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Sumerian-Ural-Altaic Affinities

by ANDRÁS ZAKAR

The similarity in structure between Sumerian and the Ural-Altaic languages has been pointed out by a number of scholars. As Kramer (1963:306) has put it,

Sumerian is an agglutinative tongue, not an inflected one like Indo-European or Semitic. Its roots, by and large, are invariable. Its basic grammatical unit is the word complex rather than the individual word. Its grammatical particles tend to retain their independent structure rather than become inextricably attached to the word roots. In structure, therefore, Sumerian resembles not a little such agglutinative languages as Turkish, Hungarian, and some of the Caucasian languages.

Lately, Woolley and Hawkes (1964:635), Schmöckel (1962:46), Soden *et al.* (1960:76), Zamarovský (1966:154), and Roux (1964:76) have also directed attention to this characteristic.

The possibility of a genetic relationship between Sumerian and Hungarian—which is related to the Uralic (Finno-Ugric) and Altaic (Turkish) languages—has been under investigation for some years. (Recent works of Hungarian scholars in English on the subject are those of Bobula [1951, 1960, 1966] and some of the articles in the anthology edited by Galgóczy [1968].) Varga (1942) demonstrated the affinity between Sumerian and the Ural-Altaic family from the point of view of grammar. Gosztonyi (1959) showed that Sumerian

grammar can be characterized in terms of 58 points, 55 of which correspond to those of archaic Hungarian, 29 to those of the Turkish languages, 21 to those of the northern Finno-Ugric languages, 24 to the Caucasian languages, 12 to Tibetan, Burman, etc., 9 to Hindu, Munda-Kol (southern Finno-Ugric), 7 to languages of the Pacific, 5 to Sanskrit, and 5 to ancient Semitic, Akkadian, and Babylonian.

Studies of morphemic similarities between Sumerian and the Ural-Altaic languages, following the introduction of the idea of probability in linguistics, began with the work of Dolgopolsky (1964, 1965), who used a method essentially derived from Orbán's (1962) "complex method for the comparison of languages" (a method involving the application of knowledge from related disciplines as to historical relationships between the groups whose languages are to be compared) and concluded that the probability of chance similarity between morphemes in Sumerian and the Ural-Altaic languages is only 0.06-0.17. Hajdú (1966:91-93 and *passim*) refers to and approves this complex method. My own recent research (Zakar 1968) has demonstrated the advantages of combining the complex method of comparison of languages with glottochronology. Using Hymes's (CA 1:3-44, 338-45) 100-word list, I have shown a significant number of correspondences between Sumerian and one or another

of the Ural-Altaic languages. For example, the word for "head" in seven of these languages is as follows: Sumerian *pa*; Turkish *bi, bij, bej*; Vogul *pānk*; Zyrian *pon*; Mordvin *pe*; Finnish *pää*; Hungarian *fej, fő*. In the case of Hungarian in particular, I found a correspondence with Sumerian in 57 words of the 100-word list. This value, on the application of Hymes's logarithmic formula, shows a direct relationship between the two languages. The significance of this finding is the better appreciated in the light of their long-recognized similarity in structure. Csóke (1969) has demonstrated the same regularity of sound changes in Sumerian and in the languages of the Ural-Altaic family. Pass (1964) has argued that Sumerian basic words can be found in varying frequencies at a certain level in a wide variety of languages, and Schedel (1966, 1969) holds that even many cultural words in these languages have their origins in Sumerian.

In view of all this recent work, it is surprising that the possibility of a relationship between Sumerian and the Ural-Altaic language family (and other language groups as well) is not given greater consideration.

[The above Idea was sent for comment to 21 scholars, of whom the following responded: Miguel Civil, Mridula Adenwala Durbin, William H. Jacobsen, Jr., Johann Knobloch, W. P. Lehmann, A. Leo Oppenheim, Robert L. Oswalt, Herbert H. Paper, Joe E. Pierce, Elaine K. Ristinen, Francis Lee Utley, and H. J. Cowan. Their comments are printed below and are followed by a reply from the author.—EDITOR.]

Comments

by MIGUEL CIVIL☆

Chicago, Ill., U.S.A. 21 VII 70

Sumerian has been compared with a wide variety of languages—Caucasian, Polynesian, Indo-European, Tibetan, Chinese, Bantu, Basque, etc.—invariably

with "positive" results (see bibliographies, quite incomplete, in Sollberger 1952 and Oberhuber 1954). All these studies share a basic defect: the Sumerian words are culled from second-hand, mostly uncritical and out-of-date sources, and the authors appear careless in assigning meanings. Furthermore, the fact that the phonemic shape of the

Sumerian roots (mostly monosyllabic) is accessible to us only in a strongly under-differentiating script is conveniently forgotten. No amount of mathematical manipulation can increase the value of a defective list of word correspondences. Since Zakar does not give his word list, it is difficult to tell if he has been able to avoid the pitfalls which

nullify the work of his predecessors. The only example given makes one suspect that he has not. Sumerian *pa* never means "head" (anatomically or figuratively) in any native vocabulary nor in any of its occurrences in literary contexts. The meaning of *pa* is (1) 'branches of a tree' (2) 'feather, wing,' and thus it ought to be compared with Hungarian *ág, toll, or szár*, not with *fej/fejő*. As a counterexperiment I prepared my own version of Hymes's word list for Sumerian and submitted it to a native Hungarian, linguistically trained, colleague. The results were only five or six rather unsatisfactory resemblances. The best ones were Sumerian *bar/bur*, Hungarian *bar(ka)* 'bark' and Sumerian *dal*, Hungarian *sál* 'fly'; the rest were decidedly less solid, of the type Sumerian *kwa/ku*, Hungarian *hal <kala* 'fish'. How Zakar could find 57 correspondences is a mystery. Even accepting with no reservations the validity of the lexicostatistical method, including Bender's (1969) evaluation of chance correspondences—which is something I am unable to do—it does not seem to me that Zakar's suggestion of a relationship between Sumerian and Ural-Altaic deserves "greater consideration."

by MRIDULA ADENWALA DURBIN☆

St. Louis, Mo., U.S.A. 3 VIII 70

In the field of anthropology, there remains a great deal to be desired in regard to the synthesis of evidence of past cultures from different subfields. The Sumerian problem is an example of this shortcoming. Scholars in various disciplines—philology, ancient history, epigraphy, anthropology—have long been puzzled by various unsolved problems related to the Sumerians: (1) their original ethnic affiliation, (2) their homeland, (3) their indigenous contribution to "Sumerian Civilization," (4) the types of cultures they encountered in Mesopotamia at the time of their arrival, (5) their role in the development of a cuneiform writing system, and (6) the genetic affiliation of the Sumerian language.

Hypotheses and proposals suggested by various specialists to solve Sumerian "unknowns" are many, but most of them suffer the major weakness of subjective interpretation of scanty evidence. This weakness, coupled with others, such as not accounting for opponents' arguments, leaves scholars in divided camps.

In such a situation, a depth study of Sumerian, even though only from one standpoint, whether archaeological or linguistic, may provide important insight. Zakar's idea of investigating Sumerian-Ural-Altaic affinities is therefore very welcome. However, the following comments seem pertinent:

1. The division of languages into agglutinating and inflectional refers to only one segment of the total structure of language, namely morphology. Comparable morphology between two languages is not necessarily an indicator of their genetic affiliation.

2. Gosztoni's findings are misleading, as the number of grammatical points and the inclusion of a grammatical point within this crucial index may be a subjective matter. Moreover, certain grammatical features may involve a dependency relationship, and hence the presence of the dependent grammatical feature in two languages becomes insignificant. The interdependency of various grammatical features is not well understood (Hays 1964). Therefore it may be misleading to use any feature count as an indicator of genetic affiliation.

Comparison in terms of syntax must also be approached with caution. All human languages share a portion of the structure called "universal grammar." The relationship between grammatical categories thus is not arbitrary but is governed at some point and to a certain extent by the cognitive modes available to the human mind. The area of grammatical structure involving a direct correlation with universal semantics would also present difficulties in comparative work aimed at tracing genetic relationships.

3. Zakar states "Csöke has demonstrated the same regularity of sound changes in Sumerian and in the languages of Ural-Altaic family." This statement is not clear. If he implies that both languages have phonemes that have changed consistently and regularly, this is in accord with the usual conception of sound change in language, irrespective of genetic affiliation. If he contends that phoneme A in both languages changed to phoneme B in both languages, this may simply reflect certain general rules of sound change that apply to a variety of languages, e.g., generally /s/ changes into /h/ but not vice versa.

4. The geographical position of Sumerian between Ural-Altaic on one hand and Dravidian on the other suggests a further possibility. Various evidences have been offered suggesting a genetic relation between Ural-Altaic and Dravidian. In the course of examining Sumerian-Ural-Altaic relationships, one of the directions which may prove fruitful is the examination of Sumerian and Dravidian. Dravidian connections with Ural-Altaic have been suggested since at least 1913 (Tyler 1968:798). Recently Tyler (1968:800-11) has provided lexical evidence for a relationship between Dravidian and Uralian by presenting 153 sets of etyma related by systematic correspondences. He argues (p. 798):

Borrowing seems unlikely as an explanation for these correspondences. Many of the correspondences are so complex that they can only be explained as the result of a series, of historical changes in each language family, and a fair number involve words for items of everyday use (basic vocabulary) that are generally felt resistant to replacement.

Geographically, Sumerian lies between the Uralic area and the Dravidian area. This suggests that an affiliation of Sumerian with the Ural-Altaic family could occur in one of three different sequences, as shown in Figure 1.

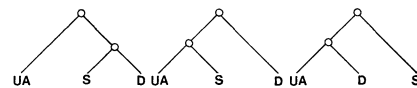


FIG. 1. Possible sequences for affiliation of Sumerian with the Ural-Altaic family.

Two hours of searching in Sumerian (Gordon 1968) and Dravidian (Burrow and Emeneau 1961) dictionaries provided 16 sets of resemblant lexemes (Table 1).

5. The comparative method as developed in historical linguistics is based on sound correspondence. This method has yielded many important results in tracing the histories of languages and their relationships within a linguistic stock. However, the results provided by this method are valid only for a period of time approximating 5,000 years. Languages that diverged more than 5,000 years ago tend to show less obvious similarity—such as morphological and phonetic correspondences. The more distant the time of divergence, the more blurred the surface resemblance will be. If Sumerian diverged from its nearest present-day relative 5,000 or more years ago, the search for phonological correspondences might not even bring out a discernible relationship. In that case, what alternatives are at the disposal of the linguist?

Sound: sound or segment: segment correspondence would be too gross a unit of comparison to be preserved intact over a very long period of time. The comparison of articulatory/acoustic features (e.g., labial:labial, vocalic:vocalic, irrespective of other accompanying features) might provide a clue with deeper time perspective. The assumption behind feature:feature comparison is that certain features of phonology are more conservative and more stable than others. Such an expansion of the comparative method is usually considered taboo by conservative historical linguists. In a field where method instead of goal has been enshrined, many areas of exciting research have long been closed off. One may hope that Zakar will not be bound by traditional methods in the research he proposes.

TABLE 1
 LEXEME RESEMBLANCES IN SUMERIAN AND DRAVIDIAN
 (from Gordon 1968 and Burrow and Emeneau 1961)

SUMERIAN		DRAVIDIAN	
PAGE No.	GLOSS	NO. OF GLOSS AND SOURCE ^a	GLOSS
28	<i>uru</i> 'city'	643 (Tamil)	<i>ūr</i> 'village, town, city'
29	<i>šà</i> 'heart, inside'	2302 (Kannada)	<i>cēgu</i> 'heart, core of a tree'
158	<i>gud</i> 'ox'	1597 (Kannada)	<i>gūli</i> 'bull'
324	<i>a-ba</i> 'whoever, whom' <i>a-ba-ām</i> 'who, whom' <i>a-na-ām</i> 'what' <i>a-na-aš-ām</i> 'why'	4228 (Gondi) (Kui) (Konda)	<i>bōl</i> 'who, which man' <i>bātā</i> 'of what sort' <i>ananju</i> 'what man' <i>ēn</i> 'who'
326	<i>a-šà-(g)</i> 'field'	1629 (Tamil)	<i>cey</i> 'wet field, field'
327	<i>db</i> 'cow'	283 (Telugu)	<i>āvu</i> 'cow'
328	<i>ak</i> 'to do, to make'	282 (Naiki)	<i>ak-</i> 'to do, make'
329	<i>am</i> 'wild ox'	283 (Tamil)	<i>ān</i> 'female of ox'
330	<i>an</i> 'heaven, sky'	4410 (Tamil)	<i>vān</i> 'sky, cloud, rain'
331	<i>arād</i> 'male slave'	342 (Tamil)	<i>āl</i> 'labourer, man, husband'
348	<i>e-šir</i> 'street'	1669 (Tamil)	<i>cēri</i> 'town, village, street'
353	<i>gaba</i> 'breast'	1451 (Telugu)	<i>gubba</i> 'breast'
353	<i>gal</i> 'large, great'	1082 (Tamil)	<i>karumai</i> 'large'
354	<i>gal-la</i> 'vulva'	1016 (Malayalam)	<i>kantu</i> 'vulva'
354	<i>ganam</i> 'sheep'	1799 (Kolami)	<i>gorre</i> 'sheep'
361	<i>gu</i> 'thread'	1809 (Tamil)	<i>kō</i> 'to string, to thread'

^a The word from only one Dravidian language is given, even where more than one Dravidian language had a comparable word.

by WILLIAM H. JACOBSEN, JR. ☆

Reno, Nev., U.S.A. 19 VII 70

It is somewhat difficult to ascertain what the new idea here is that one might discuss. As the author partly indicates, there have been an enormous number of attempts to find a relationship of Sumerian, not only to Uralic and Altaic languages, but to many others also. Part of the difficulty with this presentation is that so many of the sources cited are practically inaccessible—unpublished manuscripts in Hungarian and in Hungary—so that a more extensive treatment embodying full citation of the evidence and more detailed characterization of the sources referred to might have been more appropriate. (One available item cited, though—Bobula 1960—has not one mention of any genetic relationships of Sumerian. I must also point out the devastating critique of Bobula 1951 by Lotz [1952].)

The typological characteristic of being agglutinative, from which the argument starts, is so poorly defined as to be of little significance, as one can immediately see from its application to Caucasian languages as well as to Uralic and Altaic languages. The general structure of Sumerian is really quite different from that of Uralic in many ways. For example, in Uralic languages verb inflection is exclusively by means of

suffixes, whereas in Sumerian the verb complex contains, in addition to suffixes, prefixes of several different position classes, expressing pronoun objects of various kinds, as well as modal and lexical concepts. The stem in Sumerian, but not Uralic, may be reduplicated to express such categories as plurality and intensity. In any case, typological features are at best heuristic, not probatory of distant relationships. For what it is worth, one may note that Kramer (1963) drew no such genetic inferences from his observation; the sentence immediately following the quotation given reads:

In vocabulary, grammar, and syntax, however, Sumerian still stands alone and seems to be unrelated to any other language, living or dead.

Gosztonyi's 58 points of grammar sound more promising, but as they are unavailable to me, I have no way of judging how representative, exhaustive, or basic they are. It does seem odd, though, that archaic Hungarian shows more than twice as many of these as does northern Finno-Ugric, with Turkish (an Altaic language) having an intermediate number.

The author's concern with a statistical basis for his demonstration of relatedness is laudable, and it is along these lines that we might hope for a contribution.

We are told that he has used a 100-word basic vocabulary list and found a correspondence between Sumerian and Hungarian for 57 of the items, which indicates a "direct relationship" between these languages. This is too good to be true! If the appropriate criteria have been followed in filling in the list, and if these are regarded as related languages coming from a common ancestor, then, using the 86.4% retention rate, they would have separated only around the year A.D. 47. They would thus be related at a distance roughly comparable to that of some Germanic languages, which is to say that the relationship would have been quite obvious to all.

The problem is, of course, that Sumerian became extinct (at least in Mesopotamia) around two millennia before this date. Even if we assume that it, or a related form of speech, might have survived elsewhere, this would not have remained identical to our recorded Sumerian during the interval. This leaves as our only alternative the possibility that Hungarian is the lineal descendant of Sumerian, which I suppose is what the author may have meant by "direct relationship." Under this assumption, the date of the parent language comes out to a range centering on 1875 B.C., that is, to a time when Sumerian was already extinct as a spoken language, or virtually so.

This is still probably a closer relationship than would be expected, and it must be this sort of result that led the author to the unacceptable suggestion in the abstract of an earlier (and presumably fuller) version of this article (Letter to Associates No. 50, CA 10: 432E) that

the retention rate is high in primitive times and diminishes faster and faster as it approaches the present.

The retention rate may indeed increase with an increase of the time depth in question due to the "dregs" effect (cf. Van der Merwe 1966), but if so the retentions will be greater in the later, rather than the earlier, portion of the time span, and this has nothing to do with "primitive times."

In order to evaluate the comparisons, one would need to have them made available for inspection, and the author cites only one of his sets, comprising the words for "head" in seven languages. This piece of evidence seems to imply that the results are likely to be vitiated by shaky control of the Sumerian sources combined with lax application of the semantic criteria for choosing test-list items. The Sumerian word for "head" is given as *pa*. But the rules of the glottochronological game require that the most common or semantically central word for each concept be

entered on the list. The regular Sumerian word for "head," in all periods, is *sag*, written by a character which in its earliest form is a clear depiction of this part of the body (see Kramer 1963: 303-4, no. 7; Labat 1952: 90-93, no. 115). The character with the syllabic value *pa* usually represents the word for "branch." However, it is sometimes used also to represent a word meaning "foreman, overseer, superior," in which case it is to be read as *ugula*. There is thus no word *pa* for "head" in Sumerian, and the only way that I can see that one would assume there was would be by combining two errors. The first would be to think that this character in the meaning "foreman" was to be read *pa*. Insofar as the transcription PA corresponding to this or a related meaning is found in some text editions, it is merely an instance of the commendably cautious scholarly practice of using the syllabic value of the character when the actual pronunciation of the word is in doubt. The other error would be to assume that this meaning of *ugula* represents the commonly encountered metaphorical extension of a word for "head," as in French *chef*, German *Haupt*. But there is no evidence for this, and it seems more likely that this character came to represent this word via its use in other readings to mean "sceptre, wand" (cf. Labat 1952: 134-35, no. 295).

In similar vein, it is worth noting that, although the Uralic words cited are undoubtedly cognates, the Mordvin and Zyrian words have lost the meaning "head" and retain only the derived meanings "end" and "end; beginning; point" respectively (see Collinder 1965: 143); hence these would not be the appropriate entries for a test list.

The author's conception of the nature of the relationships he is discussing is quite unclear, and, to say the least, would call for a more extended discussion and defense. He does not seem to put much stock in the family-tree model. Most puzzling is his statement, in the abstract, that

there is a great deal of written evidence (in the structure and vocabulary) that the pre-Uralic form of Hungarian is very closely related to Sumerian.

This conjures up the image of an essentially unchanging Hungarian moving through time and joining up with one or another family every now and again. Hungarian being an Uralic language, it did not exist yet back in pre-Uralic days, nor is there any written attestation of either pre- or Proto-Uralic. Similarly confusing is his statement that Hungarian is related to the Uralic (Finno-Ugric) and Altaic languages, in addition to the putative relationship to Sumerian. The situation

is that, as stated in the abstract, Hungarian belongs to the Finno-Ugric group within the Uralic family, and there is evidence to suggest that Uralic may be distantly related to the Altaic family (of which Turkic is one branch). (Cf. Collinder 1948 for a good statistical treatment of the probability of this relationship.) Thus Hungarian is Uralic, but not Altaic. On the other hand, the abstract tells us that, although Hungarian belongs to the Uralic family, it

has close relations with other languages, both Uralic and Altaic, and relationship is not the same as origin.

This seems redundant in the case of the Uralic languages, and otherwise obscure.

We also learn from the abstract that the author regards ancient Scythian, "preserved for the most part in Hungarian," as the center of the Ural-Altaic family. However, Scythian is usually regarded as an Old Iranian language, primarily on the basis of onomastic evidence. Hungarian does indeed show loanwords from Iranian, one of which, *asszony* 'woman', perhaps belongs on the basic list. Also serving to weaken one's confidence are the apparent inclusion of ancient Arabic and Akkadian in the Altaic family, and the strange group "Hindu, Munda-Kol (southern Finno-Ugric)."

Thus, in view of the apparent laxity in the handling of the data and in the absence of the full presentation of the evidence, one must conclude that the status of a Sumerian-Hungarian relationship remains as it has been—a tantalizing hypothesis.

Actually, a far smaller number of correspondences in the 100-word list would suffice to make a genetic relationship highly probable if appropriate controls were maintained. Swadesh (1954:315-21) calculated that with a test list of 97 words, four consonant-vowel-consonant (CVC) agreements would make a historical connection between two languages highly probable, and even three agreements would be almost satisfactory. Cowan (1962) calculated certain factors in more detail, and showed that only three CVC agreements brought one to a high confidence level. We now have Bender's important empirical study (1969) involving comparisons among 21 presumably unrelated languages. This emphasizes the importance of the criteria for phonetic resemblance, and shows that with varying degrees of narrowness of criteria for CVC resemblances, it takes from two to seven agreeing items to make a historical relationship highly probable. Earlier, Greenberg (1953:270) had examined an unspecified number of language pairs, using lists of unspecified length, and found that, except for languages with

highly similar phonetic structures, 8% of agreements implied the intervention of historical factors. At first blush it seems absurd that only three or four resemblant items might suffice to demonstrate a historical relationship between languages. But if one examines the reasoning and evidence presented in these sources with an open mind, one should not fail to be convinced of its probabilistic validity. It is a wide open question whether other resemblances of interest, say in the "deep structure," would be regularly detectable between languages that would be thus at the borderline in terms of our present ability to detect relationships.

It is also impossible to evaluate the contributions of the workers mentioned toward the end of the article without much fuller information. It is unclear what is meant by Cs6ke's (1969) demonstration of "the same regularity of sound changes" in Sumerian and in Ural-Altaic. If by sound changes is meant morphophonemic alternations, then this is just another typological criterion, and a rather weak one. If what is meant is correspondences between languages, or dialects, or successive stages of the same language, then this is irrelevant as long as one believes in the universality of processes of phonological change. It is only the sound correspondences connecting the families in question that count. It is not unlikely, as Schedel (1966, 1969) is said to maintain, that some cultural words in various Eurasian languages may derive from Sumerian; Johannes Schmidt tried 80 years ago to show Sumerian influence of this sort on Proto-Indo-European. This is, however, a different matter than genetic relationships. What Pass (1964) may have done is unclear; I do not know what is meant by "at a certain level."

The author realizes that the demonstrating of historical relationships between languages is not merely a matter of piling up similarities helter-skelter, but rather of showing that the similarities of whatever sort that are found are significantly greater than what would be expected by chance. There are of course various ways in which this might be done. The statistical studies I have mentioned clearly indicate one course that might be pursued, which, if successful, would convince me and others that he was really on to something. First he should get as close to the primary sources for Sumerian as possible, acquainting himself with the vagaries of the writing system and modern transcriptional conventions, and making use of the standard lexical studies such as Deimel and G6ssmann (1925-50) and Landsberger (1937-64). He should carefully draw up the test list for Sumerian as well as for Hungarian,

choosing the appropriate entry for each meaning according to the principles that have been discussed by Hymes and others. Then he should decide on the criteria for similarity that he will require, along the lines indicated by Bender, and adhere to them strictly (perhaps use of Bender's "extended criteria" might be appropriate). If this is done, and the resemblant items found are made available for inspection, then I am prepared to say that he will have made a historical relationship, and probably a genetic one, highly probable if he can show even as few as three corresponding items using Bender's "extended criteria." or seven items using his "weakened criteria." It must be emphasized, though, that any slackening of either the semantic or the phonetic criteria in favor of otherwise tempting comparisons would automatically entail the requiring of a much larger number of corresponding items to attain the same degree of probability.

It is true that such a demonstration of historical relationship would not exclude the possibility of borrowings of words on the list between these languages or their ancestors. In the present case, this does not seem to loom as important. Proto-Uralic and Sumerian, roughly contemporaneous, are thought to have been located more than 2,000 miles apart, separated by geographical barriers such as the Caucasus Mountains. Thus the discovery of any borrowings between them would itself be of great interest. It would no doubt be more straightforward to use reconstructed Proto-Uralic, rather than Hungarian, for comparison, but this is not a logical requirement. However, since the field of comparative Uralic linguistics is highly developed, one would appropriately require that there exist no evidence to the effect that the Hungarian words compared are not of the old Uralic stock. The probability of the comparisons would be greatly enhanced by the presence of cognates in other Uralic languages, and also, as the author realizes, of corresponding items in other families potentially related to Uralic, such as Altaic, Yukagir, or Dravidian (cf. Tyler 1968).

Hymes (1966:493) has suggested a line of approach that might make more accurate the evaluation of resemblances found:

The existence of a group of specially persistent roots makes more difficult the use of glottochronology to date ancient relationships, but makes more feasible the use of lexicostatistics to prove their existence.

In Bender's study the accidental resemblances found appear to be quite evenly distributed over the various meanings. A quantification of the skew-

ing of resemblant items found in the direction of the list items with the higher retention rates might add an important dimension to the calculations of probability.

Other approaches that might be taken would include weakening the requirements for semantic similarity, but requiring strict recurrence of the sound correspondences found, rather than gross phonetic similarities (see Martin 1966 for a model study along these lines); however, the associated probabilities of varying levels of success in this have not been calculated, and this approach might not be so applicable to extremely distant relationships.

The possibility of a relationship between Sumerian and other languages seems to be something inherently intriguing that is bound to receive continued consideration. But the wider value of this article as a contribution to this department should probably be to underline the importance of rigorous statistical controls in the demonstration of distant linguistic relationships. Without them we will continue to get purported demonstrations that convince only their authors.

by JOHANN KNOBLOCH☆

Innsbruck, Austria. 19 VIII 70

Zakar does not really tell us enough about the relationships between Sumerian and Uralian linguistic areas. Insofar as previous comparisons are credible, they have shown that in its historical home the Sumerian language is not homogeneously structured, but has both Caucasian and central Asiatic elements, the former in its structure and the latter in its vocabulary. To advance our knowledge beyond this point, all available methods of linguistics must be used. Only when the results agree are they convincing.

Would it not be possible for the author to supply the entire 100-word list, rather than just the example "Sumerian *pa*=Hungarian *fej*"? Then it would be possible to determine if the similarities reveal consistent phonetic laws, thus satisfying the basic demands of the historical-comparative method. Using phonetic laws, the list of obvious equations could be systematically enlarged to include further similarities from the basic vocabulary which would not have been recognized immediately because of differences in meaning.

My references to the literature are restricted to those authors who have taken an active interest in research into these relationships: Bouda 1938; Christian 1932, 1961; Hommel 1915; Kluge 1921; Rivet 1929.

by W. P. LEHMANN☆

Austin, Tex., U.S.A. 19 VI 70

1. One of the clearest results of historical linguistic studies is the finding that genetic relationships have only minor correlations with typological characteristics. For example, the Indo-European language, Tocharian, is agglutinative like Sumerian and Hungarian; yet no one would relate Tocharian with these two languages. If CA wants to present ideas on historical linguistics for discussion, it might review the generally held conclusions about possible correlations between genetic relationships and typological characterizations rather than this very dubious statement.

2. If one accepts the validity of glottochronology, one must hold that there is a loss of approximately 80% of the vocabulary of a language in a millennium. Two related languages would then share 65% of their vocabulary after a thousand years had elapsed. In four millennia, the number of shared words would be very small, certainly far fewer than 57.

3. Few linguists would accept the data provided to derive the words for "head" from a common source. Rules of correspondence (sound laws) would have to be proposed, rather than one set of forms. If one set out to demonstrate "a relationship between Sumerian and the Ural-Altaic language family," such correspondences would have to be stated between Sumerian and Proto-Ural-Altaic.

by A. LEO OPPENHEIM☆

Chicago, Ill., U.S.A. 14 VII 70

The list of references cited gives clear evidence for the milieu in which this paper originated. Of the 21 works cited, 14 are written by Hungarians who for many years have offered the theory that Sumerian is related to Hungarian. Five other books listed are popular presentations of Mesopotamian civilization and its history. None of the Hungarian authors has any knowledge of the Sumerian language, and their interest in that language is stimulated by ethnic pride and assertiveness released for political motives. The fact that Sumerian is a complicated though very well understood language which cannot be linked to any other known language has created during the past hundred years a large literature attempting to relate Sumerian to practically all languages between Polynesia and Africa. The authors of such studies unflinchingly "prove" that either their own language or a language in which they happen to be interested is related to ancient Sumerian. They cite as a rule a few

similar-sounding words, and some linguistic feature of Sumerian which is taken out of context and can be paralleled in some other language, as "proofs" for their contention.

If a Tamil scholar offered the hypothesis that Sumerian is related to Bantu, or a Hungarian that it is to be connected with Tamil, it would be appropriate to consider this an "idea for discussion"; but the present article and others of its kind are to be characterized as expressions of a narrow ethnocentricity which in itself well deserves study in CURRENT ANTHROPOLOGY. Substantively such writings are without any other value.

by ROBERT L. OSWALT☆

Berkeley, Calif., U.S.A. 14 vi 70

If the figure of 57 in the 100-word list for correspondences between Hungarian and Sumerian is presented as an approximation of a true cognate count, it is astounding—astounding that the close relationship of the languages was not fully recognized long ago—for the figure is much greater than that between Hungarian and Finnish, and is roughly twice as great as the cognate counts between languages in different families of Indo-European (for example, Germanic and Slavic). It is difficult to comment on the claim without seeing the word lists used and the forms that are judged to be similar. Presumably some of the 57 are chance resemblances; a figure for the probability of chance similarity between morphemes in Sumerian and the Ural-Altaic languages

is given as 0.06–0.17. This perhaps means that it is expected that there will be from 6–17 chance resemblances in a 100-word list, leaving the number of cognates at 40–51 (57 minus 17 and minus 6). However, the expectable number of chance resemblances cannot be estimated without knowing the phonemic form of the words used and the exact criteria for choosing the 57 correspondences—data which are not given.

The Sumerian list is unavailable to me, but I can show the results of determining the number of chance resemblances with the 100-word list in Finnish and Hungarian under one set of many possible criteria of similarity, namely (1) for two words to correspond, two pairs of consonants must match—unless there is only one consonant in one of the words, in which case only one pair of consonants need match; (2) for a pair of consonants to match, they must share (a) the same point of articulation and (b) two of the following three manners of articulation: voicing, nasality, and spirantization.

When the vocabularies in the two languages are lined up against each other,

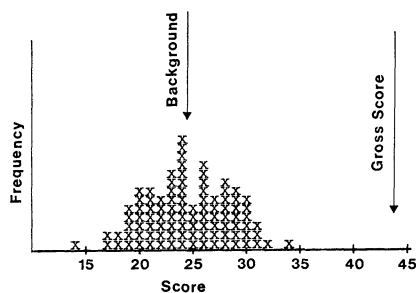


FIG. 2. Comparison of Finnish and Hungarian.

with the words semantically paired, the number of corresponding pairs found under the stated criteria constitutes the gross score; in this case it is 44 (indicated by the vertical arrow at the right of the graph, Figure 2). The gross score is not the number of cognates but a composite of the number of cognates and the number of chance resemblances. One estimate of the number of chance resemblances can be obtained by performing a *shift test*: Using the same criteria of similarity, the first word in Finnish is compared with the second in Hungarian and the second word in Finnish with the third, and so on through the list until the 100th word in Finnish is reached, which must be compared with the first in Hungarian. Other estimates can be obtained by shifting the lists relative to each other by two places, three places, and so forth. With Finnish and Hungarian, 99 shift tests have been performed, and the results of each are shown by an *x* on the graph; the height of a column of *x*'s indicates the frequency of that particular score. Note that the number of chance resemblances is not a constant but ranges from 14 to 34, distributed in a normal curve, with a mean, which I call the *background*, of 24.5 (shown by the vertical arrow near the center of the curve). The relationship between Finnish and Hungarian is sufficiently close that the gross score is much greater than any one background score; but that might not be the case between more remotely related languages.

All this has been brought up in order to point out that the partition of the gross score (which is essentially what Zakar's score of 57 is) between chance resemblances and true cognates is subject to a great deal of uncertainty. If Zakar used the same criteria of similarity that were employed here, it is unlikely that a score of 57 would be entirely due to chance. However, if the criteria were less strict—for example, if only one matching consonant instead of two were required—then the background could easily be as much as 57 and wipe out all significance to the score. The assessment of whether the number of similarities is greater than that due to chance can only be made

when the data and criteria of similarity are explicitly stated.

The Hungarian references given are all unavailable to me and cannot be commented on.

by HERBERT H. PAPER☆

Ann Arbor, Mich., U.S.A. 25 vi 70

Inscribe me among the conservatives—but little that Zakar proposes about a possible Sumerian–Ural–Altaic relationship is convincing. His citation of Sumerian as an "agglutinative" language is the keystone of his arch and the first warning signal. I am old-fashioned enough to demand phonological correspondences as evidence of genetic relationship—not broad and vague characteristics such as "agglutinative" or "grammatical affinity" or correspondences of "58 points of grammar" or "similarity in structure." Furthermore, a long list of authorities constitutes no evidence either. And the Swadesh 100-word glottochronology list is hardly the basis for "proving" genetic relationship in the first instance.

Another critical point is Zakar's claim to have found that 57 of the 100 words tie Sumerian to Hungarian "in particular." Given the extent of time depth, the association of this one Uralic language with Sumerian is suspicious—if indeed the cognates are real. But what about the relationship between reconstructed Uralic forms and Sumerian? Not a word about this.

What bothers me especially is the assumption of Ural-Altaic as a well-established language family. Is this really so?

Zakar's concluding question can be answered by pointing out that the assignment of Sumerian to another family of languages has simply not been done well. The evidence is vague and unconvincing and seems to be rather a matter of establishing respectable antiquity for a modern language. Why isn't it possible that languages spoken in the ancient world may have passed from the scene without leaving any modern descendants or relatives? The itch to hitch every language to some family niche seems to keep such questions alive. The subject certainly is worth examination and re-examination, but I am as yet unconvinced about this one.

by JOE E. PIERCE☆

Portland, Ore., U.S.A. 15 vi 70

The idea that Sumerian–Ural–Altaic forms a related group is a good one and worthy of investigation. However, I have some problems in accepting some of Zakar's statements. He implies that Sumerian is similar to Turkish in that

both are agglutinative and in that grammatical particles tend to retain their independent structure rather than to become inextricably attached to the roots to which they are affixed. This is not true for a very large number of Turkish suffixes, e.g., *on* 'front'—*onluk* 'apron', but *var* 'to exist'—*varlık* 'existence'. The morpheme /IV₁K₂/ has no meaning in and of itself, but when suffixed creates a new noun which has a new meaning; the meaning of the word is destroyed if it is removed. Perhaps Zakar means something else, but to me this means that the suffix and the root become a single unit.

Further, his example of "head" in Turkish as *bi*, *bij*, *bej* is unclear. Does he mean standard Istanbul Turkish, a reconstructed Turkish proto-form, or some other dialect of the language? Standard Turkish is *baş*, which of course could easily be related to either of the above forms through appropriate sound shifts, providing these sound shifts can be demonstrated to have occurred. His discussion of the probability of similar forms occurring in languages by chance is irrelevant because of the possibility of borrowing. The only way to insure that borrowing did not occur would be to trace the sound shifts back through time to a reconstructed proto-form, and this is a significant research proposal.

The reason that the possible relationship has not been given greater consideration is probably the small number of linguists who are qualified to make comparisons in languages so widely scattered in time and space and the fact that no well-documented study has yet been presented. Perhaps Zakar will in the future provide us with such a study.

by ELAINE K. RISTENEN☆

Bloomington, Ind., U.S.A. 9 VII 70

Probably most linguists regard this idea as a bit of persistent folklore. Nevertheless, I shall attempt to comment on it seriously and intelligently.

The basic question involved is: Does the evidence justify positing a genetic relationship between Hungarian and Sumerian? If not, what would constitute satisfactory evidence?

The author quite rightly cites primarily *linguistic* evidence in support of his hypothesis. However, his arguments are weak in several respects. Typological classification is confused with genetic relationship, an outdated and grossly simplified typological frame of reference is used, and (in my opinion) statistical methods are inappropriately applied.

The term "agglutinative" is only one of a large number of typological labels

that can be applied to languages. The notion goes back at least to Friedrich and August von Schlegel (1808, 1818, cited repeatedly in Horne 1966), and it cannot be considered an absolute term, but only a relative one. Presumably echoes of this 19th-century typology simply continue to appear in brief popular treatments of the Sumerian language such as those mentioned by Zakar: Kramer, Woolley and Hawkes, Schmökel, Soden *et al.*, Zamarovský, and Roux. None of these authors lays claim to general linguistic sophistication, and none of them says substantially more than that Sumerian is "agglutinative." Moreover, Kramer added a final sentence to the paragraph given (with one minor error) by Zakar; its restoration alters the impression given by the part quoted:

In vocabulary, grammar, and syntax, however, Sumerian still stands alone and seems to be unrelated to any other language, living or dead.

There is no necessary connection between structural typological classification and genetic relationship. Examples abound to prove this, and can readily be found by anyone willing to undertake a serious study of language typology (see Horne 1966).

Considerable import is attached to the results of statistical methods such as Dolgopolsky's, and glottochronology. These are still controversial. There is no harm in making such calculations, in my opinion, *if other evidence exists* pointing to a genetic relationship, and if they are not taken too seriously. Hajdú (1966:91–93), incidentally, mentions Dolgopolsky's method only in connection with certain cases where other evidence of this kind does exist. If regular sound correspondences can be established for cognate pairs on the Swadesh list and other such word lists, the results are significant indeed. To my knowledge, regular sound correspondences have not been established between Hungarian and Sumerian.

Perhaps it should be mentioned that Zakar's description of Hungarian as "related to the Uralic (Finno-Ugric) and Altaic (Turkish) languages" contains errors and omissions. Hungarian quite clearly belongs to the Ugric branch of Uralic; Uralic includes not only Finno-Ugric, but also Samoyedic; Altaic is not identical with Turkish, or even Turkic, but encompasses many more language groups. Further on, Munda is called "southern Finno-Ugric," with no known justification for such an amazing assertion (cf. Hajdú 1966:5–6).

In the time available it was not possible to find and examine all of the sources

cited by Zakar, but I did see over half of the *published* ones (including a German version [1968] of the Zamarovský work, translated, as was the Hungarian version cited by Zakar, from the Slovak). In them I find no support for his hypothesis.

by FRANCIS LEE UTLEY☆

Columbus, Ohio, U.S.A. 17 VII 70

We surely cannot oppose Zakar's desire to revive discussion of the affinities between Ural-Altai and Sumerian. Geography does not argue against it, as it does against attempts to tie Mayan to Egyptian; history tells us nothing pro or con. The arguments from glottochronology are impressive if you accept glottochronology; Csóke (1969) offers analogies in sound changes which remind us of chronological iterations in English, German, and Slavic, and the Sumerian genes must have gone somewhere. We cannot fall back on pure establishmentarianism and orthodoxy, in these days when Shakespearean ciphers and astrology are once more in favor to "the open mind." Yet one does have reservations:

1. Hungarian scholars have a nationalistic *cui bono* in seeking an ancient heritage comparable to that of Indo-European, and there are no Sumerians alive to object.

2. Gosztonyi provides apparently significant lists of grammatical parallels between Sumerian and Hungarian, which tower over the statistics for Turkish and Sanskrit. Cannot one always do this better with one's own language?

3. Verbal ambiguities abound: *agglutinative* (a very broad rubric which contains many languages not related), *Ural-Altai* (though Collinder [1960:37] prefers the hypothesis of a relationship between Finno-Ugric and Altaic languages to that between Finno-Ugric and Indo-European, it is still a hypothesis), *affinity* (may cover anything from strict genetic relationship to the similarities consequent upon the universals of language).

4. Sumerian as an entity is clear enough, but there is much risky reconstruction in it, and we must view it through the obscuring eyes of the Akkadians who stole its cuneiform writing. But we might be less skeptical if we knew more about the Hungarian literature and the exact linguistic parallels, and Zakar therefore most certainly deserves attention. Physical scientists allow outlets for suggestions of this kind in *Science* and elsewhere; why not anthropologists and linguists?

Utrecht, Netherlands, 25 VII 70

Being practically ignorant in the matter of Ural-Altai languages, my comment will be limited to some remarks from the point of view of general linguistics and of glotto-statistics.

As to the former: terms like "agglutinative," "isolating," and "flexional" are rather dubious and do not indicate any genetic relationship. Finnish, for instance, is often regarded as typically "agglutinative," but here we find what may be regarded as "flexional" forms, such as *vesi* 'water' (nominative), but *vetta* (partitive) and *veden* (genitive); *sido-n* 'I bind,' *sido-t* 'thou bindest,' *sito-o* 'he binds,' etc. (Jespersen 1950: 79). Chinese is often thought to be typically "isolating," but Karlgren (1920) has shown that Proto-Chinese was "flexional." English, "flexional" by origin, seems on its way to "isolation." Therefore, even if we accept the terms as justified for *typological* classification they say nothing about *genetic* relationship.

My second point concerns the author's remarks on glotto-statistic methods, involving the probability calculus. In principle the idea is sound. But the question is, in what manner did Zakar decide that the 57 word "correspondences" in the 100-word list found by him really *are* correspondences? This the author does not say. The words for "head," cited as an example, are phonetically still too divergent and their "phonostatic weight" (see below) too weak to be acceptable. A stricter phonetic similarity is necessary, unless it can be shown that the phonetic divergences in "head" are paralleled by a series of other examples, thus showing the existence of regular sound shifts. The statement that "Csőke (1969) has demonstrated the same regularity of sound changes in Sumerian and in the languages of the Ural-Altai family" does not say clearly that the regularity of the changes *exists from Sumerian to Ural-Altai* or at least *between Sumerian on the one hand and Ural-Altai on the other*. And this is what we need to know. Not knowing Hungarian, I cannot check this in Csőke (1969). But perhaps Zakar's findings would benefit by testing them on the basis of my "phonostatic" method, which I have described in detail elsewhere (Cowan 1962). In this method, the *phonemic* correspondence of the morphemic similarities and its "phonostatic weight" are the primary subject of the computation of the chance probability factor. And this may give the answer to the above question.

Reply

by ANDRÁS ZAKAR

Budapest, Hungary, 29 VIII 70

My article was intended to be a synthesis of the main lines of some Hungarian research on the Sumerian language and its relationship with Hungarian. The question is to what extent we can *prove* this relationship; that both the languages and the cultures have multiple connections with each other is undeniable.

Theoretically, Paper's presumption—

Why isn't it possible that languages spoken in the ancient world may have passed from the scene without leaving any modern descendants or relatives?

—could be correct. In practice, however, and in the case of the Sumerian question in particular, the facts are inconsistent with this presumption. The Sumerian irrigation system, the vault and other architectural features, city planning and building, fine and applied art, metallurgy, gold- and silversmithing, mathematics, astronomy, the phonetic method of writing, literature, ethics, law, the school system, etc. obviously constitute the foundations of our civilization and culture. Many generations have benefited, consciously or unconsciously, from Sumerian efforts. The Sumerian culture was one of the world's most stimulating forces (Wooley and Hawkes 1964). It would be a miracle if the structure of their language (which reflects their way of thinking) and the main elements of their vocabulary had not also been passed on to later generations. *When* this happened, however—as many have said—remains to be proven. In the process, we can also learn much about the questions "Who were the Sumerians? Where did they come from?" It seems unscientific (and is also a contradiction) to say, with Komoróczy (1970:8), "To these questions there does not exist any answer." The inflexibility of some Orientalists, and especially linguists, concerning Sumerian relationships gives the impression that they would find it out of place to investigate the relationship, after the destruction of Ur by Šamšu-Iluna, the son of Hammurabi, in 1737 B.C., after a revolt for liberty—some of his allies might disapprove, and it could be dangerous.

Utlej has said, and one must agree with him, "The Sumerian genes must have gone somewhere." And where the Sumerians went, there Sumerian or something like it was spoken. If we have not yet found the place, perhaps we have not looked seriously enough, or have not looked in such a way that it could be found.

Nobody can rightly blame Hungarian linguists for inventing the idea of a Sumerian-Hungarian relationship. Beignier (1853), Oppert (1854), Lenormant (1874), and others, scientists who were not Hungarians by birth discovered, declared, demonstrated, and persisted in the Sumerian-Ural-Altai (Hungarian) relationship. Some of their evidence is now obsolete, but much new evidence has since been uncovered by the some 35 Orientalists now working along the same lines.

The problem, of course, is not at all a question of language only. Therefore those who deal only with the language, without taking into consideration the many facts that are closely connected with it, will necessarily go astray. In the world, all things are interdependent. The narrow delimitations and the ghetto-, clan-, caste-feelings in scientific life undermine science itself. Detailed research on a particular problem can be approved only when it does not disregard the broader picture. This is the reason why Orbán's complex method of comparison of languages seems to me fundamentally sound; and this is the most essential thing my article has to say.

I shall answer the comments point by point:

1. Terms like "agglutinative," "isolating," and "flexional" are in common use in linguistics. It is true that they do not enable us to make perfect divisions and that their content is not precisely defined. Until linguists propose a better partition, however, we can use these terms, with attention to their imperfections, mainly for typological (or morphological, as Durbin emphasizes) classifications. We cannot be sure, of course, that typological similarity is not the consequence of a more profound, genetic relationship (cf. Lehmann). A genetic relationship may manifest itself in typological similarity, though typological similarity is not necessarily proof of genetic relationship. In any case, research on the questions of where typological parallelism comes from, whether basic types (archetypes) exist, and in what direction they are to be sought is of scientific value. Certainly those languages are more closely related—at least from one point of view—that belong to the same typological group. We may even investigate the nature and degree of this belonging: is it morphological only, or phonological as well (Cowan)? As Hajdú (1966: 18, translation mine)¹ has said,

We may regard the basic language as the totality of typological correspondences of related languages.

¹ "Az alapnyelvet tehát úgy tekinthetjük, mint a rokon nyelvcsoportok tipológiai egyezéseinek összességét."

Great geographical distances alone are no obstacle to the possibility that languages belonging to the same typological group are genetically related, when one considers the some hundred thousand years' duration of human history and the fact of migrations. Pogrányi-Nagy (1936-37: vii, translation mine)² has shown how we can

follow the evolutionary connections in the isolating, incorporating, and agglutinative languages on the basis of elements which indefinitely appear, then gradually become consolidated, take shape, grow wider, and spread out.

He points also to the ancient influence of these languages on the flexional languages. The terms mentioned above therefore are appropriate for the average features of the phenomena.

2. Almost all the comments ask, explicitly or implicitly, for a look at my complex 100-word list. I submitted it to CA as an appendix to my paper "On the Sumerian Language" in January, 1969. In the abstract that appeared in October, 1969, and in the present brief summary statement, it could not, of course, be included. I took all the forms in my list from published vocabularies, accepting the scientific evaluations of the respective scholars. If linguists now question some of these interpretations, discussion of them seems required.

In the case of Sumerian *pa*, I refer in my list to Gadd (1924: 189), which gives the meaning *Kopf*?, 'upper end'. The correspondences of this word in the Uralic family, as Csöke (1970: 1-2) has presented them, are as follows:

Hungarian	<i>fő, fé, fe, fej</i>
Vogul	<i>peng, pängk, pung</i>
Zyrian	<i>pom</i> 'end, aim, limit'
Votyak	<i>pung, pun, pum</i> 'end, limit, peak'
Mordvin	<i>pe</i> 'end'
Finnish	<i>pää</i> 'head, end'
Samoyed	<i>feai</i> 'end, top'

Thus the primary signification of the word *fej*, properly speaking, is 'top, peak, end, limit'. According to Finno-Ugricists, the corresponding basic root in the Finno-Ugric basic language is *pä-*.

In the Altaic family, the correspondences (also from Csöke 1970) are as follows:

Mongol	<i>eki/n/; "peki-n</i> 'head, beginning'
Middle Mongol	<i>heki/n/</i>
Mangun	<i>fehí</i> 'skull'
Gold	<i>pejé</i> 'forehead'
Lamut	<i>heje</i> 'top, peak'

Here, too, the basic root is *pä-*.

Let us now look at the Sumerian analogies (Deimel 1934):

<i>pa</i> (295/11)	'top'
<i>bad</i> (152 ³ /3-115/4)	'above, upper; head, top, peak'

Both the Uralic and the Altaic family have many correspondences to the Sumerian roots.

According to Finno-Ugricists, the more ancient form of Finnish *pää* is "*pängä*, the sound *ng* having dropped out of the so-called Finno-Ugric basic language. We can accept this possibility; we could equally well say, however, that the original form of the Finnish word was "*pädä*, the sound *d* having dropped out, because the loss of *d* is a more common phenomenon in Finnish than the loss of *ng*. We know that the sound *d* can change into *j*, so it is possible that Finnish "*pädä* = Hungarian *fej*. Therefore the Sumerian *bad* may be the source of the Finnish and Hungarian words. This much is Csöke's. I would add that Sumerian *be* means 'Herrschaft, domination' (and, in combination, 'supervisor'). The Hungarian *fej*, *fő* also has the meanings 'top, peak, principal, domination, chief'. The old Turkish *bej*, *bi*, *bij* (Vámbéry 1914) stands, if possible, even closer to the Sumerian. The modern Turkish *bas* shows the *d-s* sound change from Sumerian and the *s-j* sound change to Hungarian.

Deimel (1934) gives the following meanings for Sumerian *pa*:

I <i>pa</i> ₁	'Blattwerk d. Pflanze; Rispe' [that is, the upper part of a tree or plant]
I <i>pa</i> ₂	'Flügel' [that is, the upper part of a bird]
I <i>pa</i> ₃	'Aufseher' ['supervisor']
I <i>pa</i> ₅	<i>pa-te-si, ensi</i> ₂ [that is, 'chief']
V <i>pa</i> ₆ 1	'Wassergraben' [that is, coming from upper sides]

These and other meanings recall the interpretations of Gadd mentioned above.

At the same time, it is also true that Sumerian *pa* has the same meaning as Hungarian *fa*—'tree'. According to Deimel (1934),

<i>pa</i> (295/1)	'trunk of tree with two branches'
<i>appu/appa</i> (Akkadian)	(295/11) 'the crown and root of a tree'
<i>pa/a</i> (295/13)	'parts of plants'

Landsberger (1937-64) also gives *pa* (295) 'branch'. In the Uralic family, the words for 'tree' are as follows:

Samoyed	<i>pea, pa</i>
Zyrian	<i>pu</i>
Votyak	<i>pu</i>
Cheremis	<i>pu</i>
Vogul	<i>-pa</i>
Finnish	<i>puu</i>

In the case of Sumerian *pa*, we have an interesting but not rare example of what might be called the "ramification" of an ancient word into different meanings reflected by slight alterations of the basic form. The connection between the derived forms may be analogy (upper part of a tree and that of a human being), synonymy (Sumerian *gil* [Delitsch 1914: 9] 'morden, töten', Sumerian *gilal* [Deimel 1934: 61] 'Schlächter' ['butcher,'] is the basic root of both Hungarian *gyil* [-ok, -kol] and *öl*, the meaning of both being 'kill'), etc. (cf. Zakar 1968).

3. I would like to insist, however, on the generally accepted principle expressed by Zsirai (1937: 58, translation mine)³:

If we consider the conformity of the vocabulary as an important proof in the question of linguistic affinity, then we must attach double, or we could even say conclusive, importance to the conformity of the morphology. Languages cannot be regarded as treasuries of words, but as systems, and these systems are much more characterized by those ways and means by which we use the words for the expression of new ideas and the designation of various comparisons. . . . The recognition of this truth marked great progress in the history of comparative philology and of the practical application of this recognition to prove, on a grammatical basis, the affinity of languages.

Therefore I would underline the fundamental importance of Varga's (1942) book, already cited, which contains a systematic Sumerian grammar. Varga found not only typological, but also fundamental genetic affinities in grammar, syntax, and vocabulary (cf. Jacobsen, Ristinen). Unfortunately, Kramer could not read Varga's book. The difficulties envisioned in the comments would have vanished with knowledge of this work.

³ "Ha a nyelvrokonság kérdésében fontos bizonyítékként értékeljük a szóképzési egyezéseket, akkor kétszeres, mondhatnók perdöntő jelentőséget kell tulajdonítanunk az alakitani egyezéseknek. A nyelv nem szavak tárháza, hanem rendszer, s ezt a rendszert a szavaknál sokkalta jobban jellemzik azok a módok és eszközök, amelyekkel a szavakat új képzetek kifejezésére és a sokféle viszonyítás jelölésére felhasználjuk. . . . A nyelvhasonlítás történetében óriási haladást jelentett ennek az igazságnak a fölismerése és a fölismerés gyakorlati alkalmazásaként a nyelvek rokonságának u.n. nyelvtani alapon történő bizonyítása."

² "So finden wir z. B. organische Zusammenhänge zwischen *pä-* und *suffigierenden Sprachen*, zwischen *Sprachen, die den Genitiv und die adjektivische Bestimmungen voran*, und solche, die diese Satzteile *nachstellen* etc. Praktisch gesagt, kann man die *entwicklungsgeschichtlichen Zusammenhänge* zwischen *isolierenden, inkorporierenden und agglutinierenden Sprachen schrittweise* verfolgen."

But, independently of this, the first phase of this worldwide (although Japanese linguists are so far not represented) discussion of the problem has already had a result. It has shown that a number of scholars have independently considered the relationship of Sumerian to different languages—and not without some basis (Knobloch has pointed this out as well). Even Kramer, in the work cited (pp. 306–7), gives a description of the main lines of the Sumerian grammar, similar for the most part to those of the Hungarian one. Consequently, the single sentence immediately following my quotation cannot be interpreted as the result of a systematic and detailed comparison of Sumerian and Hungarian grammar and vocabulary.

Such a comparison shows, for example, that while prefixes occur only sporadically in the Ural-Altai family, in Sumerian and Hungarian they are frequent, expressive, and significant. This is a peculiarity of Hungarian shared with the Indo-European languages, but not borrowed from them. Sumerian is older than the known Indo-European languages. Hungarian stands alone (as Caucasian), but closer to Ural-Altai than to Indo-European. In arguing for a Sumerian-Hungarian relationship, we must begin from Sumerian and not from Finno-Ugric (Uralic) or Altaic. But working from Hungarian through proto- (basic) Finno-Ugric and Ural-Altai we can also find connections with Sumerian that cannot be disregarded. *What is definite and reliable is the Sumerian-Hungarian relationship*, and it is often a bridge between Ural-Altai and Sumerian.

Therefore, aiming at scientific collaboration, my first proposition would be to make Varga's book, or the main part of it, available in English. The contributions of Hungarian Sumerologists alone are not sufficient to the task, for many reasons. I fail, however, to see any difficulty in foreign scientists' obtaining the Hungarian texts. It is possible to borrow, or to order microfilms of, books and manuscripts (and translations of them, too) from Hungarian libraries, e.g., through the Loan Service of the Széchenyi Library, Budapest.

4. As for developments after Varga, I think that Orbán's complex (polygonal) method is important. First of all, he declares, we have to draw evidence from the materials of related sciences (history, archaeology, anthropology, ethnography, etc.). Furthermore, only the examination of the morphemes of three, four, or

more languages belonging to different families—and examination on this solid basis, not on the basis of prefabricated hypotheses—can produce decisive proof of common origin. We cannot bridge 5,000 years' distance simply by comparing two languages. For new and greater tasks, we need a new and wide-reaching, reliable method; and this method cannot be criticized in terms of the old one.

My paper (Zakar 1968) is based on the Orbán method and can be considered as its illustration. Recently Orbán (1970) has proposed a proof of Sumerian-Ural-Altai affinities on the basis of a 200-item list of culture words. There is hope—according to recent communications—that the Third International Congress of Finno-Ugricists in Tallinn may have brought to light new evidence in the course of its profound discussions, in related disciplines, in pursuit of the origin of Finno-Ugric.

The complex method provides us with a firm and reliable instrument to (a) avoid "subjective interpretation of scanty evidence" (Durbin); (b) satisfy the requirements of the "phonostatic method" of Cowan; (c) prove that corresponding items exist in plenty to bridge the Uralic languages and Sumerian (Jacobsen); (d) demonstrate that from several points of view Hungarian is more closely related to Sumerian than to Finnish (which Oswalt finds astounding), and fulfil his "set of many criteria of similarity"; and (e) make clear that we have to adjust our historical picture here and there according to the picture of the facts of linguistic relations—for these occur in a quantity that cannot be ascribed either to mere typological or morphological affinity or to simple borrowing of similar forms (Pierce), but must be explained in terms of a genetic relationship. (By this I do not mean that the relations between Sumerian and each of the subdivisions are equal.)

5. With regard to Hungarian-Ural-Altai connections, Sinor (1966) has pointed out that while many Finno-Ugricists speak of a relationship between Hungarian and Uralic, they make no allusion, or only a superficial one, to the relations and correspondences between Hungarian and Altaic. The Hungarian and Finno-Ugric stock of words and sounds can be found in large measure in the Mongol-Turkic area (Altaic, Tsagatai, Kazan Tatar, Kirghiz, and the language of Turkestan, as well as the language of the old "Turks," conserve

more archaic elements than Osmanli and Turkish). Other papers in this field are Dolgopolsky (1970) and Illič-Svitč (1967a, b, 1968).

6. Bobula is an erudite historian. We have to suppose—and the facts have demonstrated this—that she learned much from the critique by Lotz (cf. Jacobsen), and we cannot assume that Lotz's criticism applies equally to her subsequent work. There are many correspondences between the Sumerian culture-historical, archaeological, anthropological, and ethnological facts (pointed out also by Torma 1879; Vlassa 1963; Laki 1960, 1969; Makkay 1970; Kalicz 1970; Zichy 1923; and others) and those of Hungary. With due consideration for the complex method, we cannot neglect these correspondences.

7. In consideration of the close relation between language and writing, it is very important to note the fact, stated by some Hungarian scientists, that the old Hungarian *róvás* writing (Hungarian *róni* means 'to incise') is suitable for reading not only Avar or Hun, but also the runes and the old Turkic inscriptions. The relation between *róvás* writing and Sumerian cuneiform writing and the evolution of stenography has been pointed out by Forrai (1968). The connection between the Sumerian cuneiform and the Chinese and Japanese isolating writing systems through the *róvás* is also the object of new research.

8. Now, referring to some rather subjective notes: It is possible that not all living Hungarian students of Sumerian are first-class experts on Sumerian (Oppenheim), but they certainly are first-class experts on Hungarian—and to ascertain the fact of a relationship between Hungarian and Sumerian this circumstance is equally important. Furthermore, Hungarian experts speak Hungarian as their mother tongue, but no Sumerologist speaks Sumerian in this manner. As to "ethnic pride" and "narrow ethnocentricity," I think that the ethnic pride that is attached to a veritable value and does not infringe upon the human rights of others is permissible and, indeed, constitutes an important conservative force for all humanity. This is the case with Hungarians' attachment to the values of the Sumerian culture.

I thank the commentators for the positive contributions their comments have made to the elucidation of the Sumerian heritage, both in general and in particular.

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