

# STYLISTIC ANALYSIS THROUGH BODY MOVEMENT\*

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## ABSTRACT

Romantic music is characterized by large fluctuations of tempo and dynamics. The *rubato* is one of the most important stylistic characteristics in Chopin's music. Many studies identify the "expressive timing" and "expressive patterns" that performers create during their performance by adopting a motor program: the formulation and execution of musical ideas pass through the body. The *rubato* is a type of "expressive timing" that the performer uses to reflect and give expression to hierarchic musical structures. Other studies are also focusing on the relationships between the law of physical motion and expressive timing. This research shows how young pianists, who feel time oscillations of Chopin's *Mazurka* through their bodies, produce expressive *rubato* patterns in their performances. The assimilation of piano *rubato* through the body has helped to develop a motor programme in their performances.

**Keywords:** learning process, skilled performance, motor skills, stylistics component, music perception

Whenever we listen to Romantic music, we always feel involved in the magic atmosphere conveyed by the performer through interpretations rich in

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dynamics and fluctuations of tempo. In a musical performance research study in 1997, Palmer said that the mechanical performance, with a constant tempo throughout the piece, is not the norm when performers want to give musical expression to their performance. Researchers from various fields and performers agree on the fact that the expressive fluctuations of tempo are a stylistic characteristic of the Romantic period. The performers convey *expressive timing*, as Windsor (2010) argued, to communicate musical expression.

Chopin's pianistic music is an example of expressive fluctuations, it refers to a particular and difficult rhythmic effect to give expression to the performance, named *rubato*. The *rubato*, as Hudson (1994) in his studies stated, is a performance component of the Romantic period. Molina-Solana, Grachten, Widmer (2010), in the analysis of some of Chopin's *Notturmi* by 17 pianists, showed each pianist had a personal approach when performing the *rubato*. These researchers identify the pianistic-specific patterns of *rubato* style by each pianist.

The present research focuses on the way to teach the *rubato* and what kind of *rubato*.

In particular, it focuses on the following questions:

- Can the analysis of specific *rubato* patterns, through body movement, be useful to piano students in the understanding expressive fluctuations of tempo during their performance?
- Is it more simple to achieve *rubato* through the body rather than singing it or listening to the sung voice?
- Finally, can this motor experience be useful in the development of a motor program in order to gain the *expressive timing* in piano performance?

The aims of the present research are to verify:

- How much young piano students are positively influenced by the *rubato* performance when they are trained to feel time oscillations, dynamics and articulation changes through their bodies.
- How the piano performance improves after the students have felt the patterns of *rubato* in their body, compared to the performance of the same piece when the students have sung the *rubato* patterns.

The research took place in Bologna at the "Centro inCanto" in February 2012 with young piano students who were asked to study the first twelve bars of Chopin's *Mazurka in B flat* WN 41.

Recent research (Godoy and Leman 2010; Davidson and Correira 2007) asserts that expressive music communication is mostly conveyed through body movements which are transformed into sounds by the pianist and at the same time decoded, understood and interpreted by the listener. Both players and listeners

focus spontaneously and naturally on the quality of the movements which produce sounds during the performance. Gestures are considered to be movements to communicate thoughts and feelings. In fact, Camurri (2000; 2008) uses the term “expressive gestures” to refer to the body movements which convey affective and emotional meanings. Gesture is the way through which the performer gives shape to fluctuations of time, conveying *expressive timing* (Windsor 2010).

Delalande (1985) also talks about a mental gesture which is a response of the listener’s imagination. Berthoz (2000), Liberman and Mattingly (1985) say sound is a mental simulation of an action: sound is perceived through a mental image which might correspond to the musical process which generated the sound. This means that there is a correspondence between produced sound and perceived sound: sound starts a motor response through the body, linked to the mental image of the movements used to produce the sound.

Friberg & Sundberg (1999) focus on the relation between motion of the entire body and musical performance. They start from the hypothesis that the final *ritardando* is only musically correct when it alludes to our experience of locomotion. They observe that the average velocity curve of runners coming to a stop, fitted well with the average tempo curve of the final recordings of Baroque music. Their kinematic model compares the musical rhythm and physical movement.

Music performance is the result of cognitive and motor skills. The performer, after analyzing music, changes musical structures into *expressive timing*, through gestures (Spiro, Rink, Gold 2011). Palmer (1997) in research on musical performance identifies individualistic aspects, that differentiate the performer, and normative aspects shared by the performer. The normative aspects are linked to cognitive functions of grouping, unit identification, thematic abstraction, elaboration and hierarchical nesting. The music performance is constrained by style-specific syntactic properties that transcend individual interpretations. The primary syntactic elements are meter and grouping (Cooper & Meyer 1960). Meter refers to periodic features; grouping refers to the segmentation of a sequence into smaller subsequences which form hierarchical levels. Clarke (1988), Palmer (1989, 1997), Sloboda (1983) state in their research that time dynamic, articulation and timbre expressive variations are deeply linked to the musical structure and its style specific syntactic properties. Palmer (1989) and Repp (1990-1992), Shaffer (1980) and Todd (1985) focus their attention on the fluctuations of tempo which take place, expressively, in the deceleration at the end of each musical phrase. This deceleration is a kind of interpretative strategy which helps to outline and distinguish the various phrase’s levels within an articulated musical structure.

In particular, the *rubato*, as Hudson (1994) defines, is a series of simultaneous expressive fluctuations of tempo, decreasing and increasing in speed in all parts of a musical piece. It appears in this way for the first time in the *Theorie der Tonkunst* (1789) by Christian Kalkbrenner and during the Romantic period it became more commonly used in performance. *Rubato* is a stylistic component of Romantic music, but it is also a way to give shape to *expressive timing* linked to musical structure. It has a communicative and interpretative aim which grows through the analysis of musical structures. After careful observation of these structures, the interpretative characteristics chosen by the instrumentalists can be established (Windsor 2011, Spiro, Rink and Gold 2011). On this subject, the musicological interest is trying to understand whether they are specific structural aspects of a composition, or the pianist's interpretative intervention mostly influence the *rubato* and other executive temporal inflexions.

The analysis and the comparison of two *rubato* performances (Ashkenazy Decca 1996; and L. Zilberstein Deutsche Grammophon 1999) of the first twelve bars of Chopin's *Mazurka* WN 41, the same used in the experience described later, are shown here.

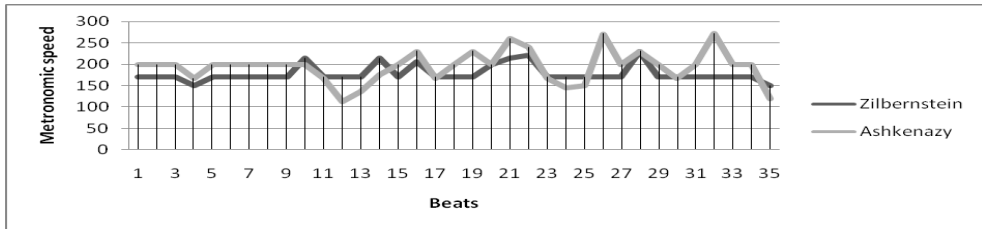
Example 1 is the score of the first twelve bars divided into Introduction and Section A, while in the figure 1, the two pianists' time variations are compared. The software Sonic-Visualizer was used to analyze both performances. It measured the time in seconds between a beat (crotchet) and the following one. This time interval survey extracted the metronomic speed indicated on the y-axis. This data collecting method is better described later when used to analyze the students' recordings.

**Example 1:** F. Chopin's *Mazurka in B flat major* WN41. In the example 35 beats have also been indicated and counted.

**Mazur** A M<sup>me</sup> Alexandrine Wolowska WN 41

The musical score for Chopin's Mazurka in B-flat major, WN 41, is presented in two systems. The first system covers bars 1 through 21, divided into an Introduction (bars 1-12) and Section A (bars 13-21). The Introduction is marked 'stretto'. Section A begins with a repeat sign and contains first and second endings. The second system covers bars 22 through 35, continuing Section A with first and second endings. The score concludes with a 'Fine' marking at the end of bar 35. The piece is in 3/4 time and is for piano.

**Figure 1:** L. Zilberstein's and W. Ashkenazy's time oscillations in the performances.



As shown in Fig. 1, Zilberstein maintains the initial metronomic speed of about 160. In her *rubato*, there are some *accelerando* on some beats and two *rallentando* on the 4<sup>th</sup> beat and on the final. After every *accelerando* or *rallentando*, she returns to the initial metronomic speed.

Conversely, Ashkenazy is freer: in his *rubato* the metronomic speed rises up to over 200. Ashkenazy drops the initial time after the 10<sup>th</sup> beat, producing an alternate performance made by *accelerando* and *rallentando*.

There are some common points. In both performances:

- the *rallentando* on the 4<sup>th</sup> beat;
- the preparation of Section A on the 10<sup>th</sup> beat and final *ritardando*, but with two different approaches.

Regarding the preparation of Section A, Ashkenazy's approach consists of a gradual decreasing speed on the 10<sup>th</sup>, 11<sup>th</sup>, 12<sup>th</sup> beats and then increasing in speed from the 13<sup>th</sup> beat, at the beginning of Section A. Conversely, Zilberstein's approach consists of a short increasing speed before Section A, then she returns to the initial speed. In the final *ritardando*, the performers choose two different strategies. Zilberstein decreases speed on the 34<sup>th</sup> and 35<sup>th</sup> beats from her initial speed; whereas Ashkenazy increases speed from the 31<sup>st</sup> beat and gradually decreases until the end. It is also interesting to point out that both performers increase the speed on the triplet in the 16<sup>th</sup>, 22<sup>nd</sup> and 28<sup>th</sup> beats.

In the experiment conducted in Bologna, the students learned the first twelve bars of *Mazurka* according to an interpretation model suggested by the research teacher. This model is in accordance with all the above proposed readings and the analytical study of the two above mentioned performances.

The main characteristics of the model are:

- Chopin's indications written in the score: *stretto*, meaning *accelerando* in that part
- formal structure: introduction and Section A
- Ashkenazy's and Zilberstein's performance suggestion and in particular increasing speed on the rhythmical sequence made of eighth notes and triplets.

- final phrase's *rallentando*.

The following model consists of eight points of *rubato* pattern:

- 1) *Stretto*, written by Chopin, placed between the 1<sup>st</sup> and the 2<sup>nd</sup> bars: from the 4<sup>th</sup> to the 6<sup>th</sup> beats there is *accelerando*
- 2) *Rallentando* on the 3<sup>rd</sup> and 4<sup>th</sup> bars, balanced by *stretto*, from the 7<sup>th</sup> to the 12<sup>th</sup> beats and at the same time to prepare for Section A.
- 3) *Accelerando* on the 5<sup>th</sup> and 6<sup>th</sup> bars on the 15<sup>th</sup> and 16<sup>th</sup> beats
- 4) *Accelerando* on the 7<sup>th</sup> and 8<sup>th</sup> bars (21<sup>st</sup> and 22<sup>nd</sup> beats)
- 5) *Rallentando* on the 8<sup>th</sup> and 9<sup>th</sup> bars (24<sup>th</sup> and 25<sup>th</sup> beats)
- 6) *Accelerando* on the 9<sup>th</sup> and 10<sup>th</sup> bars (27<sup>th</sup> and 28<sup>th</sup> beats)
- 7) *Rallentando* on the 10<sup>th</sup> and 11<sup>th</sup> bars (30<sup>th</sup> and 31<sup>st</sup> beats)
- 8) *Rallentando* on the 12<sup>th</sup> bars at the end of the 34<sup>th</sup> and 35<sup>th</sup> beats.

The example 1 bis below shows the eight points linked to the musical score. The students first learned this model through sung practices, then through specific body movements.

**The Example 1 bis:** Chopin's *B flat major* WN 41 *Mazurka* with indications of the eight points proposed in the model for a possible *rubato* performance.

**Mazur** A M<sup>lle</sup> Alexandrine Wolowska

Below the explanation of the research:

### Subjects

Seven piano students aged 11-13 took part in the research.

### Materials

- The first twelve bars of Chopin's *Mazurka in B flat* WN 41
- Digital recorder for collecting data
- PC and software Sonic-visualizer for data analysis.

Students were divided into two groups, for four piano lessons lasting one hour each. The two groups worked with the same method.

- 1) first lesson on the **Introduction** (Ex. 1 bis), following the instructions of sung voice
- 2) second lesson on the **Introduction** (Ex.1 bis), teaching specific body movements.
- 3) Third lesson on **Section A** (Ex. 1 bis) following the instructions of sung voice
- 4) Fourth lesson on **Section A** (Ex. 1 bis) teaching specific body movements.

Using sung voice means performing the first twelve bars, according to the eight-point *rubato* model presented in the Example 1 bis. The students listened to the teacher and then they performed Chopin's first twelve bars, following the teacher's sung instructions.

Using motor activities means proposing a series of body movements so that the students felt the eight *rubato* points presented in the *rubato* model (Ex. 1 bis).

Referring to the **Introduction**, according to *rubato* points (one and two) presented in the model:

- 1) Students clapped their hands on the note.
- 2) Students walked on the beat of every note while singing.
- 3) Students walked on the beat of every note while clapping their hands on the crotchet inside each minim and, dotted minim, namely the second and third internal crotchets.

Referring to **Section A**, according to the *rubato* points (from 3<sup>rd</sup> to 8<sup>th</sup> points):

- 1) Students sung the melody while walking on the crotchets.
- 2) Students walked on the beat of every note while clapping their hands on the crotchets.
- 3) Students drew the rhythm and agogic variations in the air holding a scarf at either end while singing the melody.

The main procedure compared the various performances recordings in order to determine how specific body movements can influence the *rubato* expressive performance. The comparison measured the time between one beat and the next.

Each student recorded the first twelve bars of Chopin's Mazurka five times:

**Recording number 1:** the students recorded without any suggestions from the teacher. This recording was not analyzed or compared to the others.

The following recordings were analyzed:

**Recording number 2:** after having heard the teacher's sung instructions on **Introduction**.

**Recording number 3:** after specific body movements conducted by the teacher on **Introduction**.

**Recording number 4:** after having heard the teacher’s sung instructions on **Section A**.

**Recording number 5:** after specific body movements conducted by the teacher on **Section A**.

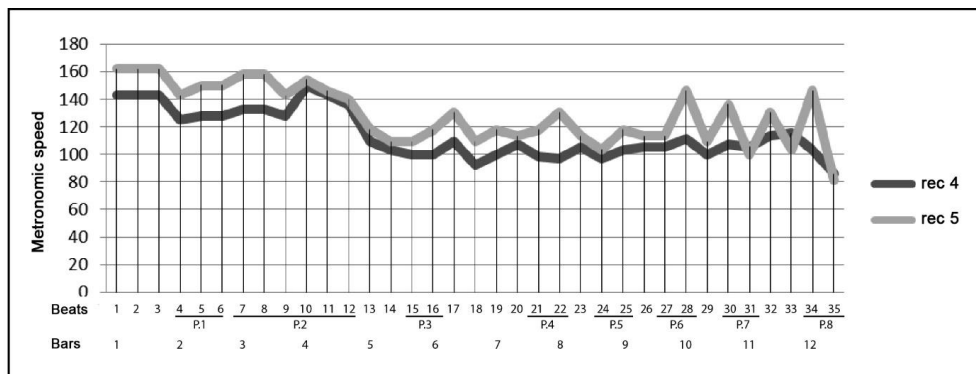
The software Sonic-visualizer was used to analyze the recordings. The collected data was analyzed by measuring the time in seconds between one beat and the next. The measurement system was studied by Silvia Malbrán and it is based on the time interval division into 480 ticks. The software allows a tolerance of more or less 60 ticks (at a metronomic speed of 150): the sounds recorded within this period of time were not taken into consideration because they were not audible.

In the following figure (Fig. 2), there is the comparison between the 4<sup>th</sup> and 5<sup>th</sup> recordings:

- 1) **Recording 4** after sung instructions.
- 2) **Recording 5** after specific body movements.

Figure 2 shows the speed variations on *Mazurka*’s 35 beats by one of the students.

**Figure 2:** On y-axis the metronomic speed; On x-axis the 35 beats with the eight *rubato* patterns points; the numbers 1 to 12 refer to the 12 bars.



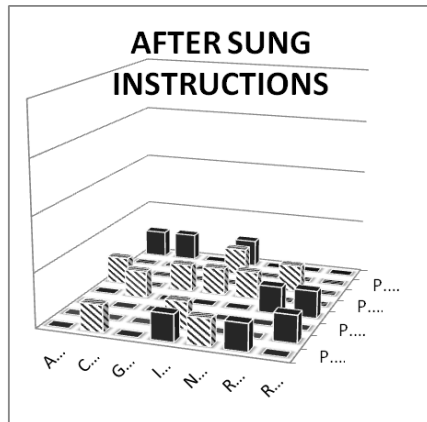
The speed variation is more evident on the 5<sup>th</sup> not so much in the **Introduction**, but especially on the **Section A**, in particular from 27<sup>th</sup> to 35<sup>th</sup> beat.

The graphic below shows the comparison between the 4<sup>th</sup> and 5<sup>th</sup> recordings of each student after sung instructions and after specific body movements, regarding the eight *rubato* patterns’ points.

Each block is a *rubato* pattern and displays a rhythmic variation: the blackblocks indicate that the students correctly performed the eight points

according to the instruction given; the striped blocks indicate that the students only partially performed the eight points correctly according to the instruction given. None of the blocks indicate any variations of tempo.

**Graphic A:**



As shown in the above graphic, after motor experience the number of columns is more. Most students, graph B, perform, even if only partially, a greater number of points than the performances of the graphic A.

**Graphic B:**

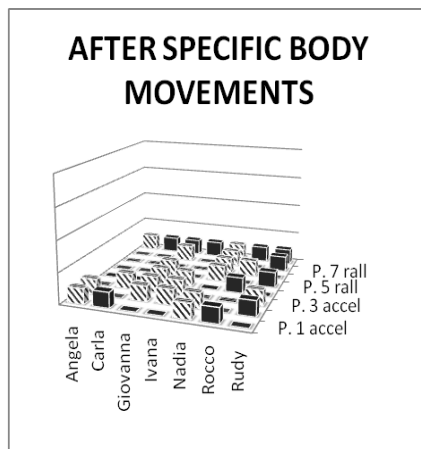


Figure 3 below summarizes the quantitative data of the two recordings of each eight *rubato* patterns more clearly.

For each of the eight points it is indicated how many students carried out the *rubato* and how they performed it.

Figure 3:

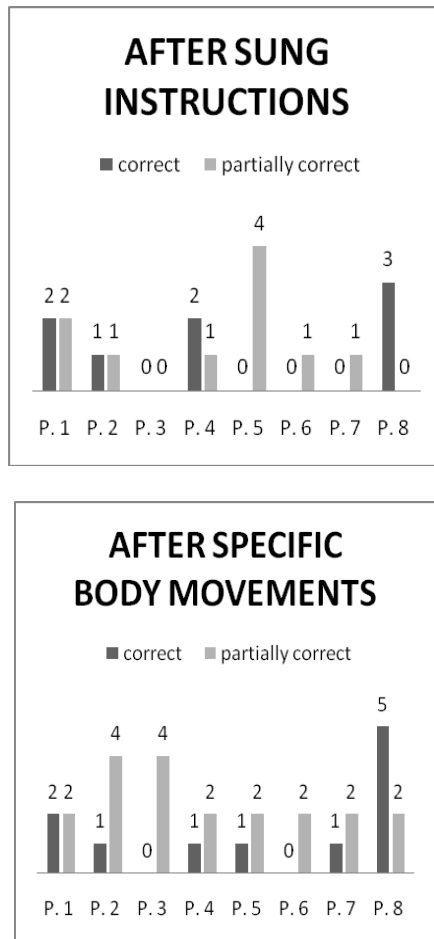


Fig. 3 shows how much the motor experience improves the students' *rubato* performance. In fact, regarding the 2<sup>nd</sup> *rubato* pattern point (P. 2), linked to the musical structure, Introduction and Section A (see Ex. 1 bis), we can see that five students perform it. One student performs correctly, the other four only partially. We can see that after sung instructions one student performs the *rubato* correctly and the other only partially.

The increasing speed on 3<sup>rd</sup> point, as seen in the triplet in Example 1 bis, is performed by four students after doing specific body movements, but none of the students increase the speed, after sung instructions.

Regarding the final *ritardando* after doing specific body movements all students perform the 8<sup>th</sup> *rubato* pattern: five students correctly and only two

students partially correct. We can see that after sung instructions only three students perform it correctly.

Taking into consideration the aims of this research, how much young piano students are positively influenced by the *rubato* performance when they are trained to feel time oscillations dynamics and articulation changes through their bodies, the results show: an improvement in students' ability to perform the *rubato*. Fig. 3 shows that body movements are more effective than the mere use of the voice which continues to be very useful to communicate musical meanings in instrumental lessons.

The result of this research is encouraging, it paves the way for having a new perspective on the observation of each students' *rubato* style. It also observes the relationship between motivations and use of movements in order to improve expressive and stylistic features in young musicians.

Personally I have observed that my students were more motivated to perform the *rubato* and the piano in general. During the movement activities students were happy to use their bodies to aid their progress. The students' recordings after the movements show a more expressive sound and touch during their performance.

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