

Why People Got Injured

How To Analyse Skeletal Trauma Patterns In The Eastern Eurasian Steppe, From The Late Neolithic Period To The Early Iron Age



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INTRODUCTION

Previous studies have emphasized the transformation from a farming-pastoral mixed economy to specialized nomadic pastoralism, and the increasing tendency of conflicts but failed to show whether, or how, this complex web of changes affected the human lived experience. Following a bioarchaeological model, I aim to explore the relationship between skeletal trauma, the natural environment, subsistence strategies and conflicts.

What Do We Know About The Eastern Eurasian Steppe?

Natural Environment

This region tends to be arid and cold, with distinct seasons. The predominant feature is the steppe landscape.

- **The north-western subarea (NW):** Complex terrain, distinct locations of productive land and mountain pastures → vertical seasonal movement of pastoralists
- **The north-central subarea (NC):** Flat terrain and low land productivity → horizontal and long-distance seasonal movement
- **The north-eastern subarea (NE):** Cool climate and productive pastures → short-er-distance seasonal movement

Subsistence Activities

- **Early second millennium BCE**
Mixed economy with farming and animal husbandry; raising pigs and sheep (NC)/ pigs and dogs (NE)
- **End of second millennium BCE**
NC: Animal herding and movement increased; raising sheep/ goats, cattle and horses
NE: Farming and settled life; raising pigs and dogs
NW: Environmental differences in subsistence are more striking than chronological differences
- **Late first millennium BCE**
Pastoralism coexisted with various subsistence strategies depending on local conditions and people's alternatives.

Conflicts

- Conflicts were enlarged and accelerated during the periods included in the textual records.
- **Two noteworthy changes:**
 1. The appearance of **warrior elites** (late second millennium BCE) → a group of people specialized in violent activities → specific demographic profiles of victims
 2. The innovation in **the weaponry technology** (late first millennium BCE)
Mounted archers emerged and replaced chariots. → enhanced the capacity of fighting → increasing number of deaths, and associated types of trauma



How To Analyse And Interpret Trauma?



Step 1

Observe Each Injury

1. **Location & Mechanism**
→ indicating whether accidental or intentional
3. **Phase of healing**
→ indicating when it happened: before, near or after death



Step 2

At The Individual-level

- **Consider the combination of all injuries within each individual (the mechanism, location, healing), explore the life-long experiences.**
 1. All injuries occurred at or near the time of death → resulted from one event or occurred in a short period. Death may be associated with the event (s).
 2. All injuries occurred before death and were well-healed → non-fatal injuries, their sequence cannot be identified.
 3. Injuries occurred before death and differed in healing phases → resulted from more than one event.
- **By studying characteristics of the individual, investigate what factors the individual have been expose to:**
 1. Biological: sex, age at death (Informed by osteological data)
 2. Sociocultural: identity, status, occupation, wealth, etc. (Informed by mortuary data)



Step 3

At The Population-level

- **Within one site**
What differences among injured individuals probably resulted in different trauma patterns? E.g., specific subsistence/ movement activities; specific identities and status.
- **Compare sites within a subarea**
What differences among sites probably resulted in different trauma patterns? E.g., temporal differences, variations in subsistence, settlement, conflicts and weapons.
- **Compare subareas within the steppe region**
What differences among subareas probably resulted in different trauma patterns? E.g., variations in topography, climate, chronological changes and social processes.

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CONCLUSION

Human remains are direct evidence of ancient people's lived experiences. The bioarchaeological model allows us to switch the focus from the natural environments and dynamic sociocultural changes to humans, reconstructing how they lived and what risks they faced in the eastern Eurasian Steppe.