

Integrating Traditional Knowledge in Archives for Culturally Important Biomaterials in Collections: Lessons from Crocodiles.

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Taxonomies: How are things named and why does it matter?

Framework

- Modern collections contain materials that had pre-existing knowledge systems associated with them.
- Best Practices require centering original and Traditional Knowledge sources, which can often be acknowledged and resurfaced through interdisciplinary archival research

Approach

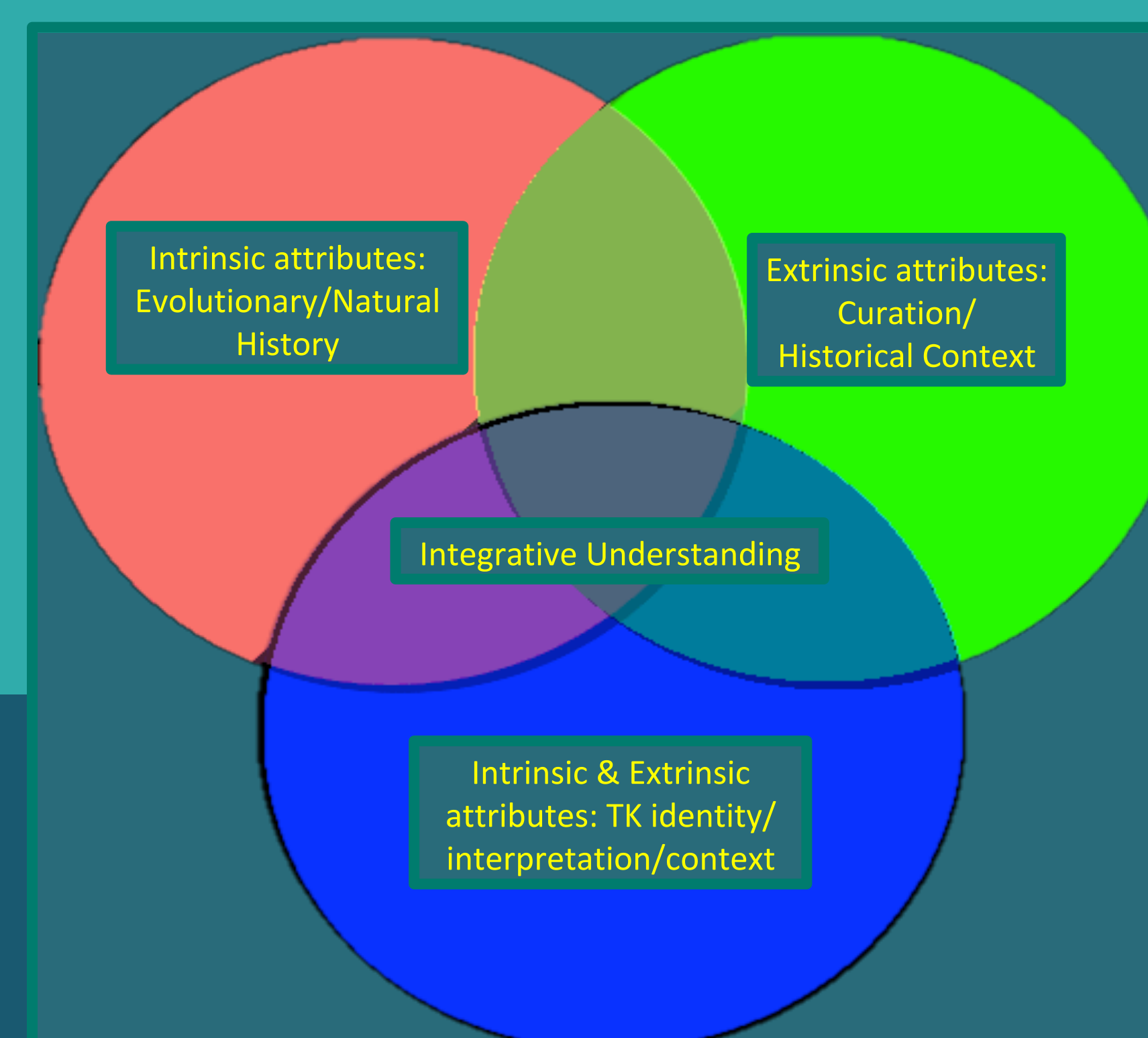
- We combined archival research and genomic tools to relate traditional knowledge to currently recognized crocodile species
- We attempted to integrate new genomic data to reflect cultural taxonomies
- We added interdisciplinary evidence to publications in the literature

Results

- Crocodylians are prominent figures in cultural and artistic representations in communities around the globe.
- We identified multiple cases where Traditional Knowledge accurately reflected genomic species, but where traditional taxonomies were ignored or un-credited in recognizing modern crocodile species
- We combined genomic methods with archival research to center Traditional Knowledge in proposing revised taxonomic identification for crocodiles

Discussion

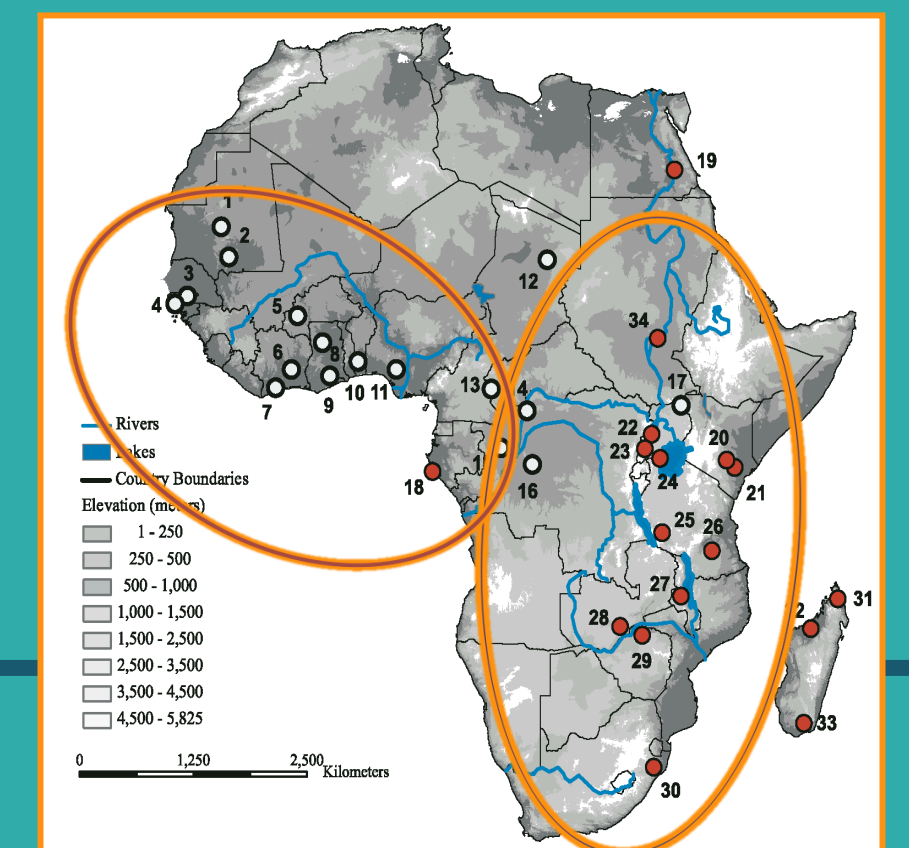
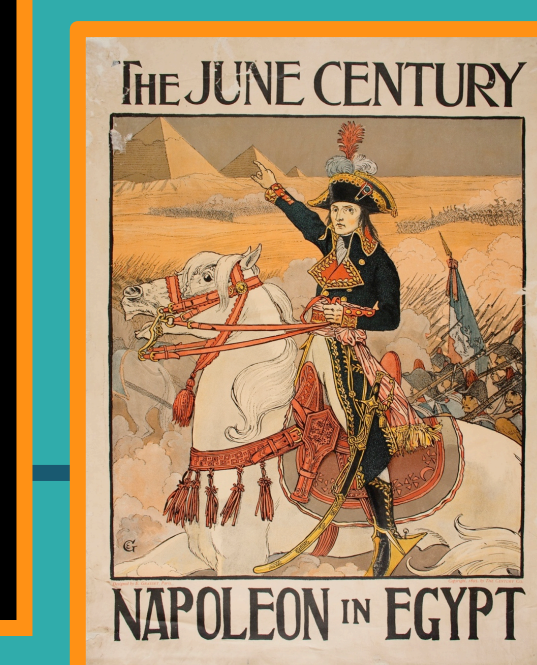
- Our results show that centering Traditional Knowledge provides for more holistic interpretation of biomaterials in collections and accelerates knowledge production



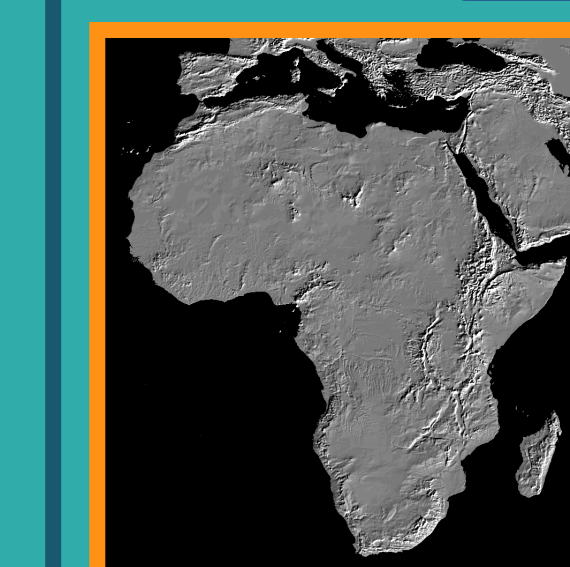
Case Studies

Nile Crocodile

- The Nile Crocodile (*Crocodylus niloticus*)
- According to Herodotus and bioarchaeological evidence, Ancient Egyptians recognized two types of crocodiles in the Nile
- After Napoleon's expedition in 1807 Geoffroy St. Hilaire described new species based on this along with his "modern" evidence
- 2011 Genomic data recognizes Egyptian species



Madagascar Crocodiles



- Malagasy people describe two species of crocodile to early explorers
- 1872 Grandidier includes anecdotal evidence to describe two species
- 20th century recognized one species
- 2007 (Brochu) & 2021 genomics confirms Malagasy taxonomy

