

# Consonantal typology of Transeurasian phyla

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The Transeurasian language family (aka Altaic) consists of Japonic, Korean, Mongolic, Tungusic, and Turkic (Robbeets & Bouckaert, 2018). From a typological perspective, Transeurasian languages are generally known to have simple phonological systems. For instance, a two-way laryngeal contrast (e.g., plain voiceless /p/ and voiced consonant /b/) is predominantly found across Turkic and Japonic languages. Global studies of phonological systems have shown that if a language has a two-way laryngeal contrast, it will be either a voicing contrast (e.g., /p b/) or an aspiration contrast (/p p<sup>h</sup>/) (Maddieson, 1984). Likewise, if there is a voicing gap, voiced velar /g/ and/or voiceless labial /p/ are likely to be missing. A wide range of implicational universals have also been proposed. Languages exploit consonantal contrasts that are articulatorily easy to produce (e.g., voiced bilabial /b/, coronal /t/). Moreover, if a language contrasts consonants which are produced at the back of the vocal tract (pharyngeal and uvular fricatives), then it is likely that the same language also possesses consonants produced at the front of the vocal tract (labiodental and alveolar fricatives). By keeping these typological and global patterns in mind, the aim of this study is to investigate the consonantal typology of the Transeurasian phyla.

A database of 44 Transeurasian languages was created based on the published grammatical sketches (Japonic: 7; Korean: 1; Mongolic: 4; Tungusic: 5; Turkic: 27; database is continuously updated). Presence and absence of a consonant was binary coded (e.g., 1 = consonant is present; 0 = consonant is absent). Total number of consonants found in each language and their frequency across languages were calculated.

Figure 1 shows geographical distribution of Transeurasian languages and total number of consonants found in each language. It can be observed that most of the languages have 20 to 40 consonants. The type of consonants and their frequency are presented in Figure 2, which indicates that the Transeurasian languages have a wide range of consonants, including typologically marked velar and uvular fricatives (/ʁ χ/), and unmarked stops (/t d/). The most common type of laryngeal contrast is between a plain voiceless /p/ and voiced /b/. Interestingly, /n m s/ are the most frequently found type of consonants, followed by /p k b g/. Fricatives produced at the front of the vocal tract (/s f v/) are more frequent than those which are produced at the back of the vocal tract (/x ɣ/). The preliminary findings of the current study indicate that the Transeurasian phyla possess a diverse set of consonantal contrasts which have rarely been reported in other languages of the Eurasian continent.

## References

- Maddieson, I. (1984). *Patterns of Sounds*. Cambridge: Cambridge University Press.
- Robbeets, M., & Bouckaert, R. (2018). Bayesian phylolinguistics reveals the internal structure of the Transeurasian family. *Journal of Language Evolution*, 3(2), 145–162.

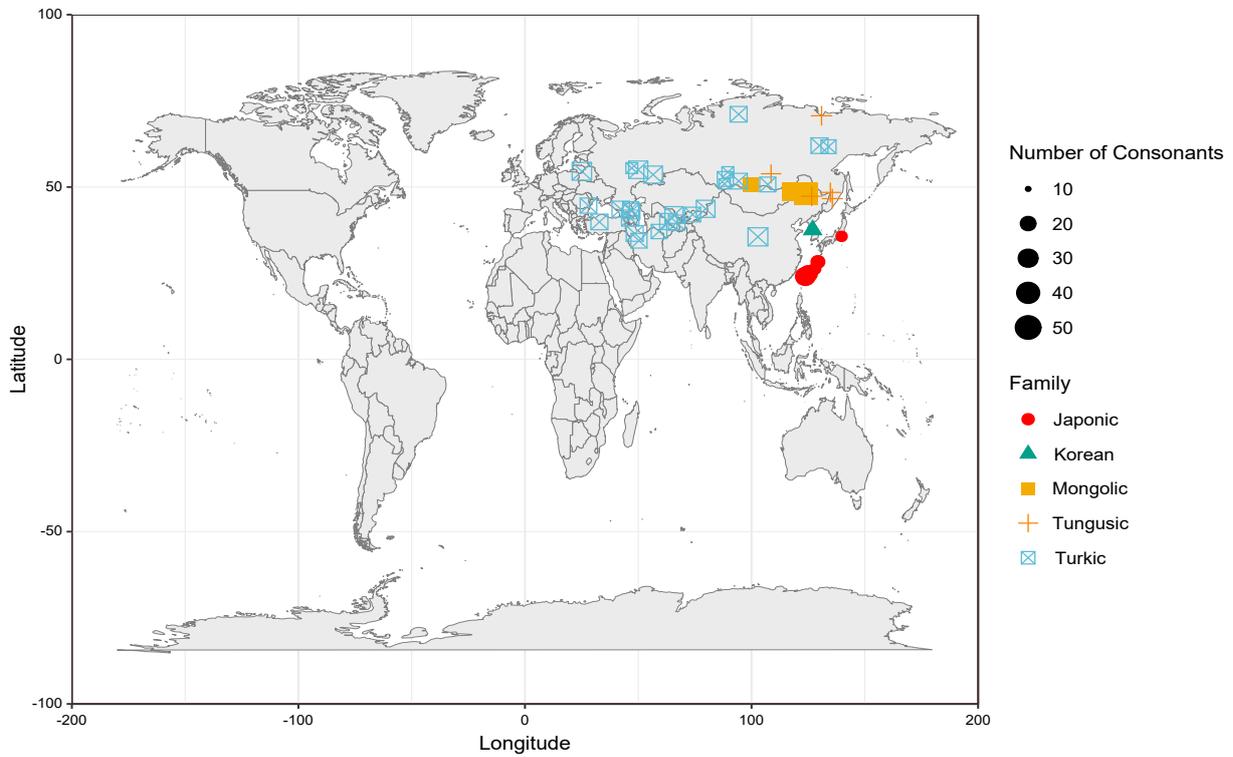


Figure 1: Total number of consonants found in Transeurasian languages. Size of each data point on the map indicates total number of consonants.



Figure 2: Phoneme cloud of different type of consonants across 44 Transeurasian languages. Size of each phoneme indicates its relative frequency.