First International Olympiad in Theoretical, Mathematical and Applied Linguistics
8–12 September 2003, Borovetz, Bulgaria

Team Contest

Problem 1 (35 marks)

In the first millennium CE there were in Chinese Turkestan two closely related languages, Tocharian A and Tocharian B, which had descended from a common ancestor, Proto-Tocharian. Here are some Proto-Tocharian words as they have been reconstructed by scholars:

<table>
<thead>
<tr>
<th>šākaśta</th>
<th>‘unreasonable’</th>
<th>pāratako</th>
<th>‘chest (breast)’</th>
<th>stāŋkā</th>
<th>‘palace’</th>
</tr>
</thead>
<tbody>
<tr>
<td>āṣare</td>
<td>‘dry’</td>
<td>rāsākāre</td>
<td>‘sharp’</td>
<td>tśāŋkār</td>
<td>‘top’</td>
</tr>
<tr>
<td>āṣtāre</td>
<td>‘pure’</td>
<td>sāmī</td>
<td>‘same’</td>
<td>wālō</td>
<td>‘king’</td>
</tr>
<tr>
<td>kārmārtse</td>
<td>‘black’</td>
<td>sākāre</td>
<td>‘happy’</td>
<td>yāsār</td>
<td>‘blood’</td>
</tr>
</tbody>
</table>

And here are Tocharian A and Tocharian B words which are descendants of the Proto-Tocharian words listed above (in no particular order):

stāŋk, wālō, rāsākare, āsār, āstāre, āstār, āṣtre, āstāre, stāŋk, wālō, wālō, pratsāko, pratsak, āknats, āknatsa, tsāŋkār, tśāŋkār, kramārtse, kramārtse, rāskār, sam, sām, yāsār, sākār, yāsār, sākāre, yāsār.

Assignment 1. Determine which word belongs to which language, knowing that:

- in one of the languages some words have two variants;
- the first word is Tocharian A.

Assignment 2. Allocate the following words to languages and reconstruct the Proto-Tocharian form of each pair:

(a) stām, stām ‘tree’;
(b) rtār, rtāre ‘red’;
(c) pārs, parso ‘letter’.

Assignment 3. It is thought that Tocharian B had stress (as in English more or less). Upon what might this hypothesis be based?

Note: ā is a prolonged a, ė sounds as sh, ŋ as ng; the sequence ts is pronounced as a single consonant, ė is a specific Tocharian vowel. (Svetlana Burlak)
Problem 2 (30 marks)

When describing how personal and reflexive pronouns work in various languages, linguists make use of the so-called subscripts—Roman letters (typically i, j, k, ...) which mark pronouns and some other words in sentences. The character * (asterisk) is also used. Here are some English examples:

1. John\textsubscript{i} saw himself\textsubscript{j} in the mirror.
2. John\textsubscript{i} says that her\textsubscript{j}/*k doesn’t know Peter\textsubscript{k}.
3. The boy\textsubscript{i} is playing with his\textsubscript{j} gun.
4. His\textsubscript{i} teacher’s influence in easily seen in his\textsubscript{j/*k} work.
5. The girl\textsubscript{i} saw her\textsubscript{j}.

Assignment 1. Explain the meaning of the subscripts and the asterisk.

Assignment 2. Add subscripts (and asterisks where appropriate) in the following sentences:

(a) She doesn’t like this trait in herself.
(b) The father took his son to his room.
(c) John knows that Peter has given his book to his son. (Maria Rubinstein)

Problem 3 (35 marks)

Consider the following pairs of verbs with closely related meanings:

\begin{center}
\begin{tabular}{ll}
accuse & rebuke \\
denounce & reprehend \\
command & instruct \\
advise & guide \\
assure & convince \\
\end{tabular}
\end{center}

It is known that all verbs in the left-hand column have a certain ability that the verbs in the right-hand column lack.

Assignment 1. Identify the ability in question.

Assignment 2. Find the verbs that also have this ability among the following: extort, threaten, forbid, swear; shout, approve, refuse, rob, dedicate, lose, scold, give up, demand.

Assignment 3. Try to find two more verbs with the same ability. (Boris Iomdin)