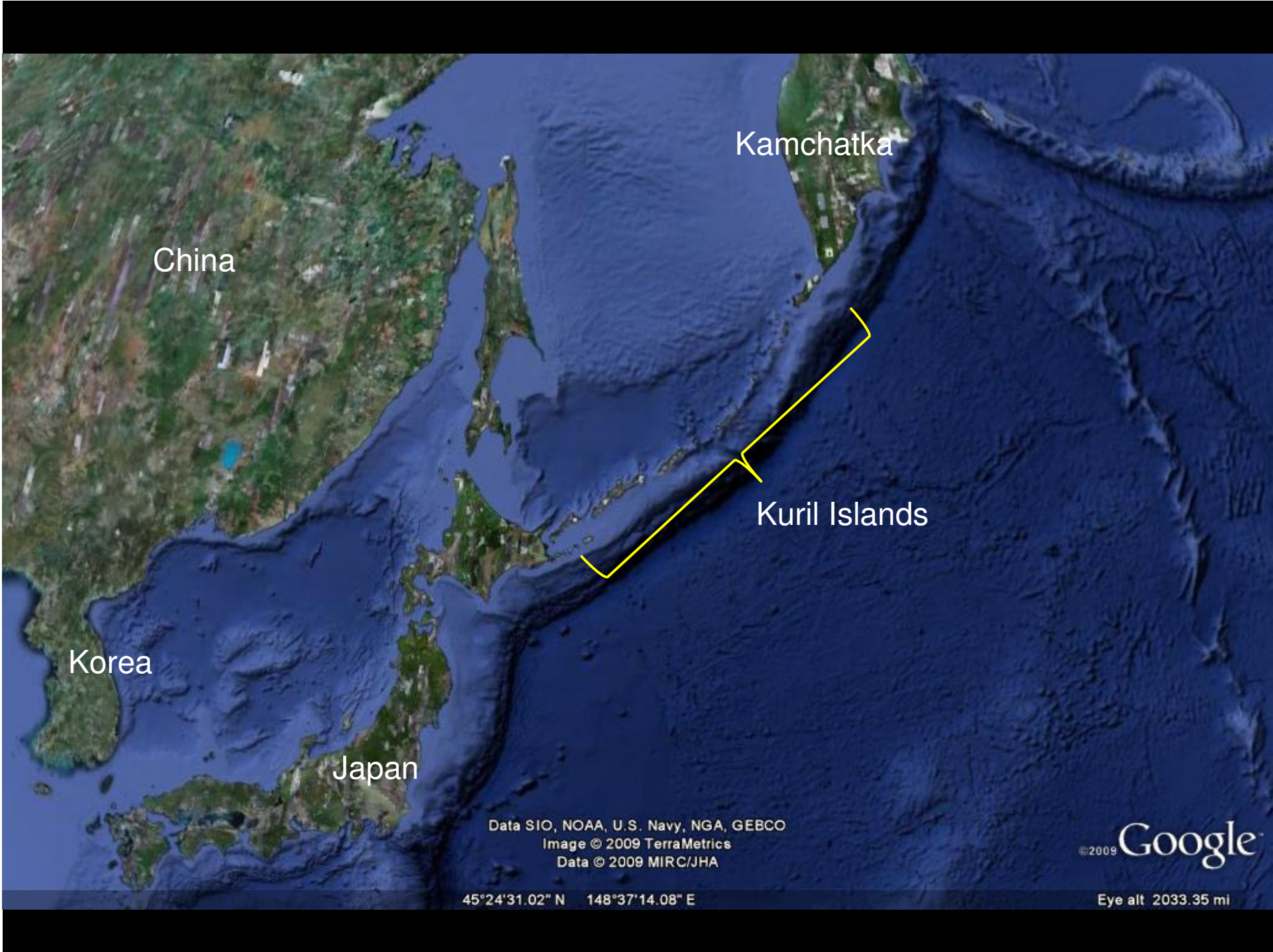


Tip of the Spear: Expanding the Use of Provenance Analysis in Human Ecodynamics Studies

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China

Kamchatka

Kuril Islands

Korea

Japan

Data SIO, NOAA, U.S. Navy, NGA, GEBCO
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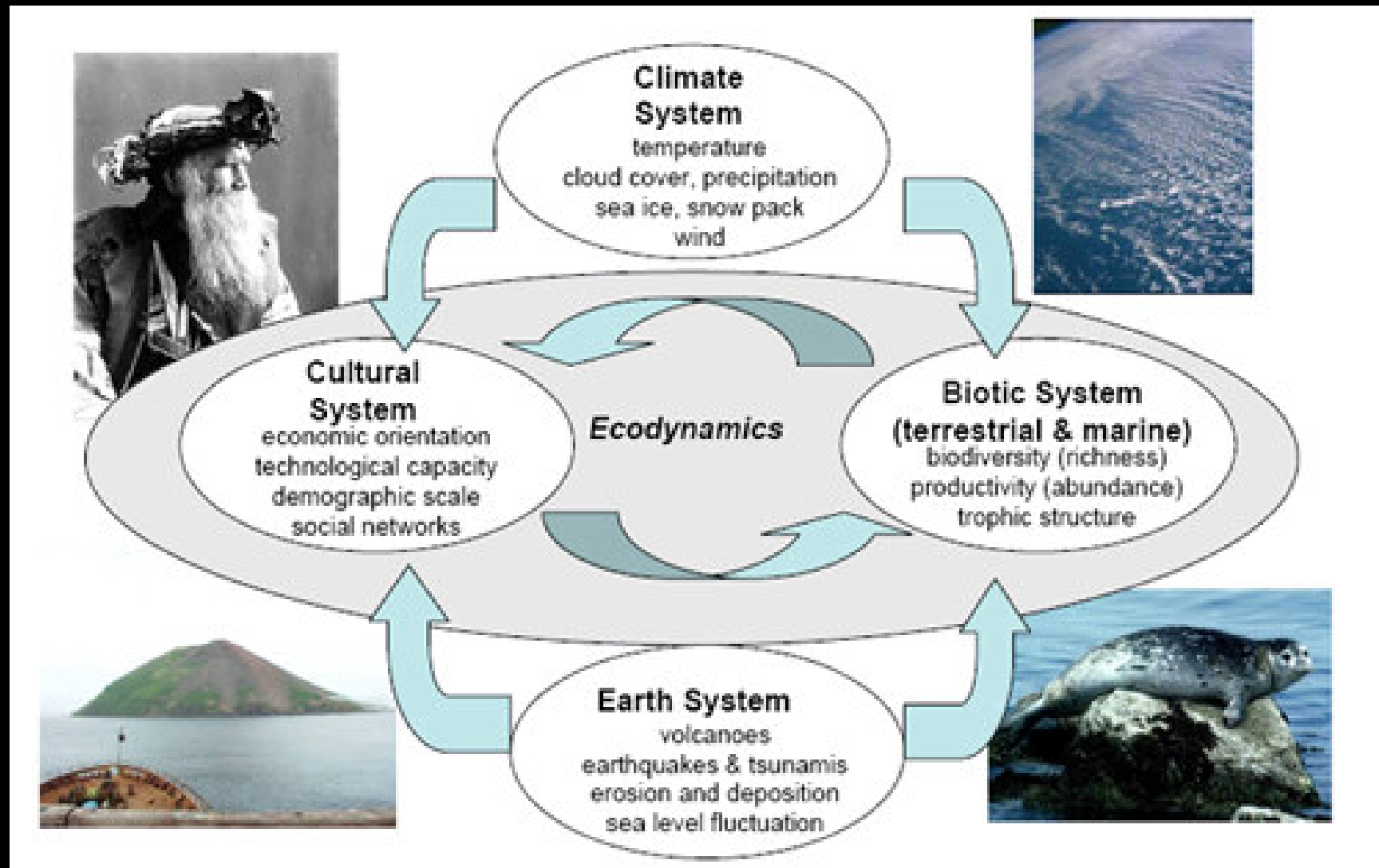
45°24'31.02" N 148°37'14.08" E

Eye alt 2033.35 mi

Kuril Islands

- “Extreme” North Pacific environment
 1. Subject to natural catastrophic events
 2. Geographically isolated (compounding #1)
 3. Bad/unpredictable weather
- Human groups successfully negotiated this environment for 4,000 years
- Interesting case study for human-environmental interaction, resilience, innovation, networks

Kuril Biocomplexity Project

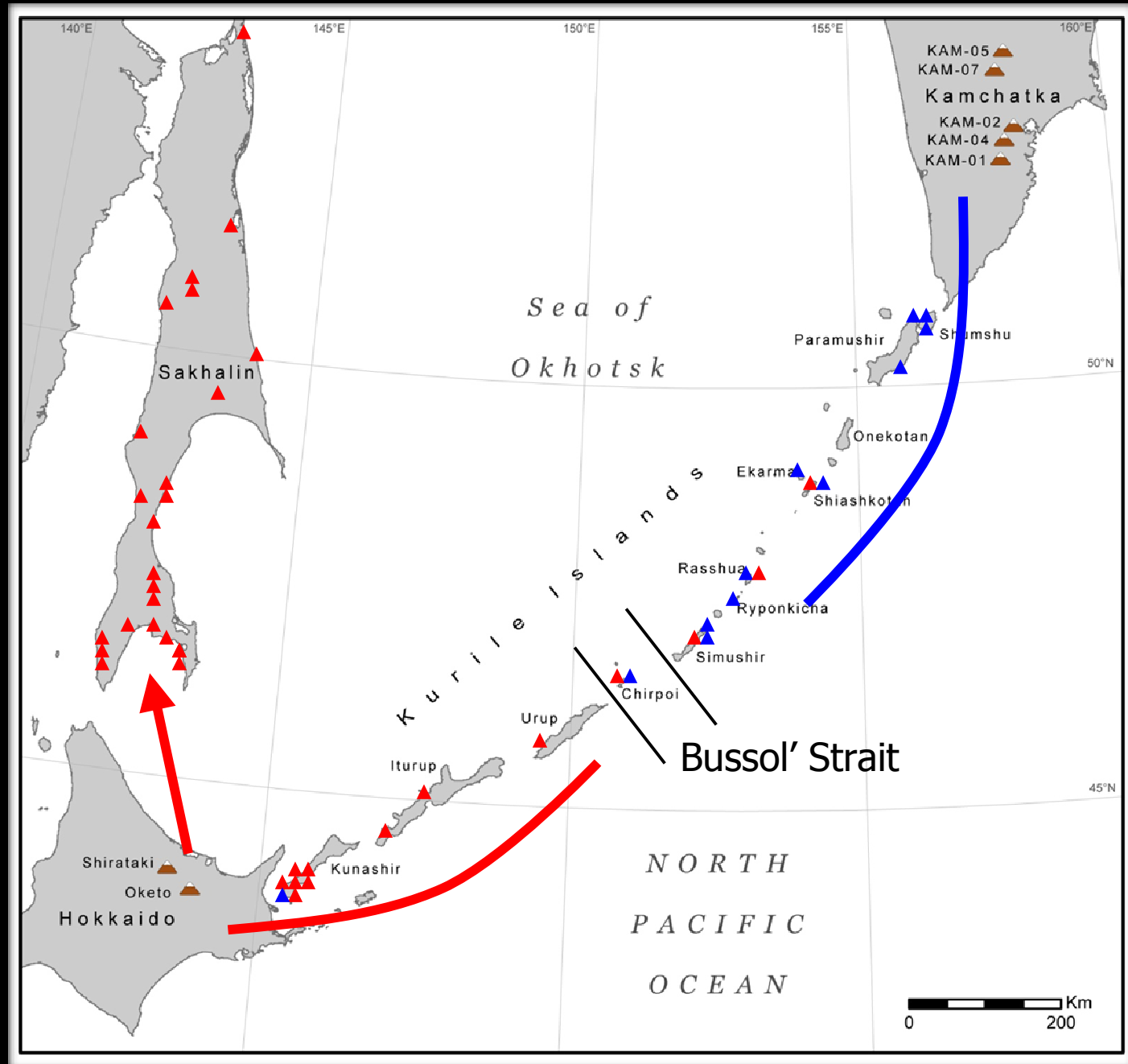


Resource Availability

- Lithic resources distributed unevenly across the Kuril Islands
- Procurement strategies/tactics embedded within other social activities/relationships
- Obsidian provides a way to trace movement of people and/or ties that islanders had within and beyond Kurils

▲ = site with
Hokkaido
obsidian

▲ = site with
Kamchatka
obsidian



Disciplinary Questions

- What was nature of obsidian consumption vs. other raw material types? Why was obsidian used at all (if only 6% of assemblage)?
- How does distribution and diversity of obsidian sources used change through time?
- Was lithic procurement embedded within other resource extraction activities?

Synthetic Questions

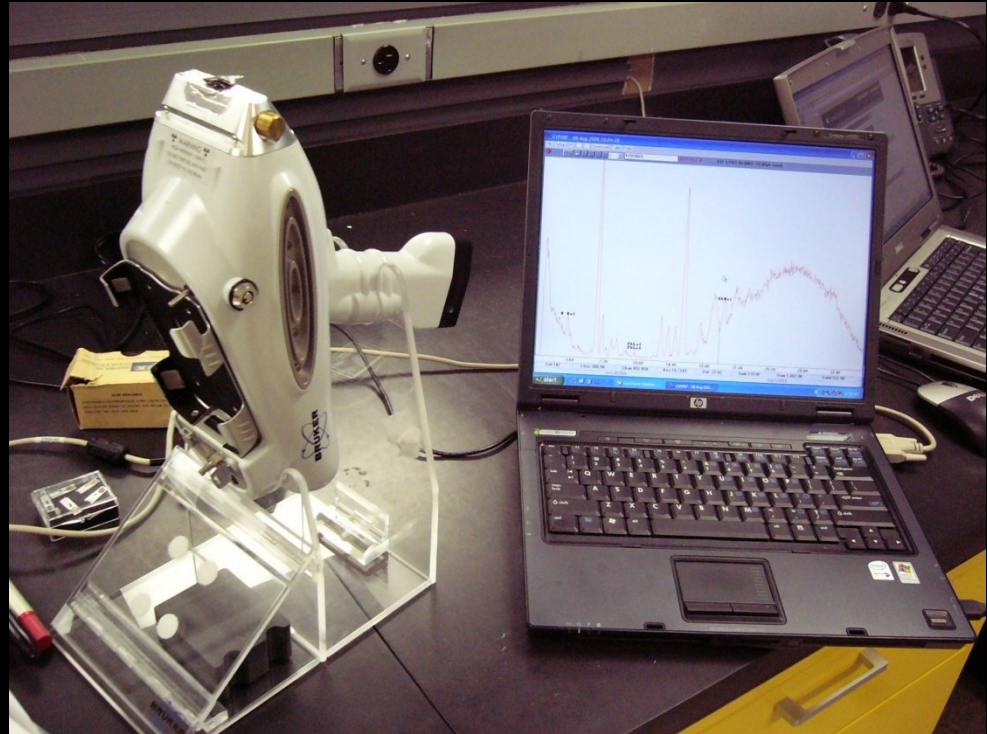
- How can lithic data integrate with environmental, ceramic, and human isotope data to inform about the timing/extent of human migration/island colonization in the Kurils?
- How might have resource procurement activities (including communication/information sharing) have facilitated human relationships at local vs. regional levels?
- What role might social networks have played in group survival/resilience in the face of environmental changes/catastrophic events?

Taking Provenance Studies Further

- Integrating with other data sets instead of standing alone
- Utilizing new technology to create data sets faster and more easily
- Using provenance data for new applications

New Technology: Portable XRF

- Take the analysis to the artifacts
- Create large data sets relatively quickly
- Low(er) cost
- Valid results for archaeological applications



Potential New Applications

- Using provenance data as the basis for social network analysis (SNA)
- Analytical method for modeling human relationships

