

Indo-European and the Indo-Europeans

by Calvert Watkins

The Comparative Method

Indo-European is the name given for geographic reasons to the large and well-defined linguistic family that includes most of the languages of Europe, past and present, as well as those found in a vast area extending across Iran and Afghanistan to the northern half of the Indian subcontinent. In modern times the family has spread by colonization throughout the Western Hemisphere.

A curious byproduct of the age of colonialism and mercantilism was the introduction of Sanskrit in the 18th century to European intellectuals and scholars long familiar with Latin and Greek and with the European languages of culture — Romance, Germanic, and Slavic. The comparison of the classical language of India with the two classical languages of Europe revolutionized the perception of linguistic relationships.

Speaking to the Asiatick Society in Calcutta on February 2, 1786, the English Orientalist and jurist Sir William Jones (1746-1794) uttered his now famous pronouncement: The Sanskrit language, whatever be its antiquity, is of a wonderful structure; more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either, yet bearing to both of them a stronger affinity, both in the roots of verbs and in the forms of grammar, than could possibly have been produced by accident; so strong, indeed, that no philologer could examine them all three, without believing them to have sprung from some common source, which, perhaps, no longer exists.

Of course, the fact that certain languages present similarities among themselves does not necessarily mean they are related. Some similarities may be accidental: the Greek verb “to breathe,” “blow,” has a root pneu-, and in the language of the Klamath of Oregon the verb “to blow” is pniw-, but these languages are not remotely related. Other similarities may reflect universal or near-universal features of human language: in the languages of most countries where the bird is known, the cuckoo has a name derived from the noise it makes. A vast number of languages around the globe have “baby talk” words like mama and papa. Finally, languages commonly borrow words and other features from one another, in a whole gamut of ways ranging from casual or chance contact to learned coinages of the kind that English systematically makes from Latin and Greek.

But where all of these possibilities must be excluded, the comparatist assumes genetic filiation: descent from a common ancestor. In the case of Indo-European, as Sir William Jones surmised over two centuries ago, that ancestor no longer exists. It has been rightly said that the comparatist has one fact and one hypothesis. The one fact is that certain languages present similarities among themselves so numerous and so precise that they cannot be attributed to chance and of such a kind that they cannot be explained as borrowings or as universal features. The one hypothesis is that these languages must then be the result of descent from a common original.

In the early part of the 19th century, scholars set about systematically exploring the similarities observable among the principal languages spoken now or formerly in the regions from Iceland and Ireland in the west to India in the east and from Scandinavia in the north to Italy and Greece in the south. They were able to group these languages into a family that they called Indo-European (the term first occurs in English in 1813, though in a sense slightly different from today’s). The similarities among the different Indo-European languages require us to assume that they are the continuation of a single prehistoric language, a language we call Indo-European or Proto-Indo-European. In the words of the greatest Indo-Europeanist of his age, the French scholar Antoine Meillet (1866-1936), “We will term Indo-European language every language which at any time whatever, in any place whatever, and however altered, is a form taken by this ancestor language, and which thus continues by an uninterrupted tradition the use of Indo-European.”

The dialects or branches of Indo-European still represented today by one or more languages are Indic and

Iranian, Greek, Armenian, Slavic, Baltic, Albanian, Celtic, Italic, and Germanic. The present century has seen the addition of two branches to the family, both of which are extinct: Hittite and other Anatolian languages, the earliest attested in the Indo-European family, spoken in what is now Turkey in the second and first millennia B.C.; and the two Tocharian languages, the easternmost of Indo-European dialects, spoken in Chinese Turkistan (modern Xinjiang Uygur) in the first millennium A.D.

English is the most prevalent member of the Indo-European family, the native language of nearly 350 million people and the most important second language in the world. It is one of many direct descendants of Indo-European, one of whose dialects became prehistoric Common Germanic, which subdivided into dialects of which one was West Germanic; this in turn broke up into further dialects, one of which emerged into documentary attestation as Old English. From Old English we can follow the development of the language directly, in texts, down to the present day.

This history is our linguistic heritage; our ancestors, in a real cultural sense, are our linguistic ancestors. But it must be stressed that linguistic heritage, while it may tend to correspond with cultural continuity, does not imply genetic or biological descent. Linguists use the phrase “genetically related” to refer simply to languages descended from a common ancestor. The transmission of language by conquest, assimilation, migration, or any other ethnic movement is a complex and enigmatic process that this discussion does not propose to examine—beyond the general proposition that in the case of Indo-European no genetic conclusions can or should be drawn.

Although English is a member of the Germanic branch of Indo-European and retains much of the basic structure of its origin, it has an exceptionally mixed lexicon. During the 1400 years of its documented history, it has borrowed extensively and systematically from its Germanic and Romance neighbors and from Latin and Greek, as well as more sporadically from other languages (compare the Appendix of Semitic Roots in English below, pages 2062-2068). At the same time, it has lost the great bulk of its original Old English vocabulary. However, the inherited vocabulary, though now numerically a small proportion of the total, remains the genuine core of the language; all of the 100 words shown to be the most frequent in the Corpus of Present-Day American English, also known as the Brown Corpus, are native words; and of the second 100, 83 are native. A children’s tale like *The Little Red Hen*, for example, contains virtually no loanwords.

Yet precisely because of its propensity to borrow from ancient and modern Indo-European languages, especially those mentioned above but including nearly every other member of the family, English has in a way replaced much of the Indo-European lexicon it lost. Thus, while the distinction between native and borrowed vocabulary remains fundamentally important, more than 50 percent of the basic roots of Indo-European as represented in Julius Pokorny’s *Indogermanisches Etymologisches Wörterbuch* [Indo-European Etymological Dictionary] (Bern, 1959) are represented in Modern English by one means or the other. Indo-European therefore looms doubly large in the background of our language. ...

The comparative method—what we have called the comparatist’s “one fact and one hypothesis”—remains today the most powerful device for elucidating linguistic history. When it is carried to a successful conclusion, the comparative method leads not merely to the assumption of the previous existence of an antecedent common language but to a reconstruction of all the salient features of that language. In the best circumstances, as with Indo-European, we can reconstruct the sounds, forms, words, even the structure of sentences—in short, both grammar and lexicon—of a language spoken before the human race had invented the art of writing. It is worth reflecting on this accomplishment. A reconstructed grammar and dictionary cannot claim any sort of completeness, to be sure, and the reconstruction may always be changed because of new data or better analysis. But it remains true, as one distinguished scholar has put it, that a reconstructed protolanguage is “a glorious artifact, one which is far more precious than anything an archaeologist can ever hope to unearth.”

An Example of Reconstruction

Before proceeding with a survey of the lexicon and culture of the Indo-Europeans, it may be helpful to give a concrete illustration of the method used to reconstruct the Proto-Indo-European vocabulary and a brief description of some of the main features of the Proto-Indo-European language. The example will serve as an introduction to the comparative method and indicate as well the high degree of precision that the techniques of reconstruction permit.

A number of Indo-European languages show a similar word for the kinship term “daughter-in-law”: Sanskrit *snu*, Old English *snoru*, Old Church Slavonic *snkha* (Russian *snokhá*), Latin *nurus*, Greek *nuós*, and Armenian *nu*. All of these forms, called cognates, provide evidence for the phonetic shape of the prehistoric Indo-European word for “daughter-in-law” that is their common ancestor. Sanskrit, Germanic, and Slavic agree in showing an Indo-European word that began with *sn-*. We know that an Indo-European *s* was lost before *n* in other words in Latin, Greek, and Armenian, so we can confidently assume that Latin *nurus*, Greek *nuós*, and Armenian *nu* also go back to an Indo-European **sn-*. (Compare Latin *nix* [stem *niv-*], “snow,” with English *SNOW*, which preserves the *s*.) This principle is spoken of as the regularity of sound correspondences; it is basic to the sciences of etymology and comparative linguistics.

Sanskrit, Latin, Greek, and Armenian agree in showing the first vowel as *-u-*. We know from other examples that Slavic regularly corresponds to Sanskrit *u* and that in this position Germanic *o* (of Old English *snoru*) has been changed from an earlier *u*. It is thus justifiable to reconstruct an Indo-European word beginning **snu-*.

For the consonant originally following **snu-*, closer analysis is required. The key is furnished first by the Sanskrit form, for we know there is a rule in Sanskrit that *s* always changes to *sh* (a *sh*-like sound) after the vowel *u*. Therefore a Sanskrit *snu-* must go back to an earlier **snus-*. In the same position, after *u*, an old *-s-* changes to *kh* (like the *ch* in Scottish *loch* or German *ach*) in Slavic; hence the Slavic word, too, reflects **snus-*. In Latin always, and in Germanic under certain conditions, an old *-s-* between vowels changed to *-r-*. For this reason Latin *nurus* and Old English *snoru* may go back to older **snus-* (followed by a vowel) as well. In Greek and Armenian, on the other hand, an old *-s-* between vowels disappeared entirely, as we know from numerous instances. Greek *nuós* and Armenian *nu* (stem *nuo-*) thus regularly presuppose the same earlier form, **snus-* (followed by a vowel). All the comparative evidence agrees, then, on the Indo-European root form **snus-*.

For the ending, the final vowels of Sanskrit *snu*, Old English *snoru*, and Slavic *snkha* all presuppose earlier *-os* (**snus-*), which is the ordinary feminine ending of these languages. On the other hand, Latin *nurus*, Greek *nuós*, and Armenian *nu* (stem *nuo-*) all regularly presuppose the earlier ending **-os* (**snus-os*). We have an apparent impasse; but the way out is given by the gender of the forms in Greek and Latin. They are feminine, even though most nouns in Latin *-us* and Greek *-os* are masculine.

Feminine nouns in Latin *-us* and Greek *-os*, since they are an abnormal type, cannot have been created afresh; they must have been inherited. This suggests that the original Indo-European form was **snusos*, of feminine gender. On the other hand, the commonplace freely formed ending for feminine nouns was **-os*. It is reasonable to suggest that the three languages Sanskrit, Germanic, and Slavic replaced the peculiar feminine ending **-os* (because that ending was normally masculine) with the normal feminine ending **-*, and thus that the oldest form of the word was **snusos* (feminine).

One point remains to be ascertained: the accent. Of those four language groups that reflect the Indo-European accent—Sanskrit, Greek, (Balto-)Slavic, and Germanic—the first three agree in showing a form accented on the last syllable: *snu*, *nuós*, *snokhá*. The Germanic form is equally precise, however, since the rule is that old *-s-* went to *-r-* (Old English *snoru*) only if the accented syllable came after the *-s-*. On this basis we may add the finishing touch to our reconstruction: the full form of the word for “daughter-in-law” in Indo-European is **snusós*.

It is noteworthy that no single language in the family preserves this word intact. In every language, in every tradition in the Indo-European family, the word has been somehow altered from its original shape. It is the comparative method that permits us to explain the different forms in this variety of languages by the reconstruction of a unitary common prototype, a common ancestor.

[Omitted here are a few pages on the reconstruction of Proto-Indo-European grammar.]

Lexicon and Culture

The reconstruction of a protolanguage—the common ancestor of a family of spoken or attested languages—has a further implication. Language is a social fact; languages are not spoken in a vacuum but by human beings living in a society. When we have reconstructed a protolanguage, we have also necessarily established the existence of a prehistoric society, a speech community that used that protolanguage. The existence of Proto-Indo-European presupposes the existence, in some fashion, of a society of Indo-Europeans. Language is intimately linked to culture in a complex fashion; it is at once the expression of culture and a part of it. Especially the lexicon of a language—its dictionary—is a face turned toward culture. Though by no means a perfect mirror, the lexicon of a language remains the single most effective way of approaching and understanding the culture of its speakers. As such, the contents of the Indo-European lexicon provide a remarkably clear view of the whole culture of an otherwise unknown prehistoric society.

The evidence that archaeology can provide is limited to material remains. But human culture is not confined to material artifacts. The reconstruction of vocabulary can offer a fuller, more interesting view of the culture of a prehistoric people than archaeology precisely because it includes nonmaterial culture.

Consider the case of religion. To form an idea of the religion of a people, archaeologists proceed by inference, examining temples, sanctuaries, idols, votive objects, funerary offerings, and other material remains. But these may not be forthcoming; archaeology is, for example, of little or no utility in understanding the religion of the ancient Hebrews. Yet, for the Indo-European-speaking society, we can reconstruct with certainty the word for “god,” *deiw-os, and the two-word name of the chief deity of the pantheon, *dyeu-pter- (Latin Iupiter, Greek Zeus patr, Sanskrit Dyau pitar, and Luvian Tatis Tiwaz). The forms *dyeu- and *deiw-os are both derivatives of a root dyeu-, meaning “to shine,” which appears in the word for “day” in numerous languages (Latin dis; but English DAY is from a different root). The notion of deity was therefore linked to the notion of the bright sky.

The second element of the name of the chief god, *dyeu-pter-, is the general Indo-European word for FATHER, used not in the sense of father as parent but with the meaning of the adult male who is head of the household, the sense of Latin pater familias. For the Indo-Europeans the society of the gods was conceived in the image of their own society as patriarchal. The reconstructed words *deiw-os and *dyeu-pter- alone tell us more about the conceptual world of the Indo-Europeans than a roomful of graven images.

The comparative method enables us to construct a basic vocabulary for the society of speakers of Proto-Indo-European that extends to virtually all aspects of their culture. This basic vocabulary is, to be sure, not uniform in its attestation. Most Indo-European words are found only in some of the attested languages, not in all, which suggests that they may have been formed at a period later than the oldest common Indo-European we can reconstruct. There are also dialectal words that are limited in the area of their extension, as in the case of an important sociological term such as the word for “people,” teut-, which is confined to the western branches: Italic, Celtic, and Germanic. (It is the base of German Deutsch and of DUTCH and TEUTONIC.) In cases such as these, where a word is attested in several traditions, it is still customary to call it Indo-European, even though it may not date from the remotest reconstructible time. It is

in this sense, universally accepted by scholars, that the term Indo-European has been used in this Dictionary.

We may examine the contents of this Indo-European lexicon, which aside from its inherent interest permits us to ascertain many characteristics of Indo-European society. It is remarkable that by far the greater part of this reconstructed vocabulary is preserved in native or borrowed derivatives in Modern English.

General Terms. It is appropriate to begin with a sampling of basic terms that have no special cultural value but attest to the richness of the tradition. All are widespread in the family. There are two verbs expressing existence, *es-* and *bheu-*, found in English IS, Latin *esse*, and English BE, Latin *fu-trus* (FUTURE), respectively. There are verbs meaning “to sit” (*sed-*), “to lie” (*legh-*, *kei-1*), and “to stand” (*st-*). There are a number of verbs of motion, like *gw-*, “to come,” *ei-*, “to go,” *ter-2*, “to cross over,” *sekw-1*, “to follow,” *kei-2*, “to set in motion,” and the variants of “rolling or turning motion” in *wel-2*, *wer-2*, and *kwel-1*.

The notion of carrying is represented by the widespread root *bher-1* (BEAR1), found in every branch except Anatolian. This root is noteworthy in that it formed a phrase *n-men- bher-*, “to bear a name,” which is reconstructible from several traditions, including English. This phrase formed a counterpart to *n-men- dh-*, “to give a name,” with the verb *dh-*, “to set, put,” in Sanskrit, Greek, and Slavic tradition. The persistence of these expressions attests the importance of the name-giving ritual in Indo-European society. For the notions of eating and drinking, the roots *ed-* and *p(i)-* are most widespread. The metaphor in “drunk, intoxicated,” seems to have been created independently a number of times in the history of the Indo-European languages; Latin *brius*, “drunk” (INEBRIATED), was without etymology until a cognate turned up in the Hittite verb meaning “to drink”; both are derived from the root *egwh-*.

The verb “to live” was *gwei-*; it formed an adjective **gw-wos*, “alive,” which survives in English QUICK, whose original sense is seen in the biblical phrase the quick and the dead. For the notion of begetting or giving birth there are two roots, *tek-* and the extremely widely represented *gen-*, which appears not only as a verb but also in various nominal forms like **gen-os*, “race,” and the prototypes of English KIN and KIND.

A number of qualitative adjectives are attested that go back to the protolanguage. Some come in semantic pairs: *sen-*, “old,” and *newo-*, “new”; also *sen-*, “old,” and *yeu-*, “youthful vigor”; **tenu-*, “thin” (under *ten-*), and *tegu-*, “thick”; *gwer-1*, “heavy,” and *legwh-*, “light.” There are also the two prefixes (e)*su-*, “good, well-,” and *dus-*, “bad, ill-,” in the Greek forms borrowed as EU- and DYS-. But normally adjectives denoting value judgments like “good” and “bad” are not widespread in the family and are subject to replacement; English good, Latin *bonus*, and Greek *agathos* have nothing to do with one another, and each is confined to its own branch of the family.

The personal pronouns belong to the very earliest layer of Indo-European that can be reached by reconstruction. Their forms are unlike those of any other paradigms in the language; they have been called the “Devonian rocks” of Indo-European. The lack of any formal resemblance in English between the subject case (nominative) I and the object case (accusative) ME is a direct and faithful reflection of the same disparity in Proto-Indo-European, respectively *eg* (**eg*) and *me-1*. The other pronouns are *tu-* (**te-*), “thou,” *nes-2* or *we-*, “we,” and *yu-*, “you.” No pronouns for the third person were in use.

The cognate languages give evidence for demonstrative and interrogative pronouns. Both have also developed into relative pronouns in different languages. The most persistent and widespread pronominal stems are *to-* and *kwo-*, which are preserved in the English demonstrative and interrogative-relative pronouns and adverbs beginning with *th-* (THIS, THEN) and *wh-* (WHO, WHICH, WHEN).

All the languages of the family show some or all of the Indo-European numerals. The language had a decimal system. There is complete agreement on the numerals from two to ten: *dwo-* (**duw*), *trei-* (**treyes*), *kwetwer-* (**kwetwores*), *penkwe*, *s(w)eks*, *sept*, *okt(u)*, *new*, *dek*. For the numeral “one” the dialects vary.

We have a root *sem-1* in some derivatives, while the western Indo-European languages Germanic, Celtic, and Latin share the form *oi-no-*. The word for “hundred,” formed from *dek*, “ten,” was **(d)ktom*. No common form for “thousand” or any other higher number can be reconstructed for the protolanguage. The deeper origins of the names of the numbers are purely speculative. They were occasionally subject to renewal: “four” in the most ancient branch, Anatolian, is a derivative of *mei-2*, “small,” extended to **meiu-*: the meaning was “little (hand),” minus the thumb.

Nature and the Physical Environment. A large number of terms relating to time, weather, seasons, and natural surroundings can be reconstructed from the daughter languages, some of which permit certain inferences about the homeland of the Indo-European-speaking people before the period of migrations took them to the different localities where they historically appear.

There are several words for “year,” words that relate to differing conceptions of the passage of time. Such are *yr-* (YEAR), related to words denoting activity; *wet-2*, the year as a measure of the growth of a domestic animal (WETHER, basically “yearling”); and *at-* in Latin *annus* (ANNUAL), from a verb meaning “to go,” referring to the year as passage or change. The seasons were distinguished in Indo-European: *ghei-*, “winter,” *wes-*, “spring,” and *sem-2*, “summer.”

The lunar month was a unit of time. The word for “month” (**mns-*) is in some languages identical with the word for “moon,” in others a derivative of it, as in Germanic **mnth-* remade from **mns-*. “Moon/month” in Indo-European is a derivative of the verb “to measure,” *m-2*. The adjective *sen-* (**seno-*), “old,” was also used for the waning of the moon, on the evidence of several languages.

The other celestial bodies recognized were the sun, *swel-*, and the stars, *ster-3*. There is evidence from several traditions for similar designations of the constellation Ursa Major, though these may not go back to the earliest Indo-European times. The movement of the sun dictated the names for the points of the compass. The word EAST is derived from the verbal root *aus-*, “to shine,” as is the word for “dawn” (Latin *Aurora*), deified since Indo-European times on the evidence of Greek, Lithuanian, and Sanskrit. The setting sun furnished the word for “evening” and “west”: *wes-pero-*. The most widespread of the words for “night” was *nekw-t-*. Words for “day” include *agh-* and such dialectal creations as Latin *dis*.

The Indo-Europeans knew snow in their homeland; the word *sneigwh-* is nearly ubiquitous. Curiously enough, however, the word for “rain” varies among the different branches; we have words of differing distribution such as *seu-2*.

Conceptions of the sky, or heaven, are varied in the different descendant languages. Although, as we have seen, the root *dyeu-* occurs widely as the divine bright sky, certain languages viewed the heavens as basically cloudy; *nebh-* is “sky” in Balto-Slavic and Iranian, but “cloud” elsewhere. Another divine natural phenomenon is illustrated by the root (*s*)*ten-*, “thunder,” and the name of the Germanic god THOR.

A word for the earth can be reconstructed as *dhghem-* (**dheghom*). Other terms of lesser distribution, like *kaito-*, designated forest or uncultivated land. Swampy or boggy terrain was apparently also familiar, judging from the evidence of the root *pel-1*. But since none of these runs through the whole family, it would not be justifiable to infer anything from them regarding the terrain of a hypothetical original homeland of the Indo-Europeans.

On the other hand, from the absence of a general word for “sea” we may deduce that the Indo-Europeans were originally an inland people. The root *mori-* is attested dialectally (MERE2), but it may well have referred to a lake or other smaller body of water. Transportation by or across water was, however, known to the Indo-Europeans, since most of the languages attest an old word for “boat” or “ship,” *nu-*, probably propelled by oars or a pole (*er-*, “to row”).

The names for a number of different trees are widely enough attested to be viewed as Proto-Indo-European in date. The general term for “tree” and “wood” was *deru-*. The original meaning of the root was doubtless “to be firm, solid,” and from it is derived not only the family of English TREE but also

that of English TRUE. Note that the semantic evolution has here been from the general to the particular, from “solid” to “tree” (and even “oak” in some dialects), and not the other way around.

There are very widely represented words for the beech tree, bhgo-, and the birch, bherg-. These formerly played a significant role in attempts to locate the original homeland of the Indo-Europeans, since their distribution is geographically distinct. But their ranges may have changed over several millennia, and, more important, the same word may have been applied to entirely different species of tree. Thus the Greek and Latin cognates of BEECH designate a kind of oak found in the Mediterranean lands.

Indo-European had a generic term for “wild animal,” ghwer- (FERAL). The wolf was known and evidently feared; its name is subject to taboo deformation (the conscious alteration of the form of a tabooed word, as in English gol-derned, dad-burned). The variant forms wkwo-, *lupo-, and wp-- (also “fox”) are all found. The name of the bear was likewise subject to a hunter’s taboo: the animal could not be mentioned by its real name on the hunt. The southern Indo-European languages have the original form, tko- (Latin ursus, Greek arktos), but all the northern languages have a substitute term. In Slavic the bear is known as the “honey-eater,” in Germanic the “brown one” (BEAR2, and note also BRUIN).

The BEAVER was evidently known (*bhi-bhru-, from bher-2), at least in Europe, and the MOUSE (ms-) then as now was ubiquitous. The HARE, probably named from its color (kas-, “gray”), is also widespread. Domesticated animals are discussed below.

A generic term for “fish” existed, *dhgh- (also *peisk- in Europe). The salmon (laks-) and the eel (*angwi-) were known, the latter also in the meaning “snake.” Several birds were known, including the crane (ger-2) and the eagle (or-). The generic term for “bird” was awi- (Latin avis), and from this was derived the well-represented word for “egg,” *wyo-.

The names for a number of insects can be reconstructed in the protolanguage, including the WASP (*wops), the hornet (*ks-ro-, a derivative of ker-1, “head,” from the shape of the insect), and the fly (*m-). The BEE (bhei-) was particularly important as the producer of honey, for which we have the common Indo-European name melit- (MILDEW). Honey was the only source of sugar and sweetness (swd-, “sweet,” is ancient), and notably was the base of the only certain Indo-European alcoholic beverage, medhu-, which in different dialects meant both MEAD (“wine” in Greece and Anatolia) and “honey.”

People and Society. For human beings themselves, a number of terms were employed, with different nuances of meaning. The usual terms for “man” and “woman” are w-ro- (VIRILE) and *gwen- from gwen- (GYNECOLOGY). For “person” in general, the oldest word was apparently *manu- (man-1), as preserved in English MAN (nominative plural *manw-es, becoming Germanic *mann-iz, becoming Old English menn, MEN) and in Slavic and Sanskrit. A word for “woman” recently identified in Anatolian Luvian, *esr, combining form *-s(o)r-, formed the feminine of the numbers “three” and “four,” as well as appearing in swesor-, sister, and the Latin word for “wife.” The Germanic word for “woman” (WIFE) was completely isolated until a cognate was recently identified in Tocharian. For its curious semantic history, see ghwbh-. In other dialects we find interesting metaphorical expressions that attest a set of religious concepts opposing the gods as immortal and celestial to humankind as mortal and terrestrial. Humans are either *mtos, “mortal” (mer-, “to die”), or *dhghomyo-, “earthling” (dhghem-, “earth”).

The parts of the body belong to the basic layer of vocabulary and are for the most part faithfully preserved in Indo-European languages. Such are ker-1, “head” (also kaput- in dialects, doubtless a more colloquial word), genu-2, “chin, jaw,” dent-, “tooth,” okw-, “to see,” whence “eye,” ous-, “ear,” nas-, “nose,” leb-, “lip,” bhr-, “brow,” s-, “mouth,” and dgh-, “tongue.” The word for “foot” is attested everywhere (ped-), while that for “hand” differs according to dialect; the most widespread is *ghes-r (ghes-, CHIRO-).

Internal organs were also named in Indo-European times, including the heart (kerd-), womb (*gwelbh-), gall (ghel-2), and liver (ykw). The male sexual organs, pes- and *ergh-, are common patrimony, as is ors-,

“backside.”

A large number of kinship terms have been reconstructed. They are agreed in pointing to a society that was patriarchal, patrilocal (the bride leaving her household to join that of her husband’s family), and patrilineal (descent reckoned by the male line). “Father” and “head of the household” are one: pter-, with his spouse, the mter-. These terms are ultimately derived from the baby-talk syllables pa(pa) and ma(ma), but the kinship-term suffix -ter- shows that they had a sociological significance over and above this in the Indo-European family. Related terms are found for the grandfather (awo-) and the maternal uncle (*awon-), and correspondingly the term nept- (feminine *nept-) applied to both grandson (perhaps originally “daughter’s son”) and nephew (“sister’s son”). English SON and DAUGHTER clearly reflect Indo-European *snu- (from seu-1) and dhugter-. Male blood relations were designated as bhrter- (BROTHER), which doubtless extended beyond those with a common father or mother; the Greek cognate means “fellow member of a clan-like group.” The female counterpart was swesor- (SISTER), probably literally “female member of the kin group,” with a word for woman (*esr) and the root s(w)e-, designating the self, one’s own group.

While there exist many special terms for relatives by marriage on the husband’s side, like daiwer-, “husband’s brother,” fewer corresponding terms on the wife’s side can be reconstructed for the protolanguage. The terms vary from dialect to dialect, providing good evidence for the patrilocal character of marriage.

The root dem- denoted both the house (Latin domus) and the household as a social unit. The father of the family (Latin pater familias) was the “master of the house” (Greek despots) or simply “he of the house” (Latin dominus). A larger unit was the village, designated by the word weik-1. The community may have been grouped into divisions by location; this seems to be the basic meaning of the *d-mo- (from d-) in Greek dmos, people (DEMOCRACY).

Human settlements were frequently built on the top of high places fortified for defense, a practice taken by Indo-European migrants into central and western Europe and into Italy and Greece, as confirmed by archaeological finds. Words for such fortified high places vary; there are pel-3, variant *poli- (ACROPOLIS), the Celtic word for “ring fort,” *dh-no- (dheu-, TOWN), and bhergh-2 (-burg in place names).

Economic Life and Technology. A characteristic of Indo-European and other archaic societies was the principle of exchange and reciprocal gift-giving. The presentation of a gift entailed the obligation of a counter-gift, and the acts of giving and receiving were equivalent. They were simply facets of a single process of generalized exchange, which assured the circulation of wealth throughout the society.

This principle has left clear traces in the Indo-European vocabulary. The root d- of Latin dnre means “to give” in most dialects but in Hittite means “to take.” The root nem- is “to distribute” in Greek (NEMESIS), but in German it means “to take,” and the cognate of English GIVE (ghabh-) has the meaning “to take” in Irish. The notion of exchange predominates in the roots mei-1 and gher-2. The GUEST (ghos-ti-) in Indo-European times was the person with whom one had mutual obligations of hospitality. But he was also the stranger, and the stranger in an uncertain and warring tribal society may well be hostile: the Latin cognate hostis means “enemy.” The Indo-Europeans evidently practiced both ransom and enslavement of enemy captives: kemb-, “to exchange,” furnishes the Irish for “captive,” and the roots *algwh-, “to fetch a price,” and wes-3, “to sell,” refer in the oldest texts to traffic in people, as does the root *des-.

The Indo-Europeans practiced agriculture and the cultivation of cereals. We have several terms of Indo-European antiquity for grain: g-no- (CORN), yewo-, and *pro-, which may have designated wheat or spelt. Of more restricted distribution is bhares-, “barley.” Such terms for cereals could originally have designated the wild rather than cultivated varieties. A root for grinding is attested, mel- (MEAL2, MILL). Another Indo-European term is s-, “to sow,” not found in Greek, Armenian, or Indo-Iranian. The verb “to plow” is *ar-, again a common European term, with the name of the plow, *ar-trom. Other related roots are

yeug-, “to yoke,” and kerp-, “to gather, pluck” (HARVEST). The root gwer-1, “heavy,” is the probable base of *gwer-n-, “hand mill” (QUERN). The term is found throughout the Indo-European-speaking world, including India.

Stockbreeding and animal husbandry were an important part of Indo-European economic life. The names for all the familiar domesticated animals are present throughout the family: gwou-, “cow” and “bull,” owi-, “sheep,” *agwh-no-, “lamb,” s-, “swine,” and porko-, “farrow.” The domestic dog was ancient (kwon-). The common Indo-European name of the horse, ekwo-, is probably derived from the adjective ku-, “swift.” The expansion and migration of the Indo-European-speaking peoples in the later third and early second millennia B.C. is intimately bound up with the diffusion of the horse. The verbal root dem-, “to force,” acquired the special sense of “to tame horses,” whence English TAME. Stock was a source and measure of wealth; the original sense of peku- was probably “wealth, riches,” as in Latin pecunia, which came to mean “wealth in cattle” and finally “cattle” proper.

The verbal roots p-, “to protect,” and kwel-1, “to revolve, move around,” are widely used for the notion of herding or watching over stock, and it is interesting to note that the metaphor of the god or priest watching over humankind like a shepherd (Latin pstor) over his flock occurs in many Indo-European dialects as well as outside Indo-European.

Roots indicating a number of technical operations are attested in most of the languages of the family. One such is teks-, which in some dialects means “to fabricate, especially by working with an ax,” but in others means “to weave” (TEXTILE). The root dheigh-, meaning “to mold, shape,” is applied both to bread (DOUGH) and to mud or clay, whence words for both pottery and mud walls (Iranian *pari-daiza-, “walled around,” borrowed into Greek as the word that became English PARADISE.)

The house (dem-) included a dhwer- (DOOR), which probably referred originally to the gateway into the enclosure of the household. The house would have had a central hearth, denoted in some languages by as- (properly a verb, “to burn”). Fire itself was known by two words, one of animate gender (*egni-, Latin ignis) and one neuter (paw, Greek pr).

Indo-European had a verb “to cook” (pekw-, also having the notion “to ripen”). Other household activities included spinning ((s)n-), weaving (webh-), and sewing (sy-). The verb wes-2 (WEAR) is ancient and everywhere attested.

The Indo-Europeans knew metal and metallurgy, to judge from the presence of the word *ayes- in Sanskrit, Germanic, and Latin. The term designated copper and perhaps bronze. Iron is a latecomer, technologically, and the terms for it vary from dialect to dialect. Latin has ferrum, while the Germanic and Celtic term was *isarno-, properly “holy (metal),” from eis-, perhaps so called because the first iron was derived from small meteorites. Gold, ghel-2, also dialectally *aus-o-, probably “yellow (metal)” or “shining,” was known from ancient times, though the names for it vary. Silver was arg-, with various suffixes, doubtless meaning “white (metal).”

It was probably not long before the dispersal of the Proto-Indo-European community that the use of the wheel and wheeled transport was adopted. Despite the existence of widespread word families, most terms relating to wheeled vehicles seem to be metaphors formed from already existing words, rather than original, unanalyzable ones. So NAVE, or hub of the wheel (nobh-), is the same word as NAVEL. This is clearly the case with WHEEL itself, where the widespread *kw(e)-kwl-o- is an expressive derivative of a verb (kwel-1) meaning “to revolve or go around.” Other words for “wheel” are dialectal and again derivative, such as Latin rota from a verbal root ret-, “to run.” The root wegh-, “to go, transport in a vehicle” (WAGON), is attested throughout the family, including now Hieroglyphic Luvian. This evidence for the late appearance of the wheel agrees with archaeological findings that date the distribution of the wheel in Europe to the latter part of the fifth millennium B.C., the latest possible date for the community of Proto-Indo-European proper.

Ideology. We pointed out earlier that the great advantage of the lexicon as an approach to culture and history

is that it is not confined to material remains. Words exist for natural phenomena, objects, and things that can be found in nature or identified from their material remains. But there are also words for ideas, abstractions, and relations. The Indo-European protolanguage is particularly rich in such vocabulary items. A number of verbs denoting mental activity are found. The most widespread is *men-1*, preserved in English MIND. Other derivatives refer to remembering, warning (putting in mind), and thinking in general. A root notable for the diversity of its derivatives is *med-*, which may be defined as “to take the appropriate measures.” Reflexes of this verb range in meaning from “rule,” through “measure” (MODICUM, from Latin), to “physician” (Latin *medicus*).

The notions of government and sovereignty were well represented. The presence of the old word for tribal king, **reg-* (*reg-*), only in the extreme east (RAJAH) and the extreme west (Latin *rx*, Celtic *-rx*) virtually guarantees its presence in the earliest Indo-European society. (Here is an example of the phenomenon of marginal or peripheral conservation of a form lost in the central innovating area.) Roman tradition well attests the sacral character of kingship among the Indo-Europeans. The functions of king and priest were different aspects of a single function of sovereignty. It is this that is symbolized by the divine name **dyeu-pter-* (*dyeu-*), the chief of the gods.

Another aspect of the function of sovereignty is the sphere of the law. There is an old word, *yewes-*, probably for “religious law,” in Latin *is*. Latin *lx* is also ancient (*leg-* or *leg-*), though the details of its etymology are uncertain. In a society that emphasized the principle of exchange and reciprocity, it is scarcely surprising that the notion of contractual obligation should be well represented. Several roots specify the notion of “bond”: *bhendh-*, *ned-*, and *leig-*, all of which have derivatives with technical legal meanings in various languages. The root *dlegh-* furnishes Germanic words meaning “to engage oneself” (PLEDGE), as well as the Irish word for “law.” The verb *kwei-1* meant “to pay compensation for an injury.” Its derivative noun **kwoin* was borrowed from Doric Greek into the most ancient Roman law as Latin *poena* and *pnre*, whence English PUNISH and a host of legal terms. The Greek word for “justice,” *dik*, is derived from the notion of “boundary marker” (*deik-*).

Indo-European is particularly rich in religious vocabulary. An important form, which is also found only in the peripheral languages Sanskrit, Latin, and Celtic, is the two-word metaphoric phrase **kred-dh-*, literally “to put (*dh-*) heart (*kerd-*).” The two words have been joined together in the western languages, as in Latin *crd*, “I believe.” Here a term of the most ancient pagan religion has been taken over by Christianity. A common word for religious “formulation,” **bhregh-men-*, may be preserved in Brahmin, a member of the priestly class, from Sanskrit, although the etymology is controversial.

Oral prayers, requests of the deity, and other ritual utterances must have played a significant role in Indo-European religion. We have already seen *prek-* (PRAY), and note also the roots **wegwh-* (in Latin *vovre*, to vow), *sengwh-* (SING), and *gwer-2*, which in Latin *grtia* (GRACE) has had a new life in Christianity.

The root *spend-* has the basic meaning of “to make an offering or perform a rite,” whence “to engage oneself by a ritual act.” Its Latin derivative *spondre* means “to promise” (SPOUSE).

A hint of Indo-European metaphysics appears in the word *aiv-*, “vital force,” whence “long life, the eternal re-creation of life, eternity” (EON). It is noteworthy that the idea of “holy” is intimately bound up with that of “whole, healthy,” in a number of forms: *kailo-* (WHOLE and HOLY) and *sol-*, whence Latin *salvus* (SALVATION). An ancient root relating solely to religion is *sak-* (SACRED).

Finally we may add that poetry and a tradition of poetics are also common patrimony in most of the Indo-European traditions. The hymns of the Rig-Veda are composed in meters related to those used by the Greek poets, and the earliest verse forms found among the Celts and the Slavs go back to the same Indo-European source. Many, perhaps most, of the stylistic figures and embellishments of poetic language that we associate with “classical” poetics and rhetoric can be shown, by the comparative method, to have their roots in Indo-European poetics itself.

A number of metaphorical expressions appear to be creations of ancient, even Indo-European date. Latin *terra*, “earth” (TERRAIN), is historically a transferred epithet, “dry (land),” from *ters-*, “to dry,” whose English descendant is THIRST. One securely reconstructible Indo-European place name rests squarely on a metaphor: *Pwer-i in Greek *Peri* (PIERIAN SPRING) and *wer-ion-, the prehistoric Celtic name for Ireland (Gaelic *Éire*, *Érin*); both continue an Indo-European feminine adjective *pwer-i, “fat,” metaphorically “fertile,” from *pei-*, the same root that gives English FAT.

Most interesting are the cases where it is possible to reconstruct from two or more traditions (usually including Homer and the Rig-Veda) a poetic phrase or formula consisting of two members. Such are the expressions “imperishable fame,” *klewos dhgwhitom (*kleu-*, *dhgwhei-); “holy (mental) force,” *isrom menos (*eis-*, *men-1*); and the “weaver (or crafter) of words,” the Indo-European poet himself, *wekw m teks-on (*wekw-*, *teks-*). The immortality of the gods (*-mto-, from *mer-*) is emphasized anew by the vivid verb phrase *nek-1 ter-2*, “to overcome death,” appearing in the Greek word *nektar*, the drink of the gods. And at least one three-member formula (in the sense of the word in traditional oral poetry) can be reconstructed for the poetic language of prayer, on the combined evidence of four languages, Latin, Umbrian, Avestan, and Sanskrit: “Protect, keep safe, man and cattle!” (*p- w-ro- peku*).

Conclusion

This survey has touched on only a representative sample of the available reconstructed Indo-European lexicon and has made no attempt to cite the mass of evidence in all the languages of the family, ancient and modern, for these reconstructions.

For this essay, we have given only the information about Indo-European culture that could be derived from language and lexicon alone. Other disciplines serve to fill out and complete the picture to be gathered from the study of vocabulary: archaeology, prehistory, comparative religion, and the history of institutions. ...

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