

# Drought, War, and Cannibalism in Northern China in History

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Despite the effort made by historians and archaeologists to investigate cannibalism in human societies, large-N statistical analysis of cannibalism and its triggering factors in pre-industrial societies is still missing in the literature. In this study, I base on 1194 cannibalism incidents in northern China in 1470–1911, together with other fine-grained paleo-climate and historical war datasets, to verify quantitatively the driving factors of cannibalism in pre-industrial societies. Granger causality, wavelet coherence, and phase analyses are employed. The key findings are that in historical northern China, cannibalism was primarily caused by drought and war, but their relationship is non-stationary and is mediated by environmental and socio-political contexts. The positive feedback between war and cannibalism is also revealed, indicating that they are mutually reinforced. The above findings supplement Malthusian theory with empirical evidence of the non-stationary influence of natural disasters on positive checks and how positive checks interact with and reinforce each other. The results also refine our knowledge about the regional environment-human nexus in northern China.

Keywords: Drought, War, Cannibalism, China

**Table 1** Granger causality analysis (GCA) about the influence of climate and war in causing cannibalism in northern China

Null hypothesis	<i>F</i>	<i>P</i>
Drought does not <i>Granger-cause</i> cannibalism	2.640**	0.048
Flood does not <i>Granger-cause</i> cannibalism	2.072	0.101
Temperature does not <i>Granger-cause</i> cannibalism	0.827	0.479
Precipitation does not <i>Granger-cause</i> cannibalism	0.202	0.895
War does not <i>Granger-cause</i> cannibalism	10.245***	0.000
Cannibalism does not <i>Granger-cause</i> war	5.714***	0.000

All of the data are in annual units. \*\**p* < 0.05; \*\*\**p* < 0.01