

Alligator + AMT

A Linked Pipe for taming relative chronology



Archaeological Background

In archaeology, there is a lack of LOD tools and Linked Pipes for modelling, applying and reasoning of relative chronologies. Usually, chronologies are being explored by using correspondence analysis (CA); however, this method is extended by us with a Linked Pipe which yields temporal reasoning with vague edge information in RDF graphs. Alligator and the Academic Meta Tool (AMT) are two little minions which in combination allow for establishing relative chronologies according to Allen's interval algebra as LOD.



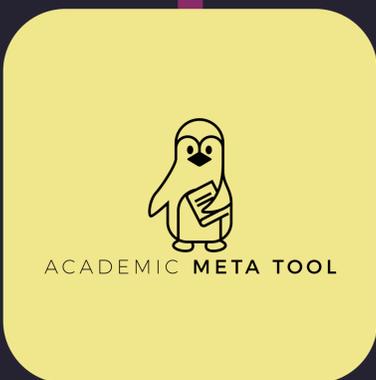
To start with, data are exported from a database in order to use them in a correspondence analysis (R package). The order of the occurrences within a known chronology yields normally a horseshoe shaped CA diagram from left (early) to right (late), the so called horseshoe paradigm. In our use case, the occurrences of objects (potter names) and types in dated and undated Limes parts are also ordered chronologically from left to right, but the relative position of some of the undated Limes parts to other Limes sections causes challenges to locate them within the general chronological order. As a result, the CA diagram factor loadings ("CA 3D coordinates") are transformed into an Alligator CA-file in order to determine the spatial distance between dated and undated types (Limes parts).



Let us create a **Linked Pipe!**



Alligator is developed at the Römisch-Germanisches Zentralmuseum (RGZM). It is a web app for transforming 3D correspondence analyses (CA) with fixed and floating time intervals into a relative chronology and RDF representation using Allen's interval algebra. Starting from an Alligator CA-File you can select an output mode which can be a visualisation (e.g. matrixes, virtual timelines or graphs) as well as machine readable representations (e.g. Turtle and Cypher) in order to use them in other LOD tools for further research and analyses.



AMT is developed in collaboration with the Mainz Centre for Digitality in the Humanities and Cultural Studies (mainzed) by the RGZM and i3mainz. AMT allows for creating user based ontologies and provides a JavaScript framework for modelling vagueness in graphs, including a vagueness reasoning using different logics. Concerning relative chronologies, results can be modelled as LOD. By using the web app AMT, reasoned chronologies can be visualised.

