Before and after

Correction of gestural and expressional misunderstandings in orchestral conducting

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Master of Science Thesis

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Abstract

The conductor of an orchestra is a central figure. He inspires musicians during rehearsals and leads them during performance. The main way how a conductor expresses his ideas comes from his nonverbal language and this study investigates the professional nonverbal language of a conductor.

The purpose of this study is to discover whether there is a difference in nonverbal language of a conductor after spotting misunderstandings during a rehearsal. During an orchestra rehearsal, a conductor stops the orchestra and gives some comments to musicians and then they repeat the same bars one more time. The research interest here is to find out whether the conductor repeats his movements after the stop and if not, what the difference in his nonverbal language is.

For this study there was chosen a video recording approach and a quantitative method where all gestures are counted, encoded and expressed as a percentage. The data was recorded during two different opera rehearsals with two different conductors at the Göteborg Opera, Sweden.

The findings reveal that after the stop both conductors increased using gaze and deictic gestures in both hands. However, they reduce the use of head and posture movements. At the same time conductors increase expressiveness of the left hand. First conductor emphasizes time beating that comes from the march genre while second conductor increases the vibrato effect that emphasizes the lyrical side of the opera.

List of musical terminology[1]

Accent (French accent) – to play with a stress/emphasis

Articulation (Italian articulando) - Articulation. Precise sound

Agogic (from Gk. agōgē, 'leading') - describes accentuation demanded by the nature of a particular musical phrase rather than by the regular metric pulse of the music (metrical accentuation)

Bar - a line drawn vertically through a staff or staves of musical notation, normally indicating division into metrical units (of two, three, four beats, etc.); now also the name for the metrical unit itself.

Beat - the basic rhythmic unit of a measure

Crescendo (It.: 'growing', 'becoming louder'; gerund of crescere, to grow) - Growing. A directive used by composers to indicate that a passage should gradually increase in loudness

Decrescendo (from decrescere: 'to decrease', 'wane'), sometimes abbreviated decresc., is virtually synonymous with diminuendo, but diminuendo is sometimes preferred as being more positive.

Diminuendo (It.). 'Diminishing', - i.e. gradually getting quieter

Dynamics are expressed more simply and directly. The Venetian Giovanni Gabrieli (1556?–?1612) introduced the words piano (soft) and forte (loud) into his scores; they became the basis of a system running from pianissimo (*pp*) to fortissimo (*ff*), with softer and louder extensions possible.

Espressivo : (Italian espressione).- to play with expression; expressive

Legato (Italian legato) – on the stings: a group of sounds played smoothly by a bow in the same direction in a connected manner

March, originally a musical form having an even metre (in $^2/_4$ or $^4/_4$) with strongly accented first beats to facilitate military marching; many later examples, while retaining the military connotation, were not intended for actual marching

Phrase - a complete musical utterance, roughly corresponding to what can be sung or played in one breath or played with a single stroke of the bow

Portamento (Italian portamento) – the way of playing the notes should be prolonged but not connected

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[1] Was taken from (Kruntyaeva, Molokova, & Ctupel, 1977), www.britannica.com and www.oxfordmusiconline.com

Tenuto (Italian tenuto) to play exactly with the written length and strength or can be played a little bit longer. To indicate playing tenuto a horizontal line is drawn under or over the note

Triangle is percussion instrument consisting of a steel rod bent into a triangle with one corner left open. It is suspended by a gut or nylon loop and struck with a steel rod

Syncopation, in music, is the displacement of regular accents associated with given metrical patterns, resulting in a disruption of the listener's expectations and the arousal of a desire for the reestablishment of metric normality; hence the characteristic "forward drive" of highly syncopated music. Syncopation may be effected by accenting normally weak beats in a measure, by resting on a normal accented beat, or by tying over a note to the next measure

Staccato (Italian staccato) - the notes are cut short when playing staccato. In a musical notation there is a dot under or over the note that indicates staccato. When strings are playing staccato, it is done by a light bow that is pushing in one direction.

Stringendo (It.: 'drawing tight', 'squeezing'; gerund of stringere) – a direction to perform with more tension and therefore specifically faster

Timpani (Italian "drums") - also spelled tympani – is orchestra kettledrums. In modern timpani the bowl-shaped shell is usually of copper or brass. The membrane, of calfskin or synthetic material, is secured by a metal hoop. Timpani tone varies according to the texture of the head of the stick and the area of the membrane struck

Time signature in musical notation is a sign or signs placed at the beginning of a composition. It indicates the metre which is the pattern of regular pulses (and the arrangement of their constituent parts) by which a piece of music is organized. Most often time signatures consist of two vertically aligned numbers, such as $\frac{2}{4}, \frac{3}{4}, \frac{6}{8}$ .The top figure reflects the number of beats in each measure or metrical unit; the bottom figure indicates the note value that receives one beat (here, respectively, half note, quarter note and eighth note)

Vibrato (Italian vibrato) – to play with vibration. Vibrating means a periodic slow change in pitch. Used to enrich sound and make it expressive

List of tables and diagrams

1. Introduction

1.1 Research area and research question

In this study it was decided to investigate nonverbal langue of a conductor during rehearsals. By observing and listening to many symphonic orchestra rehearsals with conductors it is studied how musicians are practicing. Rehearsal is the time when musicians train and master the pieces. Sometimes they stop in the middle of a piece and start from the beginning, sometimes they jump over some parts and play the last bars of a piece. Musicians have to control many things during a rehearsal so as to perform at a good level during a concert. Among the things that they keep under control are the technical side of a piece, dynamical development, ensemble among musicians and overall expression.

If a solo musician, for example a pianist, is rehearsing, he decides on his own what to change or emphasize in the piece. If an ensemble, for example a string quartet, is rehearsing, they decide together or first violin, because he is a leader, what to change/emphasize in this piece, while if it is an orchestra, it is the conductor who will say what should be changed in the piece.

A normal pattern of an orchestra rehearsal goes in the following way: musicians are playing and at some moment the conductor stops them. This suggests that some misunderstanding between the conductor and the orchestra occurred exactly at this moment because he stopped them exactly now. The conductor then gives some comments regarding the just played music and then the musicians and the conductor repeat the same music again from a place that is a bit earlier than where he stopped them.

From an outsiders view it may seem that a conductor has the same gestures, movements and expressions for the music that is repeated. A scientific interest here is a posture of a conductor and his nonverbal language which is facial expressions, head movements, posture movements and gestures. Looking at the conductor it is impossible to answer a question such as whether there are some changes in nonverbal language of a conductor after the stop, because non verbal language has a fast pace and there are many professional coded movements.

Therefore there is formulated a **research question:**

"How does the nonverbal language of the conductor change after spotting misunderstandings during rehearsal?"

To answer this question, there is conducted a study at the Göteborg Opera, Sweden. Two video files were recorded from two different opera rehearsals with two different conductors. It is this data that is analyzed in this thesis.

There was adopted "The MUMIN multimodal coding scheme" by Allwood, Cerrato, Dybkær, and Paggio, (2004 v. 1.3) to analyse and transcribe the nonverbal language of conductors.

It was decided to discover the changes of the non verbal language of a conductor through the video recordings and a qualitative approach, which is discussed later, because by seeing if there is some difference in non verbal language it is possible to say:

- If the non verbal language is really changing and what is changing. Only thorough calculations can present objective data as for gestures/movements before and after the stop
- Such changes can identify the conducting style of a conductor and it is possible to see "a red thread" of these changes in these particular videos
- Through these changes it can be seen how a conductor shapes interpretation of the opera and how he wants to follow the composer's instructions written in the score

In this thesis there are presented and analyzed two types of stops during the rehearsals. The first ones is when the conductors stopped the orchestra in the middle of some musical extract and referred back to the just played music. It is an example where a clear misunderstanding occurred. The second type is when the conductors finished a musical phrase and then the conductors stopped the orchestra because there was a logical stop in the music. During this stop the conductors also refer to the just played music. The research interest of this thesis is non verbal language of a conductor before and after the stop therefore the non verbal language of two conductors is compared after two types of stops. Both types of stops are based on misunderstandings/misinterpretations therefore it does not interfere with the theory. In fact, the first type of unexpected stops dominates in the both videos.

A conductor knows exactly how the music should sound, therefore an idea that a conductor stops an orchestra because he is unsure about his own interpretation and is totally impossible. A conductor is a responsible leader, who trusts his orchestra and has trust from the orchestra. Therefore an approach by trial and errors is absolutely unsuitable here because it will undermine both reputation and trust to the conductor. A conductor has always a possibility for improvisations and new ideas during a rehearsal, though they are applied either when the music is played or a conductor can explain his vision about some extract.

During a stop a conductor says comments only as for the just heard music and it is done quite shortly because there is not so much time. The time of the rehearsal is limited and musicians have to go through quite a long piece of music during a rehearsal. Consequently, conductor's remarks are very short and aim to change an orchestra's interpretation only.

Nowadays a lot of scholars show a very big interest towards the nonverbal language of a conductor and it seems that there are big research opportunities in this field. Scientists use different methodology approaches and choose various aspects for their analysis. For example, Luck & Nte (2008) used a computer based environment to find out conductors' temporal gestures and how people synchronize with them; Fuelberth (2004) used a videotaped mode of a conductor who uses his left hand in order to prevent vocal tension; Cofer (1998) investigated short term conducting gesture instructions on different bands and as a measure instrument there was an individual musical performance, a pencil and a paper. It is seen that conductors use their body as an instrument to send nonverbal messages to the musicians and there are many aspects that can become the focus in future research.

1.2 Research type

The recorded video files during rehearsals at GO is the data that is analyzed here. In this thesis there is analyzed nonverbal language of two conductors during rehearsals.

The author of this paper was watching the video files, then counted gestures/expressions and then they were converted into percentage. It was decided that percentage was the most suitable way to describe and discuss the obtained data. Consequently, the best way to answer the research question is to present the data in the tables and describe it. This research has percentage points and in research with a percentage there is quite often used a term "Ex post facto research" which means that "a researcher does not control over variables" (Kothari, 2004, p.3). It means that a researcher just reports what happens and cannot influence the process.

Moreover, every table is accompanied by a comparative diagram with a total percentage of gestures/expressions done by every conductor before and after the stop.

This research has characteristics of "descriptive research" (Kothari, 2004, p.2) when the main way to present and interpret results comes from a description. In a chapter № 5 "Data results" the transcribed data is presented and the percentage difference of movements and expressions is described. In the following chapter № 6 "Discussion" the meaning of conductors' gestures and expressions is explained.

The files were recorded in a single time period during the spring of 2011, therefore it is "one-time research" (Kothari, 2004, p.4).

1.3 Purpose of the thesis

The purpose of this study is to provide an answer to the research question through the collected data regarding differences in the nonverbal language of a conductor during an orchestra rehearsal before and after the stop. This information is provided through the encoded transcriptions in the tables which are analyzed and discussed. The data analysis is done through a combination of an academic literature review, observations, interviews and findings from the video analysis.

This information can be helpful to understand how relationships between a conductor and orchestra musicians are build; provide insight into nonverbal language of a conductor since the data in the tables includes 40 different expressions/gestures of nonverbal language of a conductor; show the importance of verbal explanations when misunderstanding appears.

1.4 Research contribution

This study will definitely make a research contribution to the area of professional nonverbal language of a conductor. It will provide with new ideas regarding encoded nonverbal language of a conductor, give details about what is changing in nonverbal language after the stop and give a full picture of the body language of a conductor starting from facial display, head and posture movements and finishing with both arms.

Also, this study aims to provide new knowledge that can be used for other research papers both in communication science and in music.

1.5 Company presentation

The Göteborg Opera is one of the leading theatres in Western Europe. Every year this theatre has approximately 250,000 visitors and gives about 270 stage performances. There are three stages where artists perform: the Main Stage, the Small Stage at GO and one stage in Skövde, the Skövde Stage where artists perform regularly. On the Main Stage there are operas, ballets, musicals and concerts; on the Small Stage there are dance and choreographic experiments and on the Skövde Stage there are various performances both for kids and adults. Also, this theatre has free foyer concerts on Saturdays where people come and listen mostly to chamber music.

The artistic staff consists of opera singers, ballet dancers and orchestra musicians who play during performances. Consequently, there are three main types of performances – opera, ballet and musicals where invited artists perform. Operas have an important place in the repertoire of GO and there is an extensive history of European masterpieces that were performed on the Main Stage. Among them such composers as Daniel Börtz, George Frideric Handel, Leoŝ Janácek, Jule Massenet, Wolfgang Anadeus Mozart, Modest Musorgsky, Jacques Offenbach, Sergej

Prokofjev, Gioacchino Rossini, Giacomo Puccini, Jan Sandström, Richard Strauss, Igor Stravinsky, Peter Tchaikovsky. [2]

Regarding ballet, it is the most experimental and the most modern genre at GO because choreographers are in search of contemporary ways of expressions in this genre. For example, a live camera on the stage is able to record words, sounds and expressions in "Einstein and the guest house" by Mårten Bergkvist; a combination of a symphonic music with a piano soloist in "Eroica" based on music by Ludwig van Beethoven; a combination of music by Claude Debussy, Paul Dukas and Maurice Ravel in "Impressionist" by Kevin Irving ; having only 3 ballet dancers on a stage and a solo accordionist in "Julie3" by choreographer Jeanette Langert; music of string quartets by Dimitriy Shostakovich and ballet dancers on the stage. Moreover, the name of such a performance as "Re: Tchaikovsky" directed by Nicolo Fonte presents a mix of old and new in one performance on a stage.

Another powerful type of a performance is musical. This genre has its roots in the USA and nowadays it is wildly spread all over the world in many theatres. Musical is a mixture of a beautiful story, words, songs, movements and technical aspects. Among the recent successful performances at GO can be named "Beatlamania" (2005/2006) directed by Martin Yates, "Cats" (2006/2007) by Andrew Lloyd Webber, "My Fairy Lady" (2007/2008) by Frederick Loewe and Alan Jay Lerner, "Mary Poppins" (2008/2009) by Richard M. Sherman and Robert B. Sherman, "Guys and Dolls" (2009/2010) by Frank Loesser , "Sunset Boulevard" (2010/2011) by Andrew Lloyd Webber.

GO has a big symphonic orchestra that plays for all performances. The instruments that comprise the orchestra are **woodwinds (**piccolo, flutes**,** oboes**,** English horn**,** clarinets in B-flat/A**,** bass

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[2] Composers are put in alphabetic order

clarinet (and/or Clarinet in E-flat) bassoon, contrabassoon); **Brass (**horns in F**,** trumpets in C**,** trombones, bass trombone (2 Tenor, 1 Bass)**,** Tuba); **percussion** (timpani); **Strings** (harp, violins I**,** violins II**,** violas**,** violoncellos**,** double basses). Their repertoire ranges from baroque, through classical operas till modern musicals. Consequently, it is rather flexible.[3]

All musicians in the orchestra are professionals and they were trained in degree-granting institutions such as music academies/conservatories. At the academies/conservatories students study musical theory, sound production, enhance technical skills, play in student orchestras and chamber ensembles and give performances. After graduation musicians have a very high professional level. Being employees at GO they give many performances. A schedule of a musician can be quite busy from time to time. They can have a rehearsal in the morning and a performance in the evening. At the theatre there is established a rule that a rehearsal cannot last more than 4 hours, with a break inside, so that musicians do not get too tired, especially if they have a performance in the evening.

GO has its own conductor and the theatre also invites other conductors from different theatres and countries.

1.6 Scope

Chapter 1: Is the **introduction** chapter. The research question is presented and a research field of the thesis is discussed. Also, the research types, purpose of the thesis, research contribution are discussed. At the end of this chapter there is a short introduction about the company where the research was undertaken.

Chapter 2: In this chapter the **methodology** is presented. Such points as quantitative method, technical side of the study, interview with conductors, credibility of the findings and limitations of the study are discussed.

Chapter 3: In this chapter the **participants** of the study are presented. Here is given information about the conductor, the orchestra and the rehearsal.

Chapter 4: This section is the **theoretical framework**. The theoretical approach of this study that helps to analyze the data is formulated.

Chapter 5: In this chapter there is presented the transcribed **data** in tables.

Chapter 6: This chapter is where the **discussion** of the video recorded data is done.

Chapter 7: It is the **conclusion** of the thesis. The answer to the research question is presented and suggestions for the future research are given.

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[3] The information about The Göteborg Opera was taken from http://en.opera.se/

2. Methodology

2.1 Quantitative study

In the current communication research world quantitative method is rather popular. According to Trumbo (2006 et. al), 40% of all research papers in mass communication studies use quantitative method as a single method. It is a highly debated theme among scientists which method to choose only quantitative or only qualitative or several methods in one research. Also, scientists consider which method can present an answer to the research question in a better way. However, usually the study itself dictates which method to choose quantitative or qualitative.

The word quantity means "an amount of something that can be counted or measured"[4]. Having a comparative study here, when movements of the conductors are counted before and after the stop, quantitative method is used here and it is a single method. In this study there are counted face expressions, head and posture movements and gestures of both hands.

According to Rossman & Wilson (1985 p. 628) a quantitative method "can generate data that are presented numerically and manipulated statistically". After the video recording is done, all gestures and movements are counted, transcribed, coded, expressed as a percentage and put into the tables. The percentage clearly shows how many gestures where before and after the stop and what is the difference. Furthermore, in a quantitative study this percentage has "confirmatory analysis" (Cochran & Dolan, 1984, p. 29). In other words, a percentage and numbers present the result of the study. Precise data helps to clarify the subject of the study and makes it meaningful. Having the percentage in the tables confirms that "the power of mathematical analysis can be applied easily" (Rossman & Wilson, 1985 p.628).

To say more, both Westerman (2011) and Westerman & Yanchar (2011) support the idea of usage of a quantitative method in human studies because this method is explicitly interpretive and has a quality of a concrete specification. This study is a comparative study and thorough counting of conductors' gestures and movements, which were before and after the stop, is done in order to collect the data.

2.2 Video Recording

In order to conduct this research, a video recording method was chosen.

One of the features of a video recording method is that it provides "density to the data record" (Hindmarsh, 2008 p.344). Not only is it possible to see video and hear what is going on, but there are also many other details on the video that can be considered from different perspectives, for example interaction flow, intonations.

In this research, music is intertwined with nonverbal language of a conductor who leads musicians and it is very important to hear the music and see the conductors' movements

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[4] Longman Dictionary

simultaneously. Even when only having a video recording with an audio component, it is possible to answer the research question.

"Filming has an advantage that the tape can be played a number of times" (Argyle, 1988, p. 24). It is simply impossible to count all the conductors' movements during a live observation since body language is rather intensive, developed and professional and there are many aspects which have to be taken into consideration for this research project. Therefore it is quite convenient to watch the video files a number of times and write down all the necessary information while doing so. In other words, using video "provides [a] unique access to the details of social action" (Heath, Hindmarsh & Luff, 1952. p 1)

Unlike other methods, a video recording "creates opportunities for the analysis of social action and interaction in everyday settings and can help provide distinctive contribution to observation, method and theory" (Heath, Hindmarsh & Luff, 1952. p. 13). The video files for this research contained a recording of a live interaction between the conductors and the orchestra. Even though there are sharp memories about an interaction process in mind, only video files can be helpful to make a thorough calculation of nonverbal language movements and expressions.

Moreover, the data in this research is "primary data" (Polonsky & Waller, 2001, p.95) because it was recorded only to answer the research question in this thesis.

2.3 Technical support

2.3.1 Gaining access and agreement

In order to do this research, firstly, a research proposal was sent to the Göteborg Opera where it was discussed by the manager's board. After receiving a positive answer to write this thesis, there was an oral agreement between the author and the manager that the recorded video material would not be distributed, there would not be any commercial usages and no broadcastings.

Then the orchestra musicians were given the research proposal to read and afterwards they agreed to participate in the project. Then, the management discussed the research proposal with the conductors and they agreed to be recorded and finally the author had personal meetings with each of them and also received positive answers to do the recordings.

The author of this thesis has a professional background in music (Master of Art, piano) and the theatrical settings were quite natural for me. The musical setting and the interaction between the conductor and orchestra was perfectly understood and there was no need to ask for some explanation regarding procedures or routine.

Also, there is a personal interest to write this paper because it gave a great opportunity to find out more about conducting as a profession. It was a great chance to learn from two conductors and get an insight into their professional life.

2.3.2 Video recording settings

Two videos were recorded from two different rehearsals each of 45 minutes length, totaling 90 minutes. The video recordings were done in a big orchestra exercise room where musicians and a conductor were practicing together.

The camera was placed on a tripod in a fixed position and was directed at the conductor. Generally, it was a medium and close range plans. The camera is a high end domestic one. The author was staying behind the camera and did not get in front of the camera lens. During the recording only the internal microphone of the camera was used.

On the days of recording the orchestra manager informed all musicians and the conductor that there would be a recording session before the actual recordings started.

It is also important to mention that the musicians and the conductors behaved naturally and recording session did not interrupt their normal work flow. They did not turn to the camera on purpose to look there and neither had they paid attention to the video equipment.

The whole study is anonymous and there are no names included.

It is necessary to notice that there have been other studies in the past that have analyzed the nonverbal language in a musical setting. For example, Wollner & Auhagen (2008) analyzed how orchestra musicians perceive gestures of a conductor from different perspectives when they play; and Clayton (2007) conducted video based observational analysis of Indian musicians.

2.3.3 Interviews with conductors

Interviews are one of the essential ways to gather information for research. During the time of writing this thesis the author requested to have interviews with each conductor at the Göteborg Opera. The main topic of the discussion was to find out more about this profession from inside which could be helpful for this paper. Mainly it was semistructured interviews with questions prepared in advance, but also some additional questions that came up during the meetings.

It is necessary to say that this thesis does not contain any quotations from those meetings and the obtained information is used only to understand the working process and relationships between a conductor and the musicians. Also, during interviews the author did not use a tape recorder and took notes only on paper.

2.4 Credibility of results findings

2.4.1 Validity

The idea of validity is really important for any research. Generally, validity answers the question if "we are measuring what we want to measure" (Muijs, 2004, p.65). A thorough calculation/measurement of conductors' gestures and expressions will provide with the data on which the findings will be based. The more accurate the findings, the more precise answer can be given to the research question.

To guarantee a high validity of this research is was decided to invite a professional pianist who has had a long practical experience in playing the piano in an orchestra under a conductor. This was done in order to make a prove check of some conductors' gestures/expressions, and to make some clarifications regarding the nonverbal language and movements. Moreover, involving peers and colleagues into the research process can improve "analysis and understanding" according to (Golafshani, 2003, p. 604.) As a result, for this thesis there have been some discussions with other professional musicians regarding the meaning of some gestures and how it is possible to transcribe them.

2.4.2 Reliability

The concept of reliability is central for quantitative research**.** An unreliable result will lead towards wrong research findings hence the research question may be answered incorrectly. To insure a high reliability of this research study "repeated measurement technique which means to measure the same thing several times" (Muijs, 2004, p.72) was used. After the transcriptions were finally coded, the author went through the video files and transcriptions again in order to see if something was missed in the transcriptions and made a few necessary corrections.

After the author went through one more time, some additions were made to the table with the hand transcriptions. This part of body language is specific, varied, and intensive and it requires more attention than other parts of the nonverbal language of the conductor.

2.4.3 Generalisability

Generalisability or what is also called external validity is "if finding can be applicable to other setting/organizations" (Sunders, Lewis & Thornhill, 2007, p.151*).* However, one problem arises if the research is done only in one organization or in an organization which is remarkably different. Moreover, this research is quantitative and according to Winter (2000 et. al) "quantitative research attempts to fragment and delimit phenomena into measurable or 'common' categories that can be applied to all of the subjects or wider and similar situations"

Nevertheless, after finishing the video transcriptions and analyzing the data, this research will give some new ideas regarding the nonverbal language of a conductor.

2.5. Limitations

Firstly, it is necessary to note that the number of conductors is limited to two people. Having a bigger number of conductors would definitely give a broader answer to the research question and would give a richer data set.

Secondly, the video recordings were shot during different phases of rehearsal. The first conductor had an opera that was going to be a premier in the theatre and there was more practicing to be done and more rehearsals with the musicians. The conductor and musicians have to study the music together and play a lot of times in a rehearsal room before going to the stage

rehearsals. The second conductor had a different case. He had an opera that had already been performed on stage in the theatre and the musicians knew the music well, since they used to play it many times before. The second conductor got only one single rehearsal with the musicians before going to the next level of rehearsals on the stage with singers. Therefore the level of readiness of the musician was different and the conductors used different approaches during the recorded rehearsals. The first conductor quite often repeated some parts of music, while the second conductor had fewer repetitions and went through the opera quite quickly.

Thirdly, there are two different opera types. The first opera is an example of a lyrical and dramatic opera and the composer pays a lot of attention to the tragic and dramatical side. The second opera also has a drama side, although it is more lyrical. Here the composer emphasizes the lyrical expression and the psychological side a lot. Having different operas means that there are differences in the conducting style, the number of musicians and instruments. For the 1st opera there is a big group of brass instruments and percussions. They have a very strong sound and can make the opera more dramatic. The second opera has a rich group of sting instruments. They play a lot with vibrato in order to emphasize the emotional condition of singers/heroes.

Consequently, the operas cannot be compared and they are analyzed separately. However, quite often some common tendency in movements between the conductors can be found and only then they are analyzed together.

This study does not tell how serious the misinterpretation/misunderstanding was, while it points out only the places where misunderstandings occurred. Also, this thesis does not explore misunderstandings that happened during rehearsal when the conductor succeeded to correct them with his hands or other movements while playing without stopping the orchestra.

Also, the study does not divide gestures for F (forte) and P (piano). Only the quantitative approach is used and all gestures are counted together.

3. Participants and rehearsal in the theatre settings

This section presents some information regarding such professions as conductor and orchestra musicians. Also, there is given information as for what rehearsal is in the theatre setting.

3.1 Conductor

The word conductor comes from the Latin word "conducere" which means "to lead or to guide" (Galkin, 1986, p. 187). "Conductors are responsible for determining and communicating the overall style and interpretation of the works the conduct, first to the performance in the rehearsal and then to performance and audience during a performance" (Hannan, 2003, p.62). To say it in other words, conductors are leading orchestra musicians and give them direction through their nonverbal language on how to play a music piece during a rehearsal and then perform together a prepared piece on the stage.

First of all, conductors are trained musicians who afterwards decided to become conductors. These people are very literate and have a lot of specific knowledge. Opera conductors additionally possess knowledge about a singing technique. It is necessary to understand sound

productions of a voice and then the conductor can give advice on how to sing something in a particular extract; the conductor can tell a singer, for example, which part should be emphasized to some extent. Moreover, conductors know several European languages since there are many opera masterpieces which are sung on the original language and the conductors have to know about pronunciation aspects and articulation in that particular language so that they can correct the singers, if needed.

Musicians in the orchestra play by notes, while a conductor has a special book which is called the score. This book contains music for all instruments and voices and they are written in the order. The conductor is the only one person who has this musical score.

It is the job of a conductor to know the technical and tonal abilities of all the instruments in the orchestra. This knowledge will help to communicate the interpretation to musicians in their technical language.

During a performance a conductor uses his arms and posture in order to send various nonverbal messages about the music to be performed. For example, to show different touches to some instruments such as tenuto, accents or dynamics.

The conductor has a special baton in the right hand. It is a special thin wand that is used for "emphasizing metrical outline" [5] during rehearsals and performances. To say it in another way, the right hand is used to keep the beat so the musicians know in which pace they have to play. The left hand is used to show entries for the instruments and various nuances. Generally, in order to obtain the desired result, the conductor has to be able "to communicate dynamics, details of phrasing, articulation (legato and staccato) and general expression" (Rudolf, 1950, p.2). Also, conductors can use their facial expression and body as a way to express some musical nuances in particular. Consequently, quite an extensive nonverbal language exists that a conductor has to know how to speak and musicians have to know how to understand and interpret. This non verbal language is called technique of conducting that is learnt.

By observing conductors during symphonic concerts it is clearly seen how naturally they are intertwined with musicians. Their gestures are prepared during rehearsal and the room for improvisation during the concert is rather small, although possible. Conductors hear how musicians are performing during the concert and can change some movements, if necessary, in order to adjust the sound or drama side of the performance.

"Conductors must communicate the structure of the work, and the emotional or intellectual impact they believe the composer intended or their own interpretation" (Hannen, 2003, p. 62). Coming to 1st rehearsal conductor already has the whole opera in his mind and he starts offering his own interpretation of the music from the beginning of the rehearsal.

3.2 Orchestra musicians

A symphonic orchestra is a complex musical organism that has a lot of instruments at its disposal. Among them are wood wind, brass, percussion and string sections. The word orchestra comes from a Greek word "orchestra" which means a special area "in front of the stage where

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[5] http://www.britannica.com

the chorus danced and sang during theatrical performances" Montagu (2012). However, with the musical development when the number of musicians in the orchestra was standardized, the word orchestra became associated with the musicians. In modern language the place where musicians are seated and play in the theatre during performances is called an orchestra pit.

The number of musicians and played instruments in the orchestra was not the same during all times. According to Montagu (2012), in the baroque time orchestras usually consisted of string instruments. Sometimes there were some additional instruments such as organ, harpsichords and lutes. In the classical time the number of musicians and instruments was extended. In addition to a more standardized string group, which started to consist of two violin parts, violas, cellos, and double bass, also oboes and horns with bassoons were included. Also, there are examples where trumpets and drums could be added when there were such possibilities. In the orchestra of the 19th century there are some woodwind instruments such as trombones, trumpets and horns appeared. They have a very strong sound as no any other instruments. Therefore starting from the 19th century romantic and modern orchestras can have around 90-100 musicians in one performance.

In the orchestra musicians play by notes and every musician has the notes only for his instrument. Along the notes are written dynamics, touch and some technical abbreviations that are suitable for each type of instrument. Consequently, there should be a person, a conductor, who has the whole score of a piece. His job is to study score in advance, imagine the sound balance of all the instruments and interpret music. In the 20th century music pieces became quite difficult in their rhythm, range of instruments and pace, and therefore the role of the conductor became more important.

In a symphonic orchestra musicians sit in the orchestra pit according to the seating plan. They are divided by sections such as strings, woodwinds, brass and percussion. The plans vary from country to country and they depend on what piece an orchestra is playing, which traditions this orchestra has and in which concert hall they play. Generally, there are two standard seating plans. The main difference between them is how the violins are seated. In one plan the first violins are seating on the left and the second violins sitting on the right (Picture №1, p.20). While in the other plan the first and second violins are seated on the left and violoncello and bases are seated on the right.

In a picture below Nordström (1997) presents an orchestra seating plan which is traditional for many orchestras. However, neither of two conductors in the video recording sessions used this plan. This picture is presented here just to give an idea of how musicians can be seated in the orchestra.
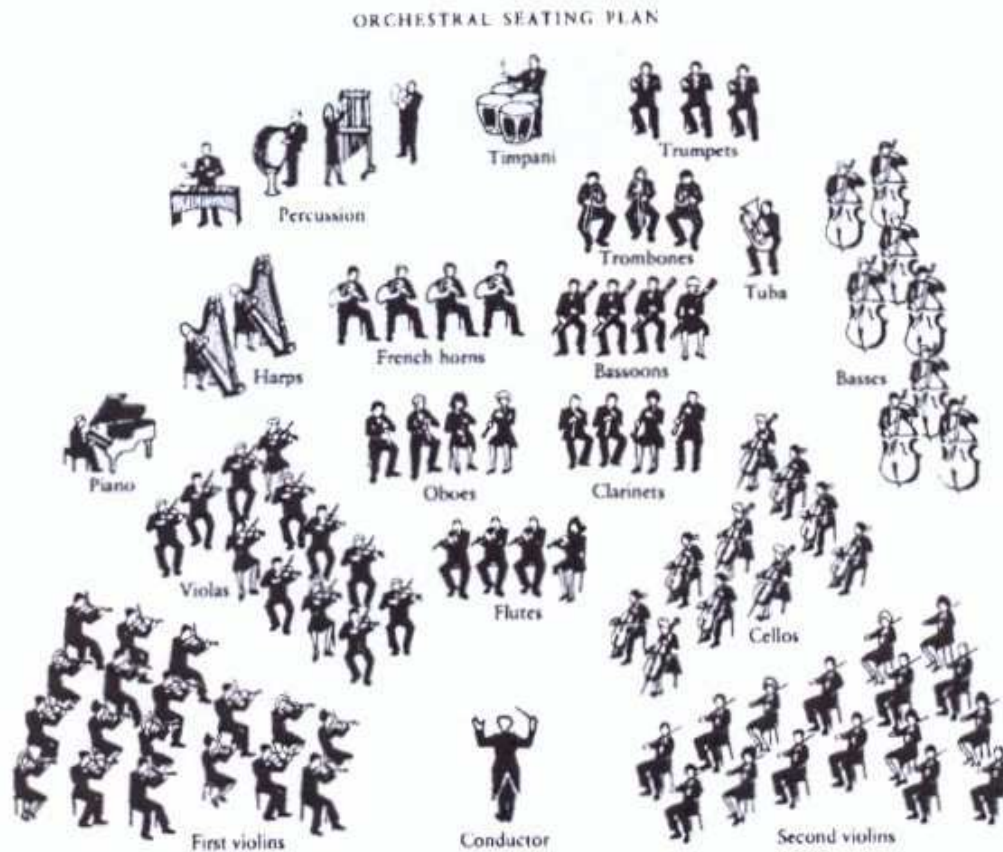
(Picture №1 Seatting plan. Nordström, 1997, p. 103)

3.3 Rehearsal

Information about rehearsals was obtained through many short talks with employees from the Göteborg Opera.

It was decided to explore the difference in the conductors' gestures/expressions before and after misunderstanding occurred, especially during the rehearsal process, because a rehearsal is "an important preparatory stage in the presentation of an opera or a concert" (Hibberd, 2011). In such a big production as an opera many different types of rehearsals exists. Among them are rehearsals for the orchestra, the principle singers and the chorus. At the same time many other departments at the opera have their own preparations, for example the technical staff has to construct and prepare decoration for the stage, beautician have to make wigs, tailors have to sew costumes for singers. During rehearsals singers master their skills in rehearsal rooms firstly with a pianist and then with the orchestra. Only after all stage equipment is ready, musicians and singers have gone through the opera many times in the rehearsal rooms, does musicians and singers start practicing a piece together on the stage. The final step of rehearsing is done on the

stage with the full set of decorations, costumes and make up. There is a huge collaboration between departments, musicians and singers so as to make a great performance.

Talking about the orchestra, orchestra musicians and the conductor first practice a piece together in a rehearsal room and after gaining confidence, they start playing it in the orchestra pit with the singers on stage. Rehearsals usually last approximately 4 hours with a small break. During this time musicians are concentrated on one particular piece/opera.

Going further, during a rehearsal musicians and the conductor are working over many topics, among them are dynamics of the piece; trying to perceive how the music will sound together with singers on the stage; paying attention to how different instruments play with each other in the ensembles and what is the balance between them; phrasing of musical material and articulation. Also, musicians work with a musical technique of the piece and it is undeniable that both musicians and the conductor work with the drama side of the opera.

The whole process of making changes during rehearsals happens in the following way: musicians play and the conductor stops the music and verbally explains his musical vision about some bars. Hence all explanations regarding the different improvements in the music are done verbally.

When all rehearsals are over and a performance is taking place, the conductor uses gestures and expressions that he showed during rehearsals and the musicians now know and understand them. Nevertheless, there is still room for improvisation and a conductor may add or exchange some gestures during the performance.

4. Theoretical framework

4.1 Interpretation

"Music is an auditory art where the medium is sound"[6]. In music there is no physical object like in visual art. The only thing that is physical in music is the full score/notes, although it is not seen as music. Without sound production there is no music at all. These notes of music can be named as "temporary successive serious of sounds" (Hospers, 2011) which musicians produce when they play.

Interpretation in music is a "process by which a performer translates a work from notation into artistically valid sound" (White, 2011). There is inherent ambiguity in the musical notation since it is almost impossible to put everything there. Musicians have to make decisions about the meaning and realization of some aspects that the composer was not able to express in the notes. It can be phrasing, dynamics, articulation or pacing of musical climaxes. These determinations show the performer's understanding of the music piece, conditioned by knowledge and personality, which lead to an interpretation.

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[6] http://www.britannica.com

Trying to explain why a conductor stopped the orchestra during a rehearsal and which comments he gave, the author suggests that the musicians and the conductor have a different interpretation regarding just played bars/extract in the piece. The conductor stops the orchestra, explains to the orchestra how they have to play and then the musicians and conductor repeat that part of the piece again.

According to Davies (2002 at. el) there are five types of interpretation in music: notational, editorial, performative, work descriptive and performance descriptive. However, only two of them are suitable here:

- **Notational interpretation,** which is an interpretation of the written score. When musicians play a piece by a composer, in our case an opera, they have to follow a written musical terminology (pace, dynamics, touch) that the composer wrote in the score. Musical notation reflects what the composer wants to express through the music. It is a tradition of Western European classical music that the instructions of composers are written in the score.

Is there only one correct interpretation of the composer's score? The answer is clearly no, because there is more than one way to play it. Even if some dynamics or the pace is written at the beginning of a piece and it seems that it is the only way to play it, there are some indefinite indications left. Performers have to interpret notes, rhythms, articulation, tempos and all of this can be played in several different ways. This leaves a very big room for interpretation.

There is a lot of information in the score, but quite often not everything is put there. "Like all symbol systems, musical notations are not-self explanatory; they are not transparent in their significance." (Davies, 2002, p.232). For instance, melodies are written without decoration, although they require decoration. Therefore it is the job of a musician to decode and play that melody correctly. In other words, notation is always incomplete and sometimes even ambiguous.

Another point of this type of interpretation is that quite often musicians play a piece which is distant in a "musical-historical situation" (Davies, 2002, p.233) and it is predictable that when they aim to play a piece from the previous epochs and different cultures, they have to be able to interpret it relying on the " playing technique and mastery of instruments" (Davies, 2002, p.233) of that time. Even though musicians follow traditions from the past, different people can interpret the same music in different ways.

- **Performative interpretation.** "A Performance is replete with sound" (Davies, 2002, p. 237). In a real performance there is a gap between the notation and sonic embodiment. "Musical works specified by notation are always indefinite with regard to some features of the performance" (Davies, 2002, p. 238). It is the musicians who are playing that decide how to bridge this gap. A performer decides how to go through many details which are definite and indefinite in the piece and it is the way how interpretation is generated. For example, a definite detail can be a sign F (forte) which means to play loudly, while an indefinite part of this sign is how loudly it should be played. Every performer will decide the loudness on his own. That is why there are many choices of interpretation that complies with the composer's work-identifying directions.

As such, musicians can decide upon many musical details in the notes: options regarding dynamics, how strong and intensive; pitch for string instruments in terms of higher or lower, decay pace and many other things that are not identified in the notes. Moreover, musicians decide upon which agogic is suitable for some phrases, how strong or light various touches should be, for example staccato, bring out or suppress its connections.

"The prime function of interpretations is to present an interesting, revealing and enjoyable perspective on the piece that is performed" (Davies, 2002, p. 240) that can be valued by the audience and professionals according to knowledge, experience and historical value. Asking again if there is only one single correct interpretation it is absolutely clear that the answer is no. One artist/musician can emphasize drama moments in the performance, while another can weight lyrics and expressiveness; one can show each development of culmination at full power, while others can have a step by step approach. There are many ways to play the same musical piece and every musician plays it differently. Nonetheless, it is necessary to admit that some poor interpretations are possible due to the fact that musicians do not follow traditions or exaggerate enormously.

As a genre, opera is a complex musical drama piece. There are many orchestra rehearsals during which a lot of musical material should be explained and understood. The "Conductor takes responsibility for producing interpretation" and the "conductor decides for the group" (Davies, 2002, p. 240). He has to make all the musicians sound as a unity according to his musical vision. Therefore when we talk about an orchestra piece, there is a personal interpretation of the conductor. We have conductor = interpreter. The conductor represents his own idea/vision of this musical piece through the orchestra. For instance, he can pay attention to some pseudo latent part and then use his best knowledge to develop that idea while other conductors will have another interpretation regarding the same piece. It is the conductor's idea and vision of the whole.

Undoubtedly, musicians have a huge part of work on their own that they have to do without the conductor before rehearsals start. They have to practice and learn the notes and it takes a lot of time. Furthermore, musicians contribute a lot of personal expression towards the final version of the interpretation. Therefore there is delegation between the conductor and the musicians. Without the musician it is impossible to have an orchestra. The performance and conductor really depends on them. Thus there is a huge respect between the conductor and the musicians.

As it was said before, in this orchestra only professional musicians are playing who have a degree from a higher education institution. They are highly skilled specialists in their instruments and spent a lot of hours practicing. When orchestra musicians play, they present their interpretation. At the same time the conductor has his own view regarding the same music as well. This gives rise to a situation where two sides have their own interpretations about the same piece of music. However, these two sides have unequal relationships. It is definitely the conductor who is a leader and his opinion and interpretation is valued more. That is why he stops the rehearsal, gives remarks to the musicians and not the other way around. The moment when he stopped the orchestra is the place where he has divergent views of the orchestra about the interpretation of the piece.

The moment when the music stops and the conductor shifts from nonverbal language to verbal, is the place where a misunderstanding occurred.

In this case we have two types of communication between the conductor and the orchestra. The conductor communicates the necessary information to the musicians: 1) nonverbal communication during the music performance/rehearsal when the conductor conducts the orchestra and sends nonverbal messages with his body, and 2) verbal communication when the conductor stops the orchestra and explains what he wants to hear from musicians instead.

Misunderstanding, leadership and nonverbal language will be explained further in this chapter.

4.2 Misunderstanding

Here will be presented a theoretical framework for this phenomenon.

First, it is necessary to explain what **misunderstanding** is. During the literature review the author noticed that there is no narrow single definition regarding misunderstanding because there are many types of misunderstandings and they vary from setting to setting. Many researchers make various attempts to clarify what misunderstanding is and their theoretical material help shaping the interpretation of the word misunderstanding in this paper.

Secondly, special attention will be given to the point that misunderstanding happens in musical setting in the rehearsals for the opera.

A number of scholars among them Zaefferer (1977) and Bazanella & Damiano (1999) state that misunderstanding can happen at the nonverbal and non linguistic level. The latter one says "Gestures, behaviors, objects, situations can act as non-linguistic triggers of misunderstanding, but often misunderstandings undergo a linguistic handling: in other words, a non-linguistic misunderstanding can be detected or made explicit and negotiated on a linguistic level" (Bazanella & Damiano, 1999, p. 829). When the conductor hears an interpretation of the music in the orchestra that is different from his vision, he stops the orchestra and he gives comments about what he just heard and advices musicians on how he wants to make them play. In this case the misunderstanding is some musical extract or some bars. Misunderstandings between the orchestra and the conductor, which occurred during the rehearsal, are definitely nonverbal and are based on misinterpretation or different interpretation of a small part of a musical piece and then follow a verbal solution of this misinterpretation.

The concept of misunderstanding started to be explored starting from 17th century when an English philosopher and physician John Locke (1632 -1704) wrote the paper "An Essay Concerning Human Understanding" (1690). One of the main ideas is that the mind of a human being is completely blank at birth and only later is filled with experience. Developing further he says that "total understanding of another is not possible since no two minds or understandings process ideas exactly the same" (Condon, 2010, p. 138) and "each person's mind develops its own complex ideas from the simple ideas introduced to it, no two people ever think exactly the same" (Condon, 2010 p. 307).

In the orchestra we have two sides that communicate with each other. On the one hand there are musicians in the orchestra and on the other hand there is a conductor. Having a professional musical background does not guarantee the same vision of the music and the same interpretation.

The orchestra as a "body" has its own way of playing and interpreting the music while the conductor has his own view as well. Experience, musical taste and perception makes the orchestra and conductor have different views regarding the same musical extract which leads to **professional misunderstanding.**

Trying to define misunderstanding Weigand (1991) presents "Misunderstanding: the standard case" where she defines constitutive features of what can be called a misunderstanding:

- *"Misunderstanding is a form of understanding which is partially or totally deviant from what the speaker intended to communicate"* (Weigand, 1991, p. 769). In this case the speaker is the orchestra and the misunderstanding is some musical extract which is different from the conductor's interpretation. Watching video recordings and observing rehearsals, the author can say that there were mostly minor misunderstandings between the conductor and the orchestra for example woodwind instruments should not wait for each other and they should play one after another; strings have to show more accents; timpani should play more crescendo, as if frightening. All that and other misunderstandings were solved within a very short time during the rehearsals and both sides understood each other. After an explanation from the conductor, a common understanding of how the extract should be played arises and the musicians accept the conductor's interpretation.

- *"As a form of understanding, it refers to the reverse side of meaning or to the reverse side of the utterance, and represents a cognitive phenomenon belonging to the interlocutor"*. (Weigand, 1991, p.769). When a conductor stops musicians, he goes back to what they have just played. A conductor refers back to that recent interpretation of the orchestra. It is in the cognition of a conductor that there was a different interpretation from his own. He makes it clear that what they played was wrong and he does not wait to say it until the end of the piece. He stops the orchestra instantly.

- *"Misunderstanding will normally be corrected in the course of the ongoing dialogic action game. We may be confident that we will arrive at an understanding in the dialogic action game as a whole even if an utterance has been misunderstood"* (Weigand, 1991, p. 770). Interestingly to notice, that when the misunderstanding occurred, there is no discussion between the conductor and the orchestra regarding the possibilities of how to play. The musicians receive comments on how they should play and they simply accept this interpretation from the conductor. Sometimes the musicians ask questions to clarify what was said before or to make it more understandable, although it does not happen very often. To see it in another light, when there are no questions, musicians accept the conductor's interpretation whereas if they want to receive more information regarding the comment, they ask questions, then receive an answer and finally accept the interpretation. Consequently, misunderstanding can be corrected without "dialogic action game" (Weigand, 1991, p. 770).

4.3 Interactional handling of misunderstanding

A study by Bazanella & Damiano (1999) "Interactional handling of misunderstanding" proposes a model on how misunderstanding is negotiated. (Picture №2, p.27). This study is based on the conversational linguistics misunderstandings in the Italian corpus, although it is applicable to nonverbal misunderstandings as well. Misunderstanding is not something abstract. It has its own structure. There can be seen a beginning (detecting of the misunderstanding), development (repair and reaction) and an end (acceptance and fresh start).

In this table it is shown that misunderstanding is not a coincidence. As it was said earlier, having two sides the orchestra and the conductor, means that sometimes there are two different opinions regarding the same musical extract. In a musical context, during the rehearsal, when a conductor stops the orchestra and gives comments, it is seen more like a "working moment" (Hinnenkamp 1999 et al) and not a coincidence. The term "working moment" seems to be very suitable for explanaing of misunderstandings in this thesis because through misunderstandings="working moments" the conductor and the orchestra are moving towards better understanding and they find a common interpretation. It is an acceptable working condition when musicians and a conductor do not have the same interpretation about the music that they play. Therefore there are rehearsals in which to practice the piece and find the most suitable interpretation.

When misunderstanding/misinterpretation is detected (box 1, picture № 2), the conductor stops the orchestra and makes repair (box 2, picture № 2). If the musicians are not stopped by the conductor, it is possible to suggest that the orchestra is playing in line with conductor's interpretation or in other words both conductor and orchestra interpret the music in the same way. It means that an interaction goes on without changes.

In a box number 2, picture № 2, if there is no repair after the conductor detected the misinterpretation, the author suggests that there will not be a break down. When misunderstanding/misinterpretation happened, musicians will just continue playing and it is only a conductor who thinks that there was something wrong. Going further if it was a minor misinterpretation, it means that there is no need to make a stop and generally the musicians did not have a big deviation from the conductor's interpretation. If it is a minor misunderstanding that does not cause a break, it can be repaired by altering or enhancing conducting gestures at the next play-through. Also, this misunderstanding can be verbally discussed, as a comment from the conductor, during the rehearsal further without repetition if necessary.

The next phase is a repair turn when a conductor explains what was wrong and what should be improved.

After the repair there is an interlocutor's reaction. In this case the orchestra has the role of an interlocutor and therefore always accepts the version of the conductor because he is the leader and there is a discipline. From the knowledge of the author and current observations there were no refusals from the orchestra when the conductor made corrections. Musicians can ask some question in order to clarify the received information, although the interpretation from a conductor will be completely accepted.

Picture № 2, Negotiation Cycle of Misunderstanding (Bazzanella & Damiano, 1999, p. 827)

```
┌─────────────────────────────────┐
│ Misunderstanding: non coincidence│
│ between the speaker's meaning and │
│ interlocutor's interpretation of  │
│ turn N                            │
└─────────────────────────────────┘
                │
                ▼
┌─────────────────────────────┐   NO   ┌──────────────────────┐
│ 1.  Is the misunderstanding │ ─────> │ The interaction goes on│
│     detected?               │        │ without any changes    │
└─────────────────────────────┘        └──────────────────────┘
     Yes │
         ▼
┌─────────────────────────────┐   NO   ┌──────────────────────┐
│ 2. Does the participant who │ ─────> │ A communication       │
│ has detected the            │        │ breakdown is          │
│ misunderstanding make a     │        │ likely to happen      │
│ repair?                     │        └──────────────────────┘
└─────────────────────────────┘
         │
         ▼
┌─────────────────────────────┐
│        Repair turn          │
└─────────────────────────────┘
         │
         ▼
┌────────────────────┐        ┌──────────┐        NO  ┌──────────────┐
│ 3. Interlocutor's  │ ─────> │ Refusal  │ ─────────> │ 3.b Is refusal│
│    reaction        │        └──────────┘            │ complete?    │
└────────────────────┘                                └──────────────┘
         │                                                 Yes │
         ▼                                                     ▼
┌────────────────────┐                              ┌──────────────┐
│    Acceptance      │                              │ Communication│
└────────────────────┘                              │ failure      │
         │                                          └──────────────┘
         ▼
┌─────────────────────────────┐
│ 3.a Is the acceptance       │
│     complete?               │
└─────────────────────────────┘
     Yes │
         ▼
┌────────────────────┐
│    Fresh start     │   NO
└────────────────────┘
```

The last step in this table is a fresh start. After receiving comments from the conductor, the musicians start playing music directly from the place that was discussed or from a place a little bit earlier of where they stopped in order to go through the problematic bars once more and insure that both sides now have the same interpretation of the music.

4.4 Leadership and conductor

In this section it will be explained why the conductor is seen as a leader and how it affects the interpretation of the music by the orchestra. Also, it will be explained why this position is important in the orchestra.

During observations of opera rehearsals and symphonic concerts it is seen that a conductor is the only one person who is standing with his back to the audience and with his face to the orchestra. Moreover, at the beginning of any performance, when musicians are already sitting on stage, musicians are waiting for the conductor's gestures to start playing and they have eye contact with him.

A number of scholars see the conductor as a leader. Among them are Koivunen (2003), Koivunen & Wennes (2011), Lebrecht (1991), Hughes, Ginnett, & Curphy (2009), Durrant (2009). The image of a conductor attracts a lot of attention because of the visible relationships between the conductor and musicians on stage. Therefore it is easy to trace their relationships, communication flow and interaction. "Conductor is a powerful figure – both in front of a symphony orchestra, and as a popular metaphor for authority and good management" (Koivunen, 2011, p. 58).

According to Ratzer (1974 at. el) there are two types of leadership between the conductor and the orchestra. The first type is when a conductor is seen as a dictator and the second type is when he is seen as a communicator of his ideas. It is interesting to notice that there are some followers that support these theories.

The closest to the idea that a conductor is a communicator is Koivunen & Wennes (2011 et. al.). She states that before the conductor tells musicians how to play, firstly musicians and a conductor play together some extract and the conductor conducts and listens to what they are playing. During the stop he gives some comments regarding dynamics, sound production, articulation and drama on the basis of what he just heard. It shows that a conductor does not force musicians to play to his pre – established musical perception. First he listens and then gives comments. This position shows a conductor opposite to common views as a dictator because a conductor does not show his power and authority, but communicates his professional opinion over the recently performed musical material.

According to Koivunen & Wennes (2011), there is one more leadership sign which is sound. All musicians practice their pieces alone or in orchestra groups (stings, brass) and they control sound only within their group. When all musicians come to the orchestra rehearsal, sound should be controlled for all instruments. Consequently, there should be a person who will be responsible for this sound and control it. It is the job of a conductor to respond to the actual sound that

musicians produce all together and shape it according to his interpretation. Therefore "a constant relational process – between the orchestra, the conductor and the sound produced" (Koivunen & Wennes 2011, p. 59) is seen. Even though there is a stereotype that a conductor is an absolute holder of power in the orchestra, Koivunen & Wennes (2011) defines it in an opposite way "leadership is a process, not a possession held by someone" (Koivunen & Wennes 2011, p.66).

Koivunen (2011) emphasizes that the language that musicians and a conductor speak is music. Here listening is seen not as a human ability, but in a much broader sense. Listening on such musical level requires special skills which are obtained through education and experience. A conductor should have a quick reaction to the actual sound and this is called "relational listening which is playing, listening, conducting and performing" (Koivunen & Wennes 2011, p. 60). When a conductor hears something different from his interpretation, he stops the orchestra and works with this extract.

Hughes, Ginnett, & Curphy (2009) present a leadership model with a leader and his followers. In our case the leader is a conductor who is leading musicians and he is in charge of everything and the followers are musicians who follow the conductor's instructions.

Going further, in order to control a musical process, a conductor must have a broad knowledge of a musical repertoire, a musical taste, a good theoretical background, an ability to hear and give an aesthetical evaluation of the just heard musical extract. There should be a high level of concentration, good memory and a good knowledge of the specific musical form and rhythm. Finally, a conductor must be a persuasive communicator of his interpretation to the musicians during rehearsals and then on the performance. In some sense a conductor has a role of an educator of the orchestra because he always brings some new ideas.

When trying to explain why a conductor is a leader, it is necessary to notice that he is the only one person who has the full score. Therefore by looking there a conductor coordinates and controls all entries of all musicians.

Another author Boerner, Krause, & Gebert, (2004) present a different point of why the leader position of a conductor is important. According to Boerner, Krause, & Gebert (2004, p. 457) "the specific nature of leadership success in the orchestra requires precise ensemble playing by the musicians". To insure a good ensemble playing, the conductor shows entries to all musicians and all these entries are written in the full score which only the conductor has.

Silvey (2003, p. 162) continues that "one of the most important roles of the conductor is to prepare an ensemble to perform accurately and expressively." A preparation process (rehearsals) and performances should be coordinated by somebody and there should be a leader who is in charge of the whole process. This person in the orchestra is the conductor. The final result of any performance is artistic quality and a great deal of all responsibility is taken by the conductor because it is his interpretation and he is leading the orchestra.

One of the most important goals of the orchestra is to produce a joint interpretation of a musical piece and interpretation that comes from a conductor. Musicians have to listen to their colleagues, to the conductor and the conductor has to listen to the musicians. There is a huge

interdependence between all orchestra players. Boerner, Krause, & Gebert (2001 et al) hugely emphasizes interdependence because it is not a single job of one person or the conductor but a joint production of everybody. There must be interdependence between musicians in one section for example simultaneous breathing among blow instruments, tonal sound among strings and relation to any other soloist and chorus. Moreover, there should be established a balance between musical sections in tempo, volume and rhythm. Therefore synchronized playing of all musicians is an essential aspect of orchestra playing.

If we imagine that there is a disagreement among musicians regarding some interpretation, to solve this problem will be time consuming and technically difficult because orchestra players can sit in different parts of the orchestra pit or exercise room and sometimes they cannot even see each other and hear properly. Consequently, there is a necessary posture of a conductor who has a direct and centralized coordination of the orchestra. It is the conductor who offers interpretation and corrects deviations from it directly.

It is true that musicians cannot implement their interpretation. However, some kind of exchange is seen when musicians who do not have their total freedom are led by a charismatic leader and then they ascribe themselves with him a lot.

4.5 Nonverbal language of a conductor

During rehearsals and concerts the conductor expresses a lot of information through his body. According to Bhardwaj (2008, p. 323), "Nonverbal communication constitutes body movements, gestures, expressions etc." The conductor does not explain the music verbally when he is conducting and consequently his body is the only possible channel with which he can show which nuance he wants to get from the musicians while they are playing. In other words, the nonverbal language of a conductor is "the nonverbal expressivity that is visually communicated, through conducting, to the musicians in an effort to elicit musically expressive performances" (Price & Chang, 2005, p. 67).

Both Vieth Fuelberth (2003) and VanWeelden (2002) agree that the nonverbal communication of a conductor includes facial expression, eye contact, gestures, body position, posture and physical appearance. It is necessary to notice that every part of a conductor's body show something very specific when he is conducting. The job of the musicians is to understand the conductor and decode these signals correctly. Some gestures can be universal for any conductor, for example showing the beats, entrance, accents and musicians understand them, while some gestures can be really specific for one particularly conductor and this musical piece for example the way how a conductor show drama part or emphasize a lyrical part of the piece. Therefore during rehearsal the conductor teaches musicians his nonverbal language. Also, this is the way a conductor makes an interpretation that he wants to get from the orchestra. Exactly through these "nonverbal skills (gestures) of a conductor are to make a difference in attentiveness, attitude, and performance of musicians" (Byo, 1990, p. 157).

5. Data results

This part of the thesis will present the transcribed data of the video files.

From the presented transcribed expressions and gestures in the tables, it is already clear how conductors use their body in order to express necessary information to the musicians.

In order to make a thorough table with percentages, "The MUMIN multimodal coding scheme" by Allwood, Cerrato, Dybkær, and Paggio, (2004, v. 1.3) that is followed in details was adopted. Even though it is stated there that these movements and gestures accompany speech, definitions of these particular movements and gestures perfectly suit this research. The paremeters in every category are filled according to the aforementioned scheme and sometimes there are added some extra necessary parameters that were spotted during the transcription. These are:

- Facial display: semi closed eyes, taking breath, articulation, giving a comment, singing all the time (SAT), whispering/saying lyrics
- Head movements: nothing extra was added
- Posture movements: all names of all parameters were written by the author during transcribing. The names are: leanings, shaking, swinging, jumping, shoulders straight, shoulders up, sitting down, standing up, semi sitting
- Gesture transcription was followed by the aforementioned scheme and there are four gestures groups which are batonic, deictic, iconic and symbolic. Every group is filled in with some other gestures and detailed information about it is presented in "Hand gestures: the right hand" in this chapter.

General Information

The summary of the obtained data is presented in Table №1 on p.32.

There were two video files filmed, each of them 45 minutes long. C1 stopped the orchestra much less than C2, although C2 spent in 3 times more time giving verbal explanations during stops sometimes. This thesis does not analyze the time when the conductors gives explanations. The time parameter was included in the table in order to give a better understanding of how the process of misunderstanding is solved during rehearsals.

C1 stopped the orchestra so often because the conductor had only one rehearsal and he wanted to pay attention to the details. C2 stopped the orchestra less times because he wanted to play longer extracts, so the musicians get familiar with the music. Also, because of this reason C1 was singing the lyrics all the time (SAT) as well. The acronym SAT which means singing all the time is discussed later in this chapter during presentation of the facial display data.

Minimum and maximum amount of analyzed bars means the amount of bars over which there occurred misunderstandings, and consequently they were repeated after the stop. In the tables further there are two vertical columns, which are named "before" and "after", filled in with numbers and percentages, and it is the amount of gestures and expressions done by the conductor before and after the stop. Also, in order to insure that the conductor follows the same music after the stop, the author was checking the bars with the full score. The minimum amount of bars over

which occurred misunderstandings for C1 is 12 and the maximum is 89, while C2 has 1 bar for minimum and 18 bars for maximum.

Also, the operas come from two different genres and it was discussed in the limitation part.

Categories	1st Conductor	2nd Conductor
Recorded time	45 minutes	45 minutes
Number of stops	7 stops	17 stops
Minimum amount of analyzed bars	12 bars	1 bar
Maximum amount of analyzed bars	89 bars	18 bars
Minimum time for giving explanation during a stop	40 seconds	10 seconds
Maximum time for giving explanation during a stop	3 minutes 45 seconds	1 minute 9 seconds
Level of familiarity with an opera	Was not performed before	Was performed before
Singing	SAT	Singing sometimes
Opera genre	Lyrical and dramatic opera	Lyrical opera

Table № 1 General information

The facial display

The face of the conductor is a very important part of the nonverbal communication and the conductor expresses a lot through it. There are 608 (100%) expressions in total in the facial display of the conductor № 1 (C1), where 299 (48%) were done before the stop and 309 (52%) after the stop. The conductor № 2 (C2) has 573 (100%) expressions in total in the facial display, where 272 (47%) were done before the stop and 301 (53%) after.

As for the eyebrows, C1 had 4% before and 2% after and there is 6% in total. While C2 had 4% before and 5% after and there is 9 % in total respectively. According to table № 2, frowning was noticed fewer times than rising and also eyebrows do not have a high percentage in comparison with other expressions for both conductors. In a category of frowning C1 has 1% before and 2% after, while C2 has 1% before and 1.5% after the stop. In a category of rising there is 3% before and 1,8% after the stop for C1, while C2 has 3% and then 0,5% increase after the stop.

Talking about eyes, C1 has 0,5% before the stop and 0% after the stop which means there is 0,5% in total. While for C2 there is 0,35 % before and 0,35 % after which means 0,75% in total respectively. It was noticed that C1opened his eyes really wide only 3 times before the stop and he did not repeat them after the stop. Also, there were not noticed any other expressions before or after the stop in this category for C1. C2 closed eyes once before the stop and two times after.

Facial display	Form of expression/ movement		1st Conductor					2nd Conductor				
			Before	Total	After	Total	Full Total	Before	Total	After	Total	Full Total
Eyebrows	Frowning		5 1%	22 4%	2 0,2%	15 2%	37 6%	5 1%	23 4%	7 1,5%	30 5%	52 9%
	Rising		17 3%		13 1,8%			18 3%		23 3,5%		
Eyes	Open		0 0%	3 0,5%	0 0%	0 0%	3 0,5%	0 0%	2 0,35%	0 0%	2 0.35%	4 0,7%
	Open really wide		3 0,5%		0 0%			0 0%		0 0%		
	Closed		0 0%		0 0%			1 0.175%		2 0,35%		
	Semi -closed		0 0%		0 0%			1 0,175%		0 0%		
Gaze	Mutual		0 0%	214 34%	0 0%	230 39%	444 73%	0 0%	222 38,5%	0 0%	228 39,5%	450 78%
	Up		55 8%		60 10%			71 12%		78 13%		
	Down		79 12,9%		87 15%			89 16%		83 14%		
	Sideways		80 13,1%		83 14%			62 10,5%		67 12,5		
	Unfocused		0 0%		0 0%			0 0%		0 0%		
Mouth	Open lips	Taking breath	0 0%	60 9,5%	0 0%	63 11%	124 20,5%	12 2%	25 4,3%	13 2,2%	41 8%	66 12,3%
		Articulation	51 8%		59 9,1%			0 0%		0 0%		
	Closed lips		0 0%		0 0%			0 0%		0 0%		
	Corners up		3 0,5%		1 0,2%			6 1%		3 0,5%		

	Corners down	0 0%		0 0%			0 0%		0 0%		
	Giving a comment	0 0%		0 0%			5 1%		20 4,5%		
	Singing	5(SAT) 0,8%		3(SAT) 0,5%			2 0,3%		3 0.5%		
	Whispering/saying lyrics	1 0,2%		1 0,2%			0 0%		2 0,3%		
Lips	**Protruded**	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
	Not Protruded	0 0%		0 0%			0 0%		0 0%		
Total			299 48%		309 52%	608 100%		272 47%		301 53%	573 100%

Table № 2 Facial display

Note: In this table all percentages are based on the total number of all expressions performed by every conductor separately before and after the stop. When it is necessary, the percentages are rounded to the tenth numbers.
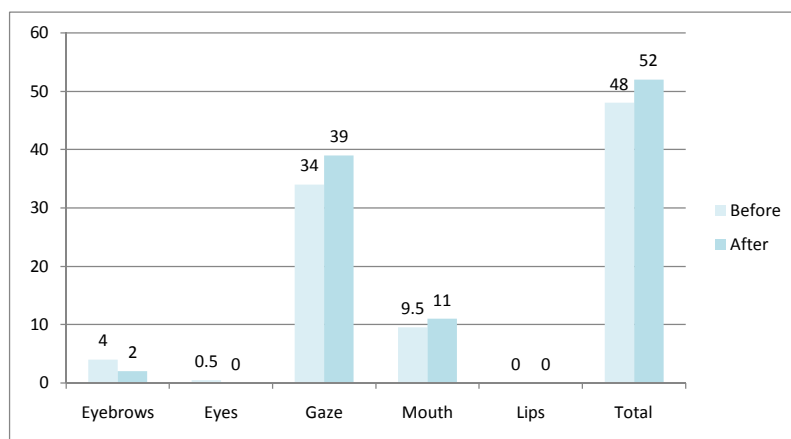
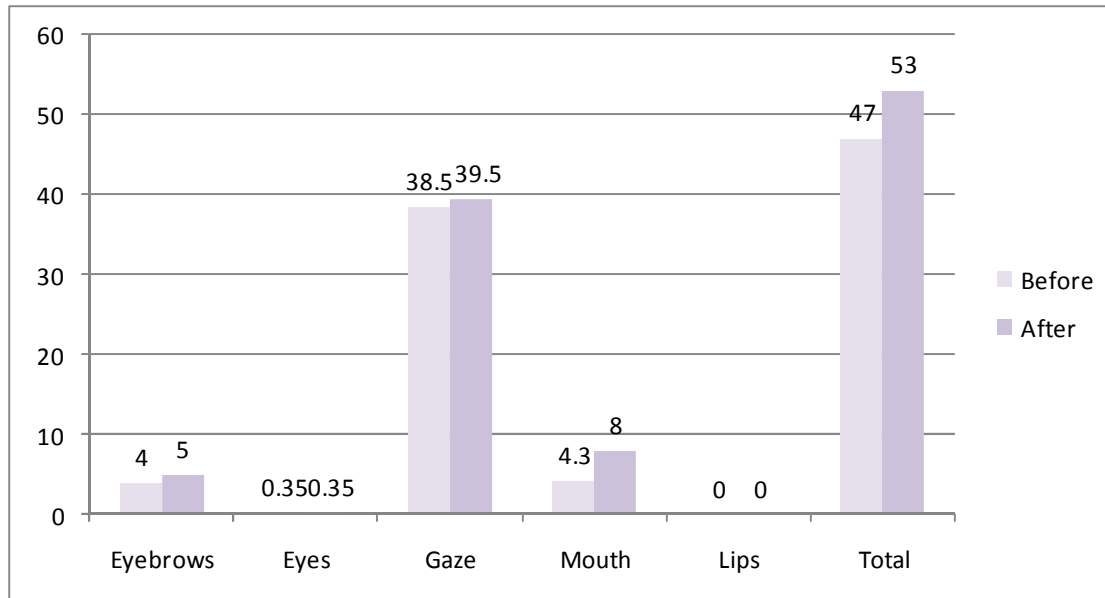Diagram № 1 Facial display for the 1st conductor

Diagram № 2 Facial display for the 2nd conductor

Regarding semi-closed eyes, C2 did it once before the stop and did not repeat it after. Eyes have a tiny percentage in the whole facial display for both conductors.

Table № 2 show that gaze has the highest percentage in this table, consequently gaze plays the most important role in the facial display for both conductors. C1 has 214 (35%) expressions before and 230 (38%) after, which means 444 (73%) in total. C2 has 222 (35%) expressions before the stop, 228 (39%) after and 450 (78%) in total respectively. Full total gaze has only 3% difference for C1 and 1% difference for C2 between before and after the stop.

Mutual gaze is not represented in this table due to the fact that the camera was focused on the conductors mainly and the musicians were not the aim of this study. There is a possibility to see sometimes mutual gaze between the conductor and a group of the musicians, although it happens quite selectively among people in a group, therefore it is impossible to trace it.

Gaze up increased for both conductors. For C1 it is 8% before and 10 % after and C2 has 12% before and 13% after respectively. The percentage shows that there is no such big difference in gaze up before and after the stop for both conductors.

Gaze down shows 2,1% increase for C1 and it is from 12,9% before till 15%, while C2 shows 2% decrees from 16% before and till 14% after.

Sideways gaze for C1 is 13,1% before and 14% after the stop, while C2 has 10,5% before and 12,5% after which is for 2% more.

There was not noticed any unfocused gaze for both conductors therefore it is 0% in all boxes.

To sum up gaze, there is an increase in percentages in gaze up and sideways for C1 and C2, while C1 has an increase in gaze down and C2 has a decrease in the same category.

Movements of the mouth are presented richly in the table and generally it is on the second place in percentages after the gaze in this table. It is 20,5% full total for C1 and 12,3% for C2. C1 does not open his lips to take in breath (inhale) neither before nor after the stop, whereas C2 has a taking breath (an inhaling) movement and it is 2% before and 2,2% after. C1 has 8% in articulation before and after the stop it increased for 1,1% and became 9,1% after, while C2 has no record in this movement at all.

Closed lips do not have any record for both conductors. During transcribing this movement was not noticed.

Corners up have decrease for both conductors from 0,5% before to 0,2% after for C1 and from 1% to 0,5% for C2.

Corners down do not have any record for both conductors. During transcribing it was not noticed at all.

C1 did not give comments to musicians when they were playing, whereas C2 gave comments. It was 5 times (1%) before the stop, while after that stop C2 commented 20 times (4,5%), which is five times more than before.

In this table the author decided to use a special acronym SAT, which means "singing all the time". When there is an opera rehearsal, it is really important that the musicians in the orchestra can get acquainted with the vocal part of the opera before they start playing together with the singers on the stage. To do that, while musicians are playing, the conductor is singing the lyrics. C1 has an opera that was going to be performed for the first time and the conductor was singing nearly all the time, although C2 had an opera that was performed at GO before and the musicians already knew the music, therefore C2 was singing only occasionally. During the video recording if C1 started singing, he did it up until the time he stopped the orchestra and started singing again after the stop. C1 was singing 5 times full time before the stop and 3 times after. C2 was singing 2 times before and 3 times after.

Regarding whispering C1 did it once before and once after, while C2 did not whisper before but did it 3 times after the stop which is 0,3% .

Lips protruded and not protruded have 0% for both conductors. During transcribing these movements were not noticed.
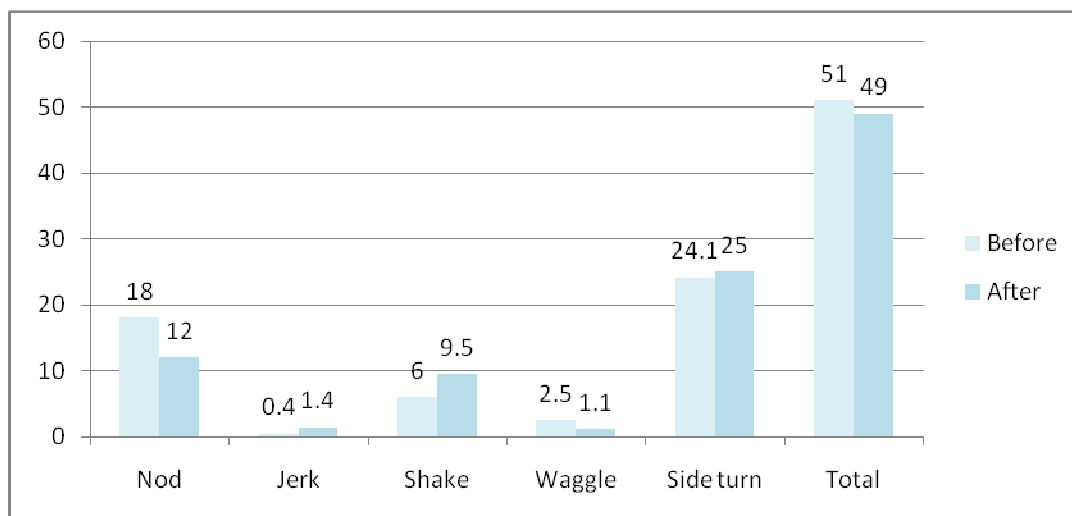
Head movements

The next parts of the video transcriptions are head movements. The data in the table presented quite richly and the head plays a vital role in the conductor's nonverbal language.

Head movements	1st conductor		Total	2nd conductor		Total
	Before	**After**		**Before**	**After**	
Nod	51 18%	35 12%	86 30%	77 18%	54 12%	131 30%
Jerk	1 0,4%	4 1,4%	5 1,8%	1 0,2%	2 0,4%	3 0,6%
Shake	17 6%	27 9,5%	44 15,5%	103 24%	93 21%	196 45%
Waggle	7 2,5%	3 1,1%	10 3,6%	1 0,2%	0 0%	1 0,2%
Side turn	69 24,1%	70 25%	139 49,1%	51 11,6%	56 12,6%	107 24,2%
Total	**145 51%**	**139 49%**	**284 100%**	**233 54%**	**205 46%**	**438 100%**

Table № 3 Head movements

Note: In this table all percentages are based on the total number of all movements performed by every conductor separately before and after the stop. When it is necessary, the percentages are rounded to the tenth numbers.

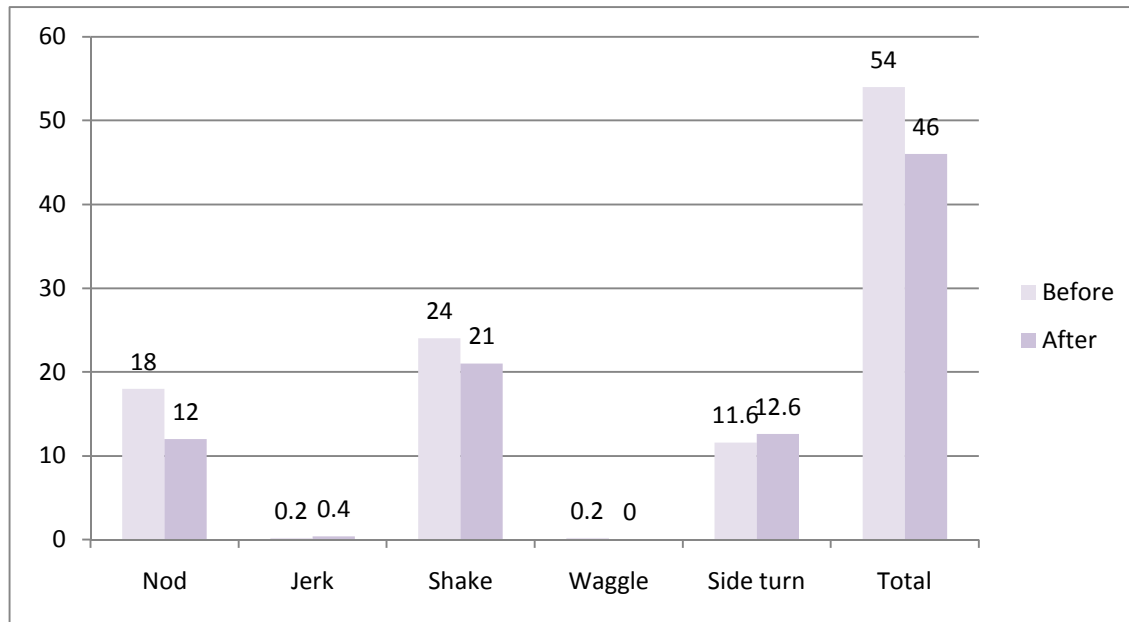Diagram № 3 Head movements for the 1st conductor

Diagram № 4 Head movements for the 2ⁿᵈ conductor

There is a total of 284 (100%) movements for C1 and 438 (100%) for C2. There is a decrease between before and after for both conductors. C1 has 51% before and 49% after, while C2 has 54% before and 46% after, which means there is a noticeable difference in 8%.

Surprising results are presented in nod movements when both conductors have equal percentage change between before and after. It is 18% before and 12% after, consequently it is a 6% difference.

Jerks have a tendency of an increase for both conductors, even though there are not so many of them. C1 has 0,4% before and 1,4% after and in total it is 1,8%, while C2 has 0,2% before and 0,4% after and it is 0,6% in total.

Shakes are quite important for C2 and they are presented by the largest amount of movements in this group. It is 45% in total and there is 24% before and 21% after. C1 did shakes three times less and the total percentage of shakes was 15,5 % and there is 6% before and 9,5% after. Consequently, there is a 3,5% increase for C1 and a 3% decrees for C2.

The next movement is waggle and there is again a tendency of a decrease for both conductors. Waggles, the same as jerks, are not presented by a large amount of numbers in the table. It is not a very frequent movement. It is 2,5% before and 1,1% after with total of 3,6% for C1, while C2 has even a smaller percentage. There is no waggle before and only one after the stop, which is 0.2%.

The last movement is a side turn movement. In this case C1 has the highest percentage of this movements in this table and it is 49,1%, which is 139 side turns in total, while C2 has 107 side turn movements and it is 24,2 %. It is interesting to see that there is a very small difference between the "before and after the stop" for both conductors. C1 has 24,1% before and 25% after, while C2 has 11,6% before and 12,6% after.

To sum up, both conductors have a decrease in nods and waggles and an increase in jerks and side turns.

Posture

According to the table № 4, conductors do not use their posture as expressively as they use other body parts. In total there is 105 (100%) movements for C1and a bit more 118 (100%) for C2. Also, there is a significant difference between the "before and after the stop" of total movements for both conductors. C1 has 62% before and 38% after, which means that the difference is 24 %, while C2 has 56% and 44% after, consequently there is12% difference.

Leaning has the highest total percentage for both conductors. It is 26% for C1 and 67% for C2 in total. There is a tendency of a decrease for both conductors from 18% before to 8% after for C1, consequently there is 10% difference, while C2 has even a bigger difference. It is 40% before and 27 % after, which is 13% difference.

Shaking is presented by a rather low percentage and is 6% before and 1% after with 5% difference and 7% in total for C1. C2 has 7% before and 5% after with 2% difference and 12% in total respectively. Shaking movements have a decrease before and after for both conductors.

The next in the table is swinging. C1 has 12% before and 10% after and 22% in total. C2 swings less and it is 6 times before and only once after the stop, which means that there is 5% before and 1% after and 7% in total respectively.

Going further, such a movement as "jumping" is done only by C1. There is 4% before the stop and 2% after and 6% in total.

Regarding straight shoulders both conductors had normal straight shoulders, therefore it is 0% in all boxes.

Shoulders up have a very small percentage between before and after for C1. It is 3% before the stop, 2% after the stop and 5% in total. C1 does not use his shoulders a lot during the rehearsal. However, C1 raised his shoulders more often. It is 4% before and 10% after, consequently there is 6% increase and it is 14% in total.

Sitting down and standing up are quite specific movements, which are done only by C1. Sitting down has 5% both before and after the stop and it is 10% in total. Standing up is 6% before and 7% after and consequently 13% in total. The percentage in the table shows that C1 was standing up more often than sitting and semi sitting.

Semi sitting is more common for C1. He did it more often before the stop than after. There is 8% before and 3% after with total of 11% and a difference of 5%, while C2 has no semi sitting before and only one (1%) after the stop.

To sum up, results from table №4 show that there is a decrease for both conductors in such movements as leaning, shaking, swinging, and jumping, which results in quite a big difference in the final total result in this table.

Posture	1st conductor		Total	2nd conductor		Total
	Before	After		Before	After	
Leaning	19 18%	9 8%	28 26%	47 40%	32 27%	79 67%
Shaking	6 6%	1 1%	7 7%	8 7%	6 5%	14 12%
Swinging	13 12%	11 10%	24 22%	6 5%	1 1%	7 6%
Jumping	4 4%	2 2%	6 6%	0 0%	0 0%	0 0%
Shoulders straight	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
Shoulders up	3 3%	2 2%	5 5%	5 4%	1 2 10%	17 14%
Sitting down	5 5%	5 5%	10 10%	0 0%	0 0%	0 0%
Standing up	6 6%	7 7%	13 13%	0 0%	0 0%	0 0%
Semi sitting	9 8%	3 3%	12 11%	0 0%	1 1%	1 1%
Total	**65 62%**	**40 38%**	**105 100%**	**66 56%**	**52 44%**	**118 100%**

Table № 4 Posture movements

Note: In this table all percentages are based on the total number of all movements performed by every conductor separately before and after the stop. When it is necessary, the percentages are rounded to the tenth numbers.
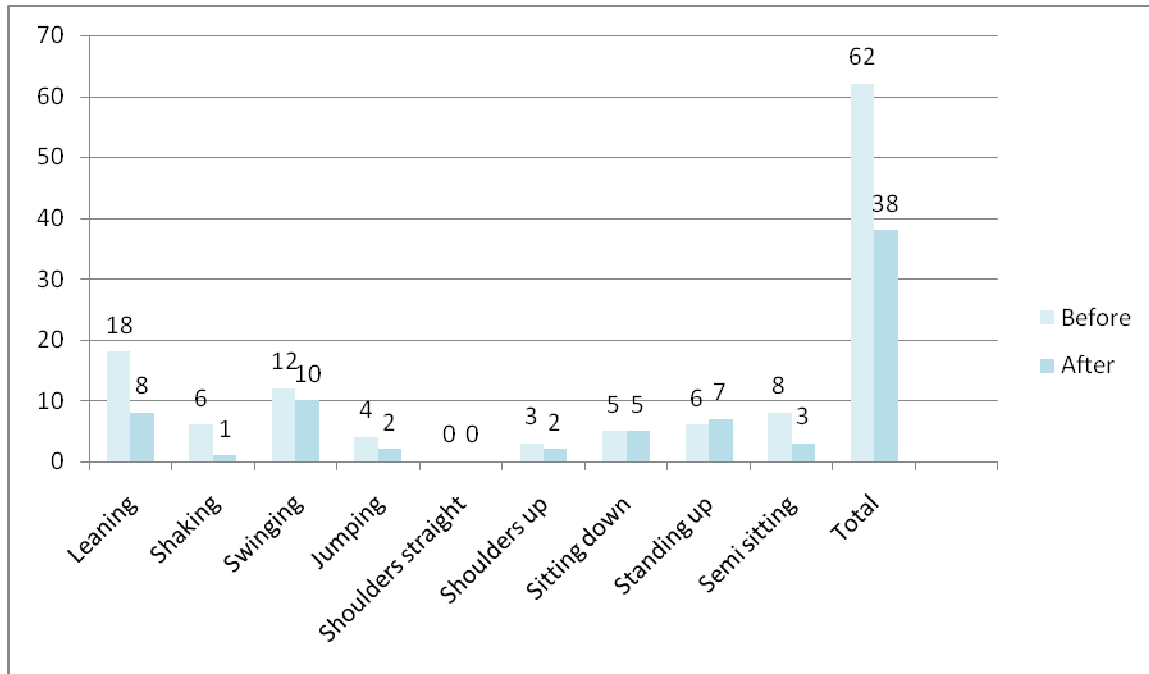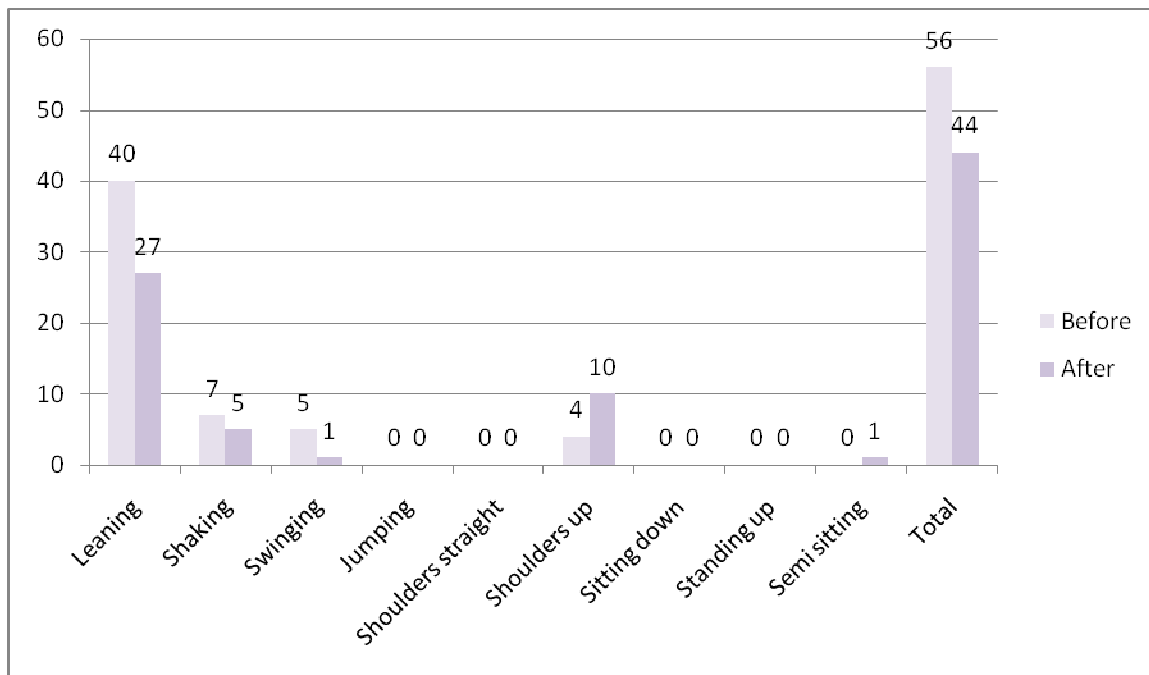
Diagram № 5 Posture movements for the 1st conductor

Diagram № 6 Posture movements for the 2nd conductor

Gestures of the hand: The right hand

Table № 5 that presents the hand gestures is the most developed as conductors use their hands extensively. It was decided to analyze conductors' gestures from the point of semantics and not

their trajectory, because semantics can provide a complex approach for the research question. There are four gesture types analyzed. Every gesture type represents some particular gesture group and every gesture group is filled in with the names of gestures that were spotted during the transcribing by the author:

- **"Batonic** gestures or beat gesture that underlies the rhythm" (Allwood, Cerrato, L., Dybkjaer, Jokinen, Navarretta, Paggio, 2005, p. 140). In this gesture type there is a normal beat which is a traditional beat when the arm "underlines the rhythm". This category includes time signature, the eight (8), circle, broad horizontal movements, semi circle and espressivo.
- "**Deictic** gestures locate aspects of the discourse in the physical space (e.g. by pointing)" (Allwood, Cerrato, Dybkær, and Paggio, 2004, p. 8). A conductor points his hand at the particular musician or a group of musicians, when they have to enter during a piece.
- "**Iconic** gestures express information by similarity or homomorphism" (Allwood, Cerrato, Dybkær, and Paggio, 2004, p. 8). This group presents similarity to such musical movements as imitation of an accents, vibrato for string, tenuto, triangle imitation and portamento.
- "**Symbolic** gestures (emblems) are gestures in which the relation between form and content is based on social convention (e.g. the okay gesture) (Allwood, Cerrato, Dybkær, and Paggio, 2004, p. 8). These gestures can be called universal in music because all conductors use them and all musicians understand them. Moreover, these gestures do not appear spontaneously. They come from a musical content. The conductor shows when to take off the sound, play more espressivo, show a better articulation, show more motion, dynamics and play with more air.

There are only four gestures that don't have a specific musical name. It is a circle gesture, which indicates a gesture that looks like a circle; semi- circle indicates a gesture that looks like a semi circle. Number eight (8) indicates a gesture that visually looks similar to number 8. In other words it looks like a drawing of the number 8 in the air; with air a gesture that shows necessity of the air. It is necessary to notice that first three come from a batonic group and the last one comes from a symbolic group.

All other gestures come from music and have self explanatory characters.

These tables have the largest numbers of movements (gesture) among all other tables. It shows 701 (100%) movements for C1 and 792 (100%) for C2 for the right hand. Moreover, there is nearly no difference in the number of gestures between the "before and after the stop" for both conductors. C1 has 356 (50,8%) movements before and 345 (49,2%)after, while C2 has even closer result between before and after and it is 393 (49,6%) before and 399 (50,4%) after.

Batonic gestures or beats "are small movements the shape of which does not change with the content of the accompanying speech" (Allwood, Cerrato, Dybkær, and Paggio, 2004 p. 7). It is true that a conductor sometimes shows only beating, which indicates the pace of the music for the musicians. However, there are many other additional gestures which conductors use within the beating system. They enrich the beating gesture with some additional meaning, although beating still has a major role there.

To start with, the total number for batonic gesture for C1 is 76.5% and for C2 it is 68% and the largest amount of gestures represented in this table are batonic ones. Both conductors want to prioritize it among all other gestures. The difference between before and after for C1 is just 2,5%, which is 39,5% before and 37% after. C2 has 36% before and 32% after and there is a 4% decrease.

When it comes to normal beats, C1has the same number as for before and after the stop and it is 26,5 %, while C2 has a decrease and it is 26.4% before and 23,2% after the stop.

Time signature gesture is 13% before and 10,5% after for C1 and C2 has 4,8% before and 4,5% after. Also, there is a decrease for both conductors. It is 2,5% for C1 and just 0,3% for C2.

The next 5 categories are presented and filled in for C2 part, because only this conductor was doing these gestures. In gesture types such as eights, broad horizontal movements and semi circle there is a decrease between the before and after the stop. The eights have 1% before and 0,1% after, broad horizontal movements have 0,5% before and 0,1% after, and semi circle movements have 0,5% before and 0,1% after. Such gestures as circles and espressivo show an increase. It is 2,5% before and 3,5% after, circle and espressivo have 0,3% before and 0,6% after.

Diectic and Iconic gestures

From table №5 it is clear that deictic gestures for the right hand for both conductors increase after the stop. C1 has 1,9% before and 2,1% after and it is 4% in total, while C2 has 2% before and 3% after and it is 5% in total. This category has quite a high percentage and it comes in the second place after batonic gestures.

C1 has 15% in total for iconic gestures and there is 7,8% before the stop and 7,2% after with a small decrease of 0,6%. And it is the only data that C1 has in this category.

C2 has 20% in total and there is 8% before the stop and 12 % after. Accent and vibrato gestures have increase in numbers after the stop. Accents have 2,3% before and 3.6% after, vibrato has 4,8% before the stop and 7,9 % after. C2 did 3 tenuto gestures before the stop and after and it is 0,3% for each category.

There is no triangle imitation therefore it is 0% for both conductors.

Portamento is the only iconic gesture that decreases after the stop, although these numbers are not so large. It is 0,6% before and 0,2% after.

Symbolic gestures

Symbolic gestures are the last ones in this table. C1 has 4,5% symbolic gestures in total, where there it is 2% before and 2,5% after and consequently there is 0,5% increase. C2 has 7% in total and there is 4% before and 3% after, therefore it is an 1% increase.

C1 has only two types of symbolic gestures, which are taking off sound and dynamics. Taking off sound has the same result before and after and it is 0,8%. Dynamics increased for 0,5% from 1,2% before to 1,7% after.

C2 has a broad range of symbolic gestures. Results from the table show that there is an increase between before and after among such gestures as taking off sound, where there is 0,2% before and 0,3% after; articulation where there is 1,1% before and to 1,2% after; with air where there is 0% before and after 0,3%. The increase is not so big and it is no more than 0,3%.

At the same time there is a decrease in espressivo from 0,9% before the stop to 0,2% after and dynamics from 1,8% before and 1% after.

Summing up, for the right hand from the table № 5 it is evident that C1 has the highest percentage in batonic gestures, followed by iconic, deictic and symbolic gestures. However, C2 has a different order. There is the same batonic, followed by iconic and after there is symbolic and deictic, which is not the same order as for C1.

Left hand: batonic and deictic gestures.

The table for the left hand is constructed in the same way as for the right hand, therefore analysis will be done in the same way.

The left hand of C1 has full total of 421 (100%) gestures, where 201 (47,3 %) were done before and 220 (52,7%) after. The difference between before and after is in the increase of 5,4%. C2 has 579 (100%) gestures in full total, where 291 (50,3%) were done before and 288 (49,7%) were done after the stop. The difference between before and after is quite small and it is in a decrease of 0,6%. Comparing left hand to the right hand it is clear that there is a bigger amount of gestures for the right hand.

C1 has 64% of batonic gestures in total. There is 30% before the stop and 34% after. Consequently, the increase is in 4 %. While C2 has 52,9% in total. There is 29,7% before the stop and then there is 6,5% decrease, consequently it is 23,2% after the stop.

C1 has 24% of normal beats before and 29% after, which means there is a 5% of an increase. C2 has 23,7% normal beats before the stop and 23,2% after, consequently the difference here is just 0,5%.

Concerning time signature beats C1 has 5,5% before and 4,8% after, which means there is just a 0,7% difference. While C2 has 2,1% before and 1,9% after. In this case there is a 0,2% decrease.

C1's left hand does not do gestures such as eights, circles, semi circles which is the same as the right hand, therefore it is 0% in those boxes. However, C2 has records of these mentioned gestures in the "before" boxes, but there are no records in the boxes "after" therefore it is 0% there. The results in the "before" boxes are the eights - 0,4%, circles - 2.9%, and semi circle - 0,2%.

Espressivo gesture was done only once before and after by C1 therefore it is 0,2% in every box and 0,4% in total. While C2 has 0,4% before and 0,5% after.

As for deictic gestures C1 has 5% before and a 2% increase after, which means it is7% and 12% in total. Whereas C2 has 2,6% before and after the stop it is 4,5%, which means there is nearly a 2% increase.

Summing up, it is seen that C1 has a decrease in all gestures before and after the stop except for espressivo, where there is no difference between before and after boxes, while C2 has a decrease in all gestures except for espressivo, where there is an increase.

Iconic gestures.

The total percentage of iconic gesture for C1 is 20%; 9,8% were done before the stop and 10,2% were done after. C2 has 33% in total of iconic gestures. There is 14% before the stop and 19% after. As it can be seen it is a 5% increase here.

The highest percentage in this category for C1 is accents. There is 9,8% before the stop and 8,6% after, which means there is a 1,2% decrease. It was interesting to notice that the accent is the only gesture that the conductor showed with his left hand before the stop. After the stop there was only a triangle imitation gesture that C1 showed 7 times which is 1,6%.

C2 showed accents 3% before the stop and 5,1% after. Vibrato has quite a high percentage here and it is 10% before the stop and 13% after. Tenuto has the same level of percentage before and after and it is 0,5%. Triangle imitation is absent and there is 0%. The last iconic gesture is portamento, where there is 0,5% before and 0,4% after.

Symbolic gesture

Symbolic gestures have a very small percentage. The total result is 4% for C1 and 7% for C2. The numbers of symbolic gestures are 2,5% before and 1,5% after for C1, while it is 4% before and 3% after the stop for C2. Consequently, both conductors have a decrease in this category.

For C1 taking off sound gesture and espressivo stay the same after the stop and it is 1.3% of a taking off sound and 0,2% of an espressivo gesture. Such gestures as articulation, motion and with air do not have any records. Also, C1 did 1% of dynamics before the stop and did not do it after.

C2 has 0,4% of take off sound gestures before the stop and 0,7% after. There is a very small difference and it is just 0,3%. Espressivo has 1,2% before the stop and 0,2% after, consequently there is a 1% decrease. Articulation does not have any record. Motion gesture has 0,2% before the stop and there is no record after. The highest percentage in this group is dynamics which has 2,2% before and 0,6% decrease after, which means 1,6% respectively. With air gesture has 0% before and 0,5% after the stop.

Gesture types			1st Conductor					2nd Conductor				
			Before	Total	After	Total	Full total	Before	Total	After	Total	Full total
Right hand	Batonic (beats)	Normal	185 26,5%	272 39,5%	187 26,5%	262 37%	534 76.5%	211 26.4%	287 36%	184 23,2%	254 32%	541 68%
		Time signature	87 13%		75 10.5%			38 4,8%		36 4,5%		
		The eight (8)	0 0%		0 0%			7 1%		1 0,1%		
		Circle	0 0%		0 0%			20 2,5%		27 3,5%		
		Broad horizontal movement	0 0%		0 0%			4 0,5%		0 0%		
		Semi circle	0 0%		0 0%			4 0,5%		1 0,1%		
		Espessivo	0 0%		0 0%			3 0,3%		5 0,6%		
	Deictic		14 1,9%	14 1,9%	15 2,1%	15 2,1%	29 4%	19 2%	19 2%	22 3%	22 3%	41 5%
	Iconic	Accent	56 7,8%	56 7,8%	51 7,2%	51 7,2%	107 15%	18 2,3%	59 8%	29 3,6%	97 12%	156 20%
		Vibrato	0 0%		0 0%			33 4.8%		63 7,9%		
		Tenuto	0 0%		0 0%			3 0,3%		3 0,3%		
		Triangle imitation	0 0%		0 0%			0 0%		0 0%		
		Portamento	0 0%		0 0%			5 0,6%		2 0,2%		
	Symbolic	Take off sound	5 0,8%	14 2%	5 0,8%	17 2,5%	31 4,5%	2 0,2%	28 4%	3 0,3%	26 3%	54 7%
		Espressivo	0 0%		0 0%			6 0,9%		2 0,2%		

		Articulation	0 0%		0 0%			8 1,1%		11 1,2%		
		Motion	0 0%		0 0%			0 0%		0 0%		
		Dynamics	9 1,2%		12 1,7%			12 1,8%		7 1%		
		With air	0 0%		0 0%			0 0%		3 0,3%		
Total				356 50,8%		345 49.2%	70 1 100%		393 49.6%		399 50.4%	792 100%
Left hand	**Batonic**	**Normal**	104 24,5%	128 30%	122 29%	143 34%	271 64%	138 23,7%	172 29.7%	123 20,8%	137 23,2%	309 52.9%
		Time Signature	23 5,5%		20 4,8%			12 2.1%		11 1.9%		
		The eight (8)	0 0%		0 0%			2 0.4%		0 0%		
		Circle	0 0%		0 0%			17 2,9%		0 0%		
		Semi circle	0 0%		0 0%			1 0.2%		0 0%		
		Espessivo	1 0,2%		1 0,2%			2 0,4%		3 0,5%		
	Deictic		24 5%	24 5%	28 7%	28 7%	52 12%	15 2.6%	15 2,6%	26 4,5%	26 4,5%	41 7,1%
	Iconic	**Accent**	39 9,8%	39 9,8%	36 8,6%	43 10,2%	82 20%	16 3%	82 14%	31 5.1%	109 19%	191 33%
		Vibrato	0 0%		0 0%			60 10%		73 13%		
		Tenuto	0 0%		0 0%			3 0,5%		3 0,5%		
		Triangle Imitation	0 0%		7 1,6%			0 0%		0 0%		
		Portamento	0 0%		0 0%			3 0,5%		2 0,4%		

Symbolic	Take off sound	5 1,3%	10 2,5%	5 1,3%	6 1.5%	16 4%	2 0.4%	22 4%	4 0,7%	16 3%	38 7%
	Espressivo	1 0,2%		1 0,2%			7 1,2%		1 0.2%		
	Articulation	0 0%		0 0%			0 0%		0 0%		
	Motion	0 0%		0 0%			1 0,2%		0 0%		
	Dynamics	4 1%		0 0%			12 2,2%		8 1,6%		
	With air	0 0%		0 0%			0 0%		3 0,5%		
Total				**201 47,3%**		**220 52,7%**	**421 100%**		**291 50,3%**		**288 49,7%**	**579 100%**

Table № 5 Gestures

Note: In this table all percentages are based on the total number of all movements performed by every conductor separately before and after the stop. When it is necessary, the percentages are rounded to the tenth numbers.
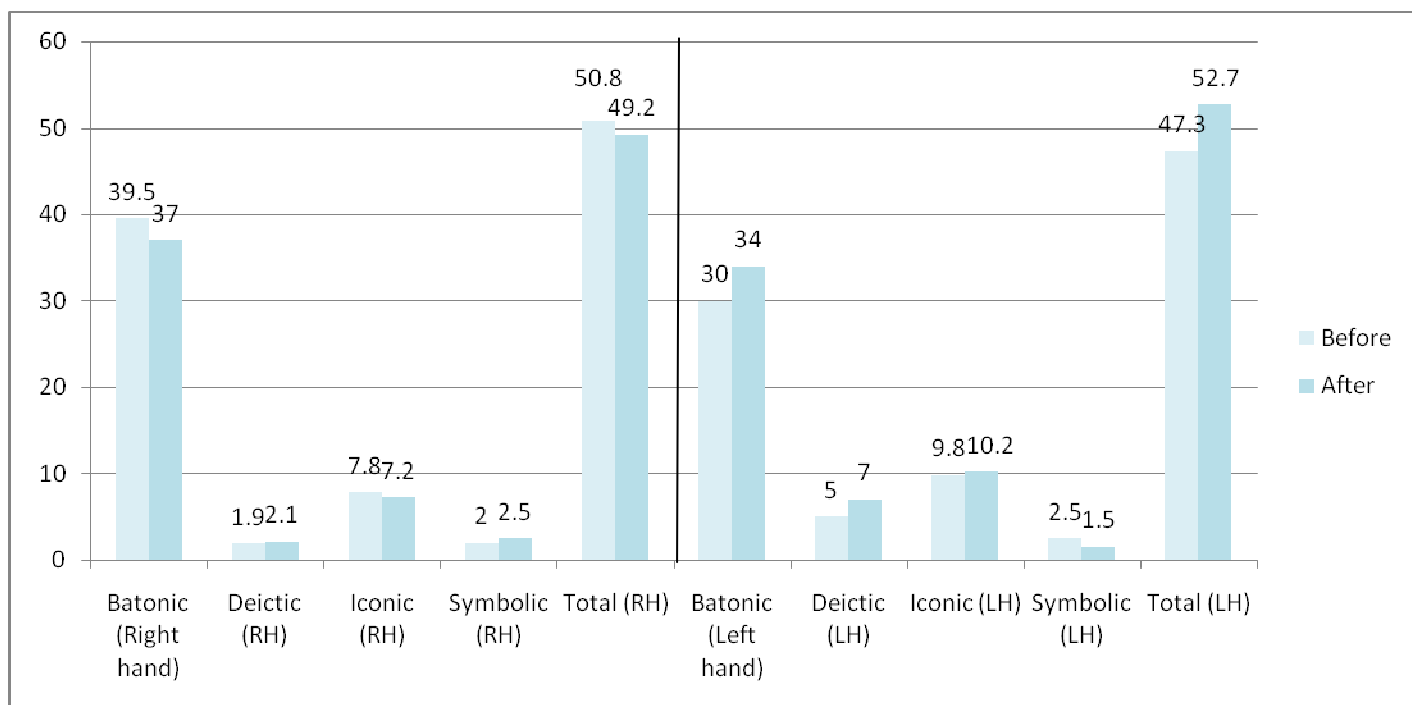

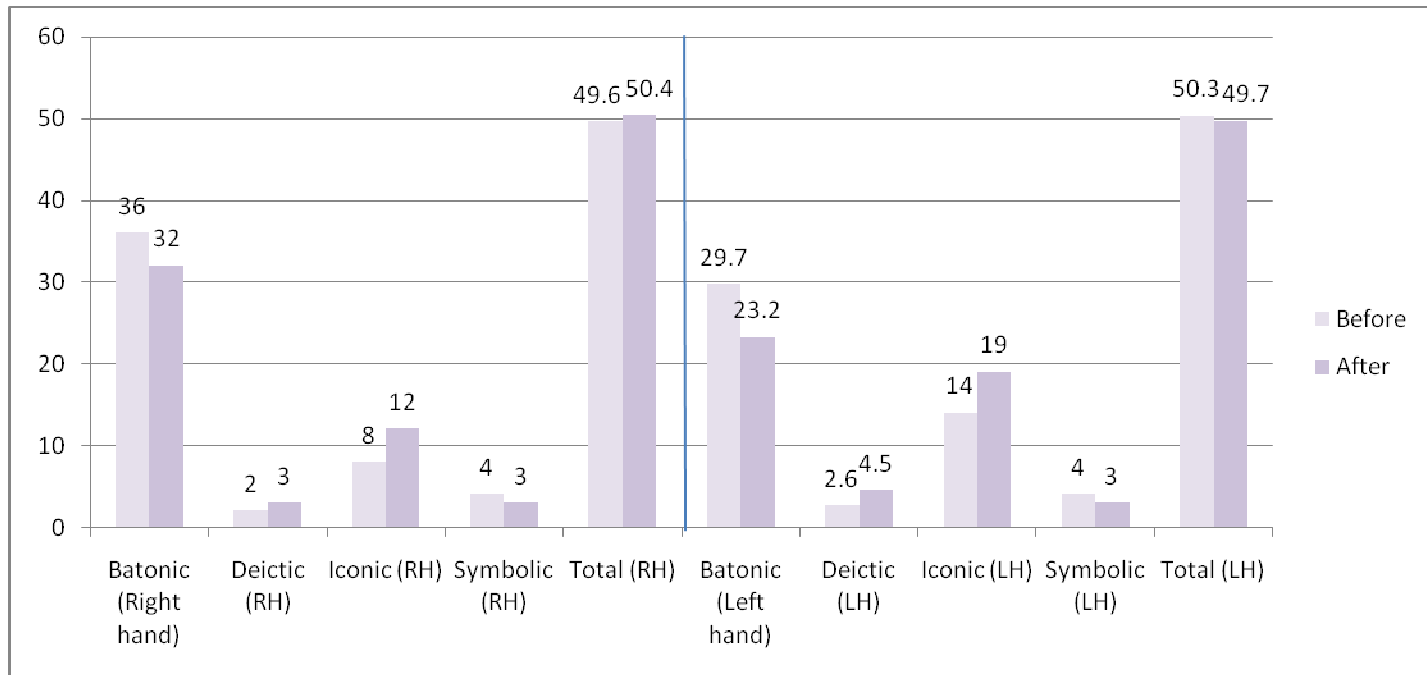Diagram № 7 Gestures: left and right hands of 1st conductor

Diagram № 8 Gestures: left and right hands of 2nd conductor

To sum up, the left hand of C1 has the highest percentage for batonic gestures, then iconic, deictic and symbolic is the least. C2 the same pattern but deictic and symbolic gestures have nearly the same percentage, which means they are equally important.

6. Discussion

In the following chapter the results from the tables will be discussed. Moreover, only the relevant information for this study will be taken for this discussion.

Facial display

In this discussion conductor' movements, expressions and gestures will be analyzed mainly from a musical point of view since music "dictates" the gestures.

C1 used to raise his eyebrows when he showed entrance to the musicians or he expected some expressiveness from the musicians. When he frowned with the eyebrows, he showed some concentration. Regarding C2, he has the same meaning for this type of expression and also, he frowned his eyebrows when he wanted to emphasize drama moments in the opera.

There are not so many eyebrow movements in total. However, C1 has less of them after the stop and C2 has more. The former one spends more time for giving explanations and decreases number of movements after. He relies on the verbal communication channel a lot. C2 increases

eyebrow expressions because he spends much less time on giving explanations, therefore he relies on his gestures/expressions more and wants to express his interpretation in a nonverbal way.

A category of eyes (open, open really wide, closed, semi closed) does not have large numbers for both conductors neither before nor after and also the difference after the stop is not so big. It means that the category of eyes does not play a big role in the nonverbal language of the conductors.

Gaze plays a vital role in the nonverbal communication of the conductors. Through it the musicians receive a lot of information. When the conductor looks sideways, he looks at the musicians. He always does it in advance and when he looks at some group of musician or a single musician, if it is a solo passage, the musicians know that it is their time to enter. In other words, a function of side gaze is to show entrance.

Gaze down means to look at the full score and check the entrance order of instruments, dynamics, touch and lyrics. Gaze up means just to look up front, upwards or at some musicians in front and show the entrance as well.

If the conductor does not look at the musicians and does not show entrance, the musicians can fail to enter correctly especially if there is a fast pace and a difficult rhythm. A conductor has the full score and controls through it when the musicians should enter. There is quite a big responsibility as for looking sideways therefore there is no big difference in this category between before and after the stop because conductors keep it strict.

Both conductors have an increase between before and after the stop in gaze category, which is true especially for C1, which means that the conductors want to have more eye contact with the musicians and give musicians more attention after the stop through their gaze.

However, one gaze is not enough to show the entrance for the musicians, therefore the conductor turns the head right and left as well, because if the musicians sit far away, a more visible body movement of the conductor is required in order to show the entrance. Also, it is quite a common combination when there is a side gaze and a turn of the head.

Both conductors used their lips quite actively, although in different ways. During the rehearsal C1 articulated rhythm with his lips with increased numbers after the break. C1 wanted to emphasize the importance of the rhythm, so articulation through the lips was one more way to show it. Moreover, the genre of this music is march (more details on p. 53), where musicians have to play rhythmically. Therefore an increased articulation of the rhythm after the stop proves the importance of this element.

C2 used to take a breath which is quite a common technique for woodwind instruments. Before they start playing, they have to fill in their lungs with air, so that they can use this air to play the instrument. C2 took a breath when there was a new phrase or the beginning of music after the stop. There isn't a big difference between before and after and this category has stable numbers.

Both conductors have less corners up after the stop, which means that they smile less times after the stop and become less emotional.

C2 increases the number of giving comments after the stop in four times. According to Skadsem (1997, p. 517), "verbal instructions have a significantly stronger influence than" written instruction in the notes, change in the conductors gestures and a volume change of the orchestra. C2 gave comments during the time when the orchestra was playing and it is another option to shape his own interpretation besides conducting.

To add more here, C2 has an increase in singing and whispering after the stop which proves once more that he tries to express his interpretation verbally but through singing.

Head movements

Both conductors have less nods and waggles after the stop.

Function of nods for C1 is a rhythmical emphasis of the beating and showing entrance to the musicians. C2 uses them for nearly the same functions, although with some difference. There is a rhythmical emphasizing as well, although showing entrance for the musicians was done quite often together with a side turn movement.

Waggles are also represented with fewer movements after the stop. The same as nods, waggles emphasize rhythmical beating. C1 and C2 reduced nods and waggles after the stop because conductors gave explanations and comments during the stop and there was no need to show so much information through the body as before.

Opposite to nods and waggles, jerks and side turns increase after the stop. C1 uses jerks as accents during a general development of the music in the orchestra. C2 uses jerks when he stops the orchestra after stringendo (an accelerating tempo) and when there is an expressive development of a sting group. Also, C2 uses jerks to show some dramatic moments.

Side turns have a very small difference between before and after the stop. C1 has only 1 movement difference, while C2 has 5. The conductors turn their head to the right and left in order to show entrance for the musicians or show approval of an intonation/dynamics at the moment. Sometimes they can show entrance only with the gaze, although in most cases there is a head movement. Moreover, C1 used head turns in order to observe the musicians during playing, for example when the music was not so intensive or fast. When he did it, he showed a visual control over the orchestra.

The increased jerks are done in order to "wake up" the orchestra and make it sound more expressively and the side turns increase a general attention of the conductors towards the orchestra.

Shakes are the only movements that do not have the same tendency of increase and decrease for both conductors. Shakes are increased for C1 and decreased for C2. C1 shakes the head in order to emphasize the rhythm and quite often it was done at FF. However, shakes for C2 were done

when there were very emotional parts with a lot of vibrato in a string group. C2 decreased the shaking because it was not necessary to show them so intensively since the orchestra had already changed its playing way after receiving comments during the stop. However, C1 increased shakes because through them he wanted to emphasize the rhythmical side.

Posture movements

After the head movements come the posture movements. Table № 4 has much fewer movements in total in comparison with other tables. Because the conductors do not use the torso a lot, consequently there is not so much information that the conductors want to express with their posture.

Both conductors used posture movements for the same functions. When conductors lean, they show:

- that some group of musicians has to enter
- they want to have more expression in music
- dynamical changes
- accents

Shaking is done to emphasize accents or a rhythmical pattern. As for the swinging movements, both conductors did some, occasionally, in order to have some rhythmical balancing during conducting.

When shoulders go up, there are nearly the same functions for both of them, although there is a slight difference for C2. Both conductors have shoulders up when a musical phrase is finishing and when the conductors want to have more expressiveness from the musicians. Moreover, C2 raised shoulders a lot when there were rhythmical syncopation patterns. Also, C2 increased rhythmical syncopation after the stop and it is the only movement that is increased after the stop.

Differences in a sitting position category are only presented for C1. For this discussion only semi sitting changes are interesting. C1 does it when he wants to emphasize a dynamical change, phrase ending and accents. After the stop C1 did semi sitting considerably fewer times.

During a stop the conductors gave a verbal explanation, where they said through the words what they wanted to change in the just heard music. When musicians start playing after the stops, they accept conductors' comments and as a result the conductors do not need to show the same amount of movements/expressions as before because the musicians accepted the conductor's interpretation. Consequently, the conductors did not need to lean, shake, swing and jump so many times as before and these movements declined for both conductors after the stop.

Right and left hands

In order to see the whole picture of conductors' gestures, right and left hands will be discussed together because they can be seen as a complete picture of gestures by the conductor. Firstly, the right and the left hand of C1 will be analyzed and then the same will be done for C2.

Observing conductors during different concerts, rehearsals and video recordings, it is clear that the hands are the most expressive part of the body and hands are used in many directions (for example way up, down, sideways, in circles). Through them the conductors deliver a lot of information to the musicians. Moreover, the data from table № 5 shows that not only have the conductors the largest numbers of gestures in total here, in comparison with other body movements, but also it is the most varied table that has many specific subsections in every category. These movements for example, circle, semicircle were designed especially during the transcribing of these two conductors.

Godøy & Leman (2010 et. al) and Schuller (1997 at. el.) agree that a conductor uses the right hand for a time beating function while the left hand controls dynamics, agogics and various nuances. However, considering the amount of information that the conductor has to communicate to the musicians, for example rhythm, melody development, harmonic changes, structure and form of a piece, it is obvious that the conductors develop a broader way of using their hands and body to deliver this information. In table № 5 there are many different gestures in every category, which show how the conductor wants to express a musical content. Therefore "gesture is a metaphorical sense to describe some emerging qualities in musical sound" (Godøy & Leman, 2010, p.19) and in addition to that "gesture as an action pattern that produces music, is encoded in music, or is made in response to music" (Godøy, & Leman, 2010, p.19).

Conductors' hands are the most movable parts of the body during the rehearsal and the concert. It can be considered that there is no organization in these movements and it is rather chaotic, although "Gesture as an action pattern that produces music, is encoded in music, or is made in response to music" (Godøy, & Leman, 2010, p.19). It is a special musical nonverbal language that the orchestra musicians and the conductor know. There is an encoded information that the conductor sends through the hands to the musicians and they have to decode it correctly. Moreover, "gestures can either supplement or reinforce verbal or musical communication" (Godøy & Leman, 2010, p.71).

Conductor №,1 Hands

According to the data from table № 5, the right hand movements of C1 do not have such a big difference between before and after the stop. There are 356 movements before and 345 after, consequently there is a decrease only by 11 gestures after the stop. The genre of this music, in the analyzed video in particular, is march where there is an even meter of 4/4 and 2/4. An idea behind this genre that military people have to march and in order to make it convenient, music should be really rhythmical and stable. Therefore one of the most important tasks of the conductor in this genre is to keep the rhythm. Going back to the numbers again the first conductor has nearly the same number of gestures before and after the stop, which means the he keeps stability and rhythm. Moreover, to reach this stability C1 prioritizes batonic gestures, normal beats, signature gestures and they have the largest and stable numbers in the right hand before and after the stop.

As for the left hand, there is a small increase in a number of gestures seen after the stop. What is interesting here is that the batonic gestures have again the largest numbers in this table. Even though the main increase is done because of the batonic normal beats, these beats represent not

only simple beats but also a musical character, which here is the march, consequently these beats emphasize the rhythmical side of this piece. It is interesting to notice that Fuelberth (2003, p. 14) states that: "The left hand should not mirror the right hand, but should be used for specific musical emphasis. Cueing and the expression of crescendos and decrescendos are appropriate tasks for the left hand". In our case the left hand expresses the character which is the march.

There is an increase in numbers of deictic gestures in both hands after the stop, which means that the conductor pays more attention to the musicians and wants to get more involvement from them.

It seems that the iconic gestures increased in the left hand, although it is done only because of a triangle imitation which was absent before the stop and appeared after it. The main gesture there is the accent and there are also fewer of these gestures after the stop which is the same as in the right hand.

In the right and left hand, the symbolical gestures are represented by a small number and there is a small difference between before and after the stop. In the left hand the difference is only in the dynamics gestures, which was 4 and became 0, although considering that there is plus three dynamics gestures in the right hand, it can be considered that the conductor achieved a necessary dynamics balance that is necessary for that piece.

Generally, for C1 priority is given to the batonic gestures, which have the largest sum of movements and in this category there is the biggest difference between before and after the stop.

Conductor №2. Hands

C2 has some similarity with C1, although some difference as well. C2 has a very broad nonverbal language, gestures in particular, which he is using in order to enrich expressiveness of the orchestra. For example batonic gestures include the eight (8), circle, broad horizontal movements, and espressivo; iconic type include vibrato, tenuto, and portamento; symbolic type include espressivo, articulation, motion, dynamics and with air. This system of gestures was designed during the observation of the video files of C2.

Unlike C1, C2 has a tendency when gestures decrease or increase after the stop in both hands altogether. For example, the total number of batonic and symbolic gestures decrease in both hands after the stop, while deictic and iconic increase after the stop. Such result shows how the left and right hands work in the same way together for C2.

As it was written before, every gesture type except of deictic, consists of several gestures. Nearly all of these small gestures do not have such a big difference between before and after the stop, although altogether they make a clear picture of the total result before and after. According to table № 5, gestures belonging to the batonic and symbolic gesture types decrease in both hands, which means that C2 wants to minimize usage of these gestures after the stop.

However, there is one gesture that has a great change between before and after and it is the vibrato for both hands. In the chapter 2 "Methodology" it was written that this opera is an example of a lyrical opera with a big and expressive group of string instruments. During rehearsal C2 showed these gestures a lot in order to enrich lyrical side of the opera. It is possible to say that it is a central element for C2.

The same as C1, C2 has an increase in the deictic gestures in both hands and here the explanation is also the same.

7. Conclusion

This chapter presents the answer to the research question. Moreover, it presents ideas for future research.

7.1 Answer to the research question

The research question of this study is:

"How does the nonverbal language of the conductor change after spotting misunderstandings during rehearsal?"

In order to answer it, two video files of two conductors at the Göteborg Opera were recorded. Afterwards, many tables were filled in with transcribed and coded data that was later on expressed as percentages.

First, there is no single approach how the data can be explained because there are very specific categories. Considering that this data comes from a musical setting, this puts a special musical emphasis on the analysis and consequently on the following answer to the research question as well.

There isn't a big difference between the movements/expressions for both conductors between before and after the stop, except for the posture movements. The conductors follow the music and consequently when the music is the same before and after the stop, movements/expression will be also the same. However, there are some details that make the difference between before and after the stop inside every table.

According to the results of the facial display in table №2, both conductors increase usage of gaze after the stop. Through the gaze the conductors express a visual contact and control over the orchestra. It seems that they need it more after the stop as if a confirmation that the musicians understood their comments and play differently. Moreover, both conductors increase the verbal part of their behavior after the stop because despite giving comments during the stop, conductors still want to add some verbal comments while musicians are playing. It means that they want to have one more channel of influence besides nonverbal expressions/movements.

It has been found that both conductors use less of some movements after the stop. Among them are some gestures, head and posture movements. Functions of these movements are:

- Head movements emphasize rhythmical beating, show entrance, support stringendo development, show approval of intonation/dynamics, observe musicians.
- Posture movements indicate that musicians have to enter soon; conductors want to get more expressiveness in music, dynamical changes, accents.
- For C1 there are batonic beats (normal and time signature beats) and iconic beats which are presented only by accents in the right hand; symbolical gestures of the left hand are

presented only by dynamics. As for C2 there are batonic gestures in the right hand (normal beat, the eight (8), circle, broad horizontal movements) and batonic gestures in the left hand (normal beat, time signature, the eight (8), circle, semi circle). Symbolical gestures in both hands are presented by espressivo and dynamics. The names of this gestures are self descriptive therefore there is no need to explain their functions.

Such decrease is explained by the fact that conductors do not need to express so much after the stop with their gestures, torso and head as before. During the stop the conductors explained verbally their vision regarding the just played music and what should be changed. Musicians accept this interpretation and consequently the conductors do not need to have so many posture and head movements as before.

It was found that both conductors increase deictic gestures in both hands after the stop. It means that the conductors want to pay more attention to the musicians after the stop, want to control their entries more and want to get more involvement from the musicians.

According to the results from table № 5, gesture types, it was found that both conductors have a very small difference in the right hand between before and after. As it was said before the right hand is responsible for the beating, consequently the conductors need to keep the same tempo through the beats in the piece, therefore these numbers are the same.

The left hand has some increase for C1, while C2 has nearly the same number of gestures. C1 wants to increase all gesture except symbolical in the left hand. Considering that C1 has an opera that was not played before, he needs to practice it with the orchestra more than C2. C1 has to put his own accurate interpretation on the music. The left hand is responsible for dynamics, phrasing, articulation, which means that it is exactly the interpretation of the music. Therefore, a more active left hand after the stop means that he wants to increase overall expressiveness of the orchestra and C1 makes the orchestra sound according to his interpretation through the gestures of left hand.

The study has shown that there are some details regarding expressiveness in the left hand for both conductors. Both of them want to increase it after the stop. C1 increased batonic gestures that emphasize metrical beating of the march, while C2 increased the vibrato effect in strings which points out the lyrical side of the opera. In other words, the conductors want to emphasize the genre side of the opera and make it more rhythmical in the first opera and more lyrical in the second. Also, the opera genre and familiarity with the music by the orchestra dictates a conducting style

7.2 Future Research

Talking about future research it would be great to do the same study which can explore various aspects. Among them are:

-   Gender difference. In the current musical world there are equal opportunities for men and women to get a professional degree in conducting. Therefore it is quite common to see a woman as a conductor now, although they are in minority in this profession. In future research it would be interesting to compare gestures between a man and a woman before and after the stop.

- Intercultural difference. It would be interesting to see if there is intercultural difference in nonverbal language of a conductor and how it affects conducting and solving professional musical misunderstandings. To do that it is necessary to record two or more conductors for every culture group and compare their nonverbal language before and after the stop.

- The same research can be repeated with more enhanced technical equipment. The usage of a special software that can identify the speed of gestures, measure heights and width, make recordings of these movements and then compare it with "before" and "after" samples. At the University of Oslo there is a research center http://www.fourms.uio.no/ under Alexander Refsum Jensenius who makes interdisciplinary studies by exploring body movements through music where the body has a role. They use sensor technologies as well, although they prefer laboratory setting rather than live recordings.
- Considering that there is always an orchestra who is following a conductor, a qualitative study with questionnaires would be very much suitable. These can explore the opinions of the musicians about how do they perceive the conductor's gestures and body language before and after the stop.

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