

# An Open Preservation Framework for Digital Archaeological Data



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## Background Information

- BSc (Hons) Cultural Heritage Management & New Technologies  
(University of Ioannina)
  - Orientation: Cultural Technology
- MSc Advanced Multimedia Design & 3D Technologies (Brunel University)
  - Orientation: Virtual Heritage
- PhD in Digital Preservation (University of Portsmouth)
  - Thesis: The Effective Preservation of Archaeological Virtual Reconstructions  
(Winner of the Research & Innovation DPA 2022)



# Outline

- Digital Archaeological Assets
- Dark Side of Archaeological Virtual Reconstructions
- Effective Digital Preservation
- Chain of Custody & Multidisciplinary Research Processes
- New Interpretation of Preservation Formats
- Open Preservation Framework
- Open Licensing for Digital Preservation Purposes
- Conclusions

# Digital Archaeological Assets

- Information-rich digital objects
- Leveraging archaeological virtual reconstructions  
(future reuse and reinterpretation)
- Value measurement:
  - Research deliverables (e.g. research results' reports)
  - Educational and/or cultural impact
  - 'Spin-off' formations
  - Potential (usefulness) of legacy and modern digital archaeological outputs in the future
  - Documentation (metadata/paradata)
  - Contextual information (i.e. cultural and technological)

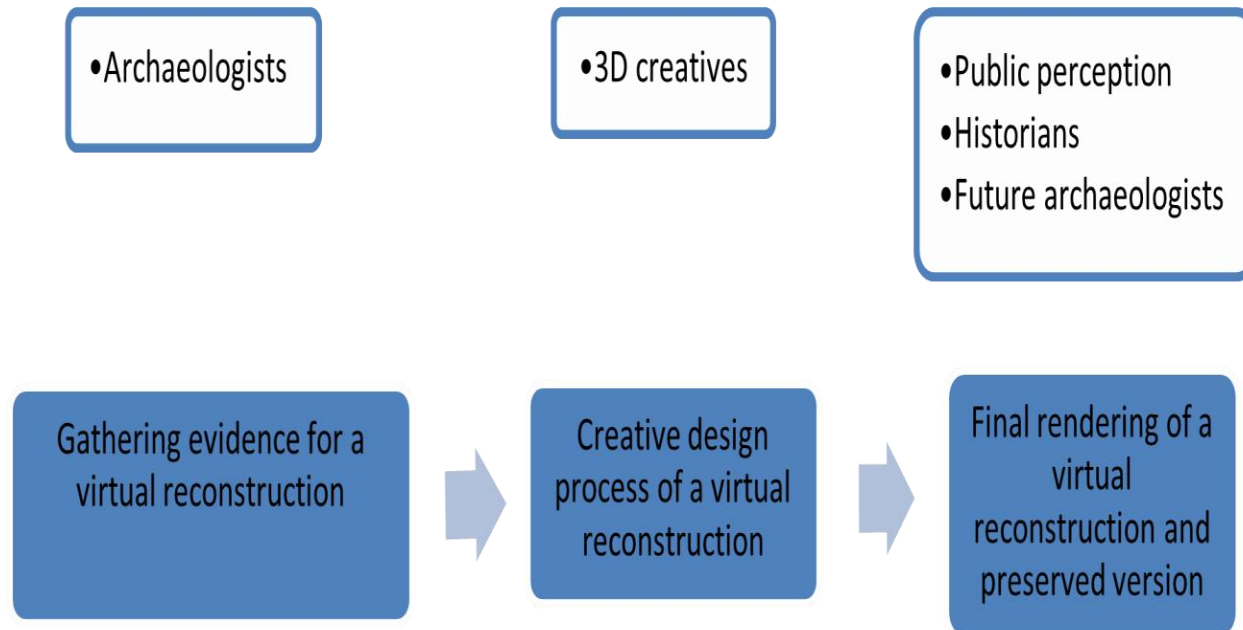
# Dark Side of Archaeological Virtual Reconstructions

- Limited digital preservation provision across memory institutions
- Basic uncontextualised storage
- Lack of expertise

# Effective Digital Preservation

- Deposited digital objects' type + designated communities' needs = suitable preservation strategy
- Renderability (i.e. 'execute' and use a stored digital object)
- Understandability (i.e. interpret and understand a stored digital object)
- Proactive digital preservation (preservation-ready digital objects)

# Chain of Custody & Multidisciplinary Research Processes



## New Interpretation of Preservation Formats

- Meta-synthesis of recommended file formats (indicative list):
  - ADS' Guides to Good Practice
  - DPC's Digital Preservation Handbook, Technology Watch Reports, Bit List
  - LoC's Recommended Formats Statements
- Prerequisites for preservation-ready digital objects
  - Preserve all the records (original, intermediate, final) comprising the digital documentary archive
  - 'Agreed in advance' standards and processes
  - Preservation of supporting documentation



# Open Preservation Framework

<u>Data types of a documentary archive (digital form)</u>	<u>Open preservation file formats</u>
Spreadsheets (.xls)	.csv/.ods
Databases (.mdb/.dbf/.mdf)	.siard/.dbml/.json
Text (.doc)	.pdf/.xml/.odt/.txt
3D vector graphics (.wrl/.tnt/.gif)	.x3d/.dac/.u3d
Texture map and Reference images (.bmp/.jpg/.tga)	.png/.tif
3D point clouds (.ptx/.lgs)	.e57/.las
3D models (.max/.dwg/.cgr)	.x3d/.obj/.u3d
Rendered images (.jpg)	.png/.tif
Video (.mov/.avi)	.mxf/.mkv/.mp4
Creative design process (.psd/.xls/.doc)	.tif/.csv/.ods/.pdf/.xml/.txt

# Open Licensing for Digital Preservation Purposes

- Copyright around emulation
- Fair use of licences
- Risk aversion of memory institutions
- Advocacy campaign (guidelines)

## Conclusions

- Endangered digital species
- Scientific authenticity and reproducibility
- Effective (proactive) digital preservation
- Cultural and technological context of a digital documentary archive
- Requirements of designated communities ⇔ applicability of recommended preservation framework

## The End

*[...] Dark side of digital technologies.*

*Although the choice between these paths will ultimately be shaped  
by economic and political factors, it is also dependent on another debate:*

*Identity.*

# Thank You



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