Climate change reflected in early Sino-Tibetan borrowings for crops and animals

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The Holocene Climatic Optimum (HCO) occurred in northeastern China around 9500-5000 BP, marked by increased precipitation and temperature (Jia et al. 2016, Liu et al. 2022). Previous studies suggest that the period from 7000 to 5000 BP was characterized by a favorable climate in the Yellow River region (Liu et al. 2022), until the temperature and humidity dropped around 4000 BP (Sun et al. 2019). During this time, there was a significant increase in the spread of rice in northeastern China (d'Alpoim et al. 2015). In the West Liao River basin, the Bronze Age was characterized by a transition of human subsistence strategies as a response to climate change, with an increased reliance on animal husbandry in comparison to millet cultivation (Jia et al. 2016).

This paper aims to investigate the lexical borrowings of crops and animals in northeastern China, which could reflect the climate events linguistically. Emphasizing on the loanwords in northeastern China, two language phyla will be the focus of this study, namely Sino-Tibetan and Transeurasian. Rice cultivation, which was spread during the peak of HCO in northern China, may have led to borrowing of vocabulary related to rice farming from Sino-Tibetan to Transeurasian languages. Similarly, the increased reliance on animal husbandry in the West Liao River Basin could lead to borrowings of animal-related vocabulary from Transeurasian to Sino-Tibetan languages. Based on these premises, the research questions of this paper are: (1) What is the impact of climate change on crops and animals in northeastern China? How is that reflected in prehistoric lexical borrowings? (2) Can climate be seen as an impact of the transmission of the words for crops and animals?

This paper maps the approximate climate situations on the contact settings between Sino-Tibetan and Transeurasian in time and space, in reference to the loanwords to specific contact settings based on a loanword database compiled by the current author. A separate database for loanwords of crops and animals between Sino-Tibetan and language families in the south (e.g., Austronesian, Austroasiatic, and Tai-Kadai) was also collected, for the purpose of comparing the quantity and quality of borrowings that happened in the northeast. Data on archaeological sites and climatic information were collected from previous research.

The preliminary results suggest that (1) climate change correlates with the spread of certain crops and animals, further coinciding with the borrowing date of related lexical items. For instance, the introduction of wheat and barley from Central Asia is mirrored by the lexical borrowings referring to these crops detected in Old Chinese, Tungusic, Japonic and Korenic. This suggests that climate is likely to have played an important role in agricultural lexical borrowings between the two phyla. (2) The lexical borrowings between Sino-Tibetan and languages with a southern origin are larger in size in comparison to loans detected in the north (i.e., with Transeurasian). This difference might also be explained by the climate different between the two geographical regions. This research sheds light on the human response to climate change from a linguistic perspective. By investigating prehistoric lexical borrowings, it shows that climate events are one of the contributing factors to language contact and lexicon change.

References

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