Cuneiform in the LOD cloud: Connecting 2D and 3D representations of philological objects with linguistic concepts

Linked Pasts VII – Ghent Centre for Digital Humanities and CLARIAH Flanders Open Humanities Service Infrastructure consortium, December 2021

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Digital Edition of Cuneiform Texts from Haft Tappeh (Iran)

Cuneiform LOD Cloud

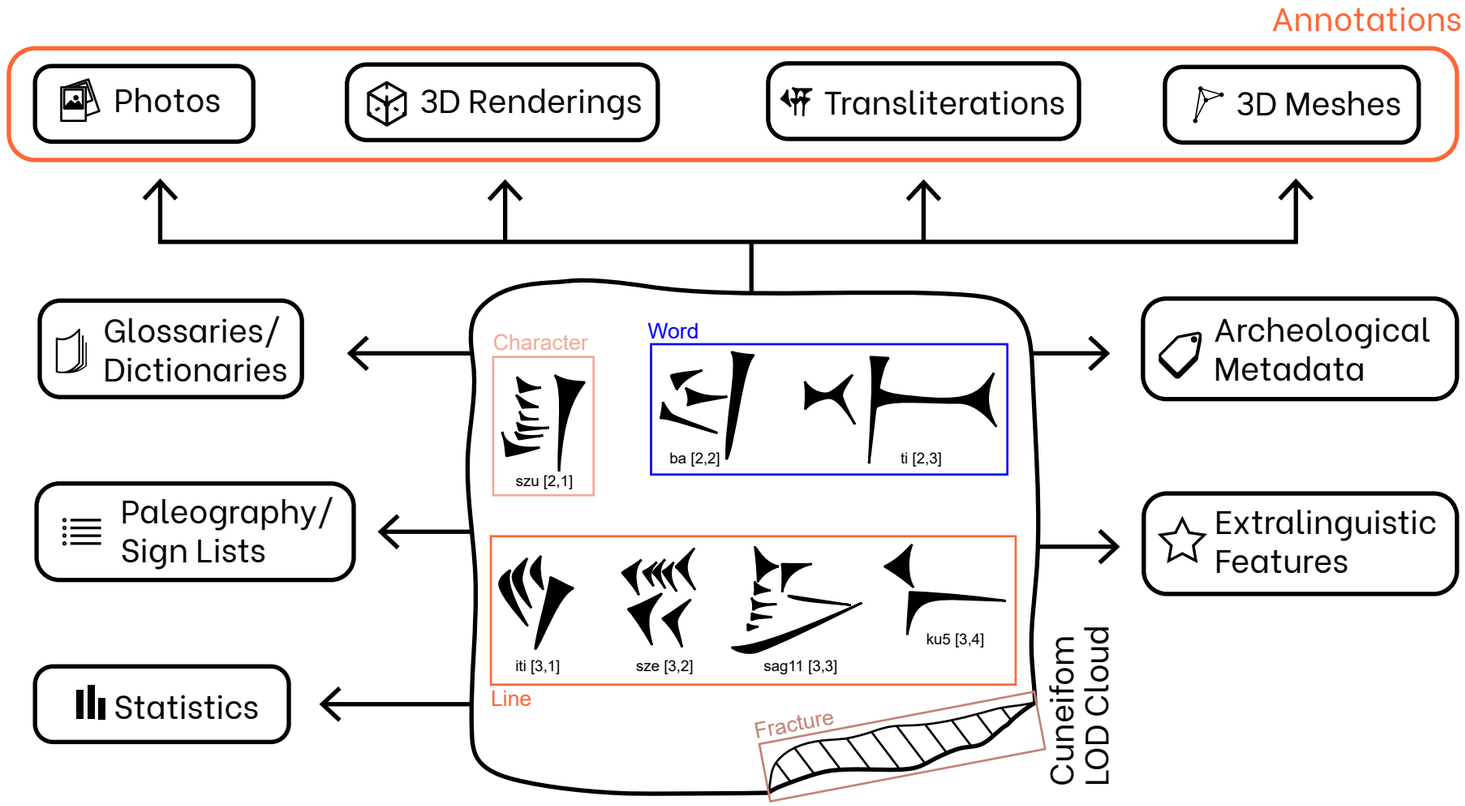
We present an ontology model that was developed in the research project „Digital Edition of Cuneiform Texts from Haft Tappeh (Iran).

The focal point of the model is the cuneiform tablet as an archaeological artefact with its philological features, of which different representations are provided:

- Transliteration (textual)
- 3D model (meshes)
- 3D renderings (2D visualisations computed from the 3D model)
- Photographs

All representations are enriched with metadata and medium-specific annotations highlighting different features relevant for philological research and beyond.

Existing standards such as CIDOC-CRM (CIDOC, 2006) and CRMtex (Murano et al. 2021) for the representation of the archaeological artefact, Ontolex-Lemon for the representation of words, the W3C Web Annotation Data Model (Sanderson 2017) for the representation of annotations and other domain-specific annotation as well as palaeographic description vocabularies are used to create the ontology model.



Metadata

We capture the following metadata on the digital mediums:

- Transliteration Metadata: Metadata schema conforming to the Cuneiform Digital Library Initiative (CDLI) allowing a seamless integration
- 3D meshes: Capturing and mesh metadata according to (Homburg, et.al 2021)
- Renderings: Metadata on the rendering and creation process in TTL (Homburg, et.al 2021)
- Photographs: XMP metadata about the creator, the photo's content and license as well as technical EXIF metadata.

The metadata will be published CC0 along with the other data products of the Haft Tappeh project.

Annotations

Annotations on digital mediums represent precise ways of scientific discourse which we wish to enhance for a variety of research communities.

We distinguish:

- Linguistic Annotations on transliterations using a customized OliA (Chiarcos 2015) vocabulary
- Annotations on 2D renderings: Areas of interest (Cuneiform signs, Paleography, extralinguistic features)
- Annotations in 3D: Currently generated as a transformation from 2D annotations in renderings (current internship project).

To make annotations interoperable all annotations conform to the W3C Web Annotation data model.

Data products

The Haft Tappeh project works on the digital scholarly edition of more than 600 cuneiform tablets. In supplement to the aforementioned source data, the digital edition environment CuneiformWorkbench provides the following data products:

- An Ontolex-Lemon (McCrae et al. 2017) LOD dictionary from the given transliteration resources
- A glossary from the given corpus
- A sign list of all cuneiform signs in the corpus
- A small collection of annotated renderings in 2D and its equivalents in 3D

The ontology will be published together with the data at the end of the project in August 2022.

Project webpage:
https://i3mainz.hs-mainz.de/en/projekte/hafttappeh/

GEPRIS:
https://bit.ly/3E9wsb8

Bibliography:
https://bit.ly/3I7KQCZ

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DOI:
https://doi.org/10.5281/zenodo.5745175

Gefördert durch
DFG Deutsche Forschungsgemeinschaft