could not come up with more than 3 or 4 sure cognate stems like those for faith, fire, and prayer, already examined in this paper.

16 “Archaeologists have not in fact succeeded in locating the Indo-Europeans and prehistoric Eurasia offers an abundant choice of culture areas” (Watkins 2000: XXXIV). This factual statement is followed, as is usual with mainstream indoeuropeanists, by a long series of conjectures presented as historical facts identifying waves of Kurgan expansion as PIE movements, and then: “We must be content to recognize the Kurgan peoples as speakers of certain Indo-European languages and as sharing a common Indo-European patrimony. The ultimate ‘cradle’ of the Indo-Europeans may well never be known” (ibid XXXV). Why should we be content since there is a choice of other areas? Of course, since the Kurgan people had no writing we don’t know what language(s) they spoke and, in any event, no indoeuropeanist has come up with any evidence of any people (Kurgan or other) moving into Saptasindhu after c4500! Thus Saptasindhu has as far as I am concerned the best claim so far – if not the only good one. But I am not certain and don’t press it though I shall continue to argue in its favour against the Steppe (which may have been a locus of secondary dispersal).
we to suppose that somehow the IA's, in departing from the Iranians, managed alone to retain apart from the alleged loanword chāga the words āja and eda 'goat' – cogn of course with Gk āix, Lth ozys and Arm aic and also the first component of Av iz-āena 'leathery', but that the Iranians, even though now settled, mysteriously lost these stems having only this būza-?³⁷ Surely, here too the movement is the reverse – from Saptasindhu to Iran. Moreover, Vedic retains the PIE s but this becomes h in Avesta. All this actual linguistic evidence and the conclusion it forces upon us has some archaeological/geographical support. G Gnoli, who is a normal AIT adherent and by no means an indigenist, showed very clearly that the early portions of the Avesta hardly know northern and western Iran and he analyses migrations there from south to north and east to west but not north-west down to south-east (1980). Thus while the conjectural Indo-Iranian movement south-eastward contains many anomalies, the Iranian movement from Saptasindhu north-westward accommodates all facts.

Finally we must remember that, as Thomas Kuhn ably demonstrated (1970) and thus angered many scientists, mainstream ('orthodox' or 'normal') doctrines forming the prevalent 'paradigm' have philosophical and/or psychological constituents as well; therefore scholars, who usually like to think of themselves as reasonable people and authorities in their fields, resist, ignore or cover up anomalies that undermine the mainstream doctrines and act almost invariably so as to preserve the paradigm within which they operate. The classic example is found in the 16th and 17th mainstream scholars who not merely resisted the Copernican heliocentric model of our solar system while themselves adhered to Ptolemy's geocentric model, but actually persecuted their opponents – Bruno, Kepler, Galileo (Cohen 2001; Kuhn 1970; Koestler 1964). The partly self-contradictory remarks of C. Watkins in n 15 demonstrate this in the IE field; also J. V. Day promotes the 'Kurgans' even though in his voluminous study he states that “the ancient cranioskeletal evidence in Europe for expansion by Kurgan groups is surprisingly meagre in places” (2001: 317; emphasis added). I should refer also to the field of biological sciences and the enormous resistance mainstreamers display against new ideas. It is not only philosophical and psychological elements (= prejusdices) that engender this resistance but also threats to one’s reputation, scrambling for position in the hierarchy or ports prestigious and remunerative, access to funds and the like (Pert 2002: 73, 161-2, etc; Dembski 1998: passim).

In Indology and Indo-European studies the received doctrine has for over a century been the Aryan Invasion/Immigration Theory while the IE diffusion spreads from the Pontic Steppe. On this, Edmund Leach, Master of King's College, wrote that after the discovery of the Indus-Sarasvati Civilization, indoeuropeanists should have scrapped their theories and linguistic reconstructions “and started again from scratch. But this is not what happened. Vested interests and academic posts were involved” (1990). This may sound harsh but prejudice and self-interest still continue today and are no less rampant in the humanities than in the sciences.

Appendix

In the Table of Vedic and IE theonyms, the 20 Vedic names are put on the left and the others for the simple and almost incredible reason that the Vedic tradition has all these theonyms but every other branch has only few of them; consequently if we were to start with, say, Ht, we would very soon have to change to another branch, say, Greek and then, Gmc, and so on. In fact no two other traditions (Gk, Gmc, L etc) have a common theonym to the exclusion of the RV. The only exception – and this a highly dubious one – is the Roman goddess Iuventas and the Irish Oeagus, according to Dumézil from PIE *yuvniko (Littleton 1973: 61, 93). This is so tenuous that I don’t include it. One can prove many things with untestable reconstructions like this one. Moreover, the

³⁷ Some connect this būza- with OE bucca (OHG boc) and C boc(e) : this surely is highly dubious. But in any event we must wonder at the disappearance of chāja from AV. There is also the stem kāpa 'hole, well' (Burrow 1973: 27) which is not found in AV but retained by Vedic; this has cogns in other IE branches like Gk kūpē 'hole', L cúpa 'cask', Gmc hūf-r 'ship’s hull', etc. Whether the word came from Finno-Ugrian or PIE it is curious that AV lost it remaining with the non-IE and non F-U xāu- and čūt- for 'well'; for the Indo-Iranians must have commonly used wells (and must have had 'holes, pits') in their common habitat before they Indoaryans moved onward. The S word kapha 'phlegm (foam, froth)' is found in AV as kafō (Persian Kaft) and in various forms in F-U like hab, khwōu etc (ibid). But the S salākā 'splinter, twig' (cf salā 'staff') has again cogns in F-U but is not found in AV (or Persian or other related language). These phenomena are unexplainable by the common Indo-Iranian period” and travel south-east. On the contrary they can be explained quite rationally by the movement of Aryans away from Saptasindhu first to Iran and thence to the Urals (and further West).
two branches, Latin and Celtic, are thought to have been one, or very closely contiguous, and so the two names, if indeed they are cognates, need not be inherited but an intra-familial loan, as Bloomfield would argue for such branches (1933: 350-60).

On the right, on the top line are the cognate names. On the line(s) below are cogn nouns in branches that do not have the corresponding deity. This shows that the particular branch(es) suffered a loss in their religion. E.g. the IE theonym for a Horse-deity (S Aśvin, Mcn Iq-e-ja, C Epo-na) does not appear in most branches yet these do have the IE stem for ‘horse’: Gk hippos, L equus, C ech, Gmc eoh, B eśva (and Sl kon-ji which is not IE but, though unrelated, does indicate a further loss).

With the theonyms I follow the English alphabetic sequence since this is common. Only Apāṁ Napāt is placed in apparently wrong place, but only because the cognates are in connexion with Napāt not Apāṁ. The S r is given as Er r. With the branches themselves, I start with India and move westward: S, Ht, Ks, Mt, Gk, L, Sl, B, Gmc, C. Tocharian, Arm and Alb contain negligible material.

The Table.

Agni: Ht Agnis; Sl Ogōn.
L ignis, Lth ugnis, Ltt uguns (Note: even the Iranians who had Fire-worship did not preserve this name, not even as a demon like Indra, Sauru etc, though the stem appears in the name daštayn). Ht ‘fire’ paḥḫur.

Aryaman: Mcn Are-mene; Gk A rē-s; C Arionamus (Gaul) / Eremon (Ir); Sc Irmin. The ar-stem in most IE languages – ‘move, rise, stir’.

Aśvin: Mcn Iq-eja (horse-deity); C Epona (Gaul);
Gk hippos, (Mcn igo, dialect ikkos), L equus, OE and Ir eoh, B eśva, all ‘horse’.

Bhaqa: Ks Bugas; Phrygian Bagaios (Zeus, Gk); Gk Phoibos; Sl Bogu.

Bṛhaddvā: C Briganti(a), later St Brighid (Ir).

Dyaus: Hittite *Siē-s; Gk Zeus/Dia-; L Ju[s]piter; Gmc Tiwaz; Rs Diva(?)
Lth dievas (usually ‘god’ cognate with S deva, dīv).

Indra: Ht Inār(a); Mt Indara; Ks Indaś; C Andrasta/Andarta.
Gk anēr/andr-; Av indra (a demon).

Marut-as: Ks Maruttaś; L Mars; C Morrighan (Ir).
The stem mar/mor/mer- ‘shine’ etc is common in all IE branches.

Manu: Gmc Mannus (in Tacitus Germania 2), father of the Gmc people, like the V semi-divine figure who was regarded as the father of mankind.

Mitra: Av Miθra; Mt Mitrasil.
Gk mitra ‘band for chest or, mainly, hair’ (> E mitre ‘bishop’s pointed head-gear.’

Apāṁ-Napāt: Roman Neptunus; C Nech-tan (Ir); Gmc (ON) sævar nīdr ‘kin of water (=fire)’!
Gk a-nep-sios, L nep-; OHG nefo, OE nefa, OLth nep- etc ‘nephew, cousin’.

Parjanya: Sl Perun; B Perkunas (and variants); Sc Fjǫrgyn (*n, Thor’s mother).
L spargo ‘throw about, besprinkle’, C eira ‘snow’.

Ṛbhu: Gk Orpheus; Gmc Elf (and variants).
Gth arb-aihs; Sl rabu , Rs robata ‘work’ ; L orbu (S arbha, Gk όρφανος) ‘deprived’ etc.

Saranyu: Mcn & Gk Erinus, Helenē.
L salio ‘leap’, salax ‘fond of leaping’; TB salute ‘leaps’.

Sūrya: Ks Śurias; Gk Hēlios; L Sol ; B Saule.
Gth savil, ON sol, W haul, Sl slunce, Rs solnce .

Tvāṣṭṛ: Gmc Twisto (Sc).

Uṣas: Gk Ėos; L Au[s]rora; Gmc Eostre.
Lth ausra, Ltt ausma, G gwawr, etc.

Varuṇa: Mt Uruwna; Gk Ouranos; B Vēlinaš (–and cf jur- = sea).
L ūrina , ON ver (=sea).


Västos-pati: Gk *Hestia*; L *Vesta*.

Gth *wisan* 'to stay'; OHG *wist* 'inhabiting'; T A/B *waṭ/-ost* 'house'.

Yama:

Sc *Ymir*.

L *gemi-nus* 'twin'; Gk *zēmia* 'damage', Av *yam*, *Yima*. 
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