CHARM
AHRC Research
Centre for the History and Analysis of Recorded Music

CHARM Newsletter

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Looking back at CHARM

We set up CHARM because we thought that musicology was skewed towards the study of scores, that there was enormous untapped potential in the last century's heritage of recordings, and that bringing recordings to the forefront of the discipline could help to transform it—not least in terms of overcoming the mismatch between a discipline focussed on written documents and a public for whom music means performed sound. Although reception theory and history had a major influence on post-war musicology, the focus remained on the written document. And although the 'performative turn' that swept through cultural studies in the last decades of the twentieth century also had an effect on musicology, it perversely served only to reinforce the conception of music as a form of writing. The historically informed performance movement brought documentary and other period evidence to bear upon performance practice, in effect subordinating playing to writing. Analytical approaches to performance did much the same by mapping score-based analysis onto performances. While ethnomusicology and popular music studies were more successful in adopting a performative approach, we felt that in the area of Western 'art' music there was the potential for a major transformative intervention. That was where we hoped CHARM might make a critical contribution.

Although we saw CHARM as in essence a vehicle for the development of a performative approach to musicology, we saw significant advantages in focussing it specifically on recordings. If it was to have a historical dimension, a musicology of performance had to be a musicology of recordings. Yet the basic infrastructure for such a musicology was lacking, whether in the form of comprehensive on-line discographies, or software environments that would make it possible to work with recordings in the same sense as you work with scores at a desk. We made major advances towards solving these problems: in the first case through our on-line discographical project, and in the second through design and financial input into Sonic Visualiser, a navigation and visualisation environment developed at Queen Mary, University of London which (on the evidence of the email lists) is rapidly becoming the default choice for musicological work with recordings.

Again, the study of recordings has suffered from fragmentation, since a great deal of knowledge is held by experts in different areas who do not normally talk to one another: performers, producers, sound engineers, collectors, archivists, popular culture theorists, sociologists, psychologists, and so forth. Our programme

The **CHARM website** is undergoing a major redevelopment. Our new site will be hosted by King's College London, and will bring together the on-line discography already under development there and the administrative and resource pages currently located on the Royal Holloway server, as well as the analytical software and data at www.mazurka.org.uk (currently located on the Stanford University server). As well as integrating within a single structure resources that are at present fragmented, the new website will provide access to an extensive library of transfers and also include sections on the early history of recording (with materials authored by Roger Beardsley); on analysing recordings, with down-loadable software, tutorial materials, and access to large quantities of data from the Mazurkas project; and a range of discographical links. Most of the new site will be accessible from May, but in order to allow for thorough testing the discographical and sound files sections will not be accessible until July. The url of the new website will be www.charm.kcl.ac.uk (which currently points to the discography development site), with a redirect from www.charm.rhul.ac.uk. As this means CHARM urls will change, in this *Newsletter* we provide them in two forms, the first for the old site, and the second for the new one.

of residential symposia was specifically designed to bring such people together, and they were almost invariably full to capacity.

But we also felt that the kind of critical intervention we hoped for required a portfolio of sustained research projects, for the most part involving cross-disciplinary collaboration and focussed on the development of new methodologies for the study of recorded music. Our three analytical projects (on performance motifs, expression in Schubert songs, and style in Chopin's mazurkas) all involved collaboration between a musicological project director, and a research assistant drawn from a related but distinct field—respectively cognitive musicology, music psychology, and music information retrieval. All three projects involved classical music of the common practice period, with a high proportion of piano music: this deliberate restriction of scope (as against the discographical project and symposia, both of which involved classical, popular, and non-Western repertories) made it possible for there to be a high degree of interaction between the projects. All three projects resulted in new analytical approaches and in some cases custom software freely distributed through the CHARM web site.

The final project was in the area of business history, focussing on the relationship between two of the major record companies of the late 1920s and the effects of their merger in 1931 to create EMI. Essentially this was a case study in a much broader issue of obvious musicological significance: the way in which business practices and technology have impinged upon performance style and moulded present-day patterns of music consumption. (It becomes clear, for instance, that the star conductor, one of the key phenomena of twentieth-century classical musical culture, is largely a product of the commercial strategies adopted in the post-merger period.) Business history and the history of technology have not generally been seen by musicologists as core subjects, yet it turns out that they are quite fundamental to the cultural practices and values which are the core subjects for the discipline. The project's focus on the real-world circumstances surrounding the recorded legacy helped to bring to light the importance of producers, engineers, and other professional mediators in the creation of recorded music—figures whose role has been neglected by musicology, but whose work was extensively discussed during our symposia.

Through its discographical project and symposia, and through the analytical methods developed in its analytical projects, CHARM was designed not only to carry out its own research but also to facilitate future research within the larger musicological community. The discography forms only part of an extensive web-based resource that also includes historical materials on recording technology and practices, and downloadable transfers of ex-copyright recordings. There are also study packages that set the transfers into a variety of period contexts, so suggesting ways in which these materials might be used in teaching and learning. Another section of the website focusses on methods and tools for working with recordings. It includes extensive tutorial materials on musicological applications of *Sonic Visualiser* (with downloadable sound clips to work on), as well as a introduction to the analytical software we developed. And the website represents just part of our output: in addition to our individual articles and book contributions, many of them still in production, we put together two special issues of *Musicae Scientiae* dedicated to CHARM research (the first appeared in 2008, the second will appear next year), and edited the *Cambridge Companion to Recorded Music* (which will appear towards the end of this year).

CHARM put new methods and approaches onto the existing musicological agenda, but did it have the transforming effect for which we hoped? It is too early to say. The focus on methods and approaches is a necessary starting point for disciplinary change, but it is no more than that: the study of performance, recorded or otherwise, will have become fully part of musicology when we see work that transcends the methods and instead focusses on issues of aesthetic and cultural meaning, explored over the enlarged and energised domain that results from placing performance at the heart of the discipline. That is a goal towards which we believe we have made substantial progress, and we hope that our efforts so far will also help others to work towards it, but there is of course much more to do—and we hope that CHARM's successor centre CMPCP, which opens for business on 1 October 2009, will do some of it. Again, it is hard to be sure how far the increasing emphasis now being put on performance—seen for example in the proliferation of conferences and doctoral research in this area—reflects CHARM's work, or how far CHARM was the expression of a

development that was already under way. The truth is probably that it was a bit of both. But wherever the responsibility may lie, it seems clear that musicology is on the move.

Nicholas Cook

DELINEATING CREATIVITY IN MUSIC PERFORMANCE

I have had the fascinating privilege of being invited to convene a series of internal working meetings for the core team members of CHARM and its successor centre CMPCP. CMPCP's basic research questions revolve around creativity in performance, and the aim of these meetings has been to put onto the table and jointly discuss as much as possible in the way of relevant intellectual sources and resources. The purpose has been to create a rich seed-bed of ideas, theories, methodologies and findings which could be relevant to the detailed thinking and planning taking place for the new projects which will be started over the next year or so.

In the course of three intensive meetings, we have reviewed in detail some 25 key sources, alluded to many more, and generated a set of interesting issues and questions which seem to have not been addressed satisfactorily in research to date.

What makes a performance creative?

One important function of these sessions has been to free centre members to try out a range of (possibly contradictory) ideas and approaches in a facilitative brainstorming environment. Therefore, a logically consistent documentary account of proceedings to date is neither possible nor helpful! What I thought I could do, however, is reflect personally on some of the key questions that these fascinating meetings have raised for me, as a psychologist, as a music performer, and a music listener.

A central question we have been turning over is what it means to identify music performance as creative. If performances are creative, then what makes them so? And how do those involved in bringing a performance into being act so as to embed creativity in what they do? Where does creativity reside? Does it reside in the way that teachers teach? Is it embedded in the way that performers practice and rehearse, out of the public gaze? Or is it primarily manifested on stage (or in the recording studio), at the point of public performance? Can audience (including critical) response be part of what makes a performance creative, or is audience behaviour 'sealed off' from the creative act as an 'after the fact' phenomenon?

What has struck me is not only the fact that there are no clear answers to many of these questions in the music or social sciences literature, but also that many of the important questions seem not even to have been articulated in a thoroughgoing way that would allow conceptual distinctions and theory-building to proceed.

One unhelpful siding into which the discussion can be shunted is partly a result of slippery linguistic usage. Very often we talk of music and other arts in a rather generic way as 'creative activities'. If, therefore, someone has been professionally trained and accredited, we might tend to describe them as a 'creative practitioner'. That being so, then by default, anything they do is a 'creative practice' and the research programme then simply becomes a programme of documentation. We observe and record what music performers do because it is all creative. The question 'how is this creative?' is simply not asked!

Another unhelpful trap is to take an overly restrictive view of creativity. Some writers on the topic reserve the epithet of creative for those rare accomplishments which significantly change the domain, and open up new possibilities for those who follow. On this definition, most humans will not be creative in their lifetimes, and the vast majority of music performances, even those by highly-trained professionals, will not be creative.

My middle road between these two equally unattractive extremes is to propose (in line with the ideas of such key thinkers as Margaret Boden) that creativity in any activity, be it music performance or something else, has to involve elements of novelty, significance, and intentionality. None of these terms are entirely straightforward, but they point both towards and away from what I consider it fruitful to look at.

On *novelty*, for instance, if a performer determines a particular way of playing a piece of music, and then sticks with it over a period of time, the creativity is associated with the first performance.

The repeats do not add to the creativity! On the other hand, if a performer varies his or her performance in formulaic ways (e.g. playing it faster or slower on different occasions, but otherwise the same), the novelty is unlikely to have any significance.

Significance is gained when the performance 'makes a difference' to some listeners. Characterising the type of difference we are talking about is an interesting challenge. Suppose, for instance, that a particular listener has never heard Brahms First Piano Concerto before. He or she may well be 'bowled over' on first exposure to it. But the significance may be primarily a function of what Brahms contributed, rather than what the particular set of performers contributed. The difference we are talking about is more the case where a listener knows the work already, but the specific performance of it sheds interesting new light on it, allows one to 'hear the music afresh'.

Intentionality is signalled, not simply by the performer having intended to play the way he or she played, but by having intended it in virtue of the envisaged difference that it may make to some body of listeners. In other words, the performance is governed by some interpretative and communicative goals. This doesn't necessarily mean that the performer can give a detailed or musicologically sophisticated verbal account of his or her intentions. It is quite clear that novel musical performances can have significant effects on listeners in cases where the performer has no very detailed 'story' to tell about what he or she intended. But there needs to be some recoverable account, and one of the tasks of this project may be to delineate its parameters: where to look and at what stages (in the practice room, in the lesson, on stage), and also how to look at it, what methods of investigation to use. What kinds of questions and observations will allow us to identify and trace the genesis and projection of the kinds of intentionality that lead to audiences who go away satisfied, not because they heard something comfortingly familiar, but because they were roused, inspired, amazed, and even troubled in response to experienced novelty of some sort?

Creativity in any activity, be it music performance or something else, has to involve elements of novelty, significance, and intentionality.

This complex web of issues and questions is setting considerable challenges to the centre research team, and I look forward to the interesting and unexpected answers that I am sure will emerge. I shall be particularly fascinated to discover if evidence exists of a key process that has been documented in other types of creativity. This is the process of winnowing and rejection of alternatives that we see in poets, painters, and composers. In such creative activities, as much as 90% of the things that are tried never develop into a publicly presented work. The documentary record is a record of notebooks and sketchbooks full of uncompleted works, and ideas never fully developed. Trial and error, and the testing and rejection of many tried avenues, appears to be the essential engine for creativity. How, in the case of performance, can we document and capture this process of experimentation and rejection of unprofitable avenues? Where does it take place? At what stages in the development of an interpretation does it take place? And what processes and factors encourage its productive development over the lifespan? Specifically, what kinds of elements encourage the development of discernment, such that a performer knows increasingly surely which directions to abandon as unprofitable, and which to develop further? I know these processes happen – but they are difficult to capture and to talk about.

I will be particularly pleased if the research to be undertaken over the next few years can shed light on the performers' version of the 'composer's sketchbook'. But there are many other equally exciting directions that the research can take, and it is a wide open field. I wish the research team well

John Sloboda

PROJECT UPDATES

These reports detail what happened in the final year of CHARM's discographical and research projects. The CHARM website is being updated to include overall accounts of each project, together with details of publications or other outputs.

Creation of web-based discographical resources: discography project

Almost all our time during the final period of work was devoted to checking the automatic tagging of the data. Francis Knights was joined by several voluntary assistants to whom we are extremely grateful, including Eric Grunin and Patrizia Rebulla. CCH devised an effective and simple approach to displaying the discographical data from the *World's Encyclopaedia of Recorded Music*. Although (unlike the rest of the CHARM discography) the WERM data will not be fully searchable, advice on searching provided on-screen should enable users to find entries relatively easily by free-text search. WERM will also be available as PDFs of the orginal volumes, the rights to which appear no longer to have an owner. (If anyone knows otherwise we should be very pleased to hear.) Michael Gray's two volumes of *Bibliography of Discographies* will also be availabe as PDFs, with Mike's generous permission.

Andrew Hallifax's ca. 2,750 transfers from 78 rpm discs in the King's Sound Archive will be linked to the discographical data and will be accessed through the same search facility, pending the creation of a dedicated front-end for the sound files alone (more on this below). Minutely detailed metadata on the transfer process for each disc will also be available.

A new study-package on 'House Conductors', authored by David Patmore and illustrated by transfers already made by the project, went live in February. This is a fascinating sample of the work of eight conductors now largely forgotten but whose work was once formative for

'Musicians of Britain and Ireland, 1900-1950' (MBI) is a sister project to the CHARM transfer project and David Patmore's CHARM work at Sheffield. Funded by JISC, it is adding nearly 2000 further sound files to the ca. 2,750 done under CHARM, focusing on performers from the 78 era who were largely forgotten once the A&R policies of EMI began to favour Continental musicians from the 1930s onwards. Among the highlights transferred so far are the first recording - beautifully poetic and idiomatic - of Vaughan William's *The Lark Ascending*, made in 1928 by the fine English violinist Isolde Menges (1893-1976) with an orchestra conducted by Malcolm Sargent. The modern technique of electrical recording was just three years old, but the HMV engineers were already extending the boundaries of the medium by waxing gossamer string pianissimos, while Menges' solos float seemingly free of any care for the restricted playing time of each 78 side. No less remarkable are some of the mechanically recorded discs issued by HMV in 1923, to mark the tercentary of William Byrd: the popular English Singers performed excerpts from the Great and Short Services with small forces, while a consort of viols directed by the musicologist Edmund Fellowes played a six-part fantasia with rapt concentration. Also helping to widen our view of Britain's role in the revival of early music are several fine discs made for Columbia by the Bach Cantata Club, directed by Charles Kennedy Scott: the outstanding side among them involves just one singer, mezzo Doris Owens, with harpsichordist Frederic Jackson, in an aria from Monteverdi's *L'Incoronazione di Poppea* - possibly the earliest such recording? Another pioneering recording, from 1924, presents the first Haydn symphony recorded in Britain, No.92, made for Vocalion by the short-lived conductor and violinist Hyam Greenbaum (1901-42), a close friend of Constant Lambert and later the first conductor of the BBC Television Orchestra. Especially well represented are recordings of chamber music by some unjustly forgotten British ensembles, besides early examples of 'cross-over', folk and national music. The list is almost endless and the collection, apart from affording hours of delight and discovery, will help to enrich our understanding of the British concert and record scene in this pioneering period.

MBI finishes work in October 2009, and the combined transfers of MBI and CHARM will be available soon afterwards via a new search interface. Suggestions for items we should include are most welcome. Contact Nick Morgan at n.morgan@sheffield.ac.uk or c/o Department of Music, University of Sheffield, S3 7RD.

Nick Morgan and Daniel Leech-Wilkinson

the output of major record companies, as revealed in David's CHARM project. The package contains an introduction, eight biographies looking over their work for the record companies, and sets of downloadable sound files of recordings they made, avoiding items already available on CD. 'House Conductors' sits alongside ‘Radio Scripts’, ‘Cortot Discoveries’, and ‘Mystery Discs’, all interesting spin-offs from the transfer project which suggest different ways in which selections from the CHARM sound-files might be packaged in the future. David also published an informative and entertaining profile of Andrew Hallifax in the Winter 2008 issue of *Classic Record Collector*, which the magazine kindly allowed us to place on the CHARM website.

Alongside CHARM, transfer work proceeds apace for the JISC-funded ‘Musicians of Britain and Ireland, 1900-1950’ (MBI), which draws on the findings of David Patmore’s CHARM research and focuses on performers who were dropped from the catalogues following the merger of the Gramophone Company and Columbia to form EMI in 1931. Andrew Hallifax will join the project on 1 April. Discussions are now beginning on the design of the search interface for the combined transfers of CHARM and MBI, which we hope will become operational in late 2009.

Daniel Leech-Wilkinson

Analysing motif in performance

Considerable analytical work and software development occurred during the last year of the project. This involved not only John Rink and Neta Spiro but also Nicolas Gold (King's College London), with whom a fruitful collaborative partnership was established during the early stages of the project. Building on their initial work, Neta and Nicolas devised and developed a flexible and innovative program using self-organising maps (SOMs) and a database, as a result of which nuanced repetitions of performance information based on timing and dynamics have been extensively identified. This program is very flexible: it can take in any amount of performance information and process it to allow for finely grained comparisons. The results are propitious, both in general and with regard to the aims of this project specifically, in that they not only confirm but (more importantly) extend beyond the observations and conclusions that musicians and musicologists alike might otherwise be able to make about the ways in which given performances are both expressive and expressively coherent. We are now able to compare raw timing and global dynamic data with relative timing and dynamic patterns, in conjunction with what might be termed ‘music-analytic listening’.

With each piece chosen, the questions that arise and the ways in which the work can be approached are so numerous that during the final year of the project we limited our application of the SOM method to two case-study pieces: the Mazurkas Op. 24 No. 2 and Op. 63 No. 3 by Chopin. The software has been designed to be applicable to more pieces without significant modification, however. The focus on Chopin during this phase usefully complemented the research within Nicholas Cook’s project, enabling both the sharing of data and the comparison of different analytical approaches.

In order to compare the results of our analyses with listeners’ perceptions, two initial studies were carried out. The aim of the first was to explore whether or not the patterns identified using the SOMs could be perceived by listeners. To this end, we presented listeners with a comparison task which involved listening to and comparing two three-beat patterns and assessing whether they were the same or different. The results showed that the differences between patterns were indeed perceptible. The aim of the second study was to assess more generally whether the characteristics revealed in the analyses of performances were also identified by listeners. Examples of different performances of the pieces that we have been analysing were therefore played to listeners. The results are currently being evaluated but already indicate a complex relationship between performance patterns identified in our theoretical study and listeners’ perceptions.

Neta Spiro and John Rink

Expressive gesture and style in Schubert song performance

An article on the performance style of Elena Gerhardt for *Musicae Scientiae* will be the final output for the Schubert song project. Gerhardt left thirty-nine published records of Schubert Lieder, made between 1907-1939, representing almost her full career in the studio. So they offer a fine opportunity to assess the characteristics of a singer much admired in her time who worked right across a period that has been of particular interest to CHARM. The article calls for more detailed work on all aspects

of the acoustics of singing, which could usefully build on the pioneering work of Carl Seashore's team at the University of Iowa in the 1920s and 30s. Their research, too, was based on commercial recordings as well as recordings made in the lab. Research on voice recognition could also be brought into the picture with potentially valuable results.

Taking a much wider view that considers piano and violin performance alongside Lieder, Dan Leech-Wilkinson's eBook, *The Changing Sound of Music: approaches to the studying recorded musical performances*, will be published by CHARM and aims to provide a basis for undertaking research into performance using recordings as sources. Many of the examples deal with Schubert Lieder recordings, and the 54 sound files are mostly drawn from the CHARM transfer project. Although written as a book, and refereed in the usual way, it is being issued, in line with CHARM's policy of providing materials to enable the study of performance, online free of charge so that students and anyone interested can have access to it.

An unexpected additional public output was Dan's February 2009 'Building a Library' broadcast on Radio 3 whose task was to review the c. 75 available recordings of Schubert's song-cycle *Winterreise*. A report appears elsewhere in this newsletter.

Daniel Leech-Wilkinson

STYLE, PERFORMANCE, AND MEANING IN CHOPIN'S MAZURKAS

The final stage in this project consisted primarily of the musicological application of analytical approaches developed in the earlier stages of the project. Two pieces of works mentioned there as having been presented at conferences were developed and written up for publication. The first is the study of phrase arching in recordings of the Mazurkas Op. 17 No. 3 and Op. 63 No. 3 originally presented at Stanford, involving a number of new techniques of visualisation, a historical evaluation of the practice of phrase arching, and an attempt to relate this practice to aspects of its larger cultural context; although a more extensive account of this research will in due course appear in a book based on the conference, an article on its technical aspects is forthcoming in the recently established journal *Musica Humana*. (This work was presented during the year at Goldmiths College, University of London, and the Royal Northern College of Music.) The second is an attempt to reconcile the computational approaches developed in this project with those of interdisciplinary performance studies, based primarily on video recordings of Op. 63 No. 3: this is forthcoming in a book co-edited by Nicholas Cook and the dramaturge Richard Pettengill entitled *Music as Performance: New Perspectives Across the Disciplines*, the purpose of which is to bring together approaches from musicology and theatre studies. (A short article based mainly on this research also appeared in *Nature*.)

A third application of the techniques developed in this project, this time to different repertory, is a study focussed round Eugene d'Albert's 1905 piano roll of Schubert's Impromptu Op, 90 No. 3; d'Albert was greatly admired by the *fin-de-siècle* Viennese theorist Heinrich Schenker, whose theory is on of the principal foundation for present-day American approaches to the analysis of performance. The research demonstrates how Schenker's theories were developed in the context of concepts of performance entirely different from those to which it is applied today, which not only recontextualises Schenker's thinking but also problematises the relationship between analytical theory and underlying assumptions about how music goes. The resulting article is forthcoming in a book of essays to be published in honour of John Sloboda, as well as in German translation. All this research is summarised and contextualised in Nicholas Cook's article-length introduction to the second CHARM special issue of *Musicae Scientiae*.

There was however also some further work on the technical side of this project. Andrew Earis extended his existing 'Expression Algorithm' software for the capture of timing and dynamic data to include articulation and pedalling information, and collaborated with Craig Sapp on the delivery via the web of this program for use by other researchers, while Craig made progress on the automation of the data capture process. Craig also further developed his techniques for the visualisation of correlations between large number of recordings. And as part of the overhaul of the CHARM website, Nicholas Cook authored analysis pages which link to and introduce web-based and downloadable analysis software and data available on the Mazurka project website. Analytical techniques developed in the Mazurkas project are also featured in Nick's chapter in the *Cambridge Companion to Recorded Music*.

The CHARM studentship holder associated with this project, Georgia Volioti, also made progress during this period, submitting chapters on style change and on the statistical analysis of recordings of Grieg's 'Butterfly', on the basis of which she was formally upgraded to doctoral registration. She also completed an article for the second CHARM Special issue of *Musicae Scientiae*.

Nicholas Cook

THE RECORDING BUSINESS AND PERFORMANCE, 1925-32

Work on this project (the name of which has changed to reflect more accurately what was done) focussed on the analysis and interpretation of the board and financial papers held at the EMI Archive for the Columbia Graphophone Company and the Gramophone Company (HMV), the retail catalogues of these two companies held at the British Library, financial reports and commentary relating to these companies published in *The Times*, consumer periodicals such as *Gramophone*, and specialist industry magazines such as *Talking Machine News*. Material relating to the conductors Sir Henry Wood, Albert Coates and Piero Coppola was also utilized to build up a picture of recording activity in the field of orchestral performance.

These materials, together with other more anecdotal sources, were used to create a picture of the competitive commercial activity of the two companies between 1925 and 1932. This produced a clear picture of Columbia as an 'under-dog' company pushing ahead remorselessly to establish its position in relation to its larger rival.

Columbia's strategy took the form of buying up companies in order to expand and gain a world-wide presence; the swift adoption of new technologies, notably electrical recording; the development of an orchestral catalogue to rival HMV's pre-eminent position with vocal recordings; and the vigorous promotion of international events, such as the Beethoven and Schubert centenaries in 1927 and 1928 respectively, both to launch large volumes of recordings of music by these composers, and to gain valuable international publicity for the label. It is clear that the record industry enjoyed a peak of activity around 1927 and 1928, when it experienced a pre-eminent position within the leisure field, prior to feeling the full competitive effects of sound films, radio broadcasting, the Crash of 1929 and the subsequent Great Depression, all of which followed shortly afterwards. Among the consequences of this burst of activity were the growth of location recordings, for instance at the Bayreuth Festival and La Scala, Milan; complete performances in place of cut versions of major works; and the recording of a considerably increased range of musicians than was the case before 1925, especially conductors.

Nick Morgan, the CHARM-funded doctoral student associated with this project, made significant progress in his study of the activities of the National Gramophonic Society (NGS). In addition to his work on back issues of *Gramophone* (now available in their entirety on-line), he traveled to Paris to consult French-language sources, and to New York to consult local holdings of *The Phonograph Monthly Review*, *Musical America*, and an important catalogue of recorded chamber music issued by the NGS but unavailable in the UK. He also began a database of recordings of chamber music issued in Britain before and during the active life of the NGS (up to mid-1933, when the NGS was declared to be 'in suspended animation').

David Patmore

PLAYING WITH RECORDINGS: CHARM'S FINAL SYMPOSIUM

11-13 SEPTEMBER 2008

In addressing the interface between recordings and the professional practice of performance, CHARM's sixth residential symposium, held on the Egham campus of Royal Holloway, University of London, paved the way for the transition to CHARM's successor centre, the AHRC Research Centre for Musical Performance as Creative Practice (CMPCP): 40-odd international scholars explored performers' and teachers' attitudes towards recordings, along with the ways in which recordings and the record industry contribute to

both the maintenance of musical culture and processes of style change. Along with the varied perspectives offered by students and scholars of Western art music, the interdisciplinary nature of both centres was enriched on this occasion by two central panel discussions providing insightful perceptions from widely recorded performers. The Symposium started off on Thursday afternoon with consideration of the record industry; Friday was reserved for examination of performance practices in relation to recordings; and Saturday morning closed with alternative approaches to the recording process, the study of performance, and recordings in culture.

Day 1: Insights into the early years of the record industry

The first two opening sessions were held together by a common interest in the early record industry as the foundation of the century-long history of recording. Martin Elste (Staatliches Institut für Musikforschung PK, Berlin) opened the symposium with two brief case studies, one of Mozart's Don Giovanni at the Glyndebourne Festival in 1937 and the other of Otto Klemperer's appointment in 1954 by Walter Legge at EMI, emphasizing how pragmatic decisions within the record industry bear upon performance style and recording practices. Second in line was Peter Martland (Pembroke College, Cambridge University), who addressed the development of early British recording history by examining artists' relationships with labels and the wider public through a variety of contracts, advertisement and marketing strategies and sales. Pekka Gronow (University of Helsinki) explored the birth and further implications of the concept of 'historical' recordings (in opposition to 'old' ones), focussing on the development of jazz traditions from the combined perspectives of businessmen and ideologists, i.e. collectors and historians.

After a short coffee break, David Patmore (University of Sheffield) presented an overview of the years between 1925-29, the heyday of the record industry, giving special attention to the impact of competition and the merging of companies on the development of record catalogues and recording practices. Nick Morgan (also University of Sheffield) traced the influence of the National Gramophonic Society, active from 1924-1931, on the development of record catalogues and, by implication, the ways the wider public has conceived of and purchased records of classical music up to the present day. Before the start of the day's panel discussion, George Brock-Nannestad (Patent Tactics) gave a brief intervention on the development of early playback technologies. The discussion panel, comprising the previous presenters and chaired by Eric Clarke (Oxford University), explored the themes touched upon earlier in relation to technological developments, marketing strategies, business decisions, ideologies and social capital, providing rich and varied perspectives for a lively discussion about the development, current state and future of the record industry.

Dinner was followed by two presentations in the spirit of lecture-recitals. Arguing that performers generally draw interpretative qualities or stylistic features from recordings for their own performances, Ian Pace (Dartington College of Arts) illustrated from his own experience as a pianist how recordings can offer a basis for reflecting on and experimenting with unexplored performative directions in classical music. His lively descriptions of individual piano performances were aided by addressing familiar performance terminology in relation to features such as tempo, articulation, direction, structure, phrasing, dynamics, timbre, pedalling, etc., and further illustrated on the piano. The first day closed with composers Aleksander Kolkowski and Federico Reuben (PhD students at Brunel University), who, taking the symposium title more literally, illustrated the creative possibilities of combining old and new recording formats and playback technologies with a series of examples of their own performances and sound installations.

Day 2: Recording performance, performing records

The themes on the second day were more varied in nature than the day before, including studies of performance style, the use of recordings, and the experience of recording. The first session of the day opened with presentations of work in progress

by three doctoral students at Goldsmiths College, University of London. Their projects involved the use of Sonic Visualiser, to the development of which CHARM has contributed, but in very different ways: Anna Kounadi is exploring performance style through a wide range of performances of a single work, Scriabin's second piano sonata; Dario Sarlo also analyses performance style but by a single performer, Jascha Heifetz, while Mizuka Yamamoto addresses the 'work' concept through a small number of interpretations of Cage's difficult Freeman Etudes. Interestingly, she addressed John Cage's statement 'Society is impossible' by posing the question 'How impossible is possible?' and discussing it through various performances of the piece itself.

Following the students' interventions, Anthony Gritten (Middlesex University) drew attention to recordings as time-saving devices that make labour more efficient while providing interpretive input to classical music performers where once there was only the score. In a quite different spirit, Mine Doğantan-Dack (Middlesex University) presented a set of reflections on listening practices related to classical music recordings in a paper read in her absence by John Rink. Her views on the possibilities recordings offer for performers' learning processes extend to listening in the context of research, so providing insight into the study of performance practice.

These early sessions, full of insights into the study of performance, provided the ground for the two central panel discussions to follow. Organised and chaired by Tim Day (King's College London), the panel brought together John Carewe (conductor), Robert Max (conductor and cellist), Ian Partridge (concert singer), Jeremy Summerly (conductor) and Susan Tomes (pianist), who apart from being successful classically trained performers have a wide recording experience, teach at prestigious conservatoires, write and produce radio programmes, and/or have published books on the subject. The issues raised during the first discussion were related to the performers' relationship with their own recordings. While they accepted recording as 'part of their job', and felt generally at ease with the recording process, some saw recording as a collaborative process to which they had to adjust on each particular occasion: the panellists stressed the importance of variables such as time, location, and their relationship with producers and engineers in the making of a successful recording. Aware of the nature of recordings as artificial representations of a moment, they didn't seemed concerned about the amount of technological intervention; rather, they emphasized the importance of creating an illusory experience through which the work of art was communicated. The pressure to meet the high expectations of record-listeners was perceived by some as undesirable, although they acknowledged aspects of the concert situation that make live performance a unique experience, quite distinct from listening to records. The performers also considered recording as a learning process, and the record as possessing historical value, as being representative of a point in their careers, and as an effective marketing device.

After lunch, the panellists returned to their places to discuss their experience of listening to others' recordings. They all seemed to agree that listening

to recordings, if done critically, could be a powerful learning tool. They also challenged the assumption that composers' recordings should necessarily be considered the ultimate interpretive authority, and engaged in a discussion of the nature of performance tradition, which they illustrated with stories about their performative preferences, their teachers and students. All in all, the discussion provided an engaging and direct account of performers' perceptions of the symposium's object of study.

Matthias Arter (University of the Arts, Bern) started the closing session of the day, which concerned performer-centred approaches to analysis. Focussing on Beethoven's Fifth and his experience as principal oboist of the Basel Chamber Orchestra, he compared early historical recordings with historically informed performance practices, so challenging commonly held assumptions concerning the originality of the latter in opposition to mainstream performance practices. Amy Blier-Carruthers (King's College London) offered some thoughts on the experience of recording orchestral music informed by participant-observation methods and interviews with musicians working under Sir Charles Mackerras. Although the statements she collected expressed general unease about recording, she found that money, time, control and empowerment were the variables that most influenced performers' perceptions of the recording process. The day closed with a lively discussion prompted by the last paper, in which it became clear that evidence-based data, whether derived from historical documents, computer measurement, or scores, were preferred by this group to what were considered 'subjective' experiential data, despite the arguably constructed nature of all research data.

Day 3: Alternative approaches to recording and performance practices

The last morning offered a site for more unconventional research propositions on recordings. Andrew Hallifax (CHARM's transfer engineer) offered some insights into the recording process from the perspective of recording and balance engineers, a perspective surprisingly under-represented in musicological studies. He saw this partly as a result of engineers tacitly perpetuating, through their practices and utterances, the belief that their job is to capture live performances rather than constructing a virtual image of them. Oliver Senn and Lorenz Kilchenmann (Lucerne University of App-lied Sciences and Arts) offered a second exception to the predominantly classical orientation of this symposium: their paper explored Bill Evans' use of overdubbing in his 1963 release 'Conversations with myself', and they illustrated several methods of data extraction that yielded promising results. Tony Harrison and Sigurd Slåttebrekk (Oslo-based recording engineer and pianist, respectively) took up the challenge of reproducing Grieg's 1903 Paris recordings, drawing analytical insights from the attempt to exactly imitate Grieg's nuances. Beth Elverdam (University of Southern Denmark) and George Brock-Nannestad (Patent Tactics) provided an anthropological approach to the perception and use of recordings within classical music. Their research approach, much in line with ethnomusicological practice, provided an alternative to most of the methods employed by other contributors to this symposium.

Final thoughts: from CHARM to CMPCP

Marking the point of transition to the AHRC Research Centre for Musical Performance as Creative Practice (CMPCP), CHARM's final symposium provided an opportunity to reflect upon its achievements. The themes covered by the six symposia, running from April 2005 to September 2008, have been highly varied. Starting with comparative perspectives in the study of recordings, the first symposium established CHARM's interdisciplinary nature by combining scholars from traditional, popular and ethnomusicologies along with performance studies. The second symposium, held as part of the first Art of Record Production conference, focussed on the musicology of production, while the third offered insight into historical recordings and the art of the transfer engineer: both of these provided a meeting point for practitioners and scholars of the respective areas. The fourth

symposium, 'Methods for analysing recordings', explored data extraction predominantly through computational approaches, whereas the fifth brought together a variety of approaches to the cultural practices and environments surrounding recordings, emphasizing popular as well as 'art' traditions. With their contrasted methodological and repertorial focusses, the different symposia have attracted markedly different audiences. This coming and going of people and trends is indicative of the growth of the young field of enquiry which CHARM has promoted and fostered during the last five years. Through its various activities, it has brought together musicologists and ethnomusicologists, performers, producers, recording engineers, collectors, archivists and even a few representatives of the business side of the record industry: all have contributed to establishing a solid basis for the academic study of recordings, and thus a foundation for the understanding of music as performance that is the goal of its successor centre, CMPCP.

Ananay Aguilar
Photographs by Simon Trezise

BUILDING A LIBRARY: *WINTERREISE*

The 'Building a Library' slot in the weekly Radio 3 programme 'CD Review' on Saturday mornings has its origins in the record choice programmes of the 1930s and 40s which figure in the CHARM website module 'Record Choice programmes on BBC Radio, 1938-1946' (http://www.charm.rhul.ac.uk/content/resources/radio_scripts_intro.html; http://www.charm.kcl.ac.uk/sound/sound_radio.html). Having put that collection together recently I was especially happy to contribute to its current incarnation on Schubert's song-cycle *Winterreise*.

Not long ago 'Building a Library' passed its 2000th issue, so there's much venerable tradition to be observed, and a host of attentive listeners to police it. The task is to select the best (already a tricky concept) of the available recordings of a composition (chosen by the producers) that listeners to Radio 3 might wish to have represented in their collection. Along the way the reviewer is expected to work through the piece as well as through all the recordings, revealing a final choice in the closing moments of a 45-minute slot.

The BBC's notion of 'available' is not quite like ours: they require a copy to be available from the UK importer within a fortnight, so the list can seem idiosyncratic to anyone comfortable with ordering online. By these criteria there were last December some seventy-nine available recordings of *Winterreise* – which supplied my Christmas and New Year listening. Some proved to be quite painfully bad, some just good but not outstanding, some wonderful in parts but seriously flawed (all the preceding categories including some very famous names), but even with those left out and an extension to 52 minutes of air-time, there still was too little space to weigh up the pros and cons of all those that remained.

While attempting to fulfil this impossible brief, my script aimed to suggest that because performance style changes so much over time it is not reasonable to insist (as many still do) on the classic recordings of the 1960s and 70s as permanent models for correct Schubert style, wonderful as they are. The current generation of Lieder singers now in their 30s and 40s are technically exceptional and interpretatively highly innovative, developing new ways of using expressive gesture to communicate meaning through Schubert's scores, and they deserve our close attention. After much sifting and comparing, the invidious task of choosing a performance for one's library was completed by opting for Christine Schäfer with Eric Schneider (Onyx Classics), almost neck and neck with Nathalie Stutzmann and Inger Södergren (Calliope), both remarkable and very different performances. Matthias Goerne and Alfred Brendel (Decca), recorded in two Wigmore Hall concerts and benefiting from the heat of the moment, was suggested as a male alternative. Thomas Quasthoff and Daniel Barenboim (on DG) were thought best for DVD viewing. Lotte Lehmann and Paul Ulanowsky (Pearl) were recommended as a historic choice, and Christoph Prégardien with Andreas Staier (Teldec) as the choice for a recording with fortepiano, though (definitely not for the same audience) Prégardien was even better in the arrangement for accordion and chamber ensemble by Normand Forget (on Atma).

The choice of women singers for the top slots led to much debate on the BBC messageboards, with the balance of opinion (albeit with a strong dissenting minority) accepting at least one of the female choices. Rejecting historical and simplistic text arguments, my conclusion was that the performances by Schäfer, Stutzmann and Lehmann speak for themselves: 'women sing *Winterreise* because women sing'.

Daniel Leech-Wilkinson

At its last meeting on 24 March, CHARM's Management Committee expressed its warm thanks to **Carol Chan** for her sterling work as Coordinator since the Centre began in 2004. Carol's input, initiative, steadfast commitment and absolute reliability have all helped to make CHARM a success: indeed, without her contributions, we wouldn't be where we are! The CHARM Directorate presented Carol with an antique tea caddy to express its appreciation of her superb service, and the Royal Holloway Music Department also made a presentation to her in the form of a suede address book (so she can keep in touch with all of us), a desk clock (so that she can continue to keep everything running to time), and a nineteenth-century key to the Department, where Carol will always be welcome. All of this was further to the public show of gratitude at the last CHARM symposium for all she has done. We wish Carol well as she moves ahead in her career and hope that she will retain good memories of five outstanding years as Coordinator of CHARM.

SECOND SPECIAL CHARM ISSUE OF *MUSICAE SCIENTIAE*

In 2007 a special issue of Musicae Scientiae *(the journal of ESCOM, the European Society for the Cognitive Sciences of Music) was devoted to CHARM's research. A second special issue featuring the work of CHARM researchers, including two CHARM-funded doctoral students, is in production and will appear in 2010. Here are the abstracts.*

Nicholas Cook, 'The ghost in the machine: towards a musicology of recordings'

This article introduces the other contributions to this second issue of *Musicae Scientiae* devoted to the work of the AHRC Research Centre for the History and Analysis of Recorded Music (CHARM), and sets them into the larger context of musicological research into recorded musical performance. There is consideration of musicology's historically odd relationship to performance, including the historically informed performance music and what is referred to as the 'page-to-stage' approach of recent music theory: CHARM's analytical projects focussed on aspects overlooked by the score-based approach, on the potential for bottom-up methods, and on the nature of performance style and the extent to which it can be meaningfully analysed by empirical methods. Another strand of CHARM's research investigated the extent to which the commercial practices of the record industry help to shape twentieth-century performance. The author includes brief accounts of his own projects with CHARM so as to provide an overview of the Centre's work as a whole.

Neta Spiro, Nicolas Gold and John Rink, 'The form of performance: analyzing pattern distribution in select recordings of Chopin's Mazurka Op. 24 No. 2'

The investigation described here focuses on twenty-nine performances of Chopin's Mazurka Op. 24 No. 2, which features clear four-bar phrases and correspondingly consistent sectional units, but which also has characteristics such as a steady crotchet accompaniment that remain constant throughout. This results in a potential tension between 'through-performed' and sectionalized features. In this study we examine the performances accordingly, investigating the relationship between the work's structural and thematic characteristics on the one hand and the timing and dynamic characteristics of performances of that work on the other. Following this, we narrow our investigation of these and other features by undertaking a comparative analysis of three recordings by the same performer, Artur Rubinstein. A toolkit of methods is employed, including an approach that has been little used for this purpose, i.e. self-organising maps. This method enables the systematic analysis and comparison of different performances by identifying recurrent expressive patterns and their location within the respective performances. The results show that, in general, the structure of the music as performed emerges from and is defined by the performance patterns. Particular patterns occur in a range of contexts, and this may reflect the structural and/or thematic status of the locations in question. Whereas the performance patterns at section ends seem to be most closely related to the large-scale structural context, however, those within some sections apparently arise from typical features of the

mazurka genre. Performances by the same performer over a 27-year span are characterized by striking similarities as well as differences on a global level in terms of the patterns themselves as well as the use thereof.

Daniel Leech-Wilkinson, 'Performance style in Elena Gerhardt's Schubert song recordings'

This final study from the CHARM Schubert project aims to examine personal style in one early recorded singer, Elena Gerhardt (1883-1961). The period style of Gerhardt's generation of Lieder singers presents the problem of changing performance style and its relation to musical meaning with special clarity. The stark differences compared to modern performance on the one hand force us to confront the contingency of musicianship and on the other render performance style far easier to disassemble into its constituent elements. Gerhardt's Schubert recordings, made right through her career, offer a good environment in which to develop suitable techniques of performance analysis. The article examines her manipulation of timbre, especially in relation to problems of register left over from an abbreviated studenthood, exacerbated by her prioritising emotional communication over technical perfection, and her use of timbral change for text illustration and for formal articulation. Also under the microscope are her ability to vary vibrato and tuning in response to text and form; her use of pitch scoops for text illustration and rhythmic articulation; her characteristic manner of portamento used rarely but when used (for texts with particular associations) used overwhelmingly; and her rubato, especially its interaction with portamento and loudness. All these elements are examined as constituents of her personal style.

Georgia Volioti, 'Playing with tradition: weighing up similarity and the buoyancy of the game'

This paper explores some of the common assumptions and beliefs surrounding the concept of 'tradition' in performance. It presents an exploratory study which interrogates the use of style analysis for determining whether tradition can be detected effectively within a specific cultural-historical context. The paper seeks to highlight the distinction between 'tradition' as objective reality, which can be captured and quantified through stylistic likeness in performance, and tradition as intersubjective practice which might elude empirical measurement and could even resist conceptualisation. Using a comparative case-study of recordings, this paper shows that a quantitative index of stylistic relatedness may not always capture the plausibility of tradition. Instead, other approaches are proposed for understanding the operation of tradition and elucidating more fully the involvement of social actors.

David Patmore, 'The Columbia Graphophone Company, 1923-1931: commercial competition, cultural plurality and beyond'

Although the Columbia brand name has a long and distinguished history as a record label, it only reflected the work of an independent commercial organization in the United Kingdom between 1923 and 1931. At all other times it was part of a larger body. This article considers the work and achievements of the Columbia Graphophone Company during this short period, and assesses its influence, particularly in relation to the classical music repertoire and the performers who committed their interpretations to disc. The commercial and cultural impact of the merger of this company in 1931 with its rival, the Gramophone Company, to form Electric and Musical Industries Ltd. (EMI), is then considered, together with the longer-term influence of the American media industrialist, David Sarnoff, the chief executive officer of RCA-Victor and a board member of the Gramophone Company and of EMI at this time.

Nick Morgan, '"A new pleasure": listening to National Gramophonic Society records, 1924-1931'

This paper presents research into the National Gramophonic Society (NGS), a British record label of the 1920s which specialized in chamber music. Existing accounts of the early development of the record industry concentrate on the production and marketing of recordings; reception of recordings has also been addressed but on very broad scales, chiefly in the field of popular music, and mainly using the words of prominent critics and well-known, published sources. Because it operated by subscription, the NGS can be used, in the manner of a historical microscope, to sharpen this focus considerably and so identify individual consumers of recorded 'classical' music during this period and study their backgrounds, motivation, tastes and listening habits.

LISTENING TO CHOPIN: PERSPECTIVES ON A MAZURKA IN PERFORMANCE

In our contribution to the last *CHARM Newsletter* we described an analytical approach developed in the 'Analysing motif in performance' project, which began in October 2006. The new method identifies and models both the differences and the consistencies between performances of the same piece. The analysis that we carried out of twenty-nine performances of Chopin's Mazurka Op. 24 No. 2 focussed on the relative length of each beat of the bar, and made use of 'self-organising maps' (SOMs). These are a form of artificial neural network trained by unsupervised learning. After training, bars of similar shape occupy similar areas of the vector space and, when presented in two dimensions, appear as clusters in the resulting map: each cluster represents a characteristic profile of beats. In this way we identified the patterns that typified the performance of the Mazurka and their distribution across different performances. Our analysis showed that there are many more or less subtle differences between performances by the same and different performers. In particular, we investigated to what extent structures suggested by analysis of the score were observable in timing and dynamic information of the performance.

Here we report on another stage of the 'motif' project: the investigation of whether any of the observations we made of the performances on the basis of both our own 'analytical listening' and the data produced using the SOMs are perceivable by listeners. In particular, four questions were explored in two experiments using comparative listening tasks:

1. Can listeners distinguish between the cluster patterns identified using the SOMs?

Using the SOMs we identified four broad cluster patterns across the twenty-nine performances which were then used as part of our analysis. One question, then, is to what extent the patterns identified in performances and subsequently analysed are perceivable.

2. Do listeners perceive differences between performances for which particular performance characteristics have been identified?

Our analysis showed that different performances included varying types and distribution of cluster patterns and overall beat length in different sections. Would listeners identify these differences between performances?

3. Are performances by the same performer rated as more similar than those by other performers?

Three performances by Artur Rubinstein (from 1939, 1952 and 1966) were analysed in our theoretical work. We observed similarity in basic structural features but some variety in other aspects of these three performances. Would listeners identify these three performances as more similar to each other than to other performances, and what would they identify as similar or different among them? This comparison is particularly interesting in the case of Rubinstein, given that he appears to have deliberately changed his performance style over many decades (as discussed, for example, by Daniel Leech-Wilkinson in his chapter in the forthcoming *Cambridge Companion to Recorded Music*).

4. How do any perceptions of performance characteristics relate to preference for performances?

Having identified which performances are rated more or less different and according to which criteria, we wanted to investigate the extent to which listener preferences reflect the degree of difference identified in the other tasks. There is perhaps a related factor here, in that we are studying listeners' responses to a small number of performances spanning some sixty years. It has been observed that listeners today generally prefer more recent performances, particularly of vocal music, and among other things we were interested to see whether or not such a preference also existed for the more recent recordings in our own sample. Certain features of performance practice that have evolved over the last six decades – among them the extent of rubato – were therefore addressed in our questionnaire. In this way we have borne in mind the possible overall effect of prevailing performance practices while primarily investigating whether or not there is a relationship between similar-different ratings and preference of our case-study performances.

Methods

Experiment 1

Stimuli

As described in our *CHARM Newsletter* article, four patterns were identified for the twenty-nine performances analysed (Figure 1). T2, with its longer second beat, corresponds to a stereotypical mazurka pattern, while T4 represents another common pattern or might result from phrase-final lengthening. Similarly, T3 has a relatively long first beat while T1 has a relatively flat contour.

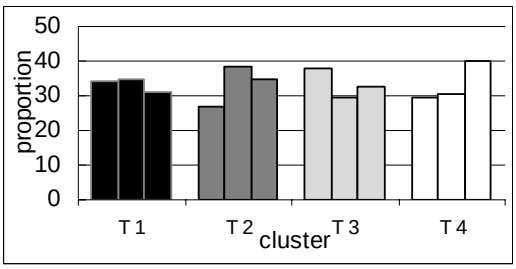


Figure 1: Timing cluster patterns for all twenty-nine performances identified using SOM software

In order to explore to what extent the differences between these patterns are perceivable, a same-different experiment was set up testing listeners' ability to distinguish the patterns. The opening chord sequence of the Mazurka was rendered in MIDI using Sibelius and checked in Matlab. Pairs of these chord sequences were played to listeners with all four patterns compared with each other (and some controls). The patterns were played through iTunes on a laptop connected to loudspeakers.

Participants

Twenty-eight undergraduate and graduate music students from the University of Cambridge participated in the experiment.

Results and Discussion

This was a forced choice same-different question so chance level would be at 50%. As Figure 2 shows, the responses are well above this ($p < .005$, using a binomial test). This simple listening task therefore indicates that the cluster patterns identified by the SOM method are distinguishable from one another: on the whole listeners could tell whether the patterns were the same or different.

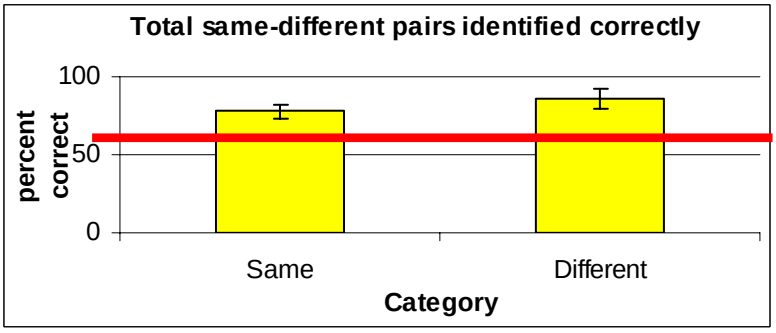


Figure 2: Showing correct responses to pair-wise comparison of same-different tasks. Those that were the same are on the left and those that were different are on the right.

Experiment 2

Stimuli

Five performances were used in the listening experiment: Chiu 1999 (abbreviated 'C' in the same-difference figures below), Luisada 1990 (abbreviated 'L') and Rubinstein 1939, 1952, 1966 (abbreviated 'R 1939' etc.). The Introduction and sections A and B of each were played. The excerpts were created by using Audacity and played through iTunes on a laptop connected to loudspeakers. All pair-wise combinations of these excerpts

were played, and the listeners were asked to rate to what extent the performances were similar or different on a ten-point scale, with 1 being the same and 10 being different, according to five categories:

1. Extent of rubato

2. Overall tempo (i.e. was one performance faster than the other?)

3. Clarity of phrase ends

4. Difference in tempo between sections.

5. Overall impression

After each comparison the participants were asked to indicate which performance they preferred. They could indicate a preference for the first or second performance, or for neither (i.e. they were liked equally). Listeners heard one performance followed by the second with 3 seconds of silence in between. They were then given 15 seconds to respond before the next pair occurred. There was a long break halfway through the session.

At the end of the session, participants were asked whether they knew the piece and if so whether they had played, heard or analysed it; also whether or not they were pianists and if so for how long they had been playing.

Participants

As for Experiment 1.

Results and Discussion

The following discussion considers each of the five categories in turn, comparing the responses to relevant analytical features. Overall, the range of the response scale was utilised to the same extent by most participants, so the average of the raw results was used for the following analysis. In this case, as in many studies that use such rating scales, the mode (i.e. the value that occurs most frequently) was used in order to reflect the most commonly chosen ratings. Each of the response categories is plotted on a separate graph below. For all of these graphs the higher the number, the more different the performances were rated.

1. Extent of rubato

In terms of rubato, Luisada 1990 is rated as particularly different from all the other performances (Figure 3): of those considered different, the only pair that does not include Luisada 1990 is that of Rubinstein 1939 and 1966. The raw timing data shows that, from the very start of the performance, Luisada constantly and dramatically changes beat lengths, much more so than any of the other performers (Figure 4). Here, then, there is a direct relationship between a performance parameter and listener response.

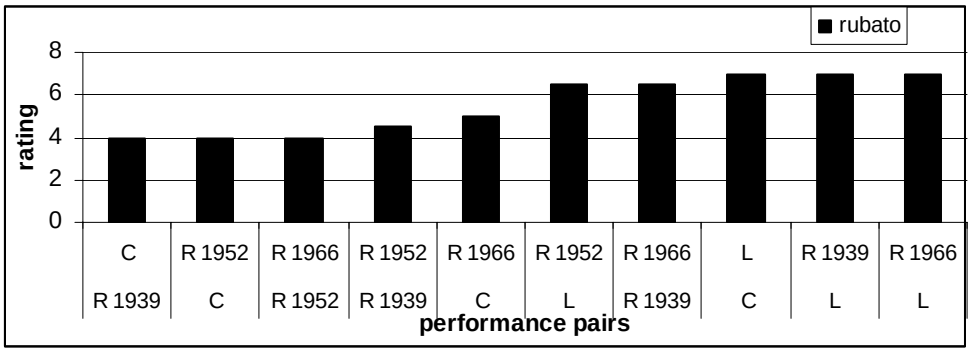
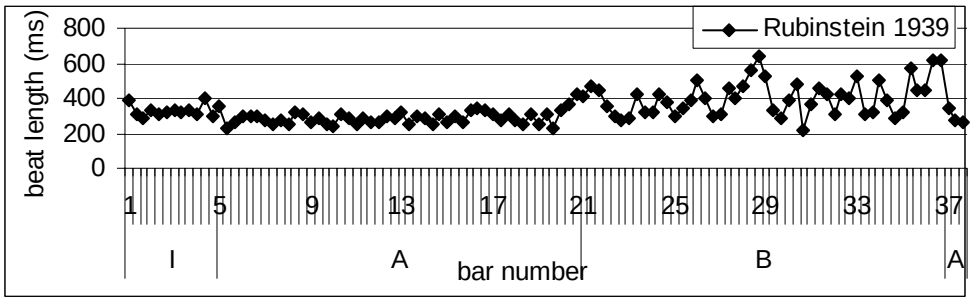
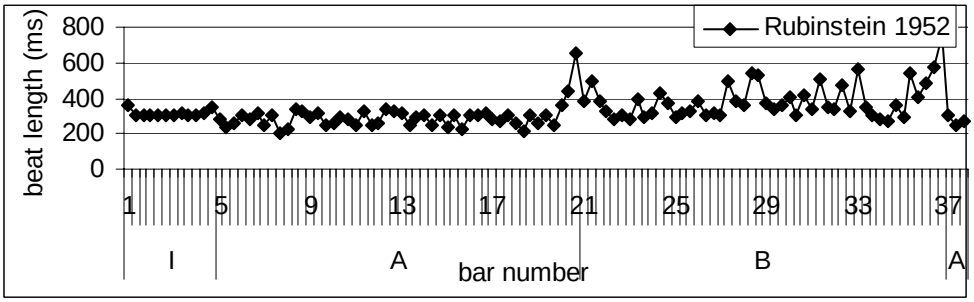


Figure 3: Same-different responses according to rubato



(a)



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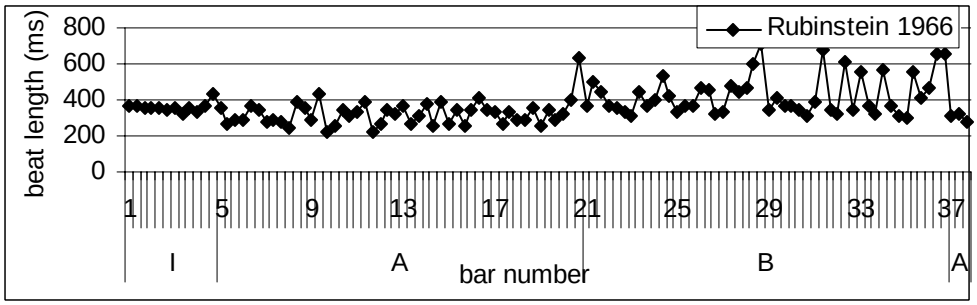

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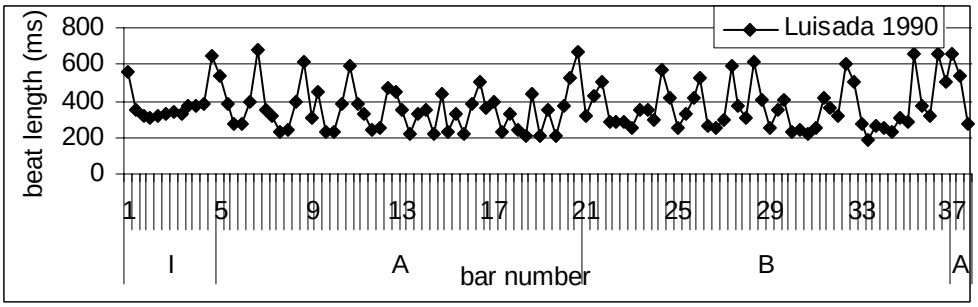

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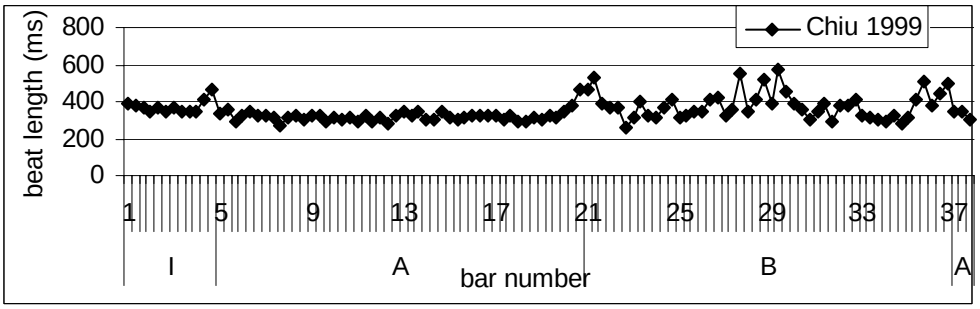

(e)

Figure 4: Length of each beat for the five performances

2. Overall tempo

The mode ratings for rubato (Figure 3) and overall tempo (Figure 5) are over the smallest range of the five measures (with four levels of the scale separating the highest and lowest ratings). Overall, listeners rated the performances as more different according to the rubato than overall tempo. Interestingly, however, the two pairs rated most different according to overall tempo were still, on average, rated either more different or different to the same degree compared to the rubato measure.

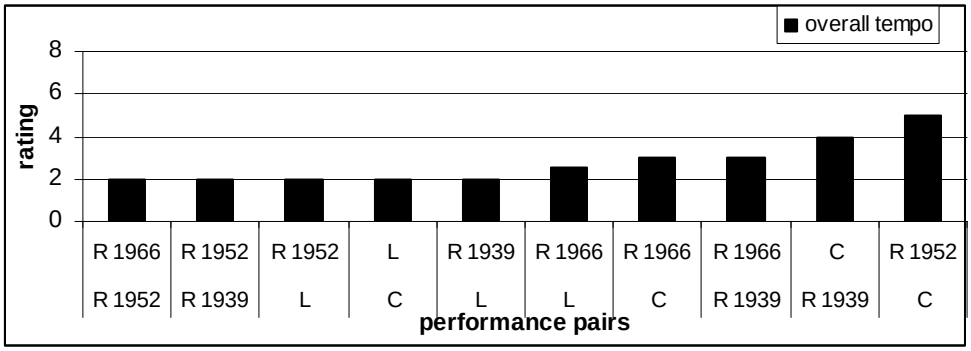

Figure 5: Same-different responses according to overall tempo

In order to compare the relationship between relative pair-wise rating of 'overall tempo rating' and the pair-wise average beat length of the recordings, average beat length of the section played to the listeners was calculated for each of the performances. The largest difference in beat length was 37 ms, so the differences are on a small scale. The average beat length of the extracts was compared by arranging them from fastest to slowest, resulting in the following order: Rubinstein 1952 (335 ms per beat), Rubinstein 1939, Chiu 1999, Luisada 1990 and Rubinstein 1966 (372 ms per beat). On this basis, the number of steps between each pair was calculated with the most similar pairs having the smallest number of steps. So for example, the average beat length of Chiu 1999 and Luisada are one step apart whilst the average beat length of Rubinstein 1952 and 1966, which are the most different amongst all the recordings, are four steps apart. This representation of similarity is plotted in Figure 6.

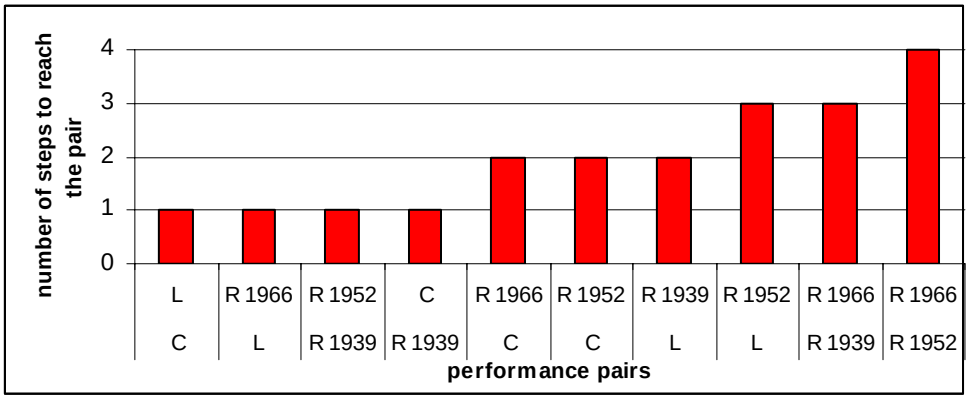

Figure 6: Stepwise difference to reach pairs – the smaller the number, the more similar the average beat length

While some of the ratings clearly coincide with the pair-wise comparison of beat length (such as Rubinstein 1939 and 1952), others appear at opposite ends of the scale (such as Rubinstein 1966 and 1952). Indeed, though some participants considered a number of the performances as different in terms of overall tempo, the mode of pair-wise comparisons shows that on the whole, they considered the overall tempi of any two performances to be quite similar, with the highest mode rating being 5. However, there is little relation between the difference in average tempi and the difference ratings given above: listeners do not seem to be extracting an 'average' tempo. Rather, listeners are perhaps responding to the extremes in tempi. For example, the greatest rated difference is between Chiu and Rubinstein 1952, the latter of which includes the greatest extremes, especially in terms of relatively long beat length (the average beat-to-beat difference is 56 ms). Conversely, the average tempi that are furthest apart are those of Rubinstein 1952 and 1966, and these are rated as among the most similar. Here the contour of the beat lengths of the two performances is very similar (Figure 4), while the average beat-to-beat difference is smaller (48 ms).

In summary, there was evidence of relationship between overall tempo and listener ratings, but it was less direct than in the case of rubato and responses seem to relate in part to extremes of beat length in the extracts.

3. Clarity of phrase ends

In this category, some of the relative ratings given by listeners coincide clearly with the comparisons suggested by the cluster distributions at the ends of phrases (Figures 7 and 8). For example, Luisada 1990 and Rubinstein 1939 are, on average, rated as different, and the distribution of clusters is indeed different for these two performances. Similarly Rubinstein 1939 and Rubinstein 1952 are, on average, rated as very similar and have only one bar whose cluster assignment is different. However, Rubinstein 1952 and Rubinstein 1966 are also rated as very different but the cluster assignment is almost the same (again, only one bar is different). In this case other factors (such as dynamics and the placement of this shape within the broader context of the phrase) may play a more important role in phrase end identification. Nevertheless, in general, the cluster distributions do relate to listeners' responses.

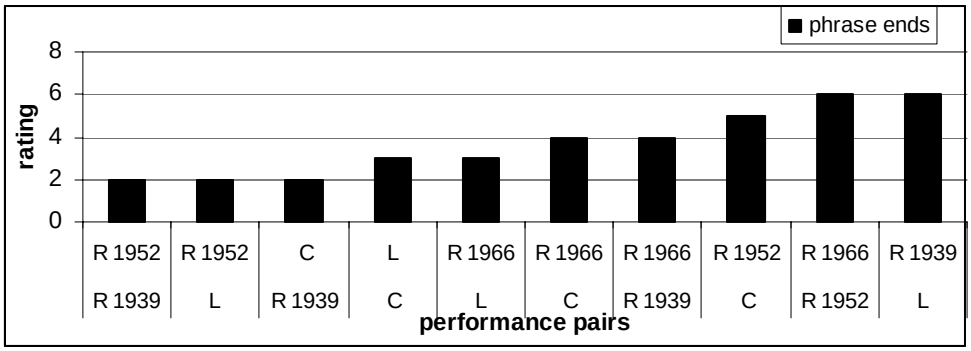

Figure 7: Same-different responses according to phrase ends

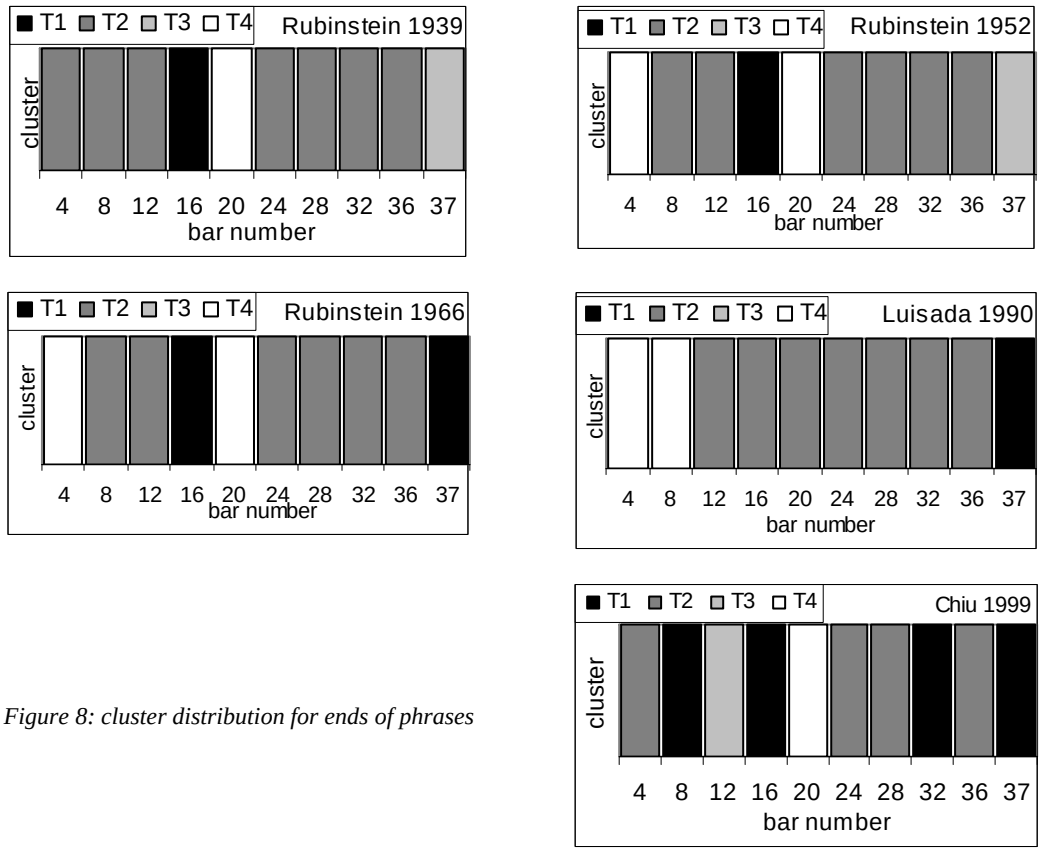

Figure 8: cluster distribution for ends of phrases

4. Difference between tempo in sections

For the most part the similarity ratings seem to match the relationship of average beat length between sections in the different performances (Figures 9 and 10). However, those rated most similar are actually quite different: Luisada 1990 and Rubinstein 1952, and Rubinstein 1939 and Chiu 1999. Again average beat length as such is perhaps one but not the only cue for this comparison.

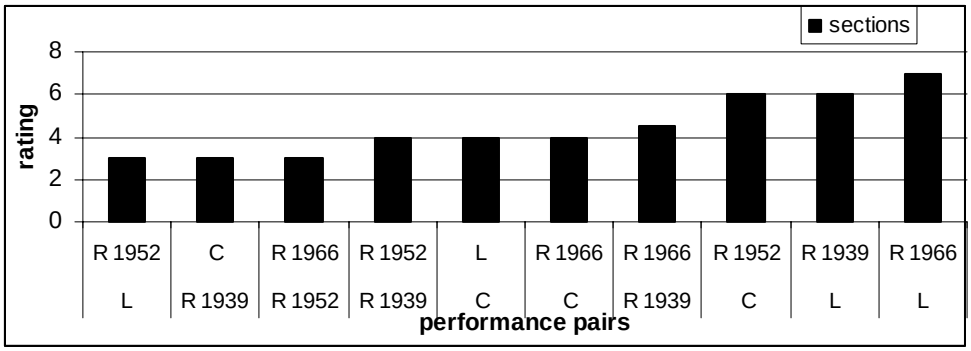

Figure 10: Same-different responses according to tempo difference between sections

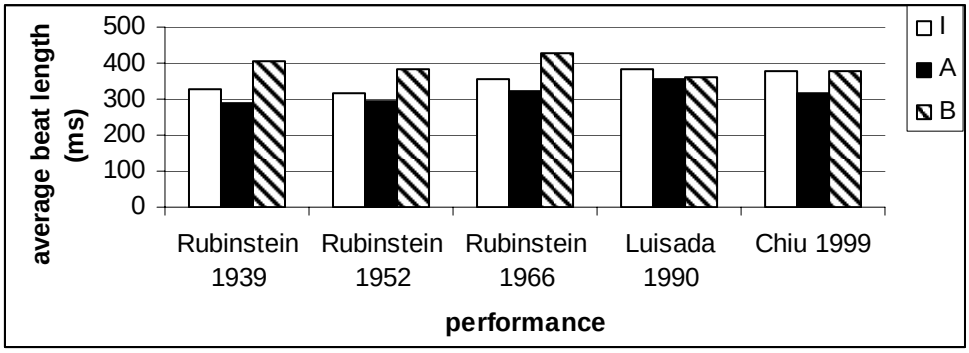

Figure 11: Average beat length for the five performances of each section (Introduction, A section, B section)

5. Overall impression

The overall impression rating was the broadest category and had the widest distribution of responses for the performance pairs. The most similarly rated pairs were Rubinstein 1939 and 1952, and Rubinstein 1952 and 1966 (whereas Rubinstein 1939 and 1966 had a significantly lower similarity rating); the most different pairs were those by Rubinstein and one of the non-Rubinstein performances (Figure 12). It is interesting to note that the difference ratings are not predictable purely according to relative dates of performance.

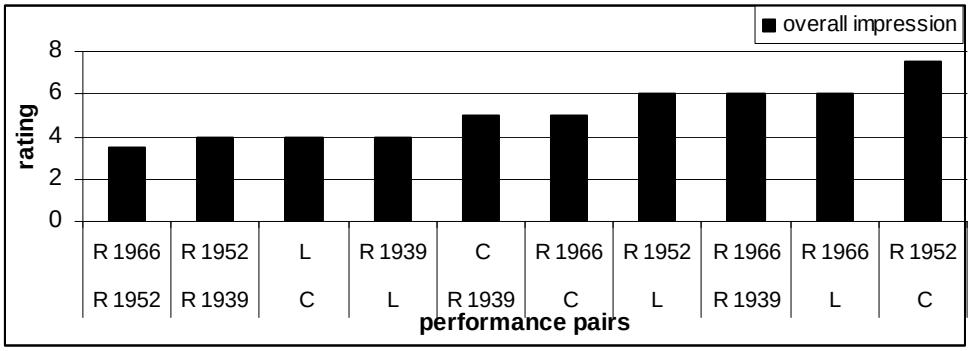

Figure 12: Same-different responses according to overall impression

In order to explore to what extent the overall impression measure relates to the other measures as a group, a mode was taken of the four other categories (Figure 12). Comparison of Figures 12 and 13 suggests that, overall, there is great similarity. However, the order is not identical: this suggests that factors other than these four categories contributed to the overall impression.

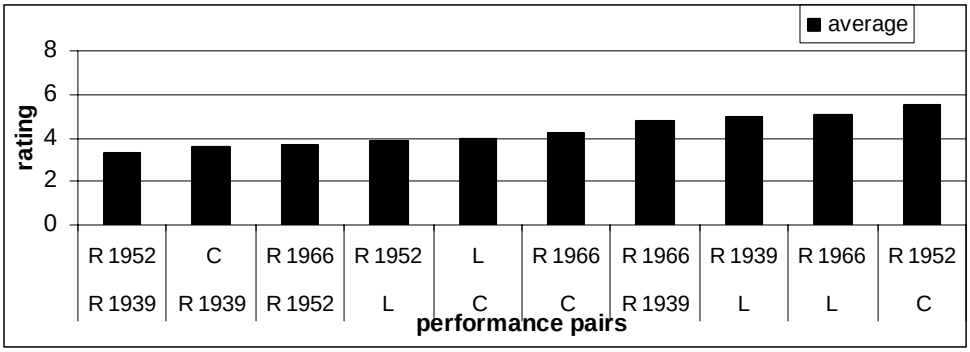

Figure 13: Average of measures 2-5

While in general there is agreement among responses to the five measures, there were some striking exceptions. For example, Luisada 1990 and Rubinstein 1939 were rated as relatively different for rubato, clarity of phrase ends and tempo difference between sections), but more similar for overall impression and tempo. This was also the case for individual responses. This confirms that, despite the similarity between ratings for the different measures, participants were considering each measure independently.

General comparison

Bearing in mind the exceptions just mentioned, the average of the measures presented in figure 13 can be used to compare the same-different test results in more general terms in order to assess which performances are in general rated as more similar, different or in between. Accordingly, we group these performances according to three groups: the two extremes – similar and different – and a group in the middle according to the order of the pairs in Figure 13.

The similar group:

- Rubinstein 1966 and Rubinstein 1952
- Rubinstein 1952 and Rubinstein 1939
- Chiu 1999 and Rubinstein 1939
- Luisada 1990 and Rubinstein 1952

The different group:

- Chiu 1999 and Rubinstein 1952
- Luisada 1990 and Rubinstein 1966
- Rubinstein 1939 and Luisada 1990

The middle group:

- Luisada 1990 and Chiu 1999 (except rubato)
- Rubinstein 1966 and Rubinstein 1939
- Chiu 1999 and Rubinstein 1966

For some pairs, the ratings are very similar for each of the five measures. For example the pair of Rubinstein performances from 1939 and 1952 are all average (by mode), rated between 2 and 5. Similarly, Rubinstein 1939 and 1966 are often rated the third or fourth most different pair. On the other hand, some pairs of performances have a greater range of rating for the different parameters. For example, Rubinstein's 1966 and Luisada's 1990 performances are rated most different for use of rubato and use of different tempi in different sections as well as being rated second most different for overall impression. However, in terms of overall tempo and clarity of phrase ends these two performances are considered much more similar. It is interesting to note that the most similar group includes the performances separated by the longest time period – Rubinstein 1939 and Chiu 1999.

Preference for performance

Overall, the Luisada 1990 performance was preferred most often and Rubinstein 1966 least often. The rest of the performances were preferred in the following order from most to least: Chiu 1999, Rubinstein 1939, Rubinstein 1952. This order is in some ways not surprising, in that the two most recent performances are

preferred over the earlier three. However, among Rubinstein's performances his earliest (from 1939) is the most highly rated and the most recent is least preferred. The results of same-different tests indicate that on some measures the three performances are heard as very or most similar, but this is not the case across the board: Rubinstein 1939 and 1952 are rated very similar, as are Rubinstein 1952 and 1966, while Rubinstein 1939 and 1966 are considered more different (in the middle group).

On the basis of the results so far, we investigated the relationship between similarity and preference ratings. Comparing Figure 14 with Figure 13, we see in general terms that those performances that are rated with greater difference in preference are also rated more different. Indeed in comparison with Figure 13 we see that the lower and upper halves of the two figures consist of exactly the same pairs, showing a broad similarity in the relationship between preference ratings and similarity judgements.

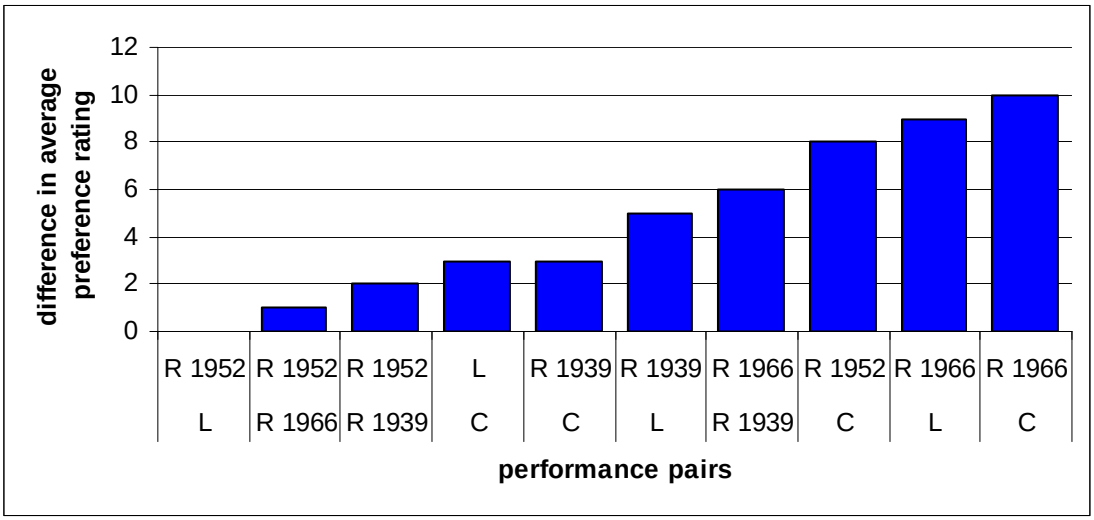

Figure 14: showing the order of difference in preference rating for the performance pairs, the higher the number the greater the difference

More specifically, we investigated whether listeners express no preference between two recordings which they rated as similar, or whether we find preferences split more or less equally between them. Therefore we combined the responses to both questions and presented the preference data in the three rated groups: different, 'middle' (see above) and similar (Figure 15).

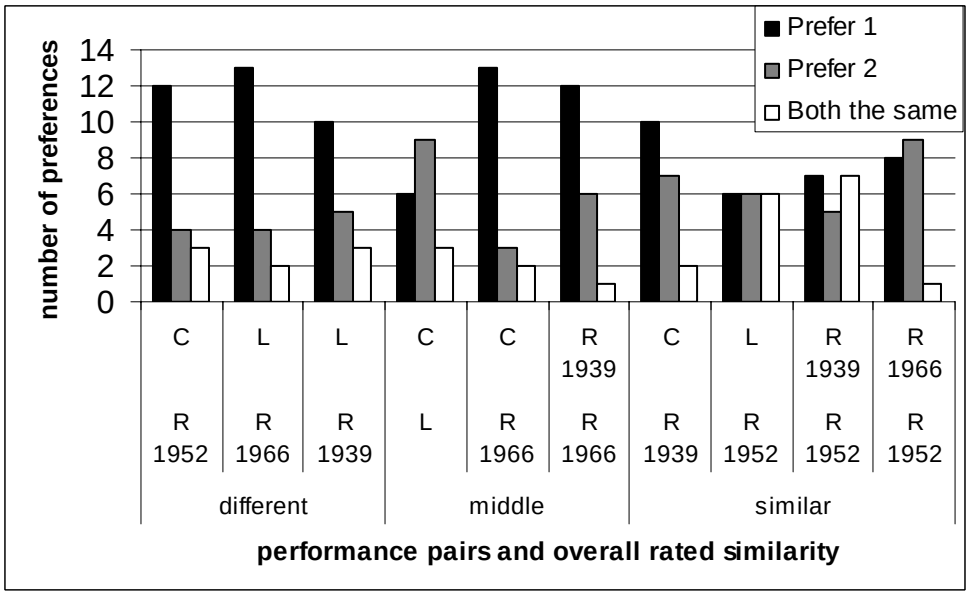

Figure 15: Preference for the performance in the pairs. The upper row of performances is performance 1 in this comparison.

The performances identified as different or in the middle category were also associated with preference for one performance over the other. However, the results for those rated as similar show that though individual participants still stated a preference for one performance over the other, the same or a very similar number of

participants chose both performances; overall in this group there was no preference for one performance over the other (with only one exception: Chiu 1999 compared with Rubinstein 1939). This suggests that there is a general relationship between the same-different rating and preference judgements.

Craig Sapp of the CHARM Mazurkas project carried out assessments of similarity between performances of the same piece on the basis of timing and dynamic information. The results for this Mazurka are given at http://www.mazurka.org.uk/ana/pcor-all/mazurka24-2-noavg/. We do not discuss the comparison here as their analysis takes in the whole piece while ours looks only at the first part.

Summary

The results of the two experiments shed light on the questions with which we began:

1) The patterns identified by the SOMs are indeed differentiated by listeners. This suggests that the SOM method allows the identification of perceivable patterns, supporting the use of the method for future analysis.

2) In our theoretical and computational analysis using SOMs we identified some similarities and differences relating to global temporal characteristics, average tempi, phrase shaping and relative tempi between sections. The results of the listener experiments described here suggest that these similarities and differences are also identifiable by listeners. This provides support for the notion that we can begin to build analytical models and gain understanding of the patterning in performance in ways that are relevant to perception. The results also indicate, however, that analysis of additional temporal and other performance measures would give a more rounded representation of the cues that listeners used.

3) Same-different ratings for Rubinstein's performances vary, but on the whole the pairs closer together in date – 1939 and 1952, and 1952 and 1966 – are rated more similar than any other pairs. However, the pairs 1939 and 1966 are rated as being more different than pairs including those by the other performers in the study. This may be an indication of the kind of trajectory that Rubinstein's change of style took, namely one of a gradual change in style over the years rather than dramatic, unrelated changes. More specifically, these results suggest a 'family resemblances' structure: although there are factors in common between the 1939 and 1952 performances and between the 1952 and 1966 ones, there are no core factors common to all three performances.

4) Comparison of same-different ratings and preference ratings suggests that the measures we tested for same-different judgements relate to preference chosen by listeners. Comparison of preference ratings more generally indicates that contemporary performances are preferred, on the whole, to older ones.

These experiments provide support for the theoretical and computational analyses carried out in the earlier part of the project and lay the groundwork for further comparative analyses. The current analyses asked a small number of specific questions about a small number of performances of the same piece. However, the flexibility of both the SOM method and the study with listeners allow for further comparison among a greater number of performances as well as performances of different pieces. This in turn would lead to a broader understanding of the range of possibilities in musical performance.

Neta Spiro and John Rink

Daniel Leech-Wilkinson's **The Changing Sound of Music: Approaches to Studying Recorded Musical Performance** is an eBook soon to be published by CHARM. It aims to cover some of the major issues that students need to consider when using recordings to study performance. Chapter 1 examines the relationship between music and performance, chapter 2 that between music and recordings, and also between musicology and recordings. Chapter 3 outlines the history of recording technologies and the limitations each technology places on what can be known of performance through recordings. The following three chapters outline histories of style-change in singing, violin playing and piano playing respectively, introducing techniques for studying performances along the way. Chapter 7 proposes a mechanism underlying style change in performance. Chapter 8 models musical performance style as a collection of expressive gestures in sound and offers ways of studying them in great detail. Chapter 9 concludes the book by looking at the interaction of disciplines required for the successful study of the relationship between performance and musical meaning. The text is linked to 54 sound examples, most drawn from the holdings of the King's Sound Archive and transferred especially for the book, as well as software, data files, charts, tables, figures and plates. It is being published online in order to permit students free access, and will be available on the new CHARM website from May 2009.

PUBLICATIONS UPDATE

The new CHARM website will contain full details of our publications, including a very large number of forthcoming items not listed here. The following includes only items relating to performance or recording studies.

Cook, Nicholas. *Music, Performance, Meaning: Selected Essays* (Aldershot: Ashgate, 2007).

Cook, Nicholas. 'Beyond the Notes', *Nature* 453 (26 June 2008), 1186-7.

Cook, Nicholas. 'The economics and business of music', in *An Introduction to Music Studies*, ed. Paul Harper-Scott and Jim Samson (Cambridge: Cambridge University Press, 2008), 267-90.

Cook, Nicholas and Craig Sapp. 'Une pure coïncidence? Joyce Hatto et les Mazurkas de Chopin', trans. Jean-François Cornu, *L'étincelle: Le journal de la création à l'IRCAM* 3 (2008), 19-21.

Patmore, David. 'CHARM and the King's College Archive – an interview with Andrew Halifax', *Classic Record Collector* 14 (2008), 58-61.

Patmore, David. 'Rudolf Schwarz: the musician's musician', *Classic Record Collector* 14 (2008), 49-54.

Patmore, David. 'From Harrow to St. Petersburg - an interview with Michael J. Dutton', *Classic Record Collector* 14 (2008), 57-61.

Patmore, David. 'Taking the muck out of the music – an interview with Ted Kendall'. *Classic Record Collector*, 14 (2008), 55-59.

Patmore, David. *Piero Coppola: Autobiography, Biography, Discography, Sound Recordings*, CD-ROM (Sheffield: Department of Music, University of Sheffield, 2008).

Rink, John (ed.). *L'esecuzione musicale* (Milan: Rugginenti Editore, 2008).

Rink, John. 'Psychology of music', in *An Introduction to Music Studies*, ed. Paul Harper-Scott and Jim Samson (Cambridge: Cambridge University Press, 2008), 59-78.

Sapp, Craig. 'Hybrid numeric/rank similarity metrics for musical performance analysis', paper presented at ISMIR 2008, Philadelphia (http://ismir2008.ismir.net/papers/ISMIR2008_240.pdf).

Sapp, Craig. 'Performance authenticity: a case study of the Concert Artist label', paper presented at the ARSC Conference 2008. Stanford (http://www.arsc-audio.org/conference/audio2008/mp3/23-sapp.mp3).

Spiro, Neta, Nicolas Gold and John Rink. 'Plus ça change: analyzing performances of Chopin's Mazurka Op. 24 No. 2', in *Proceedings of 10th International Conference on Music Perception and Cognition*, ed. Ken'ichi Miyazaki et al. (Sapporo: ICMPC10, 2008), 418-27.

PRESENTATIONS UPDATE

Eric Clarke

'Empirical methods in humanities (and specifically music) research', Carleton College, MN (8 April 2008).

'Empirical, Critical, Dialectical'. SEMPRE/IMR 'Empirical musicology' conference, London (2-3 April 2008) [keynote].

Nicholas Cook

'Psychology, performance, history: the evidence of recordings'. Annual conference of the Gesellschaft für Musiktheorie, Graz (9-12 October 2008) [keynote]; '"Ah sweet mystery of rhythmic life!" Re-reading between the lines', Conference in Honour of Edward T. Cone, Princeton University (5-7 December 2008); 'Music and cognition: on the contribution of John Sloboda' symposium, IRCAM, Paris (23 January 2009).

'Hearing Schenker through d'Albert: Schubert's Impromptu Op. 90 No. 3', 'Performing Romantic music: theory and practice' conference, Durham (10-13 July 2008).

'Bridging the unbridgeable? Empirical musicology and interdisciplinary performance studies', SEMPRE 'Empirical musicology' conference, London (2-3 April 2008); Trinity College, Dublin (20 October 2009).

‘Objective expression: analysing phrase arching in recordings of Chopin's mazurkas’, Goldsmiths College, University of London (19 January 2009); Trinity College Dublin (21 October 2009).

Andrew Hallifax

‘The engineer as stylist’, CHARM Symposium 4, Egham (11-13 September 2008).

Daniel Leech-Wilkinson

‘Elena Gerhardt’s Schubert recordings and the analysis of performance style’, King's College London (4 March 2009).

‘How do we make sense of music?’, Royal College of Physicians (23 February 2009).

Contribution to round table, ‘Careers in musicology of performance’, RMA Music Research Students' Conference (10 January 2009).

‘Studying Performance Style’, Guildhall School of Music and Drama (3 November 2008).

‘CHARM’, Association of British Orchestras conference, King's College London (11 November 2008).

Contribution to round table on musicology and performance, Oxford Graduate Exchange Conference (21 June 2008).

‘What can musicology do for orchestras?’, Association of British Orchestras/LCACE, Somerset House, London (20 June 2008).

‘CHARM’, British and Irish Sound Archives conference, Aberystwyth (23 May 2008).

‘CHARM’, International Association of Music Librarians-UK annual conference, University of Kent (13 April 2008).

Nick Morgan

‘Name the Composer: The NGS and the first “modern” record catalogue’, CHARM Symposium 6, Egham (11 September 2008).

David Patmore

‘The British record industry, 1925-29’. CHARM Symposium 6, Egham (11 September 2008).

John Rink

‘“Ah sweet mystery of rhythmic life!” Re-reading between the lines’, Conference in Honour of Edward T. Cone, Princeton University (6 December 2008); Middlesex University (11 February 2009).

‘Sounding out Chopin’, Hochschule für Musik und Theater, Rostock, Germany (24 October 2008).

‘Variants and variance in Chopin’, Lecture-Recital, Humboldt Universität, Berlin (23 October 2008).

(with Neta Spiro and Nicolas Gold) ‘Plus ça change: analyzing performances of Chopin's Mazurka Op. 24 No. 2’, 10th International Conference on Music Perception and Cognition (ICMPC10), Sapporo, Japan (27 August 2008).

‘Chopin in flux’, ‘Performing Romantic music: theory and practice’ conference, University of Durham (11 July 2008) [keynote].

‘Chopin en ligne: vers une “édition dynamique”’, ‘Genèses musicales: méthodes et enjeux’ conference, Institut des Textes et Manuscrits Modernes (ITEM), Centre National de Recherche Scientifique, Paris (23 May 2008).

‘Translating Chopin’, Royal Irish Academy of Music, Dublin, Ireland (30 April 2008).

‘Chopin: from score to sound’, National University of Ireland, Maynooth, Ireland (29 April 2008).

Craig Sapp

‘Hybrid numeric/rank similarity metrics for musical performance analysis’, ISMIR 2008, Drexel University, Philadelphia (14-18 September 2008).

‘Key-profile comparisons in key-finding by correlation’, 10th International Conference on Music Perception (ICMPC10), Sapporo, Japan (25-29 August 2008).

‘Comparing performances of Chopin mazurkas’, Sound Media Representation Laboratory, Tokyo Denki University, Tokyo, Japan (20 August 2008); NTT Basic Research Laboratories, Atsugi, Japan (18 August 2008).

Neta Spiro

(with Nicolas Gold and John Rink) ‘Plus ça change: analyzing performances of Chopin's Mazurka Op. 24 No. 2’, 10th International Conference on Music Perception and Cognition (ICMPC10), Sapporo, Japan (27 August 2008).

END OF AN ERA?

CD bird scarers on Lamma Island, Hong Kong