



**HAL**  
open science

# Performance Cues for Music ‘with no plan’: a Case-study of Preparing Schoenberg’s Op. 11, No. 3

Zélia Chueke

► **To cite this version:**

Zélia Chueke. Performance Cues for Music ‘with no plan’: a Case-study of Preparing Schoenberg’s Op. 11, No. 3. NEW THOUGHTS ON PIANO PERFORMANCE Research at the Interface Between Science and the Art of Piano Performance, 2017. ⟨hal-03928454⟩

**HAL Id: hal-03928454**

**<https://hal.sorbonne-universite.fr/hal-03928454v1>**

Submitted on 7 Jan 2023

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L’archive ouverte pluridisciplinaire HAL, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d’enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



HAL Authorization

# NEW THOUGHTS ON PIANO PERFORMANCE

Research at the Interface Between  
Science and the Art of  
Piano Performance

COMPILED AND EDITED BY  
CRISTINE MACKIE

DIRECTOR OF THE LONDON INTERNATIONAL PIANO SYMPOSIUM

A LONDON INTERNATIONAL PIANO SYMPOSIUM PUBLICATION

Copyright © London International Piano Symposium 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, resold, hired out, or otherwise circulated without the publisher's prior consent in any form of binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent publisher.

The moral right of the London International Piano Symposium has been asserted.

ISBN: 978-164007055-4

*Proof reader and co-editor* Laurin Mackie

*Book designer* Sue J Casebourne

## Contents

Biographies	ix
Preface	xv
PART ONE	
THE ROLE OF THE BODY IN PIANO PERFORMANCE	
1. 'Biomechanical and Physiological Aspects of a Holistic Approach to Piano Technique' FELIPE VERDUGO	1
PART TWO	
ANXIETY IN PIANO PERFORMANCE	
2. 'Can Improvisation Alleviate Performance Anxiety? An Exploration Amongst Musicians of Different Genres' ELEANOR HODGRINSON	23
PART THREE	
BEYOND OBSESSIVE PRACTICE: TECHNOLOGIES PAST AND FUTURE	
3. 'Beyond Obsessive Practice: Technologies Past and Future' XIAO XIAO	43
PART FOUR	
RECORDINGS PAST AND PRESENT: OF VALUE TO THE PERFORMER OR NOT?	
4. 'Musing on the Past: Historical Recordings as Creative Resources of Piano Performance' GEORGIA VOLIOTI	65
PART FIVE	
SOUND PRODUCTION: TONE, TOUCH, COLOUR, SONORITY, LOUDNESS AND TIMBRE	
5. 'Exploring Real Time Sonic Adjustment in the Performance of Notated Music: Audio-Haptics, Space Acoustics, and the Variable Timbre of Piano Sound' VICTORIA TOZTKOVA	87
6. 'Expressive Performance Parameters in the Production of Piano Timbres' MICHEL BERNAYS	103

PART SIX

SCIENCE MEETS ART IN PIANO PERFORMANCE

7. 'From Sound to Structure: Synchronising Prosodic and Structural Information to Reveal the Thinking Behind Performance Decisions'  
ELAINE CHEW 123
8. 'Mirror Neurons: Imitation and Emulation in Piano Performance'  
CRISTINE MACKIE 151

PART SEVEN

MUSICOLOGY: USEFUL OR OTHERWISE IN PIANO PERFORMANCE?

9. Chopin's 'Barcarolle Op. 60 and the Realization of Ornaments: Searching for Patterns, Models and References'  
CRISTINA CAPPARELLI GERLING & JOSIAS MACTCHULAT 169
10. 'Mompou's Theory of Sonority: Expression for Interpretation at the Piano (l'Expressio per a l' Interpretatio al Piano)' RAENELDA MACKIE 189
11. 'Finding Goya in the Goyescas: A Love Duet in Six Movements'  
DIANA DURLAVWALLA 205

PART EIGHT

THE ADVANTAGES OF A MUSICAL EDUCATION

12. 'Music Training and Cognitive Development: a Study with Music and Non-Music Students' CARLOS DOS SANTOS-LUIZ 233

PART NINE

TECHNOLOGY AND CREATIVE PERFORMANCE

13. 'Performance Cues for Music "With no plan": a Case-study of Preparing Schoenberg's Op. 11, No. 3'  
ZÉLIA CHUEKE & ROGER CHAFFIN 253
14. 'The Pianist's Body as Instrument: Performer - Controlled Electronics as a Collaborative Catalyst in Patrick Nunn's *Morphosis*' (2014) ZUBIN KANGA 269
15. 'How to Play the Piano: Dynamic Cross-domain Expression, Notation, Technology and Performance' RICHARD HOADLEY 285

Performance Cues for Music ‘with no plan’:  
a Case-study of Preparing Schoenberg’s  
Op. 11, No. 3

ZÉLIA CHUEKE & ROGER CHAFFIN

In order to provide a convincing performance, a musician needs a story, or plan. This is particularly true regarding the piece explored in this paper – Arnold Schoenberg’s Op. 11 No. 3 for piano – which might be considered a perfect illustration of the composer’s striving for music free of forms, symbols, cohesion or logic.<sup>1</sup> Whatever the merits of this approach to composition, it does not work for the performer, who needs to develop a musical story to serve as a mental map which will guide him/her through the piece. Sir Adrian Boult,<sup>2</sup> the British conductor, advised that performances should give audiences the impression of the work as a unified whole, like seeing a picture. Heinrich Neuhaus (1973)<sup>3</sup> the noted Russian pedagogue, talked similarly of the need for the artist to approach a new work with a unifying ‘artistic image’. Observational studies show that the practice of experienced soloists follows these admonitions.<sup>4</sup> How, then, does a musician approach the learning of a new work that, ostensibly, has no unifying plan? Here, we describe how a pianist

<sup>1</sup> The composer himself expressed this attitude rather convincingly (cf. in Antony Beaumont, 1987: trans. & ed., *Busoni/Schoenberg Letters* (London, Faber, 1987), 389): ‘I strive for: complete liberation from all forms/From all symbols/Of cohesion and of logic./Thus: /Away with “motivic working out”/Away with harmony as/Cement or bricks of a building. [...] My music must be/Brief. Concise! In two notes: not built, but “expressed”!! [...] It should be an expression of feeling, as our feelings, which bring/Us in contact with our subconscious, really are, and no false/Child of feelings and “conscious logic”’.

<sup>2</sup> Adrian Boult, [n.d.]: *A Handbook on the Technique of Conducting* (Oxford: Hall of Printer Limited, 21.

<sup>3</sup> MISSING?

<sup>4</sup> Roger Chaffin., Gabriela Imreh, Anthony Lemieux and Colleen Chen, 2003: ‘“Seeing the big picture”: Piano practice as expert problem solving’, *Music Perception* n. 20, pp. 461-485; Tânia Lisboa, Roger Chaffin and Topher Logan, 2012: ‘An account of deliberate practice: Thoughts, behaviour and the self in learning Bach’s Prelude 6 for cello solo’, in: Alessandro Cervino, Maria Lettberg, C. Laws and Tânia Lisboa (eds.), *Practice of Practising* (Leuven, Belgium: Orpheus Research Centre in Music), pp. 9-31

(the first author) developed a mental map in the course of preparing for a series of public performances of Op. 11 No. 3.

The pianist's work began with the score, from which she developed an inner hearing of the sound-material in three stages of listening.<sup>5</sup> Implicit qualities of the score became clearer to the performer over time as her relationship with the work developed; after the piece was stored in the performer's inner ear, the score remained as a guide as she worked on building the story to be told.<sup>6</sup> We will describe this process,<sup>7</sup> focusing on the initial four measures, which were particularly challenging, both to relate to the other sections and because of their unusually thorough counterpoint.<sup>8</sup> Playing from memory proved to be a *sine qua non* for this passage, due to the intensity of the polyphonic discourse and the volume of sound required; one needs only to observe the *ff* (*fortissimo*) through the whole passage leading to the final chords in *fff* (*fortississimo*), to appreciate this.

The present study is one of a series documenting how experienced concert soloists are able to perform challenging works from memory, reliably, on the concert stage. In these studies, the musicians recorded their practice and, in some cases, their public performances. After a public performance, they reported the *performance cues* (PCs) that they had paid attention to during the performance.<sup>9</sup> PCs guide the performer through the piece by providing the musician with a series of landmarks in a mental map of the piece. By keeping this narrative thread clearly in mind, the performer ensures that the musical material flows smoothly from one musical event to the next. PCs are established by repeatedly paying attention to particular features of the music during practice, ensuring thus that musical ideas accessed through the score come to mind automatically and effortlessly as the music unfolds. As each

PC becomes the focus of attention, it activates memory for the upcoming passage, directs the musician's attention to the relevant musical features, and tracks progress through the piece. PCs may be expressive or structural turning points, important interpretive decisions, or technical details that must be implemented as planned if the performance is to unfold as intended.

Our study differed in five ways from the previous longitudinal studies of PC development. First, as mentioned, the work in question presents apparently disconnected events; connections are made by non-traditional means. Second, instead of providing a single PC report, the pianist reported her PCs at four points in time, allowing us to document the evolution of her PCs as her relationship with the piece developed.<sup>10</sup> Third, instead of describing the development of PCs for the entire piece, we focused on the opening section, for which PCs developed more slowly, due to its complexity. Fourth, unlike the previous studies – which provided objective, quantitative descriptions of practice – we provide qualitative descriptions of the pianist's practice along with a video-recording of part of a typical practice session. The recording shows that the pianist practised the PCs that we describe in the same way that any experienced pianist would approach a particularly complex passage, independently of its style or period, with many repetitions of short passages connected by integrative runs. Fifth, the pianist used her own system for annotating the location of PCs in the score.

The pianist normally annotates her scores when preparing a new piece, locating both transitions in the musical structure and the musical features of interest to her as the performer. We will refer to these annotated scores as *maps* because the pianist uses them to help develop the mental maps she uses to guide her performances. For the study, she expanded on her usual practice by annotating fresh copies of the score on four separate occasions. Following her usual practice, she divided the piece into short passages consisting of musical phrases or sentences. For the pianist, beginnings of these passages were PCs. They were her points of arrival and/or departure that served as points of reference in her inner hearing during both practice and performance. In performance, these transitions were *landing places*, where she prepared herself to *hold on* mentally in order to engage with the following events of her listening/performance process.

The pianist made her first map in September 2011, during the preparation for her first public performance of Opus 11 No. 3, which took place on the 18th

<sup>5</sup> Zélia Chueke, *Stages of Listening During Preparation and Execution of a Piano Performance*, Doctoral Dissertation, (University of Miami, 2000), UMI, pp. 99-74800.

<sup>6</sup> The approach of interpretation as storytelling is being explored by many authors within the context of interdisciplinary studies. Cf Marie-Laure Ryan (ed). *Narrative Across Media. The Languages of Storytelling*. (Nebraska: University of Nebraska Press, 2004) ; Seymour Chatman *Story and discourse: narrative structure in fiction and film* (Ithaca: Cornell University Press, 1978) ; Zélia Chueke, "Mystery and innovation in performances of Mozart's Fantasy KV 475: following the guidance of three great 20th-century masters", International Performance Studies Network, (University of Cambridge/ AHRC, CMPCP, 2011), <http://www.cmcp.ac.uk/conferences.html>

<sup>7</sup> The authors would like to thank Rita Aiello (NYU) and Cristina Gerling (UFRGS) for their precious inputs regarding specific points explored in this paper.

<sup>8</sup> Thorough counterpoint was part of Schoenberg's usual approach to composition. He himself commented on this feature in measures 57-77 of his 1st String Quartet op.7, justifying Mahler's comments on his own inability to read the score "of no more than four staves". Cf. Arnold Schoenberg, *Style and Idea*, (California: UCP, 1984). 42.

<sup>9</sup> Roger Chaffin, Gabriela Imreh and Mary Crawford, *Practicing Perfection: Memory and Piano Performance* ( Mahwah, NJ : Erlbaum, 2002); Roger Chaffin, "Thinking about performance: Memory, attention, and practice", in: Aaron Williamon, Darryl Edwards and Lee Bartel (eds.), *Proceedings of the International Symposium on Performance Science*, (Utrecht: AEC, 2011), 689-699; Roger Chaffin, Tânia Lisboa, Topher Logan and Kristen T. Begosh, "Preparing for memorized cello performance: The role of performance cues", *Psychology of Music*, 38.(2010), 3-30.

<sup>10</sup> The only published study to examine multiple PC reports of the same piece is Jane Ginsborg and Roger Chaffin 2012: 'Preparation and spontaneity in performance: A singer's thoughts while singing Schoenberg' *Psychomusicology*, 21, pp. 137-158. Other studies involving this method were presented at the *International Symposium on Performance Science* (Vienna, Austria, August, 2013), Roger Chaffin, Cristina Gerling, Alexander Demos and A. Melms, 'Learning Chopin's Barcarolle: Performance cues as a mental map for performance'; Jane Ginsborg, Roger Chaffin, Alexander Demos and G. Nicholson, *Reconstructing Schoenberg: Rehearsing and performing together*; Tânia Lisboa, Roger Chaffin, Alexander Demos and Cristina Gerling, 'Flexibility in the use of shared and individual performance cues in duo performance'.

October, 2011.<sup>11</sup> At this time she had not yet formed the intention to study her own use of PCs. She made the map as part of her normal preparation.<sup>12</sup> Later, after deciding to document her own use of PCs, she elaborated the map by colour-coding the sections she had previously marked to make her understanding of the musical structure clearer to other readers. The pianist made these additions while preparing for her second public performance, which took place at *Lincoln Center* in New York on the 14<sup>th</sup> January, 2012.<sup>13</sup> At this time, she also added to Map 1 the PCs that she hoped to use in the upcoming performance, circling passages in blue to indicate their location.<sup>14</sup>

The second map was made on the 15<sup>th</sup> January, 2012, the day after the second public concert,<sup>15</sup> when the pianist indicated – in a clean, unmarked copy of the score – the PCs that she had used in the performance the day before. During this performance, it became clear to the pianist that she needed to add more PCs in the opening four measures. From the beginning, the pianist had perceived this passage as a strong opening statement.<sup>16</sup> After the second concert, the pianist realized that she had played the entire passage as a single, long phrase, without actually listening to its different voices. Although she had analytically scrutinized the counterpoint during practice, she had not thought about it during the performance. Consequently, some interesting features that should have been emphasized were missed, despite having been repeatedly rehearsed. Realizing that she would need PCs at these locations in order to make performance of this passage secure, she decided to make their development the focus of this study.

<sup>11</sup> As part of a contemporary music concert presented by the research group (Grupo de Estudos e Prática da Música dos Séculos XX e XXI/ CNPq) under her responsibility at the Music Graduate program of the Music and Visual Arts Department of the Federal University of Paraná, Brazil, on October 18th 2011. These initial annotations provided the basis for an analytical report of Op. 11 No. 3 that combined the performer's point of view with that of a music analyst. Zélia Chueke and Norton Dudeque, 2011; 'Analysing Schoenberg's op.11' n°3, IEMTP 2nd study-day; www.iemtp.ufpr.br.

<sup>12</sup> This map focused on section markings, represented by the red and green marks in Map. 1. This more formal approach was used to develop the 2011 paper (Zélia Chueke and Norton Dudeque, Dec. *op.cit.*).

<sup>13</sup> *The Many Faces of Modernity*, 2012: Zélia Chueke, pianist. Bruno Walter Auditorium at Lincoln Center, New York, January 14<sup>th</sup>.

<sup>14</sup> This method of marking studies of PCs is different from the previous studies cited above in which the musicians indicated the location of PCs using arrows pointing to specific locations where a PC first became relevant during performance, and provided separate reports of the musical structure by marking the locations of boundaries between sections subsections or and phrases.

<sup>15</sup> *The Many Faces of Modernity*, 2012: Zélia Chueke, pianist. Bruno Walter Auditorium at Lincoln Center, New York, January 14<sup>th</sup>.

<sup>16</sup> Schoenberg himself must have thought this way which can be verified by the fact that in the manuscript (accessible through Arnold Schoenberg Institute Archives in Vienna: <http://www.schoenberg.at>) there are no alterations in the opening four measures. All the alterations and second thoughts occur in later measures.

As a result of this decision, subsequent maps (Maps 3 and 4) included only measures 1–4. The pianist made the next map on 8<sup>th</sup> March 2012, after performing the first four measures for a student audience, as an example, during an introductory speech to freshmen at the beginning of the academic year (Maps 3a and 3b). Right before this performance, she had reviewed the passage at the piano without the score, after seven weeks without contact with the piece.<sup>17</sup> The maps, which she made later on, and in the same afternoon as the performance, indicated the points of reference that had allowed her to retrieve the passage from memory without looking at the score. As with Maps 1 and 2, the pianist made her annotations on clean copies of the score.

The fourth and last map was made seven months later, after a practice session on 18<sup>th</sup> November 2012. On this occasion, the pianist needed the score in order to practice. She did not have a clean copy of the score and so used a copy containing her markings from 2012 (Maps 3a and 3b). She edited these markings to indicate the changes in her PCs. Some she had eliminated; others she heard in new ways. For this paper's purpose, we compare Map 4 with Maps 3a and 3b and describe the changes. In addition, we include five video clips of the November 18<sup>th</sup> practice session.<sup>18</sup> Video clips 1–3 show the practice and decision-making concerning PCs, demonstrating the connection between listening and performing. Video clips 4 and 5 show the pianist playing measures 1–4, first with the score and then without. Comparison of the two recordings shows that the presence of the score did not alter the way the piece sounded, or the pianist's body movement during performance – thus demonstrating that the pianist's PCs for this passage were working. She was able to mentally hear the piece without the score in front of her and to perform it in the way that she intended. She was now able mentally to access this passage at any moment without the need to perform it, or even have a piano nearby.

### *Connected disconnection*

We begin our detailed description of the learning process with the pianist's account of her first practice session with the score:

*'The first approach to the score is very present in my memory, since it demanded a great amount of decision-making in order to proceed to the following stages of performance preparation. In fact, the structure, from the very first skeleton, remains a constant guide*

<sup>17</sup> Reconstruction from memory appears to be a common memorization strategy. Its use is documented: Jane Ginsborg, Roger Chaffin, Alexander Demos and G. Nicholson, 'Reconstructing Schoenberg: Rehearsing and performing together', and Tânia Lisboa, Roger Chaffin and Alexander Demos, 'Recording thoughts as an aid to memorization: A case study', both presented at the *International Symposium on Performance Science*, Vienna, 2013, Austria.

<sup>18</sup> Available at: <https://vimeo.com/album/3383040>



When the pianist first marked the location of her PCs in Map 1 (the blue circles), she was preparing for her second public performance (on 14th January 2012 in New York). At this point, they were still more ‘practice cues’ than performance cues. They still needed more practice to make them fully reliable in performance. At this stage, they represented points where the pianist could reliably start practising, providing she had the idea of the whole already established in her inner hearing. The circled areas were the passages that she heard in her inner ear when she needed a place to start a new sequence in her narration. She heard them as short phrases, or statements, that originated from what she had just heard and, in turn, served as the origin for what followed in the musical discourse. She was pleased to find that most of the places that she had circled were available to her during the public performance on 14<sup>th</sup> January, 2012, confirming their efficacy as PCs. This is reflected in PC Map 2 (below), which was made on Sunday, 15<sup>th</sup> January, the day after the New York concert.

The map shows the places that the pianist used as points of reference during the concert; the circled passages are the ‘landing places’ she held on to in order to keep track of her progress and prepare for the following musical event. Since the first performance, in October 2011, it had become clear to the pianist that the opening of piece No. 3 required a substantial change of mood. It involves an entirely different structure and discourse from Op.11 No.2. The pianist realized that the abruptness of the opening could easily overwhelm her ability to listen during performance. The two red circles in Map 2 indicate places where she had mentally held on during the performance in order not to get lost. On this occasion, holding on had proved sufficient to avoid getting lost, but not sufficient to provide a natural flow to the musical discourse. The pianist realized, that in order to reliably elicit the performance gestures that she intended, she needed to add PCs at these points to guide her listening. After the last chords of section A, the pianist was able to focus more on the flow of the musical narrative. The passages that she attended to (circled in blue) were places where she connected different musical ideas or anticipated upcoming musical events.

Notice that the PCs in Maps 1 and 2 are mostly the same, indicating that the places that the pianist listened for and used as starting places while preparing for the second performance, were the same places that she was able to hold on to during the performance. The ‘big picture’ is approximately the same on both maps, with a little more elaboration in Map 2, into ‘A’, ‘B’, ‘C’ sections and a ‘Coda’ (marked in brown). The differences between the two maps reflect the evolution of the pianist’s musical story for the piece, as her ability to listen became more detailed. In Map 2, PCs 4 and 8 from Map 1 have disappeared, absorbed by the larger passages to which they belong (measures 11.5–15.1 and 24.3–27 respectively). PC 7 from Map 1 becomes more focused on the specific elements in measures 22–24.1 that unify

<sup>23</sup> © Copyright 1910 and 1938 by Universal Edition A.G., Wien. Reproduced by permission of Universal Edition. Invoice n°2015250.

EXAMPLE TWO PC Map 2 - Arnold Schoenberg 3 Klavierstücke für Klavier op.11/3.<sup>23</sup>

the passage and lead to the closure of section B. PC 9 from Map 1 moves from measure 30 to measure 29, where it announces the start of transition into the final statement in measures 33–35. In measure 28, there is a new PC, not present in Map 1, announcing the transition in measures 29–32. The increased precision of the PCs in Map 2 was the fruit of practice and of the growing intimacy with the piece which it produces.

### *The first four measures*

When the pianist sat down at the piano to play the opening of the piece, without the score, nearly two months later, on 8th March 2012, having not performed or practiced the piece since the last concert on 14th January, she was able to reconstruct the opening section of Op. 11 No. 3 from memory, taking about 15 minutes to do so. She was preparing a welcome lecture for new students in which she would play the passage to illustrate the kind of challenges that the students could expect. Anchoring on the PCs, she was able to perform the introduction by heart. Later the same day, she marked the PCs on a copy of the score (PC Map 3a). PCs marked in red are those that proved essential for holding on during the performance. They had been present in the pianist's inner ear during the reconstruction from memory earlier in the day, as well as during the performance; and they had already been indicated on PC Map 2. The PCs in blue refer to the points which made possible

3

EXAMPLE THREE Map 3a – Arnold Schoenberg op.11 n°3, measures 1- 6.

the reconstruction of performance from memory. They revealed themselves during the reconstruction and occurred along with the others (marked in red) during the performance for the students.

As she made this map (PC Map 3a, above), the pianist realized that many of the PCs, particularly the more recent ones (marked in blue), represented vertical relationships; and that anchoring on these PCs by means of vertical listening, even for a single moment, could impede her forward movement through the music. Several PC markings were at points where chords are actually involved, such as at 1.3, 2.5, 3.2, 3.3, and 3.6. Others were at points where the hands play simultaneously, such as at 0.6, 3.3, 3.6 – 4.2. Still others were at points where a coincidence of attachment might be heard as a 'chord', such as at 0.6, 1.4, 2.2, 2.6 and 3.3. All of these markings could suggest or even induce vertical listening and a consequent interruption of fluency.

As she examined the annotations that she was making, it became clear to the pianist that, although she was aware of the polyphony as the result of her analysis, she had not altogether heard it in this way in her inner hearing during the performance. After repeating the passage many times during practice, she was not entirely sure of having the polyphony consciously present in her inner hearing in a way that would allow her to anticipate events during performance. This was most evident for the anchoring chords at 3.2, 3.3 and 3.5, which, she now realized, are part of a line and should not be heard vertically. She decided to map the polyphonic relationships in

EXAMPLE FOUR Map 3b – Arnold Schoenberg op.11 n°3, measures 1-6

a new PC report in order to ensure the correct hearing during practice.<sup>24</sup>

The pianist made a second PC report (Map 3b, above) immediately after the first (Map 3a). Map 3b includes both the horizontal and polyphonic ways of listening to the opening measures and indicates where they intersect. The new map shows the overlap between events characteristic of the counterpoint style, and also between the PC cues that mark the start of each event. The colours (orange and blue) indicate the phrasing, suggesting that we can listen to these first four measures as two phrases – the first in orange, the second in blue – organizing the discourse into an uninterrupted contour.<sup>25</sup> The blue circle reveals a new PC which sounds as an independent event and helps the performer not to get lost in the middle of the counterpoint. Again, the green areas in measures 5 and 6 indicate PCs already present in earlier maps.

In Map 3b, the PCs from Map 3a are integrated into continuing musical events instead of occurring as isolated events. The changes were all in the opening measures. The PC at 3.6 was maintained, as were the PCs indicating the first two events of section B (beginning respectively at 5.2 and 6.3). Two PCs were perceived very differently in their function. First, the PC at 1.5 – marked in red on map 3a – represented the anticipation of 2.1. In Map 3b, this PC was more appropriately located at 1.6, immediately prior to 2.1. Second, the PC marked in blue at 3.4 in Map 3a disappears in Map 3b; it is heard instead as an 'echo' of 3.2 and, at the same time, as an impulse towards the PC at 3.6, marking the strong *fff* – which becomes the place to 'land and fly again'.

In November 2012,<sup>26</sup> after ten months of not playing or looking at the score, the pianist reconstructed her performance of the introduction from memory, videotaping the entire practice session. As she practised, the pianist realized that she was still internally listening to many of the PCs in a vertical way (e.g., beats 1.3, 1.4 or 2.3), despite having tried to avoid interrupting the musical narrative in this way by annotating the PCs' horizontal (polyphonic) relationships in PC Map 3b. So, at the end of the practice session, she made a new PC map, reporting the PCs that she had used during the session. In this fourth and final PC map (Map 4, above), she separated the individual voices of the polyphony and replaced the circles that were used in Map 3b, and which suggested isolation, with open-ended brackets to suggest horizontal relationships. She used colour coding to distinguish four types of PCs: (a) pre-existing PCs that were reinforced are marked in red; (b) those that the pianist listened to differently are marked in violet with alterations marked in green; (c) PCs added during the session are marked in blue; (d) PCs which were present in previous maps but were not taken into consideration this time (probably because they were more fluently absorbed by the pianist's inner hearing) are marked in brown.

<sup>24</sup> This episode illustrates practicing guided by inner-hearing, with the hands always following the ears, as suggested by Susanne Langer, 1953: *Feeling and Form* (New York: Charles Scribner's Sons) thus creating a feeling of improvisation that can then be brought to the stage. p 140.

This new way of annotating the PCs better represented the way in which the pianist listened to the music. The video's clips<sup>27</sup> illustrate the process of conscious appropriation of the sound material in a way that allowed the pianist to tell her story. The videos show the function of PCs as starting points during practising. The 1<sup>st</sup> video shows the pianist listening to the coincidences of attack between beats 2.1 and 3.5 (indicated in Map 4 as PCs in violet and blue, respectively) to ensure that they were heard as horizontal rather than vertical relationships.<sup>28</sup> The 2<sup>nd</sup> video shows the similar practice of the horizontal relationships after ten months of not playing or looking at the score – represented in Map 4 by the green brackets at beats 1.4 and 1.6. The 3<sup>rd</sup> video shows the practice of the top voice from beats 2.6 to 3.5 (both points indicated in Map 4 as PCs in blue) as a fluent discourse.<sup>29</sup> The 4<sup>th</sup> and 5<sup>th</sup> videos show the practice of the whole introduction, first with and then without the score, showing that, once the piece was memorized, the presence of the score did not alter the performance. The PCs were incorporated in the pianist's inner hearing, allowing her to hear the music without looking at the score.

Schoenberg's Op.11 No.3 was composed ostensibly without form, symbol, cohesion or logic.<sup>30</sup> In order to perform it, however, the pianist had to discover a line of coherence – a musical thread – to allow her to build a story in her inner

EXAMPLE FIVE Map 4 - Arnold Schoenberg op.11 n°3, measures 1-6

<sup>25</sup> This reflects listening continuity, suggesting narration, and illustrates the point that we never play any passage of a musical work without being influenced by what came before and what comes next; hence the need to be conscious of the whole.

hearing to tell to the audience. The difficulty of discovering the narrative thread prolonged the process, providing us with greater opportunity to observe it. In other respects, however, the preparation of this unusual piece was not different from the preparation of more typical musical material. In either case, we first need to have all the notes sounding in our inner ear and then develop PCs to serve as landmarks for our storytelling. In this way, although it is impossible for the performer to listen to every single detail while performing, he/she will be sure that all the details are being performed. This is the role of the PCs. While the pianist is practising, PCs often act as starting points, as exemplified by the videos. When we go on stage, they provide landmarks to guide our narration. Once the 'story to be narrated' is understood and absorbed in this way, it can be delivered fluently and with conviction, without the need for a familiar tonal structure or musical form. As the videos show, the pianist was able to play the challenging opening session with the same kind of assurance that she would have brought to any kind of repertoire.

As she usually does when dealing with any kind of repertoire, the pianist used PCs to direct musical discourse by marking where the beginning and end of phrases provided points of reference, as well marking important points within phrases where she 'landed' momentarily either just to collect her thoughts or to emphasize a note or group of notes before proceeding to next events. She did this marking *before* the performance, thus helping to make the PCs available to her during public performance.

We followed the development of a small number of PCs for the challenging opening passage of Op.11 No.3, observing how they evolved over time. We saw that some of the PCs changed their character from one performance to the next.<sup>31</sup> These changes are partly what makes one performance different from another. PCs are not a way of 'fixing' a model of performance for a piece; they are a way of helping the performer to incorporate the musical discourse and to deliver a convincing narration of it on stage.

The changes in PCs that we've observed reflected the development of the pianist's understanding of the composer's ideas, as a result of analysis, polyphonic listening, and 'unconscious assimilation'.<sup>32</sup> This last term refers to development in a performer's relationship with a piece that occurs during periods when it is set aside and not practised. In our study, the changes in the pianist's PCs suggest that her understanding of the opening passage continued to evolve during the periods between performances – when she did not practice or deliberately think about the piece. During these times, the music remained in her inner hearing as a result of

the time she had spent in studying the score and in practising. When she played the piece again, she listened with a new understanding that was reflected in her changing PC reports. The development of musical understanding that we observed might be attributed to the –apparently deliberate – obscurity of the composer, in the case of Op. 11 No. 3. Nevertheless, we suggest that similar changes probably occur with any piece, as a result of spontaneous development of performers' musical sensibilities while dealing with (or finding) the narrative thread.

## REFERENCES

- Beaumont, A., 1987: *Busoni Schoenberg Letters* (London: Faber).
- Boult, A., [n.d.]: *A Handbook on the Technique of Conducting* (Oxford: Hall the Printer Ltd).
- Buch, E., 2006: *Le cas Schönberg* (Paris: Gallimard).
- Chaffin, R., Imreh, G., Lemieux, A. and Chen, C., 2003: "'Seeing the big picture": Piano practice as expert problem solving'. *Music Perception* 20/4: 461-85
- Chaffin, R., Imreh, G. and Crawford, M., 2002: *Practicing Perfection: Memory and Piano Performance* (Mahwah, NJ: Erlbaum).
- Chaffin, R., 2011: 'Thinking about performance: Memory, attention, and practice' in A. Williamon, D. Edwards and L. Bartel, eds., *Proceedings of the International Symposium on Performance Science* (Utrecht: Association Européenne des Conservatoires, AEC), pp. 689-99.
- Chaffin, R., Lisboa, T., Logan, T. and Begosh, K. T., 2010: 'Preparing for memorized cello performance: The role of performance cues', *Psychology of Music* 38/1: 3-30.
- Chaffin, R., Gerling, C. C., Demos, A. and Melms, A., 2013: 'Theory and practice: A case study of how Schenkerian analysis shaped the learning of Chopin's Barcarolle', in A. Williamon and W. Goebel, eds., *Proceedings of the International Symposium on Performance Science* (Brussels, Belgium: Association Européenne des Conservatoires, AEC), pp. 21-26.
- Chatman, S., 1978: *Story and Discourse: Narrative Structure in Fiction and Film* (Ithaca: Cornell University Press)
- Chueke, Z., 2011: 'Mystery and innovation in performances of Mozart's Fantasy KV 475: Following the guidance of three great 20th-century masters', in *International Performance Studies Network* (University of Cambridge: Centre for Musical Performance as Creative Practice Conference), pp. 1-9. Available from [http://www.cmcp.ac.uk/wp-content/uploads/2015/11/PSN2011\\_Chueke.pdf](http://www.cmcp.ac.uk/wp-content/uploads/2015/11/PSN2011_Chueke.pdf) (accessed 24 April 2017).
- Chueke, Z., 2000: *Stages of Listening During Preparation and Execution of a Piano Performance* (Dissertation, University of Miami).
- Dunsby, J., 1995: *Performing Music, Shared Concerns* (New York: Oxford University Press).
- Ginsborg, J., Chaffin, R., Demos, A. and Nicholson, G., 2013: 'Reconstructing Schoenberg: Rehearsing and performing together', in A. Williamon and W. Goebel, eds., *Proceedings of the International Symposium on Performance Science* (Brussels, Belgium: Association Européenne des Conservatoires, AEC), p. 87.
- Ginsborg, J. and Chaffin, R., 2012: 'Preparation and spontaneity in performance: A singer's thoughts while singing Schoenberg', *Psychomusicology: Music, Mind and Brain* 21/1: 135-58.

<sup>30</sup> Esteban Buch refers to 1909 as the year of Schoenberg's 'anti-romantic turning point', taking into account his music (from op.11 to op.18) and also his statements, addressed first to Richard Strauss, on 14 July 1909, and then to Busoni, about his need of freedom. Cf. Esteban Buch, *Le cas Schönberg* (Paris, Gallimard, 2006), p.202.

<sup>31</sup> Similar changes have been observed in other studies that followed the development of PCs across multiple performances mentioned in endnote n.9, where the musicians reported PCs were consistently in the same locations, but the content of the thought represented by the PC had changed.

<sup>32</sup> Jonathan Dunsby, 1995: *Performing Music, Shared Concerns* (New York: Oxford University Press) pp. 10-11.

<sup>26</sup> Assessment session at Paris-Sorbonne, Centre Universitaire Clignancourt, Salle 120

<sup>27</sup> Available at: <https://vimeo.com/album/3383040>

<sup>28</sup> The resource used by the pianist during practice was to reinforce the awareness of the middle voice by attentive listening, which reflects in her performance, where counterpoint is clearly listened, and PCs act as 'landing points' without interrupting the musical discourse's fluency.

<sup>29</sup> Here the pianist was guided by the same purposes which inspired the practice section shown in the 1st video.

- Langer, S., 1953: *Feeling and Form: A Theory of Art Developed from Philosophy in a New Key* (New York: Charles Scribner's Sons).
- Lisboa, T., Chaffin, R. and Logan, T., 2012: 'An account of deliberate practice: Thoughts, behaviour and the self in learning Bach's Prelude 6 for cello solo', in A. Cervino, M. Lettberg, C. Laws and T. Lisboa, eds., *Practice of Practising* (Leuven, Belgium: Orpheus Research Centre in Music), pp. 9-31.
- Lisboa, T., Chaffin, R. and Demos, A., 2013: 'Recording thoughts as an aid to memorization: A case study', in A. Williamon and W. Goebel, eds., *Proceedings of the International Symposium on Performance Science* (Brussels, Belgium: Association Européenne des Conservatoires, AEC), pp. 625-30.
- Lisboa, T., Chaffin, R., Demos, A. and Gerling, C., 2013: 'Flexibility in the use of shared and individual performance cues in duo performance', in A. Williamon and W. Goebel, eds., *Proceedings of the International Symposium on Performance Science* (Brussels, Belgium: Association Européenne des Conservatoires, AEC), pp. 465-70.
- Neuhaus, H., 1973: *The Art of Piano Playing* (New York: Praeger Publishers Inc).
- Ryan, M.-L., ed., 2004: *Narrative Across Media: The Languages of Storytelling* (Nebraska: University of Nebraska Press).
- Schoenberg, A. 1984: *Style and Idea* (Berkeley: University of California Press).