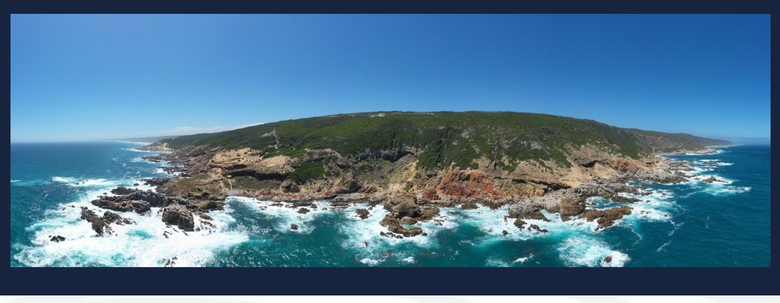
How did early humans cook their lunch?

SHELL (SHellfish ExpLoitation of early humans – Links to climate)



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Background and motivation

I am a palaeoclimatologist (past climate scientist), with a focus on hydrological (rainfall and climate) changes in South Africa during the Middle Stone Age (MSA) time interval (100 to 50 thousand years ago (ka)). I use archives such as marine sediment cores or marine shells to infer a change in climate conditions during the MSA.

The present day view from Blombos Cave, South Africa. 70,000 years ago this view would have been remarkably unfamiliar, the shoreline would have been further out exposing a vast green plain, where early humans lived and foraged for shellfish.

Main questions

- Were the shellfish found at Blombos Cave subject to heat and/or roasted?
- Which season(s) were the shellfish harvested?
- What does this tell us about occupation at Blombos Cave?

Opercula from the gastropod *Turbo sarmaticus*

Project description

During the MSA, early humans harvested marine shells from the coastal plain and shoreline. However, during this time interval, the sea levels were changing (rising or falling), and this affected the distance early humans travelled for their food. Seasonal variability, measured by reconstructing sea surface temperature of the nearshore environment, from marine shells found in Blombos Cave, can inform us on when early humans were exploiting these coastal resources and the occupation of Blombos Cave. This work also helps provide an archaeological context to cooking techniques of shellfish through measuring the temperature signals in archaeological shell opercula, which were likely attached to the cooked meat in the shell.

Archaeological opercula from Blombos Cave

Aims

- Field work in South Africa
- Clumped isotopes analysis
- Heating experiments on modern shells from South Africa
- Seasonal surface ocean temperature reconstructions

Photos from Prof. Carin Andersson-Dahl

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Marine sustainability

- Marine sustainability is at risk from anthropogenic climate change. The study of archaeological material such as opercula from shellfish will provide a long-term perspective which may help assess the impact of ongoing anthropogenic climate change on coastal biodiversity and resilience.
- This study will additionally shed light on the emergence of culture and innovations of our own species in relation to climate-related changes in the nearshore marine environment.

SCAN ME

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