Dr Wende Chen
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Boat trip: A significant panorama of Tang Dynasty river basins

Research Objectives
Dr Wende Chen has analysed Chinese poetry to reveal historical geographies of Tang Dynasty river basins.

Bio
Wende Chen, PhD, graduated from College of Tourism, Huaqiao University, China. His research is focused on tourism history, service management, and hotel design.

References

Personal Response
Is it possible to further break down the findings in a spatial manner; that is, can you pin-point certain words to very specific locations or routes?

Unfortunately not. Because all correlation words have broad representativeness, including the common characteristics of the entire river basins. Secondly, I would like to point out that the original text (Figure 5) is very important as it has already outlined the entire space of river basins.
Dr Wende Chen of Huaqiao University, China, has analysed Chinese poetry to reveal historical geographies of Tang Dynasty river basins. The Chinese character for ‘boat’ as the dependent variable, characters with significant statistical correlation were identified. These characters were classified into nine themes: structure and use of boats, geographical locations, natural water systems, flora and fauna, official travel, economic activities, leisure activities, emotions, and finally, daily life. Together, the results paint a vivid picture of sites and sounds that would have greeted travellers on boat trips in the Tang Dynasty.

The Tang Dynasty (618–907 AD) was a golden age of power and culture in China. With Chang’ an (today’s Xi’an) as the capital, and most populous, city, it encompassed the geographically important Yellow and Yangtze river basins. The city itself occupied an area much larger than that of Constantinople, the de facto capital of the Roman Empire.

The preceding Sui Dynasty (581–618 AD) had overseen a proliferation of canal building to support an ever-growing population. In particular, canals were constructed to connect the Yangtze, Yellow, and Huai rivers. In setting this infrastructure, the Tang Dynasty also embraced rivers and canals as a means of transport, a source of income, a social setting, and a muse for artistic endeavours. Moreover, references to tourism are plentiful among the abundant contemporary records. Indeed, tourism appears to have been part of daily life for both ordinary people and the aristocratic class. These records are replete with poems that describe boat trips along the many waterways.

LOGISTIC REGRESSION AND CHARACTER RECOGNITION

Chen chose the Chinese character for ‘boat’ as the observational centre to study river basins in the Tang Dynasty. The reasons were four-fold. First, boats were – and are – a dominant means of water transportation; second, boats are ubiquitous in river basins inhabited by humans; third, boats are focal points for human activities; finally, references to boats in Tang records almost exclusively relate to river navigation, as navigation on the sea was extremely rare.

Chen chose to study the correlation between the character for ‘boat’ and other Chinese characters in poetry from the era by using a mathematical method: logistic regression. Logistic regression is a quantitative statistical technique that identifies correlations among dependent and independent variables (dependent variables ‘depend’ on change, according to independent variables). Chen applied logistic regression to a large dataset of 13,100 five-character and eight-line poems from the Tang Dynasty. Based on 6,500 Chinese characters, a database containing 84,500,000 data points was established. Among these characters, five found to be synonyms of ‘boat’ were set as the dependent variables. Of the remaining characters, those appearing fewer than 10 times and those calculated to have low statistical significance were removed. Eventually, 218 independent variables (ie, 218 Chinese characters) remained; these characters all had a significant correlation with the terms for ‘boat’ and increased the probability of the term ‘boat being used’, in line with Chen’s reasoning.

WATER THEMES

The 218 Chinese characters were classified into nine themes related to the historical geography of the region: (1) structure and use of boats, (2) geographical locations, (3) natural water systems, (4) flora and fauna, (5) official travel, (6) economic activities, (7) leisure activities, (8) emotions, and (9) daily life.

Perhaps predictably, numerous terms related to geographical locations along waterways and boat trip routes in the Tang Dynasty. Most are concentrated along the lower and middle reaches of the Yangtze River, as ‘boat’ is the capital, and most populous, city. However, a number also show significant exploration into regions not previously associated with the Tang Dynasty.

Among the natural water systems which made a notable impact are geormorphological features such as ‘gorge’, ‘island’, ‘oar’, ‘berth’, ‘sail’, and ‘float’, among others. In light of this, it is no surprise that characters related to human emotions also crop up, among them ‘ethereal’, ‘solace’, ‘bear’, and ‘gentle’, showing that rivers were a place to reflect on life.

Finally, on a practical note, many of the terms relate to daily life in the Tang Dynasty. In particular, certain foodstuffs are prominent, including rice (and related terms such as ‘drunk’) and rice, confirming that rice had become a staple food by this time.

Chen is quick to point out that this study is in no way exhaustive. For one thing, the sample set included only approximately one quarter of all known poems from this time period. Moreover, while logistic regression reveals correlations, it does not necessarily reveal causal relationships. Regardless, the study paints a vivid picture of the sights and sounds that greeted travellers on waterways of the Tang Dynasty.
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