REVIEW The origin and spread of Transeurasian languages: An interdisciplinary study supports the view that Transeurasian languages arose in northeastern China about 9,000 years ago.

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Abstract

> This is a review of the paper in Science “Triangulation supports agricultural spread of the Transeurasian languages”

The family of Transeurasian languages, includes Japanese, Korean, Tungusic, Mongolic and Turkic, spreading from East Asian islands to Siberia and Turkey. Its origin and early dispersal of speakers has long been debated. In the literature one school of thought had been dominant, that is, ‘pastoralist hypothesis’ which identifies the primary dispersals of the Transeurasian languages with nomadic expansions starting in the eastern steppe in the fourth millennium before present[1].[2],[3]. Drawing evidence of linguistics, archaeology and genetics, Robbeets et al. challenged the traditional ‘pastoralist hypothesis’ and shown that the origins of the Transeurasian languages can be traced back to the beginning of millet cultivation and the early Amur gene pool in Neolithic Northeast Asia.[4] They named this proposal as ‘farming hypothesis’, for they placed those dispersals within the scope of the ‘farming/language dispersal hypothesis’[5].[6],[7].

Integrating linguistics, archaeology and genetics in a single approach termed ‘triangulation’, they addressed issues such as the time depth, location, cultural identity and dispersal routes of ancestral Transeurasian speech communities.

They first took a linguistic approach to investigate the five linguistic families using the comparative method. They collected 3.193 cognate sets that represent 254 basic vocabulary concepts for 98 Transeurasian languages. As a matter of fact, the work has been (partially) done previously in the literature. For example, Beckwith has tried to demonstrate that Japanese, Korean and Koguryo are relatives.[8] What different is that Robbeets and colleagues applied Bayesian methods to infer a dated phylogeny of the Transeurasian languages and Bayesian phylogeography to complement classical approaches. Thanks to modern computers software development which enables the particular model of probability testing such as Bayesian phylogenetic modelling to be used in linguistics, the authors found support for a Transeurasian origin in the West Liao River region in the Early Neolithic. They then examined agropastoral words revealed in the reconstructed vocabulary of the proto-languages to identify a small core of inherited words that are culturally diagnostic for ancestral

speech communities in a particular region at a particular time. Their findings supported the farming hypothesis.

The authors use their language data together with information from archology. Drawing data from the published literature, they scored 172 archaeological features for 255 Neolithic and Bronze Age sites and compiled an inventory of 269 directly carbon-14-dated early crop remains in northern China, the Primorye, Korea and Japan and (with help of Bayesian analysis) found a cluster of Neolithic cultures in the West Liao basin.

Their genetic analysis also confirmed recent findings that Japanese and Korean populations have West Liao River ancestry, contrary to previous claims that there is no genetic correlate of the Transeurasian language family[9].

With a unified perspective of 'triangulating' genetics, archaeology and linguistics, the authors determined the most probable location of the homeland of the ancestors of the modern ranseurasian languages speaking peoples, and the most likely time for the language family began to diverge into subgroups should be 9,000 years ago. The results indicate that there was a major initial split in the Transeurasian family, goes back to the Early–Middle Neolithic, which was followed by linguistic contacts between the five daughter branches, goes back to the Late Neolithic, Bronze and Iron Ages. This study provides not only a challenge to the traditional 'pastoralist hypothesis' and gains more certainty on the 'farming/language dispersal hypothesis.

Robbeets and colleagues' work is important in many ways. Since the study of the Transeurasian languages is not as thorough as that of the Indo-European languages, much uncertainty is still left for further research, such as its origins and the relationship among many language. Some languages, like Japanese and Korean, are even been considered as isolated by many a linguist. Although scholars have tried to connect (one of) them with continental languages, e.g. Beckwith's Japanese-Koguryoic Family of Languages[8], there was not enough evidence to support their studies. Beckwith even has chapters to show that the proximal homeland of Japanese is the West Liao River Region, but he himself was not that sure. Therefore, the certainty Robbeets et al.'s work has provided are significant on such fundamental issues, for it can free linguists to build on this and to explore the history of this language family much further. The work is also helpful for scholars to explore the possibility in connecting disciplines of related fields, such as linguistics, archaeology and genetics, to push research on future technologies.

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