More than 800 years ago in present-day Spain, the philosopher Averroes was working on his commentaries on Aristotle, dealing with the works of Galen, Ptolemy, and Alghazel, composing and constantly revising his treatises on philosophy, medicine, astronomy, Islamic law, and theology. Ibn Rušd, better known by his Latin name Averroes, wrote in Arabic, but nearly all his works were translated into Hebrew and Latin. The great thinker’s words can now be found in numerous manuscripts in libraries all over the world.

WHAT WAS THE PROBLEM?

The multiple attempts to establish a satisfactory edition of Averroes’ works began during the Renaissance and recommenced with the onset of historical scholarship in the late 19th century. This scholarship has indeed produced a number of remarkable critical editions and studies.

However, these multiple editions have also made it even more complex to uncover the real Averroes’ work. Many of the philosopher’s texts also have quite a few commentators while others number in the hundreds, so representing these annotations and viewpoints is difficult in a straightforward edition. Moreover, the documents are in Arabic, Hebrew and Latin, making presentation complicated.

HOW WAS THE PROBLEM SOLVED?

With the project DARE – Digital Averroes Research Environment - the centuries-old study of Averroes’s works entered a new era. DARE aims to provide researchers with structured access to the complete oeuvre of Ibn Rušd or Averroes, including scans of thousands of manuscripts, chunked full texts as interim editions of all his works and a comprehensive bibliography of primary and secondary sources.

The real challenge of DARE is in presenting texts which interlink with one another, with emphasis on both the Hebrew and Arabic words, in support of hermeneutics researchers.

WHAT ARE THE MAIN OUTCOMES?

Today, seven of Averroes’ short publications have been developed using the technology and these demonstrate the full potential of DARE as a research environment.

Digital editing needs to find ways to create interoperable content so that research can become part of a wider web of scholarship, and to this end the Institute welcomes moves towards making all research results Open Access. The achievements shown by DARE demonstrate the potential for digital innovation through openness and a sense of exploration. The project team have even contributed to a Marie Curie training network DiXiT, a
coordinated training and research programme for researchers in the multi-disciplinary skills, technologies, theories and methods of digital scholarly editing in the humanities.

In the meantime the DARE infrastructure is catalyzing new studies of medieval works. The Metaphysics of Avicenna will see a new critical edition in Pisa, Italy (see box) and the University of Cologne has prepared a digital edition of probably the best known medieval handicraft book known as Schedula diversarum artium (On Diverse Arts).

KEY LESSONS LEARNED

There were various challenges to overcome in developing this research environment:

1. **Modelling.** In order to find meaningful pathways through this maze of writings and their witnesses, the interconnections between the documents had to be modelled as semantic data. The computer programme could then generate answers like, ‘This text is written by A in cooperation with B during their stay in M where they both visited C in the year X’ or ‘This word appeared for the first time in A’s manuscripts in the year Y when he read the book P written by B who introduced this word in his publication C in the year Z.’

2. **Presentation.** It’s the semantic data that provides the glue between the documents, so the project team faced a challenge in creating a useable interface. They approached this by putting themselves in the user’s shoes and asking: how will an editor use the manuscripts?

3. **Direction of reading.** The writing direction of Arabic and Hebrew script is not left to right as in many alphabets. Displaying them is one thing, but input methods had to be carefully prepared to allow for the two directions.

4. **Performance.** In highly interconnected data the speed of queries and processes could have been compromised, so the project team worked to ensure optimum performance.

5. **Copyright.** The historical manuscripts and prints are of course copyright free, but the status of microfilms and images is not always clear. The Thomas Institute follows an opt-out policy - that is, the material is used unless someone claims otherwise.

FUTURE DEVELOPMENTS

The Thomas Institute of Cologne University has an internationally outstanding reputation, reflected in 70% to 80% of its third party funding coming from cultural foundations, national endowments and European projects, unique in the humanities. The DARE project as a whole is financed by the DFG until 2014 and will continue in specialized projects thereafter, so its prospects are good. As the DARE tools are now part of the research infrastructure for the humanities, a limited annual amount will be needed for maintenance and help desk functions. Currently, there are no guarantees of this funding.
FIND OUT MORE

Explore the DARE research environment

Read a conference abstract which explains the DARE project in more technical detail

References

All images used courtesy of the project team

Based on an interview with Professor Andreas Speer, director of the Thomas Institute at the University of Cologne, by Leo Waaijers

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