Chapter 13
Motive, Gesture and the Analysis of Performance
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‘Musical gestures are musical acts, and our perception and understanding of gestures involves understanding the physicality involved in their production’ (Cox 2006: 45). Arnie Cox’s provocative statement serves as the point of departure for this chapter.1 One of its main premises is that music’s gestural properties are neither captured by nor fully encoded within musical notation, but instead require the agency of performance to achieve their full realization. The performances in question need not be live: recordings too have distinctly gestural properties even if the visual dimension and experiential character of live music-making are lacking.

This chapter also reverses a common tendency to assign the status of musical gestures to conventional musical motives.2 In contrast, we regard the gestures created in and through performance as potentially having motivic functions within the performed music. Such ‘motives’ are defined not in terms of pitch, harmony or rhythm, however, but as expressive patterns in timing, dynamics, articulation, timbre and/or other performative parameters that maintain their identity upon literal or varied repetition.3 The essential point has to do with the nature and function of the given patterns. By way of example, the following discussion focuses on select

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1 The bulk of this chapter was written by John Rink; Neta Spiro and Nicolas Gold wrote Section C in Part 2 in addition to collecting and analysing the data used for the SOM study. The chapter is one of the outputs of our collaborative project on ‘Analyzing Motif in Performance’ in the AHRC Research Centre for the History and Analysis of Recorded Music (see http://www.charm.kcl.ac.uk; accessed 1 March 2011). The chapter develops the work described in Spiro et al. (2008) and Spiro et al. (2010), in which a number of the figures here also appear.

2 For further discussion, see Rink (2007). Grove Music Online (Macy, 2001–) defines ‘motif’ as follows: ‘A short musical idea, melodic, harmonic, rhythmic or any combination of these three. A motif may be of any size, and is most commonly regarded as the shortest subdivision of a theme or phrase that still maintains its identity as an idea. It is most often thought of in melodic terms, and it is this aspect of motif that is connoted by the term “figure”.’

3 Compare the discussion of ‘expressive patterns’ (defined in terms of tempo and ‘loudness’) in Widmer et al. (2003). Note that the authors do not explicitly relate these expressive patterns to physical or mimetic gestures, nor do they consider their findings necessarily to be ‘musically relevant and artistically interesting’ (2003: 126). Furthermore,
performances of Chopin’s Mazurka, Op. 24 No. 2, including certain dance-related features characteristic of the mazurka genre as a whole.4

Part I

A

Considerable scepticism has been expressed in recent scholarship about the mapping from structure to performance that was once considered to be ideal in the musicological literature. Clearly the interpretative practice of performers of Western art music involves a good deal more than translating notated symbols, theoretical constructs and analytical findings into sound, just as listening is not simply a matter of the ‘structural hearing’ valorized by certain authors. That does not mean that musical structure as conventionally understood is wholly irrelevant to performers or listeners – only that the relationship is far more complex and less exclusive than some have assumed.

One problem has to do with a reductivist tendency to regard musical structure as a single, seemingly static entity rather than as a range of potential, inferred relationships between the various parameters active within a work. Not only is it more accurate to refer to music’s structures, but the origin and dynamic nature of those structures must also be acknowledged. In this respect performers have a seminal role to play, creating musical structures or their counterpart – musical ‘shapes’ – in each and every performance. These go well beyond the surface-level expressive microstructure upon which much of the literature has focused to date. Indeed, the dynamic structures underlying and generated within performed music potentially operate at numerous hierarchical levels – a point demonstrated in the case study that follows.

Both shape and shaping are key concepts throughout this chapter and of signal importance to musicians more generally. One of the ways in which performers give music a sense of shape in time is by

devising a hierarchy of temporally defined musical gestures from the small to the large scale. While playing, the performer engages in a continual dialogue between the comprehensive architecture and the ‘here-and-now’, between some sort of goal-directed impulse at the uppermost hierarchical level (the piece ‘in a nutshell’) and subsidiary motions extending down to the beat or sub-beat.

there is no suggestion that these prototypes might be viewed as having what we describe as ‘motivic’ functions within given performances.

4 It should be noted that the structure of this chapter is homologous with that of Chopin’s Mazurka – i.e. introduction, three main parts with corresponding subsidiary sections, and coda.
level, with different parts of the hierarchy activated at different points within the performance (Rink 1999a: 218). 

Although some of the musical materials constituting these gestures may remain invariant across performances, the scope for innovation is vast and should not be underestimated.

Such gestures may be manipulated according to strategies that performers consciously or unconsciously devise to project their musical conceptions. One of the goals of performance analysis is to infer such strategies – not in a (misguided) attempt to discern the original expressive intentions of the performer, but rather to determine how the sounding music is made to cohere. Unfortunately, analysis of this kind occasionally falls into the same trap as more traditional analytical approaches, merely assembling data about phenomena whose broader musical purpose and effect are ignored. The ensuing study of Chopin’s Mazurka tries to avoid this by coupling a relatively objective analytical methodology – self-organizing maps – with an avowedly subjective one, namely critical assessment. The extent to which this combination succeeds can be judged by the reader in due course, but it should be noted that the quality and value of any music-analytical endeavour depend not only on the data that are produced but also on the cogency of their interpretation – in particular, whether or not the latter is musically convincing according to criteria that inevitably are individually determined.

B

Chopin wrote mazurkas more or less throughout his career; some seem to have originated as improvised dances, whereas others are complex, extended works. Much has been made in the literature about the putative influence of Polish folk music on Chopin’s mazurka output. Here it suffices to note that although his visits to the Polish countryside in the 1820s introduced him to instruments, idioms and sonorities that he had never encountered as a student in Warsaw, Chopin inherited and perpetuated an urbanized mazurka tradition established by his immediate predecessors. One can nevertheless find in his mazurkas traces of at least three folk dances – oberek, mazur and kujawiak, respectively lively, joyous and plaintive in character. He also made use of modal elements – particularly the Lydian fourth – along with an associated tendency towards chromaticism. Other typical devices taken directly or indirectly from folk models include drone fifths in the accompaniment, ‘tight’ as opposed to florid ornamentation, obsessive repetition of small bits of material (often in changing contexts), and second- and third-beat accents within a prevailing triple metre that correspond to the foot-stamping gestures of danced mazurkas. Another dance-like feature of numerous

5 Note that ‘temporally defined musical gestures’ may involve any musical parameter, not just those specifically to do with timing.
Chopin mazurkas is a waltz-like accompaniment with its typical strong–weak–weak stress pattern.

In a letter to his family from 1830, however, Chopin insisted that his recently composed mazurkas were ‘not for dancing [nie do tańca]’, and this is also true of Op. 24 No. 2, which was composed in 1833 and first published in 1835. Although its underlying ternary form is conceptually simple, there is considerable sophistication in the disposition of and interrelationships between constituent sections and subsections, as shown in Figure 13.1.

After a four-bar introduction notable for its hemiola-like tonic/dominant oscillations, section A begins in the relative minor before re-establishing C major as tonic. This opening section itself belongs to a subsidiary ternary form, the middle of which – section B – is in the subdominant, featuring a rhythmically free, mazur-inspired right-hand melody over a more regular waltz accompaniment. After section A returns (i.e. A'), a brief codetta in C major paves the way for the contrasting trio section. Whereas Chopin’s polonaises tend to have symmetrical (i.e. ternary) trios, his mazurkas often feature unitary or, as here, binary middle sections; what is especially distinctive in Op. 24 No. 2 is the harmonic remoteness of and inner contrasts within the through-composed trio section, which progresses through an ebullient, mazur-like D major phase (section C) and an E minor passage with the aching melancholy of the kujawiak (section D) prior to the reprise of section A in bar 89 (that is, A''). The recapitulation is foreshortened, however: section B never returns, nor the ensuing A section. Interestingly, in the German first edition this passage differs from its counterpart in the French and

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6 Letter of 22 December 1830 from Vienna to his family in Warsaw (Sydow 1955: 161). Chopin’s comment is unspecific but applies to at least some of the works in his Opp. 6 and 7, published in 1833.

7 In an unpublished book manuscript (The Languages of Western Tonality) Eytan Agmon describes the D major and E minor passages in terms of their enharmonic equivalents, i.e. C major and D♯ minor.
English first editions: the German print was prepared from Chopin’s autograph manuscript, and when correcting the proofsheets that ultimately served as the basis of the French edition (from which the English edition was prepared in turn), he introduced variants to bars 98 and 102–3, intentionally differentiating these bars from corresponding passages by increasing closural momentum prior to the start of the coda (bars 105ff.). In this final phase, material first presented in the introduction is developed as the oscillatory figuration winds down and the piece draws to a close.

The foregoing analysis usefully identifies structural features of the Mazurka, but without redefinition or mediation these may have limited immediate relevance to the music as performed. It is important to consider the quite different ways in which musicians apprehend, translate into action and ultimately subsume within broader expressive strategies structural elements such as the ones just described. As suggested earlier, performers are likely to grasp or ‘feel’ musical structure dynamically and gesturally rather than according to spatial or architectural paradigms. Whether consciously or unconsciously, they assess the structural features they become aware of through ongoing contact with the music, weighing up the contribution of those features to the music’s process at one or more levels and in multivalent trajectories. Process of this sort occurs from note to note, bar to bar, phrase to phrase and so on, while also involving overarching relationships between less proximate passages such as the introduction, codetta and coda in Chopin’s Mazurka. As the role of the various elements is determined, decisions are also made about their relative priority within a broader dynamic conception of the music, likewise the means of projecting them accordingly.

With musical process foremost in mind, a hypothetical task list can be drawn up for a more comprehensive analysis of Op. 24 No. 2 in terms relevant to performance; to some extent this could also serve an agenda for performance-related analysis in general. Although such a menu encompasses such standard parameters as form and rhythm, these again must be understood in a manner reflecting the temporal basis of as well as the potentially infinite variety within and between performances.

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8 For a discussion of the publication history of this opus and Chopin’s music in general, see CFEO (2007).
9 The editions of this Mazurka published after Chopin’s death in 1849 tend to follow either the undifferentiated version of the German first edition (see, for example, the Henle Urtext) or the varied one found in the French and English editions (for example, the Wydanie Narodowe). When listening to a performance of this piece one can often infer which edition(s) a pianist may have used on the basis of these and other textual idiosyncrasies. The French, German and English first editions can be viewed at CFEO (2007).
In this respect, what seems most significant about the successive formal sections that we have surveyed is their gravitational tendencies – whether processive or recessive, prospective or retrospective, and so forth. For example, the main sections depicted in Figure 13.1 could be treated more or less discretely or in a comparatively ‘through-performed’ manner, with less pronounced differentiation between the constituent phases. This is also the case with the introduction, codetta and coda, which conceivably could serve as structural pillars within an all-embracing framework. A further consideration concerns how the non-symmetrical middle section is handled as against the symmetrical first part and, for that matter, the non-symmetrical, foreshortened reprise. The same holds for the more general foreshortening from the first part’s 48 bars (3 × 16) through the middle part’s 32 bars (2 × 16) to the recapitulation’s 16 bars, which engenders a sense of formal acceleration balanced out by the extended coda.10

Important issues also surround absolute tempo. It is interesting to note discrepancies between the metronome markings in the three first editions (crotchet = 108) and Chopin’s autograph manuscript11 (crotchet = 192), although these particular tempos are obviously not the only ones available to pianists. Further questions arise regarding the respective tempos of individual sections (are they consistent or contrasted, and to what extent?) as well as the presence of rubato (where, and what types?). The latter is of interest not least because Chopin’s own playing was characterized by several different styles of rubato, including those derived from bel canto and folk traditions.12 In Op. 24 No. 2 – where ‘rubato’ is explicitly marked in bar 29 – one may favour a more structured temporal flexibility, with a regular pulse either on the downbeat (whereby the bar length is kept constant) or on the beat (whereby the beat length is kept constant). Alternatively, or in addition, the rubato may be freer, with irregular beat lengths engendering irregular bar lengths. There is also the possibility of rubato at the level of form, such that an expected pulse defined with regard to whole phrases or sections is either stretched or compressed to produce a large-scale agogic accent.

Similar manipulations in dynamics may occur within and between individual sections as well as at an absolute level. The potential differences between performed

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10 The combination of foreshortened reprise, heightened sense of cadential closure at the end of the main tonal structure, and extended recapitulatory coda compensating for the briefer reprise is found in numerous works by Chopin from the Etudes, Op. 10 onwards (for discussion, see Rink 1992, 1999b).

11 In fact, ‘108’ is the metronome marking of Op. 24 No. 1; it was wrongly added to No. 2 by the engraver of the German first edition (on which the French and English editions were based). The autograph manuscript, which served as the Stichvorlage for the German first edition, is held by the Biblioteka Narodowa in Warsaw under shelfmark Mus. 216.

12 In addition to bel canto and folk-inspired rubato (respectively characterized by a steady pulse in the accompaniment versus freedom in the melodic line, and by a consistent pulse at the level of the bar), Chopin also indulged in ‘fleeting changes of pace relative to the basic tempo … [in] a whole section, period or phrase’ (Eigeldinger 1986: 120).
dynamics and indications in the score – whether Chopin’s manuscript, the first editions or later editions – also warrant consideration, likewise the contour and extent of dynamic fluctuations in a given performance, each of which contributes to the shape of the music to some degree. The respective dynamic levels of the two hands equally merit attention.

So too do the synchrony or asynchrony of the two hands and the fingers in use at any point. Analysis of the full range of articulation available to the pianist would be enlightening, not only legato and staccato but also pedalling (for example, secco and/or ‘blended’/blurred), voicing (whether homophonic or contrapuntally layered), timbre and silences in the form of rests, delays, and so on. Of particular interest are notated as well as unnotated accents: not only is there scope for dynamic as well as agogic stress in performed music, but in Chopin’s case a difference exists between conventional accents and so-called long accents, the functions of which vary according to context (see Rink 2005). Here one should consider not only the presence and relative intensity of accents but also whether their placement is varied or consistent (e.g. on second beats, third beats or elsewhere). Moreover, their correspondence with physical gestures characteristic of the mazurka as a dance, notably stamping of the feet, may need to be assessed. The dynamic and temporal treatment of ornamentation is yet another salient element, also whether trills, turns, grace notes, and so on, are played on or before the beat (or, in the case of some of Chopin’s grace notes, played at all). In certain recorded performances of this Mazurka, ornamentation of various kinds is improvised; similarly, the melodic variants that characterize different scores (including the ones discussed above in bars 98 and 102–3) may invite consideration.

Space constraints prevent consideration of all of these factors in the study that follows, although ideally each would be taken into account within any performance-related analysis, just as they are routinely (though differently) grappled with by those performing the music. Instead, we concentrate here on two parameters – tempo and dynamics – for reasons that will become apparent. Although these are often the focus of ‘performance analysis’, our aim is by no means conventional: instead, rather than simply demonstrating how tempo and dynamics change over time, we look at the manipulation of identifiable expressive patterns within the respective performances. Revealing these patterns and the gestural properties they project is in fact the principal goal of what follows.

13 In Chopin’s manuscripts, grace notes on the same pitch as a notated trill indicate a trill start on the main note, not the upper auxiliary. Generally, however, trills in his music begin on the upper note as in eighteenth-century music, just as many ornaments should be played on rather than before the beat (for discussion, see Rink 2005).
The analysis of timing and dynamic information in performances typically starts by preparing note-to-note or beat-to-beat representations of these parameters. Because the accompaniment of this Mazurka has a strong and more or less constant crotchet beat, here we have used beat-level data as the basis of our representations. Figure 13.2 depicts the changing beat lengths in 29 case-study performances, illustrating common and varied aspects alike. In the figure, broad phrase arcs are clearly traced, and the shaping of sections and the overall similarity and other relationships between them, such as differences in the extent of beat-to-beat variance of note-length, can be discerned not only for the group of performances as a whole but also for individual ones (as will be illustrated below).

To analyse these characteristics of performance more closely, we have developed a means of identifying expressive patterns in performance which potentially can be interpreted in gestural terms. The first step in this method is to ‘pre-process’ the raw data shown in Figure 13.2 by converting beat-timing data from absolute values to relative proportions of the containing bar, and converting dynamic data into offsets – both positive and negative – from the previous beat. We analyse patterns of relative duration rather than absolute value in order to categorize and observe the distribution of ‘shape’ within the performances.

Our principal analytical method in this study is based on self-organizing maps (SOMs, also termed Kohonen networks), which are a form of artificial neural network trained by unsupervised learning. The maps have been used for a

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14 Timing and dynamic data included in the freely available datasets produced by the CHARM Mazurkas project (CHARM 2009b) was used. Timing data in these sets is gathered by a process of human-tapping to recorded performances, followed by a data-cleaning stage using the Sonic Visualiser tool and plugins to assign timing positions to musical beats with greater accuracy (available at http://www.sonicvisualiser.org; accessed 1 March 2011). Dynamic data is similarly gathered using Sonic Visualiser plugins to measure the sampled loudness (using smoothed power curve data) for each beat (for further information, see Sapp 2007).

15 The 29 recordings were chosen from a total of 48 available through the CHARM Mazurkas project (see CHARM 2009b); the selection was determined by considerations of chronological and national coverage as well as general performance approaches. A discography of nearly 70 performances of this Mazurka is available at CHARM (2009a).

16 The maps can be trained on units of any size or musical identity. In this case we investigate patterns at the bar level (see n. 18 below).

17 Artificial neural networks (ANNs) are typically divided on the basis of their learning method: supervised or unsupervised. Supervised learning means that training consists of the ANN making a prediction on the basis of input data and being told whether this is correct or not. Over time, the network adapts itself to predict more accurately on the basis of this feedback. Unsupervised learning does not contain a feedback loop; instead
wide range of classification and clustering tasks. The key advantage of the SOM methodology for the work presented here is its ability to group patterns according to the similarity of relative beat length or dynamic nuance. Using this approach allows one to discover ‘natural’ similarities in timing or dynamic shapes without a priori determination of how many should exist or how large each group of patterns should be.

We use single bars as our units of analysis, modelling each one as a point in a three-dimensional space, either timing or dynamic.18 After training, bars of similar temporal or dynamic shape occupy proximate areas of the vector space and, when presented in two dimensions, appear as clusters of nodes in the resulting map. A SOM-Ward clustering19 is then applied to determine the boundaries between clusters.

the network adapts itself to represent some characteristic of the input data. In the case of a Kohonen network, this is the topological relationship between items of data in the input set (see Kohonen 2001).

18 The decision to use bars as the unit of analysis has partly to do with the mazurka genre’s constructive tendencies (for analysis of four-bar units and paired timing and dynamic information, see Spiro et al. 2008).

19 Ward clustering is a method for clustering items based on an objective similarity measure referred to as the Ward distance (Ward 1963). Starting from each item being a cluster itself, the two closest items are combined into a new cluster. The process repeats itself until all items are in a single cluster, leaving a hierarchy of possible clusterings. The most appropriate clustering for a given task can then be determined by inspection, guided by metrics such as the lowest overall quantization error. The SOM-Ward cluster algorithm used here (as implemented in the Viscovery SOMine 4.0 software package – see http://www.viscovery.net; accessed 1 March 2011) also accounts for local similarity (i.e. proximity on the map) in the distance measure.
The mean values of nodes in each SOM-Ward cluster are extracted to provide an average shape for the bars that a given cluster represents (see Figure 13.3). Finally, the original data is classified using the trained map in order to assign cluster shapes to bars (Figure 13.4).

Using the SOM method to group into clusters those units that have similar timing or dynamic patterns, we find that across the 29 performances four clusters emerge for each of these parameters. Figure 13.3(a) shows the four timing clusters that have been identified (T1–T4); for each one, the relative proportions of the three beats within the bar are revealed. The clusters are plotted in decreasing frequency: T1 occurs in 32 percent of the bars, T2 in 30 percent, T3 in 24 percent and T4 in 14 percent. Similarly, Figure 13.3(b) displays the emergent dynamic clusters (D1–D4), for each of which the cumulative change in dynamic from beat to beat is depicted. 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. Again, the clusters are plotted in decreasing frequency: D1 is found in 32 percent of the bars, D2 in 30 percent, D3 in 24 percent and D4 in 14 percent.

In terms of timing, the second most common pattern (T2) has a relatively long middle beat, as might be expected in a mazurka (see the discussion above).

![Figure 13.3 Timing and dynamic clusters in all 29 performances](image-url)
T2 also has a comparatively long third beat, so the pattern could be related to more general ritardandos. In T3 the first beat is longest, as one would anticipate in a piece in triple metre, whereas T4 has a longer final beat, which again could be related to slowing at the end of the bar or possibly to the third-beat agogic and/or dynamic accents also typical of the mazurka genre. Finally, the most common pattern (T1) is almost flat. As for the dynamic patterns, D1 and D4 have relatively louder third beats, D2 is characterized by a relatively louder second beat, and D3 features a slight diminuendo across the bar. These patterns confirm expectations arising from the more conventional analysis above with regard to second- and third-beat accents.

Having identified the patterns, it is possible to investigate their distribution through the piece (see Figure 13.4). Note that sections A and A' have a very similar distribution of patterns. In some sections specific patterns are prevalent throughout: for example, section C is dominated by T2 and the introduction by T1 and T3. Although the latent hemiola pattern in the introduction potentially could be brought out, most performances have either flat patterns or agogic accents on the initial beat (particularly in the first bar). Some patterns occur relatively

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**Figure 13.4** Distribution of (a) timing and (b) dynamic clusters in all 29 performances of the Mazurka. The sections of the piece are overlaid in each graph.
often in parts of sections; for example, T4 is common at section ends. In these ways, the music’s general structural characteristics seem to be reflected in the performance patterns. However, there is by no means complete agreement across all performances, and the proportions and distributions of patterns differ even when the latter are in positions that structurally or thematically are very similar (such as section ends). This once again indicates that musical structure as conventionally understood is far from being the only determinant of musical expression.

As discussed above, broad comparison of the use of patterns by all the performers together shows that the frequency of cluster patterns reduces from T1 to T4 (see Figure 13.3). When looking at each performer individually, however, we find that the frequency of patterns is not the same within each performance (Figure 13.5). Some performances feature a dominance of T1, often keeping an undifferentiated timing pattern within the bar (e.g. Chiu 1999); others make particular use of second- and/or third-beat agogic accents (e.g. Poblocka 1999); and others emphasize the phrase-final lengthening pattern (e.g. Ashkenazy 1981).

In Luisada’s (1990) performance, the phrase and section ends are clearly highlighted and second beats tend to be accentuated (with a comparatively high use of T2 and T4). Conversely, whereas Chiu’s (1999) performance has relatively contrasting average beat lengths across sections (see Figure 13.6), within each section there is a dominance of the flattest of the four timing patterns.

Although broad comparison of this kind usefully reveals general trends across a large number of performances (a task for which the SOM method is extremely well suited), detailed examination of individual interpretations is required to gain insight into the expressive patterning distinctive to each one. To that end, the SOMs are trained on data for individual performances rather than the group as a whole. This allows comparison both within and among performances of the patterns and their distribution. The interpretation with the smallest number of identified clusters

![Figure 13.5 Occurrence of timing clusters in each performance](image-url)
Figure 13.6  Frederic Chiu, 1999 (HMX 2907352.53): (a) beat length, (b) timing clusters, (c) distribution of timing clusters and structure of piece, (d) dynamic clusters, (e) distribution of dynamic clusters and structure of piece
is that of Chiu (1999), with only three timing clusters, whereas the greatest number of clusters occurs in Magaloff’s (1977), with 18 clusters of this type. In between, Rubinstein’s (1939) performance has eight timing clusters.

A similar pattern, though less extreme, is seen in the dynamic clusters, with three found in Chiu’s recording, six in Rubinstein’s and eight in Magaloff’s. As explained below, the number of cluster types within a particular interpretation may be significant in terms of its perceived richness and interest.

In Chiu’s performance, the most common timing and dynamic clusters (CT1 and CD1) are almost flat in contour, while the others involve the following: lengthening of the second beat (CT2) and final beat (CT3); diminuendo through the bar (CD2); and a relatively loud second beat (CD3). The distribution of the clusters in this interpretation is more or less systematic: for example, CT3 occurs almost exclusively at phrase ends, whereas CT2 is found in the most characteristically mazurka-like sections (that is, B and C).

In contrast, Magaloff’s performance (see Figure 13.7) has many different timing clusters, very few of which return when material is repeated. Notwithstanding the abundance of patterns, however, commonalities do occur in the form of relatively long first, middle or final beats, such that three sub-groups of patterns can be discerned (as indicated by the shadings in Figure 13.7(b)). Fewer patterns in the dynamics are identified, though more dynamic clusters can be found in this performance than in most of the others.

The timing patterns discernible in Rubinstein’s 1939 performance also fall into sub-groups, which are shown by the different shadings in Figure 13.8(b) and (c). As for the dynamics, two types of first-, second- and third-beat dynamic accent can be seen in Figure 13.8, that is RD1/RD5, RD4/RD6 and RD2/RD3 respectively. Unlike Magaloff’s performance, there is considerable alignment here between the repetition of thematic material on the one hand and that of expressive patterns on the other: for instance, the three A sections have more or less identical dynamic profiles, just as the first phrase in sections B and C is entirely dominated by third-beat dynamic accents. Agogic and dynamic accents fall on the same beat in 31 individual bars but receive particular joint emphasis on the third beats of bars 14, 18, 28, 49, 50, 54 and 101 – that is, nearly half of the 18 bars in which

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20 In the following table of the three A sections (each of which has four four-bar hypermeasures), ‘1’ represents the presence of clusters with first-beat dynamic accents (i.e. RD1 and RD5), ‘2’ those with second-beat dynamic accents (RD4 and RD6), and ‘3’ those with third-beat dynamic accents (RD2 and RD3). The general consistency is remarkable, although the deviations (especially in the second and fourth hypermeasures in A") are also noteworthy:

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<td>A  1 3 1 3</td>
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<td>A' 1 3 1 3</td>
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Figure 13.7 Nikita Magaloff, 1977 (Philips 426 817/29-2): (a) beat length, (b) timing clusters, (c) distribution of timing clusters and structure of piece, (d) dynamic clusters, (e) distribution of dynamic clusters and structure of piece
Figure 13.8 Artur Rubinstein, 1939 (Naxos 8.110656-57): (a) beat length, (b) timing clusters, (c) distribution of timing clusters and structure of piece, (d) dynamic clusters, (e) distribution of dynamic clusters and structure of piece.
third-beat agogic accents appear at all. Second-beat agogic accents tend to be favoured, arising in 71 bars; however, as we shall see, Rubinstein attaches even greater weight to first-beat accents in defining the Mazurka’s expressive shape in performance.

D

Just as the formal analysis towards the start of the chapter identified structural features of variable relevance to the Mazurka as performed, not all of the properties of the 29 performances revealed by the foregoing survey may correspond to how listeners hear the music and how the respective pianists conceived it in the first place. That does not mean the analysis lacks value, however, nor are the implied limitations necessarily problematic. What needs to follow here and indeed in any act of analysis – whether of performances, scores or altogether different material – is ongoing interrogation of the initial findings as well as the sort of mediation referred to earlier if relevance to actual practice is to be assured.

In this case, three questions invite our attention – the first of which applies in respect of performance analysis more generally: (1) What musical meaning or significance do the analytical findings have? (2) How do the expressive patterns that have been identified contribute to the coherence – that is, cohesion and comprehensibility – of a given performance? (3) How might we better understand the ‘hierarchy of temporally defined musical gestures’ within individual performances of this Mazurka as a result of this analysis?

The second and third questions are dealt with in the final part of the chapter, which focuses specifically on Rubinstein’s interpretation from 1939. As for the first, consider the suggestion above that the number of cluster types within different performances may relate to the ‘perceived richness and interest’ thereof. Recall that in Chiu’s (1999) recording, only three timing clusters were found, as against eight in Rubinstein’s (1939) and eighteen in Magaloff’s (1977); similarly, the number of dynamic clusters respectively totalled three, six and eight. Although Magaloff’s interpretation might seem ‘richer’ on the strength of these higher counts, that is not how it comes across aurally – at least not to the authors of this chapter. For example, whereas Chiu’s playing features little temporal modulation and thus sounds rather mechanical, Magaloff’s is altogether unpredictable both rhythmically and metrically, with continual shifts in agogic accentuation as well as rubato more generally. Although to some this flexibility might seem imaginative and vitalizing, to our ears Magaloff’s approach sounds wilful and, in the context of a mazurka, disconcertingly unstable. Rubinstein, in contrast, subtly offsets rhythmic consistency (namely, a relatively steady pulse at the level of the bar and

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21 It would be difficult to dance to this performance if one chose to do so (notwithstanding Chopin’s intentions to the contrary): the ataxic qualities of the playing are inimical to the steady bar-level pulse typical of the mazurka genre, within which there nevertheless tends to be considerable flexibility ‘contained’ by the pulse.
within the accompaniment) against variegated rubato in the melodic line. As we will see, this may reflect a higher-level timing strategy on his part.

One point needs to be emphasized: it is not the presence or quantity of expressive clusters that matters most, but what use performers make of the features in question. Obviously it would be simplistic to claim that in a piece of this nature and duration, the presence of a given number of cluster types is a reliable indicator of artistic quality, likewise that fewer such cluster types are necessarily too few or many of them too many. Nevertheless, the foregoing analysis may reveal at least one contributing factor to the greater or lesser sense of satisfaction that some performances evince as compared with others. Although a listener might intuitively apprehend the relative differences between these performances, the study here demonstrates and defines them more explicitly, allowing one to make up one’s own mind in response to a greater range of evidence than the ear alone can muster, even after repeated listenings.

Part 3

Although the naked ear has undeniable limitations, it is almost certainly the musician’s most important tool – likewise, potentially, the analyst’s. Long before one prepares note-to-note or beat-to-beat representations of the timing and dynamic information in performances, it is advisable to listen over and over to a performance not only to gain general familiarity but also to decide what is interesting and distinctive about it. Admittedly, such a judgement will be subjective, but at the very least identifying the most intriguing features can act as a starting point for more thoroughgoing study. On first hearing Rubinstein’s 1939 recording, for example, one might be struck by the unusually delicate articulation and relatively contained dynamic compass, the latter of which serves to highlight the music’s temporal shaping, especially the refined rubato used with such flair in section B. Compared with the other recordings in our sample, Rubinstein’s stands out not only by virtue of these characteristics but also by achieving underlying control and improvisatory freedom in the same creative breath. That combination is surely one of the keys to playing Chopin well, at least judging by the compositional and performance aesthetic that can be construed from his music and from the accounts of those who heard him play; it may also be a hallmark of great music-making more generally.

But what is the source of that underlying control? And how does Rubinstein work within as well as against it? It is possible to answer these questions using one’s aural powers and tools of verbal description alone, but application of the analytical findings presented above may be revelatory, allowing us furthermore to

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22 This is one reason why the following discussion focuses on timing.
address the issues raised at the end of Part 2 concerning the musical significance of this sort of analysis, the cohesion and comprehensibility of the performance in question, and the nature of and interrelationships between the temporally defined musical gestures therein.

Let us start by reconsidering the beat-per-minute (BPM) data graphed in Figure 13.8(a). In Rubinstein’s performance a definite progression in temporal fluctuation can be discerned across the three A sections: the first is more temporally contained, the second more varied (possibly because of the influence of the preceding B section) and the last the most varied of all. B contrasts starkly with the preceding section in terms of both absolute tempo – it is noticeably much slower – and the greater amount of temporal shaping at bar and beat levels. C, too, has a good deal of temporal flexibility, but (as we shall see) its rhythmic articulation is highly patterned and thereby foregrounded. In D, Rubinstein combines flexibility and control to a greater extent than anywhere else, achieving a concentrated temporal flow with commensurate expressive intensity. The ensuing section, A”, is heard against that background, just as its own flexibility is striking in comparison with the tightly shaped coda to follow. All of these contrasts imbue the performance with a somewhat sectionalized character – yet the sense of progression across the A sections and the referential use of the more temporally articulated section C create large-scale directionality and continuity that thwart any possible sense of concatenation. Overall, then, Rubinstein achieves an equilibrium between the definition of structure and the generation of momentum – one that is manifested in numerous dimensions.

His manipulation of tempo throughout the performance creates further momentum in part through the use of three broad tempo levels that themselves act referentially as the music proceeds.23 Figure 13.9 shows the BPM data with superimposed tempo ‘averages’24 represented linearly. The introduction starts at around crotchet = 185 and section A follows at crotchet = c. 210. Most of section B is much slower at c. 160 beats per minute, while in A’ the tempo returns to crotchet = c. 210. The codetta begins at roughly the same speed but gradually tails off, with

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23 His recordings from 1952 and 1966 are similar in this respect, even though the precise tempo levels vary. There is less differentiation between the respective levels in the 1966 performance, which on the whole is slower than the earlier ones (for discussion of Rubinstein’s three recordings, see Spiro et al. 2010).

24 Various conceptual difficulties surround the calculation of average tempo (for discussion, see Gabrielson 1988). Taking into account the data for all beats in the performance (including those within general ritardandos that artificially depress the mathematical average for given sections), the tempos in BPM for the successive sections are as follows: introduction – 185; A – 211; B – 157; A’ – 211; codetta – 146; C – 164; D – 172; A” – 210; coda – 158. The overall average thus calculated is 182 BPM – but, as implied above, this is slower than the music actually feels; the same point applies to the tempos indicated for sections B, C and D, the codetta and the coda. In fact, the baseline tempo is probably close to the one specified in Chopin’s manuscript, i.e. 192 BPM.
a less rapid tempo in section C quite close to the one in section B, that is crotchet = c. 160. The first three phrases within D are palpably faster, at just under 185 BPM, whereas the fourth phrase slows towards the recapitulation. A" has virtually the same tempo as its earlier counterparts, and the coda begins at c. 185 — like the introduction — but becomes progressively slower from the third phrase onwards.

![Figure 13.9 Rubinstein, 1939 (Naxos 8.110656-57): beat lengths with average tempos in the principal sections](image)

These broad tempos act as a background to or foundation for the more immediate temporal fluctuations shown in the graph. Furthermore, they point to a distinct strategy on Rubinstein’s part — one confirmed by the similar layering in his 1952 and 1966 performances (see Spiro et al. 2010). The gestural properties of these temporal layers are all the more palpable if Figure 13.9 is understood in diachronic rather than synchronic terms. One way of grasping the underlying flow is in fact through literal gesturing, in other words by tracing the different tempo layers with one’s hand while mentally performing the music from beginning to end. What results is a gestural profile manifested physically — that is, a ‘conducting-out’ of one aspect of the music’s structure, an aspect of the structure of the music as performed. Even though Rubinstein may not have conceived the different tempos specifically in terms of physical gesture, their rendering within his performance at the very least creates a fundamental gestural energy.

Energy also arises from other gestural properties of the performance, and in this respect Rubinstein’s articulation of the Mazurka’s successive hypermeasures (that is, four-bar units) is noteworthy. As suggested earlier, the distribution of timing clusters reveals a preponderance of first- and second-beat agogic accents, with two out of eight clusters relating to the former and all but one of the remaining clusters pertaining to the latter (see again Figure 13.8(c)). Of the 30 hypermeasures in the piece, as many as 23 feature agogic accents on the very first downbeat; these occur within clusters RT3 and RT7, which otherwise appear in only eight bars. The preponderance of these two clusters on hypermetrical downbeats can be seen in

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It should be noted that tempo levels like the ones here might be physically represented in precisely this manner by musicians trying to characterize the temporal shaping of their own performances.
Figure 13.10, where the thinner arrows indicate the presence of cluster RT3 in the first bar of 19 hypermeasures all told, while the thicker arrows show cluster RT7 in the same position within four more hypermeasures. Note that RT7 – the cluster with the greatest relative stress on the first beat of the bar – is strategically used by Rubinstein as an anchor for the second half of section B (where the melodic rubato is most pronounced); this is also the case in the first two phrases of the reprise. Stability is additionally conferred through the repeated use of cluster RT3 throughout sections C and D as well as the coda, where Rubinstein maintains a steady agogic rhythm at once reflecting the phrase structure of the notated music and creating its dynamic counterpart in sound.

Figure 13.10 Rubinstein, 1939 (Naxos 8.110656-57): distribution of timing clusters and structure of piece, with arrows indicating where clusters RT3 and RT7 fall on hypermetrical downbeats

It would be worth exploring further this relationship between non-variant aspects of structure and those dependent upon the performer’s prerogatives. Although greater stress on the first bar of a four-bar hypermeasure would normally be anticipated, likewise a longer first beat in triple metre (as noted above), the absence and, thus, irregularity of emphasis on respective beats or bars in parts of Rubinstein’s performance effectively cast light on those passages where such emphasis does occur. Again, this supports the claim that musical structure as conventionally modelled is not the sole and possibly not even the primary determinant of expression; if that were the case, every first beat and every first bar would be emphasized at the relevant bar or hypermetrical level. Rubinstein’s less predictable approach reflects a shaping of the music both typical in its
idiosyncrasy (in the sense that no performance is ever a ‘true’ representation of underlying structure) and idiosyncratic in its particular non-conformance to underlying structure. In other words, the distinctive ebb and flow of first-beat/first-bar emphasis creates energy within this performance, with the irregularly regular downbeats stabilizing the music in precisely the way that a conductor’s fluid but controlled gestures generate forward impulse and effect coordination at the very same time.

One conclusion to be drawn from this is that the absence of particular features within a performance may be as musically significant as their presence. This certainly applies to another gestural aspect of Rubinstein’s interpretation, namely a dual impulse emanating from the first part of the Trio, section C, which Rubinstein treats in a remarkably systematic fashion. Indeed, the temporal regularity here so radically contrasts with the flexibility elsewhere that it ends up influencing how his entire performance comes across, possibly reflecting a conscious or unconscious strategy on his part for making the music cohere. Another look at the recordings of Chiu and Magaloff suggests just how unusual Rubinstein’s approach is compared with other interpretations as well as within his own. Table 13.1 shows the timing clusters in section C within these three recordings. As the previous discussion also confirms, Chiu’s displays a limited number of clusters, which may partly explain the broadly similar treatment of hypermeasures 3 and 4 (respectively CT3/2/1/3 and CT3/2/1/2 across the constituent four bars) and also the use of CT2 and CT3 in the third and fourth bars of both hypermeasures 1 and 2. In Magaloff’s case, one finds certain commonalities (MT7 in bar 2 of hypermeasures 1 and 3, MT3 in bar 3 of hypermeasures 1 and 4, and MT10 in bar 4 of hypermeasures 1 and 2) but no larger-scale patterning. Rubinstein, in contrast, treats the four hypermeasures with extraordinary consistency, employing the same succession of clusters – RT3/2/2/2 – in the first and third hypermeasures, followed in the second and fourth by an identical succession closely related to the one just mentioned, that is RT3/2/2/6.26 Recall that RT2 and RT6 feature second-beat agogic accents (see again Figure 13.8(b)), thereby revealing a fundamental similarity between the two hypermetrical patterns in use here. As we have seen, the first cluster in each hypermeasure, RT3, is characterized by a first-beat agogic accent, reinforcing the beginning of each four-bar group and thereby creating a higher-order rhythmic articulation.

26 On the whole the dynamic shape of Rubinstein’s section C is comparatively irregular, despite the fact that the first hypermeasure consists only of cluster RD3 (see n. 20 above for an explanation of the abbreviations in the table):

<table>
<thead>
<tr>
<th></th>
<th>Hypermeasure 1</th>
<th>Hypermeasure 2</th>
<th>Hypermeasure 3</th>
<th>Hypermeasure 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>3 3 3 3</td>
<td>2 2 3 3</td>
<td>1 3 1 2</td>
<td>1 2 1 2</td>
</tr>
</tbody>
</table>
Table 13.1 Timing clusters in section C of Chiu 1999 (HMX 2907352.53), Magaloff 1977 (Philips 426 817/29-2) and Rubinstein 1939 (Naxos 8.110656-57)

<table>
<thead>
<tr>
<th>Hypermeasure</th>
<th>Bar</th>
<th>Chiu 1999</th>
<th>Magaloff 1977</th>
<th>Rubinstein 1939</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>57</td>
<td>CT3</td>
<td>MT14</td>
<td>RT3</td>
</tr>
<tr>
<td></td>
<td>58</td>
<td>CT1</td>
<td>MT7</td>
<td>RT2</td>
</tr>
<tr>
<td></td>
<td>59</td>
<td>CT2</td>
<td>MT3</td>
<td>RT2</td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>CT3</td>
<td>MT10</td>
<td>RT2</td>
</tr>
<tr>
<td>2</td>
<td>61</td>
<td>CT1</td>
<td>MT5</td>
<td>RT3</td>
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<tr>
<td></td>
<td>62</td>
<td>CT2</td>
<td>MT1</td>
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<tr>
<td></td>
<td>72</td>
<td>CT2</td>
<td>MT8</td>
<td>RT6</td>
</tr>
</tbody>
</table>

It is the striking regularity of section C that distinguishes it from the rest of Rubinstein’s performance. In this pivotal passage, the listener is invited to re-evaluate everything that has been heard prior to the Trio, the flexibility of the earlier music standing out in retrospect against the temporal consistency in C; at the same time, one newly anticipates what will follow, with an expectation of ongoing regularity dissipating as flexibility gradually prevails once again. Thus, paradoxically, greater cohesion is achieved through contrast, and along with it a heightened sense of momentum: huge impulses are unleashed in both directions through the idiosyncratic temporal structure that Rubinstein creates, backward towards the beginning and forward towards the end.

Figure 13.11 depicts these impulses as broad gestures emerging from section C at the core of the performance – gestures that hint at the generation of both centrifugal and centripetal force. But the music’s directionality is not defined only by these outwardly directed gestures: as we have seen, Rubinstein also creates forward momentum through the layered tempos reproduced in the middle of the
diagram, as well as the ‘irregularly regular rhythm’ of the stressed hypermetrical downbeats shown at the top. This hierarchy of temporally defined gestures portrays an essential motion within the performance while also identifying how and why Rubinstein’s Mazurka comes across as coherent, in the dual sense of cohesive and comprehensible. The image helps us understand what we are listening to but possibly unable to hear.

Figure 13.11 Rubinstein 1939 (Naxos 8.110656-57): hierarchy of ‘temporally defined gestures, depicting the temporal shape of Rubinstein’s performance’

Coda

To do full justice to Rubinstein’s performance as well as those of the other pianists, one would need to focus on a broader range of parameters, if not the entire task list presented earlier. The relatively constrained focus of this analysis need not be considered a weakness, however, even if more could be said. First of all, no single analysis can ever be exhaustive: selectivity has to be exercised if only for practical reasons – and that is as true of analysis as it is of performance, in which a range of different possibilities might well be pursued on different occasions. Moreover, music generally does not depend equally upon all or even many of the parameters that constitute it: just as composers often construct comprehensive and expansive musical arguments out of limited material, performers typically conceive their music-making in simple structural terms, attaching particular expressive significance to certain elements and using them as a backbone for the unfolding music. That this is true of Rubinstein’s performance from 1939 is open to debate, but it seems remarkable that his manipulation of timing in particular serves as the basis for much of what he does. In short, Rubinstein frames his performance in accordance with the key features of the mazurka genre – four-bar phrasing, bar-level pulse, agogic accentuation on downbeats (for stability) and on
second beats (for vitality), and other forms of melodic rubato – although he moulds these idiosyncratically and creatively. Through our analysis we have arrived at a deeper understanding of Rubinstein’s Mazurka as well as Chopin’s Op. 24 No. 2 more generally. The fact that more work would be needed to plumb the potential of the latter in terms of all the different performances that do or could exist is not to be lamented but rather to be celebrated – by those who play the piece and by those who choose to analyse it, each in their own ways.

References


