

Impact case study (REF3b)

Institution: University of Oxford
Unit of Assessment: 35 Music
Title of case study: DIAMM: Revolutionising early music performance resources, manuscript accessibility and digital preservation techniques.
<p>1. Summary of the impact</p> <p>The Digital Image Archive of Medieval Music (DIAMM) is an online digital archive of European medieval polyphonic music, captured direct from the original sources. DIAMM's database (c. 15,000 images) and its award-winning publishing activities make an unparalleled number of medieval manuscripts widely accessible beyond academia, enriching a corpus of music-cultural resources for the benefit of performers, students, libraries, and all those interested in manuscripts and the art and music they contain. The online resources, available without charge, permit collections, libraries, and archives to enhance their holdings, and allow users to access an extensive cross-section of medieval cultural activity of which they would otherwise remain unaware. DIAMM's robust technical standards and protocols have been widely adopted by other digitisation projects beyond academia, demonstrating its impact on source preservation and transmission.</p>
<p>2. Underpinning research</p> <p>DIAMM (based at the Faculty of Music in Oxford and established in 1998) is an outgrowth of research undertaken by Dr Margaret Bent, Fellow emerita of All Souls College and Prof. Andrew Wathey, formerly of Oxford now Vice-Chancellor of Northumbria University. Their pioneering collaboration on Guillaume de Machaut and the Roman du Fauvel ^[1] epitomizes DIAMM's interdisciplinary research initiatives. Bent's groundbreaking work on the grammar and theory of medieval music ^[2], historiographical issues surrounding its translation and transcription, and particularly the Italian Bologna Q15 repertory is complemented by Wathey's research on fourteenth and fifteenth-century musical sources and their social and cultural contexts ^[3].</p> <p>Research is now led by the project's directors: Prof. Elizabeth Eva Leach, University Lecturer and Fellow of St Hugh's; Dr Julia Craig-McFeely, project director and Research Fellow in the Faculty of Music; and Prof. Thomas Schmidt of Manchester University. The Board of Directors (who also contribute research to the resource) includes Oxford staff: Martin Holmes (Alfred Brendel Curator of Music, Bodleian Library); Dr Owen Rees (Fellow and Tutor, The Queen's College); Dr Matthew Salisbury (Lecturer, University College) and Prof. Reinhard Strohm (emeritus Heather Professor, Faculty of Music). DIAMM has been supported by a number of competitively won grants and awards from international funding bodies including the Mellon Foundation and the AHRC.</p> <p>The individual research of DIAMM contributors has helped to shape its current form, and the availability of images has in turn opened up further avenues for research. Leach works on Guillaume de Machaut ^[4], investigating music, poetry, and cultural transfer in medieval France and England. Craig-McFeely has published on English lute manuscripts and scribes in the late medieval period, and both she and Leach have more recently written on the role of new technologies within musicology and music historiography ^[5]. Rees works on Iberian medieval motets ^[6], and Salisbury researches English medieval and Renaissance liturgical music and historiographical issues associated with source preservation and interpretation in this repertory ^[7].</p> <p>Sources archived in the DIAMM database include all currently known fragmentary sources of polyphony up to 1550 in the UK; all the 'complete' manuscripts in the UK; a small number of important representative manuscripts from continental Europe; and a significant portion of fragments from 1300-1450 from Belgium, France, Italy, Switzerland, and Spain. The database was designed to include metadata about each listed manuscript, from physical descriptions to contents to full-text transcriptions. Researchers have created, collated, and improved metadata, requiring continual specialist work (i.e. identifying provenance of manuscripts and undertaking specialist description of script, notation, mise-en-page; identification and/or analysis of music and text). The image capture protocols required for the photography were developed by DIAMM, as were the techniques for digital restoration of previously inaccessible sources, illegible through damage or age. DIAMM has concentrated on developing a carefully tested image capture and metadata standard that is proving extremely robust. The licences employed by DIAMM have been used as models for other institutions wishing to embark on digitisation. Licences and technical protocols, as</p>

well as training on specialist camera hardware and digital restoration of images (first published 2006), have been shared with similar projects.

Research outputs include the online database itself, and a growing selection of editions and early music resources, openly accessible through the project website. Since 2009, DIAMM has been preparing traditional facsimile editions and introductions to important manuscripts. Two such publications have won the American Musicological Society's annual award for best edition. The website itself has been praised in peer-review papers and conference presentations (Oswell 2011, Gutierrez 2011).

3. References to the research

Major research awards:

Andrew H Mellon Foundation (2006-10), \$465,000

AHRC Digital Equipment and Database Enhancement (2010-11), £189,000

Research References:

- [1] Bent, Margaret and Andrew Wathey (eds.), *Fauvel Studies: Allegory, Chronicle, Music and Image in Paris, Bibliothèque nationale de France, MS français 146* (Oxford: Clarendon Press, 1998). ISBN: 9780198165798. The Clarendon Press is an imprint of the Oxford University Press.
- [2] Bent, Margaret, 'The Grammar of Early Music: Preconditions for Analysis' pp. 15-59 in ed. C. C. Judd, *Tonal Structures in Early Music*, (New York: Garland, 1998). ISBN: 9780815323884 (Hbk); 9780815336389 (Pbk)
- [3] Gareth Curtis and Andrew Wathey, 'Fifteenth-Century English Liturgical Music: A List of the Surviving Repertory', *Royal Musical Association Research Chronicle* 27 (1994), 1-69 DOI:10.1080/14723808.1994.10540965. All articles have undergone rigorous peer review, initial editor screening and refereeing by at least two anonymous referees.
- [4] Leach, Elizabeth Eva, *Guillaume de Machaut: Secretary, Poet, Musician* (Ithaca: Cornell University Press, 2011) ISBN: 9780801449338 **Winner of Phyllis Goodhart Gordon Prize of the Renaissance Society of America 2012.**
- [5] Craig-McFeely, Julia, 'The art of virtual restoration: creating the digital archive of medieval music (DIAMM)', *Computing in Musicology* 12 (2001), 227-240 ISSN: 1057-9478. Published by Stanford University, USA
- [6] Rees, Owen, 'Music by Pedro de Cristo: An Edition of the Motets from Coimbra, Biblioteca Geral da Universidade, MM33', *Music Archive Publications Series C, Vol. 1*, (Harwood Academic Publishers, 1999) ISBN: 9789057550102. *Music Archive Publications* is a book series now published by Routledge and the Taylor & Francis Group, global publishers of academic books and journals.
- [7] Salisbury, Matthew and Andrew Hughes, 'The ideal copy: fallacies in the cataloguing of liturgical books', *Notes and Queries* 56 (Dec. 2009), 490-496. DOI: 10.1093/notesj/gjp178. Published by Oxford Journals, Oxford University Press

Research outputs:

- DIAMM database: <http://www.diamm.ac.uk>
- *The Eton Choirbook, Eton College MS 178*, with introduction and commentary by Magnus Williamson (Oxford: DIAMM Publications, 2010). ISBN: 9780852498774 **Winner American Musicological Society Claude V. Palisca Award for best edition or translation, 2011.**
- *Bologna Q15: the making and remaking of a musical manuscript*, with an introductory study by Margaret Bent (Lucca: LIM Editrice in collaboration with DIAMM, 2009). ISBN: 9788870965131 **Winner American Musicological Society Claude V. Palisca Award for best edition or translation, 2009.**
- Julia Craig-McFeely and Alan Lock, *DIAMM Digital Restoration Workbook* (Oxford: OSSC Publications, 2006). <http://www.diamm.ac.uk/redist/pdf/RestorationWorkbook.pdf>

Reviews of Project:

Michelle Oswell, *Notes*, 68/2 (December 2011), 428-31.

Carmen Julia Gutierrez, 'Medieval Music through the Technology Looking-Glass' (paper given at Cantus Planus conference, Vienna, 2011).

http://eprints.ucm.es/14523/1/Medieval_Music_through_the_Looking-Glass.pdf

4. Details of the impact

Usage of the current DIAMM web resource (which has nearly 25,000 unique visitors a year, with nearly half of these visiting for the first time) has demonstrated that it reaches far beyond the academic researchers in musicology for whom it was originally designed. DIAMM is the only site where medieval documents of immense range, quality, and quantity may be consulted by anyone, anywhere in the world, and from any demographic group, without charge. DIAMM provides the following benefits:

Enriching Resources for Early Music Performers.

There is high demand for early music both in recordings and in live performance. The recent expansion in electronic media has vastly augmented the demand from performers for new sources and repertoire of early music. Professional ensembles such as *Liber unUsualis* (USA), the *Brabant Ensemble*, *Marian Consort*, *Alamire Consort*, *Tonus Peregrinus*^[i] are already users of DIAMM for a variety of purposes, and support from DIAMM directors has provided them with expert assistance in editing music from digital facsimiles of the primary sources, in order to prepare their own editions of the repertoires they perform. This has helped to overcome significant inaccuracies in previous editions, and facilitated the performance of some previously unheard works. Ian Hammond (musician)^[i] writes, 'DIAMM is to medieval music what a library is to books: it collects the objects and makes them generally available. I know that sounds pretty obvious, but in fact, melody is greatly underrated as a value object to be collected, collated, protected and published. The need for DIAMM will never be extinguished - it can only grow as the web gradually fulfils its role as our universal repository. DIAMM already has its foot in the door.' In a review in *Early Music*, Fabrice Fitch writes, 'Facsimile editions of early polyphonic sources are usually self-recommending, but the long-awaited Eton Choirbook, the first fruits in hard copy of the Digital Image Archive of Medieval Music (DIAMM), is especially welcome. Magnus Williamson's 85-page commentary, at once erudite and readable, is a mine of valuable information'^[iii].

Enhancing and Expanding Library and Archive Collections.

DIAMM has provided 80 archives worldwide with free delivery of high-quality images of their music manuscripts (including the British Library^[iii]). For such institutions, delivery of their own images in a congenial medium, without cost to them, is a considerable advantage. The librarian Rijk Vriesinga of the Archiefservice Fryslân (NL)^[2] recently commented that 'it is a wonder that such a system exists'. Libraries themselves are one of the most important user groups accessing DIAMM: their collections are enhanced by free, online access to DIAMM manuscripts, and references to their own collections in RISM (Répertoire International des Sources Musicales) and CMM (Corpus Mensurabilis Musicae) can now be accessed online. DIAMM has recently been invited to join and provide metadata for the Medieval Electronic Scholarly Alliance^[iv], a union catalogue of partner collections including the British Library, the Courtauld Institute and the Walters Art Museum. Academic (researchers, students, performers and teaching staff) and non-academic library users are now able to access a wide range of resources in electronic format, some of which were previously not available at all.

Technical consultancy, imaging, and protocols for other projects which themselves have a non-academic impact.

DIAMM is a world leader in digital imaging of rare and delicate documents, and has acted as consultant in Japan and the USA to projects of international importance, such as the digitisation of the Dead Sea Scrolls (alongside experts from NASA)^[v]. DIAMM maintains the facility to provide images for other cultural projects – several funded by the AHRC such as The Production and Reading of Music Sources (Manchester) and The Experience of Worship (Bangor) – and to carry out consultancy work on behalf of institutions in Belgium, Spain, and Germany. Robust technical protocols (and DIAMM-trained technical staff) have been adopted by such institutions as the

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Alamire Digital Lab (Alamire Foundation/KU Leuven, Belgium) in the digitisation of the Vatican Library music collections^[vi]: this was described as ‘laying the groundwork for new developments in international academic thought on the musical and art-historical patrimony of the Low Countries’, in the words of Bart Demuyt, director of the Alamire Foundation^[3]. Wolodymyr Smishkewych cites pioneering work of DIAMM as a key influence, and states his intention to draw on their expertise in his production of the online digital photographic facsimile of the Lugo Codex^[vii]. DIAMM has therefore created new possibilities for the digitization and provision of resources in myriad disciplines beyond musicology, and has encouraged new approaches to the study of digital materials in the Humanities^[viii].

Teaching and learning outside Oxford.

The DIAMM database and resources are increasingly used in a wide variety of educational settings worldwide, particularly where users would not otherwise have access to large manuscript collections. In addition to its use in the music curriculum, teachers have used DIAMM to communicate an understanding of the culture of the Middle Ages. As Alice Clark^[4] of Loyola University writes, ‘Our students are much more likely to be unfamiliar with medieval culture, and this resource can help the Middle Ages come alive for them.’ This may be the most crucial impact area for DIAMM, since students attracted by the beauty, intricacy, and rarity of these sources become more engaged with historical studies, enabling them to appreciate more fully the achievements of their own and other cultures – both historical and contemporary. In this way DIAMM has fostered new projects^[ix], encouraged interdisciplinary study, and reinforced the importance of understanding the multi-faceted nature of cultural and historical research.

5. Sources to corroborate the impact

Testimonials:

- [1] Email statement from a musician
- [2] Email statement from Librarian of the Archiefservice Fryslân (NL)
- [3] Email statement from Director of the Alamire Foundation
- [4] Email statement from Professor of Music History, Loyola University, New Orleans

Other sources of corroboration:

- [i] *Tonus Peregrinus* ‘Music from the Eton Choirbook’ Naxos 8.572840–commercial recording of music edited by Magnus Williamson and published by DIAMM, with example of DIAMM image used for CD cover) <http://www.naxos.com/SharedFiles/pdf/rear/8.572840r.pdf#>
- [ii] Fabrice Fitch, ‘Celebrating the Eton Choirbook’, *Early Music*, Vol. 39, No. 4 (2011). doi: 10.1093/em/car092
- [iii] Example of DIAMM providing free access to the database through archives, British Library link <http://www.bl.uk/reshelp/findhelprestype/music/usefulmusweb/linksonlinedb/linkonlinedb.html>
- [iv] Medieval Electronic Scholarly Alliance link shows DIAMM collaboration <http://www.mesa-medieval.org/>
- [v] Corroboration of DIAMM role in Dead Sea Scrolls digitization pilot project. ‘The Dead Sea Scrolls Go Digital’, Press Release, 8/27/08, Israel Antiquities Authority http://www.antiquities.org.il/article_item_eng.asp?sec_id=25&subj_id=240&id=1422&module_id=#as
- [vi] Webpage showing current Alamire Foundation projects including the digitisation of manuscripts at the Vatican Library <http://www.alamirefoundation.org/en/research/current-research-projects>
- [vii] Lugo Codex project discussion of DIAMM techniques for digital restoration. <http://opus.music.indiana.edu/s/lugocodex/digitalrestoration.php>
- [viii] Ellen Collins & Michael Jubb, ‘How do Researchers in the Humanities Use Information Resources?’, *LIBER Quarterly*, Vol. 21, No. 2 (2012) used DIAMM as a primary resource (<http://liber.library.uu.nl/index.php/lq/article/view/8017/8364>)
- [ix] Elizabeth P. K. Hamilton, ‘A Study of Early Sixteenth-Century English Music Fragments from the DIAMM Database’, MA Thesis, University of Ottawa, (2011) <https://www.ruor.uottawa.ca/en/handle/10393/20241>