

## Abstract

Tracking eye movement to determine how visitors to archeological artifacts take in that experience.

Apply tools of modern neuroscience to study the ancient mind by studying the reaction of the modern mind to ancient settings.

Need standard way to aggregate, ingest, process & analyze datasets from different sites of interest.

What insights can we extract from the current data and future data?



## Objectives

### Deliverables

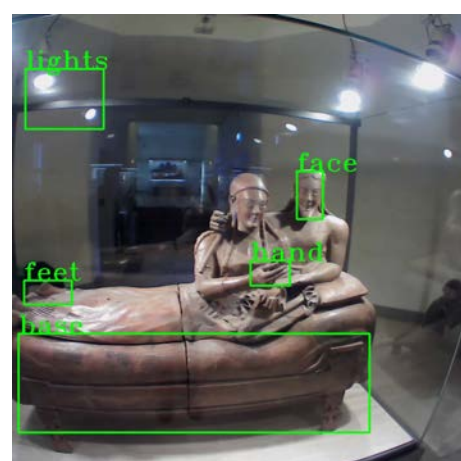
1. Create a tool to aggregate and analyze the data to produce meaningful insights from current and future datasets.
2. Make the tool broadly applicable to different experiments, formats & procedures

### Analysis

1. Outline questions that the dataset can be used to answer
2. Start looking for answers using what we have done

## Methods

- Pupil Invisible
  - Gaze points
  - Fixation IDs
- Feature tagging
- ORB with homography
- Heat map & scan path
- Descriptive statistics

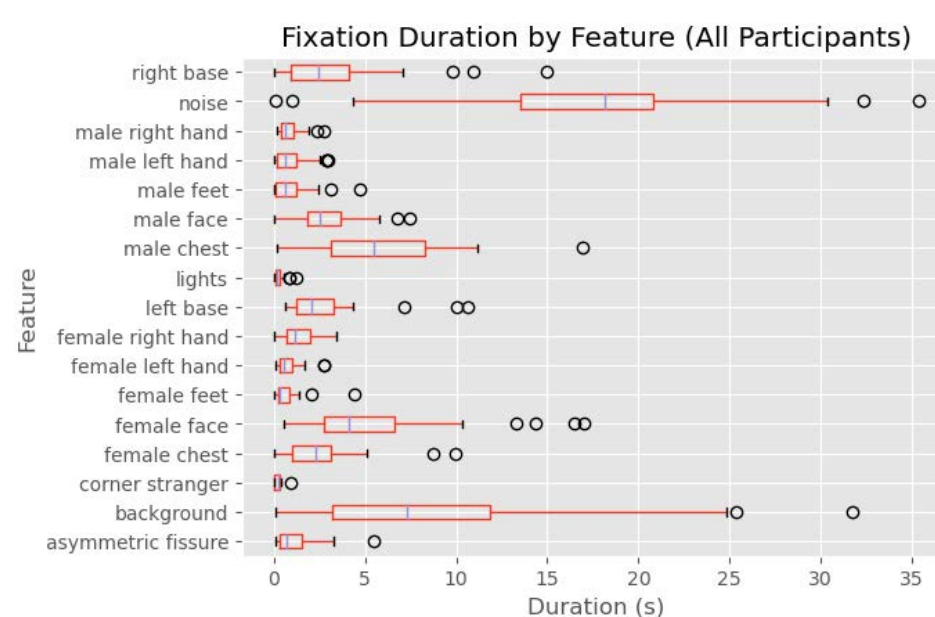
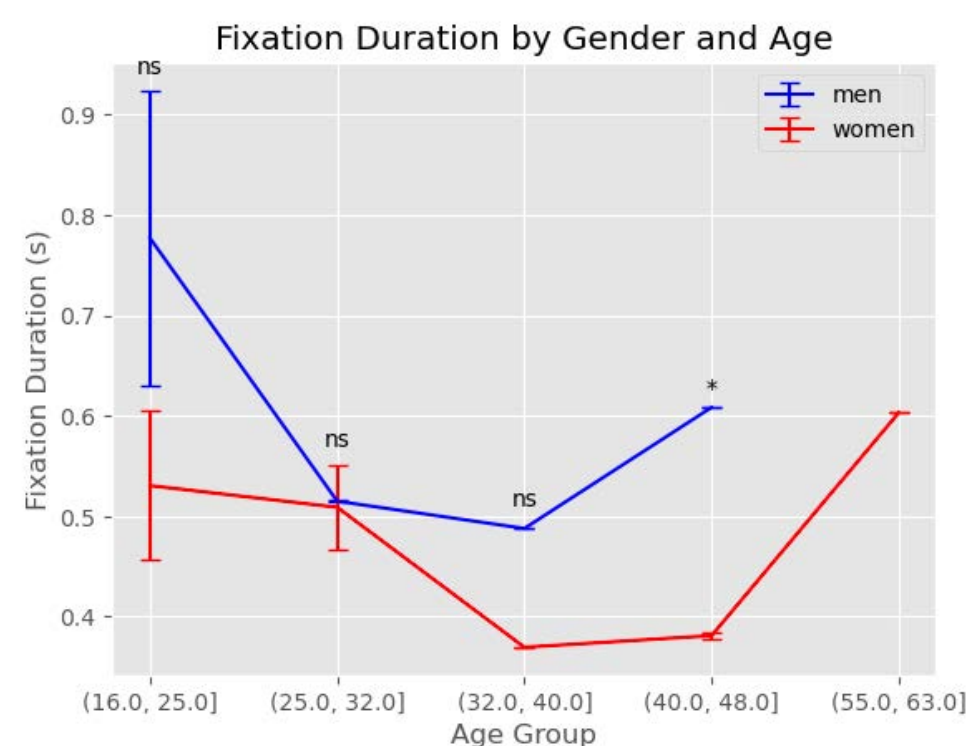


## Results

Raw metrics extracted from both datasets

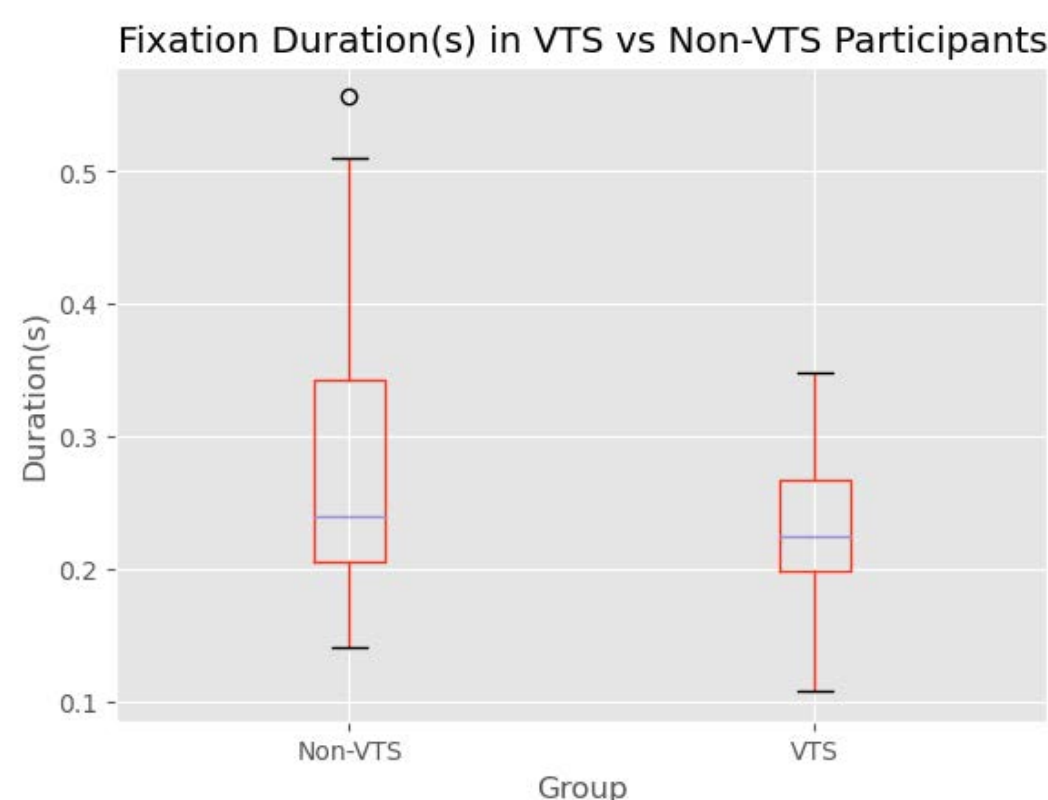
### Sarcophagus

- Younger participants have longer and fewer fixations
  - May be related to sample size
- Face and chest areas received the most attention on the sculpture itself
- “Noise” and “background” may be related to tagging inaccuracies



### Vulci Dig Site

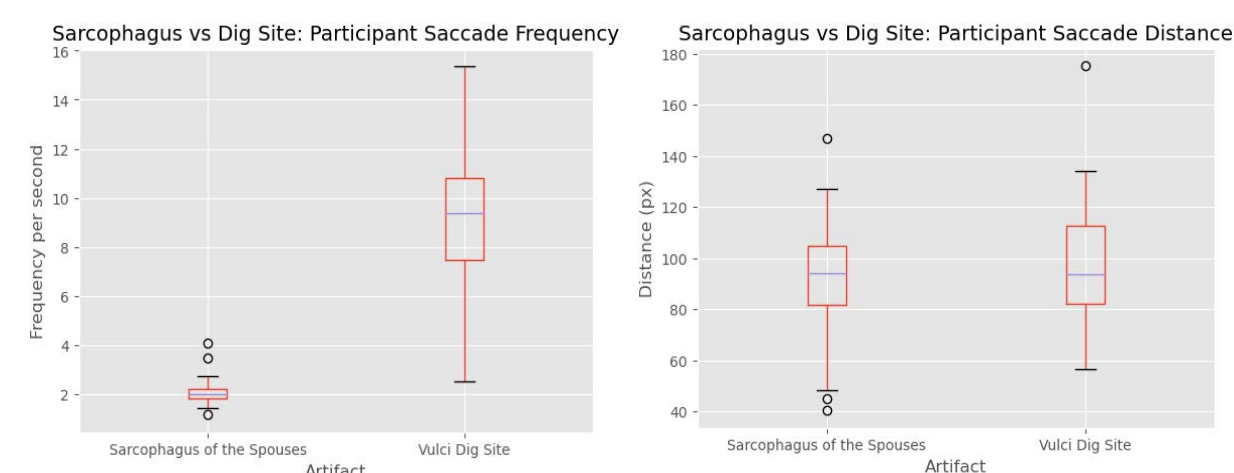
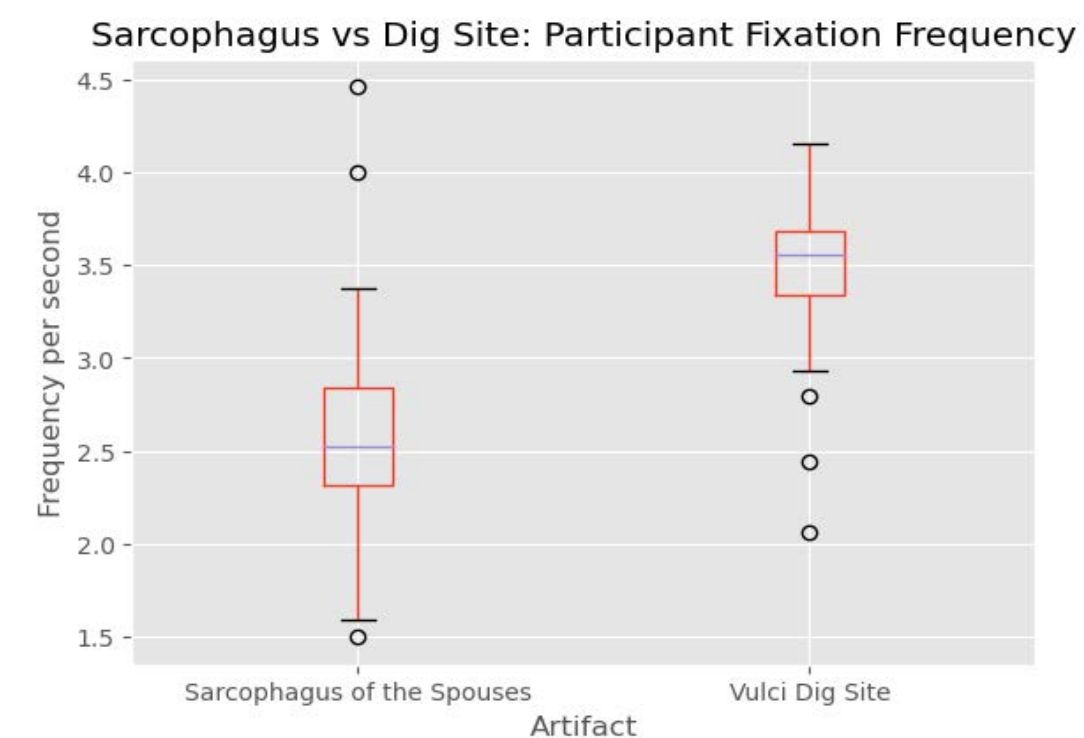
- Visual thinking strategy (VTS) survey encourages critical thinking before viewing
  - Questions about anticipated emotions
- VTS participants have smaller distribution (more uniform data)



## Results

### Data Comparison

- Sarcophagus participants have longer and fewer fixations, and fewer saccades
- Both groups have cover similar distances when making saccades



## Conclusion

### Application

- Deliverables modeled on data from the Sarcophagus of the Spouses, with minimal movement
- Can also be adapted to data from the Vulci dig site, where there is a lot of movement
- Deliverables are flexible and can be applied to many different datasets

### Tentative Interpretations

- The larger dig site means participants make more fixations and saccades in order to take in everything within the same period of time

## References

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2. Core - terminology. Pupil Labs. (n.d.). <https://docs.pupil-labs.com/core/terminology/#fixations>
3. Augustine, G. J., Groh, J. M., Huettel, S. A., LaMantia, A.-S., & White, L. E. (2024). *Neuroscience*. Oxford University Press.
4. Rita Cosentino, «The Sarcophagus of the Spouses : from discovery to virtual reality», *Anabases* [Online], 24 | 2016, Put online 01 Oct 2019, accessed 23 May 2023. URL: <http://journals.openedition.org/anabases/5822> ; DOI: <https://doi.org/10.4000/anabases.5822>