

Henriette Roued-Cunliffe is the Doctorate Student (DPhil/PhD) on this project, where she is supervised by Project Investigator Prof. Alan Bowman (Centre for the Study of Ancient Documents, Faculty of Classics, Oxford).

Henriette is also [blogging](#) about her doctorate work and you can read more about her work on this website under: [Subjects](#) > [Doctorate Work](#) .

## Previous Education

She did her undergraduate studies in Prehistoric Archaeology at Aarhus Universitet, Denmark where she took an interest in cross-cultural connections in Europe in late Roman times. As the third year of her bachelor studies she went to University of Leicester as a part of the European Erasmus exchange program. Here she took classes in among others Geographical Information Systems, Geographical Data Analysis and Java programming. From here she went to University of Southampton to do her MSc in Archaeological Computing where she was particularly interested in the dissemination of archaeological data through web services and the possibilities of connecting several data sources through one search engine.

## Doctoral Thesis

Her Doctorate Studies at University of Oxford runs from October 2008 till September 2012, where she is a member of Brasenose College.

## Knowledge base

She has been working on the XML encoding of the Vindolanda Tablets trying to update the website " [Vindolanda Tablets Online](#) " with the new tablets from the third book on The Vindolanda Writing Tablets, whilst adding extended functionality to the website. This includes work with contextual encoding and creating XML through PHP scripting.

This work has enabled her to create a [new website for the Vindolanda Tablets](#) , which uses the contextual encoding of the Vindolanda Tablets (fig. 1) to pull out the indexed words and allows the user to search through them using Ajax LiveSearch technology (fig. 2).

### WORD INDEX

```
<w lemma="idem" n="1" type="eodem">eodem</w>
```

### CALENDER INDEX

```
<date calendar="Iunius" n="1" type="Iunius_xi_kalendas" value="xi kalendas">  
Iunius xi kalendas </date>
```

*Fig. 1 Contextual Encoding*

### SEARCH THROUGH THE INDEX OF LATIN WORDS

**idem**

eodem **581** (8)

*Fig. 2. Index search of Vindolanda Tablets*

The latest on this is the development of a Web Service (APPELLO) for the Vindolanda Tablets. The Web Service is built with the RESTful protocol and has the following methods:

`get_tablets`, which will return basic information about each tablet

`get_tablet`, will return the original XML for the tablet specified through the parameter 'tabletID'

`get_word`, `get_calender`, `get_person`, `get_military`, `get_geog`, `get_all`, will either return all the words in each category. The optional parameter 'pattern' allows the user to specify a pattern which the words returned must follow. \* defines a wildcard character and {bd} allows the user to specify that a character can be either b or d . Using the following url:

**`http://localhost/vindoWebService/tablet.php?method=get_word&pattern=e*{db}`**

Will return the word 'eodem' (fig. 3) as XML or used in the LiveSearch (fig. 4).

```
- <response>
  - <element index="word">
    <id id="lemma">idem</id>
    - <types types="lemma">
      - <type type="lemma">
        <typeName typename="lemma">eodem</typeName>
        - <tablets>
          - <tablet>
            <tabletNumber>581</tabletNumber>
            <number>8</number>
          </tablet>
        </tablets>
      </type>
    </types>
```

Fig. 3 XML response from Web Service

SEARCH THROUGH THE INDEX OF ALL WORDS, TERMS, NAMES AND DATES

e\*{db}

Word: **idem** 584 (1) 586 (1)

eodem 581 (8)

Fig. 4 LiveSearch use of Web Service

## Decision Support System

Recently, she has built a prototype for the Decision Support System (DSS), which will form the basis of her thesis "A Decision Support System for the reading of Ancient Documents".

The DSS is based on an idea of a network of minor interpretations (percepts) such as a low level percept : "these three line fragments are an incised stroke" or a higher level percept: "these five letters can make up the word 'legio'"

The aim is that the expert reading an ancient document should be able to use the DSS for the things which humans find difficult, which are things like:

- Remembering complicated reasoning
- Searching huge datasets
- Accessing other experts knowledge
- Enable cooperation between experts on a single document

The ISS will guide the expert through the steps of identifying and committing to possible:

- Elements (Characters, Interpuncts, Indents and Spaces)
- Characters (a, b or c)
- Words (bovem or quem)
- Phrases, sentences and paragraphs

The process of identifying and committing to these elements, characters and words will be evidence based in the sense that the character 'h' (fig. 5) may have several pieces of evidence for or against it. It is however always up to the expert to decide which evidence to listen to.

## **CURRENT INTERPRETATIONS**

**Character: h**

**Change character:**

+ Word: hordiaria

+ AKB: h, 'Because I say so'

+ Word search: hordiaria, hordiator(es)

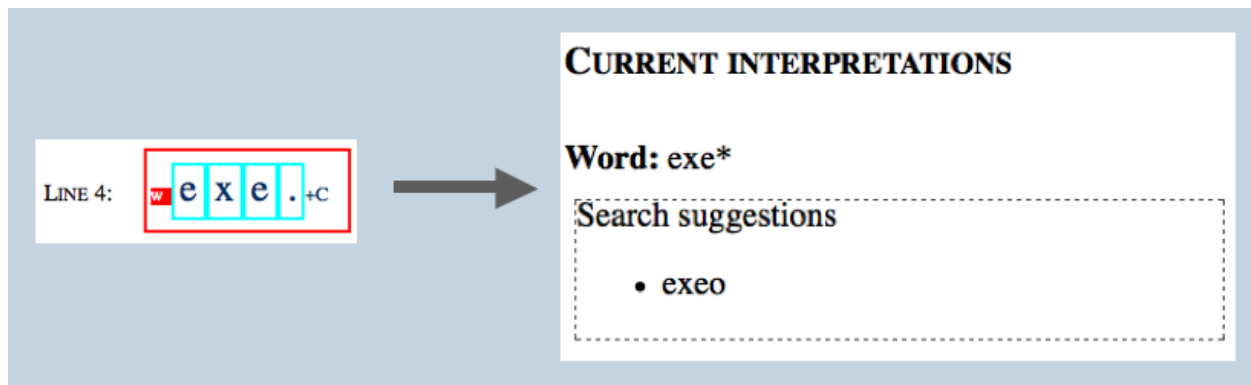
- Character recognition: n, r

*Fig. 5 Evidence for the interpretation of character 'h'*

## **Web Services**

Finally, the Vindolanda Web Service will be used as a knowledge base of words, which can be

evidence for and against certain words or characters (fig. 6).



*Fig. 6 ISS use of the Web Service*

The plan is that the Vindolanda Web service should not be the only web service used in this way. If an expert was reading a Greek text the Vindolanda Tablets would be pretty useless as a knowledge base. Therefore, we are hoping that it will be possible to use other resources (e.g. Lexicon of Greek Personal Names). A part of the plan is also that each tablet read through the system can be reused as a knowledge base for future tablet readings.

**See CV, publications and presentations on [oxford.academia.edu/HenrietteRoued](http://oxford.academia.edu/HenrietteRoued)**

