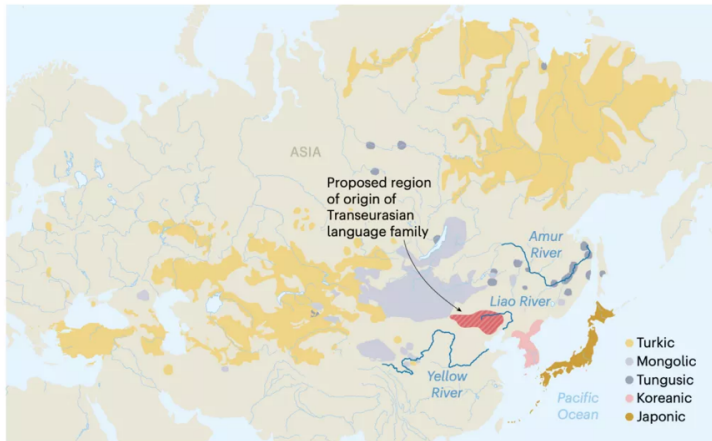


# Japanese and Korean have the same origin, and both of them come from Northeast China?

Original Wang Yiwei intellectual Today

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The Intellectual



Origin and diffusion of pan-Asian-European language family

## + Introduction

Over the long years, human beings have met, communicated and separated from human beings, and their languages also collide, merge and differentiate. Recently, a study, in cooperation with linguists, archaeologists and geneticists, found that people who speak Japanese, Korean, Turkic, Mongolian and Tungus have common genetic and linguistic ancestors - they lived in the Xiliao River Basin in northeast China 9000 years ago.

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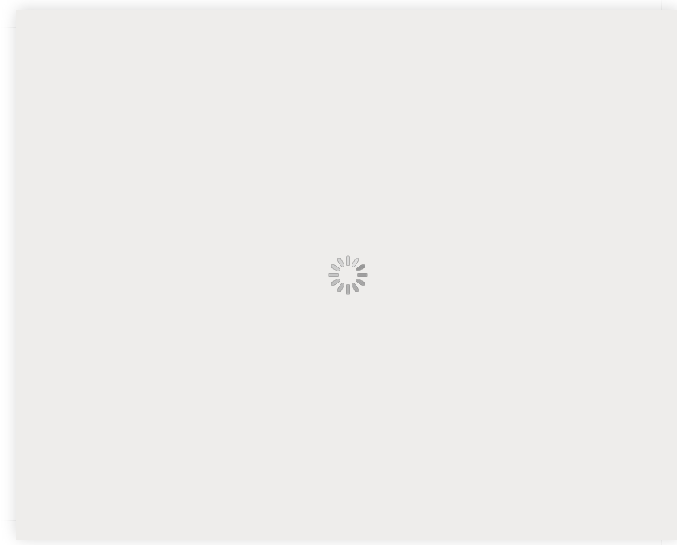


Linguists divide the world's languages into different linguistic families according to evolutionary relationships. One of the classifications is called "pan-Eurasian languages", including Tungus, Mongolian, Turkic, Japanese-Ryukyu (ethnic) and Korean (ethnic). The residents who use these languages are distributed throughout Eurasia, with a population of hundreds of millions.

Recently, a six-year cross-disciplinary study of scholars from 11 countries found that the pan-Eurasian language family has a common ancestor: they once lived about 9000 years ago, that is, northeastern Neolithic China.

On November 11, 2021, Nature published the study [1]. The study believes that the frequent language exchanges between regions of Northeast Asia after the Bronze Age **conceal the fact that these languages are essentially homogeneous**. In fact, in the early Neolithic period, farmers in Northeast China crossed the Northeast Asian continent and entered the territory where Japan and South Korea were located. They have brought their own genes and culture, as well as primitive language.

"Our research shows that people who speak Japanese, Korean, Turkic, Mongolian and Tungus have common genetic and linguistic ancestors. They live in the Xiliao River Basin in northeast China." Martine Robbeets, the corresponding author of the paper and a professor at the Maple Institute of Human History in Germany, said. She and her research team also pointed out through linguistic and archaeological research that agriculture plays an important role in the diffusion of language.



**Figure 1** The integration of language, agriculture and genetic expansion in Northeast Asia. Red is Amor bloodline, green is Yellow River bloodline, and blue is rope bloodline. The red arrow indicates that Neolithic millet farmers migrated eastward and brought Korean and Tungus to designated areas. The green arrow marks the integration of rice farming in the late Neolithic and Bronze Age, bringing Japanese from South Korea to Japan | Source [1]

Zhang Hai, associate professor of the School of Archaeology, Culture and Museums of Peking University, believes that **this is a real cross-cutting study of arts and sciences.**" In particular, linguistics and archaeology are expressed in quantitative ways, using the same analytical methods as paleontology, Bayesian phylogenology methods, link linguistics, archaeology and paleontological DNA to discuss a key scientific issue.

"(This study] provides evidence support for the existence of a unified pan-Eurasian language family," Peter Bellwood, honorary retired professor of the School of Archaeology and Anthropology of the Australian National University, wrote in a review of the paper published in the journal [2]. For a long time, there has been a lot of controversy about the origin of the pan-Eurasian language family, and he believes that this study has made a "cooice contribution" to clarifying the controversy.

PaleoDNA researchers are excited about the new genetic evidence provided

in the article.

"This study has created new paleogenomes from the Neolithic era and beyond in the Ryukyu Islands of South Korea and Japan. **The publication of these genomes fills the gap in the current paleo DNA databases in the Ryukyu Islands and other places on the Korean Peninsula.**" Wang Ke, a postdoctoral student at the Max Planck Institute of Human History, Germany, told Intellectuals by email.

"South Korea is very interesting," said Fu Qiaomei, a researcher at the Institute of Vertebrate Paleontology of the Chinese Academy of Sciences. "It is different from Japan's early (genetic composition), indicating that the impact (northern East Asia) was in South Korea and later."

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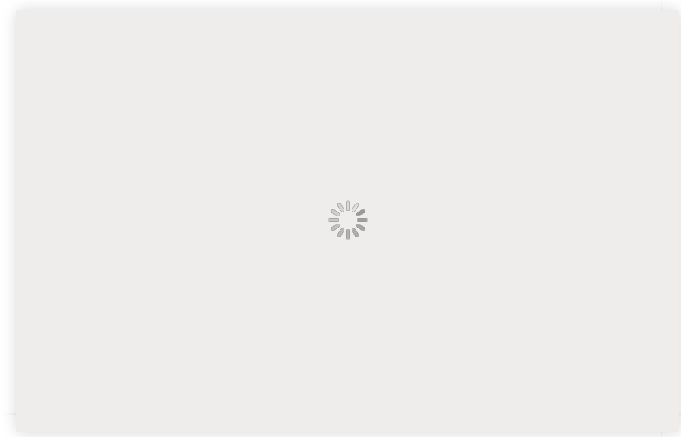
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## **Mystery of the origin of "Pan-Eurasian language family"**

Martine Robbeets is one of the proposers of the concept of "pan-Eurasian language family", which refers to a group of geographically adjacent languages from the Pacific Ocean in the east to the Baltic Sea, the Black Sea and the Mediterranean Sea in the west [3]. But not all linguists agree with this concept.

The concept of pan-Eurasian languages originated from the "altaic languages" that appeared as early as the 18th century. The Altai language family classifies several language families in Eurasia, such as Mongolia, Turks and Tungus, according to their similar geographical location, believing that

they come from the same source. Later, the "pan-Eurasian language family" added the Japanese-Ryukyu and Korean languages on this basis, believing that the people of these languages shared the same ancestors. Robbeets said that this is because linguistic research results confirm that the languages of these five linguistic families share common basic vocabulary.



**Figure 2** Origin and diffusion of Pan-Asian-European Language System | Source [2]

Whether it is the concept of "Altai language family" or the connotation of "pan-Eurasian language family", there are opposition in the linguistic community. Some scholars believe that these languages (the five language families involved in the pan-Eurasian language family) are not homologous, but only similar words generated by a large amount of communication; others believe that Japanese and Korean languages are of the same origin, and the two are not of different origins from several other language families.

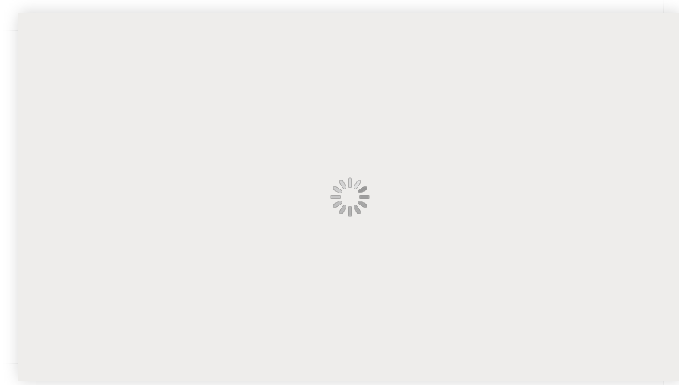
"What they said is right, just looking at problems on different levels," Robbeets said. The reason why we have so much controversy on this issue is that borrowing is very common... But to some extent, they conceal a very small number of words obtained by inheritance. She also agrees with the homology of Japan and South Korea, but believes that the perspective of comparison should be broadened to the pan-Eurasian language family.

Robbeets believes that the real problem of origin is difficult to be concluded. The real problem is that it is difficult to determine whether the evidence presented by linguists is conclusive." The problem is not that there is not enough evidence, but that people think too much, or even fantasize, and make more fiction than facts.

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## Find the prototype of the language



**Figure 3** Professor Robbeets, a linguist, video linked to Intellectuals at his home in Belgium. She laughed and said that she was an "armchair scholar" for burying the case. In the dazzling midday sun in Europe, behind her is a colorful set of books. If you take out a random book, you may record the unknown local language in some corner of the world.

Martine Robbeets' daily work is to lie on the desk, extract various elements from the different languages recorded in these books, analyze and compare them.

She is proficient or proficient in nearly 10 languages, including three local dialects in Belgium, English, Japanese, Korean, and some simple Russian, Turkic and Mongolian. Most of these languages were acquired by her in the process of studying and studying in Japan, South Korea, Russia and other places.

Robbeets said that there is a kind of word in a language that has relatively uncultural meaning. They represent some of the simplest concepts, such as house and food. She called it "basic vocabulary". Because borrowed vocabulary is often related to culture, studying the distribution of basic vocabulary in different languages can avoid the influence of borrowed vocabulary well. Linguists have made a list of "basic words" composed of 100 words in a long period of exploration, which is convenient for comparison of different languages.

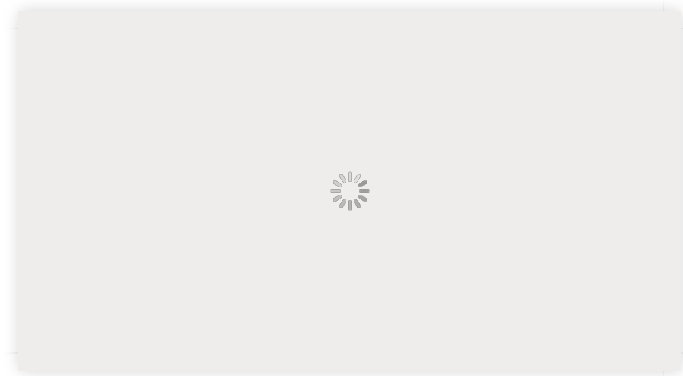
Even so, it is not easy to compare the basic vocabulary of different languages. When writing his doctoral thesis in 2003, Robbeets collected 10,000 etymology proposed by linguists that are considered pan-Eurasian languages. These etymology correspond to 2000 words, that is to say, each word has about 5 possible etymology. Which is the real etymology?

"When I collected so much evidence, I felt that it was all false, so my real goal at that time was to prove that there was no connection between the pan-Eurasian language families." She checked the vocabulary one by one and judged whether the word could be used as a real etymology with linguistic logic. If there was a trace of doubt, she deleted it. In the end, she narrowed 10,000 words to 300. "I tried all the methods, but I couldn't refuse them anymore." To confirm this, she compared the pronunciation of these words and found that they also followed the corresponding rules in pronunciation.

In addition to using etymology, she also confirmed by word morphology methods such as word forms and affixes, and found that these words are also interrelated in morphology. Therefore, she is convinced that these words

are homologous words of the pan-Eurasian language family.

In this published paper, Robbeets and his colleagues selected 98 languages from the five branches of the Pan-Eurasian language family and looked for 254 etymological words in each language. "Sometimes it can be found in three branches, sometimes four," she said. "Our database is very large."



**Figure 4** Robbeets illustrates the comparison process of an etymological word "wood". In her 2018 paper, she chose a broader meaning of words, so that the positive correlation between the language families was stronger. In this study in 2021, she chose words more refinedly. Although the positive correlation was weakened, she obtained richer data points.

They then analyzed the development process of these words with statistical methods (Bayesian Phylogenetic Analysis). The analysis results show that the "Proto-Transeurasian language" of the pan-Eurasian language family began to differentiate about 981 years ago, from which the Altai language family was separated 6811 ago, and the Japanese and Korean languages 5458 years ago, 4 491 years ago, the Mongolian language and the Tungus language family were separated.



"Human language has a history of 10 million years, and linguistics can only study it for 1 million years," Robbeets said.

In the ten thousand years from the Neolithic era to the present, the evolution of different languages has changed from fast to slow, and from big to small. Traditional linguistics calculates the differentiation of language on the basis of hypothetical uniformity of change, and there must be various inaccuracies.

"That's why genetic methods are very useful," Robbeets said. About 15 years ago, linguists began to combine genetic testing methods with the establishment of linguistic evolutionary trees to improve prediction.

Over the past 20 years of research experience, Robbeets has gradually realized that linguistic analysis, although telling her the origin of the pan-Eurasian population, cannot provide more information: where did they have lived? When will the migration start? How to migrate? Why are they scattered all over Northeast Asia? The introduction of archaeology and genetics can help solve these problems.

"Language alone cannot finally solve major problems in human history, but combining genetics and archaeology, it can increase the credibility and effectiveness of certain scenarios." She said.

It is not the first of this paper to use linguistics, archaeological and genetic methods at the same time, but such large-scale parallel research is indeed rare. Robbeets said that the interdisciplinary cooperation model proposed in this study is still in the exploration stage, and she hopes to continue this

model and expand the boundaries of linguistic research with archaeological and genetic methods.

Six years ago, Robbeets applied for an interdisciplinary research fund of 2200 million euros from the European Union and formed a huge team with the connections he had established to study in Japan and South Korea. In 2019, she also visited China and visited Professor Cui Yinqiu from the School of Life Sciences of Jilin University. Very talented scholar," she said. Cui Yinqiu suggested cooperating and let his student Ning Chao join Robbeets' team and go to Germany to carry out research.

Ning Chao has currently served in the School of Archaeology, Culture and Museum of Peking University. During his days at the Max Planck Institute of Human History in Germany, he was responsible for most of the paleontological DNA data collection in this study. He collected all published ancient genome data in Northeast Asia.

"It is not easy to form a multidisciplinary team across borders. First of all, we need to understand different disciplines, including archaeology, language and DNA, which scientists are doing research related to this topic in the world, and secondly, to ensure which scientists are interested in interdisciplinary research topics and respect other different studies. The research results of the department." In the email reply to Intellectuals, Ning Chao said.

In the past six years, the research team has held many online and offline interdisciplinary meetings to present the latest progress and findings of different disciplines respectively, and then conduct a comprehensive discussion. They called this research method "triangulation".

Robbeets stressed that although the team conducts research from three disciplines, the research process is relatively independent, and the data collection, analysis and results are carried out separately, thus avoiding the possibility of "internal loop", that is, being logical results for each other. Only in the final stage of the study will the inferences of the three disciplines be mapped to each other and compare and assess the degree of convergence of evidence, including relevance, inconsistencies, uncertainty and possible prejudices.

After comparing the results of three disciplines, the article concludes that the origin of trans-Eurasian language can be traced back to the first people in Neolithic Northeast Asia to grow millet. From the early to mid-Neolithic period, millet farmers spread from the Xiliao River to neighboring areas. In the late Neolithic, bronze and iron ages, millet farmers gradually mixed with the Yellow River, western Eurasia and rope populations, and added rice, western Eurasian crops and animal husbandry to cultivation.

### **Interdisciplinary cooperation, the future of linguistic research?**

Zhang Hai believes that the study of the Chinese and pan-Eurasian language groups originated from the early dry farming population in the Liaohe River Basin in northeast China, and the nomadic population of the pan-Eurasian grasslands originated from the spread of sedentary agriculture. "subverts the understanding of the past." Peter Bellwood expressed a similar view in the review.

Fu Qiaomei, who studies paleontology, believes that although the origin conclusion has been drawn from genetic evidence, agriculture may only be one of the factors in how the specific migration occurs. In fact, the reasons are likely to be more complicated, especially in recent times, the stronger the influence of culture on migration and language.

Robbeets responded that she believed that agriculture was an important factor, but did not exclude other factors. For example, one of the factors she believes needs more research is climate change. In previous studies, the time of climate change seems to be well related to the time of language differentiation.

What is the relationship between the pan-Eurasian language family and other language families, such as the Chinese-Tibetan language family who are also active on the land of Asia, is still an unsolved mystery.

"The questions raised in this article are more important," Zhang Hai said. "First, there is still a lack of paleontological DNA samples at a critical period, that is, the dry farming population in the Xiliao River Basin 8000 years ago. Secondly, the Pan-Eurasian language family and the Chinese-Tibet language family should be two different sources. If the Pan-Eurasian language family and the Chinese-Tibetan language family are the basis of dry farming agriculture, then do the two language families have different origins?"

Asked about the relationship between the pan-Eurasian language family and the Han-Tibet family, Robbeets said that she believes that the two language family have different origins, one originates in the Xiliao River Basin and the

other originates in the Yellow River Basin, but there was a phenomenon of language borrowing in prehistoric period, and studying this borrowing is her next step. I think it is necessary to understand how the two peasant communities interact with each other and what the signals this sent in ancient times are," she said.

She just recruited a doctoral student from China a month ago and will specialize in the borrowing of two languages in the next 3-4 years.

She hopes to continue interdisciplinary cooperation in the follow-up study. In this paper study, she said that the most difficult thing is to integrate various kinds of evidence.

"The 'triangulation method' is still incomplete and still developing," she said. In addition to requiring more financial support, she also plans to hold more academic conferences to explore how this cooperation should be carried out.

"At present, we have only lifted a little veil, and there is still a lot to do in the future," she said. "I also hope that this field can expand well in the future."

### Thank you

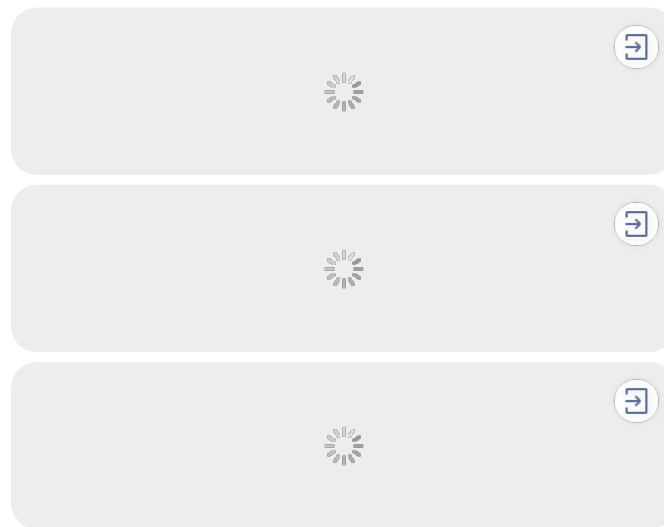
Thank you **Guo Lin**, a doctoral student in the Department of Biology of Moscow University, and **Zhang Menghan**, a researcher at the Institute of Modern Linguistics of Fudan University, for their help in this article.



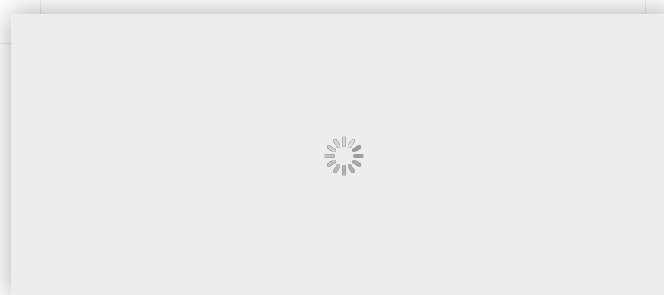
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