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**Bastions Against  
the Cold: Analyzing  
The Agency and  
Climate Change  
Resistance  
Exemplified in  
Ming Fortifications**



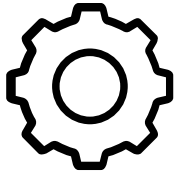
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# Background Information

- The Ming dynasty lasted from (1368-1644)
- The dynasty existed concurrently with a global cooling period that is colloquially known as the "Little Ice Age".
- Inner Mongolia was a militarily important region that also bore the brunt of the climate change during this cooling period.

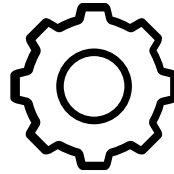
# What are my **research** questions?

## Question 1



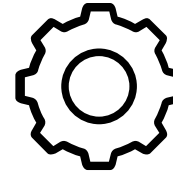
Is there evidence in Ming era China of individual agents reacting to climate change by implementing socio-cultural changes?

## Question 2



In what ways are fortifications constructed in Inner Mongolia spatially distributed that indicate individuals reacting to and resisting climate change?

## Question 3



Does the ethnohistorical record support such an interpretation?

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# What do I add to the conversation?

## Existing work.

- Works like Miao (2015) and Wang (2010) used paleoclimatic data to prove the climate was changing and inferred that it had major impacts on the Ming dynasty.
- My theoretical influence for agency comes from John Robb (2010) and focuses on the relationship between the individual and the structure they come from.
- A large number of archaeological studies that focus on research control draw upon some offshoot of Maynard Smith's (1982) notion of Game Theory.

## What do I add?

- I can include archaeological data into my analysis to add compelling evidence to whichever side of the current debate it supports.
- The vast majority of research projects that have covered this topic have looked at the effects of and responses to this climatic event from the Ming Dynasty as a whole, my project looks at the roles of individuals.
- My project adapts Lape and Chin-yunga's (2008) model to this study, which could act as an example for future projects.

# My methods.



1. Collect data.
  - a. Use GIS software to conduct a spatial distribution survey.
  - b. Review and organize information available in the ethno-historical record.
2. Analyze my data using an adapted version of Lape and Chin-yunga's model.

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# Why does **this** matter?

- Climate change is an ever increasingly structural problem, this study sheds light on the work of individuals to combat it.
- This project has a real possibility to shed new light on the debate surrounding the fall of the Ming dynasty.
- This is one of few archaeological explorations of a post-historical civilization's reactions to climate change and could lay the groundwork for future studies.



To everyone who got me here, my professors, my classmates, my friends, my family, thank you.

Questions?