



JOHANNES GUTENBERG  
UNIVERSITÄT MAINZ



## Languages and populations in the Gansu-Qinghai area - the case of Wutun

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甘肃-青海地区的语言和人口——以五屯为例  
美因茨，2026年1月22–23日



Seminarräume STH2, Gästehaus  
Johann-Friedrich-von-Pfeiffer-Weg 2

五屯下寺·三面阿弥陀佛露天大佛  
The Statue of Amitabha Buddha in the Wutun Temple  
མེང་གི་གཤོང་མ་མགོ་དགའ་ལྷན་ལྷན་ཆོས་སྒྲིབ་གི་འོད་དཔག་མེད་ཀྱི་ལྷ་ཁང་།

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# Cross views on the population origin and admixture in Qinghai

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Qinghai is the gateway of the Tibetan Plateau for human migration<sup>[1]</sup>. Along with the development of civilization, the population structure of Qinghai has continuously transformed. The peopling of Qinghai did not occur quite early. There has never been any fossil of *Homo erectus* found in Qinghai. The earliest human in Qinghai was Denisovan, an early subspecies of *Homo sapiens*<sup>[2]</sup>. Although the fossil was found in Xiahe of Gansu province, this county is actually on the plateau on the border of Qinghai and the Denisovans could travel freely into Qinghai, leaving more genetic contribution to the plateau populations than to the other East Asians.

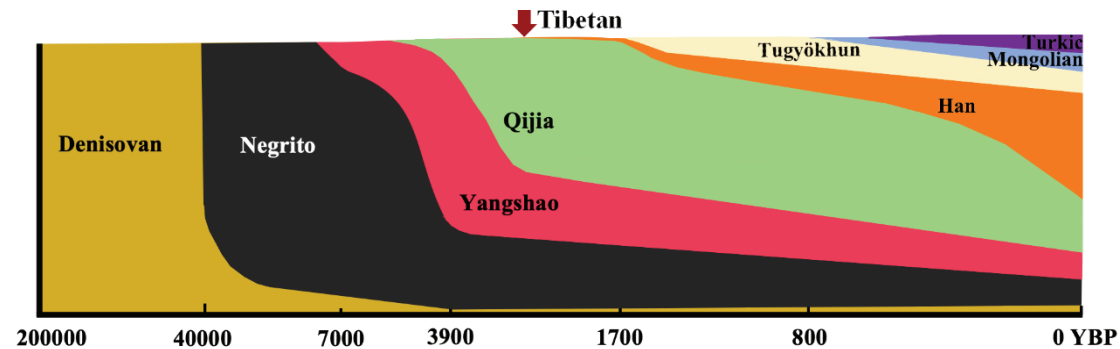
Modern humans migrated into Qinghai since around 40,000 years ago<sup>[3]</sup>. There were at least two major layers of Y-chromosome genealogy in present-day plateau populations, corresponding to the two geographic races of modern humans in the Far East, the Negritos and the major East Asians<sup>[4]</sup>. Negritos lived in the area of Mainland Southeast Asia and Tibetan Plateau for quite a long time and adapted to the highland very well<sup>[5]</sup>. Since around 7,000 years ago, some major East Asians started to trek along the Yellow River into Qinghai, which was related to the westward expansion of Yangshao Culture<sup>[6][7][8]</sup>. Yangshao mixed with the local Dadiwan Culture and turned into Majiayao Culture ~5300 YBP<sup>[8]</sup>.

However, large wave of migration onto the plateau did not happen until the highland barley was cultivated ~3900 YBP<sup>[9][10]</sup>. Since then, the two layers admixed and became the genetic foundation of modern plateau populations, e.g., the Tibetans in a ratio of around 1:3. Interestingly, the Baima people seem to be almost pure of Negrito in Y-chromosome<sup>[4][11]</sup>. The large wave of migration was initiated by Qijia Culture which was an admixture of Liangzhu Culture from the Yangtze Delta and the local Majiayao Culture. Thereafter, the population structure seldom changed until in the Northern Dynasty the Tugyökhun people came from northeast China. The present Tu people are believed to be the descendants of Tugyökhun, and we revealed that their paternal Y-chromosome lineages were mainly haplogroup C which originated in northeast China while the maternal mtDNA lineages were very close to Baima, indicating a gender bias admixture<sup>[12]</sup>. The Tugyökhun people had also mixed with the early Tibetans after their kingdom ended, which was proved by ancient DNA from Dulan site<sup>[13]</sup>.

In the recent 1,000 years, the major influence to Qinghai population was from the Mongolians<sup>[14]</sup>, as well as the Turkic speakers brought by the Mongolian armies, e.g., the Salar<sup>[15]</sup>. Above all, Han people continually migrated into Qinghai in the past 3,000 years; however, most of them were absorbed by the local populations until the end of Qing Dynasty.

The long history of population admixture made Qinghai a colorful map of

diverse culture and complex genetic structure<sup>[16]</sup>, and also created some extremely mixed populations such as Wutun, a mixture of Tugyökhun, Tibetan, Mongolian, and Han in both language and genetics.



**Figure 1.** Human Population Admixture History in Qinghai

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