

What's in a surname? New study explores what the evolution of names reveals about China

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What can surnames tell us about the culture, genetics and history of our society? That is the question being answered by Chinese researchers who have traced the evolution of surnames across China. The research, published in the *American Journal of Physical Anthropology*, reveals how surnames can act as a genetic stamp, allowing scientists to trace lineage and understand the migrations and historical events which shaped modern China.

The research was led by Dr. Jaiwei Chen, from Beijing Normal University, and Professor Yida Yuan from the [Chinese Academy of Sciences](#).

"When it comes to surnames the Chinese people are unique. 1.28 billion people share 7,327 surnames. In fact the 100 most common names account for 85% of the population," said Dr Chen. "This means Chinese surnames include more cultural and [genetic information](#) than in most other countries."

Dr Chen and the team analysed data from China's National Citizen Identity Information, using isonymy theory which provides a method of exploring population structure by studying the distribution of surnames. This included measuring Genetic distance, the [genetic divergence](#) between populations within a species."

"Surnames are inherited through the male line which means they can be considered markers for the [Y chromosome](#) genes," said Dr. Chen. "This means a study of surname distribution can help us understand genetic structures and historical social behavior, such as the role of migrations."

The team focused on the impact of migration and drift on the evolution of China's population structure. In Western European countries drift is the main effect as the majority of the population has been settled for a long time. However, in the United States immigration has had a far greater impact, particularly with the influx of people during the 19th and 20th centuries.

China stands unique from both models with a 4,000-year history of recorded surnames stretching back to the Xia Dynasty of the 21st to 16th centuries BC. Surname distribution has been consistent since the Song Dynasty 900 years ago and partly due to Confucian culture surnames have been well preserved through the generations.

The team found the highest levels of surname diversity at the Yangtze River basin, particularly around the middle and lower reaches of the river. The team believes this is due to multiple large migrations throughout Chinese history.

Historically 97 of the 100 most common surnames originated during the Spring and Autumn Period (722 BC) and the Warring States Period (476 BC) when the territory of China was limited to the central plains. There are multiple historical migrations from the central plains to the Yangtze River basin and consequently the population around the basin consists of local citizens and historical migrant groups.

The team also discovered that the [genetic distance](#) between China's three northeastern provinces and the eastern province of Shandong was very small, despite covering a vast geographical area. This is due to the

historic migration known as 'braving the journey to northeast China', which witnessed 20 million people travel to the sparsely populated provinces.

Overall geographical distribution of surnames and [population structure](#) of modern China was found to be the result of both drift and large scale migration as several regional centers of Chinese civilization developed throughout the nation's history.

"The most noticeable trends are the low number of surnames and their isolation by distance, both of which demonstrate the historic stability of Chinese surnames," concluded Dr. Chen. "The historical inheritance of Chinese [surnames](#) has been continuous, with a unique balance between drift and migration after thousands of years of surname evolution."

More information: Yan Liu, Liujun Chen, Yida Yuan, Jiawei Chen, 'A study of surnames in china through isonymy', March 2012, *American Journal of Physical Anthropology*, [DOI: 10.1002/ajpa.22055](https://doi.org/10.1002/ajpa.22055)

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