Project's metadata

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Project Title

Exploring the ontological links between Human Ecodynamics and field Archaeology through the integration of archaeological reports into DataARC's landscape ontology

History of the Originating Project

The project was carried out within the DataARC Project as an MPhil thesis. The project explores the creation of (archaeo-historical) knowledge using data within a general framework of Big Data. Human Ecodynamics is the *paradigm* which guides the project. My project explores how to link grey data from archaeological reports into a general computational ontology developed for representing Human Ecodynamics by making use of multiple datasets.

Geographically speaking, my project and its data is restricted to one archaeological site: Skútustaðir, Northeast Iceland. The coordinates of the site are:

- X: 65.566124
- Y: -17.033931

The coordinates are taken from https://www.nabohome.org/cgi-bin/explore.pl?seq=3. They were transformed from "Degrees, minutes and seconds" to decimal degrees.

The chronology of the project was pre-given by the data in use. In this case, the scope is diachronic, although the main focus is on Viking and Medieval Iceland. The chronology, therefore, extends from the Viking Period (*c.* 871±2) to the late Modern/Contemporary Period.

Information about methods

Close reading of 8 different archaeological reports. The readings served for selecting different types of data (chronology, findings, field techniques, interpretations, conclusions, etc.). Apart

from the chronological data, the rest were encompassed under terms which make references to the data but in a way capable of integrating them within the general ontology. Afterwards, the information was classified and grouped: in one column, information regarding data's position in the texts (paragraphs, pages, etc.); in another, the rest of the data. Finally, this was reclassified in a xlsx. file: some paragraphs were joined depending on their data's information, the data was separated (e.g. coordinates, chronology, concepts), the bibliographic references were added, and the "plain" text/image/chart from which the data are to be found. This dataset was later converted in a CSV file and, subsequently, in a GeoJSON file.

Details of source materials used to create the dataset

8 different archaeological reports were used to create the dataset. These are:

- Edwald Ágústa and McGovern Thomas H. (2008). *Skútustaðir Midden Investigations. Mývatn, Northern Iceland, 2008*.
- Edwald Ágústa, *et al.* (2009). *Öskuhaugsrannsóknir á Skútustöðum í. Mývatnssveit 2008. Framvinduskýrsla I*, Fornleifastofnun Íslands: Reykjavík.
- Edwald Ágústa and McGovern Thomas (2010). *NABO IPY 2009 Project Field Report: Skútustaðir Midden Investigations. Mývatn, Northern Iceland, 2009*.
- Hicks Megan (2010). *Skútustaðir: An Interim Zooarchaeological. Report following the 2009 Field Season*. CUNY NORSEC Laboratory Report No. 48.
- King Gary and Fobes Véronique (n.d.). *Archaeoentomological investigations at Skútustaðir, Mývatnssveit, N-Iceland*. Laboratoire d'archéologie environnementale, Université Laval.
- Hicks Megan and Pálsdóttir Lilja (2011). *Excavations at Skútustaðir, Mývatn Northern Iceland: Preliminary Field Report After the Excavation Season June – July 2010 (A NABO and IPY field Project 2010)*. Reykjavík: Fornleifastofnun Íslands.
- Hicks Megan *et al.* (2013). *Midden Excavations at Skútustaðir N. Iceland, 2011*. Reykjavík and New York.
- "Hicks Megan et al. (n.d.). *Excavations at Skútustaðir, N. Iceland 2013 Preliminary Report*. FSI Report No. FS544-8275.

The selection of the data contained in them is explained in the section before. No data was enhanced, but it was transformed -as explained before.

The extraction of images and charts (see section below) were done using Windows' Snipping Tool (https://support.microsoft.com/en-us/help/13776/windows-10-use-snipping-tool-to-capture-screenshots).

Content and structure of datasets (file-level metadata)

There are two files attached: Skútustaðir_pictures, and CSV_Arch.Reports_Skú. Both are "archaeological site and survey archives"

A) Skútustaðir_pictures

This is a Zip which contains another 8 different folders. In each one, you will find the images and charts from Skútustaðir's Archaeological Reports (permalink to the reports: https://www.nabohome.org/cgi-bin/explore.pl?seq=3). Each folder corresponds to one report. File's names are abbreviated. Below, I provide the correspondence between the abbreviation and the bibliographical reference to the report:

- "2008, Skútustaðir" corresponds to Edwald Ágústa and McGovern Thomas H. (2008). Skútustaðir Midden Investigations. Mývatn, Northern Iceland, 2008.
- "2009, Öskuhaugsrannsóknir á Skútustöðum í. Mývatnssveit 2008. Framvinduskýrsla I" corresponds to Edwald Ágústa, et al. (2009). Öskuhaugsrannsóknir á Skútustöðum í. Mývatnssveit 2008. Framvinduskýrsla I, Fornleifastofnun Íslands: Reykjavík.
- "2010, NABO IPY 2009 Project Field Report" corresponds to Edwald Ágústa and McGovern Thomas (2010). NABO IPY 2009 Project Field Report: Skútustaðir Midden Investigations. Mývatn, Northern Iceland, 2009.
- "2010, Zooarchaeological Report_Season 2009" corresponds to Hicks Megan (2010). Skútustaðir: An Interim Zooarchaeological. Report following the 2009 Field Season. CUNY NORSEC Laboratory Report No. 48.
- "n.d. Archaeoentomology" corresponds to King Gary and Fobes Véronique (n.d.). Archaeoentomological investigations at Skútustaðir, Mývatnssveit, N-Iceland. Laboratoire d'archéologie environnementale, Université Laval.

- "2011, Skútustaðir (June-July 2010)" corresponds to Hicks Megan and Pálsdóttir Lilja (2011). Excavations at Skútustaðir, Mývatn Northern Iceland: Preliminary Field Report After the Excavation Season June – July 2010 (A NABO and IPY field Project 2010). Reykjavík: Fornleifastofnun Íslands.
- "2013, Skútustaðir_Season 2011" corresponds to Hicks Megan et al. (2013). Midden Excavations at Skútustaðir N. Iceland, 2011. Reykjavík and New York.
- "n.d. Excavations at Skútustaðir, N. Iceland 2013" corresponds to Hicks Megan et al. (n.d.). Excavations at Skútustaðir, N. Iceland 2013 Preliminary Report. FSI Report No. FS544-8275.

Each image or chart in the folders is named after the same numeration in the bibliographical reference (e.g. 2008, p. 3, Fig. 2 corresponds to Edwald Ágústa and McGovern Thomas H. (2008). Skútustaðir Midden Investigations. Mývatn, Northern Iceland, 2008, p. 3, Fig. 2).

The information that you will find here is either A) images from trenches, artefacts found, or the landscape around the archaeological site; or B) charts which contain numeric and registry data of different value (entomological, artefactual, ecofactual). The intellectual property of all the images and charts belongs to NABO (North Atlantic Biocultural Organisation).

B) CSV_Arch.Reports_Skú

This is a CSV file which contains all the data extracted from the archaeological reports. It also contains the links to the images and charts from the reports. The CSV contains 9 columns and 348 lines.

- Column 1: Archaeological site's X coordinate (as explained above in "History of the Originating Project").
- Column 2: Archaeological site's Y coordinate (as explained above in "History of the Originating Project").
- Column 3: Historical period to which each line refers to. We have followed a standard chronological division for the Icelandic case: Viking, Medieval, or Modern Period(s). Each line might be one period (indicated as the proper name

of the period), two periods (indicated as the proper name of the period), or 3 periods (referred to as "Multiperiod").

- Column 4: Starting historical period to which each line refers to.
- Column 5: Final historical period to which each line refers to.
- Column 6: Concepts which contains the important information regarding Human Ecodynamics. These are the concepts which are to be found in the computational ontology. They are interconnected by the *Combinators*. In red appears those concepts which I developed personally for my MPhil project.
- Column 7: The bibliographic references to the archaeological reports from which the data to create the dataset are. Each line refers to the concrete pages and paragraphs from where the data are.
- Column 8: Permalink to the archaeological reports.
- Column 9: The text to which each line alludes. Links to the images and charts from the archaeological reports are also in this column.

Each line of the CSV may or may not refers to one paragraph or page. Please, consult column 7 for obtaining more information.

Please, take into account that this CSV was later transformed in a GeoJSON format to upload it to the computational ontology.

Details of how the data set relates to other archives and publications

The dataset is integrated into the DataARC's Project general ontology (https://beta.data-arc.org/about). This is a project that uses NABO's (https://www.nabohome.org/) data for creating a computational ontology capable of representing Human Ecodynamics. The datasets here presented were developed and used as part of my MPhil dissertation (Barruezo Vaquero, 2019). Additionally, you can find information regarding the DataARC Project in the following resources:

Angel, C., Brin, A., Cothren, J., Opitz, R., Strawhacker, C., Wilson, J., Sexton, T., 2018. Sometimes a map is not enough.

Barruezo Vaquero, P, 2019. Exploring the ontological links between Human Ecodynamics and field Archaeology through the integration of archaeological reports into DataARC's landscape ontology. MPhil thesis, University of Glasgow.

Opitz, R., Strawhacker, C., Buckland, P., Pálsson, G., Pulsifer, P.L., Yarmey, L., Lethbridge, E., Mainland, I., Newton, A., Streeter, R., Dawson, T., Cothren, J., 2018. DataARC: Driving interdisciplinary search for collaborative studies of long-term human ecodynamics.

Pálsson, G., Opitz, R., Strawhacker, C., Brin, A., 2017. Driftwood, power and ecclesiastical spacetime volumes: CIDOC-CRM and the complexity of archaeo-historical concepts.