



# CHARM Newsletter

Annual newsletter

Issue 4 (May 2008)

**C**HARM (the AHRC Research Centre for the History and Analysis of Recorded Music) has now entered the fifth and last year of its initial funding period. In our 2007 Newsletter we reported that we had won continuation funding: in April 2009 CHARM will morph into **CMPCP**, the AHRC Research Centre for Musical Performance as Creative Practice, the new name marking a new phase in our research agenda. Preparations for the new centre are in hand, but the past year has been primarily one of steady progress on our various projects: you will find details in this Newsletter, including a feature article from our 'Analysing motif in performance' project and an account by Andrew Hallifax of his work as CHARM's transfers technician. The year also saw our international conference (held jointly with the Royal Musical Association), as well as the fifth of our residential symposia: there are reports on both. And we thought you would be interested to know about the work being undertaken by doctoral students associated with CHARM. For more details please visit our website ([www.charm.rhul.ac.uk](http://www.charm.rhul.ac.uk)), where you can register to be kept informed of our activities.

## SYMPOSIUM 5: CULTURES OF RECORDING

Royal Holloway, 10-12 April 2008

Organised by CHARM's Director Nicholas Cook and Coordinator Carol Chan, the fifth CHARM symposium offered engaged discussion on and around the practices of recording. Delegates from across the UK, continental Europe, North America, Japan, and Australia came together to pool their expertise under the inclusive title 'Cultures of recording', and the disciplines represented included not only musicology but also media and communication studies, history, literature, philosophy, anthropology, and sociology. Royal Holloway and its peaceful surroundings served once more as the setting for this residential meeting held from 10-12 April 2008.

From the start, central issues arose which revolved around an approach to the body that Tia DeNora (Exeter University) clearly encapsulated in her presentation on the final day: she presented the body as a vehicle in which cultural and social practices are articulated through individual experience. While she focussed discourse, social practices, values and images around therapeutic processes, it became clear throughout the symposium that these features may as well define a broader

spectrum of creative processes involving music-making, recording, listening, writing or healing.

Starting off with the birth of hip-hop and a definition of its history through the development of break and scratch, Mark Katz (University of North Carolina, Chapel Hill) discussed the circumstances in which these particular technological affordances became aestheticised. Eric D. Barry (a PhD student at Rutgers University, NJ) traced the transformation of



*Nicholas Cook and Daniel Leech-Wilkinson scrutinise the symposium programme © Simon Trezise*

high fidelity discourse in the 1950s; based on specialist magazines of the time, he showed how the discourse shifted from fidelity to the performance to fidelity to the record, and indeed that of the playback situation itself. Intrigued by what he calls Elvis Presley's hiccup vocal style, Jens Gerrit Papenburg (a PhD student at Humboldt University, Berlin) traced the history and development of magnetic tape and its technical affordances. By showing how Elvis shaped his voice around what the technology of the time had to offer, Papenburg suggested that, from the beginning, rock 'n' roll embraced technology in a constructive rather than a merely documentary way. Similarly, with examples ranging from hip-hop to different types of electronic music, Joseph Auner (Tufts University, Boston) placed the concepts of the uncanny and the post-human in the disembodiedness of the sampled voice.

Central to these discussions was an argument put forward by Thomas Porcello (Vassar College, New York). By implying that music circulates not only through the singing voice, but also via musical discourse, Porcello situated Barthes' concept of vocal grain at the crossroads of language about music and music itself. He further argued that, as the body embraces technology through the creative use of the voice and the formulation of musical discourse, technology is embraced by the concept of grain.

The first day finished with a short poster presentation by Per Dahl (Stavanger University College, Norway), featuring a selection of *Peer Gynt* LP covers and the presentation of different marketing strategies around the world, reflecting the negotiation of meaning through the act of



*Per Dahl and his exhibition of Peer Gynt LP covers*  
© Simon Trezise

consumption. Similar concerns returned on the following days. The commodification of classical music was central to a paper by Adam Krims (University of Nottingham), which touched upon this in the context of retailing and lifestyle design. Steen Kaargaard Nielson (Aarhus University, Denmark), on the other hand, traced the recorded history of 'Gone with the Wind', showing how it has been marketed in



*Symposium delegates Nick Morgan and Paola Cannas in discussion* © Simon Trezise

changing and conflicting ways that reflect shifting conceptions of what is meaningful in film music as an art form.

The need to analyse general concerns in terms of specific situations was highlighted in a number of eclectic papers that touched upon specific genres, different moments in time, and changing locations. Keir Keightley (University of Western Ontario), for instance, showed through pictures and texts on LP covers and specialist magazines from the 1950s to the 1970s how the recording studio was increasingly woven into the sonic imagination of popular music. Peter Doyle (Macquarie University, Sydney) drew an illuminating parallel between a discourse of the casual and the everyday in early country music and blues recordings, and a series of Australian police mug shots of the time: artistically conceived portraits of individual criminals drew attention both to the criminals' and musicians' embodied personae and to the ways in which authenticity was narrated. Andrew Flory (Shenandoah Conservatory, Winchester, VA) concentrated on the life and work of Marvin Gaye at Motown, tracing through score-based, aural and biographical analysis a creative process that challenged traditional structures within the

recording studio. Jonathan Tyack presented some initial findings on politicians' musical choices from a pilot study of the long-running radio programme 'Desert Island Discs', which is being conducted at Royal Holloway in conjunction with Julie Brown and Nicholas Cook.



*Peter Doyle takes the stand © Simon Trezise*

Central to the second day were two papers that questioned in different ways the paradigm of teleological forms of attentiveness and narrative listening strategies consolidated by Adorno, offering multiple sites for the discussion of collective creation of meaning, unconscious listening, and bodily, affective engagements with music. Jazz guitarist and Professor of Philosophy at the University of East Anglia, Garry L. Hagberg chose jazz improvisation for exploring categories of ethical content in intentional action. In discussing the functioning of memory as not necessarily teleological, but rather contextual and relative, he presented jazz improvisation as a site for dialogic interaction, where meaning, shared values and levels of appropriate attentiveness are collectively defined. Anahid Kassabian (University of Liverpool), on the other hand, questioned the paradigm of narrative, teleological listening by drawing attention to today's ubiquitous musics and their implications for the act of listening. Outlining a more holistic engagement with music that is not necessarily structured around the concepts of attentiveness and consciousness but involves the slippery concept of affect, Kassabian underlined the necessity of finding alternative and more satisfying methods of musical analysis.

The third day was wittily introduced by a perspective from literature studies: John Michael Gómez Connor (PhD student in English at Cambridge University) illustrated through advertisements and literary texts how the domestic device of the gramophone became in its portable form a 'valuable asset to the morale of the troops' during wartime: in this way, the understanding of the gramophone gradually shifted from a carrier of the past and of death, to a device associated with home, a restored future, and social enjoyment. Also from literary studies, Sam Halliday (Queen Mary, University of London) offered insight into the shift of language about sound in novels and plays after the invention of the gramophone, exploring the conception of the gramophone and recorded sound as a means to connect past and present. A sociological perspective came from the composer François Ribac (Metz and Stirling Universities), who is interested in how amateur musicians understand and appropriate popular music through records: by means of interviews and network mappings, Ribac explored music making through imitation, domestication of the record and the recording process, and the use of the internet as a means and conveyer of musical interaction.



*François Ribac ponders a questions © Simon Trezise*

Standing rather apart in terms of subject matter was a presentation by Jonathan Sterne (McGill University, Canada): interpreting the mp3 as representative of a historically situated theory of perceptual encoding, he demonstrated the intimate links between technology and cultural practice, so exposing the potential for a rich field of study which he terms format theory. His presentation was a sampler of his forthcoming

book, tentatively entitled *MP3: The Meaning of a Format*.

While the final discussion was very brief, the symposium timetable had allowed plenty of time after each paper and during intervals and meals for lively discussions of all sorts. The point was however made that issues of place and space had played a major role throughout the event: whether in the Bronx, a particular studio, the trenches, or a range of other private and public places, broader discourses concerning

creative processes reflect the individual qualities of multiple local stories of understanding.

Congratulations are once again due to the organisers, programme committee, speakers and other participants for an inspiring event.

Further details and abstracts at <http://www.charm.rhul.ac.uk/content/events/symp5.html>

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## PLUS ÇA CHANGE? IN HOW MANY DIFFERENT WAYS CAN CHOPIN'S MAZURKA Op.24 No. 2 BE PERFORMED AND WHY?

*One thing is certain: performances of the same pieces of music are different from one another. But it is less clear how and why they differ, or indeed where they are played consistently in different performances. These questions are at the core of the CHARM project 'Analysing motif in performance'.*

Many music-psychological theories predict that given note patterns and structures are likely to be performed in a particular way. However, the huge variety that exists across performances suggests that these predictions do not account for all expressive patterning.

To understand factors contributing to performance a systematic description of the performance patterns is required. To this end, we employ the idea of 'motif'. Many music-theoretical, analytical and psychological approaches have incorporated motifs, defined as short musical ideas characterised by particular melodic, rhythmic, and/or harmonic patterns. They may be of any size, but are most commonly regarded as the shortest section that maintains its identity under variation, while being elemental and incomplete in nature. Motifs have been used to explain the development of musical ideas and are described as giving unity to musical works. Studies of motif usually concentrate on aspects of music that can be directly understood from the score, but we extend its application to performances, through analysing the nature of repeating patterns in performance and what their sources may be.

To investigate these patterns and their possible sources, we analyse timing and dynamic performance patterns of 29 performances of Chopin's Mazurka Op. 24 No. 2, a number of structural and thematic characteristics of which lead to questions concerning its performance. This Mazurka is in several sections, each with a distinctive theme, while the underlying rhythm and texture stay quite constant throughout. Therefore, a potential tension exists between sectional and through-composed features, inviting a range of performance approaches. The consistent rhythm and texture of the accompaniment could suggest regular timing patterns. On the other hand, the themes of the piece are clearly divided into four-bar phrases and the differences between the successive themes in terms of, for example, degree of improvisatory style and accent structure could be reflected in different performance tempos and expressive patterns, with the strength of boundaries between consecutive sections being expressed by different accentuation patterns, for instance through diminuendos and/or longer notes or pauses. Further tension can arise from the piece's metrical and rhythmic properties; the mazurka genre is characterised by 'mazurka patterns' – weak beat stresses – and there are different ways of shaping the weak beats and the metrically accented downbeats.

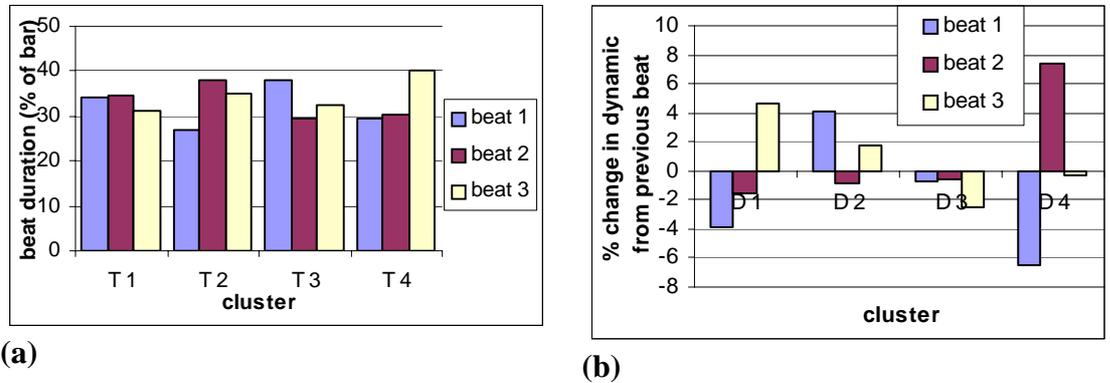
The aim of this part of the project is to investigate the relationship between the structural and thematic characteristics of the piece on the one hand, and the timing and dynamic characteristics of its performances on the other. To this end we developed a new method which allows comparisons and

analysis of performance characteristics for a large number of performances – comparisons which previously would have been technically difficult to make.

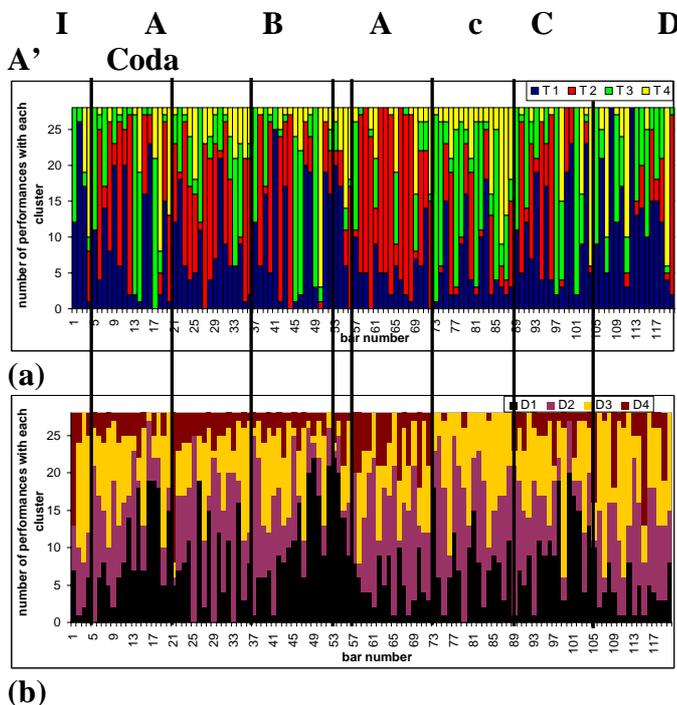
There are two parts to the method: first data collection, and second, analysis using self-organising maps (SOMs). The Mazurka has crotchet beats almost all the way through, and, as the basis for our study, we used beat-level timing and dynamics data generated by the CHARM Mazurkas Project (<http://www.mazurka.org.uk/>). To focus on patterns rather than individual values, we converted this existing beat-timing data from absolute values to relative proportions of the bar, and we converted the existing dynamic data from absolute values to the dynamic relative to the previous beat.

SOMs are a form of neural network trained by unsupervised learning, and cluster together similar points. We concentrate on the single bar as our unit of

analysis, modelling each bar as a point in a three-dimensional space, either timing or dynamic. After training, bars of similar shape occupy similar areas and appear as clusters on the resulting map.



**Figure 1: Timing and dynamic clusters:**  
*Graph (a) shows the four identified timing clusters (T1-4), for which the relative proportion of each beat within the bar is shown. Graph (b) shows the identified dynamic clusters (D1-4), for which the relative change in dynamic from the previous beat is shown. So, for D1, beat 1 is 4% quieter than the last beat of the previous bar, beat 2 is 1.5% quieter than beat 1, and beat 3 is 4.5% louder than beat 2. The overall proportions of each pattern in all performances are given in Figures 5(c) & 6(c).*



**Figure 2: Distribution of (a) timing and (b) dynamic clusters in 29 performances of the Mazurka. The sections of the piece are overlaid in each graph.**

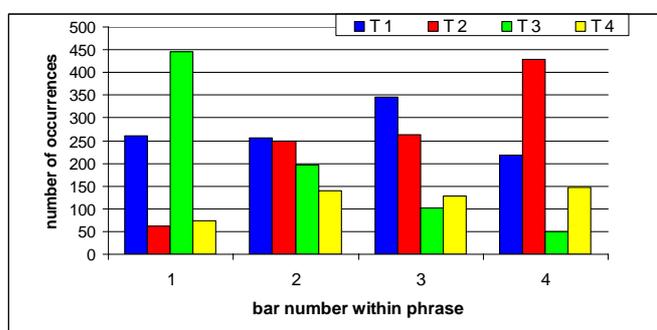
Boundaries are then determined between the clusters, and the mean values of each cluster are extracted to provide a representative average shape. Finally the original data is classified by the trained map in order to assign cluster shapes to bars. This allows the discovery of similarities in timing or dynamic shapes without *a priori* determination of how many similarities should exist or how large each group should be. Four cluster patterns are identified for timing and dynamics (Figure 1).

The resulting patterns are not surprising. T1 is almost flat, and T2 has a relatively long middle beat ('mazurka pattern'); T2 has a relatively long third beat, so it may also be related to more general ritardandos. T3 has a longer first beat, as would be expected in a piece in triple time, and T4 has a longer final beat, which could again be related to ritardandos. D1 and D4 have relatively louder third beats, D2 has a relatively louder first beat, and D3 has a slight diminuendo across the bar.

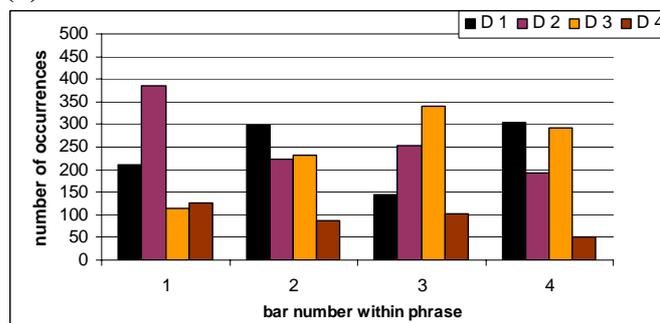
Having identified the general patterns occurring in the piece, their distribution and areas of similarity and of difference among performances can be shown (Figure 2).

Some sections, such as the C section, are dominated by specific patterns, some patterns have a relatively high occurrence in particular parts of sections (such as T4 and T2 at section ends) and the patterns of the A section reveal a very similar distribution of patterns in both of its occurrences. In this way general structural characteristics are reflected in the performance patterns. However, even though this representation of the performance patterns groups them into only four underlying patterns, there is no one bar where all performances agree (except those with one chord, i.e. bars 108 and 112), while the proportions of patterns differ even in structurally or thematically similar bars (as in bars 20 and 52, at the end of the A sections).

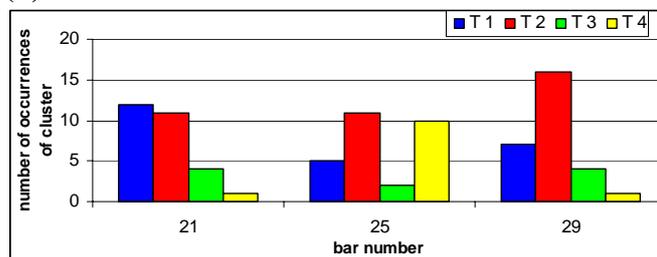
The extent of sectionalisation is partly related to the performance of phrases. According to general theories of music perception and performance, we would expect phrases to be played according to a basic arc shape, an increase followed by decrease in tempo and dynamics; thus cluster T3 would be likely at the beginning of phrases, while clusters T4, T2 and D3 would be likely at phrase ends. Because of the consistency of phrase structure of the Mazurka, it is possible to overlay the four-bar phrases (Figure 3) summarising the distributions of patterns within the phrase and allowing their analysis.



(a)



(b)



(c)

**Figure 3: Structure within phrases:**  
(a) timing, (b) dynamics and (c) first bars of phrases from section B

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**Figure 4: Score of Mazurka Op. 24 No. 2, bars 16-29**

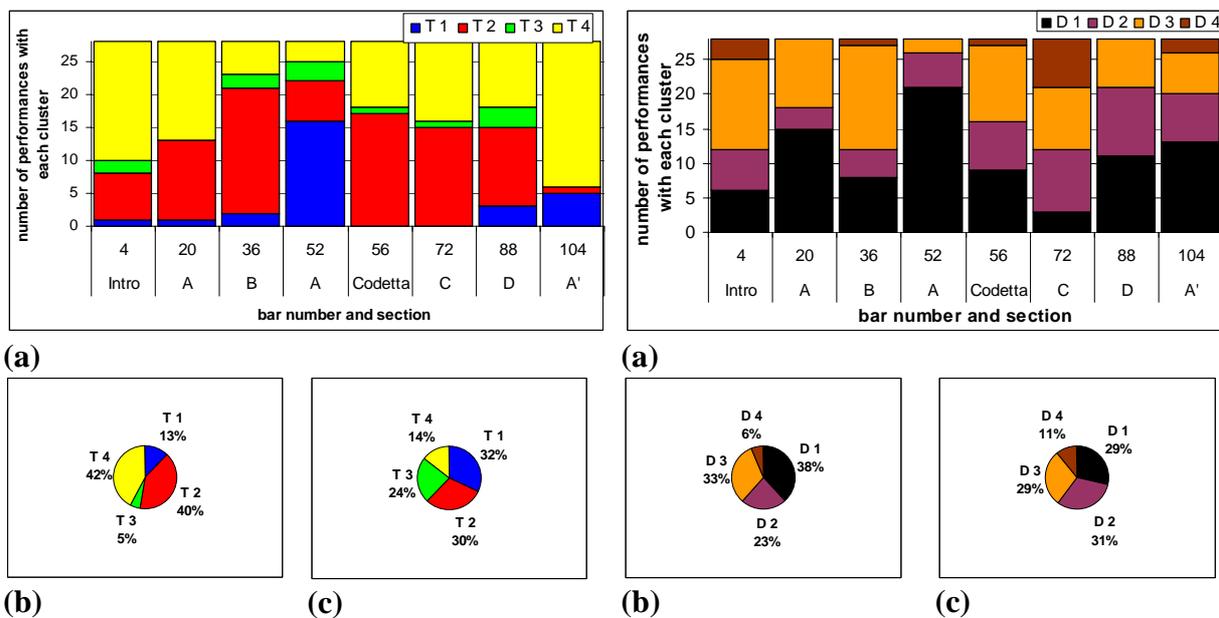
The first bar of the phrase is dominated by longer first beats (T3). However, the first bars of three phrases in section B (bars 21, 25 and especially 29) include more use of T2 (Figures 3(c) & 4). These bars feature the 'mazurka pattern'; for some performances, then, the characteristics of the motif seem to

override the phrase position. In general, the first bar is also dominated by D2 (a louder first beat), possibly relating to the bar structure of a piece in triple time.

In bar 4, D3 is highly represented, while T4 is more common in bar 2 (sub-phrase) and bar 4 than in other bars. However, T2 is far more common than T4, especially in contexts in which T2 could be heard as part of phrase-final lengthening, such as in the last bars of phrases in the same B section (bars 24, 28, and 36, Figure 4). In this way, while a broad relationship appears to exist between phrase structure and performance patterns, other features – such as the accentual patterns typical of the mazurka genre and metre – are sometimes more strongly represented in these performances.

It has been suggested that greater phrase-final lengthening is associated with more important phrase boundaries, including section ends. Therefore, we analysed section ends, comparing the use of patterns (a) in each section-end bar, (b) in all section-end bars together, and (c) throughout all the performances for timing (Figure 5) and dynamics (Figure 6).

Figure 6(c) shows that the most common timing patterns in the piece as a whole are T1 and T2, and that T4 is least used. In comparison, Figure 5(b) shows that in the section-end bars there is a much higher proportion of T4 and T2 and they are present in all these bars. However, T1 and T3 do not disappear; indeed T1 is most dominant in bar 52. Similarly, Figure 6(c) shows that the most common dynamic patterns are D1 and D3, which respectively feature diminuendo for the first two beats and then crescendo for the final beat, and diminuendo throughout the bar.



**Figure 5: Timing clusters at structural boundaries**

**Figure 6: Dynamic clusters at structural boundaries**

*Proportion of clusters in (a) bars at section ends, (b) all section ends and (c) complete performances*

Even at these larger structural boundaries there is not a consistent use of patterns. Of the most commonly used patterns at the section-end locations, T4 is mostly present at the bigger sectional boundaries (such as the end of the introduction and preceding the coda), while T2 is used most often at the 'lower level' boundaries (such as before section C, Figure 5(a)). This suggests that T2 and T4, though used in similar structural positions, are systematically associated in some performances with different structural functions, with T4 being used at the end of more structurally important sections than T2. The use of either pattern may arise from a different understanding of the music's structure: those performances using T4 tend to have a more sectionalised view of the piece, whereas those featuring T2 reflect a more through-performed approach. However, not all performances include these two patterns at section ends.

Direct relationships have also been suggested between performance and the motivic characteristics of rhythm. Three rhythmic patterns occur at the section ends. The most common is a series of crotchets, in

bars 4, 20, 52 and 104 (Figure 4 shows bar 20). However, despite the rhythmic and motivic similarities, the proportion of each performance pattern varies (Figures 5(a) & 6(a)). This is also the case for bars 20 and 52, even though both are part of an exact thematic repetition. There is one difference between these two bars: unlike bar 20, bar 52 is also the beginning of the codetta. Despite the thematic repetition and the similar structural arrival, the context and in particular the continuation have a direct effect on performance patterns. These observations suggest that repetition of rhythmic and thematic motifs does not automatically coincide with exact pattern repetition.

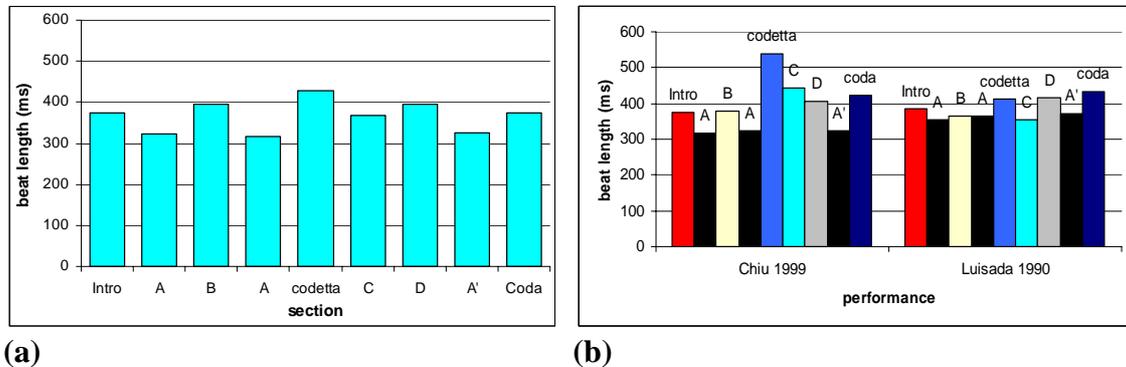


Figure 7: Average beat length (ms) of successive sections for (a) all 29 performances (b) two performances

More broadly, sections can be differentiated by means of contrasting underlying tempos, represented through average beat length within each section. Figure 7(a) shows that average beat length differs in successive sections, suggesting that each section is distinguished by particular beat lengths. However, the average beat length used in the performances is not the same. Some, such as that of Chiu (1999), have a short, almost identical average beat length, at a relatively fast tempo, in the A sections, while the other sections are played more slowly. In contrast, performances such as that of Luisada (1990) reveal a much more constant beat length throughout (Figure 7(b)). Beat length is therefore one way in which sections are more differentiated in some performances than in others.

Comparison of structural and thematic characteristics with performance patterns and average beat length suggests that both contribute to the sectionalisation of performances. On this basis we compared how individual performances combine these.

The balance of pattern use is not the same for all performances (Figure 8). Some show the dominance of an undifferentiated timing pattern within the bar (e.g. Chiu, 1999, T1, blue arrow), some show that of the 'mazurka pattern' (e.g. Luisada, 1990, T2, purple arrow), and others of the phrase-final lengthening pattern (e.g. Ashkenazy, 1981, T4, black arrow).

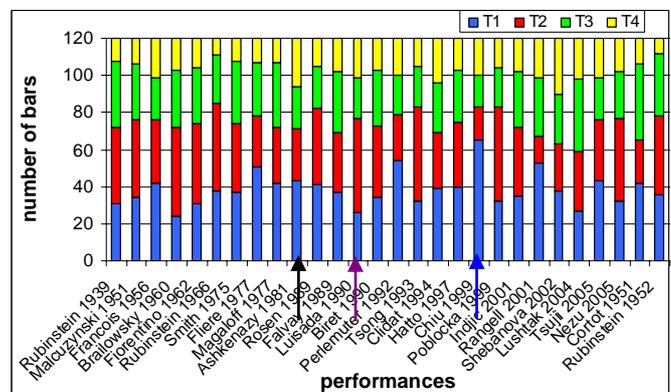


Figure 8: Use of timing clusters in performances

The performances combine all the characteristics described so far in different ways. They can emphasise one interpretation (whether sectionalised or through-performed), resulting in 'clarifying' performances; alternatively they can bring out both, creating an effect of tension in the performance. For example, though Luisada's (1990) performance has a relatively consistent average beat length across most sections, the phrase and section ends are clearly highlighted and the 'mazurka pattern' is accentuated (relatively high use of T2 and T4). Conversely, though Chiu's (1999) performance has relatively contrasting average beat length across sections, within each section there is a dominance of the flattest of the four timing patterns. Just like the contrasting structural and thematic clues as to piece's structure, then, performance cues can provide different perspectives.

In summary, performances of the same piece can indeed differ from one another in innumerable ways and for many reasons. This new method of analysis clusters performance patterns according to their relative similarity and allows the analysis of both individual and groups of performances.

Although the general structural framework of this Mazurka seems to be reflected in the performance patterns, at least two different performance patterns are present for every bar, and the relationship between performance patterns and thematic and structural information seems to relate to a number of factors: these include phrase- and section-patterns, section endings and ending types, within-bar patterns associated with metre and the genre-specific 'mazurka pattern', and average beat length (reflecting tempo). The distribution of patterns within phrases suggests a broad relationship between phrase structure and performance patterns. However other features, including the 'mazurka pattern', are sometimes more strongly represented.

Timing patterns at section ends suggest that though T2 and T4 are used in similar structural positions, they are systematically associated with different functions, with T4 being used at the end of structurally more important sections. Furthermore, in comparing performances, it seems that the use of T4 and T2 reflects individual conceptions of piece's structure: T4 highlights a more sectionalised view of the piece, while T2 reflects a more through-performed approach. Comparison of pattern use with average beat length again showed that these may reflect through-performed or sectionalised approaches, or emphasise one of the genre-specific 'mazurka patterns': these different approaches may be projected through clarity of section ending, dominance of patterns within sections, and differences in average beat length between the sections. Performances can combine these characteristics such that each one reflects different aspects of the tension between through-composed and sectionalised conceptions. In contrast, the use of performance patterns with rhythmically and motivically identical repetitions suggests that there is no necessary connection between these and performance patterns: only in a few cases are they repeated in a very similar manner.

## WHO WE ARE

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You can find more about us at:

<http://www.charm.rhul.ac.uk/content/staff/staff.html>

In addition to our own staff, CHARM's work is supported by a Management Committee

(<http://www.charm.rhul.ac.uk/content/structure/mc.html>),

Academic Advisory Board

(<http://www.charm.rhul.ac.uk/content/structure/aab.html>) and

International Advisory Panel

(<http://www.charm.rhul.ac.uk/content/structure/iap.html>).

Our thanks to all those who contribute to CHARM's success through their membership of these groups.

This method enables the direct comparison of individual bars and whole sections, and of individual, small groups, or large groups of performances. The results suggest that the variety of performances may have a number of different sources and that conventional generalisations about performance, while useful starting points, do not reflect the complexity of performance patterns and their relationship with the specific characteristics of a given piece. The study has begun to identify a hierarchy of structural features that most often seem to be related to different performance patterns, and a relative proportion of performance patterns associated with different structural and thematic characteristics.

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## NOTES FROM CHARM'S TRANSFER ENGINEER

### *The Archive*

CHARM is fortunate to have a substantial collection of 78rpm discs to hand. The King's Sound Archive (<http://www.kcl.ac.uk/schools/humanities/music/res/soundarchive.html>), consisting of around 150,000 discs, encompasses the breadth of recorded music available to the British public for half a century or more. Once everyday items, 78rpm discs are now hard to find, and require some expertise and a lot of specialised equipment to replay. Only a very small percentage has ever been reissued on CD, and many of those have been significantly adapted to suit modern taste. In choosing recordings to make available through CHARM we have focused first of all on the CHARM research projects (<http://www.charm.rhul.ac.uk/content/projects/projects.html>), which is why there are a lot of Schubert song performances here and most of the NGS label (<http://www.charm.rhul.ac.uk/content/staff/nm.html>), as well as a wealth of recordings from the early electrical era. Thereafter we have concentrated on performers and recordings that have not been well covered in commercial reissues, and especially on the HMV C series (one of the so-called 'plum labels'), which aimed to cover lesser-known performers and to satisfy a home-grown audience. We hope in this way to offer a more representative experience of what most record listeners enjoyed in the 1920s, 30s and 40s than one can currently get from CD reissues.

Making a good transfer of a 78rpm recording is not an automated, mechanical process. Interrelated practical difficulties and historical and technical considerations need to be disentangled before the audio content is revealed at its best. My task as CHARM's transfer engineer is to manage the practicalities so that the original audio content is reproduced with as much fidelity as possible, in a way that is accessible to those without specialist skills or expertise.

*'My task as CHARM's transfer engineer is to manage the practicalities so that the original audio content is reproduced with as much fidelity as possible'*

*'Making a good transfer of a 78rpm recording is not an automated, mechanical process. Interrelated practical difficulties and historical and technical considerations need to be disentangled before the audio content is revealed at its best.'*

### *Choosing the best copy*

To describe the entire transfer process one has to begin in the archive where the discs are stored. As King's is fortunate to have several copies of some discs it is important to choose the best copy. By best, I mean undamaged and least worn. Some of the discs are chipped and cracked, scuffed and scratched and, in the worst cases, broken. The choice in such instances is usually unambiguous although it is less easy to discern which discs are badly worn. In general this afflicts the most heavily modulated discs because loud music, in causing the stylus to move eccentrically, usually manifests the worst erosion. Nevertheless, any disc that has been frequently played will be worn. To compound this difficulty, signs of wear and heavily modulated grooves look rather similar in artificial light. Sometimes the least worn disc is damaged in another way: chipped at the edge for example. In such cases I have to decide whether to choose the un-broken disc and tolerate the surface noise, or to use the better copy and edit-in the beginning from the unbroken disc.

### *Cleaning the disc*

Having chosen the disc the next stage is to clean it. After years of sitting on shelves in open-ended paper sleeves, the discs are certainly dusty. More particularly, the mixture of mineral powders bonded together (originally containing shellac resin), from which the disc's surface is made, leaves a sticky residue in the groove which clogs the stylus if it is not first cleaned away. We have a machine made specifically for this purpose by Keith Monks (<http://www.keithmonks-rcm.co.uk/>): it washes and brushes the discs with double-distilled water before sucking away the dirt and residual water with a vacuum pump.

### *Stylus selection and tone-arm set up*

The record label and year of manufacture give a good indication of the groove dimensions and therefore the most appropriate stylus. Generally speaking the earlier the recording, the broader the grooves: the broader the groove, the larger

the stylus will need to be. Even so, the only real way of determining which is the most suitable is by listening and experimentation. For example, I've just completed a transfer of a complete symphony spanning five discs for which I judged a .0025 elliptical stylus to give the best results. One disc, however, sounded distorted in places, probably as a result of wear. By changing to a slightly larger stylus (.0028) for this side only, I was able to lessen the distortion. If I had decided that because of this I should make all the transfers with the larger stylus there would have been a small yet significant reduction in the high-frequency response. We have seven styli from which to choose and one additional microgroove LP stylus (Shure N44s retipped by the Expert Stylus Company [[http://www.78tours.com/Expert\\_Stylus\\_Company.htm](http://www.78tours.com/Expert_Stylus_Company.htm)]).

*'The transfer engineer who is expected to join the sides seamlessly is cast into a hopeless quandary from which it is impossible to escape unscathed.'*

Other factors need to be determined at the same time and in conjunction with choosing the stylus: the weight of the tone arm, which determines how heavily the stylus rides in the groove, and the necessary equalisation – which I'll come to in a moment. As both of these factors depend to some extent upon the choice of stylus, all three are interdependent. Having said this, it's usually possible to hear which stylus renders the best reproduction before equalization, but as the un-equalised bass is rather weak and the treble very prominent, one cannot always be certain to make the best choice at the first attempt. Besides, the best sonic reproduction is often disguised beneath a correspondingly excellent reproduction of the surface noise.

The most appropriate weight to apply to the cartridge is the least necessary. In this way the stylus will be free to respond to the movements dictated by the groove wall. But, as always, there are compromises to contend with. Warped discs, for example, necessitate the application of greater weight simply to prevent the stylus skipping out of the groove. The trade-off here is sometimes a duller, less responsive sound and an increase in resonance.

The turntable we use is an EMT 948, with a speed control unit made for us by Roger Beardsley, who explains how replay speed and

pitch are fundamental to successful transfer in the resources section of the CHARM website ([http://www.charm.rhul.ac.uk/content/KCL\\_resources/speeds\\_and\\_pitching.html](http://www.charm.rhul.ac.uk/content/KCL_resources/speeds_and_pitching.html)).

### **Archive Copy**

At this stage it's already possible to make a 'flat' transfer (no EQ, filtering, or noise reduction) for archiving. This I do as a matter of course so any additional processing beyond this point is, to this extent, un-doable. But as my remit is to make the audio accessible and useful to musicians and musicologists I need to make some effort to minimise the noise that's the perennial accompaniment to music on 78s.

Re-mastering engineers, whose job it is to prepare recordings for commercial release on CD, have the rather difficult and sometimes thankless task of matching what are often very different sounding originals in order to render them aesthetically appealing to the modern ear. Compilations are particularly difficult in this regard because it's assumed that listeners will be disturbed by sudden qualitative changes between tracks. What's more, the sound changes quite considerably even during a single side of a 78 owing to the gradual diminution in quality, and a proportional increase in surface noise, as the linear speed of the stylus slows as it approaches the centre of the disc. (Other factors such as wax whine and inconsistencies in the speed of the cutting lathe compound this problem.) The transfer engineer who is expected to join the sides seamlessly is cast into a hopeless quandary from which it is impossible to escape unscathed. My task is incomparably easier. For me each side is a separate entity that will end up as a single audio file, and whilst I attempt to maintain continuity between sides - at least with regard to speed, styli and equalisation – I am not impelled to make any effort to match the sonic characteristics of surface noise and tonal balance for aesthetic purposes. Indeed, many of these characteristics are of great interest and usefulness to certain areas of study.

### **Equalisation**

As I said at the beginning, a number of interrelated practical difficulties need to be understood in order to achieve good transfers. Many of these difficulties are the result of

engineering problems faced by the recording engineers at the time of recording. One such problem was that the surface of a 78rpm disc, being comprised of very many small granular particles, excites the replay stylus, generating unpleasant high frequency noise which – if left untreated – would overwhelm the high frequencies of the musical content. In order to circumvent this problem recording engineers in the latter years of the 78rpm record used equalisation to boost the high audio frequencies before recording so that they remained stronger than the noise. This, in audio terminology, constitutes an improvement in the signal to noise ratio.

Although the development of electrical recording overcame the inherently poor bass response that had been the bugbear of acoustic recording from the start, the new technology brought with it another, different yet similarly intractable problem.

In order to understand what follows it's necessary to know that amplitude (or intensity)

is inversely proportional to frequency (pitch). This means that for the cutting engineer using a constant velocity cutter (velocity here refers to the lateral swing of the recording stylus), there was a doubling of amplitude each time the frequency halved; in other words, a constant velocity recording had increasing groove amplitude with decreasing frequency. The problem then was that a recording with sufficient amplitude to reproduce the high frequencies adequately would render the low frequencies at such absurdly high amplitude that the cutter would deviate wildly from its helical path, slewing through the groove wall into the adjacent groove. Indeed, it's quite common to encounter discs that have been so over-modulated that the groove walls become thin enough for the reproducing stylus to be affected by the adjacent groove, resulting in pre or post echoes. To alleviate this problem recording engineers were obliged to employ equalisation to reduce the low frequency amplitude, thereby reducing the cutter velocity and limiting the lateral groove excursions.

**ALAN KELLY AWARDED  
ARSC'S LIFETIME  
ACHIEVEMENT AWARD**

*On 5 May 2007, Alan Kelly, whose work forms the core of CHARM's online discography, was awarded that year's Lifetime Achievement Award by the ARSC (Association of Recorded Sound Collections). The official citation reads as follows:*



*Alan Kelly © Francis Knights*

The Lifetime Achievement Award is presented annually to an individual in recognition of his or her life's work in published recorded sound research. Alan Kelly is recognized as one of the world's foremost discographers. He has dedicated the best part of fifty years to creating detailed discographies of the recordings produced by the Gramophone Company (whose main labels were *His Master's Voice* and *Zonophone*), from its foundation in the United Kingdom in 1898 to its merger with the Columbia Graphophone Company to form Electric and Musical Industries (EMI) in 1931. Kelly worked for many years within the EMI Archives, copying out and then arranging material from the company ledgers to form discographies based on the language or geographical area, and on the technical origin of each record. To date he has completed the Russian, French, Italian and Dutch catalogues of the Gramophone Company, together with ten volumes of the HMV Matrix series. The sheer scale both of the Company's activities and therefore of Kelly's task only becomes clear when one surveys the vast amount of information in this colossal discography, preserved and disseminated by Kelly on CD-ROM.

Clearly then, it's necessary to reverse the equalisation process upon replay in order to reconstitute the original amplitude of the recorded sound. Notwithstanding the fact that we have documentation showing the equalisation that each recording company claims to have used, it's imperative for a number of reasons to evaluate each individual recording aurally, not least because cutting engineers were without doubt more adaptive than company specifications might suggest.

Equalisation (or EQ) always affects a range of frequencies, so it is usual and useful to think of it and express it visually as a curve on a graph. Most people who have experience of audio recording terminology will be familiar with the terms usually associated with equalisation: Hertz (Hz) describing frequency, decibels (dB) for amplitude and Q for bandwidth. However, EQ curves relating to disc cutting are more often expressed as time constants ( $\mu$ ), because they describe the recording

characteristic as the recorded velocity: this is a function of the signal frequency, when the input signal to the disc cutter is constant.

Ted Kendall's Front End pre-amplifier, which we use, has only 3 EQ controls (calibrated in milliseconds) covering the audible frequency spectrum. These are specifically designed and craftily calibrated to maintain the same shape of curve regardless of where the curve is deployed in the audio spectrum. Faced with a conventional equaliser it would be all but impossible to realise the same curves, because of the interrelatedness of amplitude and frequency and the consequent interdependence of each of the controls.

### **Noise reduction**

The final stage of the transfer process involves passing the signal through two devices specifically designed to eliminate some of the most intrusive noise. Cedar Audio's 'decrackler' and 'declicker' do exactly what their names suggest: they go some way to removing certain types of rather specific, un-musical noises and, unlike some other audio noise-removal processors, they do so without adding unwanted artifacts and without colouring the sound. Although they have very simple threshold controls, it's important to set them up carefully to tackle the individual characteristics of each transfer.

Although these processors perhaps make the greatest contribution to enhancing the listening experience of early recordings they unfortunately act upon the recorded sound in a way which is irreversible, no matter how carefully the settings are noted down for future users to reverse. (The clicks and crackles are removed by digital interpolation, which cannot be undone). For this reason the procedure is not universally popular amongst archivists, and we don't use it in our own archive copies, but it plays an important role in the preparation of early audio recordings for wider dissemination.

I generally make no attempt to remove any other type of surface noise from the recordings, because such noise is invariably broad band and therefore impossible to tackle without adversely affecting the audio content.

### **Encoding and mastering**

The transfers are recorded in high-resolution audio onto a digital audio workstation in order to facilitate mastering (Lynx L22 digital sound card, Sequoia digital audio workstation, WAVES plugins). This process usually involves high and low pass filtering at frequencies beyond the limits of the audio content. For example, 78s commonly include a significant amount of low-frequency noise. Rumble from the cutting lathe and electrical mains hum are common causes, and although they were probably comparatively insignificant when the discs were originally released, once the surface noise has been cleaned away these other kinds of noise intrude much more on the listening experience, masking the audio content and clouding the potential transparency of sound. Moreover, many early recordings, particularly those made with an acoustic recording horn, exhibit unwanted resonance at quite specific frequencies. As these are quite distinctive and localized, it's usually possible to ameliorate them to a certain extent using a digital equalizer.

The mastering stage concludes by adding fades to the ambience – or, to be more precise, surface noise - at the beginning and ends of each 78 side. Several different files are then created: 24 bit stereo wav and 16 bit mono wav, from which a lossless FLAC file is derived for downloading. These are all stored on various networked hard drives and DVDs, together with the workstation files and jpeg image files of the 78 labels. We also include the transfer documentation (metadata) as Excel and XML files: these allow for every aspect of the transfer process to be annotated in the smallest detail. At the end of CHARM's work (by the end of March 2009) all this data will be accessible online, linked to the sound files.

If you have questions or comments on this article or the procedures it describes please send them to [andrew.hallifax@kcl.ac.uk](mailto:andrew.hallifax@kcl.ac.uk) before March 2009.

*Andrew Hallifax  
King's College London*

## CHARM RMA ANNUAL CONFERENCE: *MUSICOLOGY AND RECORDINGS*

Royal Holloway, 13-15 September 2007

A peaceful, pre-term Royal Holloway was the setting for the 2007 Royal Musical Association Annual Conference, put on by the AHRC Research Centre for the History and Analysis of Recorded Music (CHARM). Undeterred by the prospect of being at the centre of a foot-and-mouth surveillance zone, a large number of musicians and scholars descended on the Egham campus for the three-day residential event organised by Nicholas Cook and Carol Chan. The title 'musicology and recordings' was broadly interpreted, and the conference served as a valuable interdisciplinary forum for the exchange of ideas between people working in a wide variety of musical areas, including musicologists, ethnomusicologists, performers, producers and sound engineers.

Robert Philip's opening keynote paper praised this current plurality of approaches to studying music through recordings, noting the huge development in the area since he wrote his pioneering PhD thesis more than 30 years ago. However, he stressed that scholars should keep in mind that the standpoint from which we view things might influence what we see. He also highlighted the importance of 'not limiting the field of enquiry to that which is easily measurable', and urged musicologists to spend more time talking with musicians in order to 'find a common language'.



*Robert Philip presents the conference keynote speech*  
© Fausto Borém

The influence of developments in computer software for the analysis of recordings cannot be overestimated, and this was reflected in the analytical papers that used empirical data to furnish new insights into performance style. Richard Turner's study of 100 recordings of Brahms' First Symphony applied statistical analysis techniques to timing data to chart stylistic patterns between conductors. Alan Dodson and Miriam Quick investigated the relationship between performance timing and musical structure in piano works by Bach and Webern respectively, while László Stachó analysed timing microstructure in recorded piano performances by Bartók and Dohnányi. Elsewhere, David Beckford introduced us to the music analysis software waveDNA, and Peter Elsdon took a novel approach to the frequency spectrum to help him pin down the 'sound' of the Icelandic band Sigur Rós.



*Anthony Seeger presenting the RMA Peter Le Huray lecture*  
© Peter Adamson

Many speakers used recordings to talk about historical performance style and to trace patterns of influence between musicians. In a fascinating paper that culminated in a practical demonstration, Abigail Dolan investigated vibrato in early flute recordings to talk about the evolution of the distinctive tone colour of the French School. Historical violin performance is currently a thriving research area, with Eitan Ornoy, Dorottya Fabian, Edward Cross, Ruth Rodrigues, Alison Rabinovici and David Milsom all contributing papers on this topic. David Milsom later expanded upon his paper with an evening violin lecture-recital, in which he



study of melodic variation in sea shanties and Victoria Vaughan's study of performers' use of recordings as learning tools. Specifically, Vaughan showed how the famous 'everlasting' penultimate semiquaver at the end of Puccini's *Nessun Dorma* is a product of early recorded performances, not notation.

In a unique paper, David Trippett explored the ability of recordings to circumvent the one-way passage of time, while the capacity of recordings themselves to become raw material in a compositional process – creating, in Cormac Newark's words, 'music in dialogue with its means of reproduction' – was considered in numerous interesting ways by Mark Katz, Steve Savage, Simon Zagorski-Thomas and Aleksander Kolkowski. From scratching to sampling to performance art, the vast creative potential of recorded music is only just beginning to be realised.

The rich variety of issues raised during the conference was testament to CHARM's achievement in bringing research into performance and recordings into the musicological mainstream. Looking to the future, the calls of Seeger and Philip for further reflection on live performance and more interaction between musicologists and performers may well be answered by CHARM's successor, the AHRC Research Centre for Musical Performance as Creative Practice (CMPCP), to be launched in 2009.

Further details and abstracts at <http://www.charm.rhul.ac.uk/content/events/2007conference.html>

*Miriam Quick & Amy Carruthers  
King's College London*

## CHARM ASSOCIATED DOCTORAL STUDENTS

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### RECORDING THE PRACTICES OF CLASSICAL MUSIC

*Ananay Aguilar  
Royal Holloway, University of London*



My doctoral research explores recording practices within classical music. While musicological studies on recordings focus mainly on performance

practices or compositional aspects, recording practices have mostly been addressed in the context of popular music studies. Through ethnographic techniques and acousmatic analysis of recordings, I will relate musicians' and recordists' ideas of classical music to their recording practices, and conversely, investigate how recording practices construct and perpetuate the culture of classical music. I will argue that the practice of classical music recording revolves around a discourse of technological transparency, where the phonographic work centres on the recreation of a staged (live) performance: while some musicians and recordists hide or downplay the use of technology, are apologetic about it and talk about cheating, others, among the most known of whom were John Culshaw and Glenn Gould, have embraced the creative use of technology as a means to construct virtual

performances, seeing no limit to its creative possibilities other than the implicit values of classical music.

With an open approach to the field ranging from pure observation to direct participation, my research involves formal and informal interviews with recording engineers, producers and performers. Two main case studies form the core of the project. A class at the Royal Academy of Music offered me the opportunity to observe students' intuitive approaches to the studio gained through performance and everyday involvement with recordings. The second case study centres on the London Symphony Orchestra recording the Mahler symphonies with Valery Gergiev for LSO Live, and the Beethoven piano concertos with Evgeny Kissin and Sir Colin Davis for EMI. These series allow a close examination of the discourses around live and studio recordings by one of the most recorded orchestras in the world.

My background in acousmatic analysis of electroacoustic music inspired an analytical approach based mainly on my experience of

listening to recordings without the visual support of scores or digital interfaces. Although it can be argued that acousmatic analysis perpetuates an objective approach to 'the music itself', rather than a more holistic approach to an

embodied musical experience, I will stress the diversity of listening strategies and the relevance of alternative languages to articulate such experience.

## **SIR CHARLES MACKERRAS: LIVE PERFORMANCE – STUDIO RECORDING**

*Amy Carruthers*

*King's College London*

As we sit on the bus with our iPods, and then alight on Waterloo Bridge to attend a concert at the Royal Festival Hall, we might ask ourselves if these two musical experiences are equivalent and interchangeable. Is a recording simply a live performance, captured? And if the answer is 'no', then how and why are they different? I am working to unpick this problem by studying the live performances and studio recordings conducted by Sir Charles Mackerras, aiming in this way to explain how these two performing situations can be understood.



This kind of research involves methods ranging from the analysis of live and studio recordings, through observation of concerts, rehearsals, and recording sessions, to interviewing the people involved. I began by analysing details of the performances such as timbre, declamation and expression, vibrato, dynamics, tempo, timing, and mistakes. Having observed that many performance traits *did* vary relatively consistently depending on whether the occasion was a concert or a recording session, I asked Sir Charles, the performers, and production team members why this might be: how might they describe their approaches to and feelings about various different types of performance situation (including the more recent hybrid phenomenon of 'live' recording).

The results that are emerging shed light on what musicians feel about their art and how performances might vary depending on venue and occasion. For them, a recording is definitely not simply a photograph of a live performance: they see the two situations as completely different, and give very vivid accounts of how and why. Even in this age of technological saturation, many orchestral musicians, although always professional in their approach, still haven't come to terms with the process of recording: the results of repeated takes and editing has trained the public to expect perfection and finesse, but the process which musicians go through to achieve this is far from the collective musical experience of the concert hall that lured them into the profession in the first place.

Inevitably, as with any kind of focused research, one can only get a limited sense of the larger picture. Whereas I am focussing on orchestral music and opera, musicians working in other areas have different concerns: soloists as compared to chamber musicians, violinists compared to pianists. But I hope my work will highlight the important issues, and will help to inspire further fruitful work in the field, whilst also pointing in some interesting directions for the future of performance studies.



## **RECORDINGS AND SALIENT TEXTS AS SOURCES IN THE STUDY OF PERFORMANCE STYLE: EXTRACTS FROM RESEARCH IN PROGRESS**

*Abigail Dolan*

*King's College London*

One of the many interesting facets of the study of recordings is that it enables us to compare theory with practice. Two small examples from 78rpm flute

recordings show some of the questions that arise when one compares recordings and salient teaching texts, and how these comparisons can be useful in discussion of performance style.

The first example is Philippe Gaubert (1879-1941) and his use of vibrato. In his method Gaubert recommends that there should be absolutely no *vibrato* or any form of *chevrotement* (goat-like undulations). But from his recordings we learn that vibrato was an integral part of his tone colour (Example 1). What is the explanation for this striking inconsistency between theory and practice? An examination of flute recordings made in Europe between 1900 and 1920 reveals that Gaubert introduced a vibrato type which differs in acoustical and musical features from others in common use at the time. This, together with the distinction made by Gaubert between ‘vibrato’ and ‘chevrotement’ might suggest that Gaubert didn’t object to the use of vibrato, but only to particular types of vibrato, different from his own.

The second example focuses on the tonal legacy of Charles Nicholson (1795-1837). His approach to tone, and that of his disciples, is described by contemporaries in metaphors such as ‘metallic’, ‘reedy’, ‘specially powerful and “thick” [lower notes]’, and reminiscent of the cornet or the organ. What tone quality are the writers referring to? The answer can be found in recordings. Those by English players such as Winnie Hudson, Daniel Wood, Eli Hudson and Albert Fransella (Examples 2 and 3) reveal that they share a common tonal approach to the flute’s low register. This approach, probably related also to the use of the wooden Rudall Carte flute by many of the English players of the time, is characterised by a very strong low register with little use of vibrato, even by flautists who use it in the upper register. A spectral analysis of these examples suggests that this common ‘reedy’ tone colour results from emphasizing the second and the third harmonics (Figure 1). It was probably this that the commentators on Nicholson’s playing were noticing.

These two examples illustrate how written evidence alone can be misleading or insufficient for obtaining reliable information on performance style. It seems that the lacuna is not so much in the texts themselves, but rather in our ability to read them in their proper context. If we keep in mind the information gained from listening to the recordings, the texts can serve as a useful guiding tool.

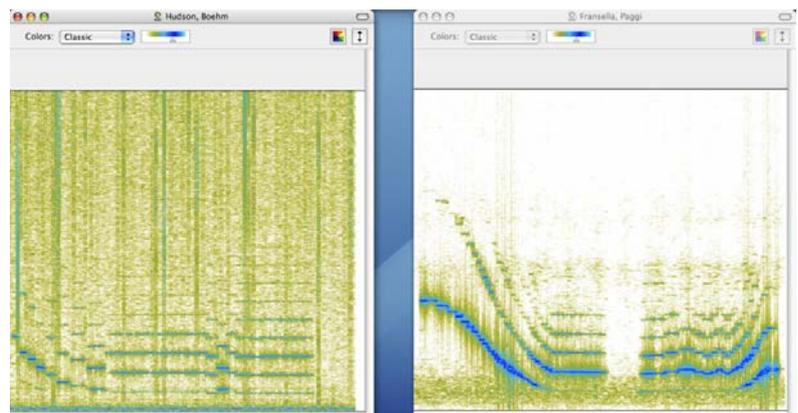


Figure 1: Spectral analysis of excerpts of recordings by Eli Hudson (Example 2, left) and Albert Fransella (Example 3, right)

### Examples

1. Philippe Gaubert (1879-1941), excerpt from his *Soir sur la Plaine*, recorded in 1919 (Gramophone W 365, matrix no. 039154, 774 aj). [<http://www.charm.rhul.ac.uk/content/resources/2008newsletterdolan1.mp3>]
2. Eli Hudson (1877-1919) excerpt from Boehm’s *Variations sur un Air Allemande* op. 22, recorded in 1908 (G&T 09150, matrix no. 2438). [<http://www.charm.rhul.ac.uk/content/resources/2008newsletterdolan2.mp3>]
3. Albert Fransella (1865- 1935), excerpt from Paggi’s *Rimembrance Napolitane*, recorded in 1911 (Columbia Rena records 1674, 27307). [<http://www.charm.rhul.ac.uk/content/resources/2008newsletterdolan3.mp3>]

The recordings are part of the private collection of Christopher Steward.



## HACKING INTO THE THICKETS

Nick Morgan  
University of Sheffield

In my first year of research on the National

Gramophonic Society (1924-1931), I worked through the richest and closest source for its

history, *The Gramophone* – which also led me to less well known contemporary sources, apparently little tapped by historians of recording but no less interesting: national and local newspapers, British and foreign music and gramophone journals. Some of the foreign ones remain to be consulted (in New York and Paris); those available here in the UK have proved fascinating and, I hope, may fill in our picture of how the gramophone went from being ‘a detestable interruption of conversation and country peace, the golf of sound’ (Compton Mackenzie, *The Daily Telegraph*, 2 September 1922) to conquering polite society and the musical world.

Eric Clarke often reminds me that I’m studying recordings, not just words about them, so I have gathered dubs of all the NGS’s issues, as well as supplying historical information to Pristine Audio (Pristine is making them commercially available online in association with *Gramophone*, for whom I recently recorded a podcast). I have also been part of the group supporting Andrew Hallifax at King’s College London in his work of choosing and transferring recordings from the College’s collection, in preparation for making them freely available for study online. I helped to make the KCL collection easier to mine by making accessible catalogue data donated by the BBC, and by writing a guide to it and coaching colleagues in its use. Finally, I helped other colleagues locate hard-to-find recordings for their research.

## **Navigating Musical Space-time: Expression and Movement in Music**

*George Papageorgiou*

*Royal Holloway, University of London*

My main concern with music analysis as practised today is its over-emphasis of abstract, structural relations between musical objects. Such abstract relations do not always relate directly to the experiential qualities of music and, in particular, those real-time qualities that ‘move’ the listener, not only metaphorically but also literally. This is one of the main features that have alienated music performers from music theory and created a gap between theory and practice. Rather than accept this gap, the aim of my research is to bridge it by proposing an analytical method that can equally engage the performer, listener and theorist.

I analyse both compositional and performance structure in terms of expressive and motional qualities so as to reveal the relation between musical and physical movement. Expressivity in music derives its

Returning to the NGS, I have started getting to grips with the production and pressing of its issues, by investigating matrix and manufacturing marks on the discs themselves and surviving matrix cards; discographer David Mason kindly pointed me to the latter, available at the British Library on microfilm, and initiated me into their decipherment. It was nice, if a little frustrating, to see my first findings confirmed and extended by unpublished research generously shared by another veteran discographer, Frank Andrews, who showed me how much I still have to learn about this part of the industry. Also at the BL, I discovered that the Society published sides of Ravel’s String Quartet, under the composer’s signature, which he had asked to be re-recorded – oops! – as well as copies of other NGS discs with labels stamped ‘Review Copy Not For Sale’, which shows how the NGS got its discs reviewed. Other discs have been identified as belonging originally to music (and record) critic Edwin Evans or to Gerald Cooper (1892-1947), who sponsored chamber and early music concerts in the 1920s, often with NGS artists.

Which brings me to another potentially fruitful line of research: I have started investigating what I suspect may be the true ‘home’ of some NGS members, the period’s plethora of chamber music societies, from the South Place ‘popular’ concerts, via Cooper’s concerts, to André Mangeot’s Music Society and the Lieder Society – run by one Walter Legge....



meaning, at least partly, from our embodied experience: performers shape expression through their whole body while listeners react to it in a comparable way, albeit less overtly. I have developed two related graphic notation systems, which provide a non-verbal means of representing expressive movement and at the same time encourage one to relate to the music in a more immediate, visceral manner. The first allows the analyst to capture the expressive movement or character of music by creating a bouncing ball animation; the second achieves the same goal by means of static graphic symbols, which represent expressive gestures of different character.

While the ultimate value of this method lies in the analytical process it instigates, it also provides a flexible tool for the study of such music-theoretical issues as the interaction between metre and rhythm, between both of these and harmony, and between structure and expression. Its main strength, however, lies in its use for the study and communication of performance interpretation, based on data extracted from recordings through the use of Sonic Visualiser. More specifically, the method allows one to study the expressive meaning of specific tempo and dynamic shadings by themselves, in relation to each other and to the compositional structure, and in relation to bodily rhythm and movement. Central in this study is also the idea of the 'expressive potential' inherent in the compositional structure of music, which acts as a creative constraint upon the performers who strive to balance objective beauty and creative freedom.



## MODERNITY ON RECORD

*Miriam Quick*

*King's College London*

Crystalline, frozen, suspended on steel wires: reviews of Webern recordings written between about 1950 and 1980 are full of descriptions like these. Such inorganic metaphors must have seemed to perfectly capture the sense of geometric space and static otherness evoked by Webern's rigorously organized, highly abstract late serial music – music that to many still sounds resolutely impermeable and alien. And yet today, with the benefit of 60 years of Webern performance on record, we can see just how much these reactions to the music were bound up with a particularly formalist strand of modernist ideology and a now largely superseded performance style. While recordings of Webern from the middle years of the twentieth century (most famously Robert Craft's complete set of 1957) emphasise the pointed contours, sharp disjunctions and harsh discords of his atonal and serial scores, more recent recordings adopt a more flexible stance, stressing the linear continuities, lyrical gestures and subtly patterned surfaces of the music: Pierre Boulez's latest complete Webern makes the point abundantly. That this new performance focus on actual sound, rather than notated structure, is paralleled by recent trends in Webern

scholarship is probably no accident. Nor are the wider connections between the changes in Webern performance style and those in compositional style. Such general historical connections between sounds and ideas, between music as written and music as heard, demand to be explored.

Recordings allow us to illuminate these connections. While only one of Webern's works was recorded during his lifetime (the String Trio, Op. 20, in 1939), a surprisingly large number of recordings of Webern's works are now available, including three sets of the complete works. Jointly with Nicholas Cook, I have collected over 50 recordings of the Piano Variations, Op. 27, dating from 1948 to 2006, and used them in my empirical study of timing and dynamics in the first movement, based on data gathered in Sonic Visualiser. Of course, recordings also allow one to focus closely on specific extracts, and the compact, gestural, densely expressive style of Webern's music makes it an ideal candidate for a detailed approach that reveals not only a great variety of performance possibilities – ways in which pianists can create very different motional (and emotional) trajectories of shape and weight – but also the wealth of meaning that can be created by a single, tiny expressive nuance.

In keeping with this detailed approach, I am currently working on a project on intonation in recordings of a passage from Webern's String Quartet, Op. 5, using an aural comparison method to determine the tuning of each note as accurately as possible. Preliminary results indicate that the theoretical edifice of enharmonic 12-note equal temperament upon which atonality might seem to depend is just that – theoretical – and seems to have little

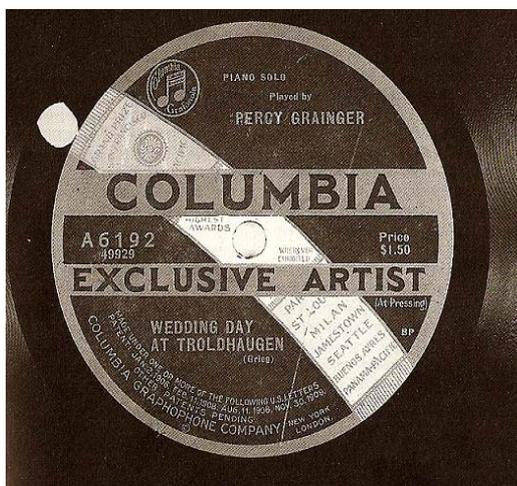
direct relevance to most quartet performances. Instead, the intonation choices adopted by players seem to depend on a complex web of contextual and expressive factors. In moving between the general and the specific, the empirical and the historical, it is my goal to be as holistic as possible in my investigation of the various forces – acoustic, perceptual, psychological, socio-cultural – that act upon us when we listen to a piece of recorded music.

## A NOTE ON GRIEG

*Georgia Volioti*

*Royal Holloway, University of London*

'I wrote my music', said Grieg, 'so that it will be played, sung and enjoyed in every fisherman's and peasant's hut in Norway where there is a piano.' And it was, though he could not have predicted that many of his piano pieces would remain largely unknown, forgotten or cast aside as the miniatures of a 'lesser genius'. Regrettably, neither Grieg nor his piano music have had an easy ride on the bandwagon of musicological reception: more effort has been expended in demonstrating what his music doesn't aspire to architecturally than in understanding what it is about, how it draws one in, and what it has to offer for the listener, the performer and the scholar alike.



With these issues in mind, I am looking at the recorded performance history of a selection of the Lyric Pieces and a few of the lesser known Slåtter dances. One of my objectives is to map out changes in performance interpretation from the early twentieth century to the present day. I have been focusing on tempo and dynamics to trace how these parameters have been used by different pianists to portray contrasting conceptions of Grieg's music. Despite the technical hurdles in generating data from recordings - some 120 in total and the number is still growing - the musical journey of discovery has certainly been worth it: I have had the rare opportunity to listen to a vast number of recordings and find out how each performer brings Grieg's music to life in their own unique way. (Needless to say, copious amounts of tapping, editing and playback set one up for an unmistakably intimate listening experience!)



The masterful lyricism of Walter Giesekeing never fails to capture the delicate moods and delicious harmonies of the Lyric Pieces, while the spirited elasticity found in Fridtjof Grøndahl's playing adds a distinctive improvisatory element, and Grainger's exuberant and impulsive pianistic personality takes them to a new physical level. Amidst my recording collection are a handful of Grieg's very own early recordings of his Lyric Pieces and other piano compositions. These fragile rarities of recording history open up a window into Grieg the pianist, the sensitive albeit frail man, the composer inspired by his native land, the contemplative musician and

ardent lover of nature. And of course, accompanying this learning curve are all those wonderful revelations about the music itself: how a mood transcends the moment through a jolting folk rhythm, a ‘halling’ from the distance, an unexpected mischievous chromatic shift, or a snapshot of a serene landscape with harmonic brush strokes that are unmistakably Griegian.

The Lyric Pieces are musical jewels with something for every taste, while the Slåtter dances invite you to delve into their world with uninhibited zeal, though they will trip you up with their polyrhythms and intricate accent patterns. Grieg’s music celebrates small spaces with power in modesty and touches us deeply because it is about ‘the truth of feeling’, as the composer himself expressed it. In this sentiment lay for another great artist, Emil Gilels, the significance of Grieg’s music - the musical formulation of truth in the ever-seeking, solitary human being.

## MUSICAE SCIENTIAE ABSTRACTS

*The following abstracts are reprinted from the special CHARM issue of Musicae Scientiae, vol. 11, no. 2 (Fall 2007). To find out more please visit <http://musicweb.hmt-hannover.de/escom/english/MusicScE/MSstart.htm>*

### An algorithm to extract expressive timing and dynamics from piano recordings

*Andrew Earis (Royal College of Music)*

Measurable features of expressive piano performance include timing, dynamics, articulation and pedalling. This paper concerns the measurement of expressive timing and dynamics in audio recordings of piano music using a multi-stage semi-automated expression extraction process. A digitised version of the musical score is synchronised with the audio recording using a simple manual beat tapping system. The continuous wavelet transform (CWT) is then employed, with a Morlet wavelet, to correct the beat tapped times, and any further errors are then corrected manually. Precise note and chord onset times and dynamics of the recorded performance can then be calculated using the CWT. Sample results of the measurement of expression in keyboard music by Bach are given and the application of the algorithms to end users discussed.

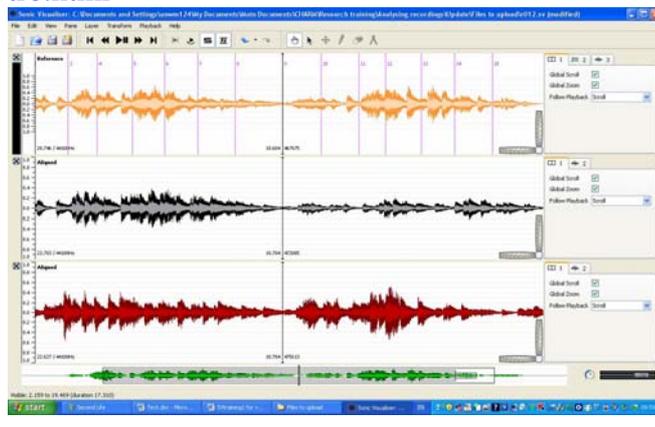
### Performance analysis and Chopin’s mazurkas

*Nicholas Cook (Department of Music, Royal Holloway, University of London)*

Reporting on work carried out in conjunction with Andrew Earis and Craig Sapp, this paper introduces recently developed approaches to the analysis of recorded music, illustrating them in terms of selected Chopin mazurkas. Topics covered include the stylistic characterisation and aesthetic values of Paderewski’s playing of Op. 17 No. 4, contrasted with performances from the last quarter of the twentieth century, as well as relationships between different pianists’ interpretations of Op. 68 No. 3. A possible performance genealogy of performances of the latter is proposed, in which recordings by

## SONIC VISUALISER UPDATE

At the beginning of this year Queen Mary, University of London, launched version 1.2 of Sonic Visualiser, the playback and visualisation program which is heavily used in CHARM's analytical projects. This is a major upgrade: it is for example now much easier to create on-screen tempo graphs, but perhaps the most important development is that you can work with multiple recordings of the same piece, and Sonic Visualiser will automatically lock the recordings together so that you can jump from a given point in one recording to the same point in another. We have revised the CHARM tutorial on using Sonic Visualiser for analytical purposes to include the new features, and you can find it at <http://www.charm.rhul.ac.uk/content/svtraining/intro.html>



Rubinstein and Cortot play a key role, while clustering based on Pearson correlation of tempo data yields relationships supported in one instance by documented teacher/pupil relationships. Representing the early outcomes of a more extended research project, these findings are encouraging in that it appears possible to draw meaningful conclusions from the consideration only of tempo data. The current phase of the project is also working with rhythmic and dynamic data, which should significantly enhance the potential for objective modelling of musically meaningful relationships.

### **Sound and meaning in recordings of Schubert's 'Die junge Nonne'**

*Daniel Leech-Wilkinson (Department of Music, King's College London)*

Musicology's growing interest in performance brings it closer to musical science through a shared interest in the relationship between musical sounds and emotional states. However, the fact that musical performance styles change over time implies that understandings of musical compositions change too. And this has implications for studies of music cognition. While the mechanisms by which musical sounds suggest meaning are likely to be biologically grounded, what musical sounds signify in specific performance contexts today may not always be what they signified in the past, nor what they will signify in the future. Studies of music cognition need to take account of performance style change and its potential to inflect conclusions with cultural assumptions. The recorded performance history of Schubert's 'Die junge Nonne' offers examples of significant change in style, as well as a range of radically contrasting views of what the song's text may mean. By examining details of performances, and interpreting them in the light of work on music perception and cognition, it is possible to gain a clearer understanding of how signs of emotional state are deployed in performance by singers. At the same time, in the absence of strong evidence as to how individual performances were understood in the past, we have to recognise that we can only speak with any confidence for our own time.

### **Vocal expression in recorded performance of Schubert songs**

*Renee Timmers (Nijmegen Institute for Cognition and Information, University of Nijmegen)*

This exploratory study focuses on the relationship between vocal expression, musical structure, and emotion in recorded performances by famous singers of three Schubert songs. Measurement of variations in tempo, dynamics, and pitch showed highly systematic relationships with the music's structural and emotional characteristics, particularly as regards emotional activity and valence. Relationships with emotional activity were consistent across both singers and musical pieces, while relationships with emotional valence were piece-specific. Clear changes in performing style over the twentieth century were observed, including diminishing rubato, an increase followed by a decrease of the use of pitch glides, and a widening and slowing of vibrato. These systematic changes over time concern only the style of performance, not the strategies deployed to express the structural and emotional aspects of the music.



*Sonic Visualiser enjoys a spot of free advertising in the Scottish Highlands © Craig Sapp*

### **Making and hearing virtual worlds: John Culshaw and the art of record production**

*David N. C. Patmore and Eric F. Clarke (Department of Music, University of Sheffield)*

A recording represents a paradoxical perceptual source: we can either attend to the sound of the medium, or to the virtual world conveyed by it, and the work of a record producer can be understood as either a process of capturing performances or one of creating

virtual worlds. This paper demonstrates that the record producer John Culshaw had clear ideas about how recordings might approach the condition of a work of art, rather than being simply the trace of a moment in time. Culshaw's fundamental aesthetic and technical approach is described and illustrated with reference to a number of key recordings. Taking the relationship between sound recording and film as a starting point, and making use of the concept of subject-position, the tension between Culshaw's radical approach to the listener and traditional approach to the authority of the score is explored.

Possible reasons are proposed for the abandonment of his ideas, and for the absence of a Culshaw legacy (apart from the recordings themselves). The paper ends with a brief discussion of the current paradigm for the recording of classical music, which seeks in various ways to reproduce 'the live experience' in 'the finest seat in the house'.

### **Towards greater objectivity in music theory: Information-dynamic analysis of minimalist music**

*Keith Potter\**, *Geraint A. Wiggins\*\** and *Marcus T. Pearce\*\** (\* *Department of Music, Goldsmiths College, University of London*; \*\* *Department of Computing, Goldsmiths College, University of London*)

We present evidence for a relationship between two objective measures of the information dynamics of music and points of structural importance in the music as analysed by an expert musicologist. Our approach is motivated by ecological validity: rather than taking musical stimuli and artificially simplifying them to make their study tractable, we have sought and found music which is appropriate to our study. We give a novel, detailed analysis of one piece, Glass' *Gradus*, and show how the analysis corresponds with the information dynamics of the piece as heard. To show that this correspondence generalises, at least to music in a similar style by the same composer, we go on to analyse Glass' *Two Pages*. We suggest that this research provides further evidence that information-dynamic modelling is a worthwhile approach to the study of music cognition and also has the potential, if automated, to be a powerful tool to increase objectivity in data-based music analysis.

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## **THE CAMBRIDGE COMPANION TO RECORDED MUSIC**

*One of CHARM's deliverables is The Cambridge Companion to Recorded Music, which is co-edited by the CHARM directorate and aims to provide a structured introduction to the study of recordings. A particular feature is that the main chapters are complemented by 'personal takes', short essays by practitioners that focus on a particular aspect of recording and recordings. The volume will shortly be delivered to the publishers, and the almost finalised table of contents is as follows:*

Learning to live with recording *Susan Tomes*

A short take in praise of long takes *Peter Hill*

### **1 Performing for (and against) the microphone *Donald Greig***

Producing a credible voice *Mike Howlett*

'It could have happened': the evolution of music construction *Steve Savage*

### **2 Recording practices and the role of the producer *Andrew Blake***

Still small voices *Jonathan Freeman-Attwood*

Broadening horizons: 'performance' in the studio *Michael Haas*

### **3 Getting sounds: the art of sound engineering *Albin Zak***

Limitations and creativity in recording and performance *Martyn Ware*

Records and recordings in post-punk England, 1978-80 *Richard Witts*

### **4 The politics of the recording studio *Louise Meintjes***

From Lanza to Lassus *Tully Potter*

### **5 From wind-up to iPod: techno-cultures of listening *Arild Bergh and Tia DeNora***

A matter of circumstance: on experiencing recording *Martin Elste*

### **6 Selling sounds: recordings and the music business *David Patmore***

Revisiting concert life in mid-century: the survival of acetate discs *Lewis Foreman*

- 7 The development of recording technologies** *George Brock-Nannestad*  
 Raiders of the lost archive *Roger Beardsley*  
 The original cast recording of 'West Side Story' *Nigel Simeone*
- 8 The recorded document: interpretation and discography** *Simon Trezise*  
 Technology, the studio, music *Nick Mason*  
 Reminder: a recording is not a performance *Roger Heaton*
- 9 Techniques for analysing recordings** *Nicholas Cook*
- 10 Recordings and histories of performance style** *Daniel Leech-Wilkinson*  
 Recreating history: a clarinettist's perspective *Colin Lawson*
- 11 Going critical: writing about recordings** *Simon Frith*  
 Something in the air *Chris Watson*
- 12 Nipper's dilemma: values in the age of mechanical reproduction** *Georgina Born*

## PROJECT UPDATES

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### CREATION OF WEB-BASED DISCOGRAPHICAL RESOURCES

The past year has seen the Centre for Computing in the Humanities (CCH) at King's College London devote increasing time and expertise to CHARM, carrying out impressive work on site modelling and input interfaces. The revised XML for the Italian catalogue generated a manageable quantity of queries, indicating that when the remaining catalogues are tagged using this automated approach the errors made by the system will be few enough for the Discography Project Manager, Francis Knights, to be able to correct them fairly quickly and return the script to CCH for mounting in the database. The inventory of core data produced by CCH as a map through which to manage the workflow is being annotated with target dates for the remaining stages to ensure progress remains on course. The web interface awaits a final 'visual skin' to be produced by Paul Vetch at CCH.

The Alan Kelly data is now completely ready for tagging. Michael Gray has provided all his discographic catalogues cumulated into a single MS Access file, which greatly reduces the amount of time required to incorporate his data into the database. The rekeying of WERM (World's Encyclopedia of Recorded Music) is now complete. The conversion and integration of the Gray bibliographies of discographies are making satisfactory progress, and the first of what we hope may be a small collection of audio biographies – memoirs of producers and

sound engineers – has been received. This is so substantial that it will make a significant section of its own in the website even if no further suitable scripts are offered.

#### *Transfers*

The rate at which 78s are being transferred has increased but has reached a ceiling due to (i) the professional care being taken to produce the best possible sound, (ii) the amount of time it takes to enter all the metadata, and (iii) the time required to transport discs between the archive and studio. We can expect, therefore, that the final total of sides transferred will approach 3,000. We have had no equipment failures in the past six months, so that work has proceeded from day to day consistently and with admirable dedication and good humour from the Transfers Technician, Andrew Hallifax.

#### *Sonic Visualiser*

Version 1.2 of Sonic Visualiser was released in late February, after numerous pre-release versions on which we gave feedback. 1.2 represents a major step forward in allowing the exact alignment of multiple performances, which greatly facilitates comparison, in its added spectrum analysis tools which allow us to work more closely on timbre, and in its much improved graphing of tempo and loudness, which means that users no longer need to export data to a spreadsheet. It seems fair to say that

Sonic Visualiser now does everything that could ideally be imagined.

### ***Related projects***

Linked to the discographic database are two additional projects. On the basis of materials from BBC Written Archives at Caversham and elsewhere, Daniel Leech-Wilkinson has assembled a selection of BBC radio scripts from the 1930s and 1940s that present selections of gramophone records. We plan to put these up as a section of the website, with transfers from the King's Sound Archive (which Andrew Hallifax is already making) providing the illustrations. In some cases the discs we use are the very discs that were originally played on air. Copyright clearance is being sought from the estates of the authors of the scripts, but so far only three have been traced; we propose that the remainder are put up with a note inviting estates to contact us. The well-known broadcaster Peter Day has generously provided his time and skill in recording one of the scripts as a spoken reconstruction of the programme. We see this exercise as providing a valuable insight into one of the ways 78rpm recordings were experienced; it also links with the second of the additional projects, a pilot study of the long-running radio programme *Desert Islands Discs* being undertaken with funding from Royal Holloway by Julie Brown, Nicholas Cook and Jonathan Tyack. This study consists of a comprehensive audit of available materials on the programme, which is an

### **ANALYSING MOTIF IN PERFORMANCE**

Considerable methodological development and analytical work have occurred in months 7–18 of this project. This has involved not only John Rink and Neta Spiro but also Dr Nicolas Gold (KCL), with whom a fruitful collaborative partnership was established during the early stages of the project. Building on their initial work, Spiro and Gold have now devised a flexible and innovative program using formal concept analysis which identifies repetitions of performance information based on timing and dynamics. They presented this work at the CHARM symposium on analytical methods in April 2007, while further papers were given by Spiro at the International Symposium on Performance in Porto (November 2007) and the Inaugural International Conference on Music Communication Science in Sydney (December 2007). Additional collaborative activity with Gold has resulted in a second program using self-organising maps (SOMs) and a database, as a result of which nuanced repetitions of performance information based on timing have been extensively identified. This second program is also

exceptionally rich source of information on the consumption of and personal meaning attached to music over a sixty-five year period, on the basis of which it is hoped to mount a full-scale funding application. Initial findings were presented at the April 2008 symposium.

### **TRY OUT SOME CHARM TRANSFERS**

When CHARM goes live we shall be offering several thousand free transfers of 78rpm recordings. We'd like to hear your views on the quality and format now, before it's too late! On the website, at <http://www.charm.rhul.ac.uk/content/resources/cortotsides.html>, you can find some examples. These are previously unissued performances of Chopin Preludes recorded by Alfred Cortot in 1927-28 and recently discovered in the King's Sound Archive. Cortot recorded his core repertory for the Gramophone Company several times between 1923 and 1928, and then again several times later in life. He typically needed several sessions to produce a set of takes consistent enough to issue. From time to time some of the unissued takes turn up hidden as replacement sides in the official sets. From the 1926-28 sessions of Chopin Preludes, for examples, the official set on HMV DB 957-960 came from 1926, but we also know of four test pressings from 1928, held by the International Piano Archives at Maryland, and now these 'new' sides at King's, alternative takes from the same sessions plus one from the previous year.

The downloads offer the first chance for anyone to hear them. We're issuing them in the FLAC lossless compression format which we intend to use for all the CHARM transfers. You can play them with the latest versions of common music software programs including Winamp. We ask readers to download these tracks, play them, and email us with comments on the sound quality and ease of use ([Andrew.hallifax@kcl.ac.uk](mailto:Andrew.hallifax@kcl.ac.uk)).

And if you're interested in searching out more unissued Cortot there's a page on the website that tells you what to look out for.

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 specifically with regard to the aims of this project: 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. Papers on the most recent work were presented by the entire project team at the CHARM staff seminar in February 2008, and by Gold and Spiro at CREST (KCL's Centre for Research on Evolution Search and Testing) in March 2008.

During the final year of the project, the team will further develop the self-organising map software and accompanying database in order to analyse intensity data, and then compare intensity and timing data in performances. We will also continue to investigate the effect of differences between performances on listeners' perceptions of the latter. An initial exploratory study has begun in which examples have been played of different performances of the pieces that we have been analysing, in order to explore listeners' responses on a set of criteria reflecting expressive characteristics and predictability. We have started our investigation with trained musicians, but we intend to broaden it to participants with a range of practical musical experience. This should allow us to explore the extent to which differences in performance characteristics are salient to various types of listeners.

We have intentionally delayed some of the analytical studies and brought forward the dissemination of project results (i.e. in the form of the publications and conference papers referred to above). These adjustments resulted from a re-phasing of the methodological work being carried out by Spiro and Gold; there will be no adverse impact on the project's eventual outcomes.

## **EXPRESSIVE GESTURE AND STYLE IN SCHUBERT SONG PERFORMANCE**

Over the past four years the project has met all its scheduled targets and outputs, with some further publications and extra dimensions explored in Renee Timmers' work. One output remains: the article due to appear in the second CHARM special issue of *Musicae Scientiae*. Over the past few months work has begun on this. The aim is to focus directly on the one question raised in the original proposal that, although constantly present in all the studies to date, has not yet been placed directly in the spotlight: 'to clarify the nature of performance style by modelling it as a coherent collection of gestures, related by shared properties and intentions'. For this final phase, therefore, Leech-Wilkinson has been exploring the feasibility of defining a performer's personal style through a study of the vocabulary formed by their repertoire of expressive gestures. This study will be focussed on the Schubert song recordings made by Elena Gerhardt between

1923 and 1929. Most of her Schubert recordings date from these years, which overlap helpfully with the period covered by the Sheffield project. Work so far, using the new features of Sonic Visualiser 1.2, has concentrated on distinguishing between the timbre of Gerhardt's voice and her characteristic vowels, with help being sought from experts in singing-voice recognition and analysis. The intention is subsequently to return to the kinds of analysis developed in the earlier studies within this strand and try to show how they can be used to define a personal style.

Work carried out within this project has also fed significantly into a book now completed in draft form by Leech-Wilkinson, entitled *The Changing Sound of Music: Approaches to Studying Recorded Musical Performances*, in which approximately half the examples relate to Schubert songs.

## **STYLE, PERFORMANCE, AND MEANING IN CHOPIN'S MAZURKAS**

This period took in the last four months of Craig Sapp's full-time work on the project, and saw consolidation and some additional development of analytical tools, plus the beginning of more sustained work on their musicological application. Andrew Earis's software for timing and dynamic data capture, delivered in its original form before this period, has been extensively tested and optimised, and is now available on the web: a draft manual with links, prepared by Craig Sapp, is available at

<http://www.mazurka.org.uk/software/earis/v100/>. This utility is intended for serious work requiring refined beat values, sub-beat values, and polyphonic dynamic data, and involves relatively complex data preparation; users needing comparatively basic data (beat and global dynamic values) will find it more convenient to use Sapp's plug-ins for Sonic Visualiser. Further additions have been made to the Mazurka project online software (<http://www.mazurka.org.uk/software/online/>), which now includes a utility to derive dynamic values at specified points (e.g. beats) to facilitate the correlation of tempo and dynamic data. A major priority for CHARM's final year is to pull together the analytical deliverables and data from the Mazurka project, the research training materials based on Sonic Visualiser, and other resource pages at <http://www.charm.rhul.ac.uk/content/resources/resources.html> into a clearly organised suite of web pages with full documentation.

The priority during the period of Sapp's full-time employment with CHARM was the development of data structures, capturing of data, and development of analytical approaches and tools. As planned, the focus is now on making use of these for musicological purposes. This work is being undertaken by Cook and has progressed in two major ways. First, an approach originally outlined at the 'Reactions to the Record: Perspectives on Historical Performance' conference (Stanford University, April 2007) has been developed into a full-scale study of phrase arching in recordings of the Mazurka Op. 63 No. 3, focussing on interactions between timing and dynamics; phrase arching is broken down into a number of separate, independently quantified components, and the resulting patterns analysed in terms of historical development. The aim is not only to find ways of analysing an important interpretive phenomenon at a stylistic level, but also to investigate the relation between such practices and broader aesthetic currents (for instance in architecture and other aspects of material culture). This research is to appear in a book based on the Stanford conference. A follow-up study, also involving Op. 63 No. 3, focusses on the relationship between audio performance characteristics and aspects of visual and kinesthetic presentation, based on a range of YouTube videos (encompassing amateur as well as professional performances); a preliminary version was presented as a keynote paper at the SEMPRES (Society for Education, Music and Psychology Research) conference on 'Empirical Musicology' (2-3 April 2008).

The second focus of musicological work is the book which will form the principal project outcome, which will place work on the Mazurkas in the context of a wider range of repertoires. Other areas to be studied include (i) recordings by performers known to and commented on by Heinrich Schenker, whose extensive analytical writings on performance are not well understood because scholars have attempted to understand them in terms of present-day performance styles; (ii) a stylistic study of recordings of Webern's Piano Variations Op. 27, based on an almost exhaustive collection compiled over the past year, in which the focus will be in part on the relationship between atonality and performance style, and in part on that between performance style and broader cultural values; and (iii) a study of the relationships between kinesthesia and interpretation, ranging from performances of Chopin's mazurkas and Webern's Op. 27 to Jimi Hendrix's stage performances. The book is provisionally entitled *In Real Time: Analysing Music As Performance*.

## RECORDING AND PERFORMANCE STYLE

Work on this project has progressed in two main ways: first, in terms of the business history of the recording industry in England during the period of study and beyond; and second, through a detailed examination of three leading conductors of the period, Albert Coates, Piero Coppola, and Sir Henry Wood.

The business history study resulted in an unexpected initial conclusion: the strategy for the merger of the two British companies, the Gramophone Company and the Columbia Graphophone Company, to form EMI (Electric

and Music Industries), was apparently driven by David Sarnoff, the board member of the Gramophone Company representing its majority share holder, The Radio Corporation of America (RCA). The impact of this strategy was simple but extremely far-reaching: the record industry in the UK, Europe and the Far East moved from being a vigorous competitive environment to an effective monopoly.

It is the cultural consequences of these changes that have been examined through the careers of

the conductors mentioned above: this exemplifies the consequences of the business activities outlined above in a very concrete manner and again with unexpectedly far-reaching consequences. Additional research at the EMI archive into the careers of Sir Henry Wood and Albert Coates, completed in October 2007, demonstrated that the merger had the effect of drastically reducing the range of performance styles that were recorded: in place of the stylistic variety displayed during the competitive 1920s, the following decade saw a more limited range of interpretive styles, led by internationally recognised musicians. The research also suggested that a combination of monopoly, a more limited number of musicians recorded, and the strong growth of electronic distributive and promotional media such as radio, television and film, resulted towards the end of the 1930s in the presentation and acceptance of certain musicians as cultural superstars, who through the same mechanisms exerted a perceptible influence upon subsequent performance styles. This represents a decisive shift in the culture of recorded classical music.

As envisaged in the original plan, we have experimented with the dissemination of research findings through a CD-ROM on Piero Coppola, the Gramophone Company's artistic director in France between the wars, which brings together his autobiography, biography, and discography, as well as approximately sixteen hours of his recordings. However the practical difficulties of clearing copyright, particularly for the use of modern transfers, constrain public distribution of the CD-ROM. In future we shall therefore place on the CHARM website documentary materials relating to the major house conductors of the 1920s (also including Albert Coates, Lorenzo Molajoli, Landon Ronald, Carlo Sabajno, Bruno Seidler-Winkler, and Frieder Weissmann), with links to transfers of relevant sound recordings drawn from the King's College London collection. We believe that this not only will ensure much wider dissemination than the originally proposed CD-ROMs, but will also act as a model for use of the internet to disseminate such research through associated textual, graphic, and sound materials.

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## COPYRIGHT UPDATE

Since last year's Newsletter there has been good news and bad news. The good news is that legislation is now in train to follow up the Gowers Review's recommendation that sound recording be fully covered by the fair dealing exceptions (meaning that it will be legal to copy extracts for purposes of research as well as criticism and review). The bad news is that, following Gowers' rejection of the music industry case for an extension of copyright on sound recordings, there has been extensive lobbying in Brussels, as a result of which Commissioner Charlie McCreevy has proposed that copyright on sound recordings within the EU should be extended to 95 years, in line with recent legislation in the US. This might be expected to have the same disastrous effect on the accessibility of early sound recordings as has been documented in the US (see Tim Brook's *Survey of Reissues of US Recordings*, <http://www.clir.org/pubs/reports/pub133/contents.html>).

CHARM is extremely concerned about these proposals. We consider that the principal effects of such an extension would be

- to drastically restrict public access to the heritage of recorded music, which now goes back over a century, as happened as a result of the similar extension in the US. This is entirely contrary to EU policies for the public dissemination of cultural materials
- to damage or destroy a thriving industry that is issuing highly affordable transfers of ex-copyright recordings, together with the increasing public interest in and access to classical music which this industry has facilitated
- to give windfall profits to the music industry, clearly unrelated to the investment that the industry made 60 or 90 years ago.

What we do not believe such an extension would do is provide significant additional income for performers, other than for a small minority of highly successful artists already of high net worth. Accordingly we believe that the positive effects of such an extension for certain elements within the music industry would be greatly outweighed by its negative effects on other parts of that industry, and

on public appreciation of the European musical heritage. This view is shared by a number of lawyers and economists with whom we are in touch, and Martin Kretschmer (University of Bournemouth) is gathering empirical evidence in support of it.

Commissioner McCreevy's initial proposal is at <http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/08/76&format=HTML&aged=0&language=EN&guiLanguage=en>. The plan is for formal proposals to be announced later in the summer, when they will go out for national consultation. At that point you might wish to make your views known to your local MP. Or in the meantime you might wish to email Commissioner McCreevy ([charlie.mc-creevy@ec.europa.eu](mailto:charlie.mc-creevy@ec.europa.eu)), or contact your MEP ([http://www.europarl.org.uk/uk\\_meps/MembersMain.htm](http://www.europarl.org.uk/uk_meps/MembersMain.htm)). There is also a petition against copyright extension at <http://www.soundcopyright.eu/petition>.

## New Charm City Events

Coming Soon!  
Fishing on the NCC Docks  
Patapsco Beach  
with  
Windsurfing and Swimming  
NCC Water Taxi!

### CHARM IN SECOND LIFE

CHARM's original five-year grant runs out in April 2009, when it is succeeded by CMPCP. With this in mind, we have been exploring options for lower cost premises. As may be seen from these images, Second Life offers not only excellent value for money (Lindens are pegged to the US dollar) but also a range of new entrepreneurial opportunities.



## PUBLICATIONS AND PRESENTATIONS

*The following listing includes only those presentations and publications by CHARM staff that relate to the history and analysis of recorded music.*

- Eric F. Clarke
- ‘The impact of recording on listening’, *twentieth-century music* 4 (2007), 47-70
  - ‘Empirical methods in music research’, University of Malmö (April 2007)
  - ‘Empirical methods in humanities research’, University of Stavanger (November 2007)
  - with D. Patmore, ‘Making and hearing virtual worlds: John Culshaw and the art of record production’, *Musicae Scientiae* 2 (2007), 269-293
- Nicholas Cook
- ‘Between science and art: approaches to recorded music’ [introduction] and ‘Performance analysis and Chopin’s mazurkas’, *Musicae Scientiae* 11 (2007), 153-4, 183-207
  - ‘Thinking about music as performance’, Princeton University (April 2007); ‘Performa’ conference, Aveiro, Portugal (May 2007)
  - ‘Semiosis in performance and performance studies’, Congress of the International Musicological Society, Zurich (July 2007)
  - ‘Towards a musicology of performance: Chopin’s mazurkas on record’, Conference of the Australian and New Zealand Musicological Societies, Brisbane (November 2007)
  - ‘Objective expression: analysing phrase arching in recordings of Chopin’s mazurkas’, King’s College London (January 2008); IRCAM/École des hautes études en sciences, Paris (February 2008)
  - with C. Sapp, ‘The Mazurkas project: creating a toolkit for performance analysis’, ‘Reactions to the Record’ conference, Stanford University (April 2007)
- Andrew Earis
- ‘An algorithm to extract expressive timing and dynamics from piano recordings’, *Musicae Scientiae* 11 (2007), 155-182
- Daniel Leech-Wilkinson
- ‘Sound and meaning in recordings of Schubert’s “Die junge Nonne”’, *Musicae Scientiae* 11 (2007), 209-236
  - ‘Schubert’s young nun: a tale of two singers’, CHARM Symposium 4: Methods for analysing recordings (April 2007)
  - ‘Expressive gesture and performance style’, Birmingham Conservatoire (May 2007)
  - ‘Performance style: evolutionary perspectives’, Music and Brain Group, UCL (June 2007)
  - ‘Evolutionary processes in changing performance style’, conference on ‘Music and Evolutionary Thought’, Durham (June 2007)
- Nick Morgan
- ‘That d\*\*ned elusive gramophile: who was buying chamber music in the 1920s?’, Music Department Graduate Study Day, University of Sheffield (May 2007)
  - ‘“To persecute people with beauty”: subverting the music market in the 1920s’, CHARM/RMA Annual Conference, Egham (September 2007)
  - ‘The National Gramophonic Society (1924-31): the world’s first niche record label’, London University Music Diploma Society (October 2007)
- David Patmore
- ‘John Culshaw and the recording as a work of art’, *Journal of the Association of Recorded Sound Collections* 39 (2008), 19-40

- ‘Sir Henry Wood: life, recording career and influence’, BBC and British Library conference on the Promenade Concerts, London (April 2007)
- ‘The business of musical culture: the British record industry and its international influence, 1925-1932’, Association of Business Historian’s Annual Conference, Wolverhampton (June 2007); CHARM/RMA Annual Conference, Egham (September 2007)
- ‘Sir Henry Wood: the recordings’, Royal Academy of Music, London (September 2007)
- ‘Albert Coates and other “lost” conductors of the 1920s’, Saul Seminar, British Library, London (November 2007); University of Sheffield (November 2007)
- with E. F. Clarke, ‘Making and hearing virtual worlds: John Culshaw and the art of record production’, *Musicae Scientiae* 11 (2007), 269-293

John Rink

- ‘Playing with words and sounds: thought and action in musical performance’ (seminar/workshop), Guildhall School of Music and Drama, London (May 2007)
- ‘Sounding out Chopin: new sources and resources’, Society for Musicology in Ireland, Dublin, Ireland (May 2007)
- ‘Chopin: from score to sound’, Royal Welsh College of Music and Drama, Cardiff (October 2007)
- ‘Sounding out Chopin’ (lecture-recital), Royal Holloway, University of London (February 2008); University of Birmingham (March 2008)
- ‘Behind the music’ (seminar/masterclass), Guildhall School of Music and Drama, London, March 2008
- ‘L’interprétation (musicale?) de l’interprétation musicale: les “Performance Studies” comme discipline’, IRCAM/École des hautes études en sciences sociales, Paris (March 2008)

Craig Sapp

- ‘Beat-level comparative performance analysis’, CHARM symposium 4: Methods for analysing recordings, Egham (April 2007)
- ‘Computational performance analysis’, Center for Computer Research in Music and Acoustics (CCRMA) Colloquium, Stanford University (April 2007); Orpheus Institute, Ghent (September 2007)
- ‘Similarity measurements in Chopin mazurka performances’, C4DM seminar, Queen Mary, University of London (July 2007)
- ‘Comparative analysis of multiple musical performances’, ISMIR conference, Vienna (September 2007), published at [http://ismir2007.ismir.net/proceedings/ISMIR2007\\_p497\\_sapp.pdf](http://ismir2007.ismir.net/proceedings/ISMIR2007_p497_sapp.pdf)
- ‘Measuring similarity in performances of Chopin mazurkas’, CCRMA Colloquium, Stanford University (October 2007)
- ‘Performance authenticity: a case study of the Concert Artist label’, ARSC Conference, Stanford University (March 2008)

Neta Spiro

- with N. Gold, ‘Understanding musical performance: using self-organising maps to characterise performance timing’, CREST, King’s College London (March 2008)
- with N. Gold and J. Rink, ‘Performance motives: analysis and comparison of performance timing repetitions using pattern matching and formal concept analysis’, International Symposium on Performance Science (ISPS), Porto (November 2007), published at <http://www.performancescience.org/cache/fl0003586.pdf>
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Renee Timmers

- ‘Vocal expression in recorded performances of Schubert songs’, *Musicae Scientiae* 11 (2007), 237-268

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- Book review: ‘Adam Ockelford’s Repetition in music: theoretical and metatheoretical perspectives’, *Musicae Scientiae* 11 (2007), 325-330
- ‘Stylistic appropriation and structural interplay in Grieg’s Butterfly’, Royal Holloway Music Postgraduate Research Forum (February 2008)

## FOR YOUR DIARY

### CHARM SYMPOSIUM 6: *PLAYING WITH RECORDINGS*

Royal Holloway, 11-13 September 2008

How do musicians use recordings and what has been their impact? In this final CHARM symposium we explore the attitudes towards recordings of performers, composers, and teachers, and the ways in which recordings contribute to both the maintenance of musical culture and processes of style change. Do recordings prompt or inhibit style change? Have they resulted in stylistic convergence, as is often claimed? And what is the relationship between such processes and the technological or business history of recording? Might technology and business practices be seen as the principal drivers of performance style in the age of recordings? In addressing the interface between recordings and the professional practice of performance, the symposium will prepare the transition to CHARM’s successor centre from April 2009, the AHRC Research Centre for Musical Performance as Creative Practice.

For further details: <http://www.charm.rhul.ac.uk/content/events/symp6.html>

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