



# Peer Community In Archaeology

## Out of the storeroom and into the virtual

**Jitte Waagen**  based on peer reviews by **Alicia Walsh** and 1 anonymous reviewer

Raykovska Miglena, Jones Kristen, Klecherova Hristina, Alexandrov Stefan, Petkov Nikolay, Hristova Tanya, Ivanov Georgi (2024) Implementing Digital Documentation Techniques for Archaeological Artifacts to Develop a Virtual Exhibition: the Necropolis of Baley Collection. Zenodo, ver. 4, peer-reviewed and recommended by Peer Community in Archaeology.

<https://doi.org/10.5281/zenodo.8027548>

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This paper (Raykovska et al. 2023) discusses the digital documentation techniques and development of a virtual exhibition for artefacts retrieved from the necropolis of Baley, Bulgaria. The principal aim of this particular project is a solid one, trying to provide a solution to display artefacts that would otherwise remain hidden in museum storerooms. The paper describes how through a combination of 3D scanning and photogrammetry high quality 3D models have been produced, and provide content for an online virtual exhibition for the scientific community but also the larger public. It is a well-written and concise paper, in which the information on developed methods and techniques are transparently described, and various important aspects of digitization workflows, such as the importance of storing raw data, are addressed.

The paper is a timely discussion on this subject, as strategies to develop digital artefact collections and what to do with those are increasingly being researched. Specifically, it discusses a workflow and its results, both in great detail. Although critical reflection on the process, goals and results from various perspectives would have been a valuable addition to the paper (cf., Jeffra 2020, Paardekoper 2019), it nonetheless provides a good practice example of how to approach the creation of a virtual museum. Those who consider projects concerning digital documentation of archaeological artefacts as well as the creation of virtual spaces to use those in for research, education or valorisation purposes would do well to read this paper carefully.

### References:

Jeffra, C., Hilditch, J., Waagen, J., Lanjouw, T., Stoffer, M., de Gelder, L., and Kim, M. J. (2020). Blending the Material and the Digital: A Project at the Intersection of Museum Interpretation, Academic Research, and Experimental Archaeology. *The EXARC Journal*, 2020(4). <https://exarc.net/ark:/88735/10541>

Paardekooper, R.P. (2019). Everybody else is doing it, so why can't we? Low-tech and High-tech approaches in archaeological Open-Air Museums. The EXARC Journal, 2019(4).  
<https://exarc.net/ark:/88735/10457/>

Raykovska, M., Jones, K., Klecherova, H., Alexandrov, S., Petkov, N., Hristova, T., and Ivanov, G. (2023). Implementing Digital Documentation Techniques for Archaeological Artifacts to Develop a Virtual Exhibition: the Necropolis of Baley Collection. <https://doi.org/10.5281/zenodo.10091870>

## Reviews

### Evaluation round #2

DOI or URL of the preprint: <https://doi.org/10.5281/zenodo.10091870>

Version of the preprint: 2

### Authors' reply, 23 January 2024

Dear Jitte,

Thank you for performing the second edit of our paper. We appreciate your time to give us these reviews and recommendations.

We have addressed all of the errors that you advised in your review and have performed a more extensive copy edit on the document, particularly for the Study Site section.

Additionally, the technical errors relating to the website link have been resolved

We have uploaded our final version to the Zenodo preprint server (<https://doi.org/10.5281/zenodo.10529167>).

Kind Regards,  
Miglena Raykovska

### Decision by [Jitte Waagen](#) , posted 07 December 2023, validated 07 December 2023

#### minor textual revisions

Dear authors,

I received feedback of the reviewers, and closed read the text. It is very much improved, although I would ask you to take note of some remaining textual issues, listed below. If those are fixed, we can proceed to final publication!

1. Please have someone proof-read the paper, preferably a native speaker, mainly in the first part there are a few clear grammatical errors.
2. Pay attention to abbreviations etc. e.g. kilometers in line 77 and then m in line 81
3. Line 84 ; and : used for the same purposes
4. Line 91, inconsistency in 1200 m2, and then one hundred etc.; above nine just use numbers

5. The link (see remark reviewer) does not work on the first try, just on the second try. Maybe you can have a look at that to make sure it works smoothly.

Again, thanks for your contribution so far.

Best wishes,

Jitte

### **Reviewed by anonymous reviewer 1, 05 December 2023**

Much improved. Only one thing, the website referred to in the paper does not exist anymore: <https://3dlab.iict.bas.bg/baley/>

### **Evaluation round #1**

DOI or URL of the preprint: <https://doi.org/10.5281/zenodo.8027549>

Version of the preprint: 1

### **Authors' reply, 09 November 2023**

Dear Jitte,

Thank you for recommending our paper and thank you for your suggestions and those of the two reviewers. We appreciate them and found them to be helpful for the presentation of our research.

We have addressed both reviews provided and have expanded and consolidated the suggested topics and sections of the text.

Minor grammatical errors were corrected throughout the document as advised, as well as major changes as per the recommendations of the reviewers at the following lines:

Line 70-71; 141-143; 170-180; 207-232; 258-263; 279-292

We have uploaded our final version to the Zenodo preprint server (<https://doi.org/10.5281/zenodo.10091870>).

Kind regards,

### **Decision by [Jitte Waagen](#) , posted 22 September 2023, validated 22 September 2023**

#### **Some revisions required**

Dear authors,

Your very interesting paper received two excellent reviews containing some very good suggestions and questions. Addressing these will in my opinion surely increase the quality and impact of the paper.

I agree with the suggestions for clarifications and elaborations in both reviews, and I think these will not take you too much time. I hope you find the time to work on these!

Thanks for your contribution so far.

Best wishes,

Jitte

## Reviewed by anonymous reviewer 1, 11 September 2023

Language generally fine. Some small grammar issues.

Some issues with content, structure and scientific value of results.

### **Issues with aims of project and results:**

1. abstract mentions that optimisation of computational workflow is an aim. This is never really discussed in this paper. Also, is this optimisation just for the project members, to optimise workflow and increase technical expertise, or is it something useful for the general research community as well?

2. main aim of project is to create a workflow that can be used by others with a similar goal to create a virtual exhibit. But how do you intend to make your workflows accessible to other projects and researchers? I didnt see a satisfactory solution for this presented in this paper.

### **Issue with technical workflow:**

line 143. The two models from different origins were oriented to overlap. Was this done manually, or using some kind of automated software feature in zbrush?

### **Issue with structure/content:**

At two places in the text you discuss design decisions (line 171-184; but also 211 -226). Better to integrate the discussion.

VR design and specific choices in it appears to have played an important role in your project. But ultimately very descriptive in paper, while a more problematising approach would be more interesting. It would be useful for others to learn more about the design process and the results of the discussions with the varying individuals, and how these influenced the design decisions. For instance, did the individuals from different backgrounds align or not?

## Reviewed by [Alicia Walsh](#), 07 September 2023

This is a well-written, concise, and detailed paper on the use of virtual environments to exhibit archaeological collections. The research aims and methods used were clearly presented and justified throughout, and the study site in the introduction provided an interesting explanation of the relevance of this collection for the case study.

In the methods section, the techniques used were described in sufficient detail, and the limitations identified in 3D scanning formed an accurate explanation of why it was used in conjunction with photogrammetry. It was good to see an emphasis on the storage of raw data both in the methods and discussion.

In methods, line 173, it is noted that individuals of varying backgrounds determined the ideal design. This could use elaboration, as it is interesting which stakeholders were involved in the decision-making process.

While many benefits of virtual museums have been accurately identified in this paper, drawbacks could have been noted and elaborated on, as the author only notes that virtual environments cannot replace real-life experiences. This could be done by drawing on examples of recent relevant works.

Further discussion on the feasibility of extending this collection would also be appreciated. As the abstract notes, this is a way of showcasing artifacts that normally remain hidden in storage. It would therefore be interesting to hear more about the limitations or necessary tools needed to implement and curate a virtual environment long-term.