

Institution: University of Cambridge
Unit of Assessment: 35
Title of case study: Research into Performance, Performance into Research
<p>1. Summary of the impact</p> <p>Recent work carried out in Cambridge has brought academic research and performance practice into multiple relationships; the impact of this work has been far-reaching and various. On the one hand, research on the origins of polyphony and on nineteenth-century piano music has impacted performance practice and, through this, the experiences and thinking of a broad listening public. Some of this research has enabled performers to revive scores long thought unperformable, while other work has empowered interpreters in ways that would have been unimaginable before the digital age. On the other hand, research that links polyphonic composition and performance practice with scientific thinking has explored the potential of the concert hall as an arena for research, turning music into a vehicle for public engagement with science. In this way, academic research informs and transforms musical performance and listener experience, while the practice of performance informs and transforms the understanding of music.</p>
<p>2. Underpinning research</p> <p>The case study is built on the following three bodies of research, which illustrate in detail these different forms of impact. In certain respects they are linked, while in others they illustrate the diversity of work in the Faculty of Music. The first and third both focus on the compositional practices of early music, while the second features nineteenth-century repertoire. On the other hand, the first two proceed from questions of notation and its interpretation, providing musicians with greater understanding of how to perform the repertoire in question, while the third seeks to apply cognitive and psycho-acoustical theory to explore and inform polytextual performance practice.</p> <ul style="list-style-type: none"> • The research carried out by Susan Rankin (Professor of Medieval Music since 2005) focuses on the musical notation used in an eleventh-century manuscript from Winchester Cathedral, now held by Corpus Christi College, Cambridge. This was published in 2007 as a facsimile with a 100,000-word introduction. The Winchester source contains the earliest repertory of polyphony extant and, as such, has enormous historical importance. Rankin showed how certain notational techniques provided much clearer information about pitch content than had previously been realised. By combining insights into notation with a study of the sources' contrapuntal techniques, Rankin was able to progress much further with transcriptions than the principal previous study (Holschneider, 1968). In developing her ideas, Rankin has worked closely with several of the leading ensembles that specialise in early-medieval music. • The research of John Rink (Professor of Musical Performance Studies since 2009) has given rise to two major outputs in the period since he moved to Cambridge, both designed for use by performers as well as scholars. The first is his edition of Chopin's Second Piano Concerto (2010). This is based on two key premises: (i) that variants form an integral part of the music; and (ii) that the conflation of multiple sources should be avoided. The concerto was published as part of <i>The Complete Chopin – A New Critical Edition</i>, of which Rink is one of four series editors. The second is the development of the <i>Online Chopin Variorum Edition (OCVE)</i>, funded by the Mellon Foundation from 2011 to 2014. OCVE, of which Rink is Principal Investigator, features an archive of digitised manuscript and printed sources (c. 6,000 images to date), all of which can be displayed in numerous formats. There are detailed philological descriptions and explanatory texts; personal annotation tools allow users to add their own comments. • The research undertaken by Edward Wickham (Affiliated Lecturer since 2007) and Sarah Hawkins (Director of Research in Speech and Music Science since 2011; previously Professor of Phonetic Sciences since 2003) addresses the fundamental question of how listeners understand sung texts in polyphonic music. Using experimental tests built round specially composed music, they manipulate parameters such as harmonic structure, number of voices,

Impact case study (REF3b)

word predictability and phonetic structure: the purpose is to probe the intelligibility of words in sung texts, and in this way inform the practices of both performers and composers, as well as the experiences of listeners. At the same time, the newly composed music and associated texts are designed to promote understanding of the neuroscience of hearing. Audiences' active participation is engaged by in-concert tests of intelligibility; these are accompanied by explanations about the principles tested and their relevance to normal and hearing-impaired listeners in complex auditory environments. Like Rankin, Wickham and Hawkins work closely with leading performers of early music to test their hypotheses – in this case The Clerks, who are directed by Wickham and whose repertoire ranges from polytextual motets to contemporary compositions.

3. References to the research

- a) Susan Rankin's edition of the Winchester Troper was commissioned by Early English Church Music; it appeared as *The Winchester Troper*, Early English Church Music 50 (London: Stainer and Bell, 2007). This volume encapsulates a body of research spanning almost fifteen years, starting with an article published in 1993: 'Winchester Polyphony: The Early Theory and Practice of Organum', in S. Rankin and D. Hiley (eds.), *Music in the Medieval English Liturgy: Plainsong and Mediæval Music Society Centennial Essays* (Oxford: Oxford University Press, 1993), 59-99.

Outputs embodying Rink's research include:

- b) *Fryderyk Chopin, Piano Concerto No. 2 in F minor, Op. 21*, ed. John Rink (London: Peters Edition, 2010).
- c) Online Chopin Variorum Edition (OCVE), www.ocve.org.uk, funded in three successive grants from the Andrew W. Mellon Foundation (Scholarly Communications Program), New York, USA. Two preliminary phases, which attracted grants of \$110,000 and \$303,000 respectively, laid the foundations for the current developmental phase of the project (2011-14), which is supported by a grant of \$600,000. The OCVE, which released its first web resource in 2010, includes significant excerpts from Christophe Grabowski and John Rink, *Annotated Catalogue of Chopin's First Editions* (Cambridge: Cambridge University Press, 2010), a volume that received the Vincent H. Duckles Award (2012) from the Music Library Association for 'the best book-length bibliography or other research tool in music', and the C. B. Oldman Prize (2011) from the UK and Ireland branch of the International Association of Music Libraries, Archives and Documentation Centres.

Representative publications underpinning the research of Hawkins and Wickham are:

- d) S. Hawkins, 'Roles and representations of systematic fine phonetic detail in speech understanding', *Journal of Phonetics* 31 (2003), 373-405.
- e) A. Heinrich, Y. Flory, and S. Hawkins, 'Influence of English r-resonances on intelligibility of speech in noise for native English and German listeners', *Speech Communication* 52 (2010), 1038-1055.

A. Heinrich, K. Bruhn, and S. Hawkins, 'Young and old listeners' perception of speech in the background of English- and foreign-accented babble', in D. Algom, D. Zakay, E. Chajut, S. Shaki, Y. Mama, and V. Shakuf (eds.), *Fechner Day 2011: International Society for Psychophysics Twenty-seventh Annual Meeting* (2011), 113-118.

4. Details of the impact

The research described above has impacted performance and the understanding of performance in complementary ways. At one end of the spectrum it has brought to light repertoire that lay dormant for centuries. Rankin's work on the Winchester Troper has resulted not only in transcriptions of long-neglected pieces but also, crucially, in better understanding of how they could be performed. Since 2008 this body of knowledge has been made available through editions, recordings and public performances. Building on the experience gained through Ensemble Gilles Binchois's landmark concert in honour of Edward the Confessor (Westminster Abbey, 2005), Rankin has worked within the assessment period with two further internationally renowned groups, Dialogos and Ensemble Discantus, greatly expanding the range of the Winchester polyphonies to

have been disseminated in concert. A recording of Winchester repertory issued by Dialogos in 2009 (*Abbo abbas*; Ambronay Editions, AMY 017) was elected best Early Music CD of 2009 by [Audio Clásica](#); *Fanfare* (January/February 2010 issue; see Section 5a) described it as 'not to be missed'. Rankin provided transcriptions for nine of the disc's twelve pieces, only one of which had previously been recorded. In all, this programme has now been performed in over fifty concerts throughout Europe and North America in venues including Harvard University, the Sorbonne and, most recently, the Thoronet Festival (July 2013). A further programme, 'Music for a King', first given by Ensemble Discantus at the 2012 Ravenstein Festival, was broadcast on France Musique on 7.IX.12 and recorded early in 2013 for release on the *aeon* label; it has already been given ten times in concert, in venues including the Musée de Cluny, Paris, while extracts have been disseminated on YouTube (Section 5b) and Facebook (Section 5c). Winchester polyphonies have also been the focus of a summer course (July 2012; Fondation Royaumont, France). In each case, Rankin devised the programmes, provided the performing materials, and used insights gleaned from her research to coach the groups in appropriate performance styles. The director of one internationally renowned early-music ensemble has written of Rankin that 'without her transcriptions of the Winchester polyphonies and her generous work with the performers, our knowledge of the earliest roots of our medieval musical heritage would be seriously incomplete, and the concert audience in many countries would not have been able to discover this important musical repertoire' (Section 5d). In short, Rankin's research has revolutionised perceptions of early-medieval sound worlds for both performers and audiences.

Rink's research has helped change perceptions not only of how music might be performed, but also of the nature of performers' interpretive choices. In his case, the focus has been on canonic repertoire. Rink's edition of Chopin's Second Piano Concerto presents a reliable *Urtext* based on a single 'best source', while offering performers variants from other authorised sources, along with original fingerings and expressive indications; this achieves both fidelity to Chopin's intentions and the freedom of choice fundamental to his performance style. OCVE is making available for the first time a comprehensive body of primary Chopin sources; by highlighting differences between sources, it enables performers and teachers to construct their own interpretive approaches. One eminent pianist has written: 'I regularly use these resources myself for preparing performances, and refer to them internationally in masterclasses, as well as hearing them referred to in other classes by some very senior and distinguished performers'; he adds that they result in 'informed performances [that] are increasingly heard worldwide, affecting audience perceptions and being passed on in turn to younger students' (Section 5e). Both the concerto edition and OCVE have been the focus of presentations ranging from masterclasses (e.g., Jerusalem, 3.I.10 and 4.I.10; circa 50 in the audience [hereafter 'c.50' or equivalent]; London, 25.X.10, c.75) to lessons to schoolchildren (e.g., Singapore, 25.X.12, c.40; Cambridge, 2010-13, c.80). All of these sessions began with a presentation on problems raised by Chopin sources; tuition focused on philological issues and on performance practice. Rink also employed this research while lecturing in China (Shanghai Conservatory, 18.III.13 and 19.III.13, c.85; Nanjing Normal University, 22.III.13, c.120); Madrid (Universidad *Complutense*, 4.V.12, c.50); Alcalá (Aula de Música, 5.V.12 and 6.V.12, c.25); Paris (Bibliothèque Polonaise, 26.XI.10, c.80); Korea (Seoul National University, 21.X.10 to 23.X.10, c.100); and London (Purcell Room, 6.II.10, c.300). Chopin's symbolic importance in Poland lends particular significance to the use of Rink's Chopin editions in a high-profile concert in Warsaw (26.II.10; also broadcast on Polish Radio). Details about OCVE have also been disseminated through 'The Virtual Chopin', a fifteen-minute film produced by Cambridge University Communications Office in 2013 and accessible on YouTube since 1 March (Section 5f). By the end of July this had already achieved almost 8,000 hits, attracting comments such as the following from individual users: 'Reaching out this way is very beneficial to the large audience that otherwise would simply remain ignorant', and 'I think this is a wonderful new departure ... Classical music needs to attract younger generations[,] and younger people do not have the same sort of unquestioning reverence that older music lovers have' (comments dated March 2013; Section 5g).

As explained on the project website (Section 5h), the research of Wickham and Hawkins integrates artistic practice with scientific method in order to develop and apply cognitive approaches to the perception of polyphonic music. Enhancing understanding of the psychological processes underlying both polyphony and textual comprehension, this research aims also to inform compositional approaches to the communication of text through music; a highly respected composer and blogger described it as 'some of the best interaction between music and science

I've seen in a long time' (July 2013; Section 5i). The first stage of their work involved concerts and presentations at Brunel (15.VI.11, c.60), Cambridge (28.X.11, c.120; 24.X.12, c.170) and Huddersfield Universities (9.II.12, c.100). These were built round the performance of a new composition, *Roger Go To Yellow Three*, with libretto by Wickham and music by Christopher Fox (Brunel University). The work brings the research process into the concert hall by systematically manipulating performance parameters and assessing word intelligibility through questionnaires answered by audience members as they listen. These responses feed into the research, while the project enhances public engagement with scientific research through the medium of music. The research was featured in an interview involving Wickham, Fox and Tom Service on *Music Matters* (BBC Radio 3, 4.II.12, c.30,000). Its success led to a second Wellcome Trust grant (Large Arts Award, 2012-14), and a new work and tests, *Tales from Babel*, with a team led by Wickham and Hawkins. Collaboration with practising clinicians in a major hospital centre followed a performance presentation to the Addenbrooke's Hospital Audiology Group (24.V.13, c.30). The Head of Audiology described the project as 'a significant contribution in public understanding of the ability to hear in complex auditory environments'; he added that 'the insights that they glean are going to be of fundamental importance in designing improved interventions for hearing impaired people', and spoke of 'an ongoing conversation out of which it is intended that we have a particular work stream of collaboration, using music specifically designed for the benefit and enjoyment of hearing impaired users of both cochlea implants and sophisticated modern hearing aids' (Section 5j). Related performance presentations have taken place in Manchester (Wellcome Trust Medical Humanities Symposium, 23.IX.12, c.120), Cambridge (14.III.13 and 5.IV.13, c.215), London (British Neuroscience Association; 8.IV.13, c.35), and at the Cheltenham Festival (7.VII.13, c.120). Subsequent performances are booked throughout the UK. These are expected to reach a live audience of 2,000 and a further 50,000 through broadcast media, social networking, and online. This process is currently being extended through a fully funded PR campaign; the latter has already included a discussion on *In Tune* (BBC Radio 3, 8.IV.13, c.40,000).

5. Sources to corroborate the impact

- a) Issue 33:3 (Jan/Feb 2010); review by J. R. Weber
- b) <http://www.youtube.com/watch?v=sqTffdRVJvo>
- c) <https://www.facebook.com/MusicforaKing.Discantus>
- d) Corroboration from Director of Dialogos (see below)
- e) Corroboration from Keyboard Research Fellow at the Royal Academy of Music (see below)
- f) http://www.youtube.com/watch?v=GJDnc_nZT-A
- g) <http://www.cam.ac.uk/research/features/the-virtual-chopin>
- h) <http://www.talesfrombabel.co.uk>
- i) The blog description can be found at: <http://www.aaronhollowaynahum.com/category/blog/> (the exact date is not given, but it predates a blog entry dated 17.VII.13)
- j) Corroboration from Head of Audiology, Addenbrooke's Hospital (see below)

Corroboration of the impact of Rankin's research on the world of medieval music performance has been provided by the Director of Dialogos, and Maître de Conférences en Musique Médiévale at the Sorbonne University, Paris.

Concert pianists who have attested to the impact of Rink's Chopin research include:

- the Head of the Keyboard Department and Professor of Piano at the Guildhall School of Music & Drama, London;
- a Keyboard Research Fellow at the Royal Academy of Music, London, and Research Fellow at the Royal Conservatoire of Scotland, Glasgow.

Corroboration of the impact of the research of Wickham and Hawkins on the hearing-impaired has been provided by:

- the Head of Audiology and Consultant Clinical Scientist, Addenbrooke's Hospital, Cambridge;
- the Highly Specialised Speech and Language Therapist, Emmeline Centre for Hearing Implants, Addenbrooke's Hospital, Cambridge.