Imaging Hadrian in Britain

IATL Pedagogic Intervention 2019 – Final Report

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Summary

The aim of the project was to test a new interdisciplinary methodology that integrates the study of classical art with digital humanities. The central idea was to use high-definition imaging and 3D technology to compare and combine the data from two different classes of ancient materials, coinage and sculpture. These were the two principal and most widespread media through which the portraits of Roman emperors were disseminated across the Empire. The project looked at the similarities and differences between portraits of the same emperor used on each class of objects, and compared how the emperor's likeness varied from an image designed in Rome, by the central authority, to one derived from it but created in the provinces, reflecting local artistic choices and skills. The project focused on the portraiture of emperor Hadrian (AD117-138) in Britain: it considered the head of a bronze statue found in the river Thames, which was made by a local workshop, alongside portraits of Hadrian used on the bronze coins made in Rome for circulation in Britain (the BRITANNIA asses). 3D scanning and modelling were used to produce high-resolution three-dimensional images of these objects. They were used to enhance the level of detail and accuracy with which ancient artefacts can be studied, and to generate a virtual reconstruction of a round model of Hadrian's portrait derived from his coin portraits. This methodology gives the opportunity to approach the study of ancient artefacts and human past in a newly engaging way, and it provides new insights into the ancient image-making process.

Structure and partners involved

The project was structured as a two-stage process. The first part focused on the research activity, which involved the documentation and analysis of the materials from the collections of the British Museum. The second part of the project was aimed at presenting and discussing the results of the research. This was conceived as a special seminar in the Taught MA in Ancient Visual and Material Culture aimed primarily at postgraduate students, which investigated the nature of imperial visual representation in Roman Britain.

There were multiple partners involved in the project: British Museum curators Dr Richard Hobbs (Roman Britain collections) and Dr Richard Adby (Celtic and Roman coins collections); Warwick WMG engineers Prof. Mark Williams, Dr Mike Donnelly and Dr Paul Wilson; 3D designer Steve Dey from ThinkSee3D Limited, Oxford.

Research activity

Mike Donnelly and Paul Wilson scanned four bronze coins and the bronze head of the statue of Hadrian in the Museum on 17th September 2019. They used a Nikon H120 blue-light laser scanner (32microns with a single point accuracy of 35microns) mounted on a MCA25+ articulated arm. The PI and both museum curators oversaw the entire documentation process.

The data captured in three-dimensional images was then processed by the engineers at the WMG to produce finished digital files (meshes in stl format). One of the coin scans was chosen to be used by the designer to derive a round model from the low-relief profile portrait. This was achieved by producing a specular image of the profile to create the other half of the head, and then integrating the missing front portion of the portrait to generate a round virtual model. The designer drew upon an image of a sculpted portrait of the same emperor to inform some characteristic facial features and used facial recognition software to process this data. The result was a virtual model of a round portrait based upon a coin (fig. 1).

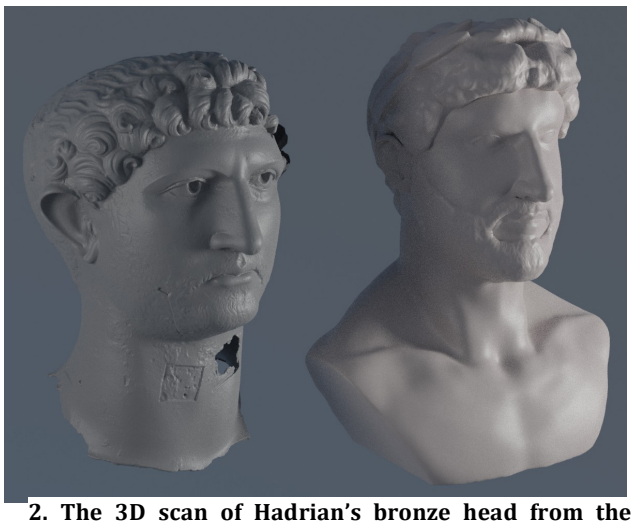
The last step was the printing of the round digital model in 3D at the WMG laboratory (fig. 2).

Seminar activity

The session was held on 5th November at the British Museum in the Department of Britain, Europe and Prehistory. It saw the participation of the PI, four museum curators, the 3D designer and seven

participants from Warwick University among members of staff (the Head of Classics Department Prof. Zahra Newby), MA and PhD students. Presentations were given by Dario Calomino, Richard Abdy, Richard Hobbs and Steve Dey. They were followed by a seminar discussion involving all the participants and the additional contribution by Dr Thorsten Opper, curator in the Department of Greece and Rome and world-leading expert in Roman imperial portraiture, particularly of Hadrian. The students engaged with the 3D print of the model-portrait of Hadrian and with the bronze head of Hadrian from the Thames (fig. 2). They discussed the analogies and the differences between the ideal projection of the emperor's likeness presented to the British audience and its local version made by a British workshop to imitate it, reflecting the view of from the provinces. The workshop-seminar was successful and very well-received; it generated food for thoughts both on the specific case study presented and on the new methodology introduced by the project.

1. 3D round model of Hadrian's bust derived from a coin profile, aligned with the 3D scan of Hadrian's bronze head from the Thames



2. The 3D scan of Hadrian's bronze head from the Thames compared with the 3D print of the model

Future activity

The results of this project will be published as a co-authored paper (D. Calomino, M. Donnelly, M. Williams and P. Wilson, 'From coin to sculpture: testing a new digital approach to the study of Roman imperial portraiture'), which will be submitted to an international academic journal later this year. The interdisciplinary approach adopted here for the first time will also inform the research in a large-scale project proposal that the PI will submit to the European Research Council in 2020. Overall, it is anticipated that the new methodology introduced in this project will generate a new form of integrated learning experience for students as well as a new teaching/research tool for scholars in the field of Digital Humanities.

Costing

- Process Scan Data of Roman Coin (ScanProcess) provided by ThinkSee3D Limited (Oxford): 796.87£ (net) + 159.37£ (VAT) = 956.24£
- Carriage of 3D printed model from Coventry to the British Museum (train and taxi fares): 41.20£

Total spent on project code IL1905: 997.44£