

CAJ 30, 1986

Zetacism and Sigmatism: Main Pillars of the Altaic Theory

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Zetacism, i. e., the sound change PA $*r^2 > PT *z$, and sigmatism, i. e., the sound change PA $*l^2 > PT *š$, are among the most important sound correspondences upon which the Altaic theory is based. It is for this reason that, as Pritsak, the eminent Turkologist, once rightly put it, "Man ist entweder Bekenner der Altäischen Spracheinheit mit den ursprachlichen r/l , oder man ist Skeptiker in bezug auf die Altäische Spracheinheit und Verfechter der primären $z/š$ ".¹ Even the late Sir Gerard Clauson, the most outspoken opponent of the Altaic theory, regarded zetacism as "one of the main pillars" of this theory.² The eminent German Turkologist Doerfer, however, is not of the the same opinion. According to him, "the question whether the original Turkish sound is $*z$ or $*ř$ or $*ř$ or $*r$ bears no relevance whatever to the problem of Altaic relationship". Doerfer believes that "many solutions are possible in this respect, and none of them proves nor refutes (in general: concerns) the Altaic problem. We may say: a) Tu. $*ř$ or $*r\check{i}$ = Mo. r has its origin in Altaic $*ř$; b) Tu. z = Mo. $r < Alt.$ $*ř$ or $*r\check{i}$ or $*z$; c) Old Bolgar loanwords with $*ř$ or $*r$ entered Mo. — all these assumptions play no rôle whatever in the question of the relationship of the languages called Altaic. Regarding only rhotacism/zetacism one cannot say anything definitive about the Altaic problem, one can neither prove it nor refute it".³

- 1 Omeljan Pritsak, "Der 'Rotazismus' und 'Lambdazismus'", *UAJb*, 35, Fasc. D (1964), p. 338.
- 2 Gerard Clauson, "A Postscript to Prof. Sinor's 'Observations on a new comparative Altaic phonology'", *BSOAS*, XXVII (1964), p. 154.
- 3 G. Doerfer, "The problem of Rhotacism/Zetacism", *CAJ*, XXVIII, 1-2 (1984), pp. 36, 37.

Leaving aside Doerfer's third solution for the time being, I would like to point out right away that the third alternative of his second solution, i. e., Trk. *z = Mo. r < *z, is not assumable. We have strong evidence supporting the view that the original sound in question was not *z, but a r-like sound. This evidence have already been given in the related literature by Ramstedt, Marquart, Poppe, Räsänen, Aalto, Joki, Pritsak and by the author of these lines. But it seems that it will not be out of place to repeat it here once more:

1. In the case of the correspondence Trk. z = Mo. r, Chuvash, a Turkic language, does not behave like a Turkic language, but it goes together with Mongolian as if it were an independent branch of the family. If we believe that the original sound was *z, we would then have to assume that the sound change from *z to r took place in Chuvash and Mongolian independently from each other, simply because we cannot think of a Chuvash-Mongolian linguistic unity in the past. Such a unity has never been existed. On the other hand, to assume that the original *z changed into the same sound in such different languages as Chuvash, Mongolian, Manchu-Tungus (and possibly Korean) at the same time would be extremely hypothetical and far from being reliable.

2. Chuvash does not behave like a Turkic language also in the case of the sound correspondence Trk. š = Mo. l, and goes together with Mongolian.

3. The Old Bulgarian loanwords in Hungarian do not have z/š, but r/l.

4. Pre-Turkic loanwords in Samoyed do not have z/š, but r/l.

5. Old Bulgarian words, proper names and titles in Proto-Bulgarian inscriptions and Byzantine sources do not have z, but r.

6. Many Turkic words with z in final position have morphologically related doublets with r in medial position before of after a consonant, e. g., *köküz - kökräk, káz - kárt-, omuz - omraw, qapız - qapırcaq, qız - qırqın, sämiz - sämri-, tüz- - tärk, tiz - tirsgäk, tiz- - tirkiš, töz - törçi-, yawız - yawrı-*, etc. It is a well-known and world-wide phenomenon that an original sound occurring before of after a consonant generally escapes a phonetic change which that sound goes through in another position or other positions. Consequently, if the original sound in question were *z, we would not have such doublets in Turkic.

As a last proof of the priority of a *r*-like sound to Turkic *z*, I will mention the change in Doerfer's reconstruction of Common Turkic *z*. As is known, Doerfer formerly used to reconstruct **z* for Trk. *z* = Mo. *r*, e. g., **dayiz* for *yayiz* and *dayir*, **bozā* for *boz* and *bora*, **azāyā* for *aziy* and *araya*, etc.⁴ Later, however, he reconstructed **r* for Trk. *z* = Mo. *r*, e. g., "urtū. **arāyān* (> mo. *arayan*) > *aziy*", etc.⁵ Most recently, that is since 1975–1976, he has been reconstructing **r*₁ for the same sound, e. g., **bōrja* for Trk. *boz*, **burjāyū* for *buzayu*, **atarju* for *atiz*, etc.⁶

As is seen, this is a drastic change of view in an exactly opposite direction. Doerfer himself expressed this change of view as follows: "Doerfer has always been irresolute as to the problem of whether *z*, *š*, or *ř*, *l* (*ř*, *l*) were original. He called this an 'unsolvable problem' (TMEN I, 98–99, . . .). But I am now convinced that *r*, *l* (or similar forms) may be somewhat more likely than *z*, *š*; i. e., I have returned (in a sense) to Ramstedt's and Poppe's classical solution". But when I drew attention to this remarkable change of view and welcomed it in the name of the adherents of the Altaic theory,⁷ he obviously became offended and gave me the following answer: "I now prefer reconstructing not **z*, but **r*₁, but this is for internal reasons of the Turkish phoneme structure".⁸

What does this answer mean? Does Doerfer mean that his previous reconstructions were not for Turkic? Everybody knows that he is against the Altaic theory and his reconstructions have always been labeled *Urtürkisch*. His change of view in reconstructing Proto-Turkic (to be more exact, Pre-Turkic, *Vortürkisch*) forms clearly shows that Doerfer has finally accepted the priority of Chuv./Mo. *r* or a *r*-like sound to Turkic *z*, and this is the essence of the whole problem.

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4 Gerhard Doerfer, *Türkische und mongolische Elemente im Neupersischen*, I (1963), pp. 98–100.

5 TMEN, II (1965), p. 55, 535, etc.

6 Gerhard Doerfer, "Proto-Turkic: Reconstruction Problems", *TDAY = Belleten* (Ankara 1975–1976), pp. 34, 36.

7 T. Tekin, "Once more Zetacism and Sigmatism", *CAJ*, XXIII, 1–2 (1979), p. 123.

8 G. Doerfer, "The Problem of Rhotacism/Sigmatism", p. 37.

After thus settling the priority problem, we now may pass to a discussion of Doerfer's third solution, i. e., to the assumption that "Old Bolgar loanwords with *f or *r entered Mongolian". It must be emphasized right away that the "Old Bolgar loanwords" could not have entered Mongolian simply for the fact that the ancestors of Chuvash and Mongols lived from the very beginning in areas far away from one another, the first in northern Caucasia and the Volga region, the latter in the easternmost part of present-day Mongolia. Therefore, it cannot be assumed that there were Chuvash-Mongolian linguistic contacts in the past. Similarly, it cannot be claimed that there are Mongolian loanwords in Chuvash. It has recently been proved beyond any doubt that the so-called Mo. loanwords in Chuvash are not direct borrowings from this language, but they came into Chuvash through the neighboring Turkic languages.

As is known, Doerfer, from the very beginning of his career, has been an outspoken opponent of the Altaic theory. Like the late Sir Gerard Clauson, he regards all the Mongolian cognates as loanwords borrowed from Turkic, and the Manchu-Tungus cognates as loanwords borrowed from Mongolian. While it is true that the Altaic languages, like all the other genetically related languages of the world, do possess loanwords borrowed from each other, it cannot be denied that they also possess a large number of cognates displaying regular sound correspondences. Doerfer has tried to refute all the Altaic equations established by Ramstedt, Poppe, and other scholars. It must be admitted that Doerfer has been successful in refuting some of the Altaic etymologies. Most of his objections, however, are far from being reliable and satisfactory. As an example, I will take his objection to the equation Trk. *aziy* = Mo. *araya* "molar".

In 1965 Doerfer thought that Trk. *aziy* could be a derivative of *az-* "vom Wege abweichen". He discussed as follows: "Ferner: die Etymologie von tü. *aziy* (mit der ursprünglichen Bedeutung 'Hauer, Stoßzahn der Tiere') könnte sein: *az-iy*, von tü. *az-* 'vom Wege abweichen', also *aziy* = 'der Zahn, der vom Wege abweicht: der von der regelmäßigen und auf ziemlich dergleichen Ebene liegenden Reihe der Zähne abweicht'. Wenn diese Etymologie richtig ist, wäre natürlich ein Vergleich mit mo. *arayan* usw. unmöglich, da es ja im Mo. kein Wort **ar-* "abirren" oder dergleichen

gibt; d. h. wohl könnte das mo. Wort ein Lw. aus dem Tü. sein, kaum aber urverwandt".⁹ In his latest article on rhotacism/zetacism, however, criticizing my analysis of the word as *az-i-γ* he asks: "I do not understand Tekin's reconstruction *az-i-γ*; from which word does he derive *aziγ*? *āz-* 'go astray', e. g., has a long vowel in Turkmen, whereas *azi* 'molar tooth' has a short vowel; furthermore, the ending of the word is just the same as in, e. g., *elig* 'hand'".¹⁰

As is seen, Doerfer's earlier view of Mo. *araya* was based on the assumption that Trk. *aziγ* could have been a derivative of *az-* (i. e., *āz-*) and on the absence of a verb like **ar-* "abirren" in Mongolian. Since this barrier has been eliminated now, may we assume that Trk. *aziγ* and Mo. *araya* are related?

As for my view of the morphological structure of *aziγ*, I have never thought of deriving it from *āz-* of course, because I *knew* that the verb had a long *a*. When I analyzed the word as *az-i-γ*, I had in mind the root of Mo. *arjayi-* "to show one's teeth, grin; to stand on end (of hair); to stand out (of a number of objects; to be rough or uneven", *arjayar* "showing teeth; grinning; bristling; uneven, rough", *arjayai* id. and *arjan* id. In Mongolian, *arjayi-* and *arjayar* also have variants with initial *i*, namely *irjayi-* "(for teeth) to show; to grin, sneer", *irjayar* "showing teeth, gaping; having protruding teeth". Mo. *arjayi-* - *irjayi-* is obviously a deverbal verb in *-yi-* derived from **arja-*. The latter is not found as such in Mongolian, but it can be deduced from Yak. *irjat-* "pokazyvat', oskalivat' zuby" (cf. Yak. *irjay-* "skalit' zuby, skalit'sja" < Mo. *irjayi-*) as well as from its derivatives *arjayar*, *arjayai* and *arjan*. Mo. **arja-*, too, could be a stem derived from the simplex **ar-* with a meaning "to protrude, jut out, stick out" and this may perfectly correspond to the root of Trk. *aziγ*. As is known, the original meaning of *aziγ* was not "molar", but "canine tooth of animals, tusk, fang".

As for Doerfer's remark about the ending of *aziγ*'s being identical with that of *ālig* "hand", I do not understand exactly what he means by this. Does he mean that *ālig* is a denominal noun derived from the simplex *āl* which has the same meaning? If so, I object to

⁹ *TMEN*, II, p. 56.

¹⁰ G. Doerfer, *ibid.*, pp. 37, 38.

this view immediately. Turkish, Azeri *äl*, Trkm. *el* is not an old doublet of *älig*, but only a shortened form of the ancient dissyllabic word (cf. Yak. *ilī*, Chuv. *alā*, *al* < **älig*). It was shortened to *äl* in the Oghuz group of languages through its forms with possessive suffixes, i. e., *älgim*, *älgin*, *älgü* in which *g* occurs at the onset of the second syllable.

In this connection, I would like to add that I have a better etymology for *älig*. I believe that it is morphologically related (through sigmatism!) to Trk. *äš-* "to dig with hands, to row (i. e., dig water)". Furthermore, I also believe that Trk. *äš-* (= Chuv. *al-* "to plow", *alt-* "to dig") is related, with the loss of the initial **s*- in Turkic, to Mo. *seli-*, *sele-* "to row" which is the simplex of *selbi-* "to row a boat", *selbigür* "oar", etc.¹¹ May I go one step further and say that Tu. *elbesče-* "plyt', plavat' (o čeloveke)", too, could be cognate with the Trk. and Mo. verbs?

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I now will discuss Doerfer's reconstructions of Turkic words with *z*.

As is known, Doerfer's most recent reconstructions of Turkic *boz* "gray", *buzayū* "calf" and *atiz* "fallow" are **bōrja*, **burjāyū* and **atarju* respectively.¹² I objected to his labeling these reconstructions "Proto-Turkic", saying that "the forms Doerfer reconstructs look like Proto-Altaiic rather than Proto-Turkic".¹³ Doerfer has given me the following answer: "It is a well-known fact of diachronic development that languages lose unstressed Auslauts, therefore such a Proto-Turkic form as **bōrja* is by no means surprising nor Altaiic".¹⁴

My answer: The reconstructed forms under discussion cannot be labeled "Proto-Turkic" for the following reasons:

1. Proto-Turkic (*Urtürkisch*) was not the ancestor of Chuvash which is a *r/l* language. Since Proto-Turkic was a **z*/**š* language,

11 T. Tekin, "Further Evidence for 'Zetacism' and 'Sigmatism'", *Researches in Altaic Languages*, (BOH XX, Budapest 1975), p. 280, and John Street, "Proto-Altaiic **l(V)b-* > Turkic *š*", *CAJ*, XXIV, pp. 293, 296.

12 *TDAY* (1975-1976), pp. 34, 36.

13 Tekin 1979, p. 123.

14 Doerfer 1984, p. 37.

our Proto-Turkic reconstructions have to be assumed with z/δ , not with r/l , or r^2/l^2 .

2. There is no such Turkic language, either modern or old, in which *boz* and *atiz* occur with a final vowel. Granted that the Mo. cognate of Trk. *boz* has a final vowel, but *atar*, the Mo. counterpart of Trk. *atiz* ends in *r*, not in a vowel. On what grounds, then, Doerfer reconstructs a protoform with a final vowel for Trk. *atiz* = Mo. *atar*?

3. Pre-Turkic (*Vortürkisch*) had lost all the final unstressed vowels. Therefore, Doerfer's **bōrja* could not even be "Pre-Turkic", let alone "Proto-Turkic".

In this connection, I would like to point out that Ligeti, the eminent Hungarian scholar, has recently proved beyond any doubt that the element *-j-* [y] in Hu. *borjú* [boryū] "calf" (< Old Chuv. **burayu*) is not the trace of Proto-Chuvash or Altaic palatalized **r̄*, but it is secondary and of Hungarian origin, i. e., the *-j-* in *borjú* is a kind of vestige of the ancient trisyllabic form of the Hu. word.¹⁵ The fact that the same element is also found in Hu. *gyapjú* "wool, fleece" (< Old Bulg. **japayu*) testifies to this, for to assume that Old Chuvash or Bulgarian possessed a palatalized *p* would be absurd, as Ligeti has rightfully pointed out.¹⁶ In short, contrary to what has been believed so far, there is no any trace of Old Bulgarian or Altaic palatalized **r̄* in the Hungarian data. Consequently, Doerfer's reconstruction **r̄i* for Trk. *z* has to be changed again, and this time, to prevent any further criticism, perhaps simply to **r^2*.

Before concluding this discussion, I would like to add that there is nothing to prevent us from assuming that Trk. *boz* and Mo. *bora*, Trk. *buzayu*/Chuv. *pāru* and Mo. *birayu*, and Trk. *atiz* and Mo. *atar* are cognates. Criticising the equation Trk. *boz* = Mo. *bora* offered by Ramstedt and Poppe Doerfer states that color names are often borrowed from one language into another.¹⁷ While this is true (cf. Trk. Mo. *qara* "black", Trk. *āl* "red", Mo. *al* id., etc.), it cannot be denied that there are some color names common to Turkic and Mongolian which do not look like borrowings, e. g.,

15 Louis Ligeti, "A Propos du Rhotacisme et du Lambdacisme", *CAJ*, XXIV, 3-4 (1980), pp. 232.

16 L. Ligeti, *ibid.*, p. 236.

17 *TMEN*, II, p. 335.

Trk. **kök* "blue" = Mo. *köke* id., Trk. **sāriy* "yellow"/**sāz* "yellowish white, pale" = Mo. *sira* "yellow", etc. Doerfer, of course, regards all these etymologies as "unwahrscheinlich" or "zweifelhaft". But the reasons he gives in rejecting these etymologies are not always valid. For example, he opposes to the equation Trk. *sāriy* = Mo. *sira* (< **sira*) on the following grounds: "Die These ist aus lautlichen Gründen unwahrscheinlich: (1) der Wortausgang in tü. *sariy* wird nicht erklärt, (2) eine Gleichung tü. *a* = Mo. **i* ist wenig wahrscheinlich".¹⁸ As I have already explained elsewhere, Trk. *sāriy* is probably a deverbal noun in -*y* derived from **sāri-* "to become white or yellow" (> Chuv. *šur-* "to become white") and the latter could be explained as a denominal verb derived from a simplex like **sār*² (> Trkm. *sāδ*, Osm., Kirg., etc. *saz* "white, yellowish white, pale").¹⁹ Pre-Turkic **sār*² survived in pre-zetacism derivative **sāri-* from which Common Turkic **sāriy* was formed (> Chuv. *šurā*, *šur* "white"). As for the second reason given by Doerfer, nothing is wrong with the equation Trk. **ā* = Mo. *i* (< **i*). As is generally known, the alternation *a* ~ *i*, especially **ā* ~ **i*, is quite common in Turkic, e. g., Orkh. *alpaya* ~ *yilpayut* "heroes, champion warriors", Yak. *ir-* ~ Trkm. *ār-* "to become tired", Yak. *sir* ~ Trkm. *yār* "precipice", Yak. *sīs-* "not to hit the target, make an error" ~ Trkm. *yāz-* in *yāzik* "sin, guilt", Yak. *kinat* (< **qīnat*) ~ Trkm. *gānat* "wing", etc. The same alternation is also found in Mongolian, e. g., *arjayi-* ~ *irjayi-* "to show one's teeth", *aryamji* ~ *iryamji* "rope, tether", *ar* ~ *iraya* "ripples on the surface of water" etc. Chuvash data, e. g., *il-* "to take" (< **il-*), *sir-* "to write" (< **yir*²-, Hu. *ir-* id. < Old Bulg. **yir-*), etc., enables us to assume that the same alternation existed in Pre-Turkic. Therefore, there is no reason why we cannot assume that the alternation **a* ~ **i*, especially **ā* ~ **i*, took place also in Proto-Altaiic. I believe that at the later stage of Proto-Altaiic Trk. **ā* alternated with Mo. **i*, finally resulting in the correspondence Com. Trk. **ā* = Mo. *i*, e. g., **tāš* = *čilayun* "stone", **sāz*/**sāriy* = *sira* "yellow", **yāz* "spring" = *nirai* "fresh, new, newborn", etc.

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18 TMEN, III, p. 221.

19 Tekin 1979, p. 129.

I now will pass to a discussion of zetacism and sigmatism in Proto-Turkic, and the place of occurrence of these sound changes.

Ramstedt, Poppe, Pritsak and other Altaicists believe that Chuv./Mo./Tu. *r* and *l* corresponding to Com. Trk. *z* and *š* are older than Trk. *z* and *š*, or they are closer to the Altaic original sounds. Even Doerfer, the most outspoken opponent of the Altaic theory, now believes that the original sounds in question were **r*_ǰ and **l*_ǰ, i. e., palatalized **r* and **l*, in short, *r*-like and *l*-like sounds. This is very important, because he is one of the leading Turkologists of our time, well-equipped with a profound knowledge of Mongolian and Manchu-Tungus languages.

The occurrence of zetacism and sigmatism instead of once-believed rhotacism and lambdacism having thus been accepted and settled by those scholars who are most interested in Turkic and Altaic studies, there remains the problem of the place or position of the occurrence of these sound changes.

Ramstedt, Poppe, Doerfer and other scholars believe that zetacism and sigmatism took place in medial as well as in final position. In fact there are quite a many examples indicating that the sound changes **r*² > *z* and **l*² > *š* occurred also in medial position, e. g., Trk. *qozı* = Mo. *qurağan* < **quriyan* "lamb", Trk. *buzayu* = Mo. *birayu* "calf", Trk. *qaşuq* = Mo. *qalbağa(n)* < *qalbuğa* "spoon", Trk. **kōšäk* "young camel" = Mo. *gölige, gölüge* "pup, young dog or cat", etc. But such examples are not numerous, and Trk. *z* and *š* are generally found in final position in Turkic, as Pritsak once noticed and pointed out.

Looking at the Turkic doublets like *sämiz* "fat" - *sämri* "to become fat", *köküz* "breast" - *kökräk* id., *tiz* "knee" - *tirsgäk* "elbow", *yawız* "bad" - *yawri* "to become bad", *bāš* "wound" - *bāliy* "wounded", *üküş* "many" - *ükli* "to increase, grow in number", etc. I once had come to the conclusion that the zetacism and sigmatism occurred in Proto-Turkic only in final position.²⁰ Throughout my three articles containing Turkic doublets which display the alternations *z* - *r* and *š* - *l*, I have maintained and defended this view.²¹ Especially, the examples like *qaz* - "to dig" -

20 Tekin, "Zetacism and Sigmatism in Proto-Turkic", *AOH*, XXII, Fasc. 1 (1969), pp. 56, 57.

21 Tekin 1975, p. 283, Tekin 1979, pp. 118, 137.

qarım "ditch; grave", **sdz* "yellowish white" ~ **sdrty* "yellow", *bāš* "wound" ~ *bāly* "wounded" and *balıq* "to become wounded" strengthened my thesis. On the other hand, I was of course aware that there were also some words which contained *z* and *š* in medial position and did not seem analyzable. Róna-Tas, Miller and Doerfer raised objections to my theory, claiming that the sounds *z* and *š* occur in Turkic also in medial position.²² Some of the examples they gave, however, are easily analyzable and could be explained as post-zetacism and post-sigmatism derivatives, e. g., *azu* "or" < *āz*- "to go astray" *yazı* "plain" < *yaz*- "to spread out". In my third article I said that "Other examples having a /z/ in intervocalic position, i. e., *azıy*, *buzay*, *küzän*, *qazı*, *qozı*, *üzängü*, *yuzay*, *güzük*, etc. could be explained as derivatives formed after the sound change from **r*² to *z* had taken place". Most recently, Doerfer has repeated the same objection and criticised my analyzing *azıy* "molar" and *qazı* "abdominal fat".²³ Since I have already explained my analysis of *azıy*, I will deal here only with the etymology of the latter word. I believe that Trk. *qazı* "abdominal fat", too, could be explained with the help of its Mo. cognate *qarbing* "the fat in the abdomen of animals, abdominal fat", Kh. *xarwin* id. Mo. *qarbing* is probably a deverbal noun in *-ng* derived from an obsolete stem in *-bi-* (for the suffix cf. Mo. *selbi-* "to row a boat" < Mo. *seli-*, *sele-* "to row", *ilbi-* "to caress, stroke" < *ili-*, *ile-* id., etc.). Street has identified this *-bi-* as a variant of the Mo. reversive suffix **-bū/-bū-* (= Ma. *-bu-*, Tu. *-w-*, Nan. *-bo/-bu-*, *-wo/-wu-*, etc.).²⁴ He calls this suffix "reversive", for it reverses the transitivity-value of the stem to which it is added, i. e., it makes transitive verbs intransitive (passive) and intransitive verbs transitive (causative). Mo. *qarbisu(n)* "uterus of an animal; placenta", too, is obviously a deverbal noun derived from the same obsolete stem, i. e., **qarbi-*. The analysis of Mo. *qarbing* in this way leaves us with Mo. simplex **qar-*, and this, in its turn, enables us to assume that Trk. *qazı* is a deverbal noun in *-ı* derived from

22 A. Róna-Tas, "Some Problems of Ancient Turkic", *AO*, XXXII (1970), pp. 209–229; R. A. Miller, "Japanese-Altaic Lexical Evidence and Proto-Turkic Zetacism-Sigmatism", *Researches in Altaic Languages*, pp. 157–172; G. Doerfer 1975–1976, p. 32.

23 Doerfer 1984, pp. 38, 39.

24 Street, *ibid.*, p. 288, note 12.

*qaz- (< *qar²-), an obsolete verb which has nothing to do with qaz- "to dig". I hope this analysis of Mo. *qarbiḡ* and Trk. *qazi* would satisfy Doerfer who has stated that "bei mo. *qarbiḡ* "Bauchfett" (tü. *qazi*) wird das suffix (?) -biḡ nicht erklärt"²⁵ and "Weder Poppe noch Ramstedt erklären das -ḡ in mo. *qarbiḡ* gegen tü. *qazi*".²⁶

In his article on rhotacism/zetacism, as examples of "bisyllabic roots with -z-, -š-, of which the derivation from originally monosyllabic roots would be difficult", Doerfer also gives the following words: *iši* "lady", *ešü-* "to cover", *üši-* "to shiver", *ešid-* "to hear", *öšün* "shoulder", *azi-* "to ooze", *qozi* "lamb", *kiši* "person".

Of these words, *iši/eši* could be explained as deriving from *eš "partner, companion, consort" + 3rd p. poss. suffix, as suggested by Ramstedt and Clauson. However, being an ancient title, it is also probable that *iši/eši* is a loanword of unknown origin.

The verb *ešü-* "to cover, envelop" could be analyzed as *äš-ü-, -ü- being the Trk. form of Altaic causative-passive suffix *-bu/-bü-, as suggested by Street who rightfully equates this Trk. verb with Evk. *elbe-* "to cover, roof (a tent)", Neg. *elbe-* "to cover (a tent-frame) to cover oneself (with something)" < PA *elbü-.²⁷ Another Trk. verb having the suffix -ü- is *säšü-* "to become loose, untied" (< *säš-* "to untie, loosen" = Bury. *heli-* "to loosen, untie" < *seli-) which corresponds to Klm. *selwē-* "to come loose" (< *seli-bü-) regularly.

The verb *üši-* is probably a denominal stem in -i-, as I have already suggested (cf. Yak. *ülüy-* "to feel chilly, to freeze" < *üli- < *ül²-i- = Mo. *ölčir* "(one) who is not afraid of the cold or is able to stand the cold" < *öl-čir).

The verb *ešid-* "to hear" (= Chuv. *ilt-* < *el²id-) could be explained as an intensive stem in -d- derived from the simplex *eš- (< *el²-) like *tod-* < *to-d-*, *id-* < *i-d-*, *küd-* < *kü-d-*, etc.

Turkic (MK) *öšün* "shoulder" (in DTS erroneously *ušun*), too, could be explained as a denominal noun derived from the simplex *öš. This word survives in the modern languages as follows: Alt., Leb., Shor *öžün* "collarbone", Shor *üštü* "shoulder" (< *üšün-ü),

25 *TMEN*, I, p. 94.

26 *TMEN*, III, p. 360.

27 Street, *ibid.*, p. 287.

Bar. *üün* "humerus, upper arm", Tuv. *öün* "humerus, forearm", Turki *öme, ösi* "shoulder", Blk. *öün* id., Kr. *öün, yöün* id. The fact that it is a derivative is understood from the Tungus data: Evk. *ulin* "grud', grudnaja kost' (medvedja)", Ev. *ölken ülken* "grud', grudnaja kletka", Ma. *ulku* "grud'" in *ulku girangi* "grudnaja kost'", *ulkume* "breast strap of the harness". The Manchu-Tungus data enables us to assume that the simplex of Trk. *öün* is **öš < *öl²*. I hope this explanation would satisfy Doerfer who asks "Why hasn't **öl²ün* become **ölün*, why has it become *öün*?"²⁸

Trk. *qozı* "lamb" corresponds to **quri-* of Mo. *qurıgan*, the element *-gan* being a diminutive suffix. A more regular correspondence would of course be Mo. *quri-gan* = Trk. **qoz/quz*. The monosyllabic Trk. form of the word is actually been attested both in old sources and modern languages: Old Anat. Trk. (Rüml) *išit bindän qara quzum qara quz* "Hear from me, (O) my black lamb, black lamb",²⁹ *quzla-* "to lamb, yean", Trkm. *quzla-* "to lamb, kid, calve; to lay eggs", Kum. *kozla-* "to lamb", Kzk. *kozda-* id. (< **qozla-*), Trkm. *quzgulak* "sorrel, sheep's-sorrel", Nog. *kozgalak*, Tat. *kuzgalak*, Bšk. *kuđgalak* id. (< **qoz qulaq*), etc. The monosyllabic form is also found in Persian: Steingas *qüz* "a sheep". Doerfer thinks that this form probably came into being through metanalysis, i. e., the final vowel of the word was mistakenly regarded as the Persian indefinite suffix *-i*. This is possible. But why did the same metanalysis not occur in the case of *böri* "wolf" which ends in *-i* like **qüzı*?

If the original form of Trk. *qozı* were **qoz*, the final *-i* could be explained as the 3rd p. poss. suffix; that is, from an expression like *qon qozı* "a sheeps's youngling" the suffixed form could have come to be taken as the basic form of the word.

Doerfer's *azi-* is a misreading and has been corrected by Dankoff to *üzi-*. The verb must have had this shape, because as we understand from Kāşyari's statements it is homophonous with *üzi-* "to become deaf" < *üz* "deaf" *-i-*. Since *üzi-* "to ooze" too is intransitive, it can best be explained as a denominal verb in *-i-* derived from an obsolete root.

28 Doerfer 1984, p. 38.

29 M. Mansuroğlu's interpretation of the words *quzum* and *quz* in this line is wrong (see TDAY 1954, p. 214).

I do not wish to speculate on *kisi*, but it is very remarkable that it does not have a Chuvash cognate. If *kisi* did not develop from an older **kilci*, we may then assume that it is an ancient loanword of unknown origin.

All the other dissyllabic and trisyllabic words not mentioned by Doerfer, i. e., *täzäk* "dung", *tozyu* "a gift of food-stuffs", *tözü* "all", *tuzaq* "trap, snare", *üzäggü/üzäggü* "stirrup", *yezä-* "to patrol", *yuzaq* "lock", *yüzük* "ring", *aşyin-* "to be worn", *aşuq-* "to hurry", *büşük/böşük* "relative by marriage", *çaşut* "false accusation; spy", *ëşik* "door", *işiy/yişiy* "cord, rope", *kişä-* "to hobble (a horse)", *köşi-* "to obstruct (light)", *köşär-/küşär-* "to be full to overflowing", *qaşan* "lazy", *qaşan-* "to urinate", *taşu-* "to carry", *töşä-* "to spread out", *yaşuq/yaşiq* "helmet", etc. all these words could indeed be explained in one way or other as derivations from monosyllabic roots ending in *z* and *š*. But at this stage I believe that there is no need for this. Since **r²* and **l²* were phonemes in Proto-Altaic and Pre-Turkic, I now think that it would be more logical to assume that they occurred in both medial and final positions. This means that I have slightly modified my earlier thesis, i. e., the assumption that zetacism and sigmatism took place in Proto-Turkic only in final position. My new thesis may be formulated as follows:

1. PA **r²* and **l²* changed into **z* and **š* in Proto-Turkic in intervocalic and final positions; in other positions, i. e., before or after a consonant, **r²* and **l²* escaped zetacism and sigmatism, and merged with **r¹*, **l¹* respectively.

2. PA **r²* and **l²* lost their phonemic value and merged with **r¹* and **l¹* respectively in Proto-Chuvash, Proto-Mongolian and Proto-Tungus.

I believe that this theory explains the existence of numerous doublets displaying the alternations *z ~ r* and *š ~ l* better than the earlier one. However, it should be added that this theory does not explain the existence of a few words with intervocalic *r* (< **r²*) and *l* (< **l²*) like *qarim* "ditch; grave" vs. *qaz-* "to dig", *sāriy* "yellow" vs. *sāz* "yellowish white, pale", *törü-* "to originate, be born", vs. *töz* "origin", *bāliy* "boil, wound; wounded" and *baliq-* "to be wounded" vs. *bāš* "boil, wound", *tölit* "bed, bedding equipment" vs. *töşä-* "to spread out", etc. Nor does it explain the existence of doublets with final *r* and *l* in such pairs as *bür-* ~ *büz-* "to contract,

pull together", *täl- - täš-* "to pierce, make a hole", **töl- - toš-* "to become full", *tül- - *tüş* "dream" vs. *tüşä-* "to dream", *ükil- - üküš* "many", etc. It may be assumed that in some of these examples the final *š* goes back to **lč*, e. g., *bāš* < **bālš* < **bālč* (cf. Mo. *bilčuu* "bump, blister, boil", *bilčud-* "for a boil to appear") as in the case of *baš* "head, beginning" < **balš* < **balč* (> Vol. Blg. *bač* "beginning" > Chuv. *puš*). It may also be assumed that in some cases we are confronted with two different suffixes, e. g., **töl-* < **tō-l-* and *toš-* < **tō-š-* as in the case of Orkh. *qil-* (< **qī-l-*; *-l-* being the freq. suff.) ~ *qiš-* (< **qī-š-* = Mo. *ki-lče-*). Doublets like *bür-* ~ *büz-*, *täl-* ~ *täš-* could be explained as examples of late zetacism and late sigmatism. Finally, examples like *tül*, *ükil* may be regarded as archaic or residual forms somehow escaped the sound change **l²* > *š*. It is obvious that further research is needed in order to explain all these exceptions.

* * *

Doerfer who qualifies my "zetacism-sigmatism" articles as "ingenious and suggestive" at the beginning of his paper, toward the end of it also states that "Making spotchecks, I have the impression that many of Tekin's examples are either incorrect or dubious", and criticises the first five examples of zetacism in my first article. Here I will answer his objections in the same order.

1. CT *biz* "awl" < **biz*, Chag., Uzb. *bigiz*, NUig. *begiz* id. ~ Yak. *bürgäs* id. < **bür-gäč* (dim.). Doerfer states that "Pekarskiy's vowel lengths are not always reliable. Both Böhtlingk and modern Russian dictionaries show the form *bürgäs*". My answer: Does this prove that Yak. *bürgäs* has never possessed a long *ü*? It is a well-known phenomenon that some originally long vowels became short in Yakut in the course of time. For example Pek. has both *īr-* and *ir-* "to get tired" corresponding to Trkm. *ār-*, but Böhtlingk and modern dictionaries give only the form *ir-*. Yak. *kīnat* = Trkm. *gānat* "wing", Yak. *iy* = Trkm. *āy* "moon, month", Yak. *ūr-* = Trkm. *ūyr-* (< **ūr-*) "to howl (of dogs)", etc. etc. Examples of vowel shortening are indeed numerous in Yakut.

Regarding *bürgäs* Doerfer also states: "Stefan Kalužynski derives the word from *bür-* "to twist, etc." and regards the suffix to be a suffix of tools (just as many other examples in *-gäs*). Now,

what holds true?". My answer; Kalužynski's etymology cannot be correct for the following reasons: 1) There is no Turkic language, either old or modern, in which *bur-* "to twist" occurs as **bür-*. 2) Radloff's Osm. *bürt-*, *pürt-* 'vertet', 'vyvernūt', 'vyvixnut'" (IV, 1892) is a ghost word occurring nowhere but some old dictionaries like Budagov's (I, 251; Radloff took the word from here); 3) Radloff's Chag., Osm. *bürčäk* "vint", too, is a ghost word actually occurring nowhere.

What happened in reality is that the verbs *bur-* "to twist" and *bürt-* "to injure, hurt, break, dislocate" were mixed together and a verb like **bürt-* originated. As far as I know, it started with Zenker who has *bertmek*, *bürtmek* [ursprünglich Vb. caus. v. *burmaq*] Vb. act. 'tourner, disloquer, luxer/drehen, renken, verrenken. *ayaq bürtmesi* "luxation de pied, entorse/Verrenkung, Verstauchung des Fußes" (p. 186). This explanation passed from Zenker to Budagov who has "*bertmek*, *bürtmek* (= *burmaq*): 'povernūt', 'vyvixnut' (v *kaz. tože*) *ayaq bertmesi/bürtmesi* vyvix, tolčok". From Budagov, in its turn, **bürt-* passed to Radloff, and finally to Kalužynski and Doerfer, to be more exact, to Doerfer and Kalužynski, because, as far as I know, Doerfer anticipates Kalužynski in using Radloff's *bürt-* as evidence for his unlucky etymological explanation of Tadjik *bürčäk* "úgol, ugolók" (< Uzb. *bürčäk*).³⁰ His putting together Uzb. *burčäk* "corner" and Com. Trk. *bürčäk* "forelock, curl" is indeed an unlucky effort. More unlucky than this is Doerfer's extremely hypothetical **bürt-üş-äk* as the basic form of CT *bürčäk* "die Drehung" (dim.). The fact of the matter is that *bürčäk* "forelock" is a denominal noun in *-čäk* derived from *bür* "bud, leaf bud, leaf". This word came to mean "forelock", simply because a forelock resembles a leaf bud which is naturally curly. In connection with this, I would also like to make it clear that Clauson's explanation of *bürčäk* too is erroneous: 1) the suffix *-čäk* cannot be added to a verbal root, 2) MK *bür-* does not mean "to twist, wind round, etc.", as Clauson translates, but it means "zusammendrücken" as Brockelmann rightly translated more than half a century ago (Arabic *zawā* means "to contract, wrinkle", not "to twist, wind round"). As I have already mentioned above, MK's *bür-* is nothing but the older form of Trk., Az.,

Trkm. *büz-*. This example shows clearly how a scholar tangles simple things if he does not believe in zetacism!

2. CT *boyaz*, *boyuz* "throat" ~ MK *boyrul* "having white on the throat (of animals)", AH *boyurdaq* "throat, gullet, pharynx". Doerfer believes that, in the case of *boyurdaq*, "just a different suffix (i. e., *-rdaq*) is attached to the root **boyo-*", i. e., as in *käkirdäk* "windpipe". My answer: What is the element *r* in **-rdaq/-rdäk*? Could it not be the older form of the suffix {-z} which forms deverbal nouns? If Chag. *kekirtäk* "windpipe" should be analyzed as *keki-rtäk*, what is ***keki-*? Unless Doerfer explains it satisfactorily, his analysis does not mean much. Besides, against Chag., NUig. *kekirtäk* we find *kegirdek* in Kazakh, a form which is very close to Trk. *geniz* "nasal passage" < Osm. *gäñiz*; cf. also Yak. *kägiri* "nasal bridge, base of the nose" < **kägirig*. Now, what sound is original, *-k-* or *ñ-*? Furthermore, IM *boyuzdaq* "windpipe" and Tuv. *böstä* "throat, gullet" (< **boyuztay*) show clearly that the suffix in question is {-DAK}, not {-XrdAK}.

About MK *boyrul* Doerfer comments as follows: "A better example, i. e., one much more compatible with Tekin's thesis, may be *boyrul*. But is it *absolutely* sure? Or may the original suffix be *{*-rXl}*, and the later development **boyo-^r-röl* > *boyryl*? The only other positive example of suffix **-rXl* is *bögrül* "having white on the flanks", the main word *bögür* "rein, flanks" ends in *-r*, too . . . And *must* an analogy *bögrül* (in case we assume *bögür-ül* is correct) > *boyrul* be excluded? And what is the connection of Turk. *boyrul* with Mo. *buyurul* (which without difficulty may be read *boyurul*, as well), a word which, however, means 'grey-haired (in general)'? Is the Mo. meaning the original one? May Turk. *boyrul*, originally 'grey-haired', have changed its meaning because of the similarity to *boyuz*?" My answer: 1) Doerfer's *{*-rXl}* is an *ad hoc* invention occurring nowhere in Turkic; 2) the suffix {-l}, on the other hand, is well-attested, e. g., *yāšil* "green" < *yāš* "fresh, green vegetables", *qizil* "red" < **qiz* "red, red-hot" in Uig. *qizyil* "reddish", MK *qizar-* "to become red", etc.;³¹ 3) Trk. *boyrul* may

31 Bang's view deriving *qizil* from **qizsil*, and *yāšil* (better *yāšil*) from **yāš-sil* ("Türkologische Briefe . . ., UJb, 10, p. 20) is wrong; so is Doerfer's theory deriving *qizil* from *qiz-* "sich erhitzen, glühen" (TMEN, III, p. 470).

not be compared with Mo. *buyurul*, *buyural*, simply because it is not a color name like the latter, but an adjective derived from the name of a body organ like *bašil*, *boymul* (< **boynul*) and *bögrül*.

3. CT *boz* "gray" ~ Kirg. *borbaš* "a big gray shrike", Chag. *borčün* "(gray) duck", Trk. (dial.) *bortak* "kind of wild duck", *boran* "wild pigeon".

Regarding *borbaš* Doerfer states as follows: "Kirg. *borbaš* must be a young compund (otherwise one would expect **borboš*), an explication by *boro* 'big' + *baš* may be much likelier. May we compare Kazakh *borbas* 'lazy'?" My answer: Kirg. *borbaš* could be "a young compund", as Doerfer claims, but it could hardly be explained as deriving from *boro* "big" + *baš*, as he suggests. How could the vowel *o* of the second syllable be dropped?

Doerfer may be right in his view that Chag. *borčün* is a loanword from Mo. *borjin* "wild duck (female)". But it cannot be denied that there is a suffix {-*čIn*} ~ {-*čIl*} in Turkic forming diminutives from color names, e. g., MK *kökčün* ~ *kökšin* "bluish, grayish", QB (376, 667, 1798, etc.) *kökčün* "grayish, graybearded old man", Kirg., Tel. *kökšün* "gray-haired, old man", Osm. (TS) *gökčil*, *gökjül* "bluish", *bozjil* "grayish", Trk., Az. *sarišin* "blond" (< **säriyčün*), Kirg. *akčil* "whitish", Trk. *kirčil* id., etc.

Doerfer says that Trk. (dial.) *bortak* means "a wild duck which is *kır*-colored; *kır* means 'white-grey, ice-grey', in contrast to *boz* which means "brown-grey, swarthy-grey". For the Turkish feeling, these are quite different colours". I would like to remind my dear colleague that the material in *DS* are collected and defined not by trained linguists, but by schoolteachers and local people. Besides, to many people the meanings of *boz* and *kır* are not much different from one another. In many dictionaries these two words are defined alike.

Although I did not mention it among my examples, MK *borsmuq*, *borsuq* "badger" too could be explained as deriving from the older form **bor*². Doerfer rejects this etymology (TMEN, II, 285), without considering the fact that the form *borsmuq* suggests it, for the diminutive suffix *-muq/-amuq* is usually added to color names, e. g., MK *qaramuq* "black weed, tares among the wheat", *qizlamuq* "measles" < *qizil* "red", Uig., Chag., Osm. *qizamuq* id., Kzk., Kklp. *bozamik* "gray, grayish", Kirg. *bozomuk* id., etc. The main form of the word survives in Chuv. *purāš* "badger" < **bors*

(> Hu. *borz* id.). The element *-s* is probably identical with the *-s* in MK *tirsgäk* "elbow" < *tir-s-gäk*, **tir-* (< **tir²*) being the older form of CT *tiz* "knee". This is only a suggestion, of course. Trk. *borsmuq*, *borsuq* may also be derived from **bor* "satiated, full, fat" (cf. Kirg. *borsogoy* "plump, fatty"), as suggested by Ramstedt.³² Cf. also Mo. *borki* "old badger", *borgi* "strong, robust, healthy", *borgil* id. *borda-* "to fatten animals", etc.

4. CT *öz-* "to crush, trample on, tread on" ~ MK *ärklä-* id. < *ärklä-* (freq.). On this Doerfer comments as follows: "Instead of *ärklä-* read *irklä-* (Clauson 226), a word which, apparently, has nothing to do with *öz-*. Other variants are *iklä-*, *yiklä-*; cf. Robert Dankoff, James Kelly, *Compendium of Turkish Dialects*, 291)". My answer: The initial *alif* of *ärklä-* is not vocalized in MK III, 443, but its variant without *r*, i. e., *äklä-* is fully vocalized in the same place. Besides, the verb *ärklä-* also occurs as such in the Rylands copy of the interlinear Koran translation in Karakhanid Turkic (written in the twelfth-early thirteenth centuries): *ärklä-* "to trample down, tread down/underfoot" (Ar. *waṭī'a*, P *sipur-dan*), *agar bolmasa mu'min äränlär, mu'mina urağutlar, bil-mägäy ärdingiz anlarnä, kim ärklägäy siz olarnä . . .* "were it not the believing men /and/ the believing women whom, not knowing them, you might have trampled down . . ." (Eckmann, 78). Of other variants, the one occurring in MK I, 287 is also unvocalized: *äklädi, ol yirig äklädi, äklär - äklämək*. Furthermore, the reciprocal stem of this form is fully vocalized and reads *äkläš-* in MK, I, 241. Consequently, only the following forms of the verb in question are vocalized with *kasra*: *iklä-*, *yiklä-* (III, 309-310) and *iklät-* (I, 265). It should be reminded that the alternation *ä ~ i* is quite common in Old and Middle Turkic, e. g., MK *äsiz ~ isiz* "bad", MK *ädiz ~ Uig. idiz* "high", MK (I, 119) *yär ~ yir* "place", MK (I, 98) *yäl ~ yil* "wind", etc. etc.

5. Middle Trk. *öz-* "to scrape, scratch" ~ Trk. (TS) *ärsin, ärsün, äršün* "an iron tool used to scrape dried pieces of dough from the trough" < *är-sin*; for the suffix cf. MK *tügsin* "kind of knot" < *tüg-* "to make a knot". On this equation Doerfer comments as follows: In the Turk. dialects we find even more forms: DS 1776-7 *ersin, ersani, ersön, ersün, eršün, evsün*. It is evident that all these

manifold variants cannot be traced back to a simple Turk. **är-sin*. This word is probably a cultural loanword. b) Is *äz-* "to scrape" = *äz-* "to crush"? c) Tekin even compares Mo. *ürü-* 'to grate, file'; this word cannot be connected with Turk. *äz-*, since the vowels are different".

My answer: Doerfer seems to forget the fact that in dialects we sometimes find forms which are very different from the standard form of a given word, e. g., *barhiç*, *bariç* for literary *bakraç* „copper bucket”, *bogarsak*, *boğörsek*, *böğesek*, *bonarsak*, *busak*, etc. for *boğasak* "a cow yearning for a bull", etc. I do not think that the dialect forms of Osm. *ärsün*, *ärsin* are more aberrant than the above-given examples.

Footnoting an information he got from Prof. A. Tietze, Doerfer also states that Trk. *ersin* might be a loanword from Kurdish (*hesin*, *esin* "iron"). This is not very likely for the following reasons: 1) there is no *r* in the Kurdish forms, 2) in the Germanic forms of "iron" *r* occurs after *s*, not before it, e. g., Old Eng. *isern*, Goth. *eisarn*, *isarn* (< Proto-Germanic **isarna*), 3) finally, Osm. *ärsün*, *ärsin* is also found in Chagatay and Azeri: Chag. *ärsün* "instrument pour racler ou tailler la pâte", Az. *ärsin* "skrebok (dlja testa)", *ärsinlä-* "skresti (testo) skrebkom".

More important than the above-mentioned points is the fact that Trk. words for "scraper" are either derivatives of *qaz-* "to dig", *qazi-* "to scrape" (Osm. *qazayi*, Trkm. *gazavi*, Yak. *kihñax*) or those of the the verb *qir-* "to cut, scrape, shave" (Tat., Kirg., etc. *kiryiç*, Alt., Kzk., etc. *kiryiř*, Bšk. *qiryis*, Uzb. *qiryiç*, NUig. *qiryu*, *qiryuç*, etc.). Taking into account this evidence, couldn't we assume that Osm., Trk. *ärsin*, *ärsün* might be a derivative of **är²*- (> MK *äz-*) "to scrape"?

Doerfer asks: Is *äz-* "to scrape" = *äz-* "to crush"? Have I ever equated these two verbs? Räsänen, Clauson, Sevortjan and others regarded these two verbs as one and the same, but I think I was the first to separate these verbs by mentioning them under different numbers. Doerfer, who blames me for not having read his articles *adequately*, should better direct this accusation first to himself.

As for his third objection, I would like to emphasize that I mentioned Mo. *ürü-* only for comparison (it has *çf.* before it, not the alternation sign). As a matter of fact, I have never thought of

equating Trk. *öz-* "to scrape" with Mo. *ürü-* "to grate, file" as Gombocz did seventy odd years ago. But let it not be thought that Trk. *öz-* "to scrape" does not have cognates in Mongolian and Tungus. Since the right time for it has come, I now will suggest a three-sided Altaic etymology hoping that Doerfer would raise objections to it:

Mid. Trk. (MK) *öz-* "to scrape, scratch", *özit-*, *öztür-* "to have st. scarified", *özig* "scratch", Tat. *izü* "collar; slit in a garment", Bšk. *idü* mouth, slit, opening (in shirts, garments)" = Mo. *erü-* < *er-ü-* "to dig, cut, hack", *erümel* "excavated, exhumed, dug out" = Evk. *er-*, *erī-*, *eru-* "razgrebat' (sneg); sgrebat'; kopat' (zemlju)", Ev. *er-* "razgrebat' (sneg); kopat', skresti", Neg. *ey-* id. (< **er-*), Orok *heri-* id., Man. *heručī-*, *herči-*, *heči-* id., Evk. *erivun*, *eribun* "lopata (derevjannaja--dlja razgrebanija snega)", Ev. *erun* id. (< **erivun*), Neg. *eyivun* id., Ulcha *heripu(n)*, *herpu(n)* id., Orok *heripu(n)* id., Man. *herpū*, *herfu(n)*, etc.³³

Doerfer concludes his paper with the following sentence: "Where Tekin's researches end the problems begin". But he somehow cut his sentence short, neglecting the most important part of it. In its full length, Doerfer's concluding sentence should have been as follows:

Where Tekin's researches end the problems begin for the opponents of the Altaic theory.

33 V. I. Cincius, *Sravnitel'nyj slovar' tunguso-man'čžurskix jazykov*, II, p. 462.