Exploring Kinaesthetic and Body Self-Awareness in Professional Musicians

Annamaria Minafra

Institute of Education, University College London

Submitted in fulfilment of the degree of

Doctor of Philosophy of Music Education

I, Annamaria Minafra, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Word count (excluding bibliography and appendices): 99,805

Annamaria Minafra

Dated: February 2019

Acknowledgements

I am especially grateful to Professor Susan Hallam for her unfailing advice and invaluable support with which she has guided me during this research project.

I am very grateful to Dr. Lynne Rogers who provided helpful feedback and support on the last stage of my work.

I would like to thank all of the musicians who collaboratively participated to this research.

Sincere thanks also to all of my friends who shared and supported my ideas.

Finally, a special thanks to my husband who always encouraged me all during this journey.

Abstract

This research aimed to explore whether developing movement awareness in the playing of professional musicians could improve performance and assist in reducing tension. The issue was studied adopting a neurophenomenological perspective (Varela, 1996) which combines the traditions of continental phenomenology and neuroscientific studies related to cognitive processes. Musicians are often not aware of the importance of their body movements or gestures in playing (Holgersen, 2010). This research investigated whether movement awareness could be developed and if so what impact it would have on performance.

Qualitative data were collected by applying phenomenological First-person mediator methods through semi-structured interviews, observation, and audiovisual materials. A range of professional instrumentalists participated. A quasi-repeated qualitative measurement research design was adopted. The musicians were asked to perform an easy, slow piece of music, which they had previously chosen, from memory three times. The first time the piece was performed with no intervention. In the first intervention they were asked to mentally rehearse the piece before playing it again, and in the second, they were asked to simulate the movements of playing without their instrument, before performing. The activities and performances were video recorded.

The data were analysed in terms of verbal and non-verbal responses during the interviews and following performance. The performances were analysed by a panel of five experienced musicians and comparisons made in relation to the way the participants responded to the interventions.

The findings showed that all of the musicians were affected by the simulation which aroused a range of feelings. The simulation seemed to generate kinaesthetic and sensory-motor feedback assisting the musicians in shaping their thoughts and developing body self-awareness even when they expressed negative feelings. The panellists noted a reduction in anxiety particularly following the third performance and an increase in concentration, musical communication, accuracy and fluidity of gestures.

Impact statement

The findings of this research aim to contribute to the field of music education through a combination of theory with practice. The research based on the body-mind relationship was designed to assist in enhancing musicians' well-being increasing their concentration when playing through the development of body self-awareness. The findings might be applied to professional musicians but also in the context of instrumental music tuition. The insights gathered from the findings may be relevant to developing self-reflection and the use of simulation when children begin to learn to play an instrument. Children may be guided to create a positive relationship with their instrument reducing tension and anxiety from the beginning of their musical journey. The effects of body self-awareness may also be explored in other educational areas through the application of kinaesthetic movement. This approach might also further multi-disciplinary research on investigating movement in playing and promote innovative future practice in music tuition through the interaction between first-and third-person data.

Selected findings from the research have been presented at several international and interdisciplinary conferences such as International Society for Music Education (ISME) World Conferences, Research In Music Education (RIME), European Association for Music in School (EAS), Music and Sonic Art (MuSA), Toward a Science of Consciousness (TSC), Movement Computing (MOCO). Sections of findings have been published in the following articles (http://www.coriscoedizioni.it/wp-content/uploads/2015/12/Immagine-e-pensiero-Bilanci-nellescienze-cognitive-attuali.pdf; https://doi.org/10.1145/3212721.3212875). The dissemination process will continue. Within the academic community, dissemination of outputs is planned through participating in future international conferences and publishing journal articles exploring aspects of the research. In addition, a book which investigates various topic of the research is planned. Presentations of the research in music conservatoires and universities are also contemplated to disseminate the findings and promote discussion. Beyond the academic community, practical application of the findings will be pursued through workshops designed for professional musicians and instrumental music teachers.

TABLES of CONTENTS

LIST OF FIGURES

LIST OF TABLES AND FIGURES

Figures

Chapter 11– Tables & Figures.

Tables

Figures

Chapter 12– Tables

Tables

Chapter 13– Tables & Figures

Tables

Figures

Section 1

Chapter 1

Introduction to the study

It is knowledge in the hands, which is forthcoming only when bodily effort is made, and cannot be formulated in detachment from that effort.

Merleau-Ponty (1945/2002:166)

This chapter introduces the research, an empirical qualitative study exploring body self-awareness and its possible benefit for professional musicians followed by a discussion of the interdisciplinary theoretical approach situated in cognitive science, the research questions, and an outline of the thesis.

1.1 Introduction

1.1.1 Biographical introduction and rationale

When I trained as a music teacher, I was taught that adopting teaching strategies including movement would make the learning process pleasant and motivate students as well as developing the various skills needed in playing an instrument (Juntunen, 2017). I liked this idea and I planned my violin and viola lessons around activities which included movement to improve learners' musical skills and to make learning fun. After a while I realized that I was working naively ignoring the cognitive processes that underpinned this principle of learning and the attention that should be paid to body movement when playing. I also noticed that students who attended my sessions after learning with other violin teachers were not used to working through movement, appeared tense and rarely had fun when playing. I was curious to find out my expert colleagues' opinions of the importance of teaching through movement and being aware of it. They were surprised about my interest and reacted as the instrumental educationalist

Kempter (2003) described. They were more interested in the sound that they produced in performance rather than the way that their bodies engendered that sound. They seemed to separate the mind from the body. As expert performers, they seemed to reduce their mental effort without thinking 'about what they were doing as they were doing it' (Montero, 2016: 51). They also did not consider that sensorial pleasure is received from performing movements when playing (Delalande, 1993). As Delalande (1993) claims, the act of playing contains a sensorial component as he showed through considering the connection between performed sound and touching the bow during performing. The string player chooses particular qualities of sound which cannot be separated from movement or gesture. This movement is consciously controlled in order to create a particular quality of sound. As Delalande explains:

> A regulatory circuit is created between sensations and performance movements which the instrumentalist takes into account. This is the practice of sensory-motor skills, but it is also a source of satisfaction both for the performer and the listener. Listening to the performed sound provides feedback but this is also provided through the sensations of using the bow and the fingers (Delalande, 1993: 45).

Following these reflections, I decided that before trying to develop these ideas for teaching my students, it would be useful to carry out research with professional musicians who were also teachers in order to shed light on the way in which they paid attention to their movements while playing. A lack of attention to movement could be an underlying factor in the development of tensions and pain experienced by many musicians (Wynn Parry, 2004). Developing this kind of attention requires the individual 'to experience what one's mind is doing as it does it, to be present with one's mind' (Varela et al., 1993: 26). This may improve musicians' well-being in playing and affect their teaching. Therefore, I decided to combine what I had learned in music education with my philosophy of education background in order to investigate musicians' movement and body self-awareness. The latter is 'the ability to pay attention to ourselves, to feel our sensations, emotions, and movements online in the present moment, without the mediating influence of judgmental thoughts' (Fogel, 2013: 1). This issue affects many activities related to the learning process in general and the performing arts in particular especially learning to play a musical instrument. I was strongly motivated to explore the existing literature in the field of embodied cognition, particularly embodied music cognition in order to understand how it might be possible to develop musicians' awareness of movement in playing. I discovered that a range of studies had been carried out on musical movement and gestures (Davidson & Correia, 2002; Davidson, 2005; 2007; 2011; 2012; Gritten & King, 2006; 2011; Jensenius, 2007; Godøy & Leman, 2010; Wittry, 2014), some from an embodiment perspective (Mereleau-Ponty, 1945/2002; Varela et al., 1993) including the application of Jacques-Dalcroze' principles (Juntunen, 2004; 2017). However, although various instrumental educationalists, such as Gobbi Belcredi (Riscica, 2017), Hoppenot (1981/2006), Galamian (1985), Kempter (2003), suggest the importance of being aware about the relationship between touch and sound consciously coordinating movement and gestures through a mental process, little research had been undertaken specifically in this area. Investigating 'the performer's perspective on what it is like to physically perform music' (Doğantan-Dack, 2011: 248) seemed likely to be relevant to understanding the body-mind relationship inasmuch as 'while performing, performers often do not focus on their bodily movements but on conceptual issues such as interpretation' (Doğantan-Dack, 2011: 252).

The following sections outline the theoretical background which led me to formulate the research questions and develop a method for carrying out a qualitative study from a first-person perspective.

1.2 Theoretical background

Paraphrasing Merleau-Ponty's (1945/2002) claim (see above), when we play a musical instrument we perform movements involving all of our body physically, intellectually, and emotionally. These are underpinned by movements which are essential to achieve a special kind of knowledge which is music. This concept was developed by Varela and colleagues (Varela et al., 1993) adopting a neurphenomenological approach (Varela, 1996) that aims 'to bridge between cognitive science and human experience' (Varela et al., 1993: 33). Knowledge is embedded and achieved through a constant body-mind relationship in which the moving body plays an essential role (Varela et al., 1993). In this way the Descartes' dualistic approach based on a clear separation between body and mind that led to in the positivist form of western science is challenged. Embodied cognition and embodied music cognition aim to go beyond Cartesian's concept and 'put the mind back to the body' (Müller & Newman, 2008: 314). Recently, a range of disciplines related to cognitive musical process, including music education, have explored both the practical and theoretical implications of the concept of embodied cognition (Reybrouck, 2001; Bresler, 2004; Leman, 2008; Gritten, & King, 2006; 2011; Clarke & Clarke, 2011; Pio & Varkøy, 2015; Cox, 2016; Leman et al., 2017). However, most of these studies adopt a third person approach and pay very little attention to the first-person perspective. Conversely, the neurophenomenological approach (Varela, 1996) combines third with first-person data through 'a process of codetermination and covalidation' (Colombetti, 2014: 142). The first-person perspective enables us to know *how* we experience the world. Using Dewey's terminology (Dewey, 1928), Varela (1999) suggests shifting the focus of learning from the *know-that* (factual information about music or how to do things) to the *know-how* (the way we learn, the strategies that we adopt). Focusing on the *know-how* leads to awareness. This occurs when we intentionally direct our attention onto a specific act or object involving our body and mind (Thompson & Zahavi, 2007). When we play, we direct attention to our moving body which is both in our external world and our mental functioning. We externally see our body, but also perceive it internally receiving sensory-motor feedback, so called *kinaesthesia*, generated through a circular dynamic process of sound and movement and the series of actions that we need to mentally anticipate before performing these actions. The word kinaesthesia comes from the ancient Greek and is the combination of two other words kinein "to set in motion", and "aisthesis "sensation" (Rocci, 1991). Therefore, kinaesthesia means receiving sensorial feedback during performing movements related to a perceived object (Petit, 2006) that, when playing, is our body. As Galvao and Kemp (1999) point out, musicians intuitively use kinaesthesia in playing, although few studies investigate how kinaesthetic experience may affect playing. This study seeks to address this issue.

1.3 Research questions and study design overview

In the light of these issues, I chose to undertake a qualitative study adopting a neurophenomelogical approach (Varela, 1996) which allowed me to collect first-person data (Vermersch, 2002; Depraz et al., 2003) related to musicians' lived experience investigating:

-how movement awareness and kinaesthesia are relevant for professional musicians in playing;

-how movement awareness could affect performance, reduce tension, and improve well-being in professional musicians.

To address these issues the main research question was:

How can professional musicians' body self-awareness be explored considering the relationship between movement and performance?

From this main question, a number of sub-questions follow:

2) How can mental rehearsal help professional musicians to self-reflect on the relationship between movement and performance?

3) How can simulating playing help professional musicians to self-reflect on the relationship between movement and performance?

4) To what extent do interventions focusing on movement impact on performance?

1.4 Study design overview

Twenty-two professional musicians, who were also teachers, participated to the study. They were asked to perform three tasks. The semi-structured interviews carried out on a one-to-one basis were videoed to enable the collection of verbal and nonverbal data. The musicians were guided to self-reflect and verbalise their feelings after performing each of the three tasks. This aimed to lead them to become aware of previously unnoticed elements of their physical actions (Petitmengin et al., 2017) executed during the tasks. Each task corresponded to a phenomenological reduction (Vermersch, 2002) in which the body-mind relationship was considered in order to explore how and whether body self-awareness could be enhanced and subsequently affect performance. Across the three phenomenological reduction processes, the musicians seemed to experience a sort of introspective "journey" which seemed to affect them at different levels. Their self-reflections and nonverbal communication enabled me to make sense of and interpret their lived experience in depth (Smith, 2004). The interdisciplinary approach I chose to analyse the data deepened and enriched my understanding related to musicians' body self-awareness and their thinking processes but also challenged me. I became aware of the lack of in-depth knowledge of much of what I was studying and that this was only the beginning of exploring musicians' body self-awareness in depth. Going forward a collaborative network of experts from a range of disciplines combining theoretical with empirical studies may be needed.

1.5 Preview of the thesis

For the sake of clarity, I structured the thesis into five sections.

The first includes this chapter and Chapters 2 and 3. In Chapter 2, I reviewed the main concepts which guided me in reflecting on and problematizing the issues. This process allowed me to position the research in the field of philosophy of music education from a neurophenomenological embodied perspective. In Chapter 3, I discussed my epistemological approach which led me to set out my research design and method of analysis.

Sections 2, 3, and 4 respectively include findings related to each research question corresponding to each task and each phenomenological reduction. Verbal and nonverbal responses were analysed and, when necessary, set out in separate chapters. The initial chapter of each section reports findings related to verbal and nonverbal reactions expressed by the musicians prior to performing each task when listening to the task instructions. This represented the start of a new self-reflection or phenomenological reduction process.

Section 2 encompasses Chapters 4, 5, and 6 and addresses the first research question presenting the outcomes which emerged from the first task analysis.

Section 3 includes Chapters 7, 8, and 9 and presents findings related to the second research question corresponding to the second phenomenological reduction.

Section 4 includes Chapter 10, 11, 12, and 13 presenting findings related to the third research question corresponding to the third phenomenological reduction.

Section 5 includes Chapter 14 and 15. Chapter 14 addresses the last research questions and Chapters 15 presents the discussion of the main findings the limitation of the study, and implications of the study in the field of music education.

Chapter 2

Literature review

2.1 Introduction

This chapter reviews the literature related to body self-awareness and taking a neurophenomenological perspective outlines its importance for playing a musical instrument. The problem of consciousness and its implications for the ‘body-mind’ relationship are discussed followed by a consideration of the elements that contribute to achieving body-self-awareness such as perception, kinaesthesia and proprioception.

2.2 Consciousness and the body-mind problem

Defining the term consciousness is difficult, as the history of continental philosophy and the current debate in cognitive sciences show. Many philosophers agree in defining consciousness as possessing, at least to some degree, subjective experiential awareness (Thompson & Zahavi, 2007; Hutto, 2011). As Hutto (2011) states, ‘a truly conscious being enjoys experiences that have phenomenal aspects’ (Hutto, 2011: 36). Cognitive science and the neurosciences have developed research programs investigating consciousness as it relates to the so called ‘body-mind problem’ (see Seager, 2007:9; Damasio, 2010) taking account of the work of Husserl, the father of modern phenomenology. Husserl’s expectation was that a ‘science of experience’ would develop and that phenomenology would cooperate with the natural sciences considering first-person experience inasmuch as knowledge is grounded in ‘lived experience’ (Varela, 1998: 34). Husserl’s purpose was to go ‘back to the things themselves’ (Husserl, 1983: 35) in order to describe how experience appears to consciousness. In this way, the body is always involved (see Husserl, 1989) as we perceive the external world through our senses and sensorimotor system processing the received information through mental acts. Following this the neurophenomenologist Francisco Varela, taking into account Husserl and Merleau-Ponty's reflections, developed research combining phenomenological and neuroscientific studies. His work started from the idea of *Leib* -the lived body (Merleau-Ponty, 1945/2002), which is the synthesis between the anatomic body (*Körper*) and the psychic condition, 'the psychic Ego' (Husserl, 1989: 128, § 121) Varela and colleagues (1993) argued that:

> […] Western scientific culture requires that we see our bodies both as physical structures and as lived experiential structures - in short, as both "outer" and "inner", biological and phenomenological. These two sides of embodiment obviously are not opposed. Instead, we continuously circulate back and forth between them. Merleau-Ponty recognized that we cannot understand this circulation without a detailed investigation of its fundamental axis, namely, the embodiment of knowledge, cognition, and experience. For Merleau-Ponty, as for us, *embodiment* has this double sense: it encompasses both the body as a lived, experiential structure and the body as the context or milieu of cognitive mechanisms (Varela, Thompson, & Rosch, 1993: xv-xvi).

In other words, the body is simultaneously experienced as object and as subject. When an individual touches his/her own body s/he lives a double experience becoming aware of having been touched and the act of touching. This concept is central in music (Bowman, 1998: 256). In playing an instrument body and mind continuously interact: the body is engaged in a constant perceptual experience involving various senses and the sensory-motor system, while the mind processes the received information. Moreover, playing is a voluntary act which is intentional. From the Husserlian perspective the concept of consciousness cannot be separated from intentionality. Husserl adopted the term 'intentionality' from Franz Brentano who used it for suggesting 'the "directedness" or “aboutness” of mental states onto a content’ (Seager, 2007: 26), referring to the ‘characteristic of psychic phenomena’ such as our desires, judgments, emotions (Drummond, 2003: 65). Husserl developed Brentano’s concept considering that ‘consciousness is intentional in the sense that it aims toward or intends something beyond itself’ (Thompson & Zahavi, 2007: 71). The subject, as knowing agent, intentionally directs his/her attention towards an object which could be both in the external world or a subject’s mental content. This means that the subject always makes sense of the considered object from lived experience, while the object has no meaning when it is not grasped from the subject’s intentional act. Then, ‘the experience and its object are not externally related but internally united’ (Drummond, 2003: 65). All of these considerations take into account the embodied root of knowledge. This is a fundamental issue which affects how human beings know the world and interact with it. For example, human beings voluntarily accomplish many acts such as grasping a glass, opening a door, or playing a musical instrument. All these are defined as ‘a set of muscular contractions and joint rotations executed in fulfillment of a specific goal’ (Jeannerod, 2017: 576) or ‘goal-directed or oriented acts’ (Gallese, 2006: 300) with the term *action.* Each action results from a combination of multiple motor acts, although we are not aware of each separate movement that we perform (Holgersen, 2010) during that action as, for example, when we are playing an instrument. Action, which combines many movements such as moving arms, fingers, eyes, breathing, and so on, is not available to our consciousness (Petitmengin et al., 2017: 173). We are aware of the content, the ‘what’, that is being produced, but we exclude the activity itself, the how’ (Petitmengin et al., 2017:173). We automatize movements without ‘controlling them by explicit thought processes’ (Holgersen, 2010: 33). We act through a kind of unconscious or pre-reflective self-awareness that is:

> [...] an immediate, implicit and irrelational, non-objectifying, non-conceptual and non-propositional self-acquaintance (Zahavi, 1998: 23).

Pre-reflective self-consciousness is the awareness which precedes any reflective act. The subject is aware of living that specific experience, but never reflects on it (Gallagher & Zahavi, 2008: 54) or makes a judgment about it. Moreover, this primary-self-consciousness is ‘passive in the sense of being spontaneous and involuntary’ (Lutz & Thompson, 2003: 35). When we gesticulate during speaking, feel pain or pleasure, eat, or hear sounds, we perceive them through ‘an immediate and non-observational access’ (Gallagher & Zahavi, 2014). Taking account of this, playing an instrument is ‘the nature of this direct (primary) experience […] a continuous flux of sensorimotor engagement’ (Clarke, 2011:195-196) in which the whole body is continuously involved.

However, pre-reflective self-awareness constitutes the base of ‘*reflective* self-awareness’ which is ‘an explicit, conceptual and objectifying thematisation of consciousness’ (Zahavi, 1998: 23).

As Gallagher and Zahavi (2008) state, the person who is self-conscious needs ‘to be aware of experiences as experiences, which entails having ‘the concept of experience’. These concepts are pivotal to playing a musical instrument. When playing, a performer continuously and circularly processes the perceived auditory and sensorimotor information in a state of pre-reflective self-awareness, while also being aware of other features of the music, such as, for example, tempo, pitch, sound, the structure of music and so on. According to Holgersen (2010), ‘musical experience is extremely apt for the study of consciousness and bodily awareness’ (Holgersen, 2010: 42) inasmuch as performers continuously engage body and mind during playing through conscious and pre-conscious experiences.

To summarise, from the Husserlian phenomenological perspective, music is a valid tool for studying how we become ‘conscious of’ our body. Through reflective acts, we intentionally direct our attention onto a specific act or object such as playing an instrument which involves our body and mind. In order to achieve this kind of awareness in musicians engaging in 'a specific gesture of reflection or phenomenological reduction' (Varela, 1998: 34) may be a valid method to adopt (see Chapter 3).

2.3 Intersubjectivity and empathy

From the literature considered above, it is possible to argue that consciousness development has embodied roots, and that 'self-consciousness is per se a social phenomenon' (Gallagher & Zahavi, 2008: 48), and consequently cannot be achieved individually. Consciousness is 'the property of a mental state in virtue of which there is something it's like for a subject or person to be in that state' (Graham et al., 2017: 519). This is 'something *constituted* through experience' continuously interacting 'with things and with others' (Zlatev, 2012: 7) through a dynamic interaction. The body continuously interacts with the environment through 'perception and action' (Varela et al., 1993). Therefore, the constitution of self cannot be considered without taking into account otherness and the relationship with the body. Human beings seem to have an 'innate capacity for intersubjectivity' (Trevarthen, 2008: vii) which has been defined as:

> 'the sharing of experiential content (e.g. feelings, perceptions, thoughts, and linguistic meanings) among a plurality of subjects' (Zlatev et al., 2008: 1) [and that] 'such sharing of experience is not only, and not primarily, on a cognitive level, but also (and more basically) on the level of affect, perceptual processes and cognitive (action-oriented) engagements' (Zlatev, 2012: 1).

Individuals start to build these intersubjective abilities when interacting with parents from birth (Trevarthen, 1979). They are fundamental components of learning and communication. Music is learned through biological construction, in a social environment, in which it assumes specific meaning and functions

(Delalande, 1993; Hallam, 2008). Therefore, it is also a tool to communicate being a language with its own phonology, syntax, and semantics (Sloboda, 2005). Human beings need to learn how to communicate through this language and to do that they use cognitive structures such as neuronal systems (Gallese, 2003a). Recent findings in cognitive neuroscience show the presence of a common neural mechanism both in humans and primates that could help to understand the intentions and actions of others (Gallese, 2010a). Mirror neuron theory could contribute to explaining how learning occurs. Every time people observe somebody performing an action or hear words describing an action, the same motor parts of their brains are activated as when they perform the action themselves (Rizzolatti et al., 1996). It seems that mirror neurons have a specific function to recognize other human beings' behaviours, sensations, and emotions, such as facial expressions (Gallese, 2008).

In developing intersubjectivity, there is another fundamental component, empathy which refers to 'daily social interactions' (Gallese, 2008: 769). As Thompson (2001) states:

> '*one's consciousness of oneself as an embodied individual in the world is founded on empathy* - on one's empathic cognition of others, and others' empathic cognition of oneself' (Thompson, 2001: 2)

Empathy is defined as a 'complex form of psychological inference in which observation, memory, knowledge, and reasoning are combined to yield insights into the thoughts and feelings of others' (Decety, 2007: 248). In other words, it is the capacity to understand and share feelings or the internal states of other people. Empathy is based on perceiving others as external from the self, but:

> 'In empathy, we experience the other directly as a person, as an intentional being whose bodily gestures and actions are expressive of his or her experiences or states of mind" (Gallagher & Zahavi, 2008: 183).

Every time that we interact with another individual we automatically create an 'embodied interpersonal link' (Gallese, 2009: 520) and as Gallese states: 'according to Husserl, there can be no perception without *awareness of the acting body'* (Gallese, 2001: 43). This is possible because all human beings have in common a 'functional mechanism' which allows them to develop an interpersonal affective link automatically understood (Gallese, 2003b) and defined as *embodied simulation* (Gallese, 2009: 519). This process:

> 'mediates our capacity to share meaning of actions, intentions, feelings, and emotions with others, thus grounding our identification with and connectedness to others. Social identification, and "we-ness" are the basic ground of our development and being' (Gallese, 2009: 520).

From this perspective, 'being conscious' is a complex phenomenon in which intersubjectivity, empathy, and perception-action interaction are fundamental components. These concepts were taken into account by Varela and his colleagues in 1991 laying the groundwork for a new research paradigm that has come to be known as neurophenomenology (Varela, 1996).

2.4. Neurophenomenology, enaction, and movement

The biologist and philosopher Francisco Varela introduced the term neurophenomenology in 1996, although many principles of this approach were first introduced in 1991 (Varela et al., 1993). Varela defines neurophenomenology as:

> […] a quest to marry modern cognitive science and a *disciplined approach* to human experience, thus placing myself in the lineage of the continental tradition of phenomenology. […] Further, 'neuro' refers here to the entire array of scientific correlates which are relevant in cognitive science (Varela, 1996: 330).

Through this interdisciplinary approach between phenomenology and cognitive science, Varela aimed to include 'everyday human experience' in his investigation. He focused on 'lived experience' which means 'experiences as they are lived and verbally articulated in the first-person' (Thompson et al., 2005:46). Therefore, the main neurophenomenological purpose is to try to:

> 'narrow the epistemological and methodological distance between subjective experience and brain processes in the concrete context of the working neuroscientist' (Thompson et al., 2005: 89).

In other words, it attempts to bridge the 'gap' related to our comprehension of 'neurobiological and phenomenological features of consciousness' (Thompson et al., 2005: 40). One of its main aims is 'to generate first-person data that can be used in interpreting physical activity and, on the other hand, to use third-person data to refine first-person data' (Colombetti, 2014: 142). In this way, first-person data

> 'guide the organization and interpretation of third person data, and also that first-person data should be revised in light of third-person data, in a process of codetermination and covalidation' (Colombetti, 2014:142).

The neurophenomenological research program confutes the hypothesis of classical cognitive science, in which the subject is considered as receiving stimuli from the external world in a passive way (Gangopadhyay, et al., 2010). In contrast, Varela and his team (1993) consider the subject continuously interacting with the environment through 'a relation of dynamic sensorimotor engagement with his/her environment' (Gangopadhyay et al., 2010: 1).

In this interaction process, the *enaction* concept is central. Varela created the term 'enactive' for including 'several related ideas' within one word (Thompson et al., 2005). As Thompson and colleagues (2005) point out:

> 'The first idea is that living beings are autonomous agents that actively generate and maintain their identities, and thereby enact or bring forth their own cognitive domains' (Thompson et al., 2005: 42).

This idea is based on the concept of *autopoiesis* (Maturana & Varela, 1980) whereby each living organism is an autonomous system enabled to maintain and organize its own equilibrium and its own identity in the environment where it lives, adapting itself to that. Examples of this system could be represented by single living cells which are able to self-produce their own membrane without changing their nature. In a more complex way, human beings behave in a similar way to single cells in order to survive, continuously adapting themselves to their environment, both physiologically and psychologically always keeping their identity. The second idea is:

> 'that the nervous system is an autonomous system: it actively generates and maintains its own coherent and meaningful patterns of activity, according to its operation as an organizationally closed sensorimotor network of interacting neurons' (Thompson et al., 2005: 42).

In other words, the human nervous system autonomously and continuously creates networks with neuronal correlates in an organized way. There is a continuous interaction among various systems of the body and the environment. This creates each human as unique. Each of us perceives the world in his/her own way. This is due to *how* human beings perceive external stimuli and act in their environment, as they appear through the *enaction* process, defined as follows:

> 1) perception consists in perceptually guided action, and
>
> 2) cognitive structure emerges from the recurrent sensorimotor patterns that enable action to be perceptually guided (Varela et al., 1993: 173).

Through this interaction of *perception* and *action*[1] with innately similar biological cognitive structures (Gallese, 2003), which also include sensorimotor patterns, individuals build meanings about the external world. For Varela and his colleagues (1993), these structures can be understood as combining cognition and behaviour in a specific background through a circular dynamic process. These structures are also developed related to that specific background assuming a personal meaning for each individual. In this way, each person learns and builds his/her own history.

The human mind is embedded in the world and the individual's knowledge cannot be separated from 'their body, language and social history, in short, from their *embodiment'* (Varela et al., 1993: 149). Varela and colleagues started from considering *lived experience* as a fundamental component to achieve knowledge, but they also stressed that cognition is closely connected with biological roots. They stated that:

> '[…] knowledge is the result of an ongoing interpretation that emerges from our capacities of understanding. These capacities are rooted in the structures of our biological embodiment, but are lived and experienced within a domain of consensual action and cultural history. They enable us to make sense of our world; or in more phenomenological language, they are the structures by which we exist in the manner of "having a world"' (Varela et al., 1993: 149-150).

[1] The terms *perception* and *action* will be argued later.

From 'lived experience' through the body moving in space, the individual becomes aware of the external word. Movement appears fundamental for the learning process. As Sheets-Johnstone (2011) states:

> 'we humans learn "which thing we are" by moving and listening to our own movement. […] We do so not by *looking* and *seeing* what we're moving; we do so by attending to our bodily feelings of movement, which include a bodily felt sense of the direction of our movement, its speed, its range, its tension, and so on' (Sheets-Johnstone, 2011: 49).

In this process, the body receives multisensorial feedback (Kim & Zatorre, 2010) in which sensory-motor patterns are also always involved. External stimuli arrive at the cerebral areas through the neuronal system which are subsequently forwarded to other specialized areas of the brain which elaborate them into categories, concepts, and thoughts (Varela et al., 1993). For example, when we hear a sound, we direct our head towards that sound and we focus our attention on sound parameters such as intensity, duration, tone color, and pitch. We need also to assemble, develop, and store the collected information in order to give meaning and become conscious of that object. Our senses such as sight, hearing, touch, and sensory-motor patterns interact with the observed object-sound. As Gallese (2010a) stresses each human being has similar cognitive structures which can be represented by the word 'equality', while the personal history that each human being has is represented by the word 'difference'. Therefore, each human being lives as 'equality in difference' (Gallese, 2010a). In considering the learning process, all these concepts appear pivotal. In this regard, it may be relevant to link Varela's idea of "dynamic circularity" to the notion that every time humans learn something they change (Hallam, 1998). Combining these two ideas, the image of the learning process appears as a spiral. The dynamic circularity between cognition and behaviour, after learning occurs, will start at a higher level.

These thoughts and particularly the *enaction* concept may have important implications in considering the process of learning and performing music. Without movement it is not possible to make music. In playing, various elements need to be considered. Various senses - mainly listening (or hearing), sight and touch - and sensorimotor systems work together in the complex process of playing. As Leman and colleagues (2017: 1) point out:

> It is assumed that human musical action and perception are reciprocal processes that fuel that loop, and that action and prediction are co-determined by constraints of the musical environment, as well as by those of the (corporeal) organism that interacts within it.

Feedback from the sounds created supports control of movement and the cyclical process. In playing, musicians pursue a goal: they express their musical intentions in order to communicate them. To do that musicians involve all of their body using body-language (Bresler, 2006). This goal is executed through acts, movements or gestures which are intentionally oriented. As Gallese specifies, the same movements can be used to execute different goals such as bending the fingers in order to take a glass of water for drinking (Gallese, 2009) or to play an instrument. Actions permit individuals both to be in command of their movements and to express their intentions. An action needs to be planned before it is performed. Therefore, the individual who plans and then performs that action needs to be motivated in executing it. This process occurs in playing a musical instrument. Before playing, first, musicians are conscious that they want to play then they need to have the mental image of sound which they want to execute. Delalande uses the term *conduct* to indicate ‘elementary motor acts coordinated to a goal’ (Delalande, 1993: 45) in order to produce a set of organized sounds.

These acts also contain a sensorial component. Delalande shows an example considering the connection between the performed sound and touching the bow during performing. The string player chooses particular qualities of sound which cannot be separated from movement or gesture. This movement should be consciously controlled in order to create that particular quality of sound. As Delalande further adds:

> A regulatory circuit is created between sensations and performance movements which the instrumentalist takes into account. This is the practice of sensory-motor skills, but it is also a source of satisfaction both for the performer and the listener. Listening to the performed sound provides feedback but this is also provided [e. g.] through the sensations of using the bow and the fingers (Delalande, 1993: 45).

From this perspective, it could be important to focus more on *how* human beings learn (Varela, 1999) in relation to musical learning. This means considering the strategies that human beings use to attribute meanings to the external world and build their consciousness.

2.5 From *what* to *how* in the learning process

Human brains react and are shaped in different ways related to *what,* and *how* things are learnt (Hallam, 2008). The way that human beings learn and how information is processed by the brain can lead to 'functional changes' in specific cortical areas when particular actions such as playing an instrument are performed (Hallam, 2010: 270). Using Dewey's terminology (Dewey, 1928), Varela proposes shifting the focus of learning from the *know-that,* the content of learning, to the *know-how*, the way human beings learn (Varela, 1999). For Varela (1999), the *know-how* regards the strategies that human beings use to attribute meanings to the external world, and to execute actions to interact with the world. The process of focusing on the know-how means to direct attention on those unnoticed parts of physical actions which bring individuals to being aware of these actions (Petitmengin et al., 2017). The body and the senses are tools to keep humans in touch with the world. The components involved in this process are described in the next sections.

2.5.1 Sensations and Perceptions.

Through the senses, individuals create contact with the external environment receiving sensations. According to Spinicci (2000) and Gallese (2006), sensations are related to *subjectivity*, which represents the internal state of the individual when reacting to the world. When we touch an object, we receive information not only from our hands touching that object, but also from those sensations related to the quality - to *how* - of our performing of movement in space.

Sensations can be pleasant or unpleasant and can generate 'craving' (Varela et al., 1993: 114). From this perspective, pleasant or positive sensations are fundamental in the learning process. They increase intrinsic motivation when repetitive tasks are required such as in instrumental practice. Positive sensations are strictly related to *intentions*, 'which function to arouse and sustain the activities of consciousness […] from moment to moment' (Varela et al., 1993: 120). In music, this means that musicians want to express a particular sound. This intention comes from the pleasure to perform it (see Delalande, 1993). The other fundamental element in learning and performing actions is *attention.* This 'arises in interaction with intention, […] focuses and holds consciousness on some object' (Varela et al., 1993: 121). According to Merleau-Ponty (1945/2002: 33), attention implies 'a transformation of mental field': the mind, through the senses, will focus on a new object or a new perceptive field in order to explore it. Therefore, sensations cannot be separated from objects (Merleau-Ponty 1945/2002), but object awareness is possible only when an individual is self-aware of his/her body (O'Shaughnessy, 2000: 629). This awareness is achieved by touching or having visual contact with an object. For example, we cannot understand the sensation of fast or slow, when linked to sounds. We need to experiment with these kinds of sensations through the moving body. Then, sensations seem to be the qualities of objects, resulting in being part of a more complex phenomenon called *perception*. From Husserl's perspective, perception is related to *objectivity* (see Spinicci, 2000; Gallese, 2006), which means the independent existence of the external world. As Spinicci (2000) specifies, *perception,* beginning from receiving sensations, continues through an abstraction process which leads individuals to become conscious of a particular object or phenomenon. In other words, perception is 'a kind of thoughtful activity' (Noë, 2006: vii) and occurs when connecting sensations to sensorimotor knowledge. From this viewpoint, it is possible to infer that perception is an active process and occurs when the body is doing something, otherwise there is no perception. As Noë specifies, '*what we perceive* is determined by *what we do* (or what we know how to do). […] we *enact* our perceptual experience' (Noë, 2006:1). This occurs when living beings have both 'sensorimotor knowledge', which enables self-movement and proprioception and is mostly a thoughtful activity (Noë, 2006: 2-3).

Through these intentional acts, *actions,* we give a physical shape to our thoughts. Body and mind are intentionally oriented toward the object or sound, becoming aware of that object/sound. Perception is the basis for generating the categorization procedure in which other similar objects can be cataloged and stored. In this sensorial dynamic contact established with the object, the kind of feedback comes from two main elements: kinaesthesia and proprioception.

2.5.2 *Kinaesthesia and Proprioception*

The term 'kinaesthesia' was coined in 1888 by the physiologist and neurologist Bastien indicating 'the ability to sense the position and movement of our limbs and trunk' (Proske & Gandevia, 2009: 4139). Since then, many other definitions have been developed. In phenomenology, kinaesthesia means receiving sensorial feedback during performing movements related to a perceived object (Petit, 2006) which could be the body itself (Petit, 2010). For the research reported here, Sheets-Johnstone's definition is more appropriate. She used the word kinaesthesia referring 'specifically to a sense of movement through muscular effort' (Sheets-Johnstone, 2011: 73) specifying that cognitive processes are based on touching and moving the body in the surrounding environment. She stressed that this kind of movement occurs spontaneously and provies the basis for 'first consciousness':

> 'our first consciousness is a tactile-kinesthetic consciousness that arises on the ground of movement that comes to us spontaneously, indeed, on the ground of fundamental and invariant species-specific kinetic acts that we simply "do" in coming into the world, acts such as kicking, stretching, sucking, swallowing, and so on' (Sheets-Johnstone, 2011: 118).

This means that behind each cognitive act there is a spontaneous movement which occurs through kinaesthesia. This process starts from birth. "The kinaestheses" (Husserl, 1989: 63), that refer to perceptual experiences, are the essence 'of the constituting I' (Sheets-Johnstone, 2011: 120). They contribute to building the sense of self or personal identity as the body performs movement. This process occurs when repeating the same acts creating a repertoire of movements which increases throughout the life span (Sheets-Johnstone, 2011: 118). From the Husserlian standpoint, the sense of touch plays an important role (Husserl, 1989) in developing the concept of body-self in which kinaesthetic experiences are essential. Words such as: ‘near and far, sudden and prolonged, straight and curved, intense and weak’ (Sheets-Johnstone, 2010a: 115) are experienced through kinaesthesia. This indicates a sort of movement awareness of ‘a qualitatively felt kinetic flow’ (Sheets-Johnstone, 2010b: 218) and contributes to developing abstract categories such as time and space (Sheets-Johnstone, 2011). Indeed each movement is performed in accordance with directionality and duration (Sheets-Johnstone, 2010a). Space and time are also essential components in performing music. Live music occurs when a body moves in space and time and, as Jaques-Dalcroze states, ‘to move, a body requires a quantum of space and a quantum of time’ (Jaques-Dalcroze, 1921: 62). During playing, musicians perform intentional movements or gestures in space, related to their duration. While they appear to perform simple actions, multiple kinaesthesia is involved in this process sending multiple feedback to the brain (see Husserl, 1989:152-154). It seems that musicians intuitively use and continuously interact with various kinds of kinaesthesia (Galvao & Kemp, 1999). They have to be aware of their own body posture moving in the space. This awareness is generally called proprioception or ‘perception of the self’ and occurs both subconsciously and consciously (Peñalba Acitores, 2011: 219). Gallagher (2005) distinguishes the term proprioception from both the neuroscientific and philosophical perspectives. In the first case, proprioception is considered as ‘an entirely subpersonal, non-conscious function’ and

> ‘results in information about body posture and limb position, generated in physiological (mechanical) proprioceptors located throughout the body, reaching various parts of the brain, enabling control of movement without the subject being consciously aware of that information’ (Gallagher, 2005: 6-7).

Differing from the philosophical perspective, proprioception is referred to as the ‘epistemological status of proprioceptive awareness’ (Gallagher, 2005: 7), enabling 'access to awareness of a particular part of the body at any time' (Peñalba Acitores, 2011: 219). Proprioception appears fundamental for adapting the body to its surrounding environment, for example, providing useful information related to how we need to move in that environment. For instance, when playing, musicians such as pianists and string players need to be aware of their hands moving in time and space. According to corresponding 'motor imagery'[2] (Jeannerod, 1995: 1419), musicians consciously have to anticipate and calibrate their gestures before playing, in order to execute the desired sound. Pianists need to know in advance what keys they have to play, while string players need to know where to shift their left hand on the fingerboard and simultaneously move the bow in space. Despite this, these acts are performed in at a non-conscious physiological level and our 'movement and postural control are governed by a more automatic process' (Gallagher, 2005: 73) that Gallagher defines as *body schema*. In this process there is a sort of 'proprioceptive-kinesthesic awareness [which] is pre-reflective (non-observational) awareness' (Gallagher, 2005: 73). In other words, the individual performing an act knows what he/she is doing without thinking of the body parts involved in that act, but rather is focusing on the goal to be achieved through that action, that in instrumental playing means focusing on 'conceptual issues such as interpretation' (Doğantan-Dack, 2011: 252). The individual intentionally executes movement without any introspective process. This is what Gallagher (2005: 74) calls 'performative awareness'. Expert musicians continuously perform in this way after automatizing movements without thinking of the body parts involved in playing. A long period of training is required to master these physical tools in

[2]Jeannerod claims that 'motor image is part of a broader phenomenon (the motor representation) related to intending and preparing movements. The process of motor representation, a normally non-conscious process, can be accessed consciously under certain conditions: a motor image is a conscious motor representation. According to this definition, motor images are endowed with the same properties as those of the (corresponding) motor representations, that is, they have the same functional relationship to the imagined or represented movement or the same causal role in the generation of this movement' (Jeannerod, 1995: 1419).

order to express musical thoughts. As a consequence, muscular tensions can be developed. This issue was studied by Feldenkrais and Alexander who developed their own method for re-educating posture or inappropriate movements. The aim of the Alexander technique is to develop 'a new postural model' by using a 'kinaesthetic re-education' (Valentine, 2004). Galvao and Kemp (1999) also suggest increasing awareness 'of the unity between mind and body' (Galvao & Kemp, 1999: 130) referring to the experience of playing that is performed in space and time, and is both external, -when performing movement in playing, and internal, -when mentally perceiving physical sensations.

2.6 Nonverbal communication components in music

Movement, kinaesthesia, and gestures also occur when playing music, conveying not only technical but also expressive information (see Davidson, 2007; Davidson & Malloch, 2009) as occurs in spoken language. People spontaneously move their body and make 'hand gestures that co-occur with spoken language' (Cassell, 1998: 248). Nonverbal communication occurs in each culture constituting 'an essential ingredient in human interaction' (Samovar et al., 2009: 244). Body movement, so-called kinesics (Samovar et al., 2009: 255), gestures, and kinaesthesia are fundamental components in constituting the self. According to Schulkin (2004: 123), the body is at 'the heart' of the gathered information and not its appendix. Gestures can occur through pre-reflective self-awareness generating a pre-reflective experience (Gallagher, 2014). This kind of communication, defined as 'kinesic ensemble' is multidimensional and accompanies verbal communication (Samovar et al., 2009). Much of kinesic behaviour is not learned and 'is less controllable than verbal communication' (Samovar et al., 2009: 255). In most cases, during verbal communication, kinesics is fast and spontaneously performed. Often the speaker unintentionally or without awareness sends nonverbal messages to the interlocutor who interprets them relating to his/her own cultural background (Samovar et al., 2009). During the communication process, much simultaneous nonverbal information is produced, the so-called ‘kinesic ensemble’ (Calbris, 2011: 6), from movements of ‘different body parts, as in the combination of a manual, with a head gesture and facial expression’ (Calbris, 2011: 267), including eye behaviours (Agnus, 2012).

In the following sections the main nonverbal features are presented.

2.6.1 Facial behaviour

Various studies have been undertaken relating to facial behaviour (see Darwin, 1890/2009; Ekman et al., 1972: 1; Russell & Fernandez-Dols, 1997; Smith, 2005) concerning those movements that the human face displays and that are identified as signals for transmitting emotions (Russell & Fernandez-Dols, 1997: xi). The face is a complex source of information conveying details related to the emotions, personality characteristics, age, and state of health (Ekman et al., 1972; Russell & Fernandez-Dols, 1997; Smith, 2005). The face receives ‘more visual attention from the other person than any other part of the body’ (Ekman & Friesen, 1969a: 77), being the main emotional transmitter (Ekman, 2004) even when the speaker is silent (Ekman et al., 1972). Human beings have an innate ability for recognizing facial expressions (Russell & Fernandez-Dols, 1997).

Various facial signals illustrate speech. They help to ‘explain what is being saying verbally’ (Ekman, 2004: 43). Voluntary or involuntary information can be conveyed from facial behaviour (Ekman et al., 1972). For example, smiling is an ambigous cue (Ekman et al., 1990): even though it shows positive emotions such as pleasure or happiness (Darwin, 1890/2009; Ekman et al., 1972), these can be simulated while ‘experiencing negative emotions’ (Ekman, et al., 1990: 344). The richness of facial behaviour may generate confusion and uncertainty in the observer who has to be able to interpret it, and is sometimes deceived (Ekman et al., 1972). Various factors affect this interpretation process such as culture, specific contexts, character, mental health and emotional state as well (Samovar et al., 2009).

2.6.2 Eye behaviour

Eye-contact is very important in dyadic interaction for transmitting significant emotional and attentional information (Fox et al., 2007; Samovar et al., 2009). Within the cortical region of human brains specific areas of it are activated in relation to 'frontal view of the face with eye contact or profile view with averted gaze' (Frischen et al., 2007: 695). Eye behaviour is fundamental for understanding other's intentionality by 'attributing the mental state of "seeing" to the gazer' (Macrae et al., 2002: 460). Gaze direction and its interpretation are also essential in the development of social cognition and social interaction (Macrae et al., 2002). It can be a signal for indicating 'interest or disinterest regulating intimacy levels, seeking feedback and expressing emotions' (Wilms et al., 2010: 2) and its observation can also be a predictor of future actions (Frischen et al., 2007). It is also fundamental for regulating turn-taking in conversation (Kendon, 1967; Ekman & Friesen, 1969a). Indeed eye-contact influences the quality of conversation which is, for example, reduced when there is too much gaze and when interlocutors do not look at the speaker (Hugot, 2007). Prolonged eye contact can 'be perceived form the interlocutor as an aggressive signal (Frischen et al., 2007).

2.6.3 Body movements

When speaking, people move parts of their body alongside making gestures. They may unconsciously nod, shake their head, lean forward or backwards, shrug their shoulders, shift their posture, and so on, transmitting information about themselves without any deliberate intention to do so (Ekman & Friesen, 1969b). These movements contribute to revealing 'the intensity of an emotion' (Ekman & Friesen, 1967: 712) and if performed 'alone do not convey specific emotion content' (Harrigan, 2005: 141). These movements vary from person to person (Harrigan, 2005) and do not convey 'the same meaning each and every time they are displayed' (Harrigan, 2005: 139). Body movements can change meaning in different contexts (Ekman & Friesen, 1969b). While the observer receives information related to the emotional status, personality, and attitudes of the speaker (Harrigan, 2005), these movements can only be coded and interpreted if their meanings are learned and shared 'across some specifiable set of individuals' (Ekman & Friesen, 1969: 54).

2.6.4 Gestures and musical gestures

In each culture when speaking, human beings continuously and simultaneously move their body (Calbris, 2011: 17) using kinaesthesia (see Petit, 2006; Sheets-Johnstone, 2011), and gestures (see Ekman & Friesen, 1969a; McNeill, 1992; Iverson & Goldin-Meadow, 1998; Ekman, 2004), conveying their internal states such as feelings and emotions (Samovar et al, 2009). Gestures involving hand movements (McNeill, 1992; Cassell, 1998; Calbris, 2011), represent a sort of 'contiguity in the action schema', such as the link 'between the concrete and the abstract' (Calbris, 2011:11). They seem to be produced as 'part of the cognitive processes that underlie thinking and speaking' (Alibali et al., 2014: 151) revealing the 'embodied nature' of reasoning. Making 'a gesture is to iconically materialize a meaning in actional and spatial form' (McNeill, 2005: 56). As Calbris (2011) argues:

> 'Gesture is primordial because it is primary and constantly present in the human movement of grasping and in our intellectual assimilation of the world; it manifests itself in all expressions of mental representation, one of which is linguistic expression' (Calbris, 2011: 1).

Movements and gestures acquire meaning in specific contextual situations (Calbris, 2011:11) related to ‘our physico-cultural experience of life’ (Calbris, 2011: 11). Gestures are an integral part of speech (McNeill, 1992: 1). They not only enrich speech conveying more information to listeners (Iverson & Goldin-Meadow, 1998), but are considered as ‘thought in action’ (McNeill, 1992: 1), appearing fundamental in shaping thoughts (Goldin-Meadow, 2003). They can stress a word or emphasize a phrase as well as describing a thought or an action in the air, contributing to developing consistency in speech (Ekman, 1991: 105). Gestures represent the ‘visible form’ of language, which is abstract, while they maintain their ‘pre-verbal status’ (Calbris, 2011: 267). ‘Gestures and words have similar meaning and reinforce one another’ (Samovar, 2009: 247). Research on gestures has identified and classified those which people perform when speaking in different contexts (see McNeill, 1992; Samovar et al., 2009; Calbris, 2011).

People are generally ‘little aware of their own nonverbal behaviour which is enacted mindlessly, spontaneously, and unconsciously’ (Andersen, 2003: 239). Gestures, as ‘concrete data’, are often performed anticipating verbalization, and ‘generally produced and perceived in a non-conscious way’ (Calbris, 2011: 267). When musicians play they perform gestures receiving continuous feedback which stimulates new sensory-motor reactions and generates musical intentions through sound. This is an example of *enaction* (Varela et al., 1993) in which perception and action continuously interact in a dynamic circular process. When performing gestures, people ‘add individually conceived distinctiveness to the socially regulated linguistic structures’ (McNeill, 1992: 247). This can be applied to musical gestures that in general can be defined as: ‘gestures as equivalent to physical (playing) techniques or performer actions’ (Cadoz & Wanderley, 2000: 73) or more precisely as:

> '[... a] movement or sound to be(come) gesture, it must be taken intentionally by an interpreter, who may or may not be involved in the actual sound production of a performance, in such a manner as to donate it with the trappings of human significance. This is a movement of ascription whereby x is read as y: physical movement as musical gesture, the acoustic properties of sound as aesthetically valuable (Gritten & King, 2006: xx).

From these definitions, musical gestures involve technical skills acquisition which has social and cultural value (Leman, 2008). However, when learning a musical instrument, musicians are required to develop 'very sophisticated motor skills', (Leman 2008: 20), which are not only technical. As Davidson specifies:

> 'performance movements have specific physical characteristics necessary for the biomechanical accomplishment of the task, and in addition, expressive movements' (Davidson, 2005: 215-216).

In performing music, social communication with the audience/observer is established. All of the musician's body is involved, revealing and shaping 'all mental states, both conscious and unconscious' (Davidson & Malloch, 2009: 565).

In summary, linguistic and musical gestures are intersubjectively shared and empathically understood, both consciously and unconsciously. As Samovar and colleagues state:

> 'All people use movements to communicate, culture teaches you how to use
> and interpret these movements' (Samovar et al., 2009: 255).

2.7 Summary of the theoretical framework

This chapter outlined the neurophenomenological perspective adopted in this research considering the issue of body self-awareness and its importance when playing a musical instrument. Neurophenomenology is an interdisciplinary approach which considers that cognition has its roots in movement aiming to investigate ‘everyday human experience’ through an interaction with first and third person data. The chapter considered issues relating to consciousness, the ‘body-mind’ relationship, the concepts of *enaction, empathy,* perception, kinaesthesia and proprioception. The review showed that there was a need to devise a means of helping musicians to develop body self-awareness.

Chapter 3 presents the epistemological approach adopted, the research design and the method of analysis.

Chapter 3

Epistemological approach and Methodology

3.1 Introduction

The previous chapter raised issues related to body-awareness in playing a musical instrument, identifying a gap in the literature. This chapter proposes an epistemological framework situated in a neurophenomenological approach (Varela et al., 1993) defined as 'embodied cognition' (see Chapter 2). A detailed methodological research design is justified, procedures for data collection are presented, and qualitative approaches to analysis, such as IPA and thematic are discussed. Sampling, ethical considerations, and critical evaluation are included related to the data analytic methods which were used.

3.2 Epistemological framework

The epistemological framework combines neurophenomenology with Interpretative Phenomenological Analysis (IPA) (Smith, 2004). Neurophenomenology (see Chapter 2), as Krippner (2013) states,

> 'provides a reinterpretation of both cognitive and affective neuroscience within the theoretical framework of phenomenology and a bridge between first-, second-, and third-person perspectives in the study of experience' (Krippner, 2013: xii).

This perspective can be useful in developing a dialogue among psychology, philosophy and human science giving a new foundation for interpreting human beings' lived experience (Krippner, 2013) including musicians. In music, knowledge can be considered as 'embodied cognition' (Leitan & Chaffey, 2014) in which the body is continuously engaged with the world (Merleau-Ponty, 1962) and 'body and mind have been brought together' (Varela et al., 1993: 27). This is in contrast to reductionistic positivism which neither considers the phenomenology of consciousness' nor 'the relationship between the mind and the brain as it lacks a self-reflective and pre-reflective element' (Gordon, 2013: xvi). Phenomenology allows us paying 'attention to the way in which we experience reality' (Zahavi, 2010: 8). From this perspective, we can analyse and understand the complex aspects of consciousness, that positivistic science does not consider (Zahavi, 2010). First-person data are ignored by positivistic science because they cannot be measured. 'An embodied approach' and 'a phenomenological oriented psychology' (Gordon, 2013: xvi) can strongly contribute to understanding human beings' behaviour.

In order to take into account first-person data and interpret them, qualitative phenomenological psychology developed an Interpretative Phenomenological Analysis (IPA) methodology. IPA is an element of the phenomenological psychology and was developed by Smith in the 1990s (Langdrige, 2007). The IPA approach enables the acquisition of perceptions of the external world from individuals' insights (Smith, 2004), taking into account their relationship between body and thought (Smith et al., 1999) dealing with particular situations, and 'how they make sense of their personal and social world' (Smith & Osborn, 2003: 53). As Smith (2004) states, IPA offers valid tools for carrying out qualitative research because 'it represents an epistemological position, offers a set of guidelines for conducting research, and describes a corpus of empirical research' (Smith, 2004: 40). IPA aims to explore individuals' personal perceptions and experiences in detail and *how* they make sense of external events (Smith & Osborn, 2003; Pietkiewicz & Smith, 2014) in various contexts. The individuals' perception of reality is not fixed, but varies related to contexts and situations in everyday life (Varela & Shear, 2002). The researcher's task is to interpret people's mental and emotional state from verbal information and their behaviour (Smith & Osborn, 2003).

This research project aimed to explore professional musician's awareness of their movement during performance from the first-person perspective, in order to improve performance and possibly generate new strategies for teaching. The next section set out the methods adopted.

3.3 Research Methodology

The methods adopted in the research are derived from a clear philosophical position related to neurophenomenology. Varela and Shear (2002) propose accessing subjective experience applying introspective First-person mediator methods, through semi-structured interviews. This method contains two elements: the First-person and the mediator figure, both with specific roles. The First-person method, carried out through verbalization, offers easy access to empirical subjective data. Through this procedure 'preverbal and pre-reflective aspects of subjective experience […] are available for intersubjective and objective (biobehavioural) characterization' (Lutz & Thompson, 2003: 37). Verbalization helps participants to become aware of their own lived experience (Vermersch, 2002), bringing out pre-verbal levels that are not recalled when events are lived (Vermersch, 1993). Participants treat their own lived (L) experience with distance, as an observed object which is external to them. They reflect on L in three different phases which are developed into a temporal organization. This process of taking distance is achieved through so-called 'phenomenological reductions' (Vermersch, 2002: 29). In the first phase (L1), the participant redirects his/her attention from the "exterior" to the "interior" and reflects (reflecting act) on his/her own lived experience (Depraz et al., 2003: 25). In this phase, the individual should break with his/her "natural attitude"' (Depraz et al., 2003: 25) suspending judgment. In the second phase (L2), he/she lives another experience by describing the first one (meta-reflection), becoming aware of that. In the third phase (L3), the participant realizes the distinction between the content of lived experience and the act of becoming aware of that (Formalisation of L2). In this process, there is a 'suspension of one's habitual attitudes' (Vermersch, 2002) in considering lived experience. This phase is also called *letting-go* and is the moment when the individual accepts his/her own experience (Depraz et al., 2003: 25). During this phase the individual 'goes from "looking for something" to "letting something come to you," to "letting something be revealed"' (Depraz et al., 2003: 31). The quality of attention changes because there is movement 'from an active search to an accepting letting-arrive' (Depraz et al., 2003: 31). Vermersch's Diagram, Figure 1, clearly represents the whole process.

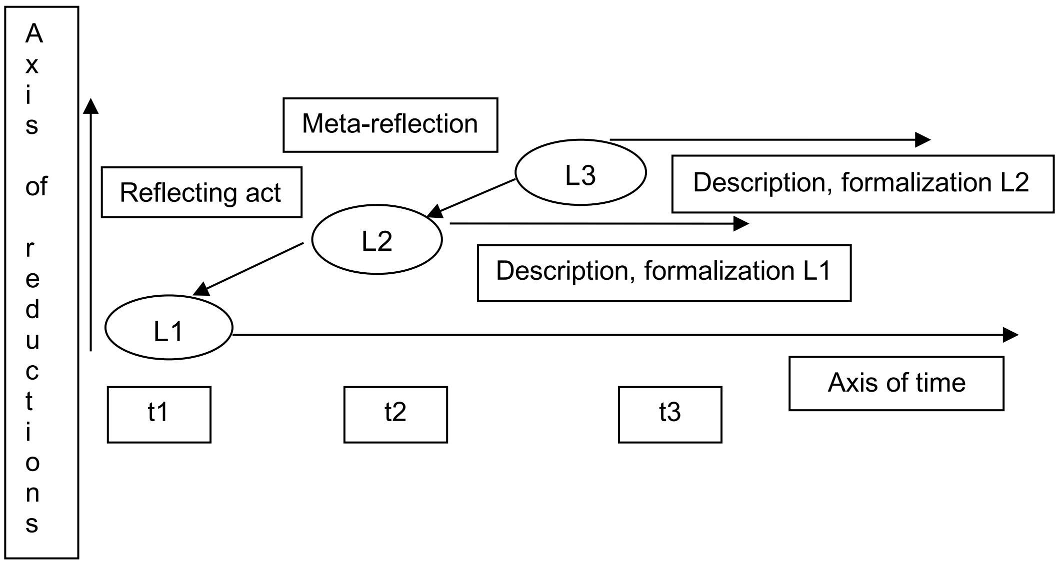


Figure 1. Diagram of introspection process (Vermersch, 2002: 32)

However, as Vermersch (2002) highlights, some criticism has arisen relating to the First-person method mainly from a positivist perspective which holds that this method cannot guarantee objective knowledge. Firstly, it does not 'confer infallibility upon subjects who use it', even though it allows people 'to thematise' important elements that would otherwise remain hidden (Lutz & Thompson, 2003: 39). Secondly, a person who thinks about him/herself as an object of knowledge cannot be 'the observer' and 'the observed' at the same time. There cannot be 'a duplication of the subject' (Vermersch, 2002: 18) or as Dennett (2001) strongly argues:

> First-person science of consciousness is a discipline with no methods, no data, no results, no future, no promise. It will remain a fantasy (Dennett, 2001).

These are the main reasons why this method has not been widely adopted in psychology. The Third-person method was and is preferred by experimental psychology and science in general because it is external to the observed person and is based on observation. It seeks causes which determine a perceptive phenomenon and the brain structure interactions which are involved, for example, in hearing sounds or seeing colors. While such studies are important in order to discover how perceptions are processed in the human brain, the Third-person method does not investigate how individuals elaborate their own perceptions related to their own experiences a process which is fundamental to develop thoughts, judgement, significance, and so on (Gallagher & Zahavi, 2008). This process is considered essential to build consciousness in human beings. Empirical phenomenology is useful not only to understand how people develop and attribute meanings to their own experiences, but also for neuroscience. Phenomenological description, related to intentional, space, temporal, and perceptive aspects of human experience, constitutes an effective starting point for neuroscientific investigation (Gallagher & Zahavi, 2008). In order to remedy these points of weakness, the First-person method has been developed to include the figure of a mediator, a so-called *second person*. This figure is the "experienced tutor" who guides the First-person in his/her introspective process, focusing on some specific aspect of experience (Varela & Shear, 2002). Vermersch explains that:

> '[...] the presence of a mediator facilitates the necessary suspension. In fact, putting something into words is done in accordance with the rhythm of what is disclosed, so preferably slowly. External guidance can help the subject to take the time to become open to the appropriate form of expression.' (Vermersch, 2002: 37).

In addition, Vermersch specifies that:

> 'The interviewer can help to regulate the moments when the reflected knowledge takes over from the reflecting process. [...] The presence of someone capable of detecting the implications helps in the production of a more precise and complete description' (Vermersch, 2002: 38).

Moreover, the second-person shares intersubjectively the First-person's experience such as sensorimotor patterns, sensitivity, emotions, body language, language, and cultural elements. This can help to achieve a kind of validation (Varela & Shear, 2002). In other words, the first person shows the '*content* of a mental act' (Varela & Shear, 2002: 8), while the second person helps to structure this *content*, that means the '*manner in which* it appears' (Varela & Shear, 2002: 9). The mediator has the role of giving 'internal coherence to his source' (Varela & Shear, 2002: 10). From the IPA perspective, the mediator, the researcher, helps participants to interpret their own experience and make sense of that through a dynamic and active role (Pietkiewicz & Smith, 2014). This method is currently better designed outlining precise procedures, identifying variables, and their relations (Vermersch, 2002).

The second method applied in this research and reported here was observation (see Creswell, 2012; Cohen et al., 2007). The advantage of observation is that it is useful to analyse movements, gestures, and other nonverbal indications that participants express. In this case this enabled the researcher to understand better musicians' behaviour triangulating it with individual verbal information and behaviour commonly identified in musicians.

However, there could be some disadvantages with this approach, such as researcher bias. In order to limit this, two kinds of observation were carried out. The first observation was immediately noted after each interview through the taking of field-notes. The second occurred through analysing afterwards the video-recorded interviews. In the final stage of the analysis, these two kinds of observation were compared.

The intent of this study was to explore the awareness of professional musicians related to their movements or gestures in their playing. The *First-person with mediator* approach (Varela & Shear, 2002) applied through semi-structured interviews, and combined with audio-visual observation seemed to be the most suitable methods to address the formulated research questions (see Chapter 1).

3.4 Research methods

Qualitative research methods, semi-structured interviews, observation and audio-visual materials were used. These tools were applied in three different stages.

Semi-structured interviews simultaneously allowed the gathering of first-person data of 'introspective/retrospective verbal reports' (Lutz & Thompson, 2003: 43). The participants were guided to reflect on (reflection-in and on-action)[3] (Schön, 1987: 26) their body and movements during performing three tasks. From the IPA perspective, this procedure led musicians to explore how they 'made sense' of their personal and lived experience in detail (Smith, 2004) enabling them to 'slow down' their mental activity (Petitmengin-Peugeot, 2002: 47). The researcher was also involved in the process of trying 'to make sense of the participant trying to make sense of their personal and social world' (Smith, 2004: 40). The researcher intersubjectively and empathically (see Chapter 2) shared participants' impressions, ideas, and emotions.

[3] The meaning which I attribute to the term action differs from Schön's meaning because, as it was specified in Chapter 2, it is always referred to the Gallese's (2006) concept of the 'goal-directed-act'.

Data were collected through three different stages as shown below.

The first stage included the semi-structured interview and information about the interview. The interview protocol (Creswell, 2012) was designed for indicating to the participants:

-essential information regarding the research purpose and the interview procedure,

-how the data were to be stored,

-guarantees relating to their anonymity,

-the necessity of signing a consent form,

-the possibility of withdrawing whenever they wanted from participation in the interview.

The semi-structured interviews (see in the Appendix 1) were undertaken face-to-face. This method allowed the application of the *First-person with mediator* method. The musicians who participated in the research were requested to think of the quality of their movements and the parts of the body involved in playing. Then they were guided to verbalizing taking into account the three axis of time and reductions (Vermersch, 2002, see above).

Referring to the literature, interview questions were formulated. Each interview was carried out face-to-face.

The second stage of the research included observation and was carried out in two phases. The first observation was undertaken immediately after each interview. Descriptive and reflective field-notes (Creswell, 2012) were taken in order to observe musicians' non-verbal behaviours such as gaze directions, unconscious movements or gestures and the main ideas that they expressed. The analysis aimed to identify:

-if there were common behaviours between all professional musicians,

-if the instrument played shaped musicians' behaviour by generating specific behaviours[4].

The third stage used the audio-visual video-recordings of each interview. This method for collecting data is widely used in contemporary social science research (Erickson, 2011) and allows very rich information to be gathered. According to Loizos (2000), images provide 'powerful records of real time actions and events' (Loizos, 2000: 93). In this study, audio-visual material enabled the researcher to audit and observe nonverbal information many times, analysing it in detail. Moreover, the use of audio-visual tools gave the opportunity to compare simultaneously verbal and nonverbal behaviours during social interaction (Erickson, 2011:180). Movements and gestures often communicate meaning that words are unable to express and also contribute to the shaping of utterances (Goldin-Meadow, 2003). Observing the whole phenomenon examining various aspects through this procedure it was possible to triangulate verbal introspective information and nonverbal data. However, there were also disadvantages as there was much data which needed to be selected and organized (Creswell, 2012).

3.4.1 Setting

The interviews were carried out in a quiet, calm studio in which there were only the interviewee and the researcher. In the studio, standardized conditions were created (Baily, 2006) so that there was similar ambience in each interview. It was crucial that participants felt at ease, so creating a supportive, respectful and uncritical atmosphere was important (Oppenheim, 1992: 65, 67). The studio was prepared before each interview as follows:

[4] In this context, the term conduct indicates 'elementary and basic acts which are coordinated to a goal (goal-oriented acts)' (Delalande, 1993) and it is related to the "musical *conducta*".

-two chairs were placed facing each other quite close together for the interviewee and the researcher. The chairs were positioned respecting the ‘personal distance’ (Hall, 1966: 119) of about three feet for creating a hospitable and informal environment. This distance consistently separates people ‘of non-contact species’ and Hall (1966) has defined it as ‘a small protective sphere or bubble that an organism maintains between itself and others’ (Hall, 1966: 119).

-a table was available to place a musical instrument on and

-a fixed camera was in a position quite near to the interviewee, for guaranteeing good quality of sound and images (Loizos, 2000: 105) while also trying to be as sensitive as possible in order to not be intrusive (Creswell, 2012).

The interview questions were trialled through a pilot study before starting the main research.

3.5 Pilot

It was necessary to test the protocol and in particular the interview questions. Therefore a pilot study was undertaken in order:

-to try out whether the interview questions could be easily understood,

-to establish whether the interview questions were appropriate for collecting the required information or if other questions had to be formulated,

-to check the interview duration in order to communicate this to the participants in the main research, and

-to establish if the interview data could be triangulated with the nonverbal observations.

Three professional musicians who were also instrumental teachers, a violinist, a pianist, and a guitarist, voluntarily accepted to participate in the pilot. Two of them were PhD students at the Institute of Education in London and another lived in London. All of them accepted because they were curious and interested in the research topic.

A schedule for each participant to be interviewed was arranged and the research was explained. Each participant read the leaflet which summarized the research aims and the main interview questions. Participants were asked if they would have any problems in playing a very short, easy, calm piece of music from memory in front of the camera. They could freely choose and prepare it before participating in the interview. They were informed that, during the interview, they would be asked to play the same few bars of that piece of music from memory three times. Each time they would be asked to follow the researcher’s verbal instructions. It was also explained that the researcher’s interest was in the musicians’ insight process related to movement during their performance. At this stage, they were not told the details of each performing task as this may have influenced their responses during the interview. They were also told that they could drop out of the interview at any time and they had no obligation to answer every question. They were also guaranteed that all data collected would remain anonymous, that it would be safely stored, and that no evaluation would be given of their performance, but only on possible changes occurring across the tasks.

The pilot showed that the questions were clear and easily understood by the participants. They also understood the instructions given. For this reason, no changes were made to the interview schedule or the way that the intervention was presented and data from these participants were included in the main study analysis.

3.6 Participants and timeline

A qualitative ‘purposeful sampling’ (Creswell, 2012: 206) was adopted. This kind of sampling enables a focus on specific individuals such as professional musicians, and in this case aimed to recruit the widest possible range of instrumentalists. The purpose was to include two or three of each kind of classical musical instrument in order to observe possible similarities in musicians’ behaviour in general and related to specific instruments, and 'measuring recurrence across cases' (Smith et al., 2009: 106).

It was expected that there might be musical behaviour common to all professional musicians and particular body-awareness related to specific instruments. This assumption was made based on the fact that each instrument requires specific movements involving different parts of the body. For example, pianists use their arms in different ways to violinists, while wind instrumentalists' movements mainly involve tongue, lips and breath, but relatively little arm movement.

Participants were recruited through professional musicians known by the researcher, while others came from 'snow ball sampling' (Creswell, 2012: 146, 209): some of the participants were asked if they could invite other professional musicians to participate to the research.

The final number recruited was 22 made up of 12 males and 10 females (see Tables 3.1, 3.3 in the appendices) from various European countries and South America (see Table 3.2 in the appendices). Twenty-one had classical musical background, while one had a folk music background. Twenty-one were both performers and teachers, and one (with a classical background) played in an orchestra (see Table 3.2 in the appendices).

The duration of each interview was between 25 and 40 minute, but one interview only lasted for 20 minutes and three spoke for almost an hour.

All the interviews were carried out over a period of a year and a half which was divided in two stages. This was due to the time taken to recruit participants. The first stage was when the researcher was in London, the second in Italy.

3.7 Ethical Issues

All of the twenty-two participants were adults, music teachers, and used to perform live music. Given the musical performance tasks required in this study, there were not any particular risks for the participants. As with most educational research, it was important to gain informed voluntary consent prior to participation (BERA, 2012; Gregory, 2003). This is more complicated than it may seem (Wiles et al., 2005) particularly with issues arising about being 'fully' informed and whether this can be achieved in reality (Homan, 1991, 1992). According to Hammersley and Traianou (2012: 8), 'This cannot mean that all information about the research is provided, since this is potentially endless.' Other challenges are related to the notion of 'informed' and the extent to which the participants might have the same understanding of the study as I did (Hammersley & Traianou, 2012). This meant that I was very attentive to the process of gaining consent which involved decisions about how much information to provide to the participants. When beginning the research, I was careful in explaining the project to ensure that the participants understood the aims of research. I provided the participants with an information sheet about the research (see Appendix 3) which illustrated what participating in the research would involve; what would happen in the interview, including playing a piece of music thrice from memory and being video recorded. For example, related to the questions that they would be asked 'could you describe what you feel after playing?' I didn't provide more detailed information about the tasks since I felt this might overwhelm the participants (Alderson, 2004), also that it could affect participants' behaviour in the interview and consequently invalid findings (Hammersley & Traianou, 2012b). I ensured that the participants understood the research by inviting them to attentively read the leaflet by themselves and be autonomous in deciding to participate in the study.

In the sample of participants, four of the participants and one of the panel members were acquaintances of mine, who I had met previously at conferences. There were two ethical issues here. Firstly, there was a risk that by involving acquaintances in the research that they might feel compelled to take part and therefore not autonomously decide to participate. So during the process of gaining voluntary consent I made it clear that they should not feel obliged to participate in the research as a favour (Yuan, 2014). The second issue is whether the acquaintances might try to mirror my expectations thus biasing data (Yuan, 2014). However, in this research, this risk was reduced as the participants were being asked to describe their own experience of playing. In undertaking the interviews I paid particular attention to establishing a safe environment since an effective introspection process is generated by trusting 'within relationships at a personal level [… in] an honest, trustworthy and 'safe' research environment' (Blake, 2007: 415). During the research I was attentive and rigorous in following the ethical and interview protocols across the interviews. I did not influence the participants' behaviour or affect any kind of evaluation such as those expressed by external panellists.

The last issue was related to the possible sensitive reactions that some participants could manifest related to their playing and being videoed.

In order to reduce all these concerns, the Ethical Principles Guidelines of Faculty Research Ethics Committee of IoE-University of London, were developed as follows:

1) Participants were informed about the research aims in a written form through leaflets and, before starting the interview verbally.

2) Participants were invited to be interviewed and video-recorded. All of them accepted voluntarily.

3) Participants were informed, before starting the interview, about the main topics and tasks to be completed during the interview.

4) Anonymity was guaranteed in written and verbal form.

5) All participants were assured that all the data collected would be stored in a safe place and treated in a confidential way.

6) Participants were reassured that no evaluation would be given about their performance, but only observing possible changes which could occur across the performances.
7) Participants were assured, before starting the interview and video-recording, that there were no physical or psychological risks in the research.
8) Participants received communication that they could withdraw from the research at any moment during the interview.
9) Participants received the researcher's contact details in case they needed more explanations and/or they would like to review their own interview.
10) All of the participants signed two consent form copies. One copy was for them and the other for the researcher.
This ethical protocol was adopted for the main research.

3.8 Procedure

The procedure for data collection was subdivided into three steps: semi-structured interviews, observation one with field-notes, and observation two based on audio-visual materials.

3.8.1 Procedure 1

Before starting the interview, participants were informed about the protocols to be adopted (see above). The semi-structured interview began with some general questions, so-called 'ice-breaker questions' (Creswell, 2009: 183), such as participant's name, the played instrument, the place where he/she studied. These kinds of questions were useful to eliminate any uneasiness in participants. After a few questions it was observed that most of the participants forgot the camera focusing their attention on what they were asked.
In the interview a *quasi-repeated qualitative measurement research design* was applied. Repeated measurement research design is usually applied in

quantitative research, where participants are 'exposed to [the same] treatment or measured on more than one occasion' (Ellis, 1999: 552). In this study qualitative data collection methods were repeated. This means that the results were not standardized (Knoblauch, 2012: 252). Secondly, the word *quasi* relates to the kinds of tasks that were modified before musicians performed the same piece of music the second and the third time. Musicians were required to execute *mental rehe*arsal before performing the second time, while they were requested to *simulate* movements of playing without instrument, before performing the third time.

The main aims of all of the tasks were to explore:

-the musicians' self-body awareness in the first task;

-whether self-body awareness could be developed during the tasks; and

-whether body self-awareness development could impact on the sound produced during performing and reduce possible tensions.

In the first task, musicians were asked to perform a calm, slow, and short piece of music they had previously prepared from memory. They were required to play from memory to reduce 'the cognitive load of performance' (Watson, 2006: 536) to enable them to focus their attention on the produced sound and on technical movements. This also facilitates the enhancement of 'musical communication and musicality in performance, enabling the audience to see communicative movements and gestures of the performer better' (Hallam, 2008: 96).

Immediately after their first performance the musicians were asked to describe their feelings referring, for example, to breathing, physical tensions, relaxations, touch, mood, mental images, and anything else that they felt was important or that they wanted to communicate.

The second task required participants to imagine themselves performing the same piece of music purely through *mental rehearsal*. This practice, also called *mental practice* (Moran 2004b: 213) used by experts both in sport and in music (Brown & Palmer, 2013), aims to improve performance and it consists of:

> 'imagining of an action without its physical execution; it is an active process during which the representation of an action is internally reproduced within any overt output' (Malouin & Richards, 2009: 241).

To perform mental rehearsal, complex abilities such as generating mental locomotor activities linked to memory of sound are needed (Malouin & Richards, 2010). Participants were required to imagine themselves playing the same piece of music while mentally repeating it, mainly focusing on the movements they needed to execute it (Watson, 2006). In this task 'auditory, visual imagery, and kinaesthesia are involved' (Lim & Lippman, 1991: 21-21). As Ross (1985) argues mental rehearsal 'is a systematic way to "see" and "feel" physical movements associated with a skill, without physically performing' (Ross, 1985: 222). This practice contributes to developing concentration and allows performers to focus their 'attention on the cognitive elements of the music' (Ross, 1985: 229).

The specific aim of this task was to explore how participants were engaged and involved in mental rehearsal, and if this practice could develop their body self-awareness contributing to improve their playing. From the phenomenological perspective, this practice is explained through a kind of *'bodily cogito'* (Berthoz & Petit, 2006: 17). Through mental simulation of the movement, the neuronal correlates of action are activated in the brain similarly to when the real action is performed (Gallese, 2006).

After the mental rehearsal task, they were asked to play the piece again trying to observe themselves, and their feelings during performance. They were required to verbalize taking account of possible sound differences between the first and the second performance and any possible differences which had occurred in self-perception.

In the third task, they were requested to perform the same piece again, still without their instrument, simulating the movements they needed in playing. According to Liao and Davidson (2016), training the body moving into space seems to assist the musicians in developing 'kinesthetic imagination and muscular memory' (Liao & Davidson, 2016: 5) which are essential aspects in performing music. They also state that 'the stronger and more carefully defined the motor images, the longer and more precisely they remain in the memory' (Liao & Davidson, 2016: 6). The aim of the third task was to focus the musicians' attention on their physicality when performing the technical movements needed in playing. They were requested to focus mainly on kinaesthesia (see Chapter 2): in particular on the sense of touch. This task was formulated taking into account Husserl's standpoint (see Chapter 2) related to the importance of touching in movement for developing body self-awareness. As was argued above musicians do not seem to pay lot of attention to movements and physical sensations during playing.

The aim of this task was to explore whether practicing through kinaesthesia could further develop self-body awareness. After the simulation it was expected that participants would:

-be more able to perceive physical sensations than before, such as becoming aware of possible tensions or parts of their body,

-be able to reduce tension,

-improve the quality of their performance.

Immediately after the simulation without verbalising, they were asked to play the piece again trying to observe once more the movements that they employed, breathing, sound quality, tensions, possible images, kinds of touch, and whatever else they wished to communicate. They were also requested to try to compare the three different performances and reflect on any possible benefits that might derive by combining these practices.

During the interview the researcher limited her speaking to the interview questions avoiding any other kind of comment.

3.8.2 Procedure 2

After each interview, descriptive and reflective field-notes (Creswell, 2012) were taken in order to record personal thoughts that emerged during the interview mainly related to movement. These notes were important as they helped the researcher to make initial interpretations of data and identify preliminary themes of analysis with a view to making links between the interviews. It was decided not to take notes during interviews. Empathically sharing the participants' mood and keeping eye contact for the whole interview was important. Gaze is a fundamental component in developing social communication inasmuch as it provides 'information regarding our attention, interest, and possible motivations and intentions (Harrigan, 2005: 172). Moreover, in conversation of dyads, listeners spend more time gazing, speakers also giving feedback showing interest in their speech (Harrigan, 2005: 174-175). Taking notes during interviews could have distracted both the interviewee and the researcher by interrupting eye contact and disrupting the sequencing of questions. As a consequence, the ambience could have been broken leading to participants feeling uncomfortable.

3.8.3 Procedure 3

The third procedure consisted of loading the audio-visual material into the computer immediately after the interview. During this phase, the video material was watched and further notes were taken. To ensure data were not lost extra copies were generated and carefully stored (Loizos, 2000). This material was subsequently analysed after completing all of the interviews. Auditing material many times was fundamental to observe the data in detail. Each video was structured in three sections which reflected those of the interview questions. This process was fundamental for organizing the data analysis.

3.9 Procedures for data analysis and introductory reflections.

The first step of analysis was identifying and assembling answers which reflected the groupings of the questions related to each task (see above) prior to that the video data were transcribed. Before explaining the transcription procedure, a premise is necessary. First, there is no 'true' way to transcribe audio-visual data. A possible solution, as Rose (2000) suggests, is to 'be as explicit as possible about the means that have been used for various modes of translation and simplification' (Rose, 2000: 247).

Secondly, even though videos cannot lie (Loizos, 2000), recordings need to be "read" or interpreted in the social context in which they occur (Knoblauch, 2012: 252) and the specific culture that uses them (Birdwhistell, 1970). Therefore, transcribing audio-visual material is a complex process. It involves a sort of 'translation from one language to another' (Rose, 2000: 247) such as transcribing gestures and behaviour in words. Video recordings include verbal and nonverbal languages that continuously interact, overlap, and produce amalgam between them. As a consequence, their transcription continuously requires making decisions and choices. This means that data are interpreted more than once, the first being in their transcription where some parts can be omitted without being examined in detail by the researcher (Rose, 2000).

3.9.1 Video analysis procedure

Taking into account these issues, after watching and re-watching the video many times, the criterion for transcribing words and gestures was set out as follows:

Two colours were used: black for transcribing words, red for describing all nonverbal language, and green for providing an immediate interpretation of gestures and behaviour (see Appendix 4).

Not every gesture was transcribed only those which referred to playing, the body or part of the body involved in playing, and those which were executed in silence anticipating words. Other research which has been carried out on gesture and speech (see Ekman & Friesen, 1969a; 1969b; McNeill, 1992; Ekman, 2004; Goldin-Meadow, 2003; Samovar et al., 2009) was taken into account in reaching this decision.

It was also decided to use the same words for describing similar gestures or body movements even though they sometimes expressed opposite meanings. Their interpretation came from the context. It was for this reason that it was decided not to use software programs such as NVivo as they are too mechanical for recognizing diversity of meaning and interpreting it, not allowing for the quality of human experience which emerged in the interviews.

At the end of transcription process, the phases of analysis began.

3.9.2 Phases of analysis

Data were analysed within a neurophenomenological framework following the process of thematic analysis (Braun & Clarke, 2006) combined with Interpretative Phenomenological Analysis (IPA) (Smith, 2004). This allowed the researcher to develop a personal approach to data analysis (Smith & Osborn, 2003).

There were two main stages of analysis: one was related to the transcription of the interviews and observations of the performing tasks, the second was related to the evaluation of the performed tasks by a panel of five experienced musicians (Meyrick, 2006) (see below).

The first stage, following Braun and Clarke's (2006) procedures individuated phases in analysing the video-data. As listed in Figure 2 the first column describes the key phases of analysis while the second indicates the processes in detail carried out related to each phase.

Figure 2. The phases of the analysis

Phase (Braun & Clarke,2006: 87)	**Description of the process in my analysis**
1.Familiarizing yourself with your data	Post-interview: Field notes were taken immediately after each interview in order to note some phrases, ideas that could be useful to generate initial themes or categories. Storing video while watching and adding other impressions. Transcribing words and gestures from data-video following themes of groups of interview questions. Reading and re-reading groups of transcripts, while watching video to check the accuracy of the transcription of gestures and to obtain a general sense of data. Annotating first impressions of verbal and nonverbal information such as similar words and thoughts, gestures, gazes and behaviour among participants during the reading process.
2.Generating initial codes	Making notes on hard copies of transcripts. Rationale: software programs were too mechanical for coding the quality of human experience emerging from the interviews. Although the use of software has become commonplace in some forms of qualitative analysis, in IPA (Smith et al., 2009) and phenomenological data analysis, using software is not an appropriate tool (Van Manen, 2014). This is because the context -the research setting- has to be continuously taken into account in order to re-evoke and empathically re-live the experience of the interview from the second person position (Varela & Shear, 2002). Behavioral components, emotions and feelings expressed both through words and gestures after listening to the interviewer's questions were simultaneously read in connection with each other. This process was fundamental for interpreting and making sense of the musicians' lived experience. This was carried out though coding interesting features of data such as key words, ideas, repeated words, words associated with gestures, gestures utterances (Goldin-Meadow, 2003) behaviours, postures, particular expressions, gaze directions, tone of voice, smiles, laughter. Looking for 'Cumulative coding (when patterns of meaning are generated within a transcript and integrative coding (when patterns of meaning are generated across a set of transcripts)' (Larkin et al., 2006: 116). Creating a list of initial codes across each data set.

3.Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme
4.Reviewing themes	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5.Defining and naming themes	Refining and reorganizing the specifics of each theme. Considering themes related to research questions. Generating clear definitions and names for each theme. Selecting and reporting relevant extracts examples
6.Producing the report	The final analysis, extract examples, final analysis of selected extracts, relating the analysis back to the research question and literature, producing a report of the analysis within the neurophenomenological framework.

3.9.3 Procedure for defining themes

The process of 'defining themes' is set out by Braun and Clarke (2006). As they claim, thematic analysis offers theoretical freedom for being 'flexible' and adapting its tools to various theoretical framework such as phenomenology. For defining a theme, the authors suggest individuating the 'keyness' of something which appears relevant in relation to the research question (Braun & Clarke, 2006) and that occurs across cases. However, generating a theme does not means that the same elements of it have to be in evidence across all of the data *set* (Braun & Clarke, 2006: 79), but they have to be relevant 'in relation to the overall research question' (Braun & Clarke, 2006: 82).

In this study, themes were identified across data *set* and across the data *corpus* (Braun & Clarke, 2006: 79) adopting a 'semantic approach'. The themes were coded within 'the explicit or surface meanings of data' (Braun & Clarke: 84), for example, referring to a coded piece of text which captured essential words or words describing gestures which expressed ideas. However, their 'interpretation is inspired by, and arises from, participants' own words (Smith et al., 2009: 90). The process of generating themes allowed the analysis to move from the descriptive to the interpretative stage advancing toward a major level of abstraction and theorization.

3.10. Panel of experts and evaluation procedure

The second stage of analysis involved a panel of five expert musicians. The aim for involving the panel was to validate the analysis in order to provide more rigour (Meyrick, 2006) reducing possible researcher bias when analysing the performed tasks.

The panel was constituted of five experienced musicians who were performers-teachers. The panel members were interested in the research and known to the researcher as rigorous observers and listeners during performances.

All the panel members voluntarily agreed to participate in the evaluation process. Their anonymity was also guaranteed. In order to avoid possible bias they were not known to each other and did not meet each other during the evaluation process.

All the panel members were requested to observe, in a randomized order, each of the three performances after the musicians had executed the mental rehearsal task and the simulated movement task completing an evaluation sheet (see Tables 3.4a,b,c in the appendices) previously prepared by the researcher. Each panel member individually analysed 18 performances (6 participants x 3 performance tasks) each video being about 30 seconds. This decision was taken as analysing 66 performances (22 participants x 3 performance tasks) was considered too great a demand on the panel’s time. Indeed each panel member took about an hour and a half to assess the 18 performances.

The video recordings were selected to represent each category of instrument (see Tables 3.1 & 3.3 in the appendices) in which there were at least two players. This enabled comparisons to be made of observations of similar technical movements. The cellists were excluded inasmuch as one of them did not complete the third task which made the possibility of comparison impossible. The performers included a pianist, a guitarist, a violinist, a recorder player, a violist and a percussionist.

3.10.1 Evaluation sheet

The panel members examined the videos and assessed them through an evaluation sheet (see Tables 3.4a, 3.4b, 3.4c in the appendices) that the researcher had developed following piloting of the tool and after using it for assessing the performances of all of the participants. In formulating parameters, assessment criteria were taken into account as follows:

Anxiety. This phenomenon is quite common in musicians when performing in social contexts. It has been defined as ‘a state of arousal and anxiety occurring before or while a person is performing non-anonymously in front of an audience producing a valuable or evaluated task touching on his/herself self-esteem’ (Kesserling, 2006: 306). It seems that in these circumstances individuals pay more attention to their environment and the people that are around them, rather than the performing task. As Nutt and colleagues (2008) state, when feeling anxious, individuals ‘are assumed to engage in self-evaluation and become inconveniently aware of their fear and arousal and of possible flaws in their behaviour’ (Nutt et al., 2008: 368).

Concentration. This is related to the status of ‘being totally immersed in the here and now, in the present’ (Castle & Buckle, 2009: 16). This parameter was considered in order to observe if the musicians increased their concentration over the three performances and the extent to which they were focused and engaged with their playing. Their posture and the time they needed to prepare before starting playing was also taken into account.

Tempo. Some of the interviewees mentioned tempo when speaking about their performances. Some also changed tempo as they repeated the performance of the piece.

Dynamic contrast. The ‘dynamic contrast’ (Fautley, 2010: 80) takes account of variety of sound from loudness or softness and vice-versa in performing a piece of music.

Musical Communication. Communication is a fundamental factor of public performance and consists in ‘sharing meanings, understanding and intentions on the part of performers and audience’ (Hallam, 2008: 101). In communication there are two main factors which affect the audience: how musicians interpret music and ‘expressive variation’ (Hallam, 2008: 101-102).

Intonation. This parameter term intonation was only used for evaluating string and wind instruments whose intonation could vary relating to the instrument’s tuning and/or possible mistakes they may have made while playing.

Expressive movements. This concept refers to the involvement of the body in performing expressive musical ideas. The quality of body movement is fundamental for generating sound quality, shaping musicians’ intentions and helping them to communicate their ideas with the audience (see Davidson & Correia, 2002; Davidson, 2011; 2012). Referring to expressive movements Davidson and Malloch (2009) suggest that ‘musical performance might be conceived of as the performer communicating with […] audience through the intrinsic musicality of body movements’ (Davidson & Malloch, 2009: 565).

Accuracy of gesture. This definition was developed from the way that the term *accuracy* was used by Fautley (2010) for referring to the sensory-motor control necessary for playing the right notes and rhythm (Fautley, 2010: 118). In order to perform them correctly, accuracy of gestures related to the specific instrument ‘in an appropriate manner’ is needed (Fautley, 2010: 119).

Fluidity of gesture. This expression was formulated taking into account Fautley's (2010) analysis. He argued that 'once a degree of mastery has been achieved then the sensory-motor movements of an individual tend to become more fluid' (Fautley, 2010: 119). All the participants were professional musicians. Therefore, it was expected they had a high degree of mastery in playing and fluidity of gesture.

3.11 Summary

In this chapter the epistemological perspective and the methodological approach to the study have been set out. A detailed description related to the nature of the study, the procedure for data collection, a discussion of IPA and thematic analysis and issues related to ethics were presented.

As outlined in Chapter 1, the following chapters grouped in four sections provide findings related to each research question. The next chapter presents the findings from the start of the first phenomenological reduction when the musicians were listening to the instructions related to the first task and started their introspective journey.

Section 2

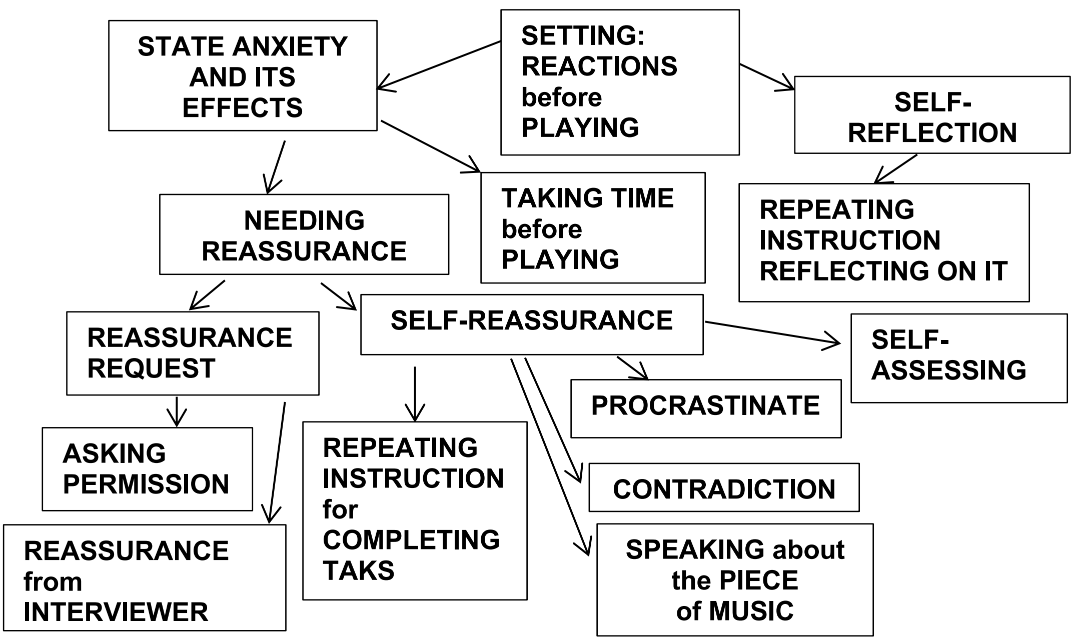
Chapter 4

Musicians' reaction prior to Task 1

4.1 Introduction

This chapter introduces data relating to a sensitive moment for the participants as the first introspective phenomenological reduction began (Vermersch, 2002). Outcomes were analyzed adopting a neurophenomenological perspective (see Chapter 3) and revealed participants' reactions after listening to the task requirements. The results are organized in terms of clusters of themes and sub-themes (IPA -see Chapter 3) taking account of verbal information and nonverbal behaviour. The themes are presented in hierarchic diagrams (Larkin & Thompson, 2012) representing the thematic analysis (Braun & Clark, 2006). Following this, there is a narrative description of the themes combined with references to the literature and extracts of text from the interviews. The emerging themes and sub-themes from the verbal (see Figure 3) and nonverbal behaviour (see Figure 4) are then presented. All of the information, verbal and non-verbal contributed to 'make sense of personal experience' (Smith, 2004: 40) that the musicians lived it.

Figure 3. Themes emerging from the interviews prior to undertaking Task 1



4.2. Influence of the research setting: verbal reactions prior to playing

The context, the interview setting, considered from the perspective of IPA (Smith et al., 2009) and neurophenomenology (Varela & Shear, 2002) (see Chapter 3), appeared to have a crucial role in how participants lived “the interview experience”. The situation meant that the musicians had to expose themselves through playing from memory the piece they had previously chosen to the interviewer while also being videoed and then verbalize their feelings about their playing. Technical weakness in playing or emotional fragility could emerge and as they were being video-recorded there would be permanent evidence of that.

Nineteen of the participants exhibited anxiety (see the sections below), even though they had been assured that their playing would not be judged.

In order to guarantee musicians’ anonymity, when referring to each of them or reporting their words, the musicians are named with their instrument and a number which indicates the order in which they were interview related to their category of instrument.

4.3 State anxiety

The emerging superordinate theme (Larkin & Thompson, 2012) (see Figure 4.1) at this stage of the interview was *state anxiety* which is a response to a specific temporary event arousing anxiety at various levels (Harrigan et al., 1992; Grös et al., 2007). This superordinate theme consisted of a number of clustering subordinate themes (see Table 4.1 in the appendices) which emerged from the analysis of nineteen musicians’ responses. These musicians also appeared to be trying to reduce their *state anxiety* adopting various strategies such as taking time before starting to play, needing reassurance, or repeating the task instructions.

As argued in Chapter 3, anxiety is a phenomenon that musicians frequently experience when performing in social contexts such as public performance. The term anxiety, according to Oxford English Dictionary (2010), is 'a feeling of worry, nervousness, or unease about something with an uncertain outcome' which generates suspense (Labbé, 2008). Musicians frequently experience this uncertainty before public performance. Research on anxiety has generally been carried out adopting a positivistic stance from external observation. As Labbé (2008) points out, 'subjective experience is publicly inaccessible', while studies carried out adopting a phenomenological approach are less common and usually rarer and usually undertaken with self-report questionnaires (Labbé, 2008: 7). The details of the numbers of participants exhibiting each behaviour are set out in Table 4.1 in the appendices.

4.3.1. Taking time before playing

Task 1 was the start of a phenomenological reduction process. This was clearly identified when musicians *took time before performing* as they had to direct their attention (Varela et al., 1993) to different actions such as playing, reflecting on their bodily movements and verbalizing their thoughts. Reflecting on and specifically verbalizing about these issues was unusual for them and contributed to increased anxiety. Nineteen of the musicians took time before starting to play (see Table 4.1 in the appendices). During this time, they seemed to need reassurance. The subordinate theme *Needing Reassurance* emerged from the grouping of two subordinate themes, *Reassurance request*, and *Self-reassurance*.

4.3.2 Needing Reassurance

Reassurance is one of the oldest psychotherapeutic methods used to comfort another person. The term reassurance indicates 'a natural psychological antidote for the negative emotions of fear, worry, doubt and uncertainty' and is intended 'to restore confidence in another by assuring him of certain facts which were previously uncertain or unknown to him' (Andrews, 1945: 52). One person may communicate reassurance to another, both through words and nonverbal behaviour in order to restore self-confidence and transmitting security (Andrews, 1945: 53). According to Fareed (1994), reassurance can be a valid method 'for handling anxiety' in social contexts (Fareed, 1994: 871) such as the research setting. This superordinate theme captured the need of the majority of the participants and as psychologically necessary for re-balancing their internal equilibrium (see the concept of *autopoiesis,* Chapter 2) in order to adapt themselves to the context.

Four musicians clearly manifested the need for reassurance, while nine adopted a strategy of self-reassurance without making any requests to the interviewer. Six asked questions, for instance, for permission from the interviewer. The researcher responded empathetically (see Chapter 2, Decety, 2007). The two subordinate themes *Reassurance request* and *Self-reassurance* respectively indicated the musicians' need of reassurance. The first subordinate theme included *Asking permission* and *Reassurance from interviewer,* while the second included *Repeating instructions for completing the task, Procrastination,* and *Speaking about the piece of music.*

4.3.3 Reassurance request

Reassurance requests were identified through participants asking various kinds of permission and responses which showed uneasiness, uncertainty, or confusion. This subordinate theme included *Asking permission* and *Reassurance from the interviewer*.

Asking permission

Six musicians asked permission relating to tuning the instrument, where they should stand, if they could keep the score close to them, if they could stop if they could not remember the music, about choosing the piece, and when to start playing. As all were professional adult musicians, these requests on the surface appear facile but they reflected a need for reassurance. Three examples are given below:

> **Guitar 3**: 'May I tune a little bit?'
> **Interviewer**: of course!
>
> **Flute**: 'Do you want me to play from memory-memory? ... I should remember it. Look, I will keep it [the score] here….ok?
> **Interviewer**: Maybe you would like to play something to warm up the flute.
> **Flute**: Yes, a little bit…. May I go, heeee?
>
> **Violin 1**: 'Sitting down? [*while standing and adjusting himself in front of the camera, without waiting for any answer and looking at the interviewer*]

Although those requests were very different, they were interpreted as reassurance requests for kinaesthetically (see Chapter 2, Sheets-Johnstone, 2011) re-establishing physical contact with their instrument and the environment a fundamental relationship for recovering the body-self (see Chapter 2, Husserl, 1989). Violin 1 needed to feel his feet *touching* the floor just standing up, allowing him to find the most comfortable position for perceiving his body at ease in space. In addition, Guitar 3 and Flute were reassured when *touching* the instrument and being *touched* by their own sound. Guitar 3 was aware of her need to tune her instrument to re-create body-self contact with the instrument and sound. Conversely, although Flute tried to self-reassure (Gilbert et al., 2004) by saying 'I should remember it', he needed help in engaging his body with sound as suggested by the interviewer who also encouraged him when he asked permission to start playing. Both of these musicians self-reassured finding their 'self-identity' through sound and touching in the interview setting. Moreover, playing before performing the task was important for re-directing the musicians' attention (see Chapter 2, Varela et al., 1993) from their anxiety to their sound helping them to reduce the anxiety.

Two musicians showed anxiety about playing from memory reveling low self-efficacy (Bandura, 1977) maybe due to insufficient practice of the piece (Hallam, 1998; Hallam, 2001; McCormick & McPherson, 2003). One of them, Recorder 2, asked permission to keep the score close to her. Although as all the musicians she had been previously informed that she would be requested to perform a piece of music from memory, this task strongly contributed to creating anxiety for her. She appeared concerned about making mistakes when playing from memory and then being negatively judged when her video-performance was analyzed. Her low self-efficacy prevented her from trusting the interviewer. As a consequence, no positive intersubjective relationship was developed during the performance of this task. She did not wait for the interviewer's response. She showed her uncertainty, while also encouraging herself before starting playing, as shown in the following dialogue:

> **Recorder 2**: So I guess you are asking me to not look at the music….
> **Interviewer**: I am not looking for a great performance. It's not this. My interest is related to how you perceive yourself during playing.
> **Recorder 2**: [*interrupting*] but does it make any difference for your study if I play and I …check or if I play without checking?' [*approaching to the score*]
> **Interviewer**: It depends
> **Recorder 2**: [*interrupting*] Yes [*saying no clear words*] but… I'll try [*keeping the score close to her*]

Viola 1 also manifested a low level of self-efficacy in relation to playing from memory:

> **Viola 1**: But I don't-don't know… if I remember it [the piece of music]… from memory… ok? .... May I sto-o-op?
> **Interviewer**: Whenever you like!

This musician was not afraid to reveal his concerns to the interviewer. His request revealed his anxiety about playing, not trusting in his body skills for remembering a piece of music.

The final permission request was *permission relating to choosing the piece* as this extract shows:

> **Percussion 2**: I like this melody, but but if you want… Like this melody?
> **Interviewer**: Don't worry [*while he was playing the melody and looking at the interviewer for receiving consent*]. Start playing and concentrate on that.

This musician asked permission for playing the melody he had chosen. He required both approval and encouragement from the interviewer. He was not ashamed to show his anxiety which was also caused by his emotional attachment to that melody. .

Reassurance from interviewer

Four musicians appeared to feel uneasy, unsure, or confused, behaving in contradictory ways. Even though they had been previously informed they were required to play and having their instrument with them, they did not know what to play. Maybe they underestimated the stress of performing during the interview in front of the camera, becoming anxious when that moment arrived, and needing to be reassured. Among these musicians there were two who appeared particularly unsure, confused, and anxious, seeming to be lost:

> **Guitar 1**: as Any piece of music? Anything at all? … ahm
> **Interviewer:** what I'm asking you to play, it's something slow and calm.
> **Guitar 1**: oh I see Oh I see ok … ehm.... something related to I will play, is it?... or not necessarily?
> **Interviewer**: it's up to you, whatever you feel to play.
> **Guitar 1**: ye
> **Interviewer**: what makes you calm.
> **Guitar 1**: ye... and do you you want I play it now?
> **Interviewer**: if you like, yes
> **Guitar 1**: ok.
>
> **Viola 1**: [*repeating the question*] Can you play a short and slow piece from memory? Ehm … I can try… A short piece… what you say… let me think
> **Interviewer**: Whatever you like, a prelude, the beginning of a slow easy sonata.

The interviewer tried to re-establish their body-self contact directing their attention to the music. According to Yoshimoto and colleagues (2005), Guitar 1 appeared tense, being unable to express a complete sentence often saying words such as 'ah, ye, oh'. The interviewer tried to direct his attention to music that he knew which would calm and reassure him, while she stimulated Viola 1 to remember and re-live the pleasure of playing, suggesting that he play something easy that he liked.

Two other musicians also appeared confused and distracted. They seemed to have completely forgotten they were requested to prepare a calm piece of music before the interview. They needed to be reassured and helped in choosing the piece and re-stablish their attention on the task.

> **Clarinet**: I can play something from the repertoire I can al-sooo invent something now… some melody.
> **Interviewer**: Yes, but I will ask you to play the piece two times more, so you need to exactly remember it. It could help you if you can play something you already know.
> **Clarinet:** It can help me more.
> **Interviewer:** Whatever you like, an adagio… a very short simple piece, just the beginning, few bars.
>
> **Oboe**: So, I did not think of that [the piece of music]…let me see.
> **Interviewer**: just the beginning of some adagio, very simple.
> **Oboe**: [he started a long digression -see below] so, the instrument is fine, what can I play for you? Let me see… Ohooo, Boh! There are so many things… Bho! For example …
> **Interviewer**: I think that some time ago, I played with you the Albinoni Concert
> **Oboe**: Albinoni concert [starting playing Allegro-first movement].

Both of these musicians appeared to be distracted as if they had forgotten the repertoire that they knew. The researcher's suggestion seemed to reassure them helping them to focus their attention on the action of playing. Moreover, when Oboe said 'the instrument is fine', he transferred his feeling to the instrument, but was referring to himself meaning that he was ready for playing.

4.3.4 Self-reassurance

Self-reassurance was another strategy that musicians adopted for calming their anxiety. Four different strategies of self-reassurance were identified such as

Repeating instructions for completing the task, *Speaking about the piece of music, Procrastination, Contradiction*, and *Self-assessing.*

Repeating instructions for completing the task

After listening to the instructions related to the task, six musicians repeated them. Three participants seemed to understand the instructions better having repeated them. This process also seemed to reassure them. Repeating words such as 'few', 'short', and 'calm' appeared to help them to embody the meaning.

> **Piano 1:** just few bars, ok
> **Violin 3:** Yea, very short.
> **Cello 2:** Ve-ry slo-ow and short and calm… that's fine…

Repeating the whole question for Viola 1 seemed to help him in focusing attention on the task. When listening to the question, he seemed confused, completely detached from the environment and his body.

> **Viola 1**: [*repeating the whole question*] Can you play a short and slow piece from memory?

Two musicians asked the same question but exhibited a different mood, as the following extracts show.

> **Percussion 1**: Has to be calm?
> **Interviewer:** Yes, slow
> **Percussion 1**: Ah! Slow [*appearing very surprised without understanding the reason of that request*]

Percussion 1 repeated the instruction through a question showing surprise as if he did not understand the task. That question hid anxiety and was also useful for taking time and self-reassuring.

Cello 1 appeared intolerant, resenting the command and the setting.

> **Cello 1**: Has to be calm?
> **Interviewer**: as I previously asked you, I would like you play a slow piece
> **Cello 1**: Bha! One Sarabanda from Bach Suite.
> **Interviewer**: Whatever you like, just the beginning.

Even though the researcher tried to reassure and calm him, his response was quite aggressive 'bha! One Sarabanda from Bach Suite'.

Speaking about the piece of music

Another self-reassuring strategy adopted by ten musicians was speaking about the piece they were going to perform. This strategy appeared to help them in focusing their attention on what they were going to play. These musicians can be divided into three groups: one included six participants who revealed a low level of self-confidence and embarrassment. As the following excerpts highlight, two seemed to need to justify the piece they had chosen.

> **Piano 1**: Ah! are you asking what kind of music I would play now ok …hum at the moment this piece is not classical… it's a piece from a movie…hum… it is very calm minimalist….

> **Clarinet**: I have the clarinet in A major ready so… I can pla-a-y the first bars from Adagio, Mozart concert.

Extracts from four others revealed the musicians' uncertainty expressed by words such as 'try', 'maybe', 'I'm thinking to play', 'I would play'. It seemed that they were going to 'try' a performance, as if they were detached from their body. They also appeared to be seeking approval or encouragement from the researcher.

> **Piano 2**: I-I-I'm going to try some… first phrase from hummm… Chopin… few bars… ok.

> **Guitar 3:** I'm thinking to play a short melody. I love it a lot…ehm a melody… very easy.

> **Violin 3:** Maybe the beginning of the II movement of Mozart Concerto in A major.

> **Flute**: Eheeem… I would play the beginning of Joubert's concert, the second movement.

Another group of three musicians just announced what they were going to play, apparently showing confidence. They gave a sense of solemnity to the moment of playing as Viola 2 announced: 'I'm going to play the beginning of Bach Sarabanda'. It was as if they were speaking to and encouraging themselves.

> **Violin 2:** It's a Meditation.

> **Viola 2**: I'm going to play the beginning of Bach Sarabanda.

> **Bassoon**: I'll play a little folk song and I'm going to play just the first two three bars.

For these musicians, speaking about the piece seemed to help them to concentrate directing their attention on to their body, the music, and the sound quality to be produced.

The tenth musician behaved differently. He was anxious about playing but was also emotionally involved in the piece of music needing "to explain" it.

> **Percussion 2**: [*starting playing and speaking*] This is a very particular piece of music. This is the base [*always playing*]… where many things occur…you know… this is a very, very simple pentatonic scale…

He could not separate his speech from performing the music. The words were not sufficient for explaining his thoughts; he also needed his body to be linked to the sound. He was completely and emotionally embedded in the body-mind relationship, wishing to communicate with and involve the researcher in his emotional mood. He achieved this by procrastinating immediately after listening to the instructions which helped him to self-reassure.

Procrastination

Procrastination was another strategy adopted by the musicians for self-reassuring and reducing their anxiety. Three musicians procrastinated in slightly different ways. Percussion 2 spoke excitedly about his past experience.

> **Percussion 2**: but look, I… my training I did not tell you… I forget all the time ehemm about my musical training… eheeem I'm very attached to a person…he was my teacher I met him when when I was I mean like for all the children who were with me ….eheem attending eheem the 3rd, 4th and 5th primary school classes eheem… his name is […] and for me he has been my musical teacher and 'life teacher'…. I was very lucky he was a life teacher, but a really music teacher, but everything he did was what he played … for me it was very important so yes you are asking me what I would like to play a very shooort piece it's a thing we play together in a creative music workshop… I have done it for ten years… I am very attached to it I'm still playing it with my kids that's all.

Describing his first music teacher seemed to be a physical need which he manifested through playing and speaking. The piece of music emotionally embodied his teacher who was symbolized when playing. As his description developed it seemed that he was re-experiencing pleasant emotions from his childhood. The need for sharing that experience was stronger than the anxiety aroused in the research context.

Percussion 1 tried to hide his anxiety by engaging in a discussion relating to the research:

> **Percussion 1:** Has it to be calm?
> **Interviewer:** Slow.
> **Percussion 1**: Ah! Slow [*appearing very surprised without understanding the reason of that request*]
> **Interviewer**: much more difficult is the piece
> **Percussion 1**: [*interrupting*] slow, it has to be slow, okokokok, yes, I perfectly understood. What can I play? ... So, I will play a slow piece that then I will go to play it faster.
> **Interviewer:** No, I will explain you
> **Percussion 1**: [*interrupting*] Boh! That's fine.
> **Interviewer**: After playing, I will ask you to verbalize all your physical sensations related to the performance. If it's possible
> **Percussion:** [*interrupting*] Ok, so, look [*reading the score, for starting playing*]
> **Interviewer:** Please could you play from memory when playing the second and third time?
> **Percussion 1**: yesyes
> **Interviewer:** Great!
> **Percussion 1**: Why from memory?
> **Interviewer**: I will ask you to perform it through mental rehearsal closing eyes
> **Percussion 1:** Ah! Ok that's fine…I have to read this piece, I don't know how it is.

This musician was anxious because he did not know what to play and tried to conceal this through a rationalization process (DSM IV, 1994) which occurs:

> ''when the individual deals with emotional conflict or internal or external stressors by concealing the true motivations for his or her own thoughts, actions, or feelings through the elaboration of reassuring or self-serving but incorrect explanations.'' (DSM IV, 1994: 756).

Through this process Percussion 1 created a false inference. After realizing that the piece had to be 'slow', he attempted to explain why the piece had to be calm, but he made an incorrect inference which may have developed more anxiety. He was concerned with playing from memory. He did not reject the task but was curious about it.

Oboe procrastinated for three minutes, delaying the moment of playing, inasmuch as he did not know what to play. He spoke about the reed, the person who makes it, the material which is employed for making it, and so on. While speaking, he also manipulated the oboe and the reed. These two actions, speaking about the reed and manipulation, helped him to re-stablish the contact with his body and the instrument. He was both reassured by the interviewer and self-reassured.

Contradiction

Only one participant contradicted himself as a means of calming his anxiety. After asking permission for stopping in case he did not remember the music from memory, Viola 1 said:

> **Viola 1**: This is not a performance
> **Interviewer**: Absolutely not
> **Viola 1**: yesyesyes, I will simulate to play in a concert, but I REALLY simulate!
> **Interviewer:** As you like.

This musician was uncomfortable about the context, deferred playing and looked for a means of reassuring himself.

Self-assessing

Self-assessing was used by the musicians as a way of re-stablishing internal equilibrium (see above *autopoiesis*). Two musicians self-assessed before playing stating:

> **Guitar 2**: It will be not good.
>
> **Cello 2:** I will try to see what will come out.

This approach may have been adopted because of a lack of self-efficacy in relation to the task. They needed to justify possible mistakes in advance.

4.3.5 Summary of findings on reassurance

Nineteen musicians needed reassurance in order to reduce their anxiety. This process occurred when the interviewer felt the need to reassure or was requested by musicians indirectly for reassurance. The process of reassurance was always intersubjective (Larkin et al., 2011) which helped the musicians to make-sense of their experience and re-stablish their internal equilibrium. There was an interaction, or *enaction* (see Chapter 2) process between the interviewed and the interviewer in a temporal axis through an action-orientated process embodied in the surrounding interview environment (Larkin et al., 2011: 320).

4.4. Self-reflection

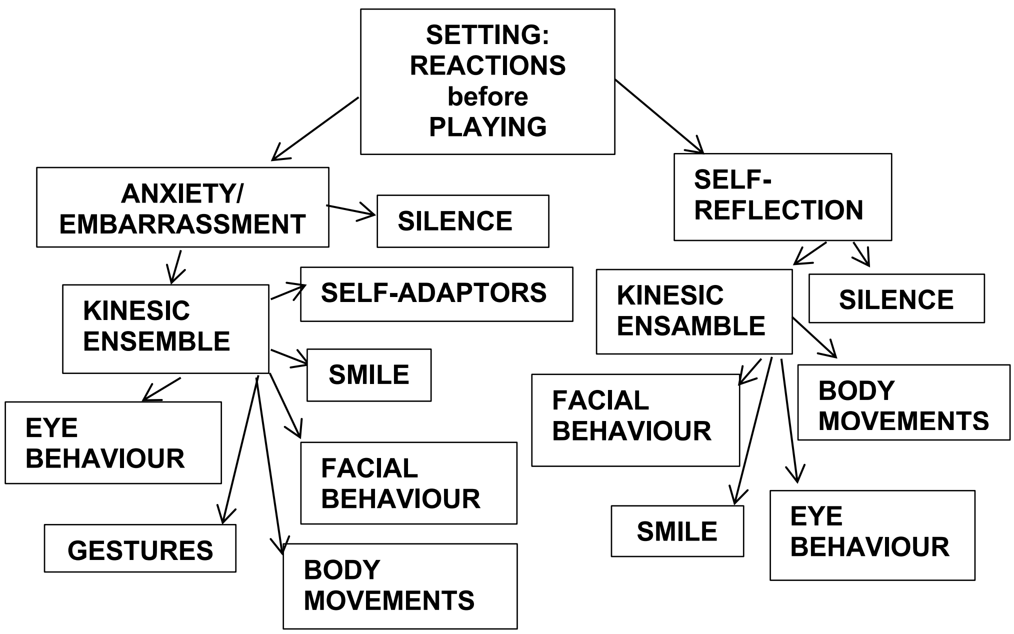
As discussed above, playing in the research setting appeared problematic for most of the participants. However, there were three musicians (see Table 4.2 in the appendices) who seemed to react differently. Piano 3 and Recorder 1, when repeating the instructions for completing the task, seemed to help themselves in self-reflecting and in focusing before playing. They appeared to 'slow down' their mental activity (see Chapter 3, Petitmengin-Peugeot, 2002). Even though Recorder 1 gave the impression of being anxious about not remembering the music during playing, when repeating the instructions 'Short calm piece, Ok' calmly she appeared to focus her concentration on herself and the action of playing. Harp appeared very calm and started playing without saying anything.

4.5. Influence of the setting: nonverbal interaction before playing

In this section, musicians' nonverbal behaviour before playing is examined. The same two main superordinate themes *anxiety/ embarrassment* and *self-reflection* have been considered relating to nonverbal behaviour, by clustering the subordinate themes (see Figure 4) which emerged.

Nonverbal communication occurs through various sets of kinesic ensemble, but in order to analyse in detail the musicians' nonverbal behaviour, single elements of it are presented as follows: kinesic movements (Calbris, 2011: 267) - including eye movement, gestures, body movement, facial behaviour, smile, self-touching (McNeill, 1992; Raffagnino & Occhini, 2000), and silence (Samovar et al., 2009; Samovar et al., 2013). A quantitative measurement scale was developed for indicating the absence or strong presence of each specific nonverbal behaviour. Absence is represented by the value 1, while 5 indicates the maximum possible frequency or duration of any phenomenon. These values are represented as follows: 1= not at all; 2=very little; 3=little; 4=much; 5=very much.

Figure 4. Themes of Nonverbal information before playing Task 1



4.6. Showing "Nonverbal Anxiety"

The nineteen musicians who expressed anxiety through their verbal behaviour also exhibited it through nonverbal behaviour revealing embarrassment (Keltner, 2005). Anxiety and embarrassment were observed through (see Table 4.2 in the appendices) ‘kinesic ensemble’, silence (Samovar et al., 2009), smile (Ekman et al., 1990), embarrassment signals (Keltner, 2005), and non-gestures such as self-adaptors (Ekman & Friesen, 1969a) which include self-touching and object manipulation (McNeill, 1992: 78). The interviewer attempted to empathically (see Chapter 2, empathy) share the musicians’ emotional feelings interpreting their body language in an attempt to understand their mood.

4.6.1 Embarrassment

Embarrassment is classified by scholars as a form of social anxiety and considered as “self-conscious emotions” or ‘a secondary emotion’ (Keltner & Buswell, 1997: 250). It occurs when the person becomes aware that they are the centre of attention, feeling that they are being judged (Bradford & Petronio, 1998: 100). He or she is self-conscious to be the actor performing actions and, at same time, being seen as the actor (Crozier, 1990a). Embarrassment is also considered as social emotion inasmuch as it increases ‘in the presence of strangers’ (Costa et al., 2001: 225). People experience embarrassment ‘when they perceive their actions as threatening their desired social identity’ (Costa et al. 2001: 226). In other words, individuals positively want to impress others, but, at the same time, believing that they have a low chance of attaining that result they become self-conscious of their inability to do so (Crozier, 1990b). Specific physical signals expressing embarrassment have been identified such as ‘gaze aversion, shifty eyes, speech disturbances, face touches, and a nervous, silly smile’ (Keltner, 2005: 134).

Taking account of these conceptualizations, the behaviour of nineteen musicians has been analyzed considering embarrassment and physical signals of anxiety. Table 4.2 in the appendices sets out the number of such behaviours exhibited by each individual.

4.6.2 Kinesic ensemble: Eye behaviour

Eye behaviour is considered a fundamental component of 'kinesic ensemble' (see Chapter 2, Calbris, 2011) being one regulatory element in dyadic interaction (Ekman & Friesen, 1969a). Gaze direction is central for interpreting others' actions or others' intentionality (Macrae et al., 2002), influencing the quality of conversation (Hugot, 2007), even though its shift is often involuntarily performed (Ekman & Friesen, 1969a).

At this stage of the research, reflecting existing research which shows that people look at the interlocutor when listening (Argyle & Dean, 1965), all the participants looked at the interviewer (see Table 4.2 in the appendices) while listening to the instructions. However, after listening, nineteen of the musicians exhibited various kinds of gaze before starting playing or asking questions before playing, alternating their gaze between space and the interviewer. Even though research shows that fixed gaze never occurs in dyadic interaction inasmuch as it increases the 'level of arousal in subjects, disturbing conversation' (Hugot, 2007: 9), these musicians shifted their gaze direction expressing anxiety (Fox et al., 2007). Seventeen of them looked around and at the interviewer, two only stared at the interviewer, while four also looked at the camera, and three closed their eyes while speaking. These nineteen participants spent different amounts of time looking around. This appeared as another strategy that they employed for self-reassuring and trying to adapt to the context. These various kinds of eye behaviour are explained in the following sections.

Looking into space

Looking at the space around them was observed in seventeen musicians who moved their gaze in various directions asking questions before playing. According to Fox and colleagues (2007), gaze direction is connected to the level of anxiety. Twelve musicians spent more time looking at the space around them than at the interviewer (see Table 4.2 in the appendices). This may have been to help them calm themselves. Four of them (Piano 1, Piano 2, Guitar 1, and Flute), while slowly speaking, slowly looked around, as if lost in space. This was particularly evident with Guitar 1 who did not know what to play (see above).

Four musicians almost avoided eye-contact with the interviewer. Violin 1 did not look at the interviewer while taking the violin and positioning it before playing and appeared shy and not at ease. This gaze avoidance was maybe useful for enhancing concentration and trying to re-establish his psychic equilibrium through the physical contact with his instrument and the environment.

Oboe, Percussion 1, and Percussion 2 while procrastinating moved their gaze onto individual objects, two of them manipulating this object. Percussion 1 looked at the music stand while speaking. Oboe looked up into space or at his instrument manipulating its keys, and Percussion 2 almost always looked at the marimba manipulating the drumsticks. For these three musicians, moving their attention from themselves onto another object seemed to be another reassurance strategy which may have helped in anxiety reduction. Viola 1 behaved differently. He repeatedly looked at the interviewer and the space around him. According to Lewis (2008), people can behave in that way when expressing negative self-evaluations (Lewis, 2008: 751). Viola 1 did not know what to play, showing a high level of anxiety. His eye behaviour reflected this. He also combined looking down with other nonverbal signals when trying to start playing, but without doing it. This may also manifest shame or guilt (Givens, 2002). Maybe Viola 1 felt guilty for not having prepared any music to play, suddenly realizing how difficult it was to play in the research context. Three musicians, Violin 3, Guitar 3, and Cello 2, looked at the space around them more than at the interviewer. They appeared to be adopting another strategy for concentrating on the task and calming themselves, focusing their gaze in space on some fix point. Violin 3 and Guitar 3 seemed to take time thinking how to re-establish their emotional equilibrium in the research context. Clarinet also looked in space, mainly when thinking of what piece of music to play, showing various embarrassment signals. He may have felt under pressure and also some guilt for not having chosen the piece in advance.

Looking at the interviewer

All of the participants looked at the interviewer while listening to the instructions showing a high level of attentiveness (see Chapter 2, Samovar et al., 2009: 262) in order to understand the task. However, even though it is not normal to stare in dyadic interactions, four musicians spent more time looking at the interviewer than at the space around them. Cello 1 exhibited gaze aversion (Keltner, 2005) suggesting that he was uncomfortable with the task. Clarinet indicated now knowing what to play seeming disoriented while looking at the interviewer. Recorder 2 almost seemed to force herself to look at the interviewer and manifested her discomfort through other body signals such as object manipulation.

Viola 2 and Bassoon looked at the interviewer and the space around, then in a balanced way as if trying to be professional and avoiding conveying any anxious signals through their gaze. However, both of them appeared restrained, showing a rigid posture, which indicates embarrassment (Keltner, 1995).

Guitar 2 stared at the interviewer all the time when speaking before playing. He expressed negative self-evaluation about the performance he was going to do while rapidly blinking. According to previous research (see Haak et al., 2009; Smilek et al., 2010), increase of blinking frequency occurs when people are in stressful situations. It is an unconscious body reaction which ‘may facilitate a shift in the balance of processing from external stimuli to internal thoughts’ (Smilek et al., 2010: 786). Therefore, Guitar 2 showed anxiety, but unconsciously tried to manage this.

Looking at the camera

Four participants looked at the camera before playing (see Table 4.2 in the appendices). Cello 2 and Percussion 2 behaved similarly, glancing at it as if they were afraid of being judged. They seemed to perceive the camera as an external eye, neither forgetting its presence nor adapting to it. After looking at the camera, they appeared more nervous: Cello 2 smiled, while Percussion 2 scratched one hand with the other or manipulated his drumsticks.

Violin 2 showed embarrassment signals such as smiling (Keltner, 2005) frequently looking at the camera. Oboe was the only participant who looked at the camera very often mainly when procrastinating and seemed to take pleasure in looking at it while also being afraid of being judged. He appeared to be attracted by the camera, but at the same time seemed to want to escape from it. Sometimes he stared it, while at other times he glanced at it as if he wished to escape from it.

Closed eyes

Two musicians closed their eyes for a while before starting to play. Research shows that people can divert their gaze or close their eyes when 'answering difficult questions about autobiographical information' (Vredeveldt & Perfect, 2014:1). In this context, through playing, musicians conveyed a kind of autobiographical information in terms of technical weaknesses or musicianship which could not be hidden. Guitar 2, who evaluated his performance in advance of playing also showed anxiety by closing his eyes, appearing uncertain about playing in the research situation. Piano 1 also looked embarrassed and unsure of performing, but closing her eyes seemed to help her in concentrating on the task. According to Glenberg and colleagues (1998), this kind of behaviour detaches people from the surrounding environment helping them to 'enhance the efficiency of cognitive processing' (Glenberg et al., 1998: 651).

4.6.3 Gestures

Even though gestures are inseparable from speech and unconsciously performed (see Chapter 2), at this stage of the interview only thirteen musicians (see Table 4.2 in the appendices) gesticulated. According to Ekman (1991), this phenomenon seems to occur when people feel uncomfortable or strongly excited decreasing their gesticulation, carefully thinking of words to say. Two were the categories of gesture identified: anticipatory and iconic (see McNeill, 1985; 1992; Goldin-Meadow, 2003; Calbris, 2011).

Anticipatory gestures

During conversation, people sometimes gesticulate before starting speaking. As research (McNeill, 1992; Goldin-Meadow, 2003) shows, it seems that these anticipatory gestures are 'internalized as mental imagery' (Goldin-Meadow, 2003: 179) promoting the shaping of thoughts and utterances. This concept stresses the indivisibility between movement and thought development reflecting an *enaction* process (see Chapter 2, Varela et al., 1993).

At this stage of the interview, three musicians performed anticipatory gestures (see Table 4.2 in the appendices). Piano 1 used them frequently, seeming to need them for explaining something to herself. She did not understand the task immediately, but step by step during performing these gestures it seemed to become clear. This behaviour also seemed a strategy she adopted not only for understanding the task, but also for concentrating on it and, as a consequence, self-reassuring. She moved her hands then suspended them in front of her while closing eyes or fixing on some point in space and finally expressing her thoughts looking at the interviewer.

Two musicians performed anticipatory gestures infrequently. Neither of them had decided what to play. This also emerged from observing their gestures. Guitar 1 moved his hands up and down, looking in space before speaking seeming to look for help when gesticulating. While performing these gestures, he seemed to be seeking a strategy for reassuring and comforting himself, but without success.

Oboe also did not know what to play. He performed anticipatory gestures as his procrastination came to an end when the moment for playing was coming nearer exhibiting increased anxiety.

In silence, looking in space or at his instrument, he performed wide circular gestures in front of himself also indicating his instrument. He appeared to execute these gestures giving him time to think of the piece of music to play. However, as in the case of Guitar 1, he needed some suggestions from the interviewer for choosing the piece.

Iconic gestures

The sub-theme *Iconic gesture* classifies those gestures which are linked to the 'semantic content of speech' (McNeill, 1992: 12). McNeill (2005) defines them:

> 'Such gestures present images of concrete entities and/or actions. They are gestures in which the form of gesture and/or its manner of execution embodies picturable aspects of semantic content (aspect of which are also present in speech)' (Mc Neill, 2005: 39).

Eleven musicians (see Table 4.2 in the appendices) performed such gestures. Nine of them raised their index finger or looked toward the score while speaking about the piece of music. One indicated the position for playing and two their instruments during procrastination. These gestures revealed both musicians' anxiety and a strategy that they adopted for self-reassuring. For example, when moving their index finger towards the score or their instrument, the musicians seemed to establish a physical contact with the music in the context, generating a further strategy for self-reassurance.

4.6.4 Body movements

At this stage of the interview, most of the musicians did not make major movements frequently (see Table 4.2 in the appendices). Maybe this was due to the fact that when being in a new context, they did not feel comfortable in so doing. As a consequence, they employed stiff and rigid postures indicating nervousness and anxiety (Navarro, 2008). Seven musicians moved frequently, eight infrequently, four rarely, and three not at all. The most common body movement to be performed was nodding while listening to the instructions. This movement seems to be typical of the western culture where it means 'acceptance and understanding' (Samovar et al., 2009: 258). It has been classified as an 'agreement listener response' (Ekman, 2004: 44), indicating that the listeners are engaging with the speaker's speech (Harrigan, 2005). Participants, when nodding, seemed to indicate that they understood the task and agreed with the interviewer that they would play their instrument. This movement contributed to developing a more empathic relationship with the interviewer.

Another relevant movement was leaning forward. This cue is usually performed combined with other gestures or movements, but when it is performed alone, it may manifest individuals' willingness 'to interact and to deal with his or her surroundings' (De Meijer, 1989: 265). Six participants leaned forward when looking at the interviewer. For example, Piano 1 and Piano 2 leaned toward the interviewer appearing to wish to be closer to her in order to listen to the instructions better. This behaviour could have been another signal for needing reassurance. One musician, Guitar 3, rocked her body while speaking about the piece she was going to play. This instinctive movement, stimulating '*accelerometers* of the inner ear', arouses both pleasure and diverts attention from what provokes anxiety and apprehension (Givens, 2002). This musician may have adopted this rocking motion to calm herself.

Musicians such as Viola 1, Clarinet, and Percussion 1 similarly moved their body. This combination of actions might indicate shame (De Meijer, 1989: 249). Clarinet initially behaved similarly to Piano 1 while listening to the task instructions but then behaved like Viola 1, appearing first to be reassured, then shy. Percussion 1 leaned forward, firstly combined with folding arms on the chest, and then shoulder-shrugging. This last body combination can convey various emotional states such as 'uncertainty, [… and] non-dominant or non-assertive social position' (Givens, 1977: 13). In this context, uncertainty seemed to be the most appropriate interpretation associated with the verbal communications made. Three musicians displayed shoulder shrugging, showing uncertainty. Recorder 2 unconsciously shrugged and tilted the head sideways when trying to encourage herself before playing. Performing these movements seems to express uncertainty and shyness (Givens, 2002). Oboe shrugged when he finally declared not knowing what to play, being no longer able to hide his uncertainty. This was manifested through words and body movement at the end of his procrastination. Percussion 2 shrugged when speaking about his teacher. According to Givens (1977), shrugging can also occur during conversations 'in contexts of greeting, flirtation, affiliation ('friendship'), and verbal argumentation' (Givens, 1977: 13). Therefore, even though Percussion 2 showed anxiety (see above) in relation to playing, his shrugging could be interpreted as 'a non-dominant or nonassertive' signal (Givens, 1977: 13) taking place in a friendly context. His need for sharing his experience with the interviewer was stronger than his anxious feelings.

Two musicians, Guitar 2 and Viola 1, moved the Adam's apple up-and-down. This signal usually indicates anxiety but can also express social disconfort such as embarrassement and fear (Givens, 2002). Guitar 2 performed it when evaluating his performance in advance and Viola 1 every time he tried to start playing, raising the bow from the string and looking down.

4.6.5 Facial behaviour

As set out in Chapter 2, the face is the main emotional transmitter (Ekman, 2004), conveying 'the nature of an emotion' (Ekman & Friesen, 1969a: 50). At this stage of the interview, musicians performed a variety of facial movements with low intesity (see Table 4.2 in the appendices), but these often revealed anxiety supporting the data emerging from the verbal information.

Two musicians, Viola 2 and Bassoon, did not show any particular facial movement. They avoided expressing any emotions displaying confidence while announcing what they would play (see above).

The most common facial movement was lowering and raising eyebrows. This movement is very often used in conversation for emphasizing speech (Ekman, 1991: 136). However, its meaning changes relating to the context when combined with other nonverbal behaviours (Givens, 2002; Yashimoto et al., 2005). In this context only two musicians performed both lowering and raising eybrows, while six only raised, and one lowered eyebrows (see Table 4.3 in the appendices).

Lowering eyebrows could indicate disagreement, doubt or uncertainty (Givens, 2002), and distress (Ekman, 1991). In this context, lowering eyebrows was interpreted as another signal revealing uncertainty and uneasiness. For example, Piano 1 performed it while speaking about the piece transmitting opposing messages. She revealed lack of confidence through lowering the eyebrows and looking at the surrounding space while also trying to self-reassure while speaking about the music. Viola 1 communicated lack of confidence and uneasiness in verbal and nonverbal behaviour. He lowered eyebrows while tuning his instrument and asking what to play. Oboe performed this movement at the end of his procrastination appearing not really convinced about what he was saying.

Six musicians raised their eybrows. This movement can convey various meanings such as skepticism, when making a rhetorical question, paying attention, and expressing surprise (Givens, 2002; Ekman, 2004). Viola 1 raised his eybrows expressing scepticism when contradicting himself appearing uncertain about his performance. Guitar 1 and Percussion 1 raised their eyebrows when repeating the interviewer's instructions. One also showed surprise by raising brows and upper eyelids (Matsumoto et al., 2008) when repeating the instructions. He seemed to not expect the instructions even though he had been previously informed about what was required.

Research shows that people also raise their eybrows when paying attention (Cohn & Ekman, 2005). Recorder 2 and Percussion 1 exhibited this behaviour when listening to the instructions, while Oboe and Percussion 2 did so when procrastinating. These two musicians highlighted what was very important for them. Oboe paid particular attention when speaking about the reed, while Percussion 2 raised his eyebrows while speaking about his teacher.

Another signal expressing anxiety and/or uncertainty exhibited by three musicians was narrowing the lips (Givens, 2002). Viola 1 exhibited this twice, when asking permission to stop playing if he forgot the piece and immediately before starting playing combining it with other nonverbal signals. Violin 1 narrowed his lips when positioning the violin before starting playing. It seemed that the moment of "starting playing" was very critical for these two participants. Clarinet behaved differently. He narrowed his lips while listening to the interviewer's suggestion about the piece to play.

4.6.6 Smiling

Smiling affects social interactions which are strictly linked to the context where they occur (Glenn & Holt, 2013). Smiling and laughing are usually associated with humor or pleasant situations, but may hide negative emotions (Ekman et al., 1990). Smiles can occur in problematic circumstances concealing anger, jealousy, distress, and embarrassment (see Ekman et al., 1990; Keltner, 2005; Glenn & Holt, 2013; Gunnery & Hall, 2015), and can be displayed voluntarily or involuntarily (Ekman et al., 1990).

In this context, fourteen musicians exhibited two types of smile (see Table 4.4 in the appendices) which have been classified as relating to embarrassment or affiliation.

Embarrassed smile

The classification *embarrassed smile* is derived from Ekman (1991). He noticed embarrassment in people when smiling and avoiding an interlocutor's eye-contact moving their gaze downward or sideways. Nine musicians (see Table 4.4 in the appendices) smiled or laughed without any apparent reason, seeming embarrassed and/or nervous. Four musicians laughed or smiled after listening to the instructions appearing embarrassed about having to play. Piano 2 may have laughed nervously about the presence of the camera which constituted a further tool for being judged. Guitar 2 laughed when negatively evaluating his performance in advance, appearing to poke fun at and disparage his performance confirming the low self-esteem which emerged in his verbal communication. Clarinet and Viola 1 smiled appearing embarrassed when not knowing what to play. Two musicians, Oboe and Percussion 1, nervously laughed when admitting to not knowing what to play. Piano 1 laughed when speaking about the piece she was going to perform, showing anxiety. This kind of laughter can occur 'as a release of tension or to avoid an unpleasant topic' (Yoshimoto et al., 2005: 374). Violin 3 smiled when going to pick up the violin, appearing to conceal his discomfort and showing some uncertainty for starting playing.

Affiliation smile

An affiliation smile or laughter can occur when people desire to 'maintain social concordance, while at the same time, avoiding fully collaborating in a delicate activity' (Glenn & Holt, 2013:17). According to Glenn and Holt (2013), the interview setting is one possible environment where this can occur. Participants can laugh not to create intimacy or alliance, but to display temporary affiliation with the interviewer (Lavin & Maynard, 2001: 456). Nine musicians seemed to display temporary affiliation. Guitar 3, Violin 3, and Percussion 2 smiled with the head tilted sideways looking at the interviewer, while listening to the task instructions. They tried to show friendliness expressing agreement with the interviewer, although their facial features manifested embarrassment as they did not appear to be completely relaxed. Guitar 3 smiled with the head tilted sideways when speaking about the piece of music like Piano 1. Viola 1, Recorder 2 and Flute smiled when asking permission to look at the score, or stop if they forgot the music. It seemed that they consciously adopted that nonverbal behaviour to influence the interviewer and be given permission to behave as requested. Percussion 2 also showed affiliation when procrastinating and speaking of his teacher confirming his willingness to share his experiences. Cello 2 smiled immediately before starting playing when saying 'I will try to see what will come out'. As stated above, she showed a low self-efficacy level, but when smiling tried to strengthen her affiliation with the interviewer in order to not be judged harshly.

4.6.7 Self-adaptors: self-touching and object manipulation

Self-adaptors are gestures which occur during communication when people self-touch or manipulate objects (Ekman, 2004; Harrigan, 2005). Adults show adaptors when something in the current environment arouses those habits associated with feeling learned in previous contexts (Ekman & Friesen, 1969a:

84). The sensory stimulation appears useful for relieving individuals' discomfort, such as embarrassment, and helping them to adapt to the circumstances (Harrigan et al., 1986; Ekman, 2004). Self-touching occurs when people manipulate one part of their body with another part or engage with their face through 'stroking, pressing, scratching, licking, biting, sucking' (Ekman, 2004: 43) or rubbing their face (Yoshimoto et al., 2005: 374). Object manipulation indicates those actions that people perform when 'handling an object or using an object' (Harrigan, 2005: 160) as, for example, playing with a pencil or part of their clothes. It seems that both of these movements are disconnected from speech content and are unconsciously performed when people live through emotionally stressful situations such as the research setting.

Nineteen musicians executed these movements with different frequencies (see Table 4.2 in the appendices) manifesting their level of uneasiness or embarrassment (see Table 4.5 in the appendices). Seven of them seemed to be particularly uncomfortable. The most common movement was manipulating their instrument. Fifteen musicians did this. They manipulated their instrument moving their left palm or fingers on the neck of their violin or the guitar, plucking strings, manipulating drumsticks, striking the marimba, sucking and/or manipulating the reed. Five musicians seemed to show embarrassment rubbing or stroking their hand on their thighs or on the other hand. Two of them scratched their chin or eyes, while two compressed their lips revealing another embarrassment signal (Keltner & Buswell, 1997). For example, Clarinet stroked a cheek for some seconds when thinking about the piece of music to play while looking down. It has been observed that people typically execute these movements during communication and that this phenomenon is related to their personality and emotional state in each specific context (Harrigan, 2005). Even though some musicians self-touched or manipulated objects during the whole interview, it seemed that these nineteen participants increased manipulations when reaching a critical moment in the research. For example, for some of them this occurred when they were requested to play from memory or when they revealed to not know what to play.

4.6.8 Silence

Silence is another powerful nonverbal signal which affects interpersonal communication. In the dyadic interaction, silence could constitute the signal for leaving the interlocutor to speak, represent the moment that the speaker needs to take a break for thinking, but it could conceal emotions and or express embarrassment and anxiety as well (Samovar et al., 2013).

Seventeen musicians (see Table 4.2 in the appendices) were silent at some point in the interview. However, this seemed to indicate different things. Piano 1 and Viola 1 were frequently silent. Piano 1 was silent for several seconds twice, five seconds on the first occasion and eight seconds on the second. The first silence occurred before agreeing to play and the second before announcing the name of the piece of music. When silent she looked around in space, appearing both to transmit anxiety and reflect on what to play. Maybe silence was another strategy she adopted for calming herself. Viola 1 alternated silence and speech, sometimes being silent for more than ten seconds. He was silent for four times trying to concentrate on starting playing, but without being able to. He transmitted uneasiness and anxiety when placing and lifting the bow from the string, compressing lips and adjusting his position many times, then again starting speaking. He did not know what to play and, in common with other musicians, this provoked anxiety.

Four other musicians were frequently silent, but their behaviour appeared very different. Guitar 1 alternated a few seconds of silence, two or three, with a few words which made no sense, showing difficulty in articulating speech. This behaviour transmitting anxiety was perhaps provoked because he did not know what to play. Violin 2 was silent for fifty-eight seconds when the interviewer positioned the camera to allow her to play standing. She looked at the camera smiling at it. Cello 2 was silent for fifty-six seconds while seeming to concentrate preparing for starting playing while plucking the strings, placing the bow on the string, looking at the cello, and then looking at the camera and laughing evaluating in advance her performance. Her silence did not convey calm, but anticipated her concern about her performance as she later confirmed in her evaluation. Oboe was silent twice. The first six seconds was when requesting what kind of music to play appearing embarrassed, the second six seconds when procrastinating, then alternating silence and words, not being able to delay playing any longer.

Four musicians were rarely silent. Piano 2 alternated silence and laughter just before starting playing, manifesting embarrassment signals (see above Keltner, 2005). Guitar 3 was silent for four seconds before asking permission to tune the instrument. Flute was silent for twelve seconds before warming up the flute while looking at and manipulating it. Similarly to Guitar 3, he seemed to adopt this strategy for re-stablishing contact with the flute, calming and adapting himself to the performing context. Clarinet was silent twice: for five seconds after listening to the request to play a calm and short piece of music from memory, and for three seconds when thinking of a possible piece to play. His silence signaled embarrassment and guilt.

Six musicians were silent rarely. Guitar 2 was silent for five seconds after negatively evaluating his performance in advance while looking at the interviewer and waiting for her reassurance. His silence manifested both uneasiness and a reassurance request. Three of these seven musicians seemed to need silence to re-stablish physical contact with their instrument. Violin 1 was silent for four seconds when standing before playing and exhibiting specific movements apparently without reason. He used this moment to re-establish his physical contact with the environment and silence helped him to perceive his body better. Violin 3 was silent for two seconds concentrating before playing, looking around in space and touching the neck of the violin. As for Violin 1, silence helped him to re-stablish his physical contact with the violin. It seemed that they pre-reflexively (see Chapter 2) behaved, needing that contact. Viola 2 was silent for three seconds after sitting and before tuning the viola. Holding the viola and the bow in silence helped him to re-stablish his physical relationship with his instrument, reassuring him and directing his attention towards what he was going to perform. Recorder 2 touched her instrument while silent. Her behaviour was similar to the previous three musicians. While touching her recorder, she shrugged and compressed her lips showing signs of uncertainty. Percussion 2 was silent for two seconds twice when speaking about his teacher. His silence underlined his affection towards his teacher and his strong emotional involvement in playing when he was child.

4.7 Nonverbal Self-reflection

In the previous verbal analysis, three musicians were included in the super-ordinate theme self-reflection. Their verbal information was mirrored in their nonverbal communication. In this part of the interview, they performed few movements expressing agreement with the interviewer, trying to create an alliance. In the following sections kinesic ensemble, body movement, smiling and silence are illustrated.

4.7.1 Kinesic ensemble: eye behaviour

Three musicians employed only one of the kinesic ensemble presented above: *looking at the interviewer.* Piano 3, Recorder 1, and Harp looked at the interviewer while listening to the instructions and then concentrated on starting playing. Piano 3 and Harp seemed to understand the instructions and did not show any hesitation, while Recorder 1 seemed to show anxiety when repeating the instructions, although she continued to look at the interviewer.

4.7.2 Body movement

The body movements executed by these musicians also showed that they understood the task. They manifested the intention to collaborate through nodding. As argued above, nodding indicates ‘acceptance and understanding’ (Samovar et al., 2009: 258).

4.7.3 Smiling

Recorder 1 and Harp smiled while listening to the instructions, depicting friendliness and expressing agreement with the interviewer also trying to create a positive feeling such as intimacy or alliance (Glenn & Holt, 2013).

4.7.4 Silence

Only one of these musicians, Recorder 1, was silent for four seconds when looking at the score seeming a little anxious. Being silent and focusing on the score appeared to be adopted for calming and re-stablishing contact with herself in the research context.

4.8 Summary of the chapter findings

The data from this chapter raised the issue of how professional musicians experienced state anxiety and embarrassment when they were required to play from memory in front of the camera. Although the musicians tried to reduce anxiety psychologically and re-balance their internal equilibrium manifesting the need of reassurance, their reactions suggested that some of them underestimated the stress of performing in the research setting and that they were used to playing through pre-reflective body self-awareness. This indicated that they were not used to self-reflecting on their movements which had become automatized and were not controlled ‘by explicit thought processes’ (Holgersen, 2010). The beginning of the first phenomenological reduction was the starting point of a deep introspection process. The musicians had to change the quality of their thinking through reflecting on-and-in action when playing in the research setting.

Chapter 5

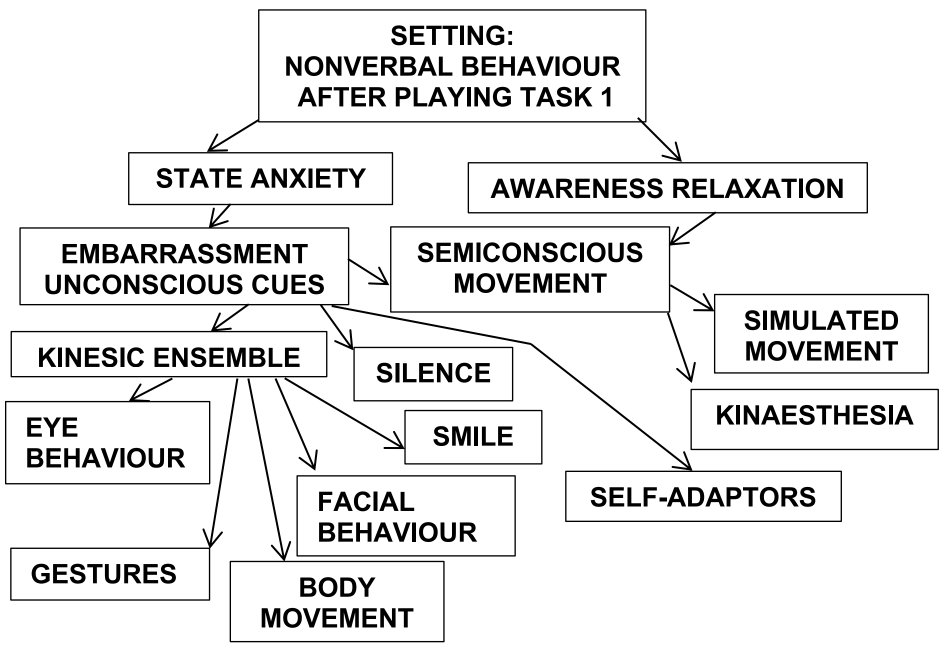
Musicians' nonverbal reactions after completing Task 1

5.1 Introduction

This chapter reports the findings related to musicians' nonverbal communication after completing Task 1. At this stage of the analysis, a decision was made to present the nonverbal analysis first as these data support the analysis of the verbal data which is presented in the next chapter. The nonverbal behaviour made a major contribution to revealing how the musicians experienced the introspection they were encouraged to engage with relating to body awareness, while continuing the same phenomenological reduction process (Vermersch, 2002) which they had started before engaging with Task 1 (see Chapter 4).

Details of musicians' nonverbal communication are presented from the point where they were required to reflect on and verbalize about their awareness of their body after completing Task 1. The themes emerging from the analysis of the more significant nonverbal signals are presented in the following Figure 5.

Figure 5. Themes of Nonverbal information after playing Task 1.



5.2 Nonverbal behaviour after completing Task 1

In this section the main nonverbal behaviour reactions after completing Task 1 are discussed. Although each musician expressed his/her own individuality through their body language (Oberhaus, 2015), similarities were observed in their nonverbal communication. Two main behaviours were identified through the two superordinate themes *State anxiety* and *Awareness of relaxation* (see Figure 5) similarly to those which emerged when the verbal data were analyzed (see Chapter 6). The superordinate theme *State anxiety* emerged from clustering themes of sets of kinesic ensembles (Samovar et al., 2009) and other nonverbal signals such as silence, smiling, and breathing. The superordinate theme *Awareness of relaxation* arose from the observation of "semiconscious" movements including *Simulated movements* and *Kinaesthesia*. In the analysis process, the same nonverbal criteria applied in the previous chapter were followed employing the same quantitative scale.

5.3 Nonverbal communication: state anxiety

After completing Task 1, nineteen musicians manifested anxiety and/or embarrassment (see Chapter 4; Harrigan & al., 1992; Grös et al., 2007) through their nonverbal communication. Eighteen of them exhibited some anxiety while two musicians changed their behaviour. One who appeared quite calm before playing became more nervous when verbalizing after playing, the other reversed her behaviour. This musician displayed a high level of embarrassment appearing disturbed by the video-camera before playing, but seemed to completely forget it when concentrating on and verbalizing about her bodily sensations.

5.3.1 Anxiety/embarrassment through unconscious cues

As already discussed, nonverbal communication is fast, spontaneous, unintentional, and performed without awareness (see Chapter 2; Samovar et al., 2009), conveying various kinds of information. Through nonverbal signals such as kinesic ensemble, silence, self-adaptors, nineteen musicians (see Table 5.1 in the appendices) expressed anxiety and/or embarrassment (Keltner & Buswell, 1997). For illustrating musicians' reactions in detail and observing some of their behavioural variations, these cues are presented for each individual and compared with the values illustrated in Chapter 4.

5.3.2 Kinesic ensemble: Eye behaviour

In this section eye behaviour is considered taking into account the relationship of the musician with the interviewer. This cue, often involuntarily performed, is fundamental in dyadic interactions for interpreting other's actions, intentionality, and emotions, which in turn influence the quality of conversation (Ekman & Friesen, 1969b; Hugot, 2007; Macrae, et al., 2002).

First, the same four classifications set out in Chapter 4 are considered. Following this, the emerging values are compared with those observed before engaging with Task 1 in order to observe possible changes in the musicians' behaviour.

Looking into space

All of the twenty-two musicians looked into space when verbalizing after completing Task 1. Sixteen of them increased that behaviour, three did not present any variation in frequency, while three decreased it (see Table 5.2 in the appendices). The reasons why people avert their gaze are related to the context and the experiences they are experiencing such as state anxiety (Fox et al., 2007). Nineteen musicians revealed anxiety or embarrassment moving their gaze and looking around in space, while thirteen of them also expressed other feelings.

Musicians looked around when they seemed unready to respond to the questions or insincere in their responses, showing dissociation between what they reported about feeling relaxed and what their body language communicated. Six of them – Piano 1, Guitar 1, Guitar 2, Guitar 3, Violin 1, Viola 2 - also increased their looking around while blinking. This cue underlined the stress and discomfort (see Chapter 4; Haak et al., 2009; Navarro, 2008; Smilek et al., 2010) that they were experiencing in the research context at that stage. Viola 2, for example, looked in space when self-justifying his admission that he had not practised the piece.

Guitar 2, Violin 1 and Viola 1 shifted their eyes, revealing anxiety. They looked down while expressing negative self-evaluations (Lewis, 2008) increasing their gaze aversion in comparison with before engaging in Task 1. Recorder 2 looked around in space and down when she was invited to answer questions about her bodily sensations. Percussion 2 seemed to look down to avoid eye contact with the interviewer. This signal might indicate deception (Navarro, 2008) or embarrassment, a typical reaction when people are requested to provide personal information (Vredeveldt & Perfect, 2014). Percussion 2 appeared shy when manifesting nostalgia for his past experiences and admitting the anxiety he was experiencing at that moment. Percussion 1 averted his gaze looking around and then down when declaring to not know the reason why he had chosen that piece and then attempting to justify that choice.

Another example of looking in space was evident in thirteen musicians who looked at some fix point. This phenomenon seemed to occur when they needed time for reflection (Frischen & al., 2007) and achieving clarity of thought (Navarro, 2008). They seemed to take time for thinking and looking for appropriate words. Violin 1 confirmed this behaviour when looking at a fixed point up at his right then saying ‘I have to think about my performance’.

Three musicians, when diverting their gaze from the interviewer, focused on a fixed point up at their left or right. Gazing at this point appeared to help them to concentrate on their body and find suitable words. Piano 1, Violin 2, and Recorder 1 also behaved kinaesthetically. Piano 1 looked in front of her before and at the beginning of her answer speaking slowly. After that, she employed kinaesthesia while describing her feelings. She slightly decreased her gaze aversion level in comparison with before playing.

Even though three musicians did not appear to present any variations in frequency of looking around, each of them behaved differently. Violin 2 appeared much more concentrated on the task than before playing. She often gazed in front of her as if this assisted her to reflect on her body. Cello 2's gaze aversion showed the same anxiety level than before playing when looking around moving her eyes very fast. She seemed to be unable to maintain eye-contact with the interviewer. Bassoon both looked around and took some time before answering appearing unprepared to verbalize about her bodily sensations. She also focused on a fixed point when starting to speak as if searching for the right words to use.

Cello 1 and Oboe decreased their looking around in comparison to before engaging with the task. Both of them communicated discomfort through their eye movements. During this stage of the interview, Cello 1 hid part of his face behind the instrument as if protecting himself. This was maybe the reason why he decreased his gaze aversion. Oboe decreased his eye shifting more than before engaging with Task 1, but continued looking around and down quickly showing uncertainness about his answer, appearing ashamed (Givens, 2002).

Looking at the interviewer

All of the musicians looked at the interviewer when they were asked the questions, showing a high level of attentiveness (see Chapter 2; Samovar et al., 2009: 262). A comparison of fifteen musicians' behaviour prior to Task 1 with that following Task 1, showed that their time looking at the interviewer increased while answering (see Table 5.2 in the appendices). This may mean that they were more concentrated on the task and were becoming accustomed to the research context, perhaps forgetting the presence of the video-camera. Four musicians did not change their frequency of looking at the interviewer from their behaviour before Task 1 such as Violin 2. She looked at the interviewer when she started answering and after reflecting while looking at some fixed point. Three musicians, Guitar 1, Clarinet, and Percussion 2 reduced the frequency of looking at the interviewer. They appeared to avoid eye-contact with the interviewer perhaps because they felt very anxious.

Looking at the camera

After completing Task 1, six musicians, two more than before playing, looked at the camera. For three of them, the video-camera constituted an external “eye” to which they were not yet able to adapt. Cello 2 looked at the camera with a similar low-level frequency as before engaging with the Task, while Oboe reduced his looking at it from very frequently to infrequently. His main concern seemed related to what to answer rather than toward the camera. Flute also quickly looked at the camera while starting answering, appearing unsure about speaking in front of it. Although he did not admit it, he appeared concerned about the permanence of the recording, giving the impression of being frustrated by his playing. Three other musicians, Viola 1, Cello1, and Percussion 2 voluntarily looked at the camera also indicating that the camera disturbed them and created anxiety.

Closing eyes

Before engaging with Task 1 only two musicians closed their eyes while speaking, while following completion of the task thirteen musicians did so. Previous research has shown that people close their eyes when they are asked to answer questions relating to difficult autobiographical information (Vredeveldt & Perfect, 2014). Closing eyes also seems to assist people in ‘slowing down’ their mental activity, contributing to enabling them to focus attention on their internal processes inasmuch as information coming from external stimuli is suppressed (Glenberg et al., 1998). Therefore, when closing their eyes, the musicians seemed to re-stablish contact with their body and took time to verbalize about their feelings, for example, Piano 1. She combined closing her eyes with silence and kinaesthesia very frequently appearing absorbed in her introspective processes. Nine musicians closed eyes when having difficulties in verbalizing. They reduced the rhythm of or stopped speaking while closing their eyes. Eight of them closed their eyes very little. Viola 1 frequently closed his eyes giving the impression of wishing to escape from the research context. When manifesting hesitation in speaking, he closed his eyes alternating silence and words such as 'yes, no, so, hum'. Three musicians closed their eyes when expressing nostalgia. Although they rarely did so they seemed to experience very intense emotions when they did as Percussion 2 showed. He remembered his emotional experience of playing during his childhood (see Chapter 6).

5.3.3 Kinesic ensemble: gestures

Gestures are considered a 'form of *embodied cognition*' inasmuch as they contribute to reveal the process of thinking (Matsumoto & Hwang, 2013: 75). Sixteen musicians increased their gesticulating when speaking, while twelve of them performed another kind of gesture, the so-called beats (McNeill, 1985; 1992, see below), in addition to the anticipatory and iconic (see McNeill, 1985; 1992; Goldin-Meadow, 2003; Calbris, 2011) previously illustrated in Chapter 4. At this stage of the interview, although the musicians' anxiety levels still tended to be high, they seemed to decrease slightly. The musicians appeared to be more involved in the Task forgetting the camera. They began to synchronize segments of speech with gestures, revealing more clearly their thinking processes. During verbal communication 'the speaker [thinks] in terms of a *combination* of imagery and linguistic categorial content' (McNeill & Duncan, 2000: 142). Speech and gestures appear 'co-expressive' manifesting the same idea, but without automatically displaying 'identical aspects of it' (McNeill & Duncan, 2000: 142-3). Gesticulating seemed to help these sixteen musicians to express their thoughts by substituting words when they appeared particularly embarrassed and uncertain about what to say. In this section, the analysis of these gestures and their frequency is set out and then compared with that observed before playing their chosen music (see Table 5.3 in the appendices).

Anticipatory gestures

After performing Task 1, eight musicians, five more than before playing Task 1, infrequently or frequently performed anticipatory gestures which seemed to contribute to the shaping of utterances (Goldin-Meadow, 2003) appearing embodied (McNeill & Duncan, 2000). It was observed that these musicians performed these gestures before starting speaking, when needing to find appropriate words for positively transmitting autobiographical information in order to preserve their self-esteem and convey a positive self-image. This phenomenon occurred when four musicians needed to self-justify their actions and another four reported something about themselves that they did not like or believed to be negative. One musician performed these gestures in both situations.

Two musicians, Guitar 1 and Recorder 1, after listening to the question seemed not to know what to answer. They gesticulated slowly repeating the same words while looking around. Viola 2 gesticulated looking around at his left before admitting that 'playing in that situation was difficult for him', while Guitar 2 gesticulated before admitting he did not know what to play. Piano 1 and Piano 3, who performed anticipatory gestures before undertaking Task 1, did not make any gesticulations. This might be explained through the fact that they seemed to be replacing the anticipatory gestures with kinaesthesia. The third musician, Flute, who frequently performed these gestures before undertaking the Task, slightly reduced them. He may have involuntarily substituted those gestures with speaking slowly and prolonging the length of words, while looking in space, taking time for formulating new sentences.

Iconic gestures

Sixteen musicians performed iconic gestures (McNeill, 2005) when self-justifying, describing something related to the piece or indicating the instrument and/or the score in order to better explain what they were referring to. Piano 2, for example, very frequently executed iconic gestures when speaking about the piece she had chosen, while Viola 2 increased the frequency of these gestures when self-justifying and self-criticizing typically saying ‘I would like to explain’. Comparing the frequency of these gestures with before undertaking Task 1, the frequency increased for nine musicians, decreased for seven, while four did not perform them at all.

Beats

McNeill (1992) defined beats as those gestures which ‘look like beating musical time. […] The hand moves along with the rhythmical pulsation of speech’ (McNeill, 1992: 15) through a short and quick movement of the hand which could move up and down or back and forth (McNeill, 1992: 15). Beats do not express semantic content, but convey the significant revealing ‘the speaker’s conception of the narrative discourse as a whole’ (McNeill, 1992:15).

At this stage of the interview, it was recorded that twelve musicians performed beats when they wanted to stress what they were saying and appear more convincing. Seven of them performed these gestures very little, three infrequently, one frequently, and another very frequently. Violin 3, for instance, performed beats when trying to avoid answering while saying ‘there, there is ok after a long day’. While performing those gestures, he meant to communicate his fatigue to the interviewer. Viola 2 very frequently executed beats appearing to emphasize what he was saying, attract the interviewer's attention, and explain important concepts such as comparing practising a Bach Suite to 'the daily body cleaning'.

5.3.4 Body movements

After undertaking Task 1, while verbalizing, all of the musicians performed body movements (see Chapter 2) which increased in frequency (see Tables 5.6 and 5.7 in the appendices) from those performed before playing Task 1 and/or introduced new types of movement (see Table 5.8 in the appendices). All of them seemed unconcerned about paying attention to their body movements, or concealing them. According to Ekman's research (1991), the musicians disregarded the fact that their body movement could communicate their feelings to others revealing their increasing embarrassment. Their embarrassment was perhaps provoked by the fact that they were unprepared for the questions posed.

As they responded, the musicians combined various kinds of body movement stressing their reaction to the research context. According to the literature on body language (see De Meijer, 1989; Givens, 2002; Harrigan, 2005; Samovar et al., 2009), leaning forward, rocking, and stepping ahead/back have been classified as collaborative and willing behaviours, while head-tilt-side, nodding, turning and shaking the head can indicate both collaborative and defensive behaviour. Movements such as leaning backwards, shrugging, head backward, Adam's-apple-jump, and trembling leg denote defensive behaviour and express a high level of discomfort (Givens, 1977; 2002).

Nine musicians showed willingness to interact with the interviewer (see Chapter 4, De Meijer, 1989) leaning forward when they began to answer manifesting agreement and/or affiliation.

Three musicians, Guitar 3, Piano 2 and Recorder 2, rocked instinctively trying to calm themselves. As illustrated in Chapter 4, this is an instinctive movement which stimulates '*accelerometers* of the inner ear', diverting attention and arousing pleasure with the effect of calming anxiety (Givens, 2002). Guitar 3, who rocked before undertaking Task 1, and Recorder 2 performed this movement when listening to the question, while Piano 2 exhibited it at the beginning of her answer with head-tilt-side and smiling.

Two musicians stepped both ahead and back while looking into space. This movement seemed to assist Violin 2 in concentrating on and perceiving her whole body from the feet to the head before declaring she was not tense. Percussion 2 exhibited that movement when listening to the question appearing to be amazed. In line with De Meijer's (1989) research, this reaction occurs when people feel surprised.

Eleven other musicians exhibited head-tilt-side seeming to manifest friendliness (Givens, 2002). However, if this cue is associated with other nonverbal signals such as shrugging, it could indicate coyness and subjection (Givens, 2002). Bassoon, for example, shrugged with head-tilt-side while verbalizing the need for taking large breaths when finding life stressful. This seemed to confirm the uneasiness which emerged from the verbal information.

Nodding was executed by fifteen musicians. This cue not only indicated 'acceptance and understanding' (Samovar et al., 2009) when listening to the question and involvement with the interlocutor (Harrigan, 2005), but seemed to reveal other feelings. Viola 2 executed it for stressing concepts which he believed relevant such as the 'concept of playing cleanly when playing Bach's Suite'. Flute nodded when self-criticizing his performance and self-justifying associating it with shrugging. Percussion 2 and Harp performed it when remembering their past positive experiences. These signals combined, in addition to expressing uncertainty (Givens, 1977) as Flute did, seemed to be performed for convincing themselves about what they were declaring rather than for communicating information to the interviewer.

The movements of turning and shaking the head can also manifest both collaborative and defensive reaction to the context. Turning the head while silent and looking into space, for six musicians seemed to be useful for reflecting on their answer and searching for the right words. Although some musicians revealed discomfort, they appeared to wish to be co-operative in continuing the Task. The movement of shaking the head, which twelve musicians performed, can manifest 'cognitive dissonance or emotional empathy' (Givens, 2002). Two musicians executed it signaling that they had finished answering while smiling and looking at the interviewer showing affiliative behaviour. Eight other musicians shook the head in various circumstances. They executed that movement before answering seeming not to know what to say, when admitting something which was anxiety provoking such as the presence of the camera, or when declaring not knowing what to play, for instance, Guitar 2. Percussion 1 also shook his head while leaning backwards and shrugging when indicating he did not know the reason why he had chosen that piece appearing very defensive (Givens, 2002).

Shrugging can be manifested when people feel uncertain (Givens, 1977: 13). Thirteen musicians exhibited shrugging. They often combined shrugging with looking around in space before starting speaking and giving the impression of not knowing what to answer. Piano 2 and Percussion 2 shrugged when admitting weaknesses such as feeling tense and excited in the presence of the camera. Guitar 2, Cello 2, and Viola 2 executed it when self-justifying, while Flute when self-criticizing.

Six musicians leant backward indicating embarrassment or anxiety. Leaning away is performed by people for self-protection and trying to withdraw from somebody or something they dislike (Navarro, 2008). Piano 1, Viola 1, and

Clarinet leant back when having difficulties in starting answering and articulating some words. Piano 2 leant back when avoiding answering and Percussion 1 when declaring to not know the reason why he had chosen that piece.

Moving the head backward, which four musicians executed, is argued to represent superiority, arrogance, or disdain (Givens, 2002). This message seemed to be transmitted by Clarinet, and Flute, when avoiding referring to their body sensations. When Percussion 2 was invited to specify more about his feelings, he performed this movement alternating it with head-tilt-side. He seemed to experience internal conflict between being defensive and co-operative. Percussion 1 seemed to recover his superiority in front of the interviewer when stating the ‘rule of playing percussion’. He appeared to use this to enhance his self-esteem which he had previously undermined.

Another unconscious signal revealing anxiety, embarrassment, and stress (Givens, 2002) executed by four musicians was the Adam’s-apple-jump. This movement is associated with swallowing and can occur when people dislike situations or disagree with the interlocutor’s perspective (Givens, 2002). Two musicians, Guitar 3 and Viola 2, exhibited it before starting speaking. They revealed that they were concerned about what to say. Both Clarinet and Oboe strongly exhibited Adam’s-apple-jump at the end of answering also looking down. Oboe performed that movement twice showing a high level of discomfort when admitting feeling uncomfortable in the sitting position and concluding answering.

Trembling leg is another important discomfort signal (Navarro, 2008). Two musicians, Cello 1 and Clarinet, displayed it when recognizing weaknesses illustrating the extent of their uneasiness. Cello 1 executed it when revealing that the presence of the camera made him nervous and Clarinet when declaring he had not paid attention to his body while playing.

5.3.5 Facial behaviour

Twenty musicians, three more than before undertaking Task 1, performed a variety of facial movements. Compared to before beginning Task 1, six musicians increased facial behaviour, seven decreased it, and nine maintained the same level (see Table 5.6 in the appendices). It maybe that these changes related to them forgetting the presence of the camera, being more concentrated on the task, or being surprised about the question. Facial expressions allowed the musicians to inceasingly externalize their emotions despite the fact that their anxiety level was still high. Facial movements such as lowering eyebrows, narrowing lips, lowering lips and hiding the face express stress and discomfort supporting the data emerging from the verbal information (see Chapter 6). Raising eyebrows and parted lips seemed to emphasize words and/or manifested attentiveness (see Table 5.7 in the appendices).

Only two musicians, Piano 3 and Violin 2, had relaxed faces. They were very focused on the Task during all their responses supporting their verbal declarations. At this stage of the interview, Viola 2 was alone in lowering his eyebrows, a movement which seemed to reveal uncertainty (Givens, 2002). He did this when avoiding answering the question.

Narrowing lips and lowering lips seems to occur when people are experiencing discomfort (Ekman, 1991; Navarro, 2008) at different levels. Narrowing lips represents a lower degree of stress while lowering lips expresses ‘an extreme amount of stress’ (Navarro, 2008:189). Six musicians, three more than before playing the Task, narrowed their lips, while three moved their lips down ‘making the mouth look like an upside-down U’ (Navarro, 2008: 188). Both of these behaviours were manifested when musicians listened to the question for the first or the second time and/or self-criticized, for example, Violin 1 and Cello 2.

Three musicians hid their faces. This behaviour seemed to be performed when they were concealing emotions (Ekman, 1991). Viola 1 hid his face with both hands when admitting the presence of the camera as if he did not want to display his facial expression which may have revealed distress. Cello 1 showed his discomfort hiding half of his face behind the cello, only showing his eyes. Percussion 2 hid part of his face with one hand at the end of answering and appeared embarrassed about what he had said.

The movement of raising eyebrows was performed by eight musicians - two more than before undertaking the Task (see Chapter 4). This movement can communicate skepticism, but it can also be displayed when paying attention, expressing surprise, and emphasizing speech (Ekman et al., 1972; Ekman, 1991; Ekman, 2004; Givens, 2002). Six musicians raised their eyebrows to emphasize words or the concept that they were setting out. Two performed this movement when looking into space before starting speaking, as if they were searching for appropriate words and concentrating on their body.

The signal of parting lips is usually performed when people feel surprised or show attentiveness and interest (Ekman et al., 1972). Six musicians executed this movement when listeninig to the question, showing both surprise and interest. Only Recorder 2 parted her lips when silent looking into space and then expressing nostalgia for her oboe.

5.3.6 Smiling

Twenty-one musicians, five more than before playing the Task, smiled during verbalizing, while only one did not smile at all. Three kinds of smiling (see Table 5.8 in the appendices) were identified: embarrassed and affiliation already classified before playing Task 1, and nervous smiling.

Embarrassed smiling occurs in situations in which people feel discomfort. It also hides negative emotions (Ekman et al., 1990; Keltner, 2005). A nervous smile seems to be quite a common reaction in situations like interviews. Indeed, in this setting, the request to reveal personal information is an anxiety provoking factor

(Glenn, 2013). The affiliation smile that musicians exhibited can often be displayed for achieving an alliance, for establishing a momentary relationship with the interviewer (Lavin & Maynard, 2001).

After completing Task 1, five musicians displayed embarrassed smiling, while three nervously laughed. These eight musicians increased smiling in comparison with their behaviour before undertaking the Task. They manifested embarrassed smiling when listening to the question, self-justifying, admitting their discomfort with regard to playing in front of the camera, finishing playing while looking at the interviewer, and concluding answering. Cello 1, for instance, smiled at the end of playing seeming to expect negative comments from the interviewer. Oboe and Guitar 2 laughed immediately after playing revealing their inner experience of nervousness. According to Glenn (2013), this behaviour is involuntarily performed and inappropriate for the situation. The reason for this kind of laughing is due to the need to release an excess of energy (Glenn, 2013: 255). Guitar 2's nervous laughter corresponded to his declaration of nervousness caused by the fact that he did not know what to play. Violin 1 also showed strong discomfort laughing when self-criticizing his performance. Piano 2 constantly smiled seeming to express embarrassment during answering and conceal her discomfort (Ekman, 1991).

Three musicians, Piano 3, Recorder 2, and Harp, showed affiliation when smiling. Piano 3's reaction appeared collaborative. She increased in her smiling in comparison with prior to undertaking the Task, smiling when listening to the question and signaling she had terminated answering. Recorder 2 and Harp smiled when expressing nostalgia: Recorder 2 when declaring that she missed her oboe, Harp when remembering her past experiences related to the piece she had performed. These two musicians seemed to smile to involve the interviewer in their own experiences creating an alliance with her.

Three musicians, Recorder 1, Flute, and Percussion 1, increased their smiling performing both embarrassed and affiliation smiling. Recorder 1 displayed embarrassed smiling when declaring that she was not relaxed, and performed affiliation smiling when reflecting on her body. Flute manifested embarrassed smiling when starting to speak about the piece of music, remembering his past experience, and when he was again asked to reflect on his bodily feelings. In contrast, he showed affiliation smiling with head-tilt-side when self-justifying his performance suggesting the need for a positive comment from the interviewer. Percussion 1 expressed embarrassed smiling when speaking about his breathing, and showed affiliation when explaining the ‘rule of playing percussion’. Percussion 1 demonstrated being unwilling to speak about his body feelings and demonstrating embarrassment. He also showed affiliation smiling when manifesting his rational and intellectual traits diverting attention from his inner experiences or the introspection process.

Four musicians, Piano 1, Violin 2, Viola 1, and Percussion 2, executed embarrassed and affiliation smiling, which decreased in their frequency when compared to their frequency prior to engaging with Task 1. This was perhaps due to the fact that they were more concentrated on the Task and more involved in the introspection process, for instance, Violin 2 considerably reduced laughing behaviour. Three musicians, Guitar 3, Violin 3 and Cello 2 did not change their frequency of embarrassed and affiliation smiling. Guitar 3 and Violin 3 both showed embarrassed smiling when listening to the question, while affiliation was displayed by Guitar 3 when starting answering, and by Violin 3 when speaking about his tiredness.

5.3.7 Silence

Twenty musicians, three more than before undertaking Task 1, were silent before and during answering questions (see Table 5.9 in the appendices). Silence can convey various meanings which may relate to the context, for instance, an interview setting. Some research carried out about the interview setting where dyadic interactions often occur indicated a 'latency of response' (Knapp et al., 2014: 354) of one/two seconds, in which interviewees are silent before starting to answer. This period could be interpreted as expressing the desire to avoid answering, concealing emotions (Knapp et al., 2014) or reflecting. Through reflection, the interviewee becomes 'aware of aspects of his experience which until then were pre-thought' (Petitmengin-Peugeot, 2002: 47) or unnoticed' (Bitbol & Petitmengin, 2017: 733).

Six musicians were silent before starting to answer appearing to reflect on their body and searching for suitable words. Four of them were silent for two seconds (Knapp et al., 2014), while one took three and another four seconds. Fourteen musicians were silent showing embarrassment probably because they were not expecting the question and were unprepared to answer it. All of them needed between two and five seconds before starting answering. Guitar 2, for example tried to conceal his embarrassment taking five seconds before starting to answer, while looking around in space avoiding the interviewer's gaze. During answering, seven of these musicians were silent before admitting uncertainty, such as Viola 1, Viola 2, and Clarinet. Viola 1 took three-four seconds each time he referred to tensions during playing. Viola 2 was silent three times, three seconds each, when self-justifying and self-criticizing. Clarinet took three seconds before declaring that he ignored his body while playing. After indicating weaknesses twice, Percussion 1 was silent for two and four seconds each. The second time, he seemed to use silence for thinking of a strategy for taking control of the conversation and avoiding any introspection.

Three musicians, Recorder 2, Percussion 2, and Harp, were silent for between one and three seconds before revealing their nostalgia; Recorder 2 before mentioning her oboe, Percussion 2 and Harp when referring to their pleasant past experiences. Although these three musicians hesitated before answering, they appeared willing to collaborate in revealing their feelings.

5.3.8 Self-adaptors: self-touching and object manipulation

During communication other kinds of gestures, called self-adaptors, are often performed. This occurs when people self-touch and/or manipulate objects for alleviating their discomfort, such as uneasiness, trying to adapt to the circumstances (see Harrigan et al., 1986; Ekman, 2004; Harrigan, 2005). At this stage of the interview, nineteen musicians adopted self-adaptors (see Chapter 4) with different frequencies when verbalizing. Comparing self-adaptor cues to before undertaking Task 1, eight musicians increased the frequency of these, ten decreased, and four did not show any difference (see Table 5.10 in the appendices). Increasing the use of self-adaptors seemed connected to an increase in uneasiness. This may have been provoked by the fact that these musicians were unprepared to respond to the question. The ten participants who reduced the frequency of the use of self-adaptors seemed to be more involved in the task and focused on their body. Four musicians maintained the same self-adaptor frequency as before playing without showing any change in their feelings. Harp, for example, did not perform these movements at all appearing at ease, while Flute executed them very frequently transmitting anxiety.

Similarly to before playing, the most common executed self-adaptor was instrument manipulation. This was displayed by fourteen musicians. All the guitarists, for example, moved one palm or fingers on the guitar neck. Violin 3 and Viola 2 often handled the bow. Cello 1 rotated the instrument. Both Recorder players and Oboe manipulated the keys of their instrument, and Percussion 1 the drumsticks. Oboe and Flute, who manifested a high level of anxiety, also manipulated other objects such as glasses and trousers.

Eleven musicians performed self-manipulations such as rubbing, stroking, and scratching. Those musicians, such as Viola 2, Flute, and Clarinet, who appeared particularly tense, executed various self-manipulators very frequently. For self-reassurance and self-consoling (Givens, 2016), Viola 2 rubbed his fingers on his palm when declaring that he was trying to be relaxed during playing, while he licked his lips numerous times when self-justifying. This cue seems to be executed when people feel uneasiness and need to calm themselves (Navarro, 2008). For self-reassurance (Givens, 2016), Viola 1 also exhibited two movements such as touching his lips and rubbing both thighs when listening to the question and admitting he felt tense. Clarinet showed his discomfort by stroking his cheek and all of his face at various times when listening to the question and admitting he did not pay attention to his body during playing. He also touched his throat and neck before starting answering and when referring to some past experience or past emotion linked to the piece. This cue seems to be a manifestation of discomfort or concealing emotions (Navarro, 2008; Cuddy, 2012). Through throat touching, Clarinet seemed to self-reassure and control his voice and emotions.

Piano 1 and Flute hid their hands between their thighs, indicating that they were not at ease or concealing their emotions (Ekman, 1991; Navarro, 2008). Moreover, Flute and Clarinet seemed to express defensiveness (Navarro, 2008; Givens, 2016) when crossing their arms. Flute crossed his arms when self-justifying his performance and at the end of answering appearing dissatisfied, as did Clarinet when starting to speak about the piece.

5.4 Awareness of relaxation

The superordinate theme *Awareness of relaxation* arose from the observation of “semiconscious” movements (see below) that four musicians performed while verbalizing and appearing embedded in their body-mind relationship. However, another seven musicians, displaying semiconscious movements with different frequency levels, performed them as if they began to self-reflect.

5.4.1 Semiconscious movements

When verbalizing about their bodily sensations, eleven musicians executed *semiconscious movements* that were subdivided into *kinaesthetic* and *simulated movements* (see Table 5.1 in the appendices). Four musicians performed both of these, while eight performed only kinaesthetic movements and seven simulated playing. The semiconscious definition arose because musicians seemed to execute these movements unintentionally or pre-reflexively (see Chapter 2; Zahavi, 1998). These movements seemed to assist the musicians in reflecting on their body leading them to become aware of their bodily sensations.

Kinaesthetic movements

Kinaesthesia consists of receiving sensorial feedback from the body while moving and is mainly related to the sense of touching (Sheets-Johnstone, 2011). These movements occur spontaneously and constitute the basis for generating ‘first consciousness’ (see Chapter 2; Sheets-Johnstone, 2011), playing a substantial role (Husserl, 1989) in developing the concept of body-self.

While speaking, eight musicians performed kinesthesia with different frequency. They moved their hands along or touched specific parts of their body (see Table 5.1 in the appendices), seeming to explore its shape. Piano 3 was the only musician who performed kinaesthesia very frequently appearing very aware of her body. In analyzing her response her words could not be separated from her kinaesthetic movements. These seemed to allow her to concentrate on the Task and manifest her body self-awareness. She appeared to be at ease. Violin 2 frequently performed kinaesthesia. This appeared to help her in focusing on the Task and perceiving and describing her bodily sensations. Piano 1 and Recorder

1 infrequently executed kinaesthetic movements. While also being silent and gazing into space, Piano 1 slowly moved her hands along her arms or touched her chest, then verbalized her thoughts. Touching seemed to promote her awareness of her muscular tensions and anxieties. She mainly expressed these executing kinaesthesia rather than through words. Recorder 1 also seemed to recognise her tensions when touching the diaphragm area.

Four musicians undertook kinaesthetic movements infrequently. They performed these movements when speaking about their tensions such as Guitar 3 who shook her right wrist while verbalizing her feelings of relaxation.

Simulated movements

This theme classifies the movements that seven musicians, with different frequency, performed simulating playing. Six musicians pre-reflexively (Zahavi, 1998) seemed to need to execute these movements for reflecting on their body and formalizing their thoughts. Only Percussion 1 voluntarily seemed to frequently simulate them when explaining the 'rule of playing percussion'. Similarly to his verbal response (see Chapter 6), his simulation did not appear spontaneous but intellectual, aiming to show his expertise and not his feelings. When simulating, Violin 2 seemed to introspectively observe the movement she needed during playing. Five musicians seemed to rarely simulate playing movements even though this act was significant for shaping their thinking. Viola 2, for instance, first simulated playing with the left hand and then with both hands, when declaring that playing was hard for him in the current circumstances. Simulation seemed to help him in perceiving his body discomfort and allowing him to verbalize it.

5.5 Summary of the chapter nonverbal findings

The analysis of the nonverbal communication after completing Task 1 showed a high level of discomfort and embarrassment (Givens, 2002; Navarro, 2008) when the musicians were being asked to reflect on their body. However, the musicians who performed particular movements defined as *Semiconscious,* which included kinesthesia and the simulation of playing, began changing the quality of their attention about their body by intentionally directing the attention on itself. Although the musicians seemed to spontaneously perform these movements, while apparently being unaware of them, their verbalization seemed to be affected by the movement, which engendering kinaesthetic feedback, and constituted the link with musicians' emotional experiences (Sheets-Johnstone, 1999a).

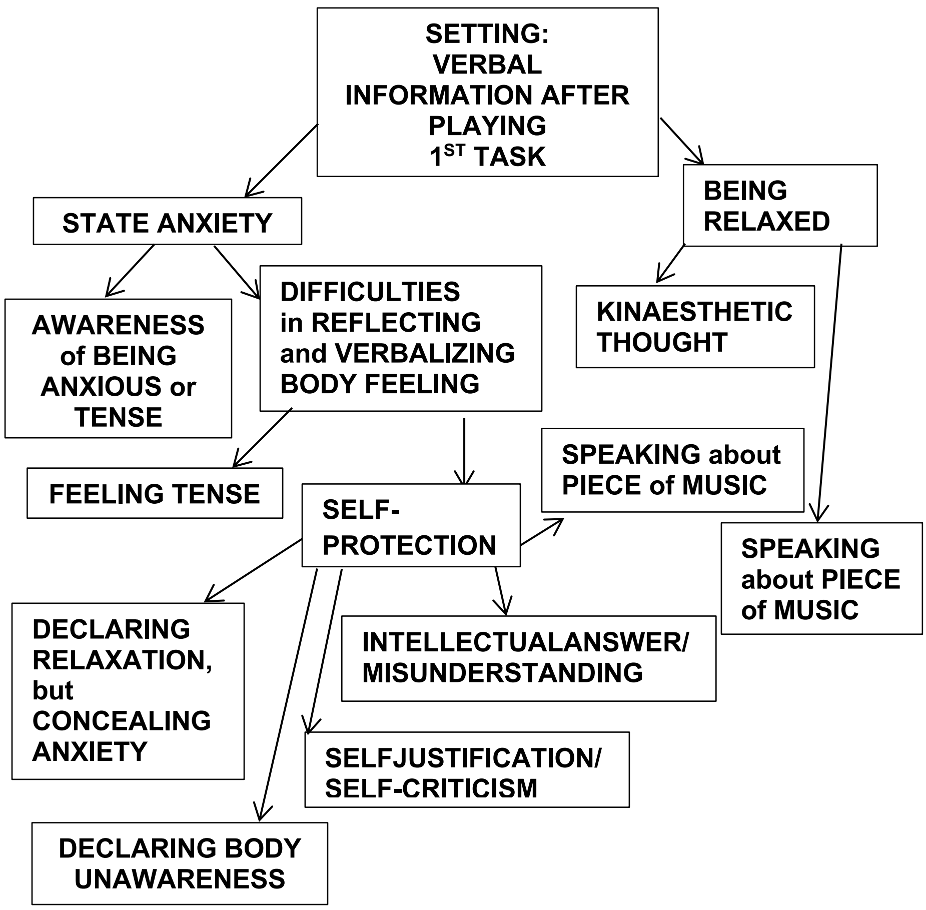
Chapter 6

Musicians' verbal information after completing Task 1

6.1 Introduction

This chapter presents the findings of musicians' verbalizations about their body self-awareness. The musicians began to reflect continuing the same phenomenological reduction process (Vermersch, 2002) which they had started before commencing Task 1 (see Chapter 4). Details of musicians' verbal communications are presented. The musicians were required to reflect on and verbalize regarding their awareness of their body after completing Task 1. The themes which emerged from the analysis of the verbal information are presented in Figure 6.

Figure 6. Themes emerging from the interviews after completing Task 1



6.2 Verbal information after playing

Two superordinate themes *State anxiety* (see Chapter 4; Harrigan et al., 1992; Grös et al., 2007) and *Being relaxed* were identified. The first superordinate theme emerged from the interviews with nineteen musicians who were aware that they felt anxious and tense, while the second emerged from three participants who reported being relaxed.

6.3 State anxiety

As in the previous chapter, the first emergent superordinate theme (see Figure 6) was *State anxiety.* It consisted of a number of subordinate themes (see Table 6.1 in the appendices) which arose from analyzing and comparing the nineteen musicians' responses. Being videoed when verbalizing their feelings constituted a stressful experience for most of the musicians. This state persisted or increased when the musicians were requested to reflect and verbalize about their perceptions of their body after playing. This was an unusual task for the musicians and they seemed to go through a 'pre-reflective self-awareness' (see Chapter 2; Zahavi, 1998) in which an explicit process of thought (Holgersen, 2010) related to their movements was not developed. In other words, when playing, their body was not an intentional object of their lived experience (Colombetti, 2014). The musicians appeared "to be not aware of being aware" (Gallagher & Zahavi, 2008) of those movements or parts of their body involved in playing. To develop awareness, the musicians were required to 'slow down' (see Chapter 3; Petitmengin-Peugeot, 2002) their mental activity. This was difficult to execute when they were not used to doing it. A further issue emerged when the musicians recognized their tensions. They had to admit to something which may have been perceived as a weakness in front of two witnesses: the interviewer and the video-camera. The subordinate themes *Awareness of being anxious or* *tense* and *Difficulties on reflecting and verbalizing body feelings* are discussed in turn considering the introspective process experienced by the nineteen musicians reporting anxiety.

6.3.1 Awareness of being anxious or tense

Only three musicians (see Table 6.1 in the appendices) admitted to feeling anxious or tense when asked to describe their feelings after playing. Although they appeared to be co-operating with the researcher and were able to reflect on and speak about their tensions when playing, they initially showed some difficulties in verbalizing. They needed to find a way of formalizing their thoughts. Before they admitted feeling tense, they took time, tried to change the content of their speech, or showed a need for reassurance. However, there was one common behaviour: while speaking, all of them performed kinesthetic movements which appeared essential for discovering their tensions. According to Merleau-Ponty (1945/2002), the body is involved in a cognitive process when 'it tries to touch itself while being touched' (Merleau-Ponty, 1945/2002: 107). In this process, 'a kind of reflection' begins (Merleau-Ponty, 1945/2002: 107). Multisensorial feedback in a circular and dynamic system (Varela et al., 1993), so called kinaesthesia, is activated. Humans do not receive feedback 'only by *looking* and *seeing* what [they] are moving, [but also] 'by attending to [their] bodily feelings of movement, which include a bodily felt sense of the direction of [their] movement, its speed, its range, its tension, and so on' (Sheets-Johnstone, 2011: 49).

Piano 1 and Recorder 1, seemed to perform their movements spontaneously. Kineasthesia seemed to constitute the link with their emotional experiences (Sheets-Johnstone, 1999a) and the basis for 'first consciousness' (Sheets-Johnstone, 2011). Piano 1 initially appeared to be surprised and disoriented taking time after listening to the question to understand it better and reflect on her body feelings. In the following extracts her response is set out with the movements reported in italics.

> **Interviewer:** Could you describe what you feel now?
> **Piano 1:** [*silent for some seconds, raising eyebrows, looking around in space and at the interviewer*]
> **Interviewer:**if you feel something
> **Piano 1:** [*looking at her right, then blinking, whispering, then closing eyes*] What I feel…
> **Interviewer:** [*softly speaking*] for example about your breath, about some sensations of arms, other parts of your body, if you feel relaxed, or tense, if you have some visual images... whatever
> **Piano 1:** [*whispering, and nodding*] ye… Heart beating… ehem ye and a bit of ehm [*with closed eyes*]…ye I feel the... [*looking at and stroking slowly first the left and then the right arm*] my arm here [*again stroking the left arm*] ye I feel this region [*touching her chest*] and this region [*again touching the left arm and then the right*].

She seemed to need to create physical contact with her body in order to reflect on it. This phenomenon occurred through two different moments. The first was when she closed her eyes, which enabled her to slowly begin the introspection process. The second occurred when she touched her arms and chest enabling multi-sensory feedback, kinaesthesia. For her, these movements seemed fundamental for discovering muscular tensions and recognizing underlying anxiety.

Recorder 1 also seemed to perceive tensions in specific parts of her body when facilitating kinaesthesia through touch. Her movements appeared to help her to formalize her thoughts. However, before recognizing this, she first took time self-justifying (see below) and then declaring that she did not feel relaxed. She manifested embarrassment while manipulating her instrument, and seemed unable to describe her feelings in detail. This object manipulation seemed to have two functions: relieving her discomfort in adapting to the circumstances (Harrigan et al., 1986), and enabling her to realize that she had not paid enough attention to her body while playing. For this reason, she independently decided to play the piece once more. She then verbalized as follows:

> **Recorder 1**: At this moment I am not relaxed with the playing [*holding the recorder in one hand*] because there’s a big gap with the practice [*holding the*

recorder with both hands]… ehem [*whispering*] what I would like to say? I think [*putting fingers on the recorder like starting to play again*] I concentrated on the sound [*starting playing again the piece, leaving the finger on the recorder keys*]…
Yea if you think asking me what I am concentrated on …. I think the melody line, the sound…the the effect … the effect what happens with this articulation? …

Similarly to Piano 1, she closed her eyes enabling her to enter into contact with her body and begin to introspect. This process deepened when she performed kinaesthetic movement touching her diaphragm and both shoulders. This seemed to allow her to recognize her tensions and understand why she was not satisfied with her sound:

Interviewer: But after playing, [*slowly closing eyes*] how is your body, how do you feel in your muscles, your breathing?
Recorder 1: Well it doesn't go as it should go [*laughing and touching her diaphragm*] oh I feel like [*touching diaphragm*] I should use [*always touching diaphragm*] more breath support or I have got [*touching both shoulders with the right hand*] tension in the shoulders, that is.

Guitar 3 initially took some time thinking about her speech content before focusing on her body. When she was again invited to reflect on her body, she executed movements to stimulate kinaesthesia while verbalizing:

Guitar 3: I feel like I came back from a journey… I have just come back here.
Interviewer: Yes, but what kind of physical sensations do you perceive? For example, related to your breathing, your muscular tensions, [*while she was moving the right fingers on the palm*] whatever related to your body perception.
Guitar 3: So…ehem my body tends… I felt and I am feeling some stiffness [*while moving the right fingers on the palm*] some of them instinctively kick off so I tried [*moving the right wrist and hand completely relaxed*]… to relax them … I tried to control the hand movement [*moving right hand completely relaxed*], when I play I imagine where the hand is going… both hands… I see them… I see the fingerboard, I see the gestures…I think of the sound, I remember its color and I sing… while I am playing, yes all these things.

Through moving the right hand while listening to the interviewer's suggestion, Guitar 3 created sensory-motor contact with her body receiving kinaesthetic feedback in two stages. The first occurred when nervously moving the right fingers on the right palm: she kinaesthetically re-lived the tension she felt in the hand from which she received sensory-motor feedback enabling her to verbalize her sensations. The second stage occurred when she communicated how she had attempted to relax the physical tensions. She changed the tense movement of the right hand to a relaxed one while describing what she imagined during playing. Through this kinaesthetic feedback, she seemed to connect body and mind. Similarly to the two previous musicians, she spontaneously performed these movements seemingly being unaware of them. This phenomenon seemed to occur because 'the neuromuscular tensions contribute to perceived emotions inasmuch as they are parts of human beings' mental activity (Jacobson, 1970).

6.3.2 Difficulties in reflecting and verbalizing body feelings

Sixteen musicians had some difficulties in reflecting and verbalizing their body feelings. Five of them admitted feeling anxious, not relaxed, appeared embarrassed, and avoided answering or changed the content of speech. The responses of these musicians were included in the theme *Feeling tense*. Among these musicians, some adopted behaviours which were classified in the subtheme *Self-protection.* This brought together the following themes: *Declaring being relaxed but concealing anxiety, Declaring being unaware, Self-justification and/or Self-criticism, Intellectual response and/or misunderstanding the question* and *Liking for the piece of music.*

Feeling tense

This theme includes the responses of five musicians who reported that they were feeling tense (see Table 6.1 in the appendices). Although they reported feeling anxious and not being relaxed, they appeared embarrassed and were unable to describe their feelings in depth and avoided answering or changed or diverted the conversation. Their reaction could be explained by their 'bodily feelings remaining in the *background*' as Colombetti (2011) points out:

> '[…] the body does not "stand out" and is not apparent, but it is still nevertheless felt, in the sense that it contributes to giving the emotion experience its specific quality, it contributes to the specific way the experience feels. [… The] attention is focused on

particular objects rather than [the] body, and yet the whole experience has a quality of urgency characterized by a sense of tightness and confinement' (Colombetti, 2011: 297).

In other words, this phenomenon occurs when 'feelings are connected with emotions' (Damasio, 1994: 149) and attention is directed toward body signals. These musicians seemed to be paying attention to the external context, such as thinking about the video-camera, rather than focusing on their bodily sensations. They felt uncomfortable and were able to proprioceptively recognize their body tension. For example, when starting to answer, Guitar 2 admitted being very nervous also revealing this through his nonverbal language:

Guitar 2: I am very nervous becauseeee …. I did not know what to playyyy.

He seemed to underestimate the impact of the research setting on his playing prior to actually playing. When becoming aware his anxiety increased. This precluded him from reflecting on his bodily sensations.

Three musicians, Viola 1, Cello 1, and Percussion 2, reported being tense about the presence of the camera. Viola 1 and Percussion 2 appeared distracted when questioned. Viola 1 appeared 'lost', and instead of answering about his bodily sensations, he asked:

Viola 1: May I leave the viola? [*Without waiting for the answer, leaving the viola, then sitting*] I am lost.

The interviewer recognized his uneasiness and tried to reassure him speaking slowly and gently.

Interviewer: Ok. What kind of feeling did you have playing this music? … For example, how was your breathing? Was your body relaxed or tense?

This seemed to help him to recover his composure although he was not able to articulate a complete sentence.

Viola 1: Tense… Tense, but it's normal that I am like that [*closing eyes*]…because ….ehem why….ehem

Only towards the end of his response, when closing his eyes he did seem to realize the cause of his tension: the presence of the video-camera. The act of closing his eyes seemed to facilitate contact between body and mind, bringing him back to reality.

> **Viola 1**: Then, you know [*closing eyes*)]… the psychological question that there is the video-camera [*concealing the face with both hands*], a thing which remains fixed there [*concealing the face again*].

Viola 1 seemed to wish to disappear when concealing his face, though he did not say this. He realized that his "performance" would remain on the video tape and was not satisfied with his performance.

Cello 1 also reported that the presence of the video-camera provoked anxiety in him. This was also conveyed by his nonverbal language. During answering, he almost always kept his face hidden behind the cello only showing his eyes while saying:

> **Cello 1:** but the video-camera… gets you nervous.

His anxiety was increased when musicians started playing in the next room and could be heard. He reported that the musician playing next door in a different key was off putting.

> **Interviewer:** Also the sound in the other room gets you nervous.
> **Cello 1:** [*concealing half face behind the cello*] Specially in another tonality … I was playing with one sharp, he is playing with four sharps, so…

Percussion 2 also felt tense at being video recorded. His nonverbal behaviour illustrated his discomfort. The dialogue below illustrates his embarrassment and concern about the presence of the camera.

> **Interviewer**: Please could you describe how you feel now?
> **Percussion 2**: eheem… [*scratching the head, looking in front of him*] sooo…
> **Interviewer**: Are you distracted?
> **Percussion 2**: Eh?... Distracted?... No I am not distracted… beh …I played in front of [*indicating and looking at it*] the camera, during an interview…

His behaviour indicated that he was not at ease.

Oboe similarly seemed to not be able to verbalize his feelings. After initially listening to the question, he appeared to be still absorbed in remembering the music he had just played. When the interviewer again asked if he felt tense, he seemed apologetic about recognizing it:

Oboe: Maybe yes, a little bit, yes… yes, yes.

6.3.3 Self-protection strategies

This subtheme emerged from the responses of nine musicians. Even though some of them stated that they were relaxed, they seemed to misunderstand the question, eluded answering, and changed the topic of conversation. This behaviour may have been generated by a self-protection strategy (Sedikides, 2012) to maintain their internal emotional equilibrium (see Chapter 2; *autopoiesis*) and preserve self-esteem. They tried to avoid being involved in any introspective process which might impact on their emotions and make them face any weaknesses. To deal with this they tried to hide their emotions.

Declaring relaxation but concealing anxiety

Five musicians indicated that they were relaxed but seemed to be concealing their anxiety. They appeared to avoid reflecting on their bodily sensations, trying to please the interviewer when declaring that they felt relaxed, concealing their real emotional state. Concealing information 'is usually easier than falsifying' (Ekman, 1991: 29), inasmuch as the speaker does not declare anything false, preserving his/her reassuring thoughts without subjecting them to any confrontation (Ekman, 1991).

Two musicians avoided answering about their feelings and implementing the phenomenological method which would have helped them to focus on 'how' they were experiencing the task (Bockelman et al., 2013: 2). Piano 2 seemed to have misunderstood the question avoiding answering as the following extract reports:

> **Interviewer:** Please could you describe how you feel now?
> **Piano 2:** I love this piece [*smiling, closing her eyes*]. So every time [*looking in space, smiling*] I listen to … this piece or I play this I [*bringing both hands on the heart*] feel… incredibly nice.

She diverted the conversation referring to an ideal 'nice' performance. As Ekman (1991) points out, misleading is another way of concealing thoughts or emotion. Piano 2 also attempted to communicate positive feelings to hide her discomfort. When the interviewer again invited her to focus on her bodily sensations she reacted as follows:

> **Interviewer:** Yes, but what about your breath [*while she slowly laterally rocked, smiled and looked in space*].
> **Piano 2:** [*closing her eyes, simulating the heart beating on the chest*] oh-oh I have usually when…even-even it's not you know hum …if I play… Ca-lm you know, but usually when you finish the piece [*always smiling, simulating the heart beating of the chest*] I feel you know my heart [*always simulating the heart beating, smiling*] here beating.

She again answered saying that the piece made her feel "calm" every time she played it and that she was usually excited at the end of playing. However, her facial expressions and the fragmented nature of her responses indicated uneasiness. When the interviewer again encouraged her to focus on her physical sensations, she was put under pressure and responded:

> **Piano 2:** Relaxed [*smiling*]
> **Interviewer:** Did you have same mental image while playing this piece?
> **Piano 2:** Ok different things [*smiling*] every time … now for example to be honest I think, I imagined [*laughing*] nothing.

Her nonverbal behaviour suggested that she was anxious. First, she stated that the piece generated 'different things' in her mind, then she 'imagined nothing'. She also ignored the interviewer's suggestions guiding her into the introspective process which might have disturbed her emotional equilibrium.

Bassoon also concealed her uneasiness, initially saying confidently that she felt relaxed but then hesitating immediately after saying:

> **Bassoon:** I feel relaxed, because ahm… it's a slow piece and then if I need a big breath and I find for example if I find stress in life and I take a big breath I need to be relaxed and that's how I feel when I play the bassoon normally. I feel a big breath in this huge tube in there.

One could infer from this that the interview setting was stress provoking although she did not report this. She referred to “normal playing”, which hid the need for taking a big breath for relaxing at that moment.

Guitar 1 and Violin 1 seemed to be unused to reflecting on their bodily feelings. Guitar 1, before declaring himself as feeling calm, manifested signals of embarrassment such as laughing, self-touching, and looking around without properly articulating:

> **Guitar 1**:eh...hup ye... ehm I think the consciousness can't be really I have to say… just…Yea but I...yea, yea hem

Then, the interviewer, gently and slowly speaking, encouraged him to verbalize:

> **Interviewer**: if you imagined something
> **Guitar 1**: just just feeling good really… yea I'm feeling calm yea.

Despite saying ‘I’m feeling calm’, he gave the impression to be very tense as if he was answering to please the interviewer and quickly terminating the conversation. He also seemed to realize that he was unable to reflect on his bodily sensations when playing. The research setting may have contributed to his discomfort.

Violin 1 appeared very surprised when he was asked to describe his bodily sensations:

> **Interviewer**: can you describe how you feel? ... If you have some tensions or you are relaxed
> **Violin 1**: right now?
> **Interviewer**: yes.
> **Violin 1**: I’m… quite relaxed I think … So… I don't have any tension to … of course….

‘Being relaxed’ seemed obvious to him like presuming that there are no tensions when playing and that reflecting on bodily sensations was unnecessary.

Flute expressed contradictory feelings. After listening to the question the first time, his body language expressed discomfort. He also tried to divert the conversation to talking about the piece of music. Therefore, the interviewer asked him to link the content of what he was speaking about with his feelings. His reaction was as follows:

> **Interviewer**: What kind of sensation does this piece give you?
> **Flute**: Ehummm [*nervously looking around in space, stroking his beard*] … peace ehuummm
> **Interviewer**: Even though you played in front the camera and a person you did not know?
> **Flute**: Yes, gosh! [*Nervously looking around in space, stroking his beard*] …[…]
> **Interviewer**: and do you feel relaxed?
> **Flute**: No now… to be honest I was thinking of all technical matters… yes so if I had more time then… I could be able to play for you…
> **Interviewer**: that's fine, but are you relaxed? Do you perceive some tensions somewhere in your body?
> **Flute**: nonono. No!

The responses made by Flute indicated confusion. His nonverbal behaviour indicated that he was anxious, but his verbal responses denied this. His focus on technical issues suggested that he did not wish to be involved in the introspective process.

Declaring unawareness

Another strategy for self-protection was adopted by Violin 3 and Clarinet. They reported that they had not paid any attention to their body while playing. The act of reflecting on the body seemed to be unimportant for them, even though they showed anxiety or embarrassment when they were requested to reflect on it. They seemed to have difficulties in 'slowing down' (Petitmengin-Peugeot, 2002) their mental activity. This did not allow them to undertake an introspective process. When Violin 3 was required to verbalize on his bodily sensations he said:

> **Violin 3:** Calm, yea and elegant. I tried to… feel elegant […] there, there is ok after a long day and the first… I realized I was thinking in this moment… because I died I don't know.

He initially avoided answering through directing attention to the way he played rather than focusing on his bodily sensations, and then indicated that he was physically too tired to reflect on that. He had been travelling all day and may have used this to preclude being asked any more questions, although his nonverbal signals revealed embarrassment.

After listening to the question, Clarinet was silent for some seconds seeming to not expect that kind of question. Then, when starting to answer, his way of speaking was uncertain and fragmented and he avoided answering the question:

> **Interviewer:** please could you describe how you feel now?... if you are relaxed or tense…
> **Clarinet:** but this piece is also also utilized… also in movies… eheem this piece hum for meeeetz expresses a great nostalgia but but… of something that that it was experienced, it is always a sunset…fo-or me.

The answer was tentative and he avoided answering the question. When the interviewer directed his attention back to his bodily sensations he stuttered after being silent for some seconds:

> **Clarinet**: physical-lyyyyeheeem I did not-not-not notice.

This response appeared sincere and indicated that he was not used to thinking about his bodily sensations. The questions seemed to increase his anxiety level disturbing his emotional equilibrium which he tried to re-establish by changing the topic of conversation.

Self-justification and Self-criticism

People can experience various kinds of discomfort related to the situation they are in. When this occurs they attempt to re-establish their internal equilibrium (see Capter 2; *autopoiesis*,) adapting to that context, adopting a range of strategies. At this stage of the interview, eleven musicians appeared to self-justify and/or self-criticize. Self-justification occurs when individuals feel discomfort related to a performed action which is dissonant with their beliefs and they need to repair their self-concept (Aronson et al., 2007). This strategy was adopted by six musicians. Guitar 2 self-justified:

> **Guitar 2**: But not, noooot. Really… I am a person who manages heeem the movement very well…

He demonstrated how he tried to overcome difficulties and endeavored to reflect on his body feeling:

> **Guitar 2:** My breath did not change o-o-or almost eheeem… I tried I tried even when I have some difficulties… they have to be overcome.

He tried to hide his discomfort, but revealed what for him was a weakness. Becoming aware of this he avoided reflecting on his body, although he ‘tried’. He diverted his attention which he may have believed would calm him and create affiliation with the interviewer, when pronouncing:

> **Guitar 2**: but the pleasure of playing is so great.

This statement seemed unconnected with what had gone before and the nonverbal signals he communicated.

Viola 1 self-justified and self-criticized his anxiety attributing it to his usual bad breathing habits when playing:

> **Viola 1:** I was not not [*closing eyes*] able to be relaxed when I start playing something in my life. I was not not… Relaxation or better… More than relaxation, winning the initial fear, because what is coming out from this instrument now, what I am doing…then when I am seeing it’s working then… slowly slowly I come in…I come in the things… ehm… I relax myself, I enter in the breath that for me it’s fundamental. So I did not breathe [*deeply breathing*]. Or better, at one point I cannot breathe, I was waiting for… then I wait the moment of musical breath for breathing in, but but this becomes regular during the performance otherwise I am going to die. Playing a whole concert in that way, I die…ehm so yes, no, there is always some tension absolutely absolutely yes.

Cello 1 revealed that he was disturbed by the playing in the other room which was in a different key:

> **Cello 1**: [*concealing half face behind the cello*] especially in another tonality … I was playing with one sharp, he is playing with four sharps, so…

The musician attributed his discomfort to musicians playing in another room which was in ‘another tonality’. However, it may not have been the tonality which concerned him but the presence of other musicians (see above) who might be able to hear him playing and speaking in the interview.

After playing, Percussion 1 was not requested to reflect on his body feelings, but to explain the reason why he had chosen to perform that piece of music. As presented in the previous chapter, this musician showed defensive behaviour intellectualising (Freud, 1966) his responses. Therefore, the interviewer attempted to establish his reflections on his body by an indirect approach. He justified his choice:

> **Interviewer**: Why did you choose this piece?
> **Percussion 1**: Because you asked me
> **Interviewer**: There are many slow pieces, but why did you choose that one?
> **Percussion 1:** Ah no, there is no reason [*silence*]… but because I wanted to show you some movement, so I wanted to show you this [*while playing*], this specific movement… because I, I, I, because we are speaking about gesture [*playing*]… this gesture is much more interesting…is much mo-o-ore particular than this [*changing playing*] which is easier ….this is the reason why I chose this piece, now that you let me think about it.

He adopted different "styles" of self-justification always in line with the initial defensive strategy of 'rationalization' (DSM IV, 1994: 756) showed prior to perform Task 1 (see Chapter 4). First, he transferred the responsibility for choosing the piece to the interviewer. Secondly, he indicated that he did not know why he had chosen that piece which revealed some discomfort. Attention was diverted from this by referring to playing technical movements.

Percussion 2 moved attention from the role of the camera in increasing anxiety to his usual tension when playing:

> **Percussion 2**: so in every moment I am very excited and I a-a-am in some wa-a-y in… tension my legs and hands are trembling and ehem everything, everything to handle.

Another six musicians both self-justified and self-criticized. Self-criticism is a self-protective strategy which is to some extent paradoxical. This behaviour can occur when people expect undesirable outcomes (Sedikides, 2012) such as after performing where negative judgements could be expressed. Although musicians were informed that their performance was not to be judged, they self-evaluated negatively perhaps anticipating possible negative feedback. Self-criticism enabled them to preserve their self-esteem (Sedikides, 2012).

Violin 1 moved attention from consideration of his bodily sensations to his performance saying:

Violin 1:If if I have to think [*while laughing, looking in space*] to my my performance about my performance
Interviewer: no no
Violin 1: [*interrupting*] maybe I would say something [*while laughing*] bad hem, no, I am relaxed.
Interviewer: It's not an evaluation about
Violin 1: [*interrupting*] ye I know.

Even though he understood that the aim of the research was to explore and develop musicians' self-body awareness, his main concern seemed to be about being judged. Viola 2 also used self-criticism as self-justification:

Viola 2: what I just played was not ready to be performed… I did not practice… but I would like to explain you… I am not ready to perform it, I did not study it.

These musicians seemed to be self-justifying and self-criticizing, when negatively evaluating their performance. This was self-protective behaviour. Cello 2, Recorder 1, and Flute showed a lack of self-efficacy in relation to the task. They first self-justified then self-criticized appearing frustrated about the quality of their performance:

Cello 2: [*fast looking at camera*] but… maybe I was not exactly able to achieve [*laughing*] really really what I wanted.

Flute: yes I did not play it li-i-ike eheem but yes, I tried to make it beautiful for you, how I also like… yes if I had more time then…. I would be able to play i-it

Recorder 1: Sorry about mistakes.

Oboe was inconsistent in response. He first self-justified for not playing from memory then manifested his discomfort for playing while sitting. Self-justification was necessary to address his disappointment towards his performance:

Oboe: Ye-e-es no the fact is that I am not [*looking in front of him, fast adjusting his glasses*] used to play from memory or better I always try to play with the sco-ore in front of me if then some phrases remain. Therefore when I play from memory my attention goes on ehem…what I have to play.
Interviewer: So you are not currently feeling
Oboe: [*interrupting*] yes. NO! [*looking at the camera*] So the sensation is that I am not comfortable… If I should say why…usually I play standing… whe-en I can, I practice standing.
Interviewer: Would you like to change the position of the camera?
Oboe: NO! NO! But it does not depend fro-om…

Intellectualisation and misunderstood responses

This theme included the responses from four musicians who seemed to hide their anxiety behind abstract or generalised responses. Recorder 2 and Viola 2 seemed to avoid responding to the question, answering inconsistently. Both initially answered referring to an abstract topic, only then referring to their bodily sensation in a superficial way. Recorder 2 seemed to adopt the stratagem of misunderstanding the question. She first talked about her nostalgia for her real instrument, and then responded in terms of emotional feelings about the piece of music:

> **Interviewer**: Can you describe how do you feel now?
> **Recorder 2**: No. I just missed playing an instrument that's what I realize when I played that. I just miss my oboe. I don't have it here…hem but yes what I play is soul. So I know the word is Ave Verum so I know the melody…it's pray to the Virgi-i-in the Virgin Mary so I tried to … think of that when I was playing, but I would do that with any piece I would make stories so…

When the interviewer tried to focus her on her bodily sensations she still seemed to misinterpret the question focusing on the technical issue of breathing:

> **Recorder 2:** Yea, I am aware of my breath now if I play again I'll try … I noticed that I did I didn't like …for example I'll try to make the breath bigger just to make you hear.

At this point, she paid attention to her body, but avoided revealing her emotions. Her nonverbal behaviour indicated that she was trying to create an affiliation with the interviewer.

Viola 2 also avoided answering the question by referring to technical issues which had motivated him to play that piece. This may have been because he had not paid attention to his bodily sensations when playing and did not want to admit it. When responding he referred to specific abilities which are not common amongst all viola players:

> **Viola 2**: as Viola players, as you we-e-ell kno-ow, we play both Bach Suites for cello and Sonatas and Partitas for solo Violin. I also play partita for Flute. Bach Suites eheem…we must not not it's not this… but Bach Suites constitute a daily technique for us…. So when I have to-o-o-o play an instrument… I everyday always play a piece of Bach when I start practicing

which is like to wash my hands or having a shower in the morning… maybe I have another shower at the end of the day. So for us, the beginning and the end eheem are represented by water, there is a relationship with cleaning… with Bach…it's similar… for me. It cleans a little bit… the notes, all the errors soooo.

At this stage, the interviewer interrupted him, attempting to guide him to reflect on his bodily sensations and he responded as follows:

Viola 2: I looked for the usual sensatio-o-o-n… of relaxation, of softness. The softness se-e-nsation is mo-ore difficult to achieve, more difficult if you don't have it, but it is the o-one you never lose, never! […] if you play after a week of holiday you know there are things which do not work, but … the softness that is to pick up the viola and do this [*simulating playing*]… that you ne-ve-er lose. This was the thing I achieved with more difficulty…but I will never lose because I studied it […] the bow could be inaccurate…but not, not the softness, if you are a soft person you go, your body goes to look for that sensation, that is very beautiful, so now I made as if I was alone in my room… starting practicing […] the first thing I looked for was softness.

Here he did not directly refer to his bodily sensations, although he mentioned the sensation of 'softness' he was looking for.

Cello 2 reflected the responses of Viola 2. She mentioned the feeling of 'relaxing' she was looking for when playing but did not indicate her mood:

Cello 2: I chose this piece because I was looking to …. have a relaxed sou-u-nd… hum…. Qui-i-iterelaxe-e-ed heeem qui-i-ite s-sonorous...
Interviewer: but physically
Cello2: [*interrupting*] physically yes yes, because it's a matter of relaxation… of breathing.
Interviewer: Before you stated: 'I don't know I was able to achieve what I wanted', so was this a cause of tension provoking?
Cello 2: not particularly… so

Percussion 1 again provided an intellectual response. When he was required to reflect in depth on his bodily sensations such as physical tensions or breathing, he reacted with silence. The interviewer invited him to play the piece again while observing his bodily sensations. After performing, he mentioned breathing and then explained how to play technically without tension, avoiding answering about his bodily sensations and possible tensions:

Percussion 1: related to my breath… nothing changed if I compare it with before playing…because the movement… you surely noticed that I this is the ideal sound…Ok? So my movement is exactly this [*dropping the arm*] ok? I drop the arm, I let just fall down it, the instrument bounces the drumstick and I take it back, but I never perform some gesture downward because the percussions do not have to be beaten. This is my rule: the percussions do not have to be beaten, but only the gravitational force. In this way I am very relaxed.

Speaking about the music or the instrument

Six musicians spoke about the piece of music which they had played. This seemed to be to try to reassure or calm them, or expressed the need of communicating their emotional attachment to it. These musicians seemed to divert their attention from their anxiety to an external object, the music, with which they had a positive emotional relationship. When Cello 1 was asked to describe his physical sensations he reacted as follows:

> **Interviewer**: Please could you describe what kind of physical sensation this piece of music transmits to you?
> **Cello 1**:[*concealing half face behind the cello*] well, surely the Sarabanda… exactly the Sarabanda must transmit calm to the listener, trying to be most tranquil as possible. In peace [*showing the face, but trembling a foot*] with the world, but the video-camera… makes you nervous.

Even though he generalized when speaking about Sarabanda, declaring that it should transmit calm to the player, the listener, and the whole world, he implicitly declared both his affection for that piece and the need for calm.

Five musicians spoke about the piece showing nostalgia for various situations or persons they missed which the music reminded them of. Recorder 2 indicated missing her oboe and the piece she chose may also have indicated nostalgia for her country:

> **Recorder 2**: So I know the word is Ave Verum so I know the melody…it's pray to the Virgi-i-in, the Virgin Mary so I tried to … think of that when I was playing, but I would do that with any piece I would make stories so…

When Flute was asked to describe his feelings after playing, he seemed to misunderstand the question speaking about the piece of music revealing nostalgia for his childhood:

> **Flute:** Hum soooo this i-i-is a movement I love very much eheem…the whole concert is beautiful… you know, there is no an extensive literatu-u-u-re eheem bu-ut Ibert wrote this concert thinking of his father who recently died, gosh, there are many things inside… childhood memories eheem there are

> so beautiful musical intervals, very beautiful… the melody is very beautiful eheem.

Clarinet also spoke about the piece in terms of spirituality and perhaps nostalgia for previous experiences:

> **Clarinet**: to let sayyyy a little spiritual aspe-eect… for me… through very few notes… We are at the top of… explosion… to the synthesis let sayyy the most beautiful, we can imagine a person or a particular situation…

Percussion 2 and Harp seemed to express their attachment to the music they had chosen which reminded them of previous positive experiences as students:

> **Percussion 2**: This piece reminds me of my childhood and-and the wonderful emotions eheem I experienced… Some images certainly are transmitted, those heeem I have when I play music, those that let me go there, the images, the images of, of the stage of that theatre where we played at the end of my fifth-primary class. We were 330 children playing with musicians. Everything was on the stage and was transmitted through the music, so those images were certainly conveyed.

6.4 Being relaxed

This superordinate theme refers to the responses of three musicians who verbally reported that they felt relaxed while also expressing this through their body language. Two of them expressed their relaxation combining words and movement. Observing this association, the theme *Kinaesthetic thought* was generated. The other emerging subtheme relates to one musician who *spoke about the piece of music*.

Kinaesthetic thought

This subtheme emerged by observing Piano 3 and Violin 2's behaviour while they were making their responses. For them, kinaesthesia appeared to be fundamental (see Chapter 2, Merleau-Ponty, 1945/2002; Sheets-Johnstone, 2011) for formalizing their thoughts. Piano 3 initially declared feeling relaxed, but when invited to be more precise, she was able to reflect in depth on her body describing and representing her thoughts through movement. The following extract reports both verbal and non-verbal responses:

> **Piano 3:** Oh I feel very relaxed then
> **Interviewer**: But what about your breathing, the sensation of your arms … if you could give some physical description.
> **Piano 3**: Physical description…I think … [*while bringing both hands at base of the neck, always looking in front of her*] I feel relaxed [*moving gently the hands at neck base*] now more here because I feel [*always touching her neck and shoulders*] some kind … when I play I feel like something [*slowly moving her left hand from the right shoulder to the elbow and then until the hand*] is going down from the upper [*slowly moving the right hand along all the left arm*] part of my body, like something wants [*fast moving her right hand along the left arm*] to drop down to the floor. That's one [*dropping down both arms along the trunk*] of the feelings that I have and when I am sitting [*bringing parallel the feet, always dropping the ar*ms] and I am playing something which is very relaxed, I feel [*looking toward herfeet*] that [*moving her feet and looking at them*] my legs and everything are going down [*slowly indicating with both index fingers along her legs toward the floor*] to the basement, like there is mud [*simulating with feet the sensation*] and they are going down. That's all the feeling that I have and also [*bringing the hands on the keyboard, looking in front of her*] when I am playing I have sometimes that feeling, like there is a very hard mud and they are going down. That's all the feeling that I have and also [*simulating playing*] when I am playing I have sometimes that feeling, like there is a very hard mud [*slowly performing small movements on the keyboard*], like you are getting inside [*simulating the sensation: bending toward the keyboard, simulating to knead the mud*] and you making the shapes. That, that's what I play when it's relaxed piece.

As the extract shows, Piano 3 also used the metaphor of 'mud' to reinforce the kinaesthesia. This metaphor contributed to showing the relationship she had between body and mind when playing. She seemed to reflect on her movement during playing, being aware of her bodily sensations.

Violin 2 employed kinaesthesia for expressing her discomfort which was caused by the fact that she was not playing her own violin. Without speaking, she was able to show her awareness of those body parts involved in playing by touching or moving them.

> **Violin 2**: well, I am not bad, only [*bringing the frog of the bow almost on the strings and the left hand close to the neck of the violin*] this changes…

The movement of the violin that she executed on her left shoulder seemed fundamental to becoming aware of her bodily sensations:

> **Violin 2**: the fact that [*moving the violin showing that it slipped from the shoulder*]…yes

Considering the fact that she was not playing her instrument, the interviewer again asked:

> **Interviewer**: How do you feel at the moment: tense or relaxed?
> **Violin 2:** No…I feel relaxed… Maybe I am not aware of that, but if I perceive well, I am not feeling tense.

Violin 2 seemed to be used to reflecting on her body while playing. For these two musicians, kinaesthesia seemed to be embodied in their thoughts constituting a fundamental role in their introspection process.

Speaking about the piece of music

Although Harp did not show tension or anxiety, she spoke about the piece she had played. She was nostalgic about significant emotional experiences that she experienced as a teenager. She also reported that she taught that piece of music to her students because it represented fluency while transmitting peace when playing

> **Interviewer:** How do you feel now? ... What did this piece of music give you back?
> **Harp:** I think there are a lot of memories when I was learning 13 or 14 and I still play it because people like it, because lots of children want to learn it…ah just sense of calm and peace. Yea, I feel good.

6.5 Summary of the chapter related to verbal findings

Most of the musicians seemed unprepared to reflect and report on their body sensations. Most appeared to be unable to verbalise their feelings in detail as if they did not have sufficient 'introspective competence' (Vermersch, 2009: 22) to make explicit their mental state. This was another factor suggesting that they were used to playing through pre-reflective body self-awareness having automatized the movements they needed in playing. Noteworthy was that the musicians who able to describe their body feelings were assisted by performing kinaesthetic movements. Generating multisensorial feedback, these movements appeared essential for the musicians in discovering their tensions.

Section 3

Chapter 7

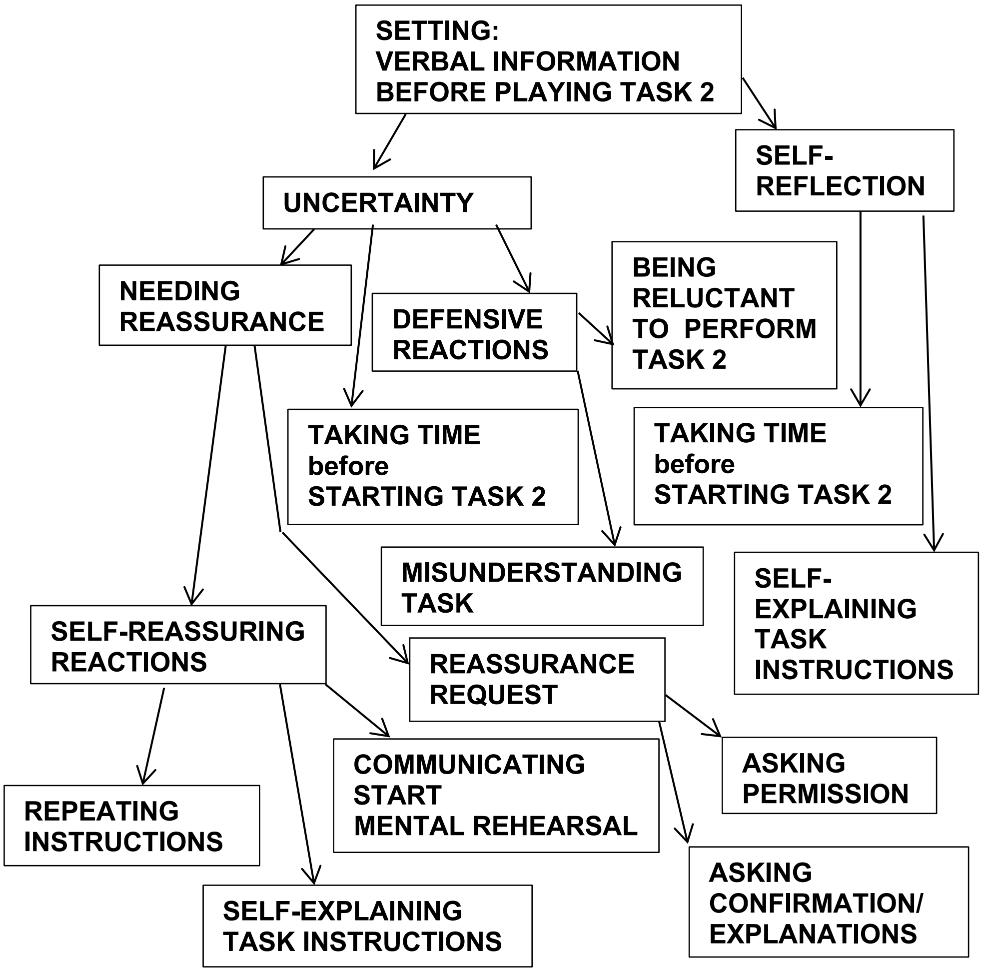
Musicians' verbal and nonverbal reactions prior to Task 2

7.1 Introduction

This chapter sets out the data relating to musicians' verbal and nonverbal communication before undertaking Task 2. The outcomes are compared to those related to communication prior to Task 1 to illustrate possible behavioural differences. At this stage of the interview, the task consisted of undertaking mental rehearsal (see Chapter 3; Ross, 1985; Lim & Lippman, 1991; Moran, 2004a, 2004b; Watson, 2006; Malouin, & Richards, 2009), also known phenomenologically as '*bodily cogito*' (Berthoz & Petit, 2006: 17). The aim of the task was to explore whether this practice could develop musicians' body self-awareness and their performance perception. The explanation of this task indicated the start of a new phenomenological reduction process (Vermersch, 2002) in which the musicians were required to redirect and change the quality of their attention (Depraz, 2013).

The emerging themes from the verbal and nonverbal communication are presented in Figures 7 and 8.

Figure 7. Themes emerging from the interviews before undertaking Task 2.



7.2 The research context and verbal reactions prior to starting Task 2

Task 2 consisted of asking the musicians to carry out mental rehearsal (Ross, 1985; Lim & Lippman, 1991; Moran, 2004a; Watson, 2006; Berthoz & Petit, 2006; Malouin & Richards, 2009) of the same piece of music that they had previously played. The requested task generated a new situation in the interview setting inasmuch as the musicians needed to begin a new phenomenological reduction process. During this mental practice, they were required ‘to perceive themselves during the process of participation' (van der Schyff, 2016: 4) in which they were simultaneously involved and observers. This kind of perception is skill based and constitutes 'an essential quality of the aesthetic experience' (van der Schyff, 2016: 4). Phenomenological reduction, so-called '*epochè*' (Depraz et al., 2003), consists in 'redirecting attention from the "exterior" to the "interior" suspending the "natural attitude" (Depraz et al., 2003: 25). In experiential phenomenology, attention is 'two in one' inasmuch as it constitutes 'an experience and a method at the same time' (Depraz, 2013: 283). This means that the musicians were being asked to change the quality of their attention when analysing their mental rehearsal, their body involvement, and the second musical performance in detail. This meant that they had to differentiate this *lived experience* into its components (Depraz, 2013: 282). The *lived experience* is not the experience itself, but what appears to reflection (Ricoeur, 1974). This chapter analyses how the musicians made sense of this when reflecting on and reacting to the request to perform mental rehearsal. Eighteen of them (see Table 7.1 in the appendices) appeared to not expect that request, although they had been informed about this before starting the interview. They still showed anxiety and/or embarrassment maybe because they did not know how to make sense of that experience. They also seemed to need time for understanding and adapting to that request. However, when compared with their feelings prior to undertaking Task 1, they seemed to reduce their levels of and embarrassment as their nonverbal communication indicated (see below). In contrast, four musicians seemed to have no difficulties in self-reflecting before starting mental rehearsal.

The analysis of musicians' responses generated the superordinate theme *Uncertainty* (see Chapter 4; Harrigan et al., 1992; Grös et al., 2007; Labbé, 2008) and *Self-reflection* through clustering a number of subordinate themes (see Table 7.1 in the appendices). It was also noted that each of the twenty-two musicians took a different amount of time before starting the task. This behaviour generated the subordinate theme *Taking time* which also included the four musicians who self-reflected.

7.3 Uncertainty

As argued in Chapter 4, people feel anxious and uneasy when they are in situations which generate uncertain results (Labbé, 2008) as for the musicians at this stage of the research process. When listening to the instructions for the task, eighteen seemed surprised about what they were being asked to do, appearing disoriented and uncertain. Fourteen musicians reacted indicating cooperation adopting positive strategies such as needing reassurance for re-balancing their internal equilibrium (see Chapter 2; the concept of *autopoiesis*). One musician seemed disoriented after listening to the instructions, but became cooperative when understanding them. Three other participants showed *Defensive reactions* such as *Misunderstanding the task instructions and/or rejectin*g them.

7.3.1 Taking time before starting mental rehearsal

The start of a new and deeper phenomenological reduction process was indicated by *Taking time* (see Table 7.1 in the appendices). Each musician took a different amount of time before starting the task. Two musicians took two seconds, while one two minutes and nineteen seconds. This behaviour seemed to be instigated by the fact that the participants needed to properly understand the unusual request of performing mental rehearsal in which they had to pay attention to the imagined movement. When taking time the musicians appeared anxious or embarrassed. They seemed to be trying to reduce their feelings adopting strategies which are illustrated in the subordinate themes *Needing reassurance* and *Defensive reactions*. However, when the *Taking time* subordinate theme is compared with Task 1 (see Tables 7.2 and 7.3 in the appendices), thirteen musicians decreased the amount of time, four increased it, while four did not show any significant variation. Time variation was considered significant when the musician showed differences between *Taking time* prior to Task 1 and Task 2 of over three seconds. As argued in Chapter 5, two seconds corresponds to the 'latency period' (Knapp et al., 2014) which is the usual time when interviewees are silent reflecting on their response.

Musicians who decreased or increased their *Taking time* prior to Task 2 showed behavioural change such as decreasing their speaking or nonverbal communication. The decreasing of *Taking time* by thirteen musicians suggests that they were still anxious or embarrassed, but that this was reducing. This behaviour suggested that they were adapting to the research context and directing their attention to the task (Lazarus & Folkman, 1984).

7.3.2 Needing reassurance

Fifteen musicians (see Table 7.1 in the appendices) appeared uncertain about the task and manifested the need for reassurance (Andrews, 1945; Fareed, 1994). However, they seemed to deal with these feelings better than when facing Task 1 (see Table 4.1 in the appendices) appearing to focus their attention on the task (Lazarus & Folkman, 1984: 153). Seven musicians self-reassured, while six self-reassured and required the interviewer's reassurance. One musician initially seemed to reject the task, and then became cooperative both self-reassuring and asking for the interviewer's reassurance. The subordinate theme *Needing Reassurance* emerged from the grouping of two subordinate themes: *Self-reassurance reactions* and *Reassurance request*.

7.3.3 Self-reassurance reactions

The sub-ordinate theme *Self-reassurance reactions* was generated by identifying three different strategies that the musicians adopted: *Self-explaining of the task instructions*, *Repeating the instructions for completing the task*, and

Communication for starting mental rehearsal. Seven musicians, Piano 3, Violin 2, Viola 2, Cello, 2, Flute, Oboe, and Bassoon, adopted one or two of these strategies. They demonstrated self-control skills positively managing the stressful situation.

Self-explaining of the task instructions

The strategy of self-explaining of the task instructions was adopted differently by the musicians. Two, Oboe and Bassoon, only employed this strategy immediately after listening to the task instructions. Both of them seemed to self-explain the instructions by using different words from those used by the interviewer. While whispering to themselves and looking at some fixed point into space, they seemed to be trying to understand the task better, self-assisting in focusing on the request, and seeming to forget their uneasiness as the following extracts show:

> **Oboe**: without instrument.
>
> **Bassoon**: Just imagining what I have to do.

Viola 2, Cello 2, and Flute also self-explained the instructions immediately after listening to them appearing anxious. Viola 2 self-explained the instructions seeming to self-reassure and reinforce his self-efficacy maybe being afraid to be judged (Bandura, 1982). He said:

> **Viola 2**: Without making movement… yes yes [*looking downward*] like I am on the train and I simulate. I do not have the viola in my hands.
>
> **Cello 2**: [*looking downward*] without making any movement… ok…

Flute first appeared very surprised about the request as if he did not understand the task then, while whispering, he explained what he had to do:

> **Flute**: seeing myself? .... ah!... so I have to imagine playing the piece.

Seven musicians self-explained the task, but concealed the reassurance request as indicated by their nonverbal behaviour (see below). Piano 1 self-explained the instruction while looking into space at some fixed point and slowly saying:

Piano 1: ehm, ok so imagining...

Then, she appeared to go deeper in her reflection closing her eyes while performing the kinaesthetic movement of touching her temple. This act seemed to assist her in understanding the task and connecting body and mind while slowly saying:

Piano 1: as I'm playing the piece in my mind...
Interviewer: when you image
Piano 1: [*interrupting like she did not listen to the interviewer always speaking with closed eyes*] so I would… that... the mental… practice… [*opening eyes*] ok [*starting mental rehearsal closing eyes*].

Five musicians seemed to self-explain the task, while implicitly requiring the interviewer's reassurance who tried to respond empathetically:

Guitar 1: ok, hum. So: I'm just…imagining.
Interviewer: yes, then playing the piece again.
Guitar 1: ok…ok…
Interviewer: when imagining, you have to think sound and movements together
Guitar 1: [*interrupting*] without playing...
Interviewer: Yes, without playing.
Guitar1: Ok.

Viola 1: Ok. So, I'll mentally perform the piece and then I'll take the viola and play…
Interviewer: Yes, then you will verbalize if you notice differences between the first and the second performance.

Recorder 2: So, it is like… me … seeing myself from outside.
Interviewer: Yes, and then we will speak later.

Cello 1: Without instrument…
Interviewer: you can perform it with opened or closed eyes.

Clarinet: I have to stand still and think of playing.
Interviewer: yes and then you will report your feelings, even if for you it's a strange experience.

Guitar 3 manifested her unease and the need for reassurance when interpreting the task instructions referring to the time she needed for performing mental rehearsal. She also appeared shy of asking for explanation and implicitly communicated that need:

> **Guitar 3**: So, I take all the time I need for mentally performing the piece. The same I have already performed.
> **Interviewer**: Yes. You can take your time. You have to imagine yourself playing the same piece.

Repeating instructions for completing the task

The self-reassuring strategy of *Repeating instructions for completing the task*, adopted by six musicians prior to Task 1 (see Chapter 4 and Table 4.1 in the appendices), was utilized by only two participants in relation to Task 2 (see Table 7.1 in the appendices). They adopted it when slowly whispering and repeating part of the instructions. This seemed to assist them in focusing on and understanding the task better. They appeared reassured and ready for starting the mental rehearsal. Guitar 1 started mental rehearsal after repeating the interviewer's instructions:

> **Interviewer**: mentally
> **Guitar 1**: mentally

Flute repeated the instructions after the interviewer had again explained:

> **Interviewer**: yes, singing the piece in the mind and imagining yourself moving like you play… without flute
> **Flute**: [*interrupting*] without flute… yes yes yes, so I imagine playing it.

Need to communicate the starting of mental rehearsal

Communicating the starting of mental rehearsal appeared to be a need for four musicians. They seemed to need the interviewer's approval and be reassured that they were correctly acting. Viola 2 and Percussion 2 seemed to start mental rehearsal closing their eyes, then looking at the interviewer, said:

> **Viola 2**: I am already performing it.
>
> **Percussion 2**: I am already thinking it.

Cello 2 also communicated that she was ready to start mental rehearsal when closing her eyes and whispering:

Cello 2: then…

Appearing very embarrassed while laughing, Violin 2 said:

Violin 2: Ok. I'm going.

7.3.4 Reassurance request

As had already occurred prior to Task 1 (see Chapter 4), some musicians manifested the need to be reassured through asking questions. They showed uncertainty about mental rehearsal as if it was unfamiliar to them. Through asking questions, eight musicians seemed to procrastinate, putting off the moment of starting the task. Two kinds of questions were identified *Asking for confirmation or task explanations* and *Asking permission*. Six participants asked for task explanations, one asked permission, and one asked both kinds of questions (see Table 7.1 in the appendices).

Asking for confirmation or explanation

Five musicians asked questions which might appear facile, but revealed uncertainty and the need to be reassured. Although the task instructions clearly specified self-imagining playing, these musicians appeared to not understand the task. They also asked for confirmation about what to perform indicating unfamiliarity with the idea of mental rehearsal. Piano 1 appeared very tense blinking and looking at the interviewer, while stuttering:

Piano 1:b-b-but do I play?
Interviewer: No
Piano 1: No [*whispering*].

When repeating the interviewer's response, she whispered and looked into space appearing disoriented as if she had not understood the task. She implicitly seemed to require the interviewer's help.

Although Guitar 3 knew she was being requested to imagine the same piece of music again, she asked:

Guitar 3: That one I have just played?

Cello 1 showed the need for reassurance by asking for confirmation as to whether he correctly understood the task. His facial expression also manifested surprise as he asked:

Cello 1: But should I just think the piece?
Interviewer: Yes.

Viola 1, Clarinet, and Percussion 2 also seemed to have difficulty understanding the task, but concealed a reassurance request by asking if they had to simulate movement during mental rehearsal.

Viola 1: so, should I mimic playing?
Interviewer: Mentally. You imagine yourself playing. Then you will play the piece on the viola.

Clarinet: So, do I have to pretend to have the clarinet in my hands without playing?
Interviewer: No, you have to imagine playing… You can practice it through closed or opened eyes, as you prefer. Just imagine you play each note as when you really play.
Clarinet: heemm… I don't know.

Percussion 2: So, should I think or pretend to play?
Interviewer: No, what I am now asking you to do is to imagine yourself playing… you can practice mental rehearsal with opened or closed eyes … as you prefer.

Asking permission

Two musicians, Guitar 3 and Recorder 2, revealed their uncertainty by asking permission before starting mental rehearsal. Guitar 3 asked permission to move during mental rehearsal:

Guitar 3: may I move during mental rehearsal?
Interviewer: as you like.

This request expressed the need for reassurance from the interviewer about how she should perform the task.

Although Recorder 2 seemed to understand the task, she felt the need to ask permission to make sound. Through her nonverbal communication (see below) and her words, she implicitly showed her discomfort of undertaking mental rehearsal:

> **Recorder 2**: can I make sound or not? … No no.

7.3.5 Defensive reactions

When people experience stressful or unpleasant situations, they can manifest defensive reactions to relieve their discomfort (Lazarus & Folkman, 1984). This occurred with four musicians (see Table 7.1 in the appendices) who tried to avoid performing the task. Two strategies, *Misunderstanding task instructions* and *Being* r*eluctant to perform the task* were adopted. After listening to the instructions for the task, one musician employed both strategies, two appeared to misunderstand the task, while one appeared to be very reluctant to perform it.

Misunderstanding task instructions

Three musicians, Piano 2, Clarinet, and Percussion 1, adopted the strategy of M*isunderstanding task instructions* (see Table 7.1 in the appendices). Piano 2 seemed to misunderstand the instructions thinking she had to concentrate on and remember movements she had made during the previous performance. Therefore she asked:

> **Piano 2**:Go back and remember movements?
> **Interviewer**: I am asking you to perform the piece through mental rehearsal which consists of imagining yourself playing that piece.

This misunderstanding was maybe due to the fact that she was unfamiliar with the concept of mental rehearsal and also did not have the confidence to ask for further explanation. These factors seemed to contribute to increasing her anxiety. Clarinet seemed to deliberately misunderstand the task to avoid completing it. When answering, he struggled to articulate the words revealing embarrassment:

> **Clarinet**: Eheghm when I am without instrumeeeent…hummmm another thing that I like is conducting eheem more than playing… so
> **Interviewer**: yes, but now I am asking you to think about your instrument… to imagine yourself playing the same bars that you played before, thinking about

> the physical sensations you perceived when playing and listening to the sound of that piece, also considering the movements you need for performing that piece.

Percussion 1 seemed to completely misunderstand the task instructions also seeming to adopt a defensive strategy (Freud, 1926/2013) towards a request that was perhaps uncomfortable for him. He began to simulate actually performing the task:

> **Percussion 1**: ye-es, yes yes yes [*starting to simulate*]
> **Interviewer**: Please could you perform the piece mentally?
> **Percussion 1**: Ah! Sorry.

Being reluctant to perform the task

After listening to the task instructions, two musicians, Piano 2 and Cello 1, appeared to be very reluctant to perform the task. They seemed to not expect this kind of request which they considered unnatural. When the interviewer again repeated the task instructions, Piano 2 seemed to be highly uncomfortable and embarrassed as her nonverbal language (see below) displayed.

> **Piano 2**: [*whispering*] Ah, ok … [*looking at the interviewer, scratching one hand, then touching the head, shaking the head*] and I can-not imagine my bo-ody, it's difficult, just my hands and see my…
> **Interviewer:** What I am asking you to do is to think about playing the piece mentally, to imagine yourself playing it… then we will speak about that.
> **Piano 2:**ok… yea…yea [*after 5 seconds*] I have done.

She was very embarrassed and the short time period led the interviewer to believe that that she had misunderstood the nature of the task. Therefore, the interviewer asked:

> **Interviewer:** Really? Did you imagine playing each note?
> **Piano 2**: Oh … ah the the all phrase you mean
> **Interviewer**: Yea!
> **Piano 2**: Ok [*smiling, frowning, and rocking, then starting mental rehearsal*]

After listening to the task instructions, Cello 1 expressed his disapproval of mental rehearsal, while also contradicting himself:

> **Cello 1:** It's very unnatural what you are asking.
> **Interviewer:** yes, but at the beginning of the interview, you said that you always practise mental rehearsal.

After the interviewer's observation, he realized that he had contradicted himself and verbalised indicating embarrassment:

> **Cello 1**:Yes!... Yes, everything is planned in the sense yes of course…

The interviewer perceived his uneasiness and, ignoring his answer, again explained the task:

> **Interviewer**: What I am asking you is to perform the piece mentally.
> **Cello 1**: oh, well, of course, well then I have done I have done thousands of times.
> **Interviewer**: Please could you do so now?
> **Cello 1**: Yes!

After his last 'Yes!', he seemed to start mental rehearsal, but soon he stopped and asked:

> **Cello 1**: Yes!... But should I only think of it?

This question seemed to reveal his reluctance and embarrassment to undertake mental rehearsal. He also appeared to be unfamiliar with the nature of the task contrary to what he had indicated earlier.

7.4 Self-reflection

Four musicians appeared to self-reflect after listening to the task instructions. Their verbal and nonverbal communication seemed to show that they were 'slowing down' their mental activity (Petitmengin-Peugeot, 2002). All of them took time, while two needed to explain the task to themselves to enable them to concentrate on and understand it better.

7.4.1 Taking time

Four musicians took different amounts of time before starting the Task. Three of them, Piano 3, Recorder 1, and Harp, employed between two to three seconds (see Tables 7.1 and 7.2 in the appendices), while Violin 2 took twenty-seven seconds. Violin 2 and Recorder 1 decreased their *Taking time* when compared with Task 1. This suggests that they had reduced their discomfort and that they needed time for understanding and concentrating on the task. Recorder 1, similarly to Harp, did not say anything, but focused her gaze on some fixed point into space.

7.4.2 Explaining the task to self

Explaining the task to self for Piano 3 and Violin 2 appeared useful for focusing on the Task. They looked into space and slowly whispered:

Piano 3: without movements.

Violin 2: like a movie [*simulating playing*] in the mind… with movement.

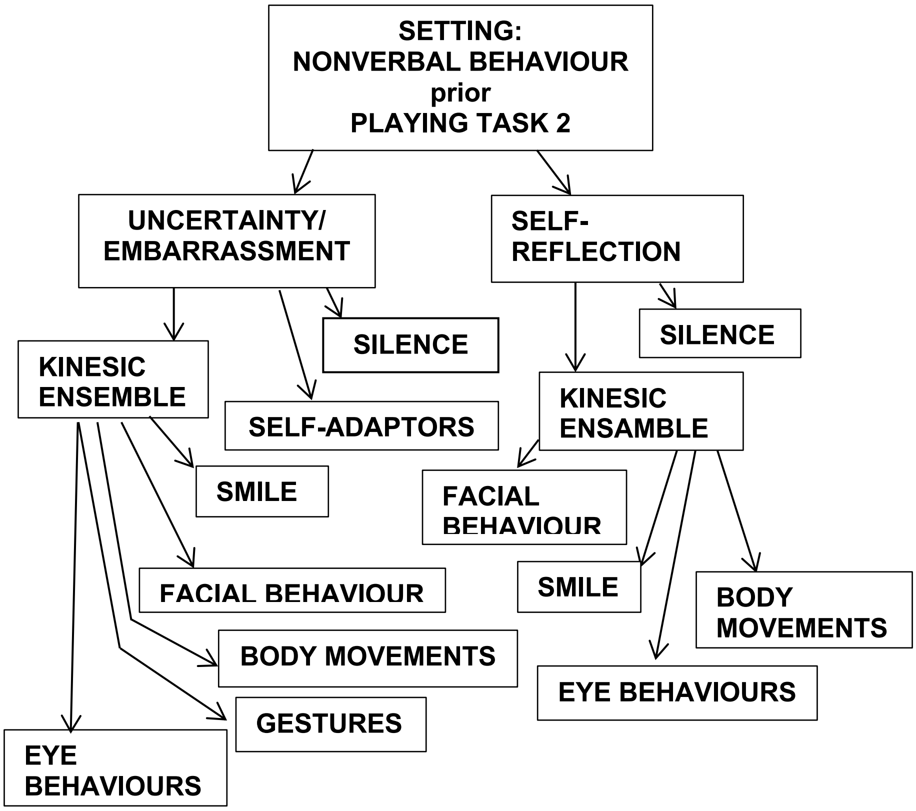
In formulating her utterance, Violin 2 seemed to be assisted by the simulation of playing for understanding the task better. The act of simulating showed her 'attentive presence', also defined as a 'reflecting act', 'mindfulness' or 'becoming aware' (Depraz et al., 2003: 15-16) in which her thought process could be identified as she connected body and mind. This is a non-judgmental or *acceptance* activity usually body-centered in which every kind of feeling, sensation, and emotion is observed and not suppressed in the thinking process (Aherne et al., 2011: 177).

7.5 Introduction to musicians' nonverbal behaviour analysis prior to Task 2

The same criteria adopted in the analysis in Chapters 4 and 5 for analysing nonverbal communication were also applied at this stage of the analysis. The two main superordinate themes emerged (see Figure 8), *Uncertainty* and *Self-reflection which had* already been identified in relation to verbal responses. The same quantitative scale was employed.

At this stage of the analysis process, possible behavioural differences between behaviours prior to Task 1 and Task 2 were examined. Even though the musicians still showed uneasiness, their nonverbal communication seemed to indicate less embarrassment than exhibited prior to Task 1 (see Tables 7.5, 7.6; 7.11, 7.12; 7.14, 7.15; 7.16, 7.17; 7.18, 7.19; Figures 7.1, 7.10, 7.11 in the appendices). Thirteen musicians (see Tables 7.2 and 7.3) had considerably reduced the overall time they took before commencing Task 1. After saying a few words or saying nothing, they began to perform the task. This may have indicated that they were adapting to the context. However, there were musicians who seemed to maintain the same level of anxiety or increase it (see below).

Figure 8. Themes of Nonverbal information before playing Task 2



7.6 Nonverbal communication prior to Task 2

The superordinate theme *Embarrassment* included the subordinate themes *Kinesic ensemble*, *Self-adaptors* and *Silence*, while the superordinate theme *Self-reflection* included *Kinesic ensemble* and *Silence* (see Figure 8). The following sections illustrate the main nonverbal features related to the first superordinate theme *Uncertainty/Embarrassment* and then to *Self-reflection*.

7.6. 1 Kinesic ensemble

At this stage of the interview, lots of simultaneous nonverbal information, so-called 'kinesic ensemble' (see Chapter 2, Calbris, 2011: 6) was demonstrated by musicians. They exhibited eye behaviours (Agnus, 2012), and movements of 'different body parts, as in the combination of a manual gesture, with a head gesture, and facial expression' (Calbris, 2011: 267).

7.6.2 Eye behaviour

Although eye behaviour seems to be unintentionally performed (Ekman & Friesen, 1969b), it influences the quality of conversation (Hugot, 2007), and assists the interlocutor for deducing a speaker's actions, intentionality, and emotions (Macrae et al., 2002).

The same four classifications of eye behaviour set out in Chapters 4 and 5 are presented here in relation to Task 2. The emerging values are compared with those detected before engaging with Task 1 in order to observe possible changes in the musicians' eye behaviour.

Looking into space

Eighteen musicians (see Tables 7.5 and Figure 7.1 in the appendices) looked into space after listening to the task instructions and before starting mental rehearsal. This may indicate embarrassment, uneasiness, or concentration as some musicians showed when focusing their gaze on some fixed point in space or slowly looked around. Guitar 3, being silent, focused her gaze in space on a fixed point. This act seemed to calm her and assist her in self-reflecting for formalizing questions and understanding the task better. Comparing the values with those which emerged prior to Task 1, one musician spent longer looking into space. Four musicians looked into space with the same frequency as that prior to Task 1, but communicated different feelings. For example, Piano 1 manifested more stress than prior to Task 1 when blinking (Smilek et al., 2010) while looking into space. Cello 1 looking into space confirmed his discomfort and uneasiness already expressed through words (see above). Four musicians, who did not look into space at all during prior Task 1, scarcely increased this at this stage of the interview. Two of them, Guitar 2 and Bassoon demonstrated some uncertainty and concern, while Piano 3 and Harp seemed to self-reflect. When shifting their gaze, two musicians, Piano 2 and Clarinet, showed strong embarrassment (Keltner, 2005). Comparing their behaviour to that prior to Task 1, they respectively increased their looking into space frequently and very frequently. This was maybe related to the fact that they took a lot of time in speaking and revealing that they misunderstood the task (see above). Twelve musicians decreased the time spent looking into space appearing less embarrassed and/or anxious.

Looking at the interviewer

As already occurred when listening to the previous task instructions, all of the musicians looked at the interviewer and were attentive (Samovar et al., 2009) as they focused on understanding the task. However, different frequencies of looking at the interviewer were exhibited (see Table 7.5 and Figure 7.2 in the appendices). For example, six musicians rarely looked at the interviewer. They seemed to understand the task immediately starting mental rehearsal after listening to the task instructions. In contrast, seven musicians, who very frequently looked at the interviewer, asked for more explanation, asking more questions and looking at her.

Looking at the camera

At this stage of the interview, no musician looked at the camera (see Table 7.5 and Figure 7.3 in the appendices). They all seemed to have forgotten its presence. This behaviour may indicate that they were focusing on the task reducing their discomfort and adapting to the interview context.

Closing eyes

At this stage of the interview, eight musicians closed their eyes (see Table 7.5 and Figure 7.4 in the appendices). Six of them increased this behaviour very little when compared with similar behaviour prior to Task 1 when they did not exhibit it at all. According to Glenberg and colleagues (1998), people seem to close their eyes when removing their attention from the immediate environment. This may occur in odd or stressful situations, but also when individuals need to reflect on what to do, comprehend language, or consciously remember something. As Glenberg and colleagues (1998) show, 'disengaging from the environment facilitates internal control over conceptualization and should thus increase accuracy' (Glenberg et al., 1998: 654). Therefore, this seemed to confirm that the musicians had begun to be more focused on the task and ready for starting the new introspection process. However, similarly to prior to Task 1, thirteen musicians did not close their eyes at all.

7.6.3 Gestures

Gestures spontaneously accompany speech (see Chapter 2; McNeill, 1992; Cassell, 1998; Calbris, 2011). At this stage of the interview only six musicians gesticulated infrequently (see Table 7.7 in the appendices). The frequency of gestures of those who executed these movements prior to Task 1 decreased at this stage of the interview. According to Ekman (1991), this absence suggests that the musicians were self-reflecting. Only two musicians, Flute and Clarinet, increased their gesticulation suggesting that they were concerned about the task. Similarly to Chapter 5, three categories of gestures were identified: anticipatory, iconic, and beats.

Anticipatory gestures

This kind of gesture is usually performed before starting speaking. People seem to be helped by anticipatory gestures in shaping their thoughts before formalizing them through words (Goldin-Meadow, 2003). Only three musicians executed anticipatory gestures (see Table 7.7 and Figure 7.5 in the appendices). Two of them, Piano 1 and Flute, performed them infrequently when explaining the task instructions to themselves. Compared with their behaviour prior to Task 1, Piano 1 reduced that frequency. She seemed to usually use these gestures for shaping thoughts and explaining to herself. For Flute, these gestures appeared useful for self-explaining and self-reassuring. He seemed to be reassured after performing the gesture of pointing at something in space, remaining silent as if he had understood the task instructions. Clarinet exhibited these gestures when he misunderstood the task and was searching for words to express this. His nonverbal communication transmitted uncertainty in particular through these gestures, looking around and unfocused smiling.

Iconic gestures

Iconic gestures refer to 'the semantic content of the speech' (see Chapter 4; McNeill, 1992; 2005). While eleven musicians during the time prior to Task 1 performed this kind of gesture, at this stage of the interview only four rarely executed them (see Table 7.7 and Figure 7.6 in the appendices). Two of them increased this kind of gesture very little having not performed them at all prior to Task 1. It was interesting to note that three musicians, Piano 1, Viola 1, and Recorder 2, executed these gestures when self-explaining instructions indicating the object that they were speaking about. Piano 2 exhibited these gestures when manifesting reluctance to perform the task

Beats

Only two musicians performed beats moving one or both 'hands along the rhythmical pulsations of the speech' (McNeill, 1992: 15). Piano 2 displayed beats very little when rejecting the task. Through nonverbal communication of laterally shaking her hands, she manifested her reluctance to perform the task revealing her discomfort. Flute exhibited beats a little when repeating instructions. These gestures seemed to assist him in self-reassuring.

7.6.4 Body movement and posture

At this stage of the interview process, the frequency of musicians' body movement, compared to prior Task 1, was as follows: eight musicians did not show any variation, seven increased body movement while seven decreased it (see Tables 7.8 and 7.9; Figure 7.7 in the appendices). Similarly to prior to Task 1, the most frequently performed body movement was nodding. Nineteen musicians (see Table 7.10 in the appendices) exhibited this while listening to or self-explaining task instructions. In Western culture this cue usually indicates that the listener is engaging with, understanding and agreeing with the speaker (Ekman, 2004; Harrigan, 2005; Samovar et al., 2009). This kind of behaviour was reinforced by head-tilt-side (Givens, 2002) by four musicians. However, if nodding is combined with some movements such as head-tilt-side and shrugging, leaning backwards, shaking head, head backward, or Adam-apple-jump as eight musicians showed, it expresses defense and discomfort (Givens, 1977; 2002). Another signal manifested by Flute during listening to instructions task was 'crossing arms'. According to Givens (2016), this cue indicates a 'guard-like stance, disliking, or disagreement' and is performed for self-comfort and alleviating anxiety (see Givens, 2016). However, although Flute appeared anxious, similarly to Clarinet, Flute seemed to change disposition when leaning forward (De Meijer, 1989). Both of them appeared to be more cooperative during listening to the task explanation. Two other musicians, Recorder 2 and Percussion 2, performed a ‘balance cue’ respectively rolling the chair and rocking. Performing this body movement stimulates motion sensors in the inner ear which both arouses pleasant sensations and diverts attention away from anxiety (see Givens, 2016).

7.6.5 Facial behaviour

The frequency of facial behaviour performed by musicians at this stage of the interview decreased (see Tables 7.11, 7.12: Figure 7.8 in the appendices) when compared with that prior to Task 1. Seven musicians did not display any particular facial movement prior to Task 1 or Task 2, while five increased the frequency. This occurred with those musicians who revealed that they were uncomfortable, not seeming to understand the task, taking time, and asking for further explanation of the task. One example is Guitar 1 who appeared particularly uncomfortable showing various kinds of facial behaviour very frequently (see Tables 7.11 and 7.13 in the appendices). Ten musicians decreased their facial behaviour. This phenomenon could be due to the fact that they reduced their anxiety (Grös et al., 2007) focusing their attention on the task instructions. Only four musicians exhibited the same kind of facial behaviour immediately prior to Task 1 and Task 2. Three of them, Guitar 1, Recorder 2, and Oboe, raised their eyebrows expressing both skepticism and surprise (Givens, 2002; Ekman, 2004) when listening to the task instructions, while Viola 1 lowered eyebrows seeming to be uncertain (Givens, 2002). However, musicians who maintained the same frequency of their facial behaviour as prior to Task 1 or reduced it, displayed more kinds of facial behaviour such as narrowing of the lips,

lips down, parted lips and hiding the face (see Table 7.12 in the appendices). Piano 1, for example, narrowed her lips while listening to the instructions seeming to reveal discomfort and/or uncertainty (Givens, 2016). Then, she seemed to change her mood showing attentiveness, interest, and surprise when parting lips (Ekman et al., 1972; Ekman & Friesen, 2003) during listening to the task requirements before explaining them to herself. Only one musician, Clarinet, strongly manifested an increase in stress and uncertainty relative to prior to Task 1 when lowering his lips (Navarro, 2008). He manifested this feeling when asking for further task explanation. To conceal his discomfort (Ekman, 1991), Cello 1 hid his face behind the cello. As he indicated when responding after performing Task 1 (see Chapter 5), he appeared to continue experiencing the same feelings when listening to the instructions about mental rehearsal (see above).

7.6.6. Smiling

Fourteen musicians, two less than prior to Task 1, smiled prior to Task 2, while ten musicians reduced their frequency (see Table 7.14 in the appendices). Reducing smiling seemed to be another nonverbal signal indicating that musicians were decreasing their anxiety and embarrassment, adapting to the interview context, and concentrating on the task. The musicians seemed to smile to conceal negative feelings (Ekman et al., 1990; Keltner, 2005; Glenn & Holt, 2013; Gunnery & Hall, 2015). Embarrassed, affiliation, and nervous smiling were identified at this stage of the interview process. Comparing the frequency of smiling with that prior to Task 1, eight musicians did not smile at all, four increased the frequency of smiling, while ten decreased it. Of the fourteen musicians who smiled, only five appeared embarrassed smiling without any apparent reason (Ekman et al., 1990; Ekman, 1991; Keltner, 2005) when listening to the task instructions. For example, Piano 2, appearing to be reluctant to perform mental rehearsal very frequently smiled seeming to experience high distress. Four musicians, Guitar 3, Flute, Percussion 1, and Harp, displayed very little affiliation smiling. As already discussed (see Chapters 4 and 5), this kind of smiling is manifested to develop an alliance and establish a momentary relationship with the interviewer (Lavin & Maynard, 2001: 456). Maybe at this stage of the interview the musicians did not see the need to create this alliance again as it was already established. Only two musicians, Cello 1 and Clarinet, manifested embarrassed and affiliation smiling. For example, Clarinet smiled very frequently. He first exhibited affiliation smiling when he appeared to deliberately misunderstand the task instructions. He appeared to seek an alliance with the interviewer in order to avoid undertaking the task. He then expressed embarrassed smiling while looking into space while listening to the task instructions again. Two musicians, Piano 1 and Violin 2, exhibited both affiliation and nervous smiling, while Viola 2 exhibited embarrassed and nervous smiling. Their laugh seemed to be useful for releasing an excess of energy (Glenn, 2013). Moreover, although these musicians behaved differently (Piano 1 when listening to the instructions, Violin 2 when announcing that she was starting mental rehearsal, and Viola 2 when self-explaining the task), they seemed to communicate a low level of self-efficacy (Bandura, 1982) in undertaking mental rehearsal.

7.6.7 Silence

Only six musicians were silent at this stage of the interview with the following frequency: two of them were silent infrequently, two frequently, and two very frequently (see Tables 7.16, 7.17; Figure 7.10 in the appendices). Comparing musicians' behaviour prior to Task 1, thirteen of them decreased the frequency of the time they were silent, six maintained the same level, and three increased it. This overall reduction in the length of silence also signaled that the musicians were reducing their anxiety, adapting to the interview setting, and concentrating on the task. Four musicians, Piano 2, Guitar 1, Piano 1, and Clarinet, who were frequently and very frequently silent, seemed to conceal their anxiety and embarrassment (Samovar et al., 2013), when listening to task instructions also smiling and looking around into space. These cues were particularly manifested by Piano 2 and Clarinet whose increased silence indicated their high level of uneasiness.

7.6.8 Self-adaptors

Ten musicians exhibited self-adaptors, nine fewer than exhibited these gestures prior to Task 1 (see Tables 7.18, 7.19 in the appendices). Musicians also used self-adaptors less frequently when compared with observations prior to Task 1 (see Table 7.18; Figure 7.11 in the appendices). Four performed them very little, four infrequently, and two frequently. Self-adaptor reduction suggested that musicians were decreasing their anxiety or discomfort. These gestures are unconsciously performed by participants when manipulating objects and/or self-touching for alleviating discomfort and adapting to the situation (Ekman, 2004; Harrigan et al., 1986; Harrigan, 2005). Only one musician increased the frequency of self-adaptor behaviour appearing very tense and uncertain. He transmitted this feeling when compressing his lips and showing the tongue-tip between lips (Givens, 2016). He also revealed unconscious strategy adoption for self-reassuring and self-consoling when manipulating the guitar neck and stroking his fingers (Givens, 2016). Four musicians manifested the same frequency of self-adaptor adoption as prior to Task 1. Three of them, Piano 3, Recorder 1, and Harp, appeared at ease and able to self-reflect (see above) and did not exhibit self-adaptors at all prior to Task 1 or Task 2. Similarly to prior to Task 1, Cello 1 performed self-adaptors frequently revealing that he still felt uncomfortable (Givens, 2016). For self-consoling, he stroked and scratched his fingers while hiding his face behind the cello alongside expressing reluctance to engage in mental rehearsal (see above). The most utilized self-consoling self-adaptors were stroking, exhibited by seven musicians, and manipulating objects exhibited by five musicians (see Table 7.20 in the appendices). Self-adaptor behaviours such as hiding hands, compressing lips, and showing the tongue-tip between the lips particularly reveals embarrassment, uncertainty, and uneasiness (see Ekman, 1991; Keltner, & Buswell, 1997; Navarro, 2008; Givens, 2016) and was in evidence in five musicians.

7.6.9 Semiconscious movements

As already set out in Chapter 5, semi-conscious movements (see Table 7.4 in the appendices) have been subdivided into kinaesthetic and simulated movements. These seem to be unintentionally performed through a kind of pre-reflective self-consciousness which precedes any reflective act (see Chapter 2; Zahavi, 1998; Lutz & Thompson, 2003; Gallagher & Zahavi, 2008). Only six musicians demonstrated these movements and then only rarely. They seemed to assist them when reflecting on and/or self-explaining the task instructions.

Kinaesthetic movements

Three musicians, Piano 1, Piano 2 and Violin 2, touched their temples while self-explaining or self-reflecting on the task instructions. Even though these musicians performed these movements very little (see Table 7.4 in the appendices), receiving sensorial feedback from the body (Sheets-Johnstone, 2011) appeared essential for them. They seemed to need to create contact between mind and body for better understanding the task and becoming aware of body involvement.

Simulated movements

Four musicians, Guitar 1, Violin 2, Viola 1, and Cello 1, simulated playing very little. Similarly to kinaesthetic movements, they pre-reflexively executed them

(Zahavi, 1998; Lutz & Thompson, 2003; Gallagher & Zahavi, 2008). They seemed to be assisted by these movements in self-explaining or asking for further explanation about the task. Simulated movements appeared fundamental for perceiving the body and starting a new introspection process. Cello 1, when he contradicted himself and transmitted his discomfort, seemed to simulate playing as a strategy for reducing his embarrassment.

7.7 Summary of the chapter

Prior to Task 2 many of the musicians showed uncertainty and embarrassment. This was provoked by the request to perform the piece through mental rehearsal. The musicians seemed not to expect this demand in which they were required to be simultaneously involved and observers. Most adapted to the request and appeared to re-balance their internal equilibrium through adopting various positive strategies to cope with the task demands indicating cooperation. Compared with their feelings prior to undertaking Task 1, their nonverbal communication showed that they had reduced their levels of embarrassment. When reflecting on and/or self-explaining the task instructions, some musicians seemed to be assisted by kinaesthetic and simulated movements, which appeared unintentionally performed through a kind of pre-reflective self-consciousness.

Chapter 8

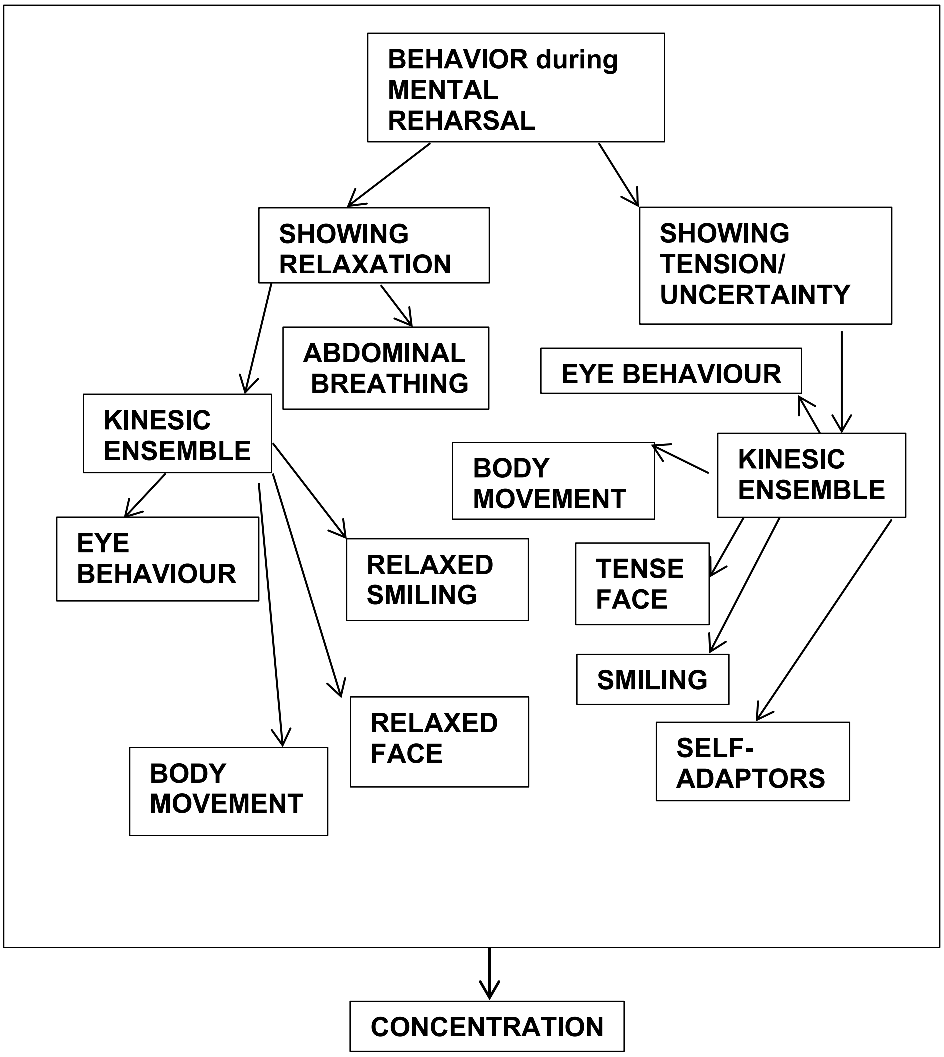
Musicians' reactions during mental rehearsal and its effects on body self-awareness

8.1 Introduction

This chapter presents data related to musicians' reactions during and after undertaking Task 2 examining any changes related to their body self-awareness. Through continuing the second phenomenological reduction process (Vermersch, 2002), which they had started before engaging with Task 2 (see Chapter 7), musicians were required to re-direct their attention toward their inner space (Depraz et al., 2003: 29) while practising mental rehearsal and playing, then verbalizing on their feelings after playing.

In the analysis process, first, musicians' behaviour was examined during performing mental rehearsal (see Chapter 3), and also phenomenologically defined as '*bodily cogito*' (see Chapter 3; Berthoz & Petit, 2006). Differences emerged after undertaking Task 1 and 2 were examined. Following the same procedure of analysis adopted in the previous chapters, outcomes were assembled by clustering themes and sub-themes considering first the nonverbal behaviour observed during mental rehearsal and verbal information which emerged after completing the task. Themes are presented in a hierarchic diagram (Larkin & Thompson, 2012) representing the thematic analysis (Braun & Clark, 2006) in Figure 9 and 10 shown.

Figure 9. Themes emerging from behaviour observation during mental rehearsal
before performing Task 2



8.2 Musicians' behaviour during mental rehearsal

Nonverbal behaviour exhibited by the musicians during mental rehearsal assisted in interpreting and making sense of that lived experience (Smith, 2004). During the second phenomenological reduction process, musicians were required to redirect their attention (Depraz et al., 2003: 29) onto an 'inner doing'

(Louchakova-Schwartz, 2013: 64). This consisted in performing the piece of music purely through mental simulation of movement. During this activity, 'attention […presupposed] a transformation of the mental field, a new way for consciousness to be present to its objects' (see Chapter 2; Merleau-Ponty, 1945/2002). Musicians were required not to focus on external stimuli, but to observe their inner sensory-motor perceptions without expressing any judgement.

The criterion for analysing musicians' behaviour emerged through examining kinesic ensemble (see below) concurrently exhibited by the participants. This procedure made it possible to generate the superordinate themes *Showing relaxation,* which included sixteen musicians, and *Showing tension/uncertainty*, which referred to six musicians (see Table 8.1 in the appendices). Both superordinate themes were identified through clustering themes which emerged observing a set of kinesic ensemble that each musician concurrently manifested during performing mental rehearsal. The following section presents the superordinate theme *Showing relaxation* which contains the subordinate theme *Kinesic ensemble*.

8.3 Showing relaxation

The superordinate theme *Showing relaxation* was generated through the observation of sixteen musicians' behaviour (see Table 8.1 in the appendices) who seemed to achieve a relaxed status during mental rehearsal. They seemed to manifest similar physiological effects to those occurring during meditation experiences, such as abdominal breathing (Austin, 1998), decreasing respiratory rate and muscle tone (Benson, 1985: 16). These bodily reactions, defined as 'relaxation response' (Benson, 1985), consisted of 'generalized decreased sympathetic nervous system activity' (Benson, 1985: 15) and have been observed when people are comfortably meditating.

8.3.1 Kinesic ensemble

As already argued in the previous chapters, kinesic ensemble transmits information about nonverbal behaviour (see Calbris, 2011) and also about physical status (Austin, 1998). During this phase of the task, sixteen musicians seemed to manifest a *relaxation response* (Benson, 1985; Austin, 1998) exhibiting similar kinesic ensemble such as relaxation of the chin, abdominal breathing, and an erect spine. While slightly rocking, nine of these musicians also showed other cues, such as closing their eyes, relaxing their face and/or parting their lips. These all revealed relaxation (Austin, 1998). Four musicians closed their eyes and another seven also slightly smiled. This last cue seemed to be an involuntary reaction and a consequence of the relaxation response which led to a corresponding emotion (Austin, 1998).

8.4 Showing tension/uncertainty

The superordinate theme *Showing tension/uncertainty* was generated by examining the kinesic ensemble of six musicians (see Table 8.1 in the appendices) who appeared tense and/or uncertain when performing mental rehearsal. They showed the same facial expressions such as lip and jaw tension and manifested ‘anxious feelings, nervousness and emotional concerns’ (Givens, 2002). Four of these musicians exhibited various cues which revealed tension. For example, Cello 1, who expressed disagreement about the process of mental rehearsal before engaging with it (see Chapter 7), looked around in space very frequently, smiled ironically, and while hand-wringing massaged the back of one hand with the thumb of the other. The self-adaptor massaging a hand seems to express deception, disagreement, or uncertainty Givens (2016). Piano 2 also seemed to show discomfort and uncertainty scratching one hand frequently and smiling very frequently. Percussion 2 appeared uncomfortable and embarrassed hiding both hands in his pockets (Navarro, 2008) while moving his gaze downward (Ekman, 1991). Oboe seemed to be concurrently tense and uncertain. While slightly smiling and moving his eyebrows up and down, he looked around and sometimes glanced quickly at the camera appearing concerned about its presence.

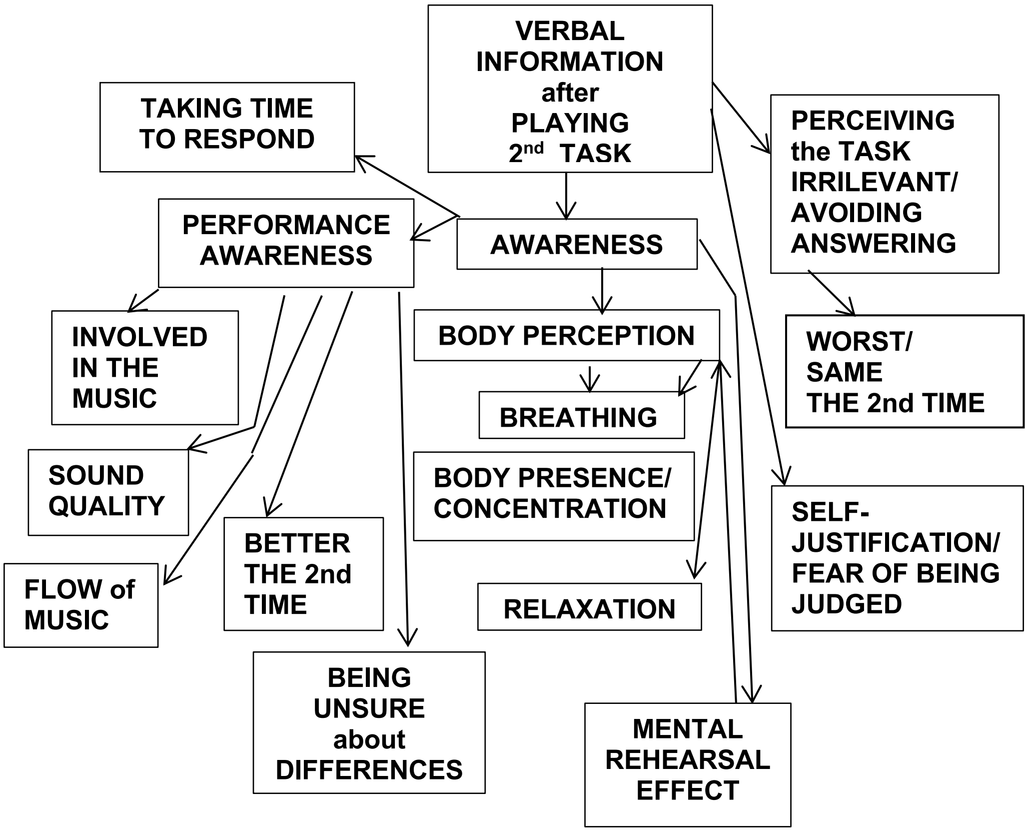
8.5 Musicians' concentration before performing

Before performing the piece of music the second time, twenty-one musicians were silent and still, seeming to focus their attention on what they were going to do. Compared with the first performance, sixteen increased the time they needed for concentrating before starting to play (see Tables 8.1, 8.2; Figure 8.1 in the appendices). Fourteen musicians took between three to five seconds, while one took eighteen. Three decreased their preparation time. For instance, Piano 1 decreased her time by four seconds, maybe because she was adapting to the research context. Only Cello 1 took no time to prepare and started playing immediately, as he did prior to performing Task 1. The musicians who took time seemed to be more introspective than they were the first time, as if they were slowing down (Petitmengin-Peugeot, 2002) their mental activity. This reflective act seemed to be affected by mental rehearsal.

8.6 Verbal information after playing Task 2

This section presents the analysis of the introspective process that musicians experienced after undertaking Task 2. They were required to describe their feelings referring to breathing, physical tension, relaxation, touch, mood and the mental images that they experienced during the mental rehearsal and the second performance. Three superordinate themes *Awareness, Self-justification/Fear of being judged,* and *Perceiving mental rehearsal as irrelevant/Avoiding answering* emerged from the interviews (see Figure 10).

Figure 10. Themes emerging from the interviews after completing Task 2



8.7 Awareness

The superordinate theme *Awareness* emerged by analysing and clustering 'the subjective qualities of feelings' (Shear & Jevning, 2002: 189) that each musician expressed during their responses after performing Task 2. Being conscious means to have some degree of subjective experiential awareness (Thompson & Zahavi, 2007; Hutto, 2011) that could relate to 'a pure thought-consciousness independent of sensory components' or 'both bodily feelings and some kind of cognitive assessment of them' (Seager, 2007: 10). Twenty-one musicians appeared more "aware of being aware" than when undertaking Task 1. This may have been due to the research context which was based on an *enactive* approach (Varela et al., 1993) which took into account the 'interindividual interaction' (De Jaegher & Froese, 2009: 445) developed between each musician and the interviewer. As this developed during the course of the research, the musicians seemed to be more at ease. They felt free to evaluate their performance and referred to their body perception in much more detail than after Task 1. In addition, nineteen of the musicians took time before starting speaking. The following sections present the subordinate themes *Taking time through silence and/or speech latency*, *Performance awareness*, and *Body perception* illustrating the introspective processes experienced by the musicians.

8.7.1 Taking time through silence and/or speech latency

The subordinate theme *Taking time* emerged again. However, differently than prior to Task 1 where it had indicated anxiety. At this stage of the research process, *Taking time* related to the cognitive load or mental effort (Frank et al., 2013) that the nineteen musicians (see Table 8.4 in the appendices) experienced for reliving and then verbalizing the experience that they had just had. This mainly occurred when they were required to reflect on the second performance and compare it with the first. When listening to the question, the musicians initially appeared surprised as if they were not expecting it. Then, they seemed to need time to assess sensorial and emotional dimensions (Petitmengin-Peugeot, 2002) generating the process of 'retrospective introspection' (Vermersch, 2009: 23). They exhibited silence and/or 'speech latency' (Frank et al., 2013: 59) and filled pauses with words such as 'ah, hum, uh' which seemed to indicate mental effort (Frank et al., 2013). The time span of periods of silence was considered significant when musicians went over the 'latency period' of two seconds (see Chapters 5 & 7; Knapp et al., 2014). This is the time considered normal when interviewees are silently reflecting on their response.

8.7.2 Performance awareness

The analysis of nineteen musicians' (see Table 8.4 in the appendices) responses about their self-evaluation of Task 2 and comparison with Task 1 generated the subordinate theme *Performance awareness.* After undertaking the performing element of Task 2, the musicians seemed to be more able to self-evaluate their performance than after performing Task 1. The fact that they paid more attention to sound quality, and were more involved in playing seemed to suggest that their degree of awareness had increased. However, nine musicians recognised that the second performance was better, but were not able to verbalize the nature of the differences. The emerging themes *Involved in music, Sound quality, Flow of music, Better the 2nd time,* and *Not able to verbalize differences* illustrate the musicians' introspective processes.

Involved in music

Seven musicians (see Table 8.4 in the appendices) indicated that they were involved in the music during the second performance. They manifested mental effort (Frank & al., 2013) in formulating utterances as the following extracts show. Four of them, Piano 1, Guitar 2, and Viola 1, appeared self-critical.

> **Piano 1:** ha ok ahm … the first time I was just playing and the second time ok ... I need to be so I would like.... playing a little more... delicately.
>
> **Guitar 1**: I think … more involved in what I was playing.
>
> **Guitar 2**: When I played the first time, I followed my instinct… Yes, eheem I prepared my mood differently … better, yes, eheemmm
>
> **Violin 3**: Yea I feel more implicated in the performance. I-I-I …now I was inside the music… I think…. I was more immersed because it wasn't musical the first time… it was musical.
>
> **Viola 1**: in the first performance I was continuously asking: what is it coming out?... in the second performance I had more time tooo tooo be more [*touching his chest*] inside sooo…

The latter musician kinaesthetically manifested his involvement in music when touching his chest. He seemed to exhibit 'a kind of reflection' (Merleau-Ponty, 1945/2002: 107) on his body which made him aware of his feelings. Kineasthesia seemed to constitute the link with emotional experiences (Sheets-Johnstone, 1999) and the relevant context for 'first consciousness' (Sheets-Johnstone, 2011). Two musicians, Clarinet and Percussion 2, also seemed particularly excited and used kinaesthesia when simulating playing. Simulating seemed to kinaesthetically assist them in reliving their emotional experience, connecting body and mind during responding, and then re-balancing their internal equilibrium (see Chapter 2; *autopoiesis*). For example, Clarinet had some difficulties in re-starting the interview. He was so absorbed in the music during playing that he cried with closed eyes.

> **Clarinet**: No… Humhum… there were let's say mixed some memories the-e-en mhuhu… I imagined … hum … so various emotional situations and clearly now …the first was only a little bit fo-o-r …so only for playing a little bit hem now… I thought [*simulating playing*] … I was more absorbed in the music…. I was was much more involved.

Percussion 2 also seemed to relive his exciting childhood experience already mentioned in Chapter 6.

> **Percussion 2**: Eh now I started to enjoy, I started to go, before, the first time I did i-i-i-t, it was an execution, now slowly and aaa just… when I [*simulating playing*] sta-a-arted ehe…there was bu-u-ut…after a-a-all ehem obviously in repeating of of [*simulating playing*] the thing… there is a story.

Sound quality

Seven musicians (see Table 8.4 in the appendices) declared that the sound quality was better or perceived an improvement in intonation in the second performance. However, for some responding appeared difficult. For example, Violin 1 and Flute appeared to be unaware of performance differences:

> **Violin 1**: …heem... better you talk about intonation or whatever…

> **Flute**: The diff-heum-yes then the so-o-ound difference…

They seemed to not know what to say, but appeared to want to present themselves positively to the interviewer giving socially desirable responses (Johnson & Fendrich, 2002: 1661). Cello 1 showed discomfort contradicting himself:

> **Cello 1**: It was the same thing than before, I didn't realize that I played less in tune than before… than now.

While speaking, Violin 3 seemed to be assisted by kinaesthetic movement in expressing his feelings when simulating a glissando. He seemed to re-live the experienced sound quality through sensory-motor perception:

> **Violin 3**: I'm not sure how it sounded but I feel better, the sound was warmer… More warm more romantic even high glissando [*simulating the glissato*] than the first performance.

In referring to the sound differences between performances, Cello 2 appeared uncomfortable in self-evaluating and, through speech latency (Frank & al., 2013), showed her mental effort in formulating her thoughts:

> **Cello 2**: For me the first was a little bit mo-o-ore the sound was less warm, here it was a little bit mo-o-ore… how to say mo-o-ore… a sound more round… it seemed to me.

Clarinet was excited, but sure of his evaluation:

> **Clarinet**: the sound was mo-o-ore uniform.

Following the flow of music

This subtheme refers to the responses of four musicians (see Table 8.4 in the appendices). They reported their sense of freedom and a perception of less effort when playing. One of them, Piano 3, similarly to following Task 1, mainly represented her thoughts through movement and kinaesthesia rather than words. For her kinaesthesia and movement seemed to be essential (Merleau-Ponty, 1945/2002; Sheets-Johnstone, 2011) for formalizing her thoughts. As the following extract illustrates, it was only through the use of movement that the sense of her words was clear.

> **Piano 3**: I was I think [*looking in front of her in space and slowly speaking*] more without thinking … I was just playing and listening to [*slowly moving the right hand in front of her like a wave*] how one thing goes [*continuing fluidly moving the hand*] to another and another I was thinking more sounds without thinking the first time [*looking in front of her*] I was thinking more like I go like here I go [*horizontally rigidly moving both hands*].
> **Interviewer: Do you think that this performance is better than the first for you?**
> **Piano 3**: … I thi-i-ink that the first 8 bars [*moving the right hand like a semicircle in front of her*] were much more connected like at least the second time for sure [*looking in front of her in space*] than the first time… the sound

was much more [*describing a semicircle*] connected. It was like huuuud [*describing a fluid semicircle*] flow that goes to the end [*doing the same movement*] the first time it was like thinking [*vertically and jerkily, moving the right hand*] so it was more divided…

Also for Viola 1 using kinaesthesia (see above) seemed fundamental for expressing how he felt when playing.

Viola 1: so… to follow the flow… the second time I knew before playing what was going to come out.

Recorder 1 and 2 respectively expressed a sense of freedom and less effort.

Recorder 1: heemmmm I was thinking more free all line… I think

Recorder 2: The second time I didn't have to dooo at the second phrase I didn't have to do a big practice I had I worked less hard the second time… I think it was more effort the first one

Better the 2nd time

When starting to respond, six musicians (see Table 8.4 in the appendices), declared that their second performance was better than the first without specifying what was improved or why. They seemed as if they were concealing their emotions and did not want to reveal their thoughts. Their body language (see Chapter 9) also manifested embarrassment when they were asked to self-evaluate their performance.

Guitar 2: better, yes, eheemmm we-eell certa-aanlyyy I have to say that I thought about what you told me of thinki-i-ing about yes, yes…

Viola 2: It was better… surely hum…

Four musicians spoke more when prompted by the interviewer, although one of them-Oboe- always appeared reluctant. He did not know what to say.

Oboe: Eh! It was the second time, so a little bit better… a little bit mo-o-ore….

Guitar 1: Everything better [*smiling*] I have to say
Interviewer: Why?
Guitar 1: hem [*smiling and looking at his right into space*]… I think… I want… just speak with the second playing and...

Two musicians first concealed their feelings behind stereotypical answers, then, when urged to respond recalled emotional memories. After an inconsistent answer (see above) and when asked if his second performance was worse than first, Cello 1 reacted as follows:

> **Cello 1:** [*interrupting*] NO! Better…because the sec-as usually-the second t… my teacher said always that the second time you play a piece… is better, first I played it already once…

Percussion 2 appeared particularly involved in remembering when he simulated playing:

> **Percussion 2:** Yes because this was the second time
> **Interviewer:** Why? What is it different for you?
> **Percussion 2:** Eh [*looking into space*] now I started to enjoy, I started to go, before, the first time I did i-i-i-t, it was an execution, now slowly [*looking into space*] that is I to go in I should pla-a-ay for a whi-i-i-le, isn't? so and aaa just… when I [*simulating playing*] sta-a-arted ehe…there was bu-u-ut…after a-a-all ehem obviously in repeating of of [*simulating playing*] the thing… there is a story.

Being unsure about differences

This subtheme was generated by responses from three musicians (see Table 8.4 in the appendices). They indicated that they had not noticed any differences between the two performances. Their reaction may have been because they had not experienced mental rehearsal before and that this had disoriented them as had the request for them to reflect and verbalize on their performance.

> **Piano 2:** Yea…yea… I think it was quite similar… I'm not I'm not sure [*slightly laughing then looking at her right into space*] probably… yea […] I want to be honest just to say I don't remember the first time.
>
> **Violin 1**: hum… it's difficult to to know, but [*biting the lower lip*]... heem...
>
> **Flute:** huummmm … noooo, NO [then speaking about sound quality-see above] very little difference

8.7.3 Body perception

Fourteen musicians demonstrated that they had intentionally paid more attention to their body (Merleau-Ponty, 1945/2002) than when completing Task 1 (see Table 8.4 in the appendices). They seemed to have activated a kind of 'interactive process' (Bickhard, 2008: 38) between their body and mind. Observing their body constituted the object of their reflection which achieved a deeper level of concentration and body self-awareness as a result of a 'behavioural dimension' (Merleau-Ponty, 1945/2002: 143). This process is illustrated in the following sections through the subordinate theme *Body perception* that was generated by clustering the subthemes *Breathing, Body presence/concentration, Sense of touching, Relaxation*.

Breathing

Breathing seems to be the key-factor, or 'key-meditation', for connecting 'interior attitude and the bodily posture' (Depraz et al., 2003: 216), a fundamental element of achieving body self-awareness. Breathing is 'equally corporeal and mental, immediately affected by one's mental state and a basic life process of the body' (Depraz et al., 2003: 216). Six musicians (see Table 8.4 in the appendices), indicated that they had paid more attention to their breathing during their mental rehearsal and subsequent performance. Breathing awareness seemed to assist three musicians in improving their performance.

> **Violin 1:** I try to breath in...after some notes
>
> **Violin 3**: for the first note ehm I-I-I imagined breathing … and I breathed better than the first time… I imagined hem … be conscious [*simulating bowing*]… the resistance of the string with the bow to the harmony of the music … [*touching his temple*] helped me when I played to prepare to fee-eel this kind of hum … this kind of… density in the harmony.
>
> **Recorder 2:** I just thought that I didn't have to take big breaths at the particular sections…
> Now… I thought about it I was thinking hum… I worked less hard the second time… I think it was more effort the first one, but it wasn't necessary.

Piano 1 recognised that she felt more anxious than after Task 1 through noticing her breathing.

> **Piano 1:** I think the breath was a little bit [*simulating heart beating on the chest*] it was a little bit like that
> **Interviewer:** In the second performance?
> **Piano 1:** In the in the se-con-d one
> **Interviewer:** Do you think you felt more anxious?
> **Piano 1:** Yea…Yea

Guitar 3 declared that she was more relaxed when giving the second performance after singing and perceiving her breathing during mental rehearsal.

> **Guitar 3:** Without guitar I perceived more other things, my breath… Eheemmm my breathing while I sang the piece inside my mind, I perceived the sounds of this piece… I felt much more my breathing [*touching her diaphragm area*] when I have the instrument I perceive I perceive maybe less and… I tried to be very [*touching both shoulders*] relaxed

Before starting to play Clarinet consciously changed his body posture in order to perceive his breathing better.

> **Clarinet:** I don't know if you see it, I have also I used a slight different posture for letting go the flow of breathing better… I [*simulating the posture*] was just bending a little bit forward and I felt… [*touching the diaphragm area*] the the breathing better yesyes.

Body presence/concentration

When playing, nine musicians (see Table 8.4 in the appendices) reported perceiving the presence of their body or parts of their body and concentrating more than in Task 1. This may have resulted from of the mental rehearsal where they imagined playing and intentionally directed their attention on their body and kinaesthetic feedback. According to Varela and colleagues, 'changes in the mind of the analyzers' can be generated and 'automatic patterns of conditioned behaviour' interrupted (Varela et al., 1993: 122). Three musicians referred to having perceived the presence of the whole body, while five seemed to focus their attention on specific parts of their body involved in playing, and one on both. This focus seemed to assist the musicians in improving their performance.

> **Piano 2**: now I felt my body engaged, mo-ore than the the first time… I-I realized that the my bodyyy was… There!…. Now I was aware of my body, bu-t… in the first … time I don't know what I have done.

> **Guitar 3**: When playing I perceived my body more… more than before, hum… I combined what I experienced without guitar this allowed me to feel things that the FI-irst time I didn't feel….I combined things ehem some things were so strong…it was so different… it was a sensation completely different… much stronger

> **Violin 1**: I fe-e-l more hem … more aware about the movements of my body not my arm and my hand… especially my body… I did more hem … more static the first time.

Viola 1: much concentrated… much insi-ide… inside

Six musicians seemed to focus their attention on the specific parts of their body involved in playing their instrument. They expressed this feeling through touching or simulating playing. They seemed to develop a sort of kinaesthetic thinking in which kinaesthesia appeared to be fundamental (Merleau-Ponty, 1945/2002; Sheets-Johnstone, 2011) for formalizing their thoughts, for instance in relation to relaxation.

Guitar 1: no no I thought a little bit about that [*touching shoulders*] hem...

Guitar 3: I remember the feeling when I embed [*simulating playing with the right thumb*] the finger, the pleasure, the nail [*simulating and singing some notes*]… then I remember the pleasure to embed the finger [*always simulating*] in the string, then… I felt my breathing much more

Violin 2: the first time I didn't feel [*simulating*] this… the string change… [*simulating the change*] I felt it much more [*simulating and touching the right elbow*]… I felt exactly this

Violin 3: maybe more conscious of playing here [*while simulating holding the bow moving up and down the right elbow*] and here

Viola 2: … I played very concentra-aa-ted… and I played better now, I play better…. The shift [*simulating with the left hand*] at some point the shift I have done before… it was a bit stiff [*simulating*]… now it was much softer…

Recorder 1: in the mental rehearsal I was… more aware [*touching both shoulder with the right fingers*] about certain tensions and in the playing …. I was just free to concentrated on where I were going.

Relaxation

This subtheme was generated by five musicians who indicated that they felt more relaxed when playing the second time. This feeling could be due to the effect of mental rehearsal or because it was the second performance and they were more relaxed.

Piano 2: I feel much more relaxed and … this affect our music.

Guitar 1: ehm…it was slightly more relaxed I think.

Cello 2: I was a little bit more relaxed this I wanted to say relaxation I was able to be mo-ore…

Recorder 1: Hem ….Hum I tried to have the shoulder more relaxed …

Cello 1 gave what might be seen as a rather non-reflective response. His reaction was perhaps related to his reluctance to engage with the practice of mental rehearsal and his attempt to conceal his embarrassment about having to do so.

Cello 1: eheemha the second time you are always more relaxed.

8.7.4 Mental rehearsal effect

The subordinate theme Mental rehearsal effect emerged from the responses of ten musicians (see Table 8.4 in the appendices), who reported how mental rehearsal affected their performance or assisted them in becoming aware of their body. As the following extracts show, this stage of the interview represents the third phase (L3) of ‘phenomenological reduction’ (see Chapter 3; Vermersch, 2002) in which musicians seemed to realize the distinction between the content of lived experience and the act of becoming aware of that experience, accepting it (Depraz et al., 2003).

Guitar 3: Yes! Definitely… it came out differently… This thing scared me… it created anxiety, from the beginning…because I perceived the sound differently…this concerned me
Interviewer: Why?
Guitar 3: Because I said: Beau-utiful!... Ve-ery beautiful… I liked it and this distracted me. This allowed me to continuing playing … I don’t know, I felt to be brought by music.

Recorder 1: In the mental rehearsal I was thinking about other things but… yea. So in the mental rehearsal I was… more aware [*looking around in space, then touching both shoulder with the right fingers*] about certain tensions and in the playing I was just free to concentrate on where I were going.

Bassoon: I…I did a little bit but now I realize that actually I do it all the time, for example when I Teach that way as well sca-le playing I get the children to… Tell me what notes they’re going to play in scale before before they play so

Piano 1: During mental rehearsal, I felt, hum I had to slow down the piece.

Piano 2: yea, [*referring to mental rehearsal*] it’s like another performance… it was very nice

Violin 2: Yes, because I focused on the piece more.

Showing uncertainty, Flute revealed first, that the act of thinking, or mental state, about the piece generated the intention of playing in a specific way and that this was then embodied through the behaviour (Haggard et al., 2002). This process seemed to allow him to achieve a sort of awareness.

> **Flute**: Hu… yes because maybe the fact of thinking… befo-o-ore and then playing while before we start playing the piece directly… even though one always imagines before, isn't?

8.8 Self-justification/Fear of being judged

As already argued in Chapter 5, people self-justify to re-establish their internal equilibrium (see Chapter 2; *autopoiesis*) and maintain their self-concept. This is a strategy that individuals adopt when feeling discomfort provoked by a performed action which is dissonant with their beliefs (Aronson et al., 2007). Four musicians self-justified when appearing to be dissatisfied with their playing (see Table 8.4 in the appendices). They seemed to be frustrated about the quality of their performance revealing a lack of self-efficacy in relation to the task. As the following extracts illustrate, these musicians showed embarrassment exhibiting silence and/or 'speech latency' (Frank et al., 2013).

> **Piano 1**: I cannot control this piano… and hmmm I'm trying to control the tone quality… I'm trying to pay ahm...tz... softer and.... maybe it was a little bit more calm for the other people to ... listen… bebecause hem ye as a pianist we never know the piano and, and if the piano is not that good we have we have we have to... to do the best and then.

Two musicians, Viola 1 and Flute, also seemed to indicate a lack of self-confidence as also shown after playing Task 1.

> **Viola 1**: There is an aggravating factor: today is Saturday and I haven't played since last Thursday so physically I feel…

> **Flute**: you know the memory then you saw there were some note that… heee the first interval destabilized me I thought I made a wrong note but it was only out of tune so… ehee let's say a little different than before.

8.9 Perceiving mental rehearsal as irrelevant

Five people were reluctant to engage in mental rehearsal (see Table 8.4 in the appendices). This may be because they were orchestral musicians who continually perform in concerts where their musical expertise is sufficient to guarantee good performance. They may not feel the need to find 'new ways' of practicing or 'new ways' of reflecting. Two musicians were polite in their responses but did not express their feelings. Three indicated their disagreement with the nature of the task and avoided answering, or declared that the second performance was similar or worse than the first.

Avoiding answering, Disagree with the task, Worst/ Same the 2nd Time

Two musicians, Oboe and Percussion 1, avoided giving a response. Oboe did not seem to have paid attention to his body or his performance and did not expect the question about comparing the first performance to the second.

> **Interviewer**: Why was the second time better?
> **Oboe**: So for me more on-ne perso-o-on so ssss I… to me it happens mo-o-ore I play the same thing…more clearly you manage what you have to do.

Percussion 1 avoided responding about his feelings and showed defensive behaviour intellectualising his responses (Freud, 1966).

> **Percussion 1**: no there are no differences because… I'm used to do this activity while playing… the activity that you asked me to perform like [*simulating mental rehearsal position and closing eyes*] that ehem while playing [*simulating the position for starting playing with both hands*] I do… this thing [*while playing and shrugging looking at the interviewer*]… I DO … it's exactly what my brain is thinking to do.

Immediately after Cello 1 finished playing he expressed his disagreement with the process of mental rehearsal clearly rejecting it.

> **Cello 1**: [*after playing*] It's not possible to separate what you asked with what you play [*hiding his face behind the cello and manipulating the cello*] it's the same thing than before that is not…

Appearing nervous (see Chapter 9), Bassoon indicated that she was used to playing by instinct, i.e. automatically and that she did not think about what she was doing.

> **Bassoon**: Ah it's very different because NOW I'm aware about what I'm doing and I think…I do so many things by instinct… for example if I go to open the door and go out … hem I've just to go out of the door, but if you say to me I'd like to walk to the door I'd like to turn handle, I'd like to open the door and walk out …I'm thinking about it where I was playing these things by instinct I don't actually think about what I'm doing.

Harp revealed her discomfort about mental rehearsal and being requested to reflect on her playing. She explicitly admitted that other skills were required and that she was not used to adopting them. According to Holgersen (2010), she trusted implicitly in the automatism of her body without paying attention to it.

> **Harp**: I think it was WORST! Actually …eye, eye, eye
> **Interviewer**: Why?
> **Harp**: I don't know …because I was thinking: I was me I wasn't me I felt … Yea … actually yes… I mean it was kind of disconnected… as I can tell I didn't what go anymore I didn't let itself to go I was trying to keep control of it. I have to find the way, I don't know…. Maybe different if I'm learning a piece new… when different skills come in I don't know

8.10 Summary of the chapter

The nonverbal behaviour when performing mental rehearsal revealed musicians' physiological reactions like meditation such as relaxation which also indicated psychophysical well-being. Compared with the first performance, most of the musicians spent longer concentrating before starting to play. It seemed that through the act of mental rehearsal they were more introspective. When reporting their experience, the musicians appeared to be more at ease. They referred to their body perception in much more detail and were more able to self-evaluate their performance than after Task 1. Paying more attention to sound quality and being more involved in playing suggested that the musicians' degree of awareness had increased.

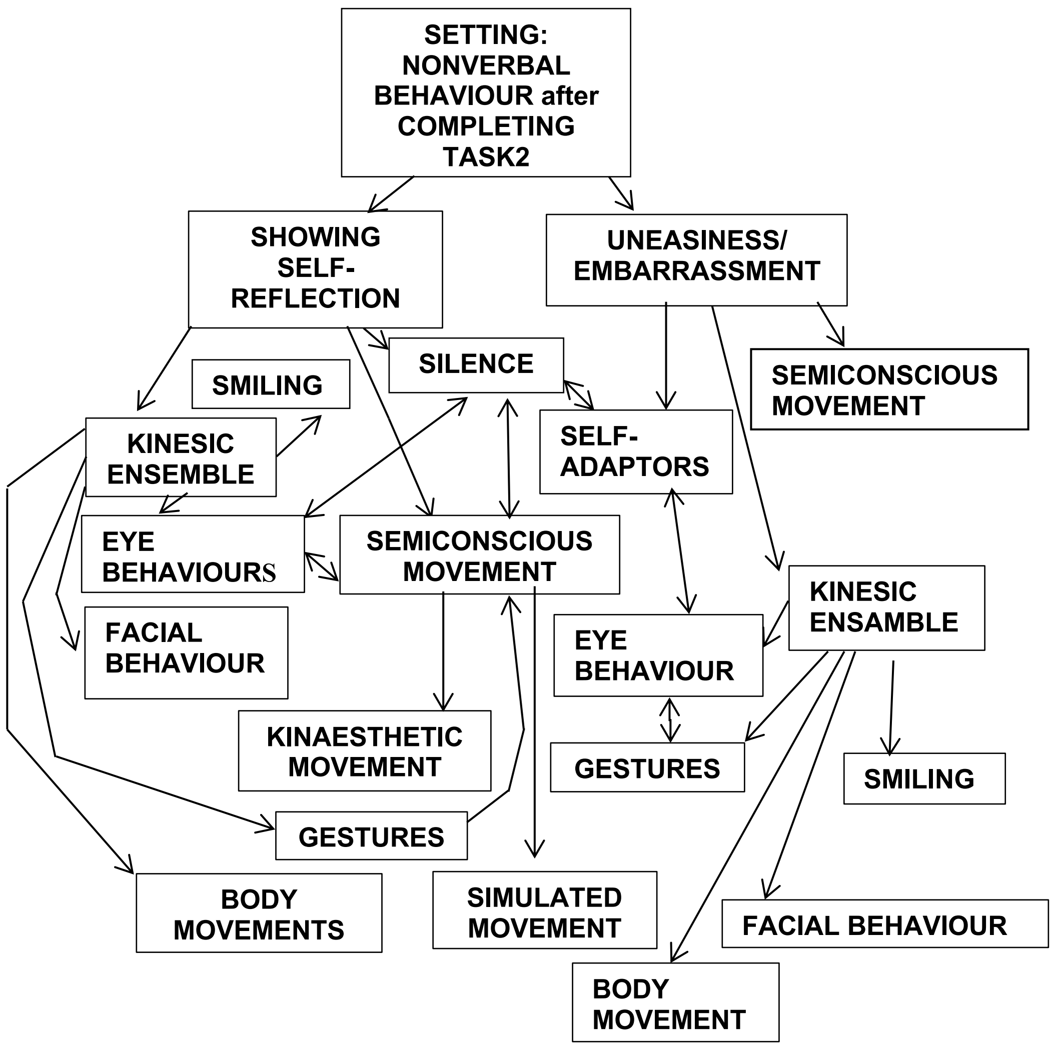
Chapter 9

The nonverbal communication of the musicians manifested after completing Task 2

9.1 Introduction

This chapter presents the findings relating to musicians' nonverbal communication during the interview after completing Task 2. Details are presented from the point where they were required to reflect on and verbalize about the differences in performance between the first and second task, and their awareness of their body in performance after completing Task 2. The themes emerging from the analysis of the more significant nonverbal signals are presented in Figure 11.

Figure 11. Themes of Nonverbal information after playing Task 2



9.2 Nonverbal behaviour after completing Task 2

In the analysis process the same criterion were adopted as in the previous chapters (see Chapters 4, 5, and 7). Two main behaviours were identified and classified into two superordinate themes, *Showing self-reflection* and *Uneasiness/embarrassment*. The first superordinate theme was generated by examining sets of kinesic ensembles (see Samovar et al., 2009; Calbris, 2011) combined with other cues such as silence, smiling, and semiconscious movements (see Chapter 5). The second theme arose by combining kinesic ensemble with, self-adaptors (see Ekman, 2004; Harrigan, 2005), and semiconscious movements. The first superordinate theme included data from eighteen musicians while the second concerned four participants. One musician was included in both themes because he first seemed embarrassed and anxious and then appeared able to self-reflect (see Chapter 8).

9.3 Showing self-reflection

The superordinate theme *Showing self-reflection* had already emerged before the musicians undertook Task 2 (see Chapter 7) and included data from four musicians. Eighteen musicians were observed to be self-reflecting. The cues of the subordinate theme *Kinesic ensembles* (see Samovar et al., 2009; Calbris, 2011) were combined with other nonverbal signals (see Table 9.1 in the appendices). The musicians initially appeared surprised as if they were not expecting to have to reflect on ther performance and compare it with the first performance. As they needed time to assess their response and evoke sensorial and emotional dimensions (Petitmengin-Peugeot, 2002), they simultaneously exhibited nonverbal signals which seemed to reveal self-reflection. They adopted a kind of embodied cognition, reacting with their body (Varela & al., 1993). They revealed their process of thinking through their body showing how they redirected their attention from the “exterior” to the “interior” (Depraz et al., 2003: 25). Moreover, their nonverbal communication revealed a reduction in levels of *state anxiety* and increasing calmness.

9.3.1 Kinesic ensemble combined with other nonverbal language

At this stage of the interview, the musicians transmitted lots of nonverbal information, so-called ‘kinesic ensemble’ (Calbris, 2011), through eye behaviours (Agnus, 2012), and movements of different parts of the body such as ‘manual gestures, head gestures, and facial expression’ (Calbris, 2011: 267). Eighteen musicians (see Table 9.1 in the appendices) displayed their kinesic ensemble, sometimes combined with other nonverbal signals. This appeared to be spontaneous, unintentional, and performed without awareness (Samovar et al., 2009). In the following sections, the single components of kinesic ensemble, for example looking into space, are presented with other nonverbal communication signals.

9.3.2 Kinesic ensemble: eye movement combined with other nonverbal signals

The movement of the eyes is unintentionally performed (Ekman & Friesen, 1969a) and has an important role in dyadic interactions influencing the quality of conversation (Hugot, 2007). It assists the interlocutor in deducing a speaker’s actions, intentionality, and emotions (Macrae et al., 2002). In the next sections, the four classifications of eye behaviour set out in the previous chapters are considered in relation to Task 2, and are sometimes examined with other nonverbal signals.

Looking into space

Similarly to following completion of Task 1, all of the twenty-two musicians (see Tables 9.1, 9.2 in the appendices) looked into space when they started to verbalize after completing Task 2. Although two kinds of gaze, such as looking at a fixed point and looking around or down, had already been identified after completing Task 1, the frequency of each changed. Eighteen musicians mainly focused on a fixed point seeming to indicate self-reflection (Frischen et al., 2007; Navarro, 2008), compared with thirteen after completing Task 1. Looking around or down, sometimes blinking (see below) seemed to express embarrassment and/or uneasiness (see Chapter 4; Haak et al., 2009; Navarro, 2008; Smilek et al., 2010). At this stage of the research, only four musicians displayed this behaviour compared with Task 1 where there were nineteen. Compared with after completing Task 1, eleven musicians maintained the same frequency level, four increased it, while for seven it decreased (see Tables 9.2, 9.3; Figure 9.2 in the appendices). Those musicians who displayed the same frequency may have been experiencing the same feelings as in Task 1 such as *uneasiness* or embarrassment. But, if they combined their gaze with other cues, this may indicate a change in their behaviour from *state anxiety* (Harrigan et al., 1992) to self-reflection. This was the case for four musicians, Piano 2, Guitar 1, Violin 3 and Viola 2 who frequently looked into space in both tasks, but changed their eye behaviour. They initially appeared embarrassed looking around and showing other nonverbal signals of embarrassment such as self-adaptors (see Ekman, 2004; Harrigan, 2005) and/or embarrassed smiling (Keltner, 2005). Then, they seemed to self-reflect looking at some fixed point and performing semiconscious movements (below) which seemed to support their introspection process. Four musicians increased their looking into space at some fixed point seeming to improve their concentration (Frischen et al., 2007) such as Piano 3 and Violin 1. Bassoon and Cello 1 also increased looking around into space but this seemed to be provoked by the fact that they appeared to not know how to verbally communicate their disagreement with undertaking the task revealing embarrassment (see Chapter 8). Seven musicians decreased the frequency of looking into space. One reason for this might be that some verbalized less as they did not know how to respond, such as Oboe, or disagree with undertaking h the task, such as Percussion 1, and Harp (see Chapter 8). Four musicians, Guitar 3, Viola 1, Clarinet and Percussion 2, considerably reduced looking around into space and concentrated their gaze on some fixed point. This seemed to indicate a reduction in stress. Percussion 1, looked less into space and more at the interviewer than after Task 1 and seemed to control his feelings when intellectualizing his responses (see Chapter 8). He seemed to maintain the same defensive behaviour which he expressed after completing Task 1 (see Chapter 5).

Looking at some fixed point in space, silence, closing eyes, and semiconscious movements

The first kind of gaze *Looking at some fixed point into space* was manifested by eighteen musicians who were also silent (see Figure 9.1 in the appendices). All of them seemed to slow down their mental activity (Petitmengin-Peugeot, 2002) revealing needing time for reflecting (Frischen et al., 2007) and achieving clarity of thought (Navarro, 2008). Five more musicians showed this behaviour than after completing Task 1. However only three of them, Piano 3, Violin 2, and Recorder 1, constantly manifested this kind of gaze appearing to self-reflect immediately after playing. The other fifteen first appeared anxious or embarrassed looking around/down, then changed the quality of their gaze looking at some fixed point seeming to self-reflect. Eight musicians also alternated their gaze with closed eyes (see Table 9.1 in the appendices). This seemed to assist them in 'slowing down' their mental activity, contributing to enabling them to focus their attention on internal processes, and suppress information coming from external stimuli (Glenberg et al., 1998). Twelve of them also executed anticipatory gestures (McNeill, 1992; Goldin-Meadow, 2003) and/or semiconscious movements (see Table 9.1 in the appendices) which included kinaesthetic and simulated movements. When performing semiconscious movements (see below), the musicians received sensorial feedback from the body while moving and touching specific parts of it (Sheets-Johnstone, 2011) such as the diaphragm area or shoulders. This was exhibited by eleven musicians (see Table 9.1; Figures 9.8, 9.9 in the appendices). This phenomenon mainly occurred when musicians were required to reflect on their body (see Chapter 8). Looking at some fixed point and performing these movements seemed to support the musicians in reliving and reflecting on the experiences of mental rehearsal and playing, and then formulating their responses before speaking. In summary, this behaviour seemed to reveal the moment when they focused on their body and 'converted a certain motor essence into vocal form' (Merleau-Ponty, 1945/2002: 211).

Looking at the interviewer, silence, body movements, and other nonverbal signals

All of the musicians looked at the interviewer. Comparing this behaviour with that observed after completing Task 1, nine musicians maintained the same level of frequency, eight increased frequency and five decreased it (see Table 9.2 and Figure 9.3 in the appendices). At this stage of the research, the musicians seemed to exhibit this behaviour at three different points in time. Two were common to all of the participants. The first was observed when the musicians were silent and looked at the interviewer immediately after playing, indicating to her that they had concluded their performance. The second, already discussed (see Chapters 4, 5, 7), occurred while musicians listened to the questions and revealed a high level of attentiveness (Samovar et al., 2009). The third was exhibited by seventeen musicians who combined it with semiconscious or body movements (see Table 9.1 in the appendices). After looking into space at some fixed point while performing these movements, the musicians looked at the interviewer some still moving others stopping. Their gaze seemed to reveal a new level of awareness related to their *lived experience*. For example, Piano 1 seemed to become aware of an increase in her discomfort (see Chapter 8). During her response, looking at the interviewer, she simulated her heart beating on the chest while blinking contributing to communicating her anxiety (Smilek et al., 2010). While looking at the interviewer, Guitar 1 seemed to realize that he was more relaxed performing the kinaesthetic movement of touching his shoulders. Clarinet seemed to consciously perform simulated and kinaesthetic movements while looking at the interviewer. This occurred when he described his posture during playing to ensure that the interviewer understood his response. Two musicians, Guitar 2 and Oboe, respectively performed gestures such as beats (McNeill, 1992) and anticipatory gestures (Goldin-Meadow, 2003) while looking at the interviewer. In emphasizing his words while rhythmically moving his hands, Guitar 2 appeared as if he was discovering the benefit of mental rehearsal. Oboe appeared disconcerted seeming to search for words while performing anticipatory gestures. His looking at the interviewer appeared to be a request for reassurance.

Looking at the camera, smiling, and self-adaptors

After completing Task 2, four musicians rarely looked at the camera, two less than after completing Task 1 (see Tables 9.1, 9.2, 9.3 in the appendices). Exhibiting different levels of frequency, three of them had already shown this behaviour before Task 1 (see Chapter 4), while Guitar 1 displayed it for the first time. When glancing at the camera, the musicians seemed to reveal discomfort due to its presence as if it could judge them. Their uneasiness was also expressed by displaying other cues revealing embarrassment. Violin 2 and Cello 2, for example, while glancing at the camera, also manifested embarrassed smiling (Keltner, 2005) before starting to speak. Then, they seemed to overcome their initial embarrassment and focus on their "interior attention" as their semiconscious movement and glancing at some fixed point revealed (see above). Besides revealing uneasiness while quickly glancing at the camera, Bassoon exhibited other cues which communicated further information. She seemed to alleviate her uneasiness by manipulating her instrument (Harrigan et al., 1986; Ekman, 2004), appeared tense compressing her lips, and then manifested disagreement, showing her tongue (Givens, 2002) while speaking about mental rehearsal (see Chapter 8).

9.3.3 Kinesic ensemble: gestures and other cues

The same three categories of gestures, anticipatory, iconic, and beats, already examined in Chapters 4 and 5 were identified. In contrast to following Task 1, all of the musicians performed at least one of these gestures (see Table 9.6 in the appendices). Making gestures seemed to assist the musicians in the shaping of utterances (Goldin-Meadow, 2003) appearing to be a sort of "thought in action". The process of thinking appeared to be influenced by gestures resulting in a sort of 'bridge between thought and action because they are kinaesthetically close to action and yet also symbolic' (Cartmill et al., 2012: 129). Thoughts were concretely manifested through the gestures 'becoming part of the [musicians'] experience (McNeill & Duncan, 2000: 156) seeming to assist them in remembering their experience (Cartmill et al., 2012) when verbalizing. This phenomenon was mainly observed when the musicians performed anticipatory gestures and/or semiconscious movements.

Anticipatory gestures and semiconscious movements

As previously discussed, people perform anticipatory gestures before starting to speak and are assisted by them in shaping thoughts and utterances (Goldin-

Meadow, 2003). At this stage of the interview, eleven musicians, three more then after completing Task 1, performed these gestures (see Table 9.6, Figure 9.10 in the appendices). Comparing the frequency of anticipatory gestures with those following completion of Task 1, eight musicians did not show any frequency variation. Nine increased anticipatory gestures, and five decreased their frequency (see Table 9.7 in the appendices). Nine musicians interchangeably performed these gestures with semiconscious movements (see Table 9.1 in the appendices) which seemed to be executed in a 'representative way'. Cartmill and colleagues (2012) define representational gesture as 'hand movements that often resemble the actual movements involved in acting on objects' (Cartmill et al., 2012: 129). The musicians appeared to physically represent their mental processes also revealing how the mind is 'integrated into the body's sensorimotor systems' (Cartmill et al., 2012: 130). For example, Piano 1 very frequently alternated anticipatory gestures with kinaesthesia. Before starting to speak, she conveyed anxiety when moving her hands in front of her as if she was looking for words, while looking into space and being silent. Then, to express her feelings, she continued to execute anticipatory gestures and kinaesthesia seeming to consider this more effective than words. Two musicians, Violin 2 and Violin 3, frequently seemed to prefer expressing their thoughts through gestures rather than speaking. They alternated words with anticipatory gestures and semiconscious movements. Violin 2 seemed to be assisted by semiconscious movements in shaping her responses before beginning to speak, and then when she explained the string change. She simultaneously simulated the string change and touched her right elbow with the left hand, searching for appropriate words, then for demonstrating her thoughts. This behaviour seemed to assist her in becoming aware of physical changes, such as the weight and elbow position that she had adopted when playing the piece for the second time.

Iconic gestures

Iconic gestures refer to the 'semantic content of speech' (see Chapter 4; McNeill, 1992: 12). At this stage of research fifteen musicians performed iconic gestures, one musician less than following the completion of Task 1 (see Table 9.6, Figure 9.11 in the appendices). Eight musicians showed the same frequency as observed after completing Task 1, four increased frequency and ten decreased it. For instance, Percussion 2 did not perform iconic gestures at all, while he frequently did so after completing Task 1 (see Table 9.6 in the appendices). Oboe also reduced these gestures, maybe because the length of time he spoke was less that after Task 1. Piano 2 appeared more relaxed than after Task 1 reducing the frequency of iconic gestures from very frequently to not performing them at all (see Table 9.6 in the appendices). Piano 3 considerably increased that frequency. She behaved in a different way than after Task 1 where she did not exhibit iconic gestures at all. Following Task 2, she frequently used iconic gestures and appeared to be very calm.

Beats

As already discussed, beats are short and fast hand movements and seem to rhythmically accompany the pulsation of speech rather 'like beating musical time' (McNeill, 1992:15). When the musicians performed beats, they seemed to be used to stress what they were saying, revealing little embarrassment, for instance, Viola 2 (see Table 9.6 in the appendices) performed these gestures very frequently after completing both Tasks while also looking at the interviewer. Beats seemed to be part of his repertoire for communication (Harrigan, 2005) in the research context executing them for self-reassurance and relieving his discomfort. At this stage of the research, comparing the use of beats with those performed after completing Task 1, two main elements emerged. The number of musicians who performed these gestures slightly increased from twelve to thirteen, while the frequency level of beats decreased (see Table 9.7; Figure 9.12 in the appendices). Eleven musicians performed beats infrequently. Two executed beats very frequently, while five increased the frequency level of beats. Guitar 2, for example, showed embarrassment while being required to self-evaluate his performances. He increased his beats frequency from infrequently to very frequently and exhibited 'speech latency' (see Chapter 8; Frank et al., 2013).

9.3.4 Body movements

Similarly, to after undertaking Task 1, at this stage of the research, all of the musicians performed body movements combined with other cues (see Table 9.8 in the appendices) when verbalizing. They mainly communicated feelings, intensity of emotional states, the degree of attention paid to the task and their level of motivation and involvement (see Mehrabian, 2009; Knapp et al., 2014) when interacting with the interviewer. Two main findings emerged. Firstly, although the musicians showed the same kinds of body movements already presented in the previous chapters (see Chapters 4, 5, 7), there was variation in frequency. Musicians still performed body movements that conveyed uneasiness, but this reduced as the frequency[5] indicated (see Figure 9.13 in the appendices). Secondly, some of the musicians performed new types of body movements such as crossing hands/arms, adjusting sitting, and hiding hands (see Tables 9.10a, 9.10b in the appendices) which revealed discomfort.

As already demonstrated after completing Task 1, collaborative and positive behaviours were communicated by leaning forward and rocking, while non-collaborative and defensive behaviour was illustrated by head tilt to the side, nodding, turning and shaking the head (see De Meijer, 1989; Givens, 2002; Harrigan, 2005; Samovar et al., 2009). For example, Viola 2 appeared friendly when displaying head-tilt-side and slightly increased leaning forward (Givens,

[5]The body movement frequency was evaluated averaging the performance of each of it as illustrated in Tables 9.1 and 9.8 in the appendices.

2002; Navarro, 2008) and also appeared to be involved in interacting with the interviewer when nodding. Then, when evaluating his performance, he manifested defensive behaviour and discomfort through leaning backward, shaking his head and shrugging (Givens, 1977; 2002), appearing particularly nervous, also adjusting his sitting position.

The most common body movements were head-tilt-side, exhibited by sixteen musicians and nodding which was performed by fifteen musicians. (see Tables 9.10a & 9.10b). For example, Recorder 2 performed head-tilt-side showing friendliness while being silent and self-reflecting before speaking. Nevertheless, she communicated uncertainty, and a need for self-reassurance when frequently combining this cue with shrugging and rocking (Givens, 2002). Defensive behaviour and discomfort were mostly manifested by leaning backwards, (exhibited by eleven musicians), shaking the head (elven musicians), and shrugging (ten musicians) (Givens, 1977; 2002). Harp leaned backward when evaluating her performance more than following Task 1 and laughing embarrassedly (see Chapter 8). Piano 1 also shook her head when evaluating the effect of the mental rehearsal. She appeared to have some difficulties in admitting she had to 'slow down the piece' because she realized that she was performing it incorrectly.

Eight musicians displayed the same body movement frequency as following ask 1, but for some it decreased. For example, three musicians 'rocked' similarly to after completing Task 1. This movement seemed to be part of their behavioural repertoire (Harrigan, 2005) performed for diverting attention from stress and arousing pleasure with the effect of reducing anxiety (Givens, 2002). Flute, as he did after completing Task 1, very frequently performed body movements always exhibiting uneasiness, although there were some behavioural changes. His level of shrugging decreased, he maintained the same frequency of shaking head, increased the level of nodding, and introduced leaning backward, head-tilt-side, and hiding hands. He conveyed a range of feelings such as uncertainty and disagreement while shrugging, leaning backward (Givens 2002) and looking around in space when being asked to self-evaluate his performance. Hiding his hands, Flute communicated low-confidence (Navarro, 2008) when starting to answer the question, then after he began speaking, he seemed to change his feelings, nodding with head-tilt-side (Givens, 2002) indicating friendliness. He seemed to be beginning to feel at ease and to trust the interviewer. Other musicians appeared calmer, and did not manifest any anxiety cues, while others, because the time for responding reduced, consequently displayed less movement. For example, in contrast to after Task 1, Percussion 2 scarcely displayed body movements. He performed head-tilt-side and shrugging when slowly speaking and appeared to be trying to recall his feelings (see Chapter 8). Oboe scarcely showed any body movements because his response was very short. However, he appeared disconcerted, adjusting his sitting, as if he did not know how to respond.

Seven musicians increased their body movement frequency to levels higher than after completing Task 1. For example, comparing Violin 1's behaviour with after Task 1, he frequently showed body movements which seemed to increase his discomfort and nervousness (Givens, 2002). This was particularly evident immediately after playing when he looked at the interviewer and exhibited an Adam's-apple-jump, as if he was afraid he was going to be judged.

Ten musicians for a short time, displayed discomfort indicated by crossing arms, adjusting their sitting, and hiding their hands. Musicians showed these movements when they were particularly anxious and reluctant to speak. To alleviate their stress, three musicians crossed their arms while speaking (Givens, 2002). Guitar 2 manifested the effort to speak not only through his words (see Chapter 8), but also when he crossed his arms in a defensive posture (Navarro,

2008) and adjusted his sitting position several times. This latter movement was also performed by other four musicians Viola 1, Viola 2, Oboe, and Percussion 1. Hiding hands was exhibited by four musicians who all revealed discomfort (Navarro, 2008). For example, while hiding her hands, Bassoon appeared particularly nervous when admitting playing by instinct (see Chapter 8).

9.3.5 Facial behaviour

All of the musicians, two more than after completing Task 1, exhibited facial movements (see Table 9.11 in the appendices). Eleven musicians scarcely changed their facial behaviour; five infrequently changed it; six frequently changed it; and one did so very frequently (see Figures 9.14 in the appendices). Similarly to other cues, people unconsciously display facial behaviour which manifests the nature of their emotions (Ekman & Friesen, 1969a: 50). However, at this stage of the interviews, three musicians (see Table 9.13 in the appendices) seemed to consciously make some facial movements such as lips like 'an upside-down U' (Navarro, 2008:188) which is a significant indicator of high discomfort. While shaking the head, through upside-down U' they seemed to communicate that they did not know what to say. This occurred with Violin 1, Cello 2, and Guitar 2 who were unsure about the difference in the two performances (see Chapter 8). Displaying lips down also appeared to be part of body language repertoire of some musicians such as Bassoon who displayed it after both tasks. She indicated displeasure when referring to mental rehearsal (see Chapter 8) while also displaying lower eyebrows (Navarro, 2008). Cello 1 continued to convey embarrassment when expressing disagreement about the nature of the task, although he reduced his facial behaviour hiding his face behind the cello (see Chapter 5) to conceal his negative feelings (Ekman, 1991).

The most common facial movements were raising eyebrows and parting lips respectively. These were exhibited by nine musicians. Both cues seemed to express surprise and or were used to emphasize words (Ekman et al., 1972; Ekman, 1991; Ekman, 2004; Givens, 2002). Parting lips was especially evident when musicians self-reflected or listened to the interviewer expressing surprise (Ekman et al., 1972; Ekman & Friesen, 2003). For example, Guitar 1 showed surprise when speaking about the effect of mental reaharsal and before referring to feeling more relaxed. He also slightly bit his lower lip. This latter cue, exhibited by other three musicians could indicated nervousness and may be part of their 'repertoire for dealing with stress' (Navarro 2008:12). This could occurr when being embarrassed and not knowing how to behave (Harris, 2013). Licking lips, exhibited by two musicians, is another signal which expresses uncertainty especially when manifested during silence. Three musicians, one more than following completion of Task 1 showed a relaxed facial expression when responding. Their responses were also concise. Three other musicians seemed embarrassed, cringing when they indicated that their performance had declined. For example, Recorder 2 made a face when referring to her breathing (see Chapter 8).

9.3.6 Smiling

Twenty musicians, one less than after completing Task 1, smiled during verbalizing (see Table 9.14 in the appendices). Two musicians did not smile at all. Those who smiled did not communicate the same feelings. For example, Piano 3 always appeared calm and relaxed (see above) and the content of her speech was very clear (see Chapter 8). In contrast, Guitar 2 frequently transmitted embarrassment or discomfort (see above) and appeared reluctant to speak (see Chapter 8). Comparing his behaviour with that after completing Task 1 where he nervously laughed, at this stage of the research, he still appeared tense and anxious, but less so than in relation to Task 1. He seemed more involved in the task. His reluctance was maybe due to his 'lack of introspective competence' (Vermersch, 2009: 229). Comparing levels of smiling with those after completing Task 1 (see Figure 9.15 in the appendices), the following frequency levels were noted. Eight musicians maintained the same frequency level, six increased it and eight decreased it (see Table 9.15 in the appendices). The same three types of smiling, embarrassed, nervous, and affiliation (see Table 9.14 in the appendices), already detected, were identified. Embarrassed smiling usually expresses uneasiness or conceals negative emotions (Ekman et al., 1990; Keltner, 2005). This kind of smiling, exhibited by fifteen musicians mainly occurred when musicians, such as Guitar 1, Violin 1, Violin 3, did not know how to answer. Viola 1 displayed embarrassed smiling when revealing that he had not practised, and Cello 1 when expressing his disagreement about the nature of the task (see Chapter 8). Piano 1 smiled expressing embarrassment when admitting to feeling more anxious than after Task 1. While describing this, she seemed to become more anxious, nervously laughing. This behaviour, exhibited by seven participants could be due to an anxiety provoking factor (Glenn, 2013). Affiliation smiling, displayed by twelve musicians seemed to be to establish a momentary alliance with the interviewer (Lavin & Maynard, 2001) as, for example, exhibited by Violin 3 when listening to the question with head-tilt-side.

9.3.7 Silence

As previously argued, silence, alongside other cues, seemed to indicate mental effort (see Chapter 8; Frank & al., 2013) and the time that musicians needed for assessing their sensorial and emotional responses (Petitmengin-Peugeot, 2002). This seemed to assist the musicians in generating the process of 'retrospective introspection' (Vermersch, 2009: 23). At this stage of the research, silence occurred not only prior to answering, but also when musicians paused in speaking as if they were reflecting on the experience that they had just had.

Twenty-one musicians exhibited silent moments at different frequency levels (see Table 9.16). Comparing this behaviour with that after completing Task 1 (see Table 9.17, Figure 9.16 in the appendices), nine musicians maintained the same silence frequency level; seven increased it; while six decreased the time spent in silence. Bassoon and Harp, reversed the behaviour manifested after Task 1 (see Table 9.16 in the appendices) appearing nervous when expressing disagreement about the nature of the task (see Chapter 8).

9.3.8 Self-adaptors

Although self-adaptors indicate discomfort, the researcher decided to present them in the superordinate theme S*howing self-reflection.* Most of the musicians changed their feelings becoming calmer and introspective during their responses. While verbalizing, sixteen musicians performed self-adaptors. These gestures consist in self-touching or manipulating objects and are performed when people try to alleviate their uneasiness and adapt to circumstances (see Harrigan et al., 1986; Ekman, 2004; Harrigan, 2005). Although the musicians still revealed discomfort when performing self-adaptors, they appeared more tranquil and concentrated compared with responses following Task 1 (see Table 9.18; Figure 9.17 in the appendices). The most frequent cue was scratching and/or rubbing. Eleven of them exhibited this (see Table 9.20 in the appendices). They stroked or rubbed their thighs, hands, nose, cheek, eyes, chin, and forehead. For example, Clarinet, who very frequently displayed self-adaptors, rubbed his eyes, and stroked his thighs and throat very frequently immediately after playing. Maybe the fact that he cried during playing made him feel embarrassed and he tried to alleviate his discomfort through these movements. Oboe stroked his chest and manipulated his instrument as if he did not know what to say. Seven musicians bit their lower lip and seven manipulated their instrument or their clothes as exhibited by Guitar 3 who appeared especially excited when referring to the effect of mental rehearsal. These movements also suggested tension or uneasiness when they were combined with other cues (see Chapter 8). For example, Piano 2 communicated her difficulty through maintaining gaze when stroking one hand or grooming her hair (Harrigan, 2005) while looking at the interviewer (see Table 9.1 in the appendices). Guitar 1 confirmed his nervousness when scratching his nose and biting his lips. Cello 1 manipulated both his instrument and bow while hiding his face and unfavorably commenting on mental rehearsal (see Chapter 8). Recorder 2 frequently touched her cheek, manipulated the recorder, and the reed with her lips, while looking around communicating general uneasiness. Her behaviour, similar to that of Bassoon suggested that both of them were perhaps not totally honest in their responses (Navarro, 2008). Comparing the incidence of self-adaptors with those performed after completing Task 1, most of the musicians maintained the same frequency levels (eleven) or reduced it (eight) (see Table 9.19 in the appendices), while only three increased it.

9.3.9 Semiconscious movements

Fifteen musicians performed semiconscious movements. This subordinate theme includes two kinds of movements: *Kinesthetic* and *Simulated movements* (see Table 9.4 in the appendices). The semiconscious movement definition was generated by observing movements that initially appeared unintentionally or pre-reflexively performed (see Chapter 2; Zahavi, 1998). Kinaesthesia (see Chapter 2) refers to the sensorial feedback received from the body while moving and is mainly related to the sense of touching (Sheets-Johnstone, 2011), while simulated movement refers to the simulation of playing. When starting to verbalize, musicians seemed to not pay attention to these movements. However, when executing, musicians seemed to be guided in self-reflecting by these movements in reflecting on their body. According to Sheets-Johnstone (2012:

44), the ‘kinetic qualities that structure [the] movement’ seemed to arouse the ‘kinesthetic memory’. Musicians relived their experience and intentionally perceived their body (Husserl, 1977:196) in a circular dynamic process continuously receiving sensorial feedback (Varela et al., 1993) from kinaesthetic and simulated movements (Sheets-Johnstone, 2011).

Kinaesthetic movements

Twelve musicians, four more than after completing Task 1, performed kinaesthesia also combining it with other cues when responding (see above and Tables 9.1 & 9.4 in the appendices).

Ten musicians did not exhibit kinaesthesia at all. Nine rarely exhibited it, two infrequently, and one very frequently (see Table 9. 4 & Figure 9.6 in the appendices). Eleven musicians maintained the same frequency level as after completing Task 1, eight increased the frequency, and three decreased it (see Table 9.5 in the appendices). Although most of the musicians rarely exhibited kinaesthesia, they seemed to need to touch or indicate parts of their body when referring to them. For example, Piano 1, who was the only musician who very frequently displayed kinaesthesia, touched her chest to indicate her heart beating and her breathing, and one temple when referring to the mental rehearsal experience. As already set out, when carrying out these movements, she seemed to reveal her process of thinking and communicate her feelings as if she considered the movements more effective than words. Violin 3 appeared to be assisted by kinaesthetic movement, touching his temple when remembering his feelings during playing. Guitar 3 seemed to be aware of her breathing and relaxation when respectively touching the diaphragm area and her shoulders (see Chapter 8).

Simulated movements

Similarly to *Kinaesthesia, Simulated movements* seemed to assist the musicians in self-reflecting, shaping their thoughts, and becoming aware of their experience. Comparing the incidence of this cue with after Task 1, it was observed that three more musicians performed simulated movements and that nine of them increased their frequency (see Tables 9.4, 9.5; Figure 9.7 in the appendices). Ten maintained the same frequency, and three decreased it. For example, Violin 3, who very frequently performed simulated movements, seemed to manifest some difficulties in speaking English in as much as it was not his native language. He appeared more at ease transmitting his thoughts through simulating. The high frequency exhibited by Viola 2 was maybe due to the length of his verbal response. The movements seemed to assist him in concealing his embarrassment and reassuring himself. Although infrequently, Clarinet displayed the simulation when excited, starting to speak after playing, and then consciously when showing his posture during playing and evaluating his sound quality (see Chapter 8). Violin 2, very frequently simulated playing. Compared with after Task 1, she increased simulating and appeared very concentrated on Task 2. Piano 3 and Violin 2 seemed to be unable to separate words from simulating. The body-mind relationship was well embedded.

9.4 Uneasiness/embarrassment

The superordinate theme, Uneasiness/embarrassment emerged in previous chapters (see Chapters 4, 5, & 7). At this stage of the research it was generated by concurrently examining kinesic ensemble with smiling, self-adaptors (see Ekman, 2004; Harrigan, 2005), and semiconscious movements. Although several musicians showed uneasiness and embarrassment, four are included in this super-ordinate theme because they were not able to reduce their discomfort showing embarrassment throughout the response period. These musicians were those who avoided answering or perceived the task as irrelevant (see Chapter 8). The following sections illustrate the most relevant nonverbal signals transmitting anxiety and embarrassment.

9.4.*1 Looking into space down and/or around, silence, body movements, and self-adaptors*

Four musicians, who mainly *looked down and/or around,* appeared embarrassed. They combined this gaze with other kinds of nonverbal language which revealed uneasiness such as embarrassed smiling (Keltner, 2005), self-adaptors (see Ekman, 2004; Harrigan, 2005), and body movements. They also were rarely silent. Conversely to what has been argued above where silence indicated self-reflection, these musicians, when silent, seemed reluctant, embarrassed, or disagreed with the practice of undertaking mental rehearsal as referred to by Cello 1, Oboe, and Bassoon (see Chapter 8). One musician, Recorder 2, clearly expressed her feelings when verbalizing, but manifested uneasiness in her nonverbal language. When speaking, rarely silent and hesitating, she alternated looking into space and down with closed eyes, self-touching or manipulating her instrument. She also seemed instinctively to try to calm herself through rocking (Givens, 2002). She exhibited cues which did not seem to convey any "interior attention", but rather contradiction of her verbal response. According to some research (see Ekman & Friesen, 1969b; Ekman, 1991), her body language may suggest that she was not being honest in her response.

9.5 Summary of the chapter

The findings related to musicians' nonverbal communication after completing Task 2 revealed how body movements assisted the musicians in their thinking processes during the introspection process and led some of them towards greater body self-awareness. They simultaneously exhibited a set of kinesic ensembles combined with other cues such as silence, smiling, and semiconscious movements which showed self-reflection. Moving and touching specific parts of the body involved in playing while speaking generated sensorial feedback which seemed to develop body self-awareness in the musicians. The nonverbal language, such as kinaesthetic movements, was essential to reveal the process of thinking and how the musicians redirected their attention from the "exterior" to the "interior" (Depraz et al., 2003: 25).

Section 4

Chapter 10

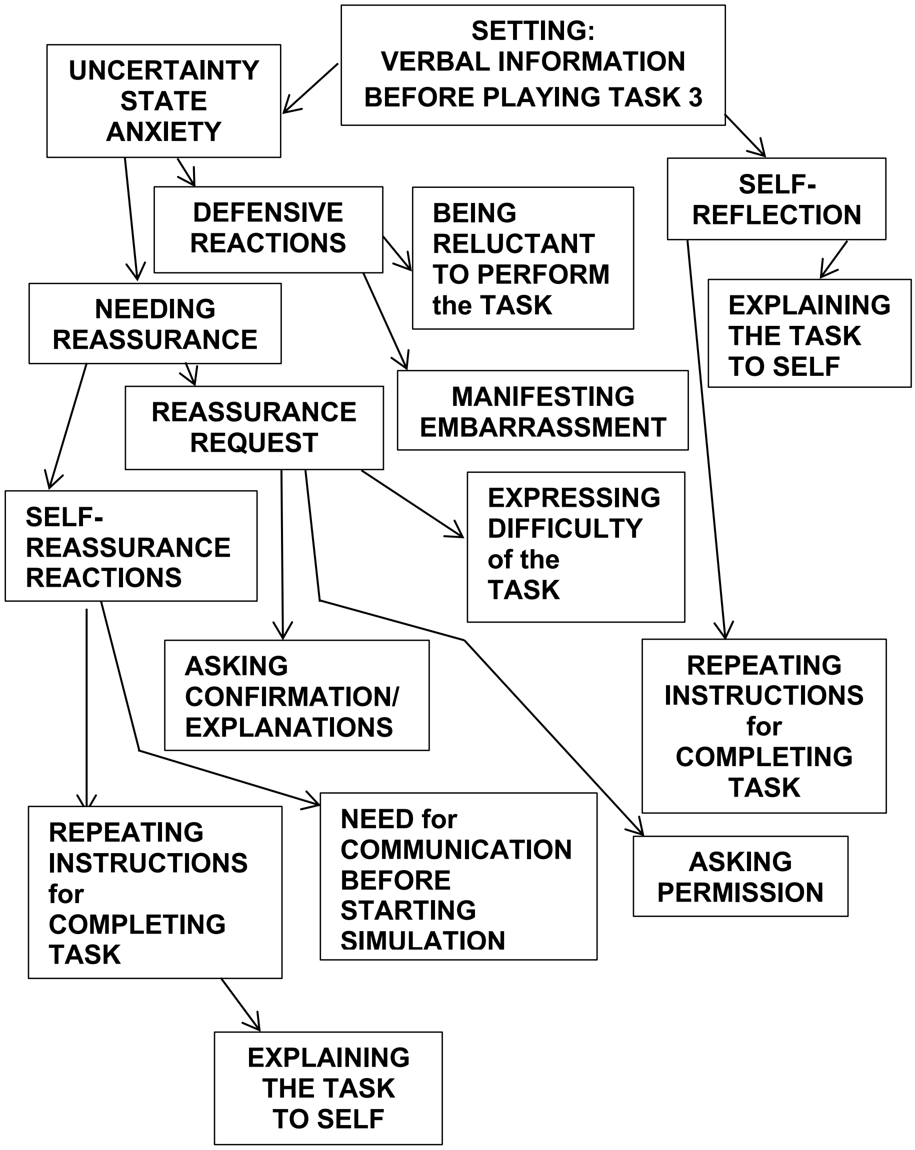
Musicians' verbal and nonverbal responses prior to Task 3

10.1 Introduction

This chapter presents the data relating to musicians' verbal and nonverbal reactions after listening to the Task 3 requirements before undertaking it. The task instructions consisted of simulating the movements that were needed in playing the same piece of music that they had performed in Tasks 1 and 2.

The analysis followed the same process which was adopted in the previous chapters and included musicians' responses in comparison with those prior to them undertaking Task 1 and 2 to illustrate possible behavioural differences. The task was formulated considering Husserl's perspective related to the importance of employing kinaesthesia which is 'a sense of movement through muscular effort' (see Chapter 2; Sheets-Johnstone, 2011: 73). As occurred prior to Task 1 and 2, the task explanation indicated the start of a new phenomenological reduction process (Vermersch, 2002) in which the musicians were once more required to redirect and change the quality of their attention (Depraz, 2013) 'from the "exterior" to the "interior" suspending their "natural attitude" (Depraz et al., 2003: 25). Musicians were asked to maintain this 'attitude' when simulating the movements that were needed in playing. The themes and sub-themes emerging from the verbal and nonverbal communication (see below Figures 12 & 13) are presented in hierarchic diagrams (Larkin & Thompson, 2012) representing the thematic analysis (Braun & Clark, 2006).

Figure 12. Themes related to verbal information emerging from the interviews before undertaking Task 3.



10.2 The research context and verbal reactions prior to starting

Task 3

Task 3 required the musicians to simulate the movements that were needed in playing while mentally singing the same piece of music that they had performed in the previous tasks. During simulation, they were required to intentionally sense their moving body and observe the qualities of their movements in order to explore their body self-awareness. The 'relationship between movement skill and attentional and other forms of cognitive control' (Clark et al., 2015: 2) is considered the foundation for the concept of mind-body connection from the embodied cognition perspective. To develop this relationship, individuals need to learn to perceive their body in movement through attending to it and paying attention to it. The body moving in space seems to contribute to developing the individuals' awareness of their external world (Varela et al., 1993; Sheets-Johnstone, 2011). This concept is particularly relevant in music where 'the human motor system, gestures and body movements' play a fundamental role for 'the musical meaning formation process' (Leman & Maes, 2014: 236). Similarly, to prior to Tasks 1 and 2 (see Chapters 4 & 7), in order to explore whether musicians were aware of the movements that they needed in playing, they were required 'to perceive themselves during the process of participation' (van der Schyff, 2016: 4). During simulating and playing, the process consisted of feeling the characteristics of movement-such as its direction, speed, range, tension - and its qualities - such as the swiftness or slowness, constrictedness or openness, tensional tightness or looseness (Sheets-Johnstone, 2011). This chapter examines how the musicians made sense of the experience of being asked to perform a simulation (Smith, 2004) and analyses any possible behavioural change related to prior Task 1 and 2. Nineteen of them (see Table 10.1 in the appendices) appeared uncertain and showed *state of anxiety* which seemed to be provoked by the fact that they were simulating movement for the first time. Four musicians exhibited self-reflective behaviour. Two of them initially appeared anxious after listening to the task instructions then seemed to calm themselves self-reflecting. When comparing with the musicians' reactions prior to Task 1 and 2, their level of state anxiety and embarrassment seemed to have decreased as their nonverbal communications suggested. The fact that they did not take time before undertaking the task, which was not the case prior to Task 1 and 2, seemed to indicate a decrease in anxiety. The emerging superordinate themes were *Uncertainty and state anxiety* and *Self-reflection.* They were generated from clustering a number of subordinate themes (see Table 10.1 in the appendices) created from the musicians' responses.

10.3 Uncertainty and State anxiety

Before performing the task, the musicians appeared afraid of being unable to complete it. The task requirements appeared unusual for most of them and seemed to provoke uncertainty or state anxiety inasmuch as simulation was a new practice for most of the musicians. They showed low self-efficacy inasmuch as they represented the task as difficult and conceived of it negatively (Bandura, 1977). As in the previous analyses (see Chapters 4 & 6), the superordinate theme *Uncertainty and state anxiety* was generated by clustering a number of subordinate themes (see Table 10.1 in the appendices) analyzing the nineteen musicians' responses. 'State anxiety' is a momentary emotional state which occurs when people experience situations that may have uncertain outcomes (see Chapter 4; Harrigan et al.; 1992; Grös et al., 2007; Labbé, 2008) such as the task requested of them in the research context. Although only two musicians clearly expressed their concern declaring that they had never performed simulation before, there were others who conveyed similar uncertainty. As in their responses prior to Task 1 and 2, to re-balance their internal equilibrium (see

Chapter 2; *autopoiesis*), the musicians seemed to adopt two main strategies. These had already emerged prior to Task 2 and were classified in the subordinate themes *Needing reassurance* and *Defensive reactions*.

10.3.1 Needing reassurance

Eighteen musicians (see Table 10.1 in the appendices) seemed to need reassurance 'for handling [their] anxiety' (see Chapter 4; Fareed, 1994: 871), and adapting themselves to the context. They adopted similar reassurance strategies to those shown prior to Task 1 and 2. This allowed comparisons to be made with their reactions prior to undertaking Tasks 1, 2 and 3 in order to observe possible behavioural changing. The subordinate theme *Needing reassurance* was generated from the subordinate themes *Self-reassurance reactions* and *Reassurance request*. Three musicians adopted the strategy of self-reassuring, four required interviewer's reassurance, and nine adopted both strategies. Two musicians also expressed defensive reactions.

10.3.2 Self-reassurance reactions

The subordinate theme *Self-reassurance reactions* included three different strategies. These were identified from the analysis of the responses of twelve musicians. These strategies were respectively categorized in the subordinate themes *Repeating the instruction for completing the task, Explaining the task to self,* and *Communication for starting simulation* (see Table 10.1 in the appendices). Through self-reassuring, musicians tried to self-manage their state anxiety revealing positive self-control skills. Nine musicians adopted one strategy, while three of them adopted two.

Repeating the instructions for completing the task

Two musicians adopted the self-reassuring strategy: Guitar 1 and Oboe (see Tables 10.1 & 10.2 in the appendices). Prior to Task 1 and 2 musicians who adopted this strategy seemed to focus on the task to better understand it (see Chapters 4, 7). At this stage of the research, the musicians appeared disconcerted and/or embarrassed as indicated by their nonverbal communication. Guitar 1 displayed the same strategy prior to Task 2. This suggests that this might be a normal response for him indicating a lack of confidence. The following extracts from the interviews are combined with the musicians' nonverbal communication that will be discussed later (see below):

> **Interviewer**: Please can you put down your guitar and simulate playing?
> **Guitar 1**: Without my instrument? [*while blinking and looking at the interviewer, smiling*]

Oboe appeared surprised and also disconcerted by the request as if he did not understand it:

> **Oboe**: Without… without the instrument? [*looking at the interviewer raising eyebrows*]

Explaining the task to self

The self-reassurance strategy of *Explaining the task to self* was adopted by nine musicians (see Table 10.1in the appendices). This was three fewer than prior to Task 2 (see Table 10.2 in the appendices). In contrast to the previous task, most of the musicians did not seem to adopt this strategy for focusing on understanding the task better (see Chapter 7). They communicated feelings such as expressed disbelief, surprise, perplexity, uncertainty, embarrassment but also self-encouragement. Violin 2 employed this strategy at two different times, first for managing her *state anxiety*, then for self-reflecting (see below & Table 10.1 in the appendices). The following extracts illustrate the musicians' reactions along with their nonverbal behaviour. Guitar 1 revealed surprise and uncertainty:

Guitar 1: First of all without the instrument? [*looking at the interviewer raising eyebrows*]…as I finished I take it up [*looking down toward the guitar simulating*] and doing it again

Guitar 2 seemed to show disbelief and embarrassment:

Guitar 2: Yes hem so [*looking at the interviewer and simulating playing*]… I need to execute the gestures as if I'm playing?

Appearing perplexed and anxious after listening to the task instructions, Violin 1, Flute, and Percussion 2 responded:

Violin 1: [*looking at the interviewer*] In my, my mind?

Flute: ok… so [*looking at the interviewer, frowning and stroking hands, then simulating playing*] to simulate playing.

Percussion 2: [*looking at the instrument, raising both hands on it, and then the interviewer*] I'll pretend to have the drumsticks.

Viola 1 and Oboe seemed to manifest embarrassment and discomfort. Viola 1 at first seemed to be at ease but then appeared embarrassed and disconcerted. He tried to conceal these feelings ironically saying:

Viola 1: Ah simulate! [*while looking at the interviewer and simulating*]… This [*looking at the interviewer, smiling and nodding*] this is easier for me! [*laughing*]

Oboe: Ah! [*closing eyes then simulating*] Doing positions [*looking at the interviewer fast simulating*] so what I want

Cello 2 and Recorder 1, seemed slightly embarrassed and then self-encouraged:

Cello 2: Yes… with the imaginary instrument [*looking at the interviewer and smiling*], but with the instrument.

Recorder 1: imaging, yeah [*looking at the interviewer and smiling*]

While joking, Clarinet first attempted to self-reassure concealing his embarrassment saying a meaningless phrase:

Clarinet: Ok [*looking at the interviewer, leaning backward and speaking to an imaginary clarinet*] hum look if you instrument are here [*laughing, looking at his simulating hands*]…

He then became serious and silent and seemed to self-explain the task requirements to relieve his embarrassment:

Clarinet: [*looking at the interviewer*] This [practice] is as if I anticipated it a little bit… [*looking down*] becau-u-use… so the physical posture [*simulating playing*] sometimes…[*looking at the interviewer*]

The extracts reveal some contradictions. Six musicians manifested discomfort related to the request of simulating, but appeared to support themselves in doing it by explaining the task to themselves. They seemed to need kinaesthetic feedback to enhance their understanding of the task and make sense of the experience (Petit, 2010). Through 'a rapid, silent, adaptive and efficacious way' (Petit, 2010: 201), they implicitly became aware and achieved the knowledge of that experience. According to Sheet-Johnstone (2011: 118), 'conceptual understanding is kinaesthetically-rooted'.

Need to communicate the starting of the playing simulation

Four musicians (see Table 10.1 in the appendices) seemed to *Need to communicate the starting of the playing simulation.* This seemed to act to provide self-encouragement. They appeared uncertain, but also able to positively control their emotional state through self-encouraging which overcame their discomfort. Two, Violin 2 and Cello 2, behaved in a similar way prior to Task 2 (see Table 10.2). These four musicians seemed uncertain and embarrassed, but tried to overcome their emotional state through self-encouraging:

Violin 2: [*laughing*]…Ok, [*seriously with closed eyes*] I'll try

Cello 2: [*whispering*] Fine [*looking at some fixed point*]… now

Recorder 2: [*scratching the head, leaning backward, looking at the interviewer*] Right… [*whispering, closing eyes*] ok… so I am simulating.

After manifesting her reluctance, Piano 2, before starting the simulation, seemed to make a great effort and self-encouraging said:

Piano 2: Ok [*looking at the piano and deeply breathing*]…once more

10.3.3 Reassurance request

The subordinate theme *Reassurance request* emerged as in previous analyses (see Chapters 4, 7). Thirteen musicians seemed to need reassurance from the interviewer (see Table 10.1 in the appendices). They asked for explanations about the task, asked permission, and expressed difficulties. They seemed uneasy, uncertain, and needed to be encouraged. These requests were identified in the subordinate themes *Asking for confirmation or explanation about the task* and *Asking permission,* which had both already emerged (see Chapters 4, 7), and *Expressing the difficulty of the task*.

Asking for confirmation or explanation about the task

Eight musicians asked for explanations about the task (see Tables 10.1 & 10.2 in the appendices). This request seemed to reveal uncertainty and anxiety, perhaps because most of the musicians had never performed simulation before. Three musicians, Piano 1, who similarly behaved to prior to Task 2, Recorder 2, and Percussion 1 seemed to ask for more explanation as a means of reassuring themselves before starting.

> **Piano 1**: [*nodding and looking at the interviewer*] just thinking? [*closing eyes*]
> **Interviewer**: thinking, but doing movement
> **Piano 1**: doing like this [*simulating playing, looking at the interviewer and nodding*]
> **Interviewer**: yes, exactly
>
> **Recorder 2**: Should I [*simulating playing looking at the interviewer*] do it?
>
> **Percussion 1**: but with closed or opened eyes?

The following extracts illustrate Viola 1, Clarinet, and Oboe's reactions. Similarly, to prior to Task 2 in which Viola and Clarinet asked for explanations appearing very embarrassed, these three musicians also seemed incredulous about the request:

> **Viola 1**: [*looking at the interviewer with broken voice*] Sho-ould I simulate the whole piece I played before?

> **Clarinet**: [*looking at his hands simulating, then at the interviewer*] Do you mean without the instrument?

Oboe particularly appeared disconcerted as if he had not understood the task and needed reassurance.

> **Oboe**:[*simulating and looking at the interviewer*] but exactly the posture of playing?
> **Interviewer**: yes
> **Oboe**: [s*tarting simulating, then interrupting*] and then?
> **Interviewer**: then you will play the piece again

Harp also appeared surprised about the request, but asked for confirmation:

> **Harp**: like this? [*simulating and looking at the interviewer*]

When asking for confirmation, Guitar 3 seemed to be simultaneously self-reassuring. She did not wait for the interviewer's response, but seemed to be assisting her task comprehension combining kinaesthetic feedback with reflection on the task. She received feedback from the position of playing as the following extract displays:

> **Guitar 3**: [*looking at the interviewer*] I'll just [*in the position of playing*] perform the gestures [*in the position of playing looking at some fixed point into space*].

Her reaction seems to be in line with Sheet-Johnstone's claim: that 'conceptual understanding is kinaesthetically-rooted' (2011: 118).

Asking permission

Only two musicians, Flute and Percussion 2 asked permission to start the simulation. These were not the same two musicians who asked permission prior to Task 2. Flute seemed to behave similarly to prior to Task 1 (see Chapter 4) when asking permission to start playing. This request seemed to manifest uncertainty, needing the interviewer's approval and encouragement for starting the task. Flute and Percussion 2 behaved similarly. They first seemed to start simulating, closing their eyes and then taking the position of playing, but then, interrupting:

> **Flute**: ok…. [*looking at the interviewer*] Am I going?

Percussion 2: [*first looking at the instrument, then the interviewer*] Am I going?

Expressing difficulty of the task

This subtheme was generated analyzing the responses of five musicians (see Table 10.1 in the appendices). They seemed to need reassurance indicating that simulation would be difficult to perform. Piano 2 was very reluctant about performing simulation (see below) and seemed to need reassurance from the interviewer.

Piano 2: Oh [*whispering*] It's difficult [*looking at the interviewer, frowning, looking at the piano…shaking the head, smiling, whispering, and looking at the interviewer*] I don't know if I can do that
Interviewer: Don't worry, just try and then play it.
Piano 2: [*looking at and along the cover of the piano for a while*] I feel [*looking at the interviewer*] quite u-uncomfortable to do this.
Interviewer: I know
Piano 2: [*laughing*] I never done this
Interviewer: Don't worry
Piano 2: [*positioning the left hand on the cover looking at it then looking at the interviewer starting laughing and fast removing the hand from the cover*] are you sure?
Interviewer: yes, I'm sure
Piano 2: ok [*left hand on the cover for starting, immediately removing it out laughing, looking at the interviewer*] It's strange [*laughing, and positioning the hand again looking at it*].

Guitar 1 and Violin 2 seemed to hesitate and display embarrassment before starting the simulation. The interviewer tried to interpret their feelings to reassure them.

Guitar 1:[*smiling, nodding while looking at the interviewer, then tongue between lips*] ok [*looking at the floor, being still*]
Interviewer: It could be strange.
Guitar 1: [*looking down, blinking, and nodding, then smiling and looking at the interviewer*] It will be very strange, yea.

This strategy appeared effective in relieving Guitar 1's discomfort. Expressing his feelings allowed him to start simulating. Violin 2 at first seemed to self-encourage then, seeming to realize the difficulty of simulation needed reassurance.

Violin 2: Yes… Fine [*rolling the sleeves up*]… I don't know how to [*simulating vibrato*] simulate the vibrato [*looking at the interviewer*]… I never practice in this way… I'm not used to…how difficult it is.

> **Interviewer**: Yes, it's a little bit difficult, but try to imagine practising alone and concentrate on the task.

Viola 2 was open in expressing his concern about simulation inasmuch as he had never performed simulation before. He implicitly seemed to request reassurance.

> **Viola 2**: ahiahaiahi this is more difficult [*smiling and whispering*]
> **Interviewer**: Yes, this is more difficult.
> **Viola 2**: This is more difficult [*looking at the interviewer*] because I have never done it before… I'm doing it for the first time in my life… you are asking me something I have never done.
> **Interviewer**: Don't worry

Recorder 1 seemed to be concerned immediately after listening to the task request:

> **Recorder 1**: Imaging yeah, just very hard [*smiling, looking at the interviewer, in the position for starting simulation*]
> **Interviewer:** Yea, it could be, but just try
> **Recorder 1:** [*interrupting simulation*] It's very hard [*while looking at the score*] to do.

10.3.4 Defensive reactions

Similarly to prior to Task 2, six musicians (see Table 10.1 in the appendices) manifested defensive reactions. They seemed to experience the request as stressful and unpleasant and adopted these strategies for relieving their uneasiness (Lazarus & Folkman, 1984). Five musicians seemed to be *Reluctant to perform the task,* two *manifested embarrassment about simulation*, and one adopted both strategies.

Being reluctant to perform the task

This subtheme had already emerged in the analysis of data prior to Task 2 in relation to only two musicians (see Chapter 7). At this stage of the research process, four musicians were reluctant to perform or rejected the nature of the task (see Table 10.1 in the appendices). Three musicians, Piano 2, Cello 1, and Clarinet, appeared defensive and communicated the impression that they did not want to undertake the task. Two of them, Piano 2 and Cello 1, had already shown defensive reactions prior to Task 2. Although Piano 2 and Clarinet appeared to need reassurance (see above), their behaviour seemed to conceal rejection of the task. After listening to the task request, Cello 1 appeared annoyed and tried to avoid performing the task as the following extract illustrates:

> **Cello 1**: no but [*looking at his left, nervously moving both hands and legs, shaking the head*] no the fact is that… what you would like to see [*simulating and looking at the floor*] It's stylized I always imagine [*indicating the cello*]… also when I play… so [*simulating, looking at the floor*], if you like [*looking at the interviewer always simulating*], I will simulate, but [*ironically smiling looking at the interviewer*] the movements… are all here [*touching both temples*] inside me not…but not…

Violin 3 appeared disconcerted about the request. He gave the impression of wanting to please the interviewer and performed the task unwillingly. Before starting the simulation, he seemed to rehearse it and as if he was speaking to himself, said:

> **Violin 3**: [*smiling, looking up and at his left simulating*] It's strange [*smiling, simulating, and whispering*] strange feeling.

Manifesting embarrassment about simulation

Two musicians, Viola 1 and Clarinet, manifested feeling uncomfortable about the simulation. They usually play in orchestras and frequently perform in concerts having a clear method of achieving the results that they want. The simulation constituted a new practice which challenged their previous practices. They needed to direct their attention to moving their body while thinking of sound, rather than only listening to the sound produced during playing. Clarinet joked and emphasized the simulation for concealing his embarrassment (see above). Viola 1 very clearly expressed his feelings:

> **Viola 1**: Hu-um [*looking at his right*] …Ok [*nodding and looking at the floor, preparing for simulating*] I'll feel a little bit silly.

10.4 Self-reflection

At this stage of the research process, two musicians appeared to self-reflect before undertaking the task (see Table 10.1 in the appendices). Piano 3 and Violin 2, behaved similarly to prior to Task 2. The self-reflecting strategy (see Chapters 4, 7) appeared useful for 'slowing down' their mental activity (Petitmengin-Peugeot, 2002) by *Explaining the task to self.* This seemed to assist them in understanding the instructions better, and focusing and concentrating on the task. While explaining to self, they also simulated. This seemed to provide them with kinaesthetic feedback (Petit, 2010) that seemed fundamental in assisting them in comprehending the task.

> **Piano 3**: I play on [*looking at the piano simulating playing with on the piano cover*] on the wood [*looking at the interviewer*].

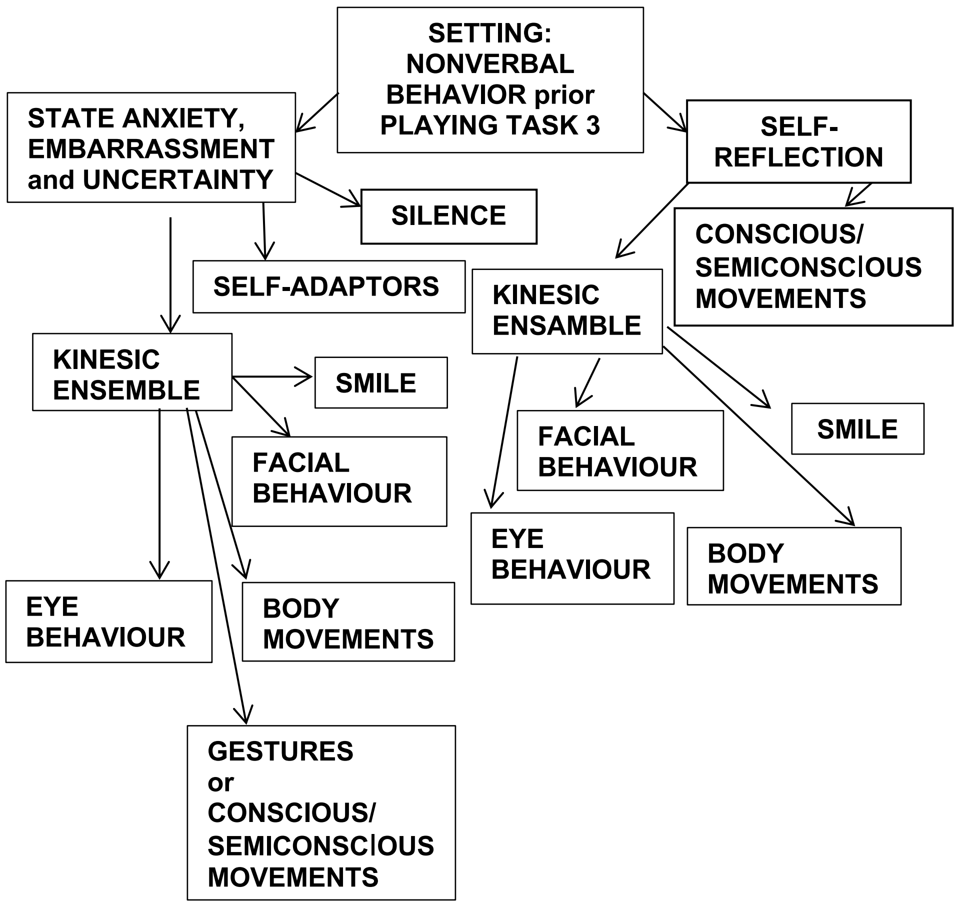
Violin 2 first needed to be reassured (see above), then appeared calmer and concentrated on her body movement.

> **Violin 2**: [*simulating with the right arm*] Simulating…

10.5 Introduction to musicians' nonverbal communication analysis prior to Task 3

The same criteria employed in the preceding chapters (see Chapters 4, 5, 7, 8) for examining nonverbal communication were adopted. Two superordinate themes *State anxiety, embarrassment, and uncertainty* and *Self-reflection* (see Figure 13) already identified in the previous tasks (see Chapters 4, 5, 7, 8) both in relation to verbal and nonverbal communication emerged. The first superordinate theme emerged through clustering the subordinate themes *Kinesic ensemble*, *Self-adaptors,* and *Silence*, while the second emerged through *Kinesic ensemble* and *Conscious/semiconscious movements*. Although musicians' verbal reactions showed uncertainty or state anxiety, their nonverbal communication seemed to reveal a decrease of that emotional state as thee values frequency indicators showed (see Tables 10.5 to 10.17; Figures 10.1 to 10.10 in the appendices). Musicians' nonverbal communication conveyed that they had become accustomed to the research setting. Moreover, a new phenomenon seemed to have emerged provoked by the task request. Instead of gesticulating, musicians seemed to consciously perform kinaesthetic and/or simulated movements (see Tables 10.3, 10.20, 10.21; Figures 10.11, 10.12 in the appendices) which appeared to assist them in understanding the task better and becoming more confident in completing it.

Figure 13. Themes of Nonverbal information before undertaking Task 3



10.6 State anxiety, embarrassment, and uncertainty

This superordinate theme refers to musicians' nonverbal communication and has been generated by clustering kinesic ensemble, self-adaptors and silence cues. Although musicians still manifested state anxiety, embarrassment, and uncertainty, these seemed to be reduced in comparison with those emerging in relation to the previous tasks. In the following sections the subthemes *Kinesic ensemble*, *Self-adaptors* and *Silence* are presented.

10.6.1 Kinesic ensemble

As already argued, a set of spontaneous cues, so called 'kinesic ensemble' (Calbris, 2011: 6) were simultaneously exhibited during musicians' verbal communication. Musicians transmitted information while moving 'different body parts, as in the combination of a manual gesture, with a head gesture, and facial expression' (Calbris, 2011: 267) and eye behaviour (Agnus, 2012). In the following sections the most significant cues are examined.

10.6.2 Eye behaviour

The *eye behaviour* cue seems to be fundamental in influencing the quality of conversation (Hugot, 2007), and assisting the interlocutor for inferring a speaker's actions, intentionality, and emotions (Macrae et al., 2002). The same four classifications previously set out (see Chapters 4, 5, 7, 9) are illustrated. The values in relation to prior to Task 3 are then compared with those identified before engaging with Task 1 and 2.

Looking into space

Fifteen musicians, three fewer than prior to Task 2 (see Table 10.3 in the appendices), looked into space after listening to the task instructions. They also decreased the frequency of doing this compared with Task 1 and 2 (see Tables

10.4, 10.5; Figure 10.1 in the appendices). This behavioural change may suggest that these musicians had reduced the need to reflect on the task. Nine musicians behaved similarly in relation to looking into space to Task 2, five slightly increased the frequency, while it decreased for eight. Viola 1, Cello 1, and Clarinet, seemed embarrassed and avoided looking at the interviewer (Keltner, 2005) frequently or very frequently looking into space. For example, Viola 1 looked at the floor while exhibiting self-adaptors such as scratching the head and saying he was embarrassed to perform a simulation (see above). Scarcely looking into space, Guitar 1 also blinked. This act seemed to reduce the 'processing of external stimuli in two ways-by physically closing the eyelid and by generating cortical suppression of visual processing both before and after the time of actual lid closure' (Smilek et al., 2010: 787). Six scarcely looked into space, while one, Piano 2, infrequently manifested this behaviour. Three did not exhibit it at all. Piano 2 demonstrated her discomfort through looking into space while smiling.

Looking at the interviewer

Similarly to prior to Task 1 and 2, all of the musicians (see Tables 10.3 and 10.4 in the appendices) looked at the interviewer while listening to task instructions showing a high level of attentiveness (Samovar et al., 2009). Nine musicians very frequently looked at the interviewer, three frequently, five infrequently, and five rarely. Nine musicians maintained the same level of looking at the interviewer as prior to Task 2, seven increased the level, and five slightly decreased it (see Table 10.5 & Figure 10.2 in the appendices). Those who decreased it and rarely or infrequently looked at the interviewer immediately began the task after listening to the instructions. They seemed to understand the instructions and did not appear embarrassed to perform the task. The musicians who looked at the interviewer very frequently could be divided in two categories. One included five musicians, Piano 2, Guitar 1, Cello 1, Clarinet and Oboe, who appeared anxious, uncertain and defensive about the task; the second comprised three musicians, Piano 1, Viola 1, and Flute. They showed discomfort at first and then seemed to trust the interviewer work collaboratively.

Looking at the camera

Only two musicians, (see Table 10.4 in the appendices) rarely looked at the camera, both showed discomfort. This was two more than prior to Task 2, but two less than prior to Task 1. Although their reaction was similar to prior to Tasks 1 and 2 as if they remembered the presence of the camera, they transmitted different information. Violin 2 immediately after listening to the task instructions combined this behaviour with laughing as if she tried to dissimulate her embarrassment and overcome her emotional state (see above) 'simulating antithetical feelings' (Ekman & Friesen, 1969b: 90). Similarly to prior to Task 1, Cello 2 appeared concerned to be being judged by an external source.

Closing eyes

Four musicians (see Tables 10.3, 10.4 in the appendices), four less than prior to Task 2, rarely closed their eyes immediately after listening to the task instructions. Although the frequency value of this cue was low, as already suggested the musicians seemed to manifest this signal to detach themselves from the surrounding environment. This disengagement seemed to facilitate their 'internal control over conceptualization [which] should thus increase accuracy' (Glenberg et al., 1998: 654) and assist them in reflecting on the task instructions. For example, Piano 1 and Guitar 2 closed their eyes seeming to need a moment for reflecting on the task requirements. Piano 1 closed her eyes after asking for explanation and Guitar 2 immediately after listening to the task instructions.

10.6.3 Gestures

In this research context, the term *gestures* always indicates hand movements (McNeill, 1992; Cassell, 1998; Calbris, 2011). When comparing the frequency values of gestures with those prior to Task 1 and 2, the musicians seemed to continue to reduce hand movement during their verbal communication (see Table 10.6; Figures 10.4, 10.5 in the appendices). They seemed to replace gestures with performing kinaesthetic and/simulated movements (see below) for expressing their thoughts. This behaviour was introduced prior to Task 2. It was also noted that the musicians did not execute *Beats* at all. Two kinds of gestures, such as *anticipatory* (Goldin-Meadow, 2003) and *iconic* (McNeill, 1992) were identified. Two musicians performed gestures respectively executing *anticipatory* and *iconic* gestures.

Anticipatory gestures

The only musician who exhibited *anticipatory gestures* was Clarinet. He rarely performed them and seemed to use them to assist in shaping his thoughts and formalizing them verbally (Goldin-Meadow, 2003). Although he seemed to be assisted by these gestures, he showed embarrassment when trying to explain the task to himself also looking down.

Iconic gestures

The musician who performed iconic gestures was Cello 1. He displayed them when indicating his instrument, shrugging, and expressing reluctance about the task. This kind of gesture is usually executed when the speaker refers to 'the semantic content of the speech' (McNeill, 1992; McNeill, 2005). Cello 1 appeared assisted by these gestures in relieving his discomfort as if he was externally transferring his emotional state towards the cello.

10.6.4 Body movements

At this stage of the interview, the musicians accompanied their verbal communication with body movements. There seemed to be a slight decrease in body movements when compared with those prior to Task 2 (see Tables 10.7, 10.8; Figure 10.6). Nineteen musicians executed body movements, one less than prior to Task 2. Four musicians displayed body movement very frequently, two frequently, five infrequently, eight scarcely, and three not at all. The most detected movement was nodding, executed by seventeen musicians (see Table 10.9 in the appendices). In Western culture, when manifesting this signal, listeners appear engaged with, understand, and agree with the speaker (Ekman, 2004; Harrigan, 2005; Samovar et al., 2009). Similarly to prior to Task 1 and 2, musicians nodded when listening to or self-explaining task instructions. Recorder 2, first appeared friendly and collaborative while listening to the task instructions also exhibiting head-tilt-side, leaning forward, and rocking (Givens, 2002). She then seemed to become defensive, nodding but leaning backwards (Givens, 2002) while communicating the need to start the playing simulation. Three musicians, Piano 3, Viola 1, and Percussion 2, exhibited collaborative behaviour displaying head-tilt-side and nodding while listening to the instructions. Viola 1 transmitted a stronger collaborative attitude also combining the head-tilt-side with leaning forward (Givens, 2002). Four musicians appeared defensive, leaning backwards (Givens, 2002), and showing reluctance about the task requirement. Two musicians, Piano 2 and Cello 1, respectively manifested reluctance shaking the head while leaning backward, and shrugging (see above).

10.6.5 Facial behaviour

Eight musicians, four less than prior to Task 2, exhibited some change in their facial behaviour (see Table 10.10 & Figure 10.7 in the appendices). They seemed to reduce this behaviour when compared with that prior to the previous tasks. Two musicians frequently displayed some facial behaviour change, while six did so rarely, and fourteen showed no particular movement. Comparing the behaviour with that expressed prior to Task 2, eight musicians maintained the same behaviour, five slightly increased their facial behaviour, and nine decreased it (see Table 10.11 in the appendices). The most common facial behaviour was parted lips. This can indicate surprise (Ekman et al., 1972; Ekman & Friesen, 2003). Five musicians exhibited this (see Table 10.12 in the appendices) perhaps because they were surprised at the task. Another cue was lowering the eyebrows. Four musicians did this, Piano 2, Violin 1, Flute, and Oboe. This seemed to convey disagreement, doubt or uncertainty (Givens, 2002), and distress (Ekman, 1991). However, when combined with other signals, other information can be communicated, for example, Violin 1 and Oboe displayed perplexity while nodding with parted lips (Givens, 2002) and lowering eyebrows (Ekman, 1991). Piano 2 combined lowering her eyebrows with looking at the piano cover also appearing uncertain and concerned about the task. Raising eyebrows was displayed by three musicians, Piano 2, Clarinet, and Oboe. Through this cue, they seemed to reinforce the transmission of their uncertainty and surprise about the task (Givens, 2002). Two musicians, Piano 2 and Harp, narrowed their lips suggesting annoyance (Ekman, 1991) after listening to task instructions and before concentrating on performing the simulation. Bit lips and lips down were respectively exhibited by Piano 1 and Violin 2. While biting her lips, Piano 1 seemed to express nervousness and embarrassment as if she did not know how to behave (Harris, 2013). Immediately after listening to task instructions, Violin 2 seemed to voluntarily move lips to ‘an upside-down U’ (Navarro, 2008: 188). She seemed to prefer communicating through body language that she did not know how to perform the task. This act simultaneously seemed to reveal the embarrassment she was experiencing and her relief from it.

10.6.6 Smiling

During social interaction people voluntarily or involuntarily smile not only in humorous and pleasant circumstances, but also for concealing negative feelings such as anger, jealousy, distress, and embarrassment (see Chapters 4, 5, 7, 9; Ekman et al., 1990; Keltner, 2005; Glenn & Holt, 2013; Gunnery & Hall, 2015). Embarrassment seemed to be manifested through smiling. Sixteen musicians, two more than prior to Task 2 (see Table 10.13 in the appendices), smiled appearing embarrassed and/or distressed. This increase may suggest that the musicians were experiencing more discomfort, although the frequency level was less than that which emerged prior to Tasks 1 and 2 (see Figure 10.8 in the appendices). Two musicians smiled very frequently, four frequently, two infrequently, eight scarcely, and six not at all. Comparing their smiling behaviour with that exhibited prior to Task 2, seven musicians seemed to maintain the same frequency, eight increased it, while seven exhibited a decrease (see Table 10.14 in the appendices). Also at this stage of the analysis process, three kinds of smiling, embarrassed, affiliation, and nervous, were identified (Table 10.13 in the appendices). Thirteen musicians seemed to smile involuntarily to conceal their embarrassment (Ekman et al., 1990; Ekman, 1991; Keltner, 2005). Five laughed nervously. For example, Piano 2 and Violin 2 behaved similarly. They smiled and laughed nervously without any apparent reason seeming to try to dissimulate their embarrassment. This occurred when they indicated the difficulty of the task also implicitly expressing a weakness in that they did not know how to perform it. Viola 1 showed embarrassed smiling and a nervous laugh when declaring feeling silly in performing the simulation (see above). Three musicians, Cello 2, Recorder 1, and Recorder 2, manifested affiliation through smiling trying to establish a momentary alliance with the interviewer (Lavin & Maynard, 2001: 456).

10.6.7 Silence

Only two musicians were silent prior to Task 3 (see Table 10.3 in the appendices). The frequency of this signal was considerably reduced when compared with that observed during the previous tasks, particularly Task 1 (see Table 10.15 & Figure 10.9 in the appendices). This suggests that the musicians preferred asking a question rather than reflecting by themselves or concealing feelings such as embarrassment or anxiety (Samovar et al., 2013). This could indicate that they were developing trust in the interviewer and that a positive dyadic relationship was being established. Sixteen musicians maintained the same frequency level, one increased, and five decreased (see Table 10.16 in the appendices). Only Piano 2 and Clarinet, who were respectively silent very frequently and infrequently, seemed to conceal their embarrassment and or anxiety (Samovar et al., 2013) before asking questions or starting the task. The span of time in which the musicians were silent was considered notable when they overtook the 'latency of response' (Knapp et al., 2014: 354) of one/two seconds. Piano 2 was silent for more than four seconds at various times when trying to start simulating, laughing and manifesting reluctance (see above). Clarinet was silent twice for four seconds on each occasion. The first time was immediately after listening to the task instructions. He started laughing, appeared very embarrassed and incredulous about the task requirements. The second time he seemed very disconcerted before starting simulation.

10.6.8 Self-adaptors

Twelve musicians, two more than prior to Task 2, performed self-adaptors (see Table 10.17 in the appendices) after listening to the task instructions. These cues consist of self-touching and manipulating objects and seem to be unconsciously performed when people need to adapt to stressful situations to relieve unpleasant feelings such as embarrassment (Harrigan et al., 1986; Ekman, 2004). At this stage of the interview, these emotions appeared to have been provoked by the unusual task request. The musicians who manifested these feelings seemed to have increased them when compared with those observed prior to Task 2. In contrast to the previous tasks, where musicians displayed both kinds of self-adaptors, prior to Task 3 the musicians only displayed self-touching (see Table 10.19 in the appendices). Thirteen musicians showed the same self-adaptors frequency level than prior to Task 2, six increased the performance of them, while three decreased (see Table 10.18 & Figure 10.10 in the appendices). Five musicians infrequently exhibited self-adaptors, five rarely, and ten not at all. Clarinet and Guitar 1 showed the highest frequency level of self-touching. They respectively very frequently and frequently seemed to self-console or self-reassure adopting various kinds of self-touching. This seemed to confirm their high level of discomfort which was also manifested through other cues. Stroking was the most frequent self-consoling self-adaptor (Givens, 2016). Five musicians performed it, two less than prior to Task 2 (see Table 10.19 in the appendices). They stroked their hair, face, hands and fingers. Scratching, rubbing, and grasping seem to be displayed when people experience a higher level of anxiety, or worry (Givens, 2002). Four musicians, two more than prior to Task 2, scratched. For example, Viola 1 appeared worried when scratching his forehead and head, while Clarinet seemed to be particularly anxious when scratching his eyes and grasping his nose. Self-adaptors such as hiding hands, showing the tongue-tip between the lips seem to reveal embarrassment, uncertainty, and uneasiness (see Ekman, 1991; Keltner & Buswell, 1997; Navarro, 2008; Givens, 2016). Two musicians, Guitar 1 and Cello 1, hid their hands. Guitar 1 also showed the tongue-tip between his lips appearing embarrassed, while Cello 1 and Oboe bit their lips revealing uneasiness. Only Piano 1 hid her face perhaps trying to conceal (Ekman, 1991) her disagreement about the nature of the task (see above).

10.7 Self-reflection

This superordinate theme emerged by observing movements identified as *Semiconscious/conscious movements* which seemed to assist the musicians in self-reflecting, understanding the task, and calming themselves.

10.7.1 Semiconscious/ conscious movements

This subordinate theme was generated (see Chapters 5, 7, 9) by clustering the emerged themes kinaesthetic and simulated movements (see Table 10.3 in the appendices). Maybe due to the nature of the task, at this stage of the interview, musicians seemed to increase this movement which sometimes appeared voluntarily and consciously executed compared to prior to Task 2.

Kinaesthetic movements

Four musicians, one more than prior to Task 2, performed kinaesthetic movements (see Table 10.20 & Figure 10.11 in the appendices). Only one musician, Violin 2 slightly increased its incidence, while two musicians rarely displayed it, and one infrequently (see Table 10.21 in the appendices). These movements consisted of receiving sensorial feedback from moving, looking at or touching a part of the body (Sheets-Johnstone, 2011) as the musicians were speaking. For example, Violin 2 looked at her left hand doing vibrato when referring to it (see above). She seemed to consciously perform that act as if she was looking for the correct way executing the task. She did not internally represent the vibrato, but seemed to be assisted by her gaze shifting to the moving hand for focusing her attention on it (Hutto & Myin, 2013). This seemed to lead her to generate an internal image which was 'synonymous of mental (or cognitive) representation' (Decety, 2002: 53). Her behaviour also allowed her to continuously circulate back and forth between the 'physical structures and lived experiential structures, in short, as "outer" and "inner", biological and phenomenological (Varela et al., 1993: xv). She simultaneously experienced herself as subject, the agent of the action, and object, the body executing the action, intentionally directing her attention towards her body. Percussion 2 looked at the marimba and raised both hands before asking to simulate playing (see above). He appeared to pre-reflectively (Zahavi, 1998) understand the task instructions while doing that act.

Simulated movements

The number of musicians who simulated the movement of playing considerably increased prior to Task 3. There were fifteen, eleven more than prior to Task 2 (see Table 10.20 & Figure10.12 in the appendices). Ten musicians performed simulated movements rarely, four infrequently, and one frequently. These movements seemed to assist the musicians in understanding the task. Some musicians voluntarily seemed to simulate playing to be reassured by the interviewer about their correct understanding of the task before starting it, such as Piano 1. Eight musicians maintained the same behaviour as prior to Task 2, while fourteen increased simulation of playing (see Table 10.21 in the appendices). The act of simulating and simultaneously looking at the action seemed to assist musicians in directing their attention on those parts of the body involved in playing. This behaviour supports Clark and colleagues (2015) who claim that 'the process of controlling attentional movement cannot be cleanly separated from the selection of physical movements' (Clark et al., 2015: 2). As is emerging from this study, the body has an important role to play in cognition and particularly in music cognition that appears "grounded" and embodied. Simulating before starting the task also seemed to assist musicians in achieving concentration. For example, when joking, Clarinet seemed to attempt to reduce his high level of discomfort and embarrassment through frequently simulating (see above). He seemed to benefit from this action. He involuntarily led his attention to his body which assisted him in understanding the task and calming him. Cello 1 and Oboe infrequently simulated playing and seemed to contradict themselves when verbally expressing their reluctance to undertake the task but needing to simulate to relieve their negative feelings. Cello 1 revealed his reluctance and defensive behaviour about the task while nervously moving, diverting his gaze into space, and simulating (see above). Oboe manifested his embarrassment and discomfort in performing the task (see above).

10.8 Summary of the chapter

The findings from verbal and nonverbal responses showed *Uncertainty and state anxiety* in most of the musicians due to the unexpected request to perform the simulation. This may be due to the fact that most of the musicians had never performed the simulation before. In reacting to this emotional state and re-balancing their internal equilibrium, they adopted various strategies revealing positive self-control skills. As the musicians' nonverbal communications suggested, *uncertainty and state anxiety* seemed to have decreased compared with those emerging prior to Task 1 and 2. Moreover, a new phenomenon seemed to have emerged provoked by the task request. Instead of gesticulating, musicians seemed to consciously perform kinaesthetic and/or simulated movements which seemed to assist them in understanding the task better and becoming more confident in completing it.

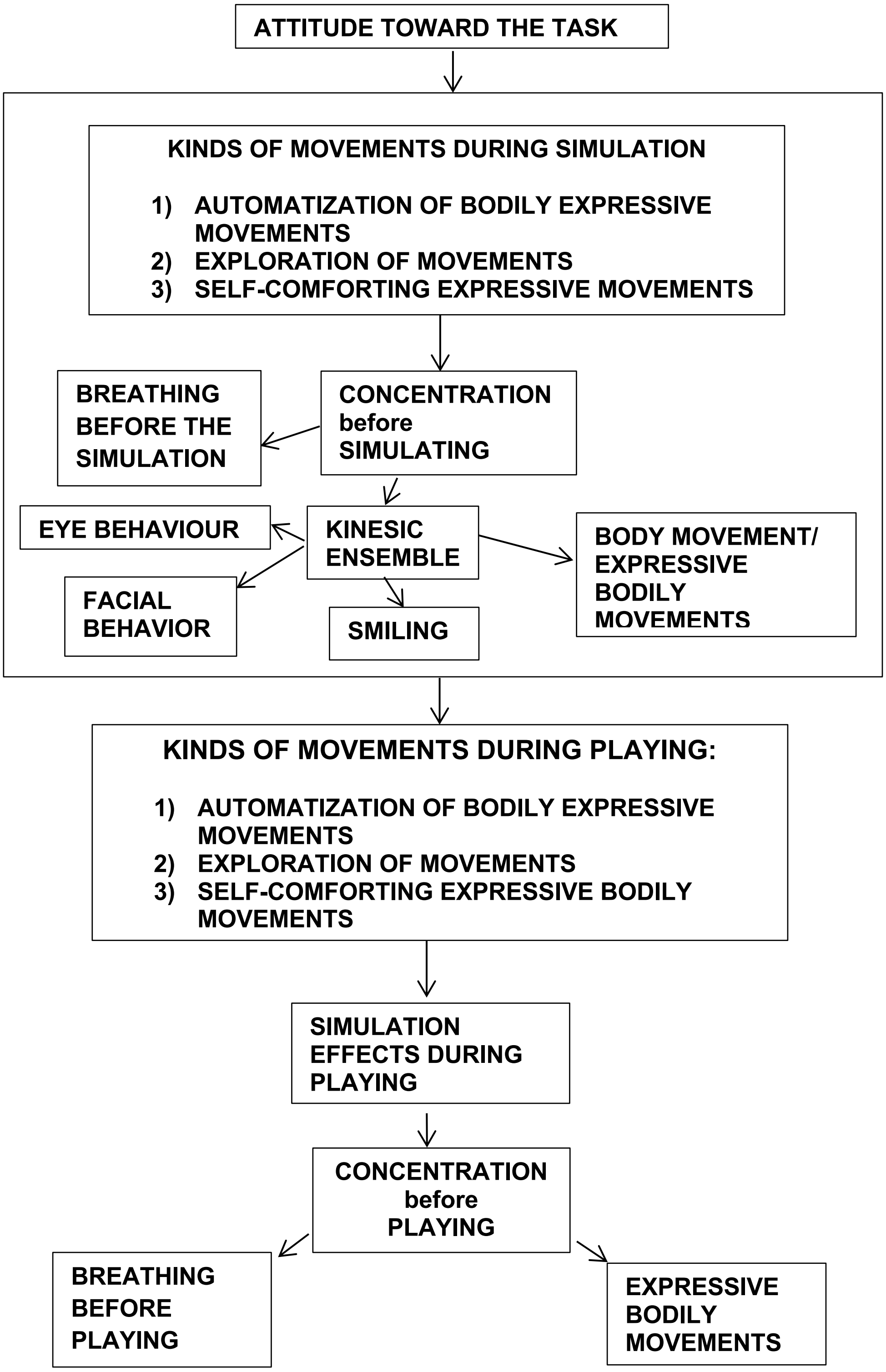
Chapter 11

The nonverbal communication of the musicians manifested during Task 3

11.1 Introduction

This chapter sets out the findings related to musicians' nonverbal reactions as they were undertaking Task 3 and comparisons with their previous actions. This was in order to identify, across the three performances, possible behavioural differences and musicians' attitudes towards the third task. The aim of the third task was to explore whether the kinaesthetic feedback received by the simulation could develop the body self-awareness of the musicians and consequently affect their way of performing. The musicians were expected to continue the third phenomenological reduction process (Vermersch, 2002), which they had started before engaging with Task 3 (see Chapter 10). They were required to simultaneously pay attention to their bodily movements and their sensorial feedback which occurred both during the simulation of playing and the third performance. Taking account of the previous performances, possible behavioural differences of the musicians were examined employing the same criteria for analysis adopted in the previous chapters. Emerging themes are presented in Figure 14.

Figure 14. Themes of nonverbal behaviour during the performance of Task 3



11.2 Musicians' behaviour during the simulation of playing

The simulation of playing was the first part of Task 3. Without expressing any judgements through the third phenomenological reduction process, musicians were required to simulate the movements that they needed in playing while focusing on them and their sensory-motor feedback. In Husserlian terms, musicians were requested to "intentionally" (see Chapter 2; Seager, 2007) perform movements when executing the *action* of simulating and playing. They 'consciously and actively [were asked to exercise their] agency to voluntarily direct [their] thoughts and actions' (Zhu, 2004: 303). This procedure generated a circular dynamic process that Varela and colleagues (1993) defined as *enaction* (see Chapter 2). The sensory-motor system triggered circular proprioceptive feedback engendered by the musicians while guiding the action of the simulation of playing or actually playing. The musicians' bodies simultaneously constituted the subject and the object of reflection. This generated 'a transformation of the mental field' (Merleau-Ponty, 1945/2002) which led them toward another level of body self-awareness related to that new *lived experience* (Thompson & Zahavi, 2007). The musicians' nonverbal behaviour, observed from the moment they concentrated before the simulation, assisted the researcher in interpreting their attitude towards the task and making sense of that *lived experience* (Smith, 2004). Therefore, the superordinate theme *Attitude towards the task* was generated.

11.3 Attitude towards the task

This superordinate theme *Attitude towards the task* was generated by observing the nonverbal behaviour that musicians displayed from the moment that they started concentrating before the simulation of the playing. The kinesic ensemble (see Calbris, 2011) exhibited during the simulation led to the identification of three kinds of movements defined as *automatization of bodily expressive movements*, *exploration of movements*, and *self-comforting expressive bodily movements*. In the following sections, concentration before simulating, the main nonverbal cues exhibited during the simulation, and expressive bodily movements are illustrated to better explain the musicians' behaviour.

11.4 Musicians' concentration before and during the simulation of playing

Twenty musicians seemed to need time to concentrate before starting the simulation, while two began it immediately (see Table 11.1 in the appendices). One musician took one second, twelve two seconds, four three seconds, two four seconds, and only one five seconds before starting the task. The time span that the musicians needed to prepare concentration for the task combined with their facial behaviour contributed to communicating their feelings. Although most of the musicians took two seconds to prepare for the task, they did not all convey the same feelings. For example, Piano 2 seemed to not be able to focus on the task when executing it. She seemed to be tense and showed the same embarrassed smile during the whole task as if she objected to doing it. Also taking two seconds to prepare, Clarinet manifested jaw tension (Givens, 2002) when starting, but seemed to relax and develop self-confidence during the task. He appeared more focused on and involved in music during the simulation. Similar behaviour was noticed with Guitar 3 who took four seconds before starting the task. Compared with Task 2, eighteen musicians decreased the time span that they needed to concentrate before starting the third performance, two maintained the same span, while only two increased it (see Tables 11.4 & 11.5 in the appendices).

11.5 Kinesic ensemble during the simulation of playing

At this stage of the research process the musicians did not speak, but exhibited a set of kinesic ensemble which conveyed their feelings as they moved different parts of the body (Samovar et al., 2009). In the following sections some subordinate themes which had already emerged in the previous chapters and a new kind of body movements, classified as *Expressive bodily movements* (Davidson & Correia, 2002; Davidson & Malloch, 2009; Davidson, 2011) are presented.

11.5.1 Eye behaviour

During the simulation process, four kinds of *Eye behaviour* were identified. In contrast to the mental rehearsal undertaken during Task 2 (see Tables 11.1 & 11.2 in the appendices), the musicians exhibited a greater number of eye behaviours that seemed to assist them in concentrating on the task. Sixteen musicians displayed only one behaviour, while six showed two of each (see Table 11.1 in the appendices).

Looking at the "imaginary instrument"

While simulating, eight musicians behaved as if they were playing the real instrument looking at it while their fingers moved on it (see Table 11.1 in the appendices). Four of them did this very frequently, two frequently, and two rarely. The musicians who very frequently looked at the imaginary instrument did not adopt any other eye behaviour, while the other four musicians combined this with another eye behaviour. When looking at their imaginary instrument, the musicians seemed to envisage their physical contact with it. This appeared to reassure and assist them in concentrating on the task. This was the case for Guitar 1, Clarinet, and Percussion 2 who very frequently looked at the imaginary instrument and moved their hands. They seemed to realize the importance of touch and kinetic feedback, which is fundamental in developing the concept of body-self (Husserl, 1989). However, this phenomenon did not occur with Piano 2. Although she very frequently looked at her moving hands and the cover of the piano, she always appeared tense and anxious as if these movements were distracting her from the music. This may explain why she frequently interrupted the simulation process.

Looking into space

The subordinate theme *Looking into space* had already emerged during Task 2 when the musicians undertook mental rehearsal. It also emerged during the verbalization process when musicians needed time for reflection (see Frischen et al., 2007) and while they achieved clarity of thought (Navarro, 2008). At this stage of the research process, looking into space seemed to assist the musicians in concentrating on the task. It appeared as if they were reading the score and internally listening to the piece of music while simulating. The number of musicians who looked into space was ten, four less than during Task 2 (see Table 11.2 & Figure 11.1 in the appendices). Seven musicians displayed this behaviour very frequently, two infrequently, and one rarely. The musicians who very frequently looked into space slowly moved their gaze around. Another three musicians alternated their gaze with another kind of eye behaviour. Two also looked at their imaginary instrument, and one, Guitar 3, closed her eyes. She, when looking into space sometimes blinked. This is an unconscious body reaction which 'may facilitate a shift in the balance of processing from external stimuli to internal thoughts' (Smilek et al., 2010: 786). Two musicians very frequently looked into space, but exhibited very different feelings. Guitar 2 appeared very tense and worried during the whole simulation, while Violin 2 seemed to be very concentrated on the task and paying attention to all the performed movements.

Closing eyes

Nine musicians adopted the strategy of *closing eyes* to assist concentration. This had been adopted previously during the other tasks (see Tables 11.1 & 2 in the appendices). Closing the eyes seemed to assist the musicians in ‘slowing down’ their mental activity (Petitmengin-Peugeot, 2002) and enhancing their attention on the task through the suppressing of information coming from external stimuli (Glenberg et al., 1998). Musicians also exhibited this strategy during Task 2 while performing mental rehearsal, with the exception of one musician (see Figure 11.2 in the appendices). Six musicians exhibited this behaviour very frequently without showing any other eye behaviour, for example, Violin 1. Violin 3, frequently displayed this behaviour alternating it with looking at the imaginary instrument. Two musicians, Piano 1 and Guitar 3, rarely showed this behaviour. Piano 1 alternated closing eyes with looking at her imaginary instrument, while Guitar 3 closed her eyes and looked both around into space and at some fixed point. The musicians who very frequently and frequently closed their eyes appeared very focused on the movement they were performing and totally involved in music. They seemed to connect their body and mind, for example, Piano 3 appeared very relaxed and aware of the movement she was executing related to the sound that she was imagining producing.

Looking at the camera

At this stage of the research process, only Cello 2 looked at the camera. She had already manifested this behaviour during performing Task 1 and 2 revealing anxiety about the presence of the camera. She showed this behaviour when starting the simulation appearing tense and very worried about the task. However, she seemed to ignore the camera during the simulation itself, very frequently looking around and slowly into space and appearing to slightly reduce her tension.

11.5.2 Body and expressive bodily movements, and muscle tone

This subordinate theme was identified considering three subthemes, including *Breathing before starting the simulation, Expressive bodily movements*, and *Muscle tone.* These contributed to interpreting the musicians' attitudes towards the task and their involvement in the music. Only one musician, Piano 1 (see Table 11.1 in the appendices), exhibited body movements (see Knapp et al., 2014) combined with verbal communication during the simulation. She shook her head to express her difficulties in performing the task while announcing the word 'difficult'.

Breathing before starting simulation

When starting the simulation six musicians seemed to consciously breathe. The process of breathing regulates various functions within the nervous system also interacting with physical tension and emotions. Although the regulation of breathing is automatic, it can be voluntarily controlled in specific situations, such as in playing and during anxiety provoking situations. It seems that there is 'an important relationship between breathing patterns and the levels of physical tension generated in playing' (Gaunt, 2006: 19). The musicians who consciously breathed seemed to release tension and concentrate on their posture in playing and the music they were going to mentally sing. For example, taking a little breath, Piano 3 positioned her hands on the cover of the piano while rotating the forearms appearing to release the weight from both arms. While deeply breathing, Viola 1 seemed to release tension and reduce his anxiety. Only three wind players, Recorder 2, Flute, and Bassoon, breathed before simulating, while Recorder 1, Clarinet, and Oboe seemed to forget about their breathing. This was maybe due to the absence of real contact with the instrument and the embarrassment provoked by the unusual task requirement. Sixteen musicians seemed to not consider their breathing at all, perhaps because they were not used to consciously breathe before playing.

Expressive bodily movements

The subtheme *Expressive bodily movements* was generated referring to Davidson's research (see Chapter 3; Davidson & Correia, 2002; Davidson, 2005; Davidson & Malloch, 2009; Davidson, 2011; 2012) which examines those movements, shown by musicians during performing, that appear to be non-functional in achieving technical aims. At this stage of the research process, sixteen musicians executed expressive bodily movements (see Tables 11.1 & 11.3 in the appendices), although they were not producing sound. These kinds of movements, also defined by Gritten and King (2006; see Chapter 2) as musical gestures, engender 'acoustic properties of sound as aesthetically valuable' (Gritten & King, 2006: xx). Their quality seems to affect the generation of sound quality. They mainly reveal the body involvement of the musicians, which seems to be an important element in shaping the musicians' musical intentions. Similarly to gestures, which accompany spoken language (see Chapter 2; Calbris, 2011), during performance musicians can, more or less consciously, execute expressive bodily movements. Through them, musicians can also affect audience understanding of the music but only if they are familiar with the musical culture and its style of performing (Davidson, 2005: 216). This phenomenon also appears to be a kind of 'thought in action' (McNeill, 1992: 1) generating a reciprocal process of intention between the performer and the audience. In Merleau-Ponty's (1945/2002) words, 'it is as if the other person's intention inhabited my body and mine his' (p. 215). This occurs through 'the bodily engagement of the performer' (Davidson, 2005: 217) that emerges through a combination of 'intellectual/conceptual understanding and motor skill' (Davidson, 2005: 217) in which 'mental representations' have an important role. The performer produces mental representations ‘while trying to encode or manipulate a relevant stimulus for a specific performance event’ (Davidson, 2005: 216). Expert musicians who have practised for years achieve a high degree of movement automation (Davidson, 2011). They embed expressive bodily movements within technical movements (Davidson, 2005). Their motor programs, that lead to fluency and automaticity of movements (see Davidson, 2011), seem to include expressive bodily movements which assist them in phrasing. In the current study, the musicians showed these movements at different levels. One exhibited them very frequently, six infrequently, and nine rarely (see Table 11.1 in the appendices). Six musicians did not show any expressive bodily movements, although they revealed different attitudes towards the simulation. For example, Percussion 1 did not display any expressive bodily movements seeming to automatically perform technical movements apparently without reflecting on them. He did not express any negative evaluation about the simulation, but gave the impression that this practice was of no use to him. Violin 2 also did not show any expressive movements appearing to carry out only technical movements. Head nod was the most frequent expressive bodily movement. This was exhibited by sixteen musicians while trunk swaying was displayed by eight (see Table 11.3 in the appendices). Fourteen musicians showed *specific instrumental expressive movements* which appeared typical for their instrument (see Table 11.3 in the appendices). As shown by Piano 1 and Piano 3, this included the lifting of forearms and their rotation (Davidson, 2005). Violin and viola players stretched and bent the upper part of the back, backwards and forwards and/or moved up and down the instrument. Flute, Recorder 1 and 2, and Oboe seemed to swing the lower part of the instrument slightly swaying their elbows.

The way that the musicians exhibited expressive bodily movements contributed to the identification of three main attitudes towards the task, *automatization of bodily expressive movements*, *exploration of movements*, and *self-comforting* *expressive bodily movements.* The following sections present example descriptions of one musician's behaviour in detail to better explain these attitudes.

Automatization of bodily expressive movements

Violin 3 appeared unaware of showing expressive bodily movements. When starting the simulation, he seemed very focused on the music, and manifested expressive bodily movements very frequently as if he had automatized them at specific points in the piece of music. He showed fluency of bowing often accompanying bow changes with two kinds of head nods. Small head nods were executed when he started simulating while consciously breathing, and then on each upbeat as if this movement assisted him in preparing the beat for a new bar. Wider head nods were shown on each new bar, and when the music would have been more intense and *forte.* Here, he indicated the climax of the piece slightly bending upwards and swaying the trunk. As already argued, the body movements that he displayed could be compared to those unconsciously performed in spoken language (McNeil, 1992; Goldin-Meadow, 2003). The movements seemed to assist him in shaping his musical thoughts and transmitting his musical intentions (Davidson, 2005). He seemed to be focused on each technical movement appearing to correctly bow, fingering all of the notes, and executing vibrato.

Six musicians, Violin 1, Viola 2, Cello 1, Recorder 2, and Flute, and Oboe, seemed to exhibit automatized expressive bodily movements. The exception was Cello 1 who did not simulate all of the piece indicating that he did not wish to complete the task. The other musicians seemed to concentrate on technical movements rather than expressive bodily movements. As had already occurred during mental rehearsal, Viola 2, Cello 1 and Oboe seemed to trust in their expertise and the automatization of processes not needing any 'new ways' of practising or reflecting on their performance or playing.

Exploration of movements

Guitar 3 was very focused on the task. She displayed small expressive bodily movements infrequently. She appeared as if she was exploring all the movements that she was making. The main movement that she manifested was the trunk swaying both laterally and back and forth on upbeats. She also integrated small head nods into slight swaying which seemed to assist her in phrasing. According to Davidson (2005), her swaying may have constituted the *centre of movement* which is situated in the waist area and appears fundamental in producing 'musically expressive information' (Davidson, 2005: 219). As some research has shown (see Mc Agnus Todd, 1999; Givens, 2002; Davidson, 2005), the swaying seems to stimulate the vestibular activity, arousing pleasure and constituting the top of a hierarchic process in which all the other expressive movements are integrated (Davidson, 2005). Moreover, when she started the simulation, she seemed to focus on the right hand pinching the strings and softly lifting the wrist. This instrument specific expressive movement appeared to be related to musical mood. Four seconds later she closed her eyes including in the simulation the left hand fingers seeming to realize that she had forgotten them. She sometimes added the instrumental expressive movement of rotating the left elbow as if she wanted to affect the sound. While simulating, she appeared as if she was adapting to the task and becoming aware of the parts of the body involved in playing.

The other nine musicians, Piano 1, Piano 3, Guitar 1, Violin 2, Viola 1, Cello 2, Recorder 1, Clarinet, and Percussion 2, also seemed to exhibit an exploratory attitude. For example, although manifesting reluctance towards the task prior to starting it (see Chapter 10), Clarinet did not exhibit any expressive movements during the simulation, but appeared very carefully to be performing fingering as if he was discovering it. He also seemed to relax his face and become calmer. Piano 1, Violin 2 and Cello 2 also did not show any expressive bodily movements seeming to focus on technical movements and body perceptions. Cello 2 and Percussion 2 appeared tense during the simulation as if they were not confident in completing the task.

Bodily expressive movements for self-comforting

Piano 2 seemed to be not involved in the music as if the simulation disturbed her. She swayed very frequently, but this movement appeared automatic and stereotyped as if it was comforting her. The swaying may have stimulated *accelerometers* of the inner ear assisting her in removing her attention from concerns about the task stimulating the vestibular activity which arouses pleasure (Givens, 2002; Davidson, 2005). This phenomenon seemed to be provoked by 'rotation [which] upsets the normal circulation of fluid in the ear's balance loops to make us feel dizzy' (Givens, 2002). She interrupted the simulation several times and seemed lost as if she was not able to link her inner singing with the technical movements she needed in playing. Missing the feedback produced during playing seemed to undermine her internal equilibrium and generate anxiety.

Muscle tone

The subtheme *muscle tone* (see The Oxford Companion to the Body, 2001) was generated by observing musicians' muscle contractions and the energy they employed in 'playing' their virtual instrument. This energy is essential for leading muscles to become active during an individuals' action and postures. All the musicians manifested *muscle tone*, although with difference in intensity (see Table 11.3 in the appendices). Eight musicians displayed a very high level of muscle tone as if they were playing the real instrument, for instance, the three pianists. The contact with the piano cover supported their muscle tone, while it appeared reduced in musicians who simulated playing without any contact with their instrument such as Violin 3 and Cello 2.

The high muscle tone level exhibited by Guitar 2 and Bassoon revealed tension and anxiety. This was mainly manifested in their arms and jaw. Viola 1 appeared specially focused on his performing movements. He displayed a high level of muscle tone as if he was really holding the bow and re-living the contact with his instrument. His concentration and self-confidence seemed to increase during the simulation process showing more freedom in expressing bodily movements. Although Violin 3 exhibited expressive bodily movements very frequently (see above), he showed a medium level of muscle tone as if he was not imagining instrumental contact.

11.5.3 Facial behaviour: Tense and relaxed expressions

Before starting and during the simulation process, twenty musicians (see Table 11.1 in the appendices) manifested concern or embarrassment through unconsciously contracting the muscles of the face (Given, 2002). For example, two musicians, Guitar 2 and Cello 1, showed jaw tension frequently maintaining it for the duration of the task. Four musicians infrequently contracted the muscles of the face. Three of them maintained the same behaviour, while Piano 1 manifested face contraction when the simulation became difficult. Six musicians scarcely showed tension signals such as jaw tension or frowning when some difficulty seemed to emerge in performing the simulation. Nine musicians showed some signs of relaxation. Only one, Piano 3, exhibited a relaxed face throughout, while the other eight seemed to relax their face and be more concentrated and involved in music during the simulation, for example, Viola 1, Viola 2, and Clarinet.

11.5.4 Smiling

Fourteen musicians (see Table 11.1 in the appendices) smiled communicating various feelings including discomfort and relaxation. Piano 1 frequently smiled or laughed indicating discomfort only when finding the task difficult. Three musicians infrequently smiled suggesting embarrassment, uneasiness or that they were concealing negative emotions (Ekman et al., 1990; Keltner, 2005) about the simulation, for example, Piano 2. She manifested the same slight smile throughout the task appearing to conceal her objection to undertaking the simulation. Ten musicians rarely smiled appearing relaxed. As occurred during the mental rehearsal in Task 2 (see Chapter 8) this kind of smiling seemed to be an involuntary reaction and a consequence of the 'relaxation response' which leads to a corresponding emotion (Austin, 1998). This 'response' consists of a 'generalized decreased sympathetic nervous system activity' (Benson, 1985: 15) which also arises during meditation. Piano 3 represents an example of this phenomenon. She displayed a very relaxed face throughout the simulation slightly smiling.

11.6 The simulation effect during playing

This subordinate theme emerged from clustering the themes *Concentration, Breathing before starting the third performance*, and the combinations of *Expressive bodily movements* that the musicians displayed during playing. Comparison of the musicians' behaviour during the simulation with that in previous performances, revealed that most of them showed more self-confidence and were more involved in the music. Some changes related to the frequency of expressive bodily movements. The musicians seemed to be affected by the simulation making their movements more effective and/or economising them so that they could better transmit their musical intentions (see Chapter 13).

11.7 Musicians' concentration before and during the third performance

Similarly to the previous tasks, before starting the third performance musicians took time to focus their concentration. In contrast to Performance 2, where they increased the time they needed for concentrating before starting to play, at this stage of the research process eighteen musicians decreased this time. Two maintained the same time span, while two increased it (see Tables 11.4, 11.5; Figure 11.6 in the appendices). The *lived experience* (Merleau-Ponty, 1945/2002) of the mental rehearsal and the simulation seemed to lead them to find the right time span between the first and the second performance. For example, Violin 1 and Violin 3 showed more self-confidence than in the previous tasks reassessing the time span they needed before playing. Violin 1 took four seconds before starting the third performance. He considerably reduced the time span compared to the second performance, where he employed eighteen. He slightly increased that time when compared to the first performance where he took three seconds. Violin 3 took three seconds decreasing the time span displayed in the previous performances. He took seven seconds before the first performance and twelve before the second. During playing, some musicians appeared very focused on their body performing the movements and the feedback from sound. This emerged from observing body posture, the tempo of the music, expressive bodily movements, and the *specific instrumental expressive movements* (see Chapter 13).

11.7.1 Breathing before starting the third performance

Eight musicians consciously breathed before performing (see Table 11.3 in the appendices). The six wind players necessarily breathed. This was different to the simulation where only four of them did so. Violin 3 and Viola 1, who breathed before the simulation, also did so before performing for the third time. For Violin

3, breathing before starting playing appeared to be an automatic act as if it was embedded in his performing. Differently than prior to the simulation Viola 1 slightly breathed. At this stage of the research process, he appeared more self-confident than in the previous performances. In contrast to prior to Task 1 and 2, he seemed to not need to release his tension (see above, Gaunt, 2006). Piano 3, who consciously breathed before the simulation, did not show evidence of this before actually playing.

11.7.2 Expressive bodily movements

This subordinate theme was generated taking into account Davidson's research (see above) and refers to three main expressive bodily movements exhibited by the musicians, head nods, trunk swaying, and specific instrumental expressive movements. In comparison to the simulation and Performances 1 and 2, the musicians seemed to increase the frequency of their expressive bodily movements. Compared to the simulation, the increase of expressive bodily movements seemed to be stimulated by the sound feedback. In comparison with the previous performances, some musicians seemed to slightly decrease some parts of these movements or increase others (see Tables 11.3 & 11.6; Figures 11.3 to 11.9 in the appendices). They seemed to economise and make these movements more functional to their musical intentions. The way that the musicians displayed these movements allowed the researcher to identify the same three attitudes identified during the simulation (see above). Each is explained using the same three examples presented above analyzing possible behavioural differences between the simulation and previous performances.

Automatization of bodily expressive movements

As displayed during the simulation, also when playing, Violin 3 seemed to exhibit expressive bodily movements automatically. He appeared particularly focused on the music and demonstrated accuracy and fluency of bowing during performance. He displayed the same expressive bodily movements at the same points in the music exhibited during the simulation. He emphasised each upbeat and beat exhibiting head nods very frequently and swaying frequently. When the music was more intense and forte his swaying became wider. He also increased specific instrumental movements such as slightly moving up and down the violin while swaying on the upbeat and beat (see Table 11.3 in the appendices). Comparing his expressive bodily movements to his previous performances, he seemed to maintain the same frequency of head nods, while he increased both swaying and specific instrumental movements. During the third performance, his expressive bodily movements seemed to reveal increased engagement with the music. He appeared more comfortable while moving and freer in transmitting musical intentions (Davidson, 2005). However, as reported during the simulation, he seemed unaware of his performed expressive movements.

The same six musicians, Violin 1, Viola 2, Cello 1, Recorder 2, Flute and Oboe, who previously had demonstrated automatic bodily expressive movements, were included in this subtheme. As shown by Violin 3, they seemed to emphasise the same expressive bodily movements performed during the simulation for stressing particular aspects of the music. For example, Viola 2 showed a greater involvement with the music particularly through swaying forwards, head nods, and specific expressive instrumental movements when performing chords. Maybe the fact that he missed the physical contact with the instrument during the simulation led him to greater physical effort. Compared with Performance 1 and 2, he increased his expressive bodily movements which suggested greater involvement in the music. Conversely, Oboe seemed to gradually decrease the specific expressive instrumental movement of swing of the oboe when compared with Performance 1 and 2. Maybe after the simulation he focused more on technical movements leading him to eliminate superfluous movements. Only performing part of the piece, Cello 1 did not complete the task. While playing he seemed to express resentment at completing the task showing a tense facial expression.

Exploration of movements

While performing, Guitar 3 seemed to show expressive bodily movements with the same frequency level as in the simulation. She appeared focused both on the music and the technical movements she was executing. She seemed to explore the kinaesthetic experience produced from the sensory-motor feedback related to the sound. This seemed to lead her to economise her movements removing the automatic elements, such as swinging the right knee or nodding her head shown during Performance 1 and 2 (see Tables 11.3 & 11.6 in the appendices). Compared to the previous performances, she seemed to gradually reduce each of the expressive movements, while she slightly increased the specific instrumental movement of swinging the left elbow. This latter seemed to be performed for relaxing the left arm and assisting her in transmitting her musical intentions. She decreased the swaying and head nods that had previously appeared (Davidson, 2005). According to Hoppenot (2006), her behaviour seemed to have changed to achieve the optimal performance outcome. She seemed to adopt an analytical procedure of deconstructing the movements concentrating on each of them. This procedure could be an application of Husserl's purpose to go 'back to the things themselves' (Husserl, 1983: 35) in order to describe how experience appears to consciousness in which the body is involved in (see Chapter 2; Husserl, 1989). Guitar 3 had already adopted this strategy during the simulation, but at this stage she experienced it linked to sound. She seemed to 'analyse, visualise, and experience the musical gesture on the inside, [and] materialise what [she had] imagined' (Hoppenot, 2006: 64) during the simulation.

Nine musicians, Piano 1, Piano 3, Guitar 1, Violin 2, Viola 1, Cello 2, Recorder 1, Clarinet, and Percussion 2, who seemed to reveal an exploratory attitude towards movements during the simulation, seemed to deconstruct their movements. Some of them seemed to have discovered that they needed to add movements so that they were comfortable and free while playing, for instance, Guitar 1. During Performance 1, he rarely showed the specific instrumental movement of moving the left elbow up and down and when he did so it was quite a stiff movement. In Performance 3, he increased this movement, and head nods and swaying. He showed more fluency of movement, appearing more comfortable and confident in playing, and more involved in the music. Percussion 2 increased all of his expressive bodily movements when compared with previous performances. He appeared more confident, performed the piece faster and seemed to be more involved in the music as if he was enjoying the playing more. Conversely, Piano 1 and Cello 2 slowed down the piece appearing to pay attention to each performing technical movement. Piano 1 seemed to slightly reduce the expressive instrumental movement of lifting forearms and their rotation (Davidson, 2005) as if she realized that they were superfluous. Cello 2 slightly increased head nods as if she was listening to the sound quality of each bow.

Bodily expressive movements for self-comforting

While playing, Piano 2 very frequently showed swaying which seemed to be unsynchronized with her musical intentions, but rather automatic. She seemed to sway to comfort herself (Givens, 2002), but also gave the impression to have embedded that movement during her practice so that it had become part of her motor programs (Davidson, 2011). In all of her performances she very frequently exhibited swaying. During the third performance she also increased head nods, which could indicate an increase in her uneasiness. Maybe the discomfort, which she felt during the three tasks, did not allow her to reflect on and ‘deconstruct’ (Hoppenot, 2006) the movement as the tasks required.

11.8 Summary of the chapter

Analysis of the nonverbal reactions revealed how the musicians manifested their engagement with the task particularly displaying expressive bodily movements both during the simulation and playing. Three kinds of expressive bodily movements were identified: *Automatization of bodily expressive movements, Exploration of movements,* and *Bodily expressive movements for self-comforting.* Comparison of the musicians’ behaviour during the third playing with that in previous performances, demonstrated that most of them showed more self-confidence and were more involved in the music. They seemed to be affected by the simulation making their movements more effective and/or economising them so that they could better transmit their musical intentions. This emerged from observing body posture, the tempo of the music, expressive bodily movements, and the *specific instrumental expressive movements.*

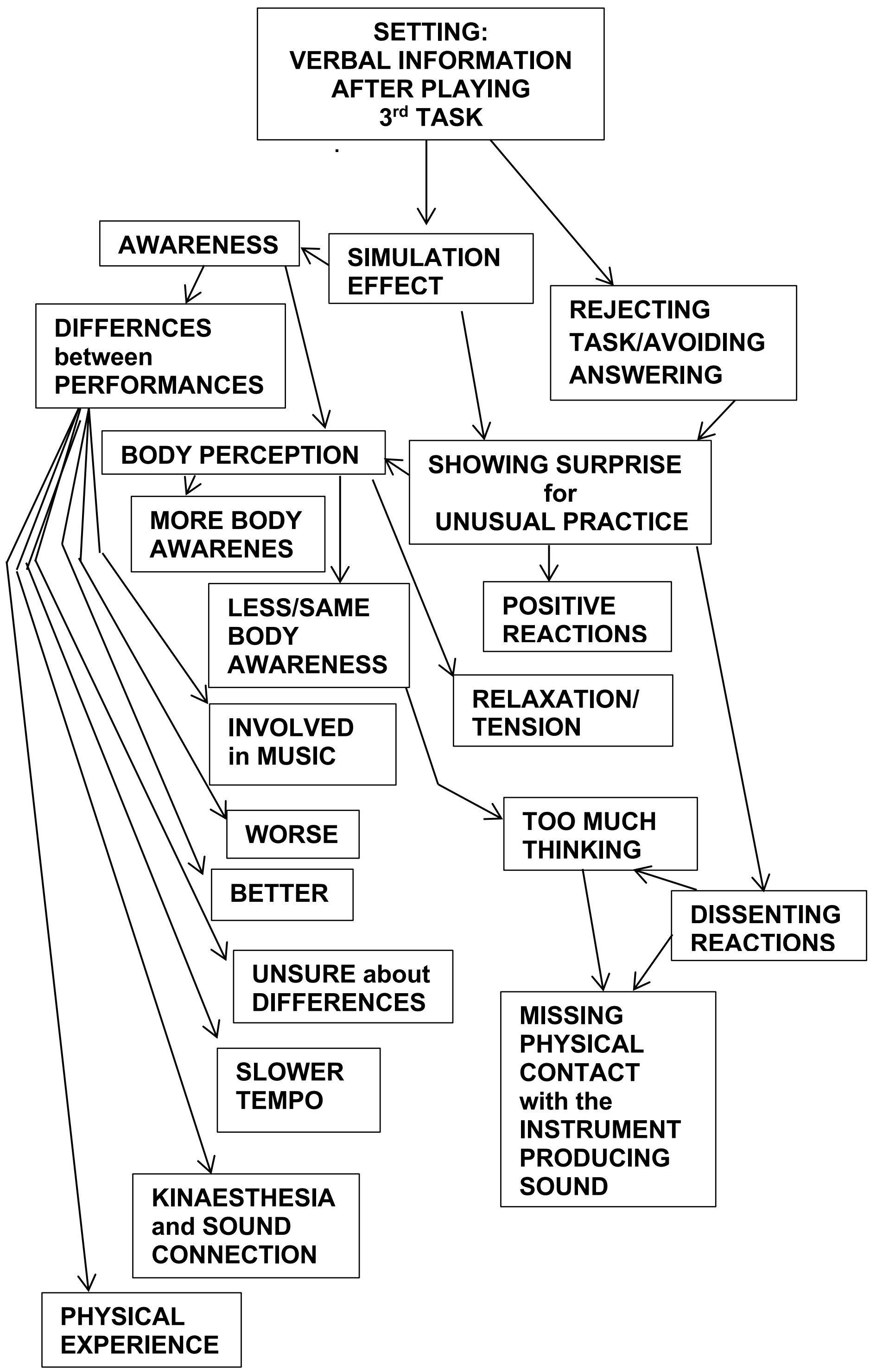
Chapter 12

Musicians' verbal responses after undertaking Task 3

12.1 Introduction

This chapter reports the findings from the introspective process that the musicians experienced after undertaking Task 3. Through continuing the third phenomenological reduction process which the musicians had started before engaging with Task 3 (see Chapter 10) and continued during the simulation and the playing (see Chapter 11), they were required to verbalize on their feelings as they perceived them while simulating and playing. The kinaesthetic feedback received by the simulation, the status of musicians' body self-awareness, and the possible simulation effect on their performance were the focus of the analysis. Details of musicians' verbal communications are presented and organized in themes in a hierarchic diagram (see Figure 15) representing the thematic analysis (Braun & Clark, 2006).

Figure 15. Themes emerging from the interviews after undertaking Task 3



12.2 Verbal information after undertaking Task 3

The analysis of the introspective process that musicians experienced after undertaking Task 3 is presented in the following sections. The musicians seemed to show a reduced level of anxiety appearing to have adapted to the research context. They were more at ease in expressing their thoughts. For example, they considerably reduced the time they took to respond (see Table 12.1 in the appendices) when compared with Task 2. Four musicians began to speak immediately after playing expressing their impressions about the simulation or evaluating their performance, without the interviewer asking them a question. Fifteen musicians spoke immediately after listening to the interviewer's question, five took three seconds before answering, one four seconds, and only one seven seconds. These reactions may have arisen for two reasons. The first could be connected to the 'interindividual interaction' (De Jaegher & Froese, 2009: 445) developed between each musician and the interviewer. The second may have been generated by the reflection process that musicians triggered when seeing themselves moving and receiving sensory-motor feedback from the movement itself. Musicians simultaneously experienced their body as object and as subject (see Varela et al., 1993) as they reflected on their movement. This action embodied experience seemed to influence their way of thinking which appeared to contribute to shaping their thoughts (see Goldin-Meadow, 2003; Beilock & Goldin-Meadow, 2010; Goldin-Meadow & Beilock, 2010; Alibali et al., 2014). The outcomes were assessed by clustering themes and sub-themes which led to identifying the superordinate theme *Simulation effect* and contributed to making sense of that *lived experience* (Smith, 2004).

12.3 Simulation effect

This superordinate theme was generated by analysing and clustering 'the subjective qualities of feelings' (Shear & Jevning, 2002: 189) that each musician expressed during their responses after performing Task 3. This means considering the way in which each musician experienced the simulation and playing while focusing their attention on those specific actions (Thompson & Zahavi, 2007). The mind became aware of that specific experience making sense of it (Thompson & Zahavi, 2007). In the analysis process, detecting similar patterns across cases made it possible to generate connections between the musicians' responses (Smith et al., 2009). This provided information for identifying an intersubjective experience (Thompson & Zahavi, 2007) which was useful for achieving a kind of validation of the study. Musicians reported on their feelings referring to the kinaesthetic feedback received by the simulation and its possible effect on the performance. They also related their body self-awareness to eventual variations of breathing, physical tension, relaxation, touch, mood and the mental images experienced during the simulation and the third performance. During their responses, musicians always referred to the experience of the simulation although the interviewer asked separate questions about the simulation and the playing. Twenty-one (see Table 12.2 in the appendices) of them also continued performing while speaking perhaps to re-live that experience. This behaviour was maybe due to the fact that most of the musicians were surprised by the simulation, as twenty of them indicated that this was the first time that they had carried out a simulation. The simulation generated different reactions that led to the identification of the subordinates themes *Awareness* and *Rejecting the task and/or Avoiding answering.* These are presented in the following sections.

12.4 Awareness

The subordinate theme *Awareness,* had already emerged following the completion of Task 2. At this stage of the research process it was generated by clustering the responses of all the musicians in relation to their way of expressing their body self-awareness (see Table 12.2 in the appendices). Musicians were required to 'practice awareness in movement' (Feldenkrais, 1981: 96) focusing on each element of it when simulating and playing. The last step of the task was the verbalisation that constituted the third phase of the third phenomenological reduction process and allowed the musicians to verbalise those experiences (Fogel, 2013). According to Depraz and colleagues (2003), this phase was the moment when the musicians distanced themselves from their own lived experience, becoming aware of and making sense of it. The experience of paying attention to each movement, 'the feelings engendered by the movements' (Fogel, 2013: 26), and the lack of sound led musicians to express different responses which were identified in the themes *Differences between performances*, *Body perception*, and *Showing surprise for an unusual practice.*

12.4.1 Differences between performances

This subtheme was generated by clustering emerging themes from the musicians' responses related to the first question that they were asked after playing. When comparing the third performance with the previous two, twelve musicians self-evaluated it using the words *better* or *worse*, seven were unsure of possible differences with the first and second performance, two said that they were more involved in the music, three were unable to verbalize the differences between performances, while nine referred to the third playing as a physical experience (see Table 12.2 in the appendices). In the following sections, the emerging themes *Physical experience*, *Kinaesthesia and sound connection*, *Slower tempo*, *Not sure of differences*, *Better, Worse, Involved in music*, illustrate the musicians' introspective process.

Physical experience

This theme was generated by clustering the responses of nine musicians (see Table 12.2 in the appendices) who reported physical details or evaluated the third performance as a 'physical event'- as stated by Viola 1. Five musicians mainly experienced the third performance as a physical and/or technical experience, while four seemed to be more introspective in reporting their physical experience. While they were verbalising, seven musicians seemed to be assisted in their thinking by the simulation of playing and/or kinaesthetic movements very frequently, as if they were re-living the simulation experience and appeared to prefer expressing themselves through movements rather than words. The increase of gestures production seems to occur when people 'describe information they acquired through physical actions' (Alibali et al., 2014: 151) or 'talk about *bodily actions* that they have performed' (Alibali et al., 2014: 152). This phenomenon may be explained by the fact that 'mental simulations of actions and perceptual states activate the same neural areas that are used in actual actions and perception' (Alibali et al., 2014: 150). Therefore, kinaesthetic movements and simulation of playing seemed to assist the musicians in their thinking process or 'reasoning' (Alibali et al., 2014) increasing their bodily self-awareness. This particularly occurred when simultaneously the musicians visualized and received sensory-motor feedback from their movements (Sheets-Johnstone, 2011). Performing these gestures seemed to evoke particular and salient details experienced during the simulation in the musicians' mind (Albali et al., 2014). According to Llinás (2001: 5), the 'generation of [their] mindness' seemed to be deeply related to their 'generation of movement' revealing the embodied root of knowledge (Varela et al., 1993). Musicians seemed to become aware of their *Leib,* the lived body (Merleau-Ponty, 1945/2002), generated by the synthesis between the anatomic body (*Körper*) and the psychic condition, 'the psychic Ego' (Husserl, 1989: 128, § 121). In the *Leib*, the tactile and kinetic sensations play a fundamental role (Husserl, 1989). The following extracts report musicians' experiences:

> **Viola 1:** I experienced the third performance more as…a physical [*simulating bowing*] event… yes.
> **Interviewer**: what did kind of sensation produced? Did you like it?
> **Viola 1:** It was only like as a bodily approach.
> **Interviewer:** Do you mean that you mainly focused on the movement?
> **Viola 1:** Yes, [*fast simulating bowing*] on the movement… It's a technical matter.

Viola 1 and Flute also referred to their instrument as an obstacle when playing, while saying that the simulation made them feel free.

> **Viola 1:** It's like as… as I have practiced, but in a really particular way, very different [*simulating the holding of bow*], it removes the issue of the bow [*slowly simulating bowing down looking at it*], I saw the movement … so … it's like as I divided the practice in two sections… the [*fast simulating bowing looking at it]* movement [*stopping simulating*] and the weight of the bow… and then I need to put them together so…
>
> **Flute**: [taking time before answering]… maybe it was more immediate, bu-u-ut it's not a difficult technical passage for fingering… and without the means of the instrument probably-y-y … we have … time for thinking o-o-of, I don't know, of the music or o-o-of technical aspects that you would like to improve… and without having the means of the instrument probably the musical idea becomes much more clear eheem … let's say of what….and idea… an ideal idea of what we would like to achieve… on the contrary through the instrument there is the means of instrument so.

Violin 3 seemed to perceive parts of his body better during playing and became aware of it when verbalizing and simulating.

> **Violin 3**: I didn't feel better into the whole arms, but I felt better in [*simulating the playing position with the left hand and indicating the left wrist*] in my joint … hemhum [*looking and moving the right hand on the left elbow*] it was [*simulating vibrato looking at me*] here [*looking at the vibrato and touching the left wrist*] for this hand and for this [*always simulating vibrato and looking at me*] wrist…[*simulating the vibrato*] movement.

Oboe and Clarinet referred to their physical experience. Although Oboe seemed to not know what to answer and simulated as re-living and thinking of the experience, he stated:

> **Oboe**: I… my sensation is that playing more and mo-o-ore especially with these instructions it's clear that I mean [*simulating playing*] it's it's it's easier… not but it's easier as always, how to say…

Clarinet implicitly seemed to reject (see below) the third performance due to the attention he paid to the body.

> **Clarinet**: No-o-ow I was let's sa-a-ay interested to the body position and breathing out…

The physical experience appeared fundamental for four musicians who transferred the perceptions they experienced during the simulation to their playing. When beginning to respond, Piano 1 seemed to need to mention the feelings she experienced during simulation. This appeared fundamental for realizing she was playing automatically or in phenomenological terms, through a pre-reflective self-awareness (Colombetti, 2014) in the previous performances. She seemed to support the idea that when playing musicians often automatize movements without 'controlling them by explicit thought processes' (Holgersen, 2010: 33).

> **Piano 1**: without the keybord... I lost the refere-en-ce of the KEy […] I lost the co-o-ontrol because I I didn't have (*touching softly the finger points of both hands*) the... the... re-e-ference, the key the keys the black keys and white keys…during the pra-a-actice aand doing not so... automatically, because I was a little bit... playing automatic-a-ally.... [*simulating playing*].

During verbalizing, Piano 3 and Violin 2 seemed to intentionally simulate playing and perform kinaesthetic movements that seemed fundamental for constituting the base for 'first consciousness' (Sheets-Johnstone, 2011). In an introspective dynamic process, they appeared to shift from pre-reflective self-awareness toward reflective self-awareness focusing their attention on the performed movements (Sheets-Johnstone, 2006). This phenomenon appeared clear when they substituted words with movements which seemed to be more effective for communicating their thoughts as the following extracts illustrate.

> **Piano 3**: … after I played it silently and I focused [*simulating playing*] on the movement… I think [l*ooking always at the arms and hands*] the third time I focused the most on the sound… Because I was really intensively …

suddenly I had the response from the…The thing is that a-after I mean the simulation and then after when I played … I think I repeated exactly the same movements I did in the simulation… I am not sure if I did it exactly, but I did I was trying the simulation [*simulating playing*] to do like as the movement [*while playing*] very clearly because I didn't have the sound… so I [*looking at hands simulating playing*] repeated it again I think I did it like subconsciously I just did [*while simulating looking at the interviewer*] the same movements [*looking at hands while simulating*] in the simulation even if I [*looking at the keyboard*]… didn't think too much about that after… But because you just, just suddenly open [*simulating opening the cover*] the piano…but it stays the thing [*simulating movement of arms on the keyboard*] I did before on the movement they stay [*simulating playing looking at hands moving*] from the simulation I think.

Violin 2: Yes.. the fact of simulating [*simulating playing*] with both hands for a while never I have done this [*simulating bowing*] sometime I do [*simulating bowing*] only the bow…sometimes a little bit with fingers [*simulating playing with left fingers*], but very little… or sometimes on the violin maybe without the bow like this [*simulating with the left hand*], but in this way [*simulating with both hands*] in the air never…and it gives you hem [*simulating with both hands*], well hem [*always simulating as re-living the experience*] you feel the movements [*always simulating*] … you also feel the little things [*simulating small bowing*] oh… [*simulating small bowing at the top of the bow*] Why am I doing this in this way? [*bringing the right index to the temple*]... in the air … if I play [*simulating*] I cannot do I mean I cannot correct myself [*simulating*] I think.

Guitar 3 seemed to realise and become aware that various sensorial channels, such as visual, auditory and kinaesthetic modalities (Gault, 2005), are involved during playing and should interact with each other. Moreover, according to Montero (2010), the request to direct attention to movement initially could distract expert musicians who seem to ignore the kinesthetic and visual information received from their movements. However, as occurred with Guitar 3, when able to maintain attention on movement during performance, their playing seems to considerably improve.

Guitar 3: I had one little moment of distraction because this kind of perception… I mean these different sequences of working stages allowed me to bring with me some sensations that, compared to the first time, assisted me in playing…. Ehm I'm not used to… When I started playing I got distracted because I had to overlap all these experiences, the memory of these experiences… because each of them left me a different memory of myself… in the third time I tried to put them all together… heeem I understood that there are some communicating channels…. but… but …. but sometime when I play I closed them…I don't perceive everything…These channels should be opened… They should be opened because they help…there are things which do not came out… sometime these channels remain closed eheem …. At least in my experience I perceived that.

Kinaesthesia and sound connection

This theme emerged from the analysis of the responses of seven musicians (see Table 12.2 in the appendices) in which they referred to various types of kinaesthetic feedback. According to Husserl (1989), musicians perceive their 'body' always combined with sound from external and internal perspectives (see Chapter 2). From the external perspective, when seeing parts of their body moving while also receiving auditory feedback, musicians perceive the body as object. From the second perspective, the body constitutes the subject of the experience through which musicians experience tactile and sensory-motor sensations. From the neurophenomenological viewpoint (Varela et al., 1993), musicians *enact* or interact through 'a relation of dynamic sensorimotor engagement with [their] environment' (Gangopadhyay et al., 2010:1) which is constituted of sound and movements that they simultaneously generate. Human beings 'learn "which thing [they] are" by moving and listening to [their] own movement' (Sheets-Johnstone, 2011: 49). This does not result only from '*looking* and *seeing*' the body in movement, but mainly from 'a bodily felt sense of the direction of our movement' (Sheets-Jonhstone, 2011: 49). According to Godøy (2017: 115), this means that 'when we hear sound, we also tend to imagine body motion we believe has generated the sound'. For example, while speaking, Piano 3 and Violin 3 simulated and looked at themselves moving as if they were becoming conscious about the kinaesthetic effect on their playing.

Piano 3: during the simulation I had to be very focused … on movement because when I played I worried about sound … actually [*looking at the clavier*] it's a good exercise because you have to… [*simulating hands position on the keyboard*] remember like [*simulating on the clavier looking at that*]… the position much better … we are very much connected to the sound… I always need a re-esponse from the sound and this when I didn't have it I had to really focus on what I was doing with with the hands and how [*slowly simulating*] I'm doing [*simulating*] and then how I make this movement [*simulating*]… you have to play [*simulating with the left hand*] separately this one part [*simulating playing with the left hand*] from the others [*looking at the simulating hand*] so there [*simulating with the left looking at it*] was much more clear because I had to focus on how I am doing this [*simulating with the left hand*] when I played it after when I had the response from the sound, I was again more thinking of the sound connected, not too much on the … physical

Violin 3: [*simulating fast and large bowing, and simulating the left hand*] I bit yes with the I was conscious with the …speed of the [*simulating the bow up and the left hand position*] of the bow… You know [*fast simulating bowing and the left hand*] bow distribution because sometimes I [*making an accent with the head and the right hand while simulating the bowing up*] want to stop [*simulating the stopping of the bow*] and [*simulating bowing*] hem maybe it was too [*simulating bowing up and vibrato with left hand looking at right hand*] sudden…too exaggerated… but let me say when I was playing I felt [*simulating fast bowing up*] the contact [*simulating the contact with the string*] the hair with the string and… maybe [*simulating the violin position*] the weight but it was strange because I only listened to the sound more [*simulating vibrato*] clearly, but it was not warmer that hum hum maybe I looked for the… relationship with the hair [*simulating the pressure of bow on the string*]… and then it's always when I felt this kind of [*simulating the adherence of the contact of bow on the string*] link it's produces a warm, a warmer sound, but only [*simulating large bowing and left hand position*], clear and more free [*simulating bowing and touching the right arm looking at that*] here.

Cello 2, Viola 1, and Percussion 1 stressed the importance of the visual feedback of movement and the complete involvement of the body in playing.

Cello 2: you can visualize more the [*simulating bowing*] movement you are doing…because sometimes we think that playing…[*simulating the left hand*] that things come out magically, isn't? On the contrary… there is a movement which is… there is a coordination, especially for bow instruments, of two [*simulating bowing and shifting*] opposite movements… linked to the sound…to the touch… there are a number o-o-of… things which are not obvious

Viola 1: [*indicating all of the body at various times*]… It was as if I knew what was going to happen… I was there with my thoughts…

Although Percussion 1 seemed to recognise the benefit of the simulation on his playing, he continued to show defensive behaviour intellectualising the situation (see Chapter 6; Freud, 1966).

Percussion 1: The complete involvement of all, the physicality, hem becomes mental I mean you see… you see yourself while playing… I mean see yourself [*closing eyes and simulating playing*]….and… and the internal listening of playing. I mean I have to listen to the sound … before it happens because if I listen to it after it's the end I am late…

Guitar 1 and Violin 1 seemed to realise the importance of movement and kinaesthetic channels (Gault, 2005) in producing sound.

> **Guitar 1**: hem... you don't realize as much [*simulating playing of left hand*] as you need to do, you know hem... and particularly the ear, we would not do without the instrument, we lost … well mentally it was extraordinary [*indicating the left ear*]... how how much I was hearing… even without instrument

> **Violin 1**: I noticed that I am aware and more conscious about every no-o-ote that I played… that's for sure whereas in my, in my first and in my second performance I felt that some notes [*simulating violin position*] or some movements I wasn't aware, hem in my last performance I felt that everything was a part of my [*simulating*] my body of my [*simulating*]…a-all my mind was focused on… on my [*simulating with left hand and looking at it*] fingers and my bow [*simulating bowing looking at it*] and that's why.

Slower tempo

Three musicians (see Table 12.2 in the appendices) referred to the need to slow down the tempo of the piece when performing it as if the simulation affected their performance, reflecting Montero's research (2010). She showed that when expert musicians were required to pay attention to their movements and think about them when playing, they slowed the tempo. Two musicians, Piano 1 and Percussion 2, expressed the need to slow down the piece after playing.

> **Piano 1**: Just observing the movement...[*simulating playing with the left hand*] ahha....maybe I need to play slower [*rhythmical doing slow movements with the head*] as well as I played mentally [*simulating and doing little circles with right index finger near the right temple*]

> **Percussion 2:** So look, while I was playing I have to say that that I was thinking 'I would like to play it a little bit slower, why I always start with this tempo?'

Only Cello 2 performed the piece slower than for the previous tasks. She seemed to recognise this after the interviewer urged her to reflect on it.

> **Interviewer**: what about the tempo? Do you think you that you performed the piece at the same tempo than the previous performances?
> **Cello 2**: ma-a-y-be not [*while smiling*] the
> **Interviewer**: I think it was slower
> **Cello 2**: yes, slower
> **Interviewer**: I perceived as if you were testing each note
> **Cello 2**: it's true, it's true, yes.

Being unsure about differences between performances

This theme clusters the responses of seven musicians (see Table 12. 2 in the appendices) who were uncertain about the musical differences between performances. Their reactions perhaps were generated by the fact that during the task they were required to observe, reflect on, and remember many things that they were not familiar with. Immediately after playing, three of them seemed to answer without thinking and said that the third performance was better. However, when reflecting for a while they were not able to remember any differences as the following extracts show:

> **Recorder 1:** Yea I think so
> **Interviewer:** in which sense?
> **Recorder 1**: I am not sure…It was different
> **Interviewer**: Do you think it was worst, better
> **Recorder 1**: [interrupting] I don't know, I don't know

> **Violin 2**: I play the piece a little bit differently [*simulating*]… I don't know… I don't know this.

> **Oboe**: Yes… Ah! So… I cannot say…. I mean all of them have been different I mean in the sense… I do-o-on't know… I made some more mistakes, but really… I don't know

Cello 2 reported that she did not notice any particular differences about sound, but as argued above, she performed the piece slower than the previous performance. Bassoon seemed to observe the impact that the simulation had on her thinking.

> **Bassoon:** but I don't know whether the re-esult is any difference, but I know my brain is doing different things.

Better

The theme *better* was generated by analyzing the responses of five musicians (see Table 12.2 in the appendices) who declared that the third performance was better than the previous two. Three musicians seemed to be sincere and positively surprised about the simulation effect on their playing. For example, Guitar 1 suggested that the process had helped him in expressing his thoughts through gestures.

> **Guitar 1:** you know, because it was easier [*while simulating playing with the right hand*] the third time.

Flute appeared quite embarrassed, but implicitly seemed to admit that the experience of mental rehearsal and the simulation had assisted him in having a clearer conceptualization of the piece.

> **Flute**: I would say always better all the-e-ese I mean putting together the two … ehee you start pla-a-aying immediately with a more precise idea.

Immediately after playing, Viola 1 declared:

> **Viola 1:** ehmmm much better, yes, in fact much better I have to say…although it is not anymore Adagio

Maybe the simulation allowed Viola 1 to concentrate on movement which distracted him from his uneasiness (see Chapters 5 & 8) and made him physically feel better. Three musicians declared that the third performance was better, but seemed to say this to please the interviewer (van de Mortel, 2008). Violin 3 simply answered 'Yea' without explaining why the third performance was better. Recorder 2 seemed to answer intellectually:

> **Recorder 2**: Y-yes I think that last was more confident and … ehm … I think more free than the other ones that's my impression
> **Interviewer**: because it was the third time?
> **Recorder 2**: I think it was both because I played the same thing so far three or four times, but also because I was (*while playing with the recorder with the left hands*) thinking about it. I think it makes the difference.

Worse

The theme *worse* was generated clustering the responses of seven musicians (see Table 12.2 in the appendices) who declared that the third performance was worse than the others. Musicians referred to being disturbed by the simulation which did not allow them to properly focus on the music and/or be involved in it as, for example, had occurred during the second task. This reaction was maybe provoked by the task requirement, performing the simulation for the first time and observing, reflecting, and verbalizing on the performed movements. For example, Piano 2 appeared very disturbed by the simulation and its effect on the playing.

> **Piano 2**: … y-es I didn't enjoy that [the performance]… as much as the se-econd one… n-no I didn't like it.

Clarinet showed mental effort (Frank et al., 2013) as he expressed his disagreement with the simulation implicitly considering it unnatural. As an expert musician, he seemed not to want to accept any suggestion for a new way of practising.

> **Clarinet**: What I heem let's say I found more natural the second one was was …that one let's sa-a-ay with a higher involvement because … I mean I think if the music in that way… with thi-i-is.

Guitar 2 immediately after playing declared that 'It was the worst one', but then he seemed to not know what to say:

> **Guitar 2**: I don't kno-o-ow [*adjusting sitting and laughing*]. Maybe I have one idea ehem certainly this thing is very useful… huum yes beca-ause I hem I go looking for… inside me and so I-I-I think I found that for doing the first gesture… is very difficult… I mean mentally although this piece is very easy.

Although he said he felt physically better during the third performance, Viola 1 implicitly said that he was not musically involved.

> **Viola 1**: I liked the second one better. This is because of how I lived it. I'm not speaking about… about the effect…

Also, Viola 2 was more involved in the music in the second performance. He said that he was taken aback by the simulation as it was not how he usually practised and that did not allow him to concentrate deeply.

> **Viola 2**: No… No the second performance was better, not this one, but I have the impression that the best was the second performance and not this one… ehem I don't know if it's only my impression. I was very focused on in the second…. If you wanted to hit m-y-y head, I would not have been aware… on the contrary this… maybe maybe because you made me execute for the first time… I was not so focused on. I was focused, but not so much… I repeat…maybe I did for the first time and I was focused on, but I would have felt the hit on my head … of course this is a subjective perception

Similarly to Viola 2, Recorder 1 was not at ease during the third performance.

> **Recorder 1**: The other side, the normal kind of mental rehearsal… I felt free to… play, what I want to play. It was less after the last one.

Harp seemed to not have been at ease in Tasks 2 and 3 and challenged both, which were new for her.

> **Harp**: Something went go-od, something worst… in a way I preferred something in the first … still… now I felt as something … is missing because

> it's something, something else I never thought about before so there is a kind of distraction but it may be incorporated with the practice.

Involved in music

This theme emerged by analysing responses from two musicians (see Table 12.2 in the appendices) in which they appeared completely involved with body and mind during performing. They seemed to 'be in their body' (Merleau-Ponty, 1945/2002: 173) through perception of the self or the proprioception (see Chapter 2) also generated by their sound. Assisted by the simulation and kinaesthetic movements, Piano 3 explained in detail her involvement in the music.

> **Piano 3**: When I did the simulation, I was thinking not about the sound, but the rhythmical structure… And…about [*simulating playing with the left hand*] the movements. So when you connect those two I think it's… it has an impact on the last performance… because in the first time you think about sound because … you are imagining it and the second time I was thinking [*simulating positioning both hands in front of her looking at them*] like about the movement and more about [*moving the hands rhythmically simulating playing*], the rhythmical part of the sound… because [*looking at simulating right hand*] you wanted to [*simulating*], also someone you wanted to play like this [*simulating playing on the cover*]. You wanted to sound, you know, like this, perfect [*gently touching the tip of her right finger*] trills and everything and they focus on the movements how do [*simulating trills with right hand on the cover*] you do, what do you do with the fingers [*simulating*] to make perfect trills.

Guitar 1 referred to his physical status which seemed to assist him in being involved in the music.

> **Guitar 1:** and when I did pick it up (*indicating with the left index the guitar, closing eyes*) it was…hem… more comfortable again, the third time… more than second one and the first…I just feel (*simulating playing the strings*) … I don't even know because something was more… was more in the sound, you know … ye-es more more involved a-a-again, more than second, first and second time.

12.4.2 Body perception

The theme *body perception* emerged (see Chapter 8) from examining the responses of sixteen musicians (see Table 12.2 in the appendices) and was generated by clustering the subthemes *Body and movement awareness* and *Tension/relaxation*. Musicians seemed to experience the body as *Leib* or 'lived body' (see above) phenomenologically, which means to live it 'in the first person perspective, myself as a spatiotemporal embodied agent in the world' (Sestito et al., 2017: 1). Musicians seemed to be engaged with their bodily movements manifesting a sort of 'proprioceptive sensory bodily awareness' (Montero, 2010: 113) which affected their cognition (Sheets-Johnston, 2011). When performing simulated and kinaesthetic movements during verbalizing (see Table 12.2 in the appendices), they seemed to become aware through 'an awareness of various sound-related actions' (Godøy, 2011: 231). However, there were musicians who seemed to be not at ease or disconcerted and objected to having this kind of awareness. The following sections illustrate musicians' responses related to their body perception.

Perceiving more body and movement awareness

Fourteen musicians (see Table 12.2 in the appendices) referred to feeling more aware of their body or parts of it and/or movements during playing. Always referring to the sound that they produced, six musicians stated that they felt more aware of their movements, three of their sensory-motor involvement, while two perceived some specific parts of the body more, two their breathing, and one tactile perception. For example, Piano 3 always spoke while performing simulated and kinaesthetic movements. She seemed to become aware of her moving hands and sound as one unit. Although kinesthetic movements seem to occur spontaneously (Sheets-Johnstone, 2011), she seemed to use them consciously as if they assisted her in re-living what she felt during performing.

> **Piano 3**: Definitely! Because when I had mental rehearsal…. I was thinking [*simulating hands position of playing*] of my hands… and now what I am [*slowly simulating playing and following the movement with the gaze*] doing with my hands and… what is sound so I play [*slowly speaking*] with the hands and I hear [*indicating the right ear*] the sound at the same time.

Three musicians declared that they were more aware of their movements, but related to their sensory-motor activity. Two of them, Viola 2 and Cello 1, expressed contradictory opinions about the simulation. For example, Viola 2 seemed to consciously simulate to better express his ideas.

> **Viola 2**: while performing without the instrument, obviously I was much… more aware much more about movements… but… there are pros and cons… the pro is that you make the movements, so you feel them… the con is that you do not control them. For example, at some point I realized that the first chord I did in this [*simulating the movement to play the chord*] way…after I performed another chord better… I mean I was aware that without the instrument [*simulating the wrong movement*] I only outlined the first chord… surely with the viola I would have performed it badly [*simulating the bow position*] through a movement which was not… On the contrary the second chord [*simulating the correct movement and looking at it*] I thought to have the viola and perform the chord [*simulating the movement of playing the chord*] and to play [*simulating the movement of playing the chord*] it better [*simulating bowing*]…so this gives you a greater awareness… awareness why not?...

Two musicians, Guitar 3 and Flute, indicated that they were more aware of their breathing. Guitar 3 seemed to realise that breathing awareness assisted her in becoming aware of body posture. This awareness constituted a novelty that distracted her. While speaking, the act of touching her back generated tactile kinaesthetic feedback which seemed to assist her in developing body self-awareness (Sheets-Johnstone, 2011).

> **Guitar 3**: What I perceived more was the column of air of my breathing… I perceived the column [*touching the back*] which was moving, going in and out from my nose… From the beginning this was the main thing… then the balance in my back [*touching the back*] … setting and doing the simulation without the instrument [*simulating*] allowed me to perceive my vertebral column then when I picked up the instrument… and then I played with the instrument [*simulating*], not mentally… I perceived my back much … so I paid much more attention to that… and also this distracted me… it was a novelty… Yes… yes

Two musicians, Guitar 1 and Violin 3, indicated that they were more aware of specific parts of their body. Showing surprise, Guitar 1 said he was more aware of his feet touching the floor while playing. Violin 3 referred to the joint of his left arm linked to sound and his vibrato movement (see above). Guitar 2 declared that he was more aware of tactile sensations, but he did not specify anything further and did not show any kinaesthetic movement at all.

Perceiving less or the same body and movement awareness

Nine musicians, six of them wind players (see Table 12.2 in the appendices), said that they perceived less or the same body awareness than during the previous performances. Five said that they felt the same awareness, two reported feeling less, two contradicted themselves, and one did not know. These reactions may have been due to the unfamiliar nature of the task, leading them to reject it intellectually as they believed that their playing was intuitive (Montero, 2010). Recorder 2 and Percussion 2 seemed to implicitly challenge the nature of the task making excuses.

> **Recorder 2:** I guess on a more complicated instrument… you may be more aware because I [*simulating playing on the recorder*] didn't cha-a-ange re-ea-ally anything on the instrument while with the oboe I might [*simulating playing*] have changed my lips o-r m-y I would change the fingers because I would give different note, but…yea, I would haved change my breathing or my lips with this… this is a quite simple instrument… you don't make lots of changes.

> **Percussion 2**: Honestly-y-y a little bit because I-I-I playe-e-ed…. Very very little… but then this kind of thing comes out I feel it, I internalize it in a wider performance

Recorder 1 implicitly communicated feeling less body self-awareness in the third performance:

> **Recorder 1**: Mental rehearsal, normal mental, yes.

Clarinet indicated feeling the same body awareness from the beginning of the first performance, but he seemed to forget that he had not paid attention to his bodily sensations when he played the first time (see Chapter 6).

> **Clarinet:** No no, the physical sensation was always the same from the first time.

Harp appeared very annoyed saying:

> **Harp**: I was less aware actually.

Relaxation/Tension

Differently than after performing Task 1, six musicians appeared sincere and at ease in revealing their feelings when declaring that they were tense or relaxed (see Table 12.2 in the appendices). Piano 2 and Percussion 2 said that they were more tense in the third performance. For example, after declaring that she did not enjoy the third task Piano 2 stated she felt tense in this performance. Four musicians referred to the relaxation effect of the simulation in different ways. While verbalizing, Guitar 1 simulated the playing indicating its positive effect on the performance.

> **Guitar 1**: Yes, Still, still I am very tense, still quite nervous person, you know, still slightly tense person, you know, but it was easier [*simulating playing with the right hand*] the third time.

Cello 2 referred to the tensions she felt during the simulation and how she tried to eliminate them. Maybe this was the reason why she performed at a slower tempo than the previous performances and was not aware that she slowed down (see above). When speaking, she seemed to be assisted by kinaethesia and the simulation as if they led her to become more (Sheets-Johnstone, 2011) aware of the content of her speech.

> **Cello 2**: physically [*touching the left shoulder*] yes hummm… I realized that, after performing witho-o-out [*fast simulating bowing*] instrument, there were some tensions in my shoulders [*touching the left shoulder*] and that that before I was not so aware let's say that [*touching both shoulders*]. I perceived some tensions in my [*touching shoulders*] shoulders and therefore when I played the last time [*simulating bowing*] I tried to, to pay more attention to that, to [*simulating bowing*] try to relax mo-o-ore those parts [*simulating bowing*] I perceived…yes.

Percussion 1 reported the simulation as an effective strategy for controlling nervousness. However, he seemed to implicitly admit to feeling tense because of the presence of the camera.

> **Percussion 1**: while you see yourself, ehmm, you are liable to become nervous if you have a video-camera in front of you or if you have an audience.

12.4.3 Showing surprise for the unusual practice: positive reactions

During the verbalization process after each task, musicians often showed surprise. This was mainly manifested through nonverbal language. At this stage of the research process, musicians expressed their surprise about the simulation of playing. Two kinds of reactions indicating surprise were identified. The first seemed to manifest curiosity and an open-mind toward the simulation and was in evidence in seven musicians (see Table 12.2 in the appendices). The second was part of the theme *Rejecting the task* (see below). According to Depraz (2013: 284), surprise constitutes 'the experiential access to experience as novelty' which is 'an open awaiting […where] a somatic cardiac and neural embodiment' (p. 285) is implicated. Therefore, surprise is an embodied reaction to an external stimulus in which at least four main components such as 'time, body, emotion, and language' (Depraz, 2013: 285) are implicated. The following section sets out what has been classified as positive surprise.

Showing positive surprised reactions

Seven musicians initially appeared disconcerted about the simulation, but then seemed to be positively affected by it. For example, Piano 1 seemed to be very surprised and became aware of the proprioceptive feedback when she realized that she was missing it (see Chapter 2; Peñalba Acitores, 2011). She seemed to achieve this awareness alternating words and simulated movements of playing.

> **Piano 1**: [*simulating*] to keep the references ...hm....[*simulating and looking at the piano*] here.... [*indicating the cover with the left hand*] […] it was nice… it was nice to… to have this... playing [*slowly and softly simulating playing, closing eyes*] ...in order to observe just the movement and then go to… pla-a-ay and be aware a-a-about what I have to... this... playing.

Although he appeared disconcerted about the simulation, Guitar 1 appeared excited about what he discovered about sound and body perception.

> **Guitar 1**: Very, very, very strange [*looking at the interviewer with wide yes, fast simulating playing with the right hand*] when I had to do without an instrument.

Violin 3 appeared surprised and disconcerted seeming to experience contrasting perceptions, giving the impression that he had performed the simulation for the first time.

> **Violin 3**: The imagination [*simulating*] was strange. It was, ehm, mo-ore I have I wanted to check the movement, the fingerings, the vibrato then I it's like … I was too late [*simulating uncertain playing*]. I thought I don't know [*simulating shifting smiling*] to make the shift … then it was strange because I don't feel like always comfortable as usual…

Guitar 3 appeared positively surprised about the novelty of perceiving her body differently when playing.

> **Guitar 3**: So when I started I was very concentrated then I realized that, hem, and I got distracted because rationally I tried to control what was happening… then I let myself go and then everything was fine, although I had one little moment of distraction because this kind of perception…

Two musicians indicated that they had not performed simulation before and were surprised and curious to investigate it further.

> **Viola 1**: This I never experienced there is… I have to deep this practice…to mimic [*simulating bowing*] exactly mimic… physically.

> **Viola 2**: This is because I am not used to this practice, so I was taken aback […] You taught me something new today, well thank you…I promise you that I will experiment with this practice… I will let you know…

12.5 Rejecting the task. Showing surprise through dissenting reactions

The theme *Rejecting the task* and was relevant for five musicians. At this stage of the research process, fourteen musicians seemed to reject the nature of the task or were reluctant to engage with the simulation and expressed conflicting feelings (see Table 12.2 in the appendices). According to Montero (2010), as expert musicians they are used to performing movements without awareness, but intuitively inasmuch as they have highly automatized skill levels which guarantee good performance. They may not feel the need to find 'new ways' of practising or reflecting. This subordinate theme emerged by clustering musicians' responses expressing *Surprise through dissenting reactions* and is presented as follows.

12.5.1 Showing surprise through dissenting reactions

This subordinate theme was generated by clustering the themes *Dissenting reactions*, *Too much thinking, Missing physical contact with the instrument and sound.* These emerged from the analysis of the responses of fourteen musicians (see Table 12.2 in the appendices). They appeared disconcerted or annoyed by the simulation and this seemed to provoke a sort of negative surprise. The following sections present musicians' responses in detail.

Dissenting reactions

Thirteen musicians (see Table 12.2 in the appendices) seemed to be reluctant to engage with the simulation rejecting it or avoided answering the questions about it. This reaction was particularly notable amongst the wind players. This may be because when playing, they do not need to move their arms as much as pianists or string players who affect sound through movement. Three musicians indicated that they felt very strange. Piano 2 said that she was very embarrassed and declared that she did not enjoy the task at all (see above). Flute seemed to transmit conflicting feelings such as discomfort, but also curiosity toward the simulation. When speaking, he simulated appearing to reflect on it.

> **Flute**: it was quite strange in the sense that [*simulating playing with the right hand*] looking for the keys… for example [*simulating the movements he was speaking about*] the little finger movement, ehemmm… while all the other [*simulating with the left hand*] fingers have [*simulating with both hands*]… more or less one key for each finge-e-er [*simulating playing with the right little finger*] the little finger was strange when it had to move [*simulating with the right little finger*] in the sense [*simulating with both hands*] of looking for the… the fingering [*always simulating*]… without having… physically yes in the hand… it was strange.

Harp and Bassoon seemed to be annoyed by the task and the request to think about their movements. Harp firmly said:

> **Harp**: It was strange I am telling you the thing of thinking.

> **Bassoon:** I'm just thinking that increasingly I-I… rapt up in what I'm doing, as opposed to the first time I wasn't thinking about what I was doing. So yes, I would suggest it was different.

Recorder 1 appeared disconcerted and seemed to politely reject any benefits of the simulation when saying:

> **Recorder 1:** Not especially effective.

Guitar 2 admitted that the task was difficult and he did not know how to manage the requirement.

> **Guitar 2**: Huum yes, beca-ause I, hem, I have to go to look for… inside me and so I-I-I think I found that for doing the first gesture… is very difficult… I mean mentally although this piece is very easy.

Percussion 2 implicitly expressed his discomfort and his disagreement with the outcome of the simulation, but was polite in proposing an alternative. He also said that the simulation could be a useful practice. His reaction could be interpreted as a misunderstanding of the task. He answered as if he was required to simulate a new piece or he did not internally sing the piece correctly when simulating.

> **Percussion 2**: I think that… for internalising or [*slow moving his hands and looking at them*] assisting to-o-o memorise, surely a mimic ehem can help… but very much also the singing… I mean I would not do without singing for helping myself to learn the piece, I would sing it….yes I think that… to find a way for internally memorizing a piece of music helps

After appeasing the interviewer (see above), Recorder 2 politely seemed to reject any benefits of the task.

> **Recorder 2:** My, my only wondering would be is it useful to do this in this short piece of music? Now if I had to play a concerto for example, I don't know if I would be able to do that ehm ….tz. I have never tried it, maybe maybe…

Contrary to his initial behaviour (see above and Chapter 10), Cello 1 seemed to want to please the interviewer. Although he had rejected the benefits of the task previously, at this stage of the interview he simulated many times as if this practice disconcerted and made him curious.

> **Cello 1**: I don't… I don't know…I have no idea I never did it [*simulating bowing*] before without instrument […] I will think about it, until now I never thought [*simulating bowing and then the left hand*] about that… to the movement…to simulate… to mimic the movement [*simulating*]. I always imagined them in my mind, but I never [*fast bowing*] mimed them.

Oboe seemed to reveal indifference to the task and to not need any changes to his practice.

> **Oboe:** I never do this… I mean, I sometimes think about a melody I wanted to play, maybe I am on the bus, maybe I hum it but, but well more than

Clarinet appeared to reveal that he thought the task was irrelevant.

> **Clarinet**: I try to be careful when playing to look for this relaxation because it needs, because it needs, it's part of the music… If I had played another kind of pie-e-ece maybe I would have had a different attitude.

Too much thinking

Five musicians seemed to be disturbed by being asked to think both when simulating and playing. Two of them, Guitar 2 and Violin 1, seemed disconcerted about how to observe and manage their 'thinking' during the task. Violin 1 said:

> **Violin 1**: I have to think of everything I have to think a lot how to explain why it's … it's positive for me, aham…I don't know exactly, I don't know, ahha, maybe I … by intuition I I know, I, I can tell you something, but I don't know exactly how my brain works, hem.

Three musicians appeared to be annoyed about the request to think about movement as they normally played intuitively (see above Montero, 2010).

> **Recorder 2**: If I try the first movement for example and then becomes part of you… you have not to think too much about it the second the third, movement…but I think it's time consuming to think like that… and you need someone to really help you to direct you… hem

> **Bassoon**: I feel [*right hand on the right temple*] the brain is doing something else extra and hem it's a distraction from what …[*simulating the right hand position*] if, if it gets too complicated I think there are many things to think about.

Harp, repeated several times that she was negatively affected by thinking and that this decreased her awareness level.

> **Harp**: It was strange I am telling you the thing of thinking… [*slowly starting playing*] I tend to work on action and reaction [*playing only one note*] so… Oh it was fine, it was fine but I was still effected by the thinking… […] Because I was thinking too much!

Missing physical contact with the instrument when producing sound

Four musicians seemed disconcerted about the lack of physical contact with the instrument and sound during the simulation (see Table 12.2 in the appendices). The reason for this reaction may be that movement was completely embedded in producing sound. This suggests that they were playing through pre-reflective self-awareness (Colombetti, 2014; Zahavi, 1998) and did not move from pre-reflective to reflective body self-awareness when performing. According to Toner and colleagues (2016), musicians seem to experience a sort of *marginal* or *recessive* awareness of their body retaining 'a sense of agency and ownership over [their] movement' (Toner et al., 2016: 304) through proprioceptive and kinaesthetic sensations during the performance. Maybe for this reason, musicians felt strange when focusing on movement related to sound, as the following extracts show.

> **Piano 2**: It's ve-e-ery [*smiling*] dii-ifficult for me to to pla-a-y without the clavier… Aaaa but I I'm trying to think if this is because I didn't have the so-o-und or because I didn't have the clavier… I mean that I tried to imaagine …how… this could be… aehm …in [*simulating playing with both hands in space*] clavier… but without sound… But [*lightly touching the clavier looking at that*] having notes here I think this could be much easier for me… Do you understand what I mean?
> **Interviewer**: Perfectly, yes
> **Piano 2**: Ye-ea, but [*closing the piano cover*] like thi-is I don't have sound I don't have the clavier so…and I am trying now to think how it cou-ld be… If you know [*simulating playing in space*] I [*simulating looking at the interviewer*] had sound without the clavier.
>
> **Cello 1:** There's a diff…no [*hiding half face behind the cello*] for me… because…without the physical support, maybe this [referring to the simulation] could be useful [*showing for a while all the face*] …they are vague gestures without [*expressing his idea showing the pressure on the bow tip on the real string*]…
> **Interviewer**: physical contact
> **Cello 1**: [*showing the pressure on the bow tip on the real string*]… the physical contact of the weight is, is [*simulating fast bowing*] difficult…it's something I can imagine…
> **Interviewer:** It seems as if you lost the ground under your feet
> **Cello 1:** Yes! It's something like that.
>
> **Clarinet**: I always feel this contact with the instrument so I don't care … I mean if I have to do in one way or in another I mean I pick up the instrument and, and the contact is that also because we have been together now for more than forty years.
>
> **Harp**: I tend to work on action and reaction [*playing only one note*] so…

12.6 Summary of the chapter

The musicians' verbal responses manifested positive and or dissenting reactions towards the simulation. For some, the simulation seemed to positively affect their performance assisting them in maintaining attention on movement and focusing on sound. The musicians related their body self-awareness to eventual variations of breathing, physical tension, relaxation, touch, mood and the mental images experienced during the simulation and the third performance. Most of them reported on their feelings referring to the kinaesthetic feedback received by the simulation and its possible effect on the performance. The kinaesthetic and sensory-motor feedback, also generated while verbalizing and simulating playing, seemed to assist the musicians in shaping their thoughts and developing body self-awareness. Other musicians expressed contradictory feelings about the performance and their body perception, negatively reacting to the task. They did not enjoy the third performance reporting that too much thinking was required. Moreover, compared with the previous tasks, all seemed to decrease their anxiety level as showed by the reduced time they took to respond.

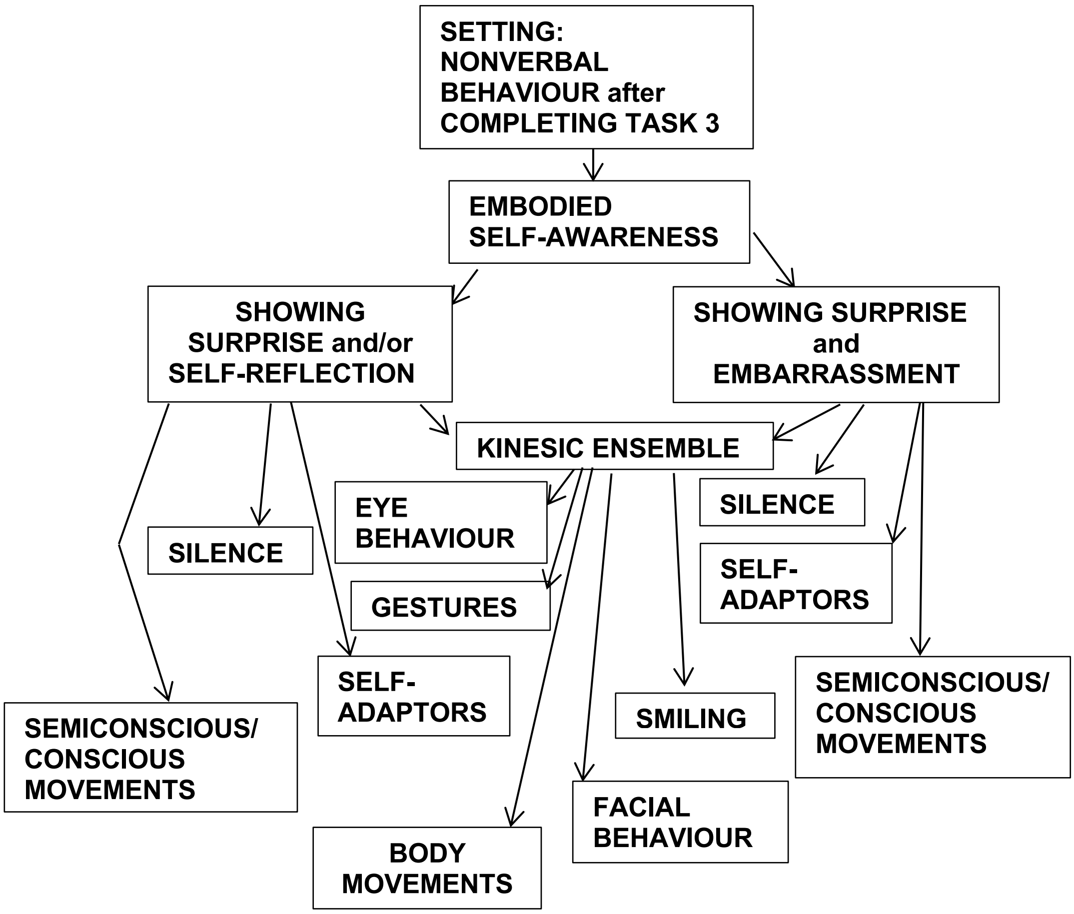
Chapter 13

The nonverbal reactions of the musicians after completing Task 3

13.1 Introduction

This chapter sets out the findings related to the musicians' nonverbal reactions which emerged during the interview after completing Task 3. At this stage of the research, the musicians were participating in the third and last phenomenological reduction process (Vermersch, 2002). The details of the musicians' nonverbal communication are presented from the point where they were required to reflect on and verbalize about the differences in their performance between the three tasks, and their awareness of their body as they were performing after completing Task 3. The themes emerging from the analysis of the more significant nonverbal signals are presented in Figure 16.

Figure 16. Themes of Nonverbal information after playing Task 3.



13.2 Nonverbal behaviour after completing Task 3

The same process of analysis was adopted as in previous chapters. Through their body language, each musician expressed her/his own individuality (Oberhaus, 2015) which allowed the researcher to identify similar patters across cases generating connections between the musicians' behaviour (Smith et al., 2009). The superordinate theme *Embodied self-awareness* (Fogel, 2013) emerged from the analysis identifying how the musicians developed awareness related to their body and movements during the third task. Although there were musicians who rejected the task or manifested dissenting reactions (see Chapter 12), all of the musicians seemed to show an increase in their bodily self-awareness revealed through their body language. The superordinate theme *Embodied self-awareness* emerged through the clustering of the subordinate themes *Showing self-reflection*, *surprise, and/or embarrassment.*

13.3 Showing self-reflection, surprise, and/or embarrassment.

These subordinate themes reflect two main behaviours which seemed to be provoked by the simulation effect. Some musicians initially showed surprise which seemed to lead them to self-reflecting, while others appeared to be surprised and embarrassed. *Self-reflection* previously identified in earlier analyses (see Chapters 5, 7, 9, 10) was exhibited by thirteen musicians while *Surprise and embarrassment was evident in* nine who exhibited embarrassment cues expressing dissenting reactions towards the task or avoided self-reflecting (see Chapter 12). Four musicians were able to self-reflect immediately after completing Task 3, although two of them, Recorder 1 and Harp, manifested some embarrassment. Before starting to self-reflect, nine musicians appeared surprised and embarrassed. Surprise seemed to emerge as a result of the simulation effect (see Chapter 12), 'the experiential access to experience as novelty' (Depraz, 2013: 284). This also generated discomfort in the musicians' internal equilibrium. This new emotional state seemed to motivate the musicians to self-reflect on the physical changes that the simulation provoked. The cues of the theme *Kinesic ensembles* (Samovar et al., 2009; Calbris, 2011) were combined with other nonverbal signals (see Table 13.1 in the appendices) to explore the way in which bodily responses accompanied the introspection process, affected verbalization, and led the musicians to reflect on their body. The musicians' first-person data combined with the 'third-person (biobehavioural) data' (Thompson et al., 2005: 47) seemed to support the neurophenomenological concept (Colombetti, 2014; Shapiro, 2011; Varela et al., 1993) according to which cognition emerges from interaction or *enaction* with movement of the body and mind and not 'solely "in the head"' (Larkin et al., 2011: 319). The musicians' body movement contributed to revealing their thinking processes and how they redirected their attention from the "exterior" to the "interior" (see Chapter 3; Depraz et al., 2003: 25).

13.3.1 Kinesic ensemble combined with other nonverbal language

Through kinesic ensemble (see Chapter 2; Calbris, 2011), which includes eye behaviour (Agnus, 2012) and movements of different parts of the body such as 'manual gestures, head movements, and facial expression' (Calbris, 2011: 267), the musicians conveyed a great deal of nonverbal information. Most of the musicians frequently accompanied their verbalizations with cues which were mainly unconsciously performed (Samovar et al., 2009). At this stage of the analysis process, twenty-one musicians (see Table 13.1 in the appendices) combined kinesic ensemble with kinaesthetic and/or simulated movement of playing that seemed to be consciously performed. In the following sections, the incidence of single components of kinesic ensemble, e.g. looking into space, are presented with other nonverbal communication signals.

13.3.2 Kinesic ensemble: eye behaviour combined with other nonverbal signals

At this stage of the analysis process, the phenomenon of gaze was considered. As already argued (see Chapters 4, 5, 7, 9), gaze direction, often unintentionally performed, constitutes an important regulatory factor in dyadic interaction (Ekman & Friesen, 1969a), and is central for interpreting a speaker's actions, intentionality, and emotions (Macrae et al., 2002). In the following sections, the same four classifications of eye behaviour previously set out are examined in relation to other cues and are compared with responses in Task 1 and 2.

Looking into space

All of the twenty-two musicians (see Tables 13.1 and 13.2 in the appendices) looked into space when verbalizing after completing Task 3. Similarly to after completing Task 1 and 2 (see Chapters 5 & 9), two kinds of looking into space, self-reflection and uneasiness, were identified. As suggested by Glenberg and colleagues (1998), disengaging from the environment when averting gaze seemed to facilitate the musicians in internally controlling conceptualization and allow self-reflection (Glenberg et al., 1998: 654). The second kind of gaze, when the musicians looked around or down seemed to convey embarrassment. This seemed to be provoked by the task requirement of self-reflecting on the simulation and its effect on the playing. However, during the verbalization process, the musicians seemed to experience different feelings which were transmitted through changing gaze direction. For example, fifteen musicians looked into space at some fixed point as if they needed to reflect and achieve clarity of their thoughts before starting to speak (Navarro, 2008). Conversely, some musicians such as Oboe and Clarinet seemed to feel uneasy when looking down and showed show self-adaptors such as stroking their neck, scratching the head, and/or manipulating objects (Harrigan et al., 1986; see below). They appeared as if they did not know how to respond or whether to reject the nature of the task (see Chapter 12). Eight musicians seemed to exhibit the same frequency level of looking into space as they had exhibited after completing Tasks 1 and 2. Comparing their responses with those following Task 2, five musicians showed the same frequency level, eight increased it, and one decreased it (see Tables 13.2, 13.3; Figure 13.1 in the appendices).

Looking at some fixed point in space combined with other cues

When looking at some fixed point, the musicians often exhibited other nonverbal signals (see Table 13.1 in the appendices) revealing self-reflection or surprise. Cello 2 smiled with her head-tilted to the side and her lips parted (Ekman et al., 1972; Ekman & Friesen, 2003; Givens, 2002). When looking at a fixed point, eighteen musicians performed kinaesthetic movement and or simulated playing. Piano 3 and Violin 2, while looking at a fixed point and verbalizing about movement, appeared as if they were consciously perfoming kinaesthesia and or simulating playing (see Chapter 12). Some musicians, such as Piano 1, who was silent and often had parted lips performed simulated movements appearing to be very focused on them. Consciously turning attention on their body movements, the musicians focused on 'all those components and structures which were contained implicitly in the lived experience' (Gallagher & Zahavi, 2012: 70) of playing. In other words, through self-reflection they changed their way of perceiving that experience transforming their mental status from pre-reflective self-awareness to self-awareness. While looking at a fixed point, Violin 3 simultaneously communicated embarrassment, surprise, and self-reflection. He did not speak fluently and filled the pauses with unnecessary words or noise which seemed to assist him in taking time for self-reflecting (Frank et al., 2013). He also smiled (Keltner, 2005) as if he did not expected to experience the feelings he was perceiving while simulating playing. Looking at a fixed point and touching his chin with lips parted and then simulating playing, Guitar 1 showed surprise as he consciously realized the importance of movement in playing (see Chapter 12). In contrast, five musicians looked around or down, were silent and transmitted embarrassment, for instance, Recorder 2 and Percussion 2 who seemed to challenge the nature of the task and made excuses (see Chapter 12).

Looking at the interviewer and other nonverbal signals

This theme emerged similarly to after completing Task 1 and 2. All the musicians very frequently or frequently looked at the interviewer alternating this with looking into space. This behaviour suggests the way in which the musicians appeared to self-reflect and communicate their thoughts to the interviewer. Eight of them maintained the same frequency level of looking at the interviewer as they did after completing previous tasks. When comparing this with after completing Task 2, three musicians exhibited the same frequency level, six increased, and five decreased it (see Tables 13.1, 13.2, 13.3; Figure 13.2 in the appendices). To communicate that they had completed their performance, twenty-one musicians looked at the interviewer, while only Viola 1 looked down and around, appearing embarrassed (Keltner, 1995; 2005) critically self-evaluating the performance (see Chapter 12). Simultaneously with looking at the interviewer, the musicians displayed two main behaviours. The first was nodding. Eighteen musicians did this revealing attentiveness (Samovar et al., 2009: 262) and involvement (Harrigan, 2005).The second behaviour, manifested by twenty musicians, consisted of performing kinaesthetic movements and or simulating playing. The musicians first looked into space seeming to self-reflect on the movement and its feedback. Then, while verbalizing and formalizing their thoughts, they looked at the interviewer as if they 'recognized the bodily source' (Sheets-Johnstone, 1999b: 152) of their thoughts grounded in the tactile-kinaesthetic experience. Smiling was another behaviour exhibited while looking at the interviewer by eighteen musicians. This accompanied the musicians' gaze when completing playing, listening to the interviewer, or when they were concealing feelings combined with body movements (see below).

Looking at the camera

Five musicians fleetingly looked at the camera after completing Task 3 (see Table13.1, 13.2; Figure 13.3 in the appendices). Three of them looked at it infrequently and two scarcely. Eleven musicians displayed the same level of frequency as in previous tasks. When compared with Task 2, three showed the same frequency, five increased it, and three decreased it. As after Task 1, the video-camera seemed to constitute an external "eye" which generated concern and uneasiness about the permanence of the recording. Cello 2 showed this behaviour after each task, slightly increasing it following Task 3. Only Percussion 1 consciously looked at the camera, indicating its presence and referring to his nervousness (see Chapter 12).

Closing eyes and other cues

Eleven musicians closed their eyes exhibiting various levels of frequency of this behaviour (see Tables 13.1, 13.2; Figure 13.4 in the appendices). Six of them maintained the same frequency level that they exhibited after completing Task 1 and 2. In comparison with after Task 2, five exhibited the same frequency, six increased it, and five decreased it. Closing eyes seemed to occur to suppress information coming from external stimuli (Glenberg et al., 1998). Nine musicians seemed to do this. Through this, they seemed to be assisted in focusing their attention on the internal process of re-living the feelings which they experienced during the task. While closing their eyes, four of them simulated playing seeming to deeply experience these feelings. Piano 1 and Cello 2 manifested this behaviour very frequently combining it with silence and the simulation of playing.

However, two musicians closed their eyes before expressing their disagreement with the nature of the task as if they were looking for the right words to express this. Piano 2 openly expressed his view, while Recorder 2 seemed to respond intellectually (see Chapter 12)

13.3.3 Kinesic ensemble: gestures and other cues

Hand movements were identified through the same three categories of gestures: anticipatory, iconic, and beats as in previous chapters. Compared to after completing Task 1 and 2, only thirteen musicians showed some of these gestures and their frequency level was considerably reduced (see Tables 13.1, 13.4; Figures 13.5, 13.6, 13.7 in the appendices). This suggests that the musicians replaced gestures with kinaesthetic and simulated movements. These noticeably increased and appeared to be performed consciously. When speaking, people always spontaneously and unconsciously perform gestures which convey information to the interlocutor (Calbris, 2011). In contrast, at this stage of the analysis process, there were musicians who seemed to consciously execute gestures seeming to 'iconically materialize a meaning in actional and spatial form' (McNeill, 2005: 56). This particularly occurred when musicians exhibited iconic gestures while looking at those gestures. The following sections illustrate the three kinds of gestures in detail and compare their frequency with after completing previous tasks.

Anticipatory gestures

Seven musicians displayed anticipatory gestures. The number of the musicians and the frequency level of this kind of gestures was considerably reduced when compared with after Task 1 and 2 (see Tables 13.1, 13.3, 13.4; Figure 13.5 in the appendices). Moreover, the musicians seemed to replace anticipatory gestures with kinaesthetic and simulated movements. Six musicians rarely exhibited this kind of gestures while Guitar 2 did so infrequently. Comparing the frequency level to after Task 2, only three musicians slightly increased it. Unconsciously performed, these gestures seemed to assist the musicians in shaping their thoughts (Goldin-Meadow, 2003) revealing uncertainty and embarrassment. They were displayed before the musicians started speaking. They seemed to assist the musicians in looking for words for expressing dissenting reactions toward the task. This phenomenon was mainly observed with the wind players and Guitar 2 (see Chapter 12).

Iconic gestures

Five musicians (see Tables 13.1, 13.4 in the appendices) performed iconic gestures which contributed to represent 'the semantic content of [their] speech' (McNeill, 1992:12). They appeared as if they 'iconically materialized a meaning in actional and spatial form' (McNeill, 2005: 56). Four musicians rarely displayed these gestures. Guitar 3 exhibited them infrequently seeming to emphasize the physical experience lived during the third performance (see Chapter 12). She seemed to be consciously performing these gestures, observing what she was doing, while spreading her arms and then clenching her fists on her knees. Compared with after the previous tasks, the execution of *Iconic gestures* and the level of their frequency reduced (see Tables 13.4, 13.5; Figure 13.6 in the appendices). Three musicians displayed the same frequency level after each task, while when compared with Task 2, five exhibited the same frequency, for two it slightly increased, and for twelve it decreased. This decrease in iconic gestures suggests that musicians replaced them with kinaesthetic and simulated movements which better represented 'the semantic content of their speech' (McNeill, 1992:12). When displaying iconic gestures, four musicians appeared self-confident during the process of self-reflecting and at ease in referring to their experience.

Beats

Five musicians exhibited *Beats* which consisted of rhythmically accompanying the pulsation of their speech showing short and fast hand movements (McNeill, 1992) stressing words (see Tables 13.1 and 13.4 in the appendices). *Beats* seemed to be performed by those musicians who revealed discomfort. For example, Guitar 2 and Clarinet executed *Beats.* They alternated *Beats with* looking at the interviewer, looking into space and anticipatory gestures. Compared with after completing Task 1 and 2, most of the musicians considerably reduced this kind of gestures (see Table 13.4 and 13.5; Figure 13.7 in the appendices). Five musicians did not exhibit *Beats* at all after performing each task, while compared to after completing Task 2, four showed the same frequency level, two slightly increased it, and eleven decreased it. The reduction of *Beats* seemed to suggest that the musicians had gradually decreased their *state anxiety* (see Chapters 4 & 5; Harrigan et al., 1992; Grös et al., 2007).

13.3.4 Body movements

All of the musicians exhibited body movements combined with other behaviours (see Table 13.1 in the appendices). Following the same procedure adopted in Chapter 9, the body movement frequency was evaluated averaging the performance as illustrated in Tables 13.1 and 13.6 (see appendices). Observing this phenomenon contributed to interpreting the musicians’ feelings, the intensity of their emotional states, the degree of attention paid to the task and their level of motivation and involvement (see Mehrabian, 2009; Knapp et al., 2014). The same kinds of movements identified after completing Task 2 were observed. However, the musicians increased the frequency level of body movements compared to after completing previous tasks (see Table 13.6; Figure 13.8 in the appendices). Fifteen musicians displayed body movements very frequently, four frequently, one infrequently, and one rarely. After completing each task six musicians showed the same frequency of body movements, when comparing the frequency level with after completing Task 2, five exhibited the same level, and eleven increased it (see Table 13.7 in the appendices). In contrast to previous tasks, the musicians reduced the performance of movement related to anxiety while increasing movements revealing collaborative and positive behaviours (see Tables 13.8a, 13.8b in the appendices) such as nodding, leaning forwards, and tilting their head to the side (De Meijer, 1989; Givens, 2002; Harrigan, 2005; Samovar et al., 2009). Some musicians showed both positive behaviours and anxiety movements. These seemed to vary related to the content of the speech and the feelings that the musicians were experiencing during that stage of the interview. For example, twenty musicians showed nodding not only while listening to the interviewer, but also while self-reflecting or speaking. Nodding reveals listener's 'acceptance and understanding' (Samovar et al., 2009: 258), so the musicians seemed to listen to themselves and embody their "acceptance" and "understanding" of what they were internally experiencing. Fourteen musicians exhibited leaning forward and looking at the interviewer when referring to their experience appearing as if they were assisted by their body in conveying their feelings. Guitar 2 was one of the musicians that particularly exhibited discomfort and embarrassment, seemed to be looking for the interviewer's sympathy when leaning forward and admitting he did not know how to manage the task (see Chapter 12). Twelve musicians showed head-tilt-side, transmitting different feelings as they combined it with other cues. Ten musicians exhibited friendliness and self-reflection (Givens, 2002) such as Cello 2. She very frequently combined head-tilt-side with silence and closed eyes or with parting lips while looking at a fixed point. Two musicians, Recorder 2 and Flute, exhibited both self-reflective and defensive behaviour. Recorder 2 appeared defensive while combining head-tilt-side with self-adaptors (Givens, 2002), such as object manipulation or touching body parts also referring to her body-awareness (see

Chapter 12). Two body movements, shrugging and shaking the head, were respectively executed by fourteen and twelve musicians. Compared with after completing Task 2, the musicians increased these cues revealing feelings such as defense, uncertainty, or discomfort (Givens, 1977; 2002). This was manifested by nine musicians who displayed both of these movements when not knowing how to evaluate their performance or expressing dissenting reactions. For example, Bassoon shook her head at various times appearing to be annoyed about the request to think of movement. Leaning backward was manifested by eight musicians seeming to manifest disagreement with what they were being asked to do and discomfort (Givens, 2002; Navarro, 2008). For example, Viola 2 leant backward when admitting that he had not performed a simulation before and was not at ease with it. Six musicians adjusted their sitting revealing embarrassment and discomfort. Appearing very embarrassed, Guitar 2 adjusted his sitting position while laughing and negatively evaluating his performance. Revealing anxiety, embarrassment, or stress, three musicians exhibited Adam's apple-jump when seeming to not know how to respond. For example, Piano 1 and Clarinet exhibited this before starting speaking. Two musicians slightly rocked as if they were self-comforting (Givens, 2002). Viola 2 rocked as if he was instinctively calming himself when he admitted he had not performed a simulation before. Recorder 2 exhibited rocking after completing each task, although she slightly reduced it in Task 3 compared with after Task 2. Maybe this behaviour is part of her normal body movement repertoire which she uses for self-consoling (Ekman & Friesen, 1969a). There was a decrease in the showing of discomfort through crossing arms and hiding hands. Clarinet showed both of these cues. He crossed his arms and then hid his hands appearing to reveal that he thought the task was irrelevant (see Chapter 12). His body language conveyed defense, strong discomfort and low-confidence (Navarro, 2008). Percussion 1 crossed his arms at the end of answering. He seemed to release his tension through crossing arms, while standing and smiling he transmitted defense and superiority (Givens, 2002). Oboe hid both hands in his pockets while looking into space and shrugging when manifesting uncertainty about differences between performances (see Chapter 12).

13.3.5 Facial behaviour

Nineteen musicians displayed facial behaviour (see Tables 13.1, 13.9; Figure 13.9 in the appendices). They were three less than after completing Task 2, four maintaining the same frequency level. One of them changed her facial behaviour frequently, while three scarcely did so (see Table 13.9 in the appendices). Comparing facial behaviour with after completing Task 2, five musicians exhibited the same frequency level, eight increased it, and five decreased it. At this stage of the analysis, it was observed that the musicians reduced the variety of facial behaviour compared with after completing Task 2 (see Tables 13.11a&b in the appendices). Among the musicians who increased the frequency level, five changed their facial behaviour very frequently. This high frequency was displayed only at this stage of the research process and was perhaps generated by the simulation effect provoking surprise. The most common facial movements were raising eyebrows and parting lips which seemed to manifest surprise or the emphasis of words (Ekman et al., 1972; Ekman, 1991; Ekman, 2004; Givens, 2002). These cues were respectively exhibited by eleven musicians, two more than after completing Task 2. For example, Viola 2 and Oboe raised their eyebrows after completing each task. At this stage of the research process, Viola 2 raised his eyebrows showing surprise when admitting that this was the first time he had simulated playing. Raising eyebrows seemed to be part of the facial behaviour repertoire of Oboe used for emphasising his communication. In this circumstance he exhibited this cue revealing indifference to the task perceiving not needing any changes to his practice (see Chapter 12). Parting lips was particularly noticeable when musicians self-reflected, listened to the interviewer or expressed surprise (Ekman et al., 1972; Ekman & Friesen, 2003). Piano 1 exhibited parting lips frequently when silent and appearing especially involved in self-reflecting on her body through performing the simulation. Guitar 1 seemed to show surprise about the simulation effect alternating parting lips and silence, with raised eyebrows looking at the interviewer. Eight musicians lowered their eyebrows or frowned. This behaviour seemed to indicate concentration, displeasure, or uncertainty (Givens, 2002). Piano 1 and Violin 1 lowered their eyebrows when parting lips and looking at a fixed point in space seeming to focus on their body. Through their body language, there were musicians who seemed to convey opposite feelings to those that they expressed when speaking. This phenomenon seemed to occur with four musicians. For example, Violin 3 seemed to respond so as to please the interviewer, but revealed some embarrassment and uncertainty while verbalizing unclear phrases about sound connection, lowering the eyebrows, stroking the chin, and averting his gaze from the interviewer (see Chapter 12). Recorder 2 also lowered her eyebrows when intellectualising her responses and concealing her feelings (Freud, 1966). Five musicians consciously moved their lips down and shook their head emphasising that they did not know what to answer or expressed disagreement with the nature of what they were being asked to do (Navarro, 2008). Harp moved her lips down when repeating that she was negatively affected by the request of thinking of movements. Narrowing of the lips was exhibited by three musicians, Oboe, Basson and Harp, who manifested dissenting reactions (Navarro, 2008). Oboe and Bassoon narrowed their lips when being required to evaluate and compare their third performance to the previous two. Bassoon narrowed her lips after completing each task. Maybe this is part of her facial behaviour repertoire when she feels discomfort. She was one of the wind players who manifested dissenting reactions to the task (see Chapter 12). Hiding his face was manifested by Cello 1 after completing each task. He again seemed to conceal his disagreement with what he was being asked to do (Ekman, 1991) and his embarrassment.

13.3.6 Smiling

Twenty-one musicians exhibited smiling. This was the same number as after completing Task 1 and one more than after Task 2 (see Table 13.12 in the appendices). Comparing the frequency level of smiling with after completing Task 2, thirteen musicians increased their frequency, four maintained the same level, and five decreased it (see Figure 13.10 in the appendices). Smiling and laughing often affect communication (Glenn & Holt, 2013) not only in terms of humour or positive feelings, but also for concealing negative emotions such as anger, jealousy, distress, and embarrassment (see Ekman et al., 1990; Keltner, 2005; Glenn & Holt, 2013; Gunnery & Hall, 2015) which can be voluntarily or involuntarily displayed (Ekman et al., 1990). At this stage of the analysis, three kinds of smiling were identified: embarrassed, nervous and affiliation. Seventeen musicians, two more than after completing Task 2, showed embarrassed smiling, six, one less than after completing Task 2, exhibited nervous smiling, and eight affiliation smiling. Ten musicians exhibited two kinds of smiling. Five of them smiled very frequently (see Table 13.12 in the appendices). For example, Cello 2 smiled very frequently showing embarrassed and affiliation smiles. She showed embarrassment when reporting that she had not noticed any particular differences between the performances as if she did not remember them, while she displayed affiliation smiling after the interviewer urged her to reflect on the fact that she performed the piece slower than in the previous tasks. Piano 1 also manifested these two kinds of smiling. She exhibited embarrassed smiling when saying that she felt lost without the reference of the keyboard as if she was admitting a weakness. She showed affiliation smiling looking at the interviewer, as if she was awaiting the interviewer's assent, when realizing she was playing automatically. Violin 1 showed embarrassed smiling and a nervous laugh. He displayed embarrassed smiling when completing his performance as if he feared the interviewer's judgement. Then he laughed nervously when appearing disconcerted about how to observe and manage his 'thinking' during the task (see Chapter 12). The fact that embarrassed smiling and nervous laughing increased could be due to the simulation effect. This latter generated surprise and discomfort in several musicians. For example, Recorder 1, smiled very frequently but only exhibited affiliation smiling. She exhibited this when she indicated that she could not remember any differences between the performances and after saying that she felt freer during performing the mental rehearsal. She appeared self-confident in expressing her dissent about Task 3, politely manifesting it through her smiling.

13.3.7 Silence

Throughout the research process (see Chapters 5, 7, 8, 9), and also after completing Task 3 some musicians were silent. This cue was considered relevant when the musicians were silent for longer than the 'latency period' of two seconds (Knapp et al., 2014: 354). Sixteen musicians, five less than after completing Task 2, exhibited silence at different frequency levels and also combined it with other cues (see Tables 13.1, 13.13 in the appendices). Two musicians were silent very frequently, three frequently, three infrequently, eight scarcely, and six not at all. Four musicians displayed the same frequency after completing each task. When comparing the frequency levels of silence with after completing Task 2, five showed the same frequency, four increased it, and nine decreased it (see Table 13.14 and Figure 13.11 in the appendices). The frequency level variation could be interpreted in two ways. One factor seemed to be the pleasure of self-reflecting on the body that the musicians experienced when they were silent, for instance, Violin 2. The second seemed to be due to the simulation effect which generated embarrassment for some musicians. They seemed to need time to conceal their feelings or find appropriate words for expressing their dissent, for instance, Clarinet (see Chapter 12). Piano 3 seemed to self-reflect while slowly speaking and looking at some fixed point or at her body movements. Conversely, Cello 1 was never silent, appearing annoyed by the task request to think and seeming to want to avoid any introspection process. Combining the analysis of silence with other cues allowed the identification of discomfort and self-reflection. For example, Piano 1, who was silent very frequently, seemed to need time for assessing her sensorial and emotional responses (Petitmengin-Peugeot, 2002), and was assisted in generating the process of 'retrospective introspection' (Vermersch, 2009: 23). She first was silent for seven seconds with lips parted and looking into space at a fixed point appearing to self-reflect before starting to answer. She again showed self-reflection when she interrupted speaking, looked into space, being silent for eight seconds. She also combined silence at various times, four seconds each, with the simulation of playing while looking at her movements or closing eyes. At this stage, she seemed to be paying attention to her body from an external and internal perspective. This phenomenon was also shown by Piano 2, Violin 2, and Viola 1. Looking at their movement seemed to enable them to gradually become conscious of their body and change the way in which they experienced it (Gallagher & Zahavi, 2008; 2012). Piano 2 and Percussion 2 manifested both embarrassment and self-reflection being silent infrequently. Piano 2 manifested embarrassment twice: the first time while looking around into space, exhibiting embarrassed smiling, adjusting sitting, and shaking her head, before saying she experienced strange feelings when simulating playing. The second time was when she displayed embarrassment before saying that she did not agree with completing the task. Conversely, she expressed self-reflection when looking into space at a fixed point before referring to the relationship between movement and sound (see Chapter 12). Percussion 2, while silent, stroked his chin, and looked around into space, showing embarrassment before expressing his discomfort and his disagreement with the outcome of the simulation. However, immediately after that he was silent seeming to self-reflect before referring to the possible benefits of the simulation (see Chapter 12).

13.3.8 Self-adaptors

The theme *Self-adaptors* was again generated (see Chapters 4, 5, 7, 9, 10). It was identified by observing the musicians who self-touched through stroking, rubbing, or scratching, and or manipulating objects such as their instruments and or their clothes as they tried to alleviate discomfort and adapt to the circumstances (see Harrigan et al., 1986; Ekman, 2004; Harrigan, 2005). Eighteen musicians, two more than after completing Task 2, performed these behaviours. Seven of them exhibited self-adaptors very frequently, four frequently, three infrequently, five scarcely, and three not at all (see Tables 13.1, 13.15; Figure 13.12 in the appendices). Comparing after each task, five musicians showed the same frequency level, while comparing with Task 2 three exhibited the same frequency, eleven increased it, and three decreased it (see Table 13.16 in the appendices). Eleven musicians increased the frequency level of self-adaptors which suggests that they experienced a high level of discomfort. This phenomenon was particularly relevant for those musicians who expressed dissent toward the task, for instance, the five wind players (see Chapter 12). Self-adaptors, such as stroking, rubbing, and licking lips seemed to be manifested for pacifying the musicians and remaining calm when they were feeling embarrassed or stressed (Navarro, 2008). The most frequent cue was stroking executed by sixteen musicians (see Table 13.18 in the appendices). For example, Clarinet at various times stroked his neck, chin, fingers, and nose. He implicitly seemed to be reluctant to complete the third performance (see Chapter 12), showed discomfort and insecurity looking down, being silent, and stroking his neck (Navarro, 2008). Eight musicians mainly rubbed parts of their face such as lips, eyes, or nose, and/or parts of their body such as hands, ankle, and abdomen. Besides respectively showing stroking and rubbing, two musicians, Violin 3 and Viola 2, licked their lips. Four musicians, including Viola 2, bit their lips expressing insecurity (Navarro, 2008). Through scratching, six musicians exhibited two different feelings. When scratching their head, five musicians seemed to involuntarily communicate that they were thinking what to say (Navarro, 2008), while one musician, Viola 1, scratched his cheek and the thigh showing uncertainty when evaluating his third performance (see Chapter 12). Six musicians, four of them wind players, manipulated objects, such as their instruments or their clothes, to assist them in remaining calm (Navarro, 2008).

13.3.9 Semiconscious and conscious movements

Similarly, as in the analysis process after completing Task 1 and 2 (see Chapters 5, 9), the subordinate theme *Semiconscious movements* emerged through clustering the themes *Kinaesthesia* and *Simulated movements* exhibited by twenty musicians (see Tables 13.1, 13.18 in the appendices). However, at this stage of the research process, the musicians seemed to behave differently to the way that had after completing the previous tasks. They seemed to think about *what* they were doing *while* they were doing it (Varela et al., 1993; Montero, 2016: 41) appearing conscious of their movements. The musicians seemed to replace gestures with kinaesthetic and/or simulated movements as if they were intentionally performing and paying attention to them (Graham et al., 2017). They seemed to execute these movements for supporting and clarifying their thoughts or conveying (Cartmill et al., 2012) their message to the researcher. Therefore, the term *conscious* was added to the subordinate theme. Compared with after completing the previous tasks, the musicians seemed to have moved from pre-reflective bodily self-awareness to reflective bodily self-awareness (Colombetti, 2014; Zahavi, 1998), being able to 'make sense out of [their lived experience] in a narrative way' (Gallagher & Zahavi, 2008: 49).

Kinaesthesia

Twenty musicians, eight more than after completing Task 2, displayed kinaesthesia also increasing its frequency (see Table 13.18; Figure 13.13 in the appendices). The musicians seemed to show self-body awareness when touching and/or looking at the parts of their body that they were speaking about. Looking at and receiving kinaesthetic feedback from movements and specific localized 'touch-sensations' of the body seemed to lead the musicians to became aware of it (Husserl, 1989:152 § 36). In Husserlian terms, they perceived their *lived body*, or *Leib* in two ways. The first was when the musicians experienced their body while touching it externally as a 'physical thing'. The second was while the musicians experienced their body from perceiving the internal sensations of being touched (Husserl, 1989: 153 § 36). For example, Guitar 3 showed kinaesthesia very frequently while sequentially touching her shoulders, chest and abdomen when looking at the researcher and speaking about her breathing and its effect on her body. She seemed to consciously perform these movements to support transmitting her feelings to the researcher (Cartmill et al., 2012), also simultaneously experiencing them. Piano 3 frequently executed kinesthesia, touching various parts of her body such as fingertips, hands, and arms, always looking at them. As occurred during the interview process, she seemed to receive kinaesthetic and visual feedback which appeared to assist her in self-reflecting (Cartmill et al., 2012). Three musicians exhibited the same frequency level after completing each task. When comparing with after completing Task 2, three musicians showed the same frequency, thirteen increased the level, and three decreased it (see Table 13.19 in the appendices). Guitar 2 did not exhibit kinaesthesia at all, while Bassoon and Percussion 1 rarely exhibited it. This suggests that they were reluctant to engage with the tasks and subsequently did not experience any introspection. Guitar 2 and Bassoon expressed dissenting reactions, while Percussion 1 seemed to maintain his defensive behaviour (see Chapter 6) intellectualising his responses in an attempt to conceal his feelings (see Chapter 12). The increase in kinaesthesia could be interpreted as a simulation effect which seemed to stimulate the musicians in expressing themselves through 'nonlinguistic concepts' (Sheets-Johnstone, 1999b). As Sheets-Johnstone (1999b) argues, these concepts originate from bodily experience which begins 'in early childhood and form the basis of the corporeal concept of *insideness*' (Sheets-Johnstone, 1999b: 151). The term *insideness* represents 'the archetypal relation grounding the relation of containment, thus the experiential foundation for "embodied image schemata" containment' (Sheets-Johnstone, 1999b: 153).

Simulated movements

At this stage of the research process twenty musicians, ten more than after completing Task 2 (see Table 13.18; Figure 13.14 in the appendices), displayed simulated movements of playing while speaking. Nine musicians simulated very frequently, four frequently, four infrequently, and three scarcely. Only Recorder 1 did not exhibit simulated movements at all after completing each task, maybe because moving or gesticulating was not part of her body movement repertoire (Ekman & Friesen, 1969a). Comparing the frequency level with after completing Task 2, three musicians maintained the same frequency level, sixteen musicians increased it, and two decreased it (see Table 13.19 in the appendices). The musicians seemed to intentionally redirect their attention (Depraz, 2014) to the simulated movements which seemed to activate 'cognition-in-action'. This latter is 'a principle about specifically conscious mental processes' (Montero, 2016: 38) consisting of a self-reflective process that experts employ when performing in which they 'think, predict, pay attention to, conceptualise, control, their actions [...] having a sense of the self' (Montero, 2016: 38). The musicians seemed to consciously employ simulation for assisting self-reflection while looking at themselves and/or conveying their feelings and thoughts to the interviewer when looking at her (Cartmill et al., 2012). They seemed to recollect content from their 'implicit memory' generated when their body learned actions required for playing through 'repetition and exercise' (Fuchs, 2012: 10) and that, once automatized, became embodied and difficult to be verbalised (Fuchs, 2012). The simulation combined with verbalization seemed to allow the musicians to re-experience the initial content of their learning. For example, executing the simulation very frequently, Violin 2 appeared to self-reflect and become aware, when combining these movements with looking into space and/or at her moving body speaking slowly. She seemed to be assisted by the simulation in formalizing and transmitting her thoughts and feelings while looking at the interviewer (see Table 13.1 in the appendices). She seemed to apply a sort of 'introspective observation [of] any action segment' (Jeannerod, 2017: 584) that led her to become conscious when verbalizing. Ten musicians, who simulated very frequently or frequently, behaved similarly to Violin 2 (see Table 13.1 in the appendices). This phenomenon occurred also with the musicians who expressed dissenting reactions such as Cello 1 and Harp. Cello 1 appeared curious about simulation (see Chapter 12) seeming to discover that he could experience his movements of playing differently when self-reflecting and looking into space while speaking. Harp frequently simulated while expressing her dissent, but also while explaining the reason why she disapproved of the task (see Chapter 12).

13.4 Summary of the chapter

The analysis of the musicians' nonverbal reactions in Task 3 generated the superordinate theme Embodied self-awareness. When comparing the nonverbal responses for Task 3 with those of Tasks 1 and 2, an increase in their body self-awareness and a reduction in anxiety were noticed. It seemed that bodily responses affected verbalization and contributed to revealing the musicians' thinking processes. Body movements and particularly kinaesthetic and simulated movements, that at this stage seemed to be consciously performed, led the musicians to reflect on their body, and revealed an increase in their bodily self-awareness. This behaviour showed a strong body-mind interaction or *enaction* revealing the importance of movement in the cognitive process of the musicians.

Section 5

Chapter 14

The expert musicians' evaluations of participants' musical performances

14.1 Introduction

This chapter sets out the outcomes related to the second stage of the analysis process which consisted of the evaluation by a panel of five experienced musicians of the three performances. The reason for involving the panel was to provide rigorous validation (Meyrick, 2006) and reduce possible researcher bias when analysing the performed tasks. The panellists were asked to observe a set of video-recordings from a selection of six of the musicians who participated in the study. The decision to select a group of participants was taken in order to avoid too great a demand on the panel's time if they had to evaluate sixty-six performances (three for each of the twenty-two musicians). The panel members examined the videos and assessed them using an evaluation sheet which asked them to rate on a 5 point Likert scale the performances in relation to specific parameters which were identified from the literature (see below). The following sections present the criteria according to which the musicians and the panel members were selected. Also set out are the parameters used in the evaluation sheet, and the panellists' evaluations triangulated with the musicians' responses.

14.2 The selected musicians, the panel members, and assessment criteria

As already discussed in Chapter 3, the choice to involve a panel of expert musicians was made in order to provide rigorous validation and reduce possible researcher bias when analysing the performed tasks. In order to constitute the panel, make the evaluation effective, and make effective use of the panellists' time, criteria needed to be determined.

14.2.1 The selected musicians

Evaluating sixty-six performances (three for each of the twenty-two musicians) was considered to place too great a demand on the panel's time. Therefore, the researcher invited one of the panellists (Panellist 4; see below), who had already agreed to participate, to assist her in selecting a significant and representative number of the video-recordings. The selection criterion was decided after watching all of the video-recordings once. It consisted of choosing one musician from each category of instrument in which there were at least two players. This would enable comparisons to be made of observations of similar technical movements. The cellists were excluded inasmuch as one of them did not complete the third task which made the possibility of comparison impossible. The categories in which there were two or three players were pianists, guitarists, violinists, violists, recorder players, and percussionists. The videos of these were watched many times. While watching the three performances, notes were taken relating to nonverbal signals, such as body posture, facial expression, gaze direction, attention to movement, relaxation, expressive movements, and differences related to the music, such as tempo, musical communication, and dynamic contrasts. The musician who within each group appeared more focused and during the tasks more affected by the intervention was selected. The evaluation sheet was not used at this stage. At the end of this process, Piano 1, Violin 2, Recorder 1, Percussion 2, Viola 2, and Guitar 3 were chosen. This selection process took a long time and was demanding for the panellist. For this reason, the video-recordings were not analysed again immediately to allow some distance from them and enable greater objectivity. Following this process the other panellists could begin to evaluate the performances.

14.2.2 The panel

Deciding on the constitution of the expert panel was another important step. The researcher invited five teachers and expert performers, who she knew personally to participate on the panel. Where possible the panel was arranged so that there was an evaluator for each instrument played by the video recorded musicians. All of the panellists were Italian and included four women and one man. The man played viola, while the women played violin, guitar, piano, and recorder. To guarantee the panellists' anonymity, they were simply numbered Panellist 1 to 5 in the order of their video-analysis as the following list shows:

Panellist 1= male -viola player

Panellist 2= female -violinist

Panellist 3= female-recorder player

Panellist 4= female guitarist (the panellist who assisted in the selection process)

Panellist 5= female -pianist

All of the panellists evaluated the performances voluntarily and independently. To avoid possible bias, they did not know each other and did not meet during the evaluation process. They were asked to observe each of three performances from six musicians and complete an evaluation sheet previously prepared by the researcher. The performances of the musicians were presented to the panellists in the order shown in Figures 17 to 25. The performances of each were randomized, although the evaluators recognised the correct sequence for most when re-watching the video-recordings. Each panel member took about an hour and a half to assess the eighteen performances, three for each musician.

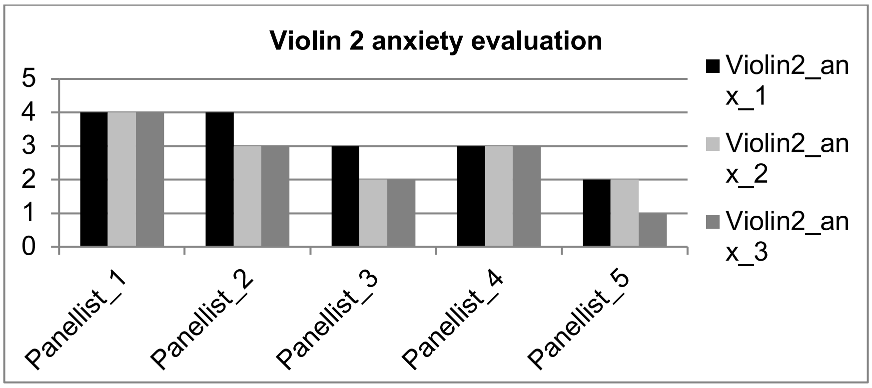
14.2.3 The parameters of evaluation

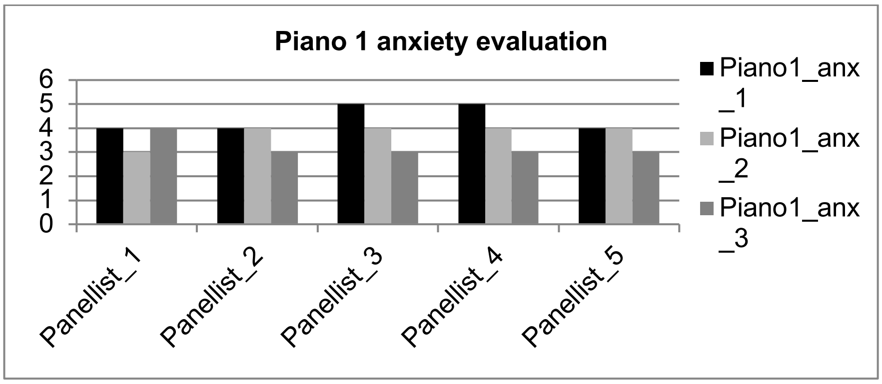
The performances were evaluated by means of nine parameters using a five point Likert scale. They were grouped in the evaluation sheet as follows: *Anxiety, Concentration, Tempo, Dynamic Contrasts, Musical Communication, Intonation,* *Expressive Movements, Accuracy of Gestures, Fluidity of Gestures.* Each parameter was identified referring to the literature and is discussed separately with the panel's findings. The order of listing the parameters was first to observe the musicians' attitude towards the tasks, and then changes related to musical communication, and finally the attention paid to musical gestures. The evaluation sheet was piloted by one of the panellists prior to it being used. The panellists did not give any judgement about the technical aspects of the playing only focusing on possible changes from the first to the third performance without knowing about the kind of intervention that the musicians had been involved with. After the evaluations, the panellists were told about the interventions. Alhough each panellist used the same scale, the evaluations were different for the same musicians. This is in part because assessment of musical performance is a complex process. Expert listeners may take account of different factors which make assessment 'inevitably subjective' (Hallam, 2008, p. 160). The panellists' evaluations are set out in Figures 17 to 25. Each figure shows each parameter across the performances for each musician. These are considered in detail in the following sections.

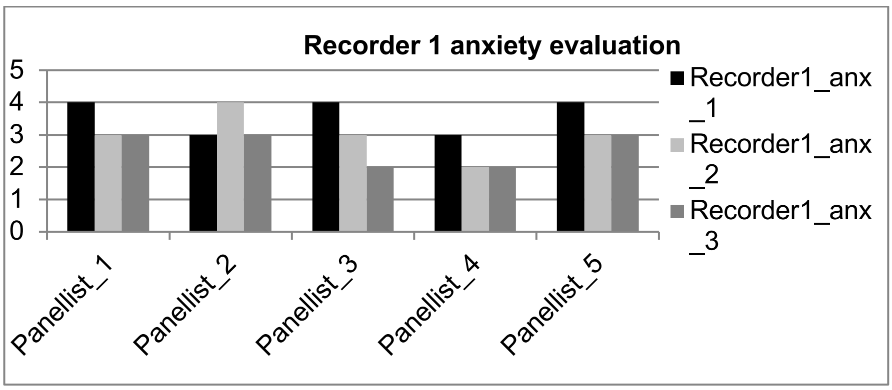
14.3 Anxiety

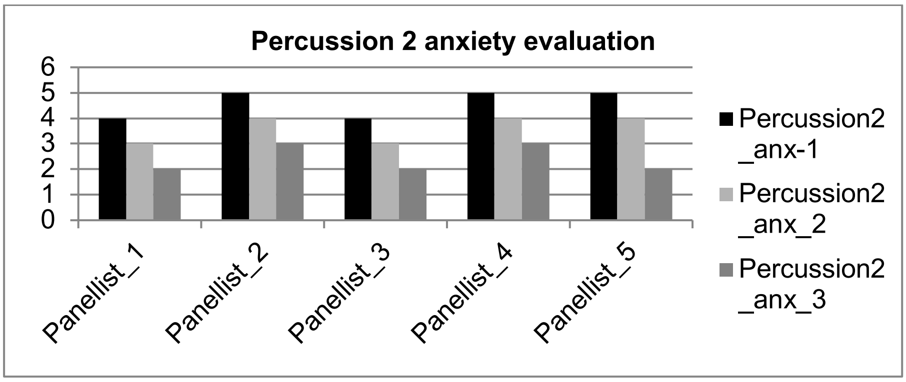
The first parameter to be analysed by the panellists was the anxiety level of the musicians. This was established by observing motor expressive behaviour such as the musicians' changes of facial expression (Kesselring, 2006: 309). Although the panellists did not always rate the same musicians similarly, they seemed to note a decrease in the musicians' anxiety level across the performances. For example, during the first performance the panellists evaluated Percussion 2's anxiety level as very high or high, but noticed a progressive decrease to a moderate or low level during the second and third tasks. Evaluating Violin 2's anxiety level seemed problematic in that there were inconsistencies. These evaluation differences may be because the piece she played was very short. Figure 17 shows the panellists' evaluation related to each musician.

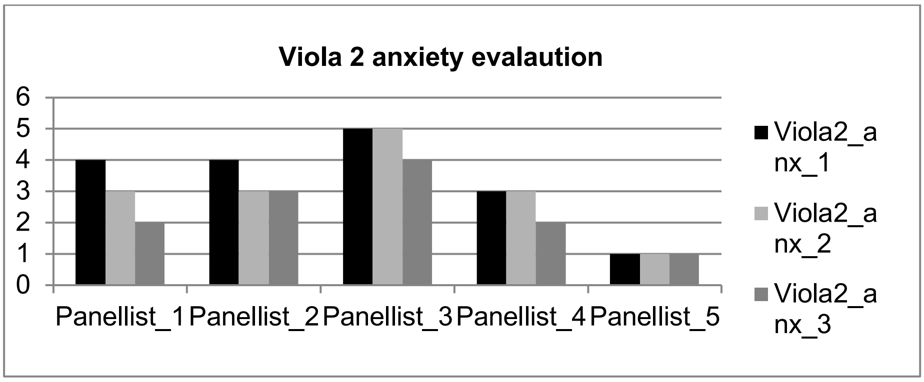
Figure 17. Anxiety evaluation during 1st, 2nd, and 3rd performance

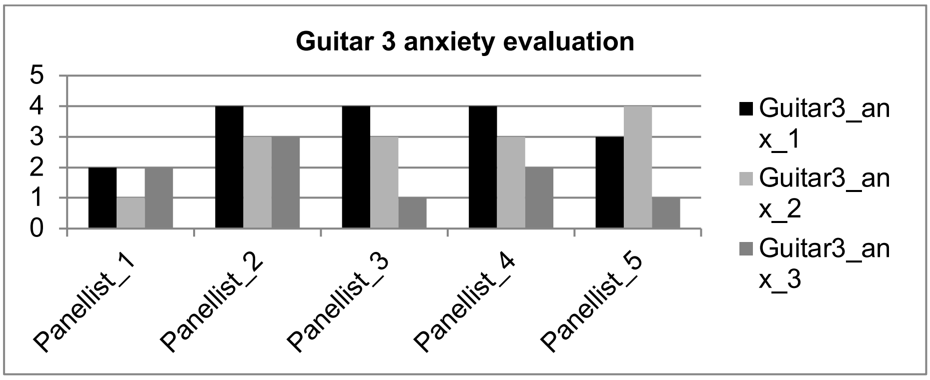








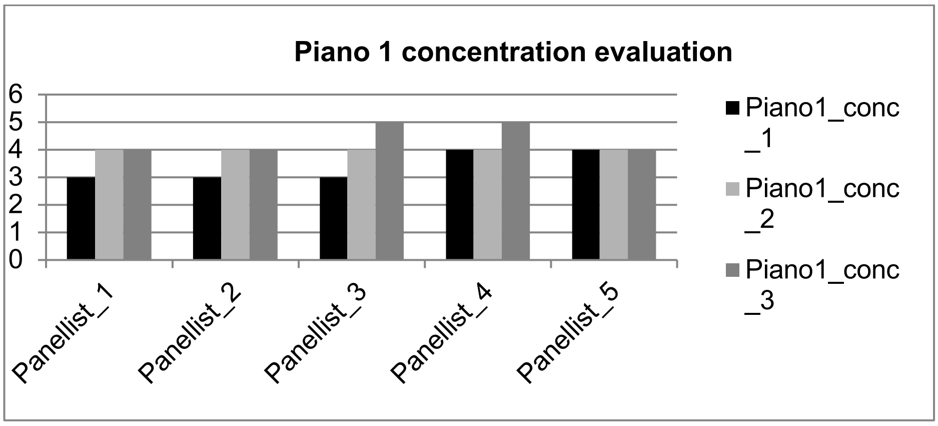


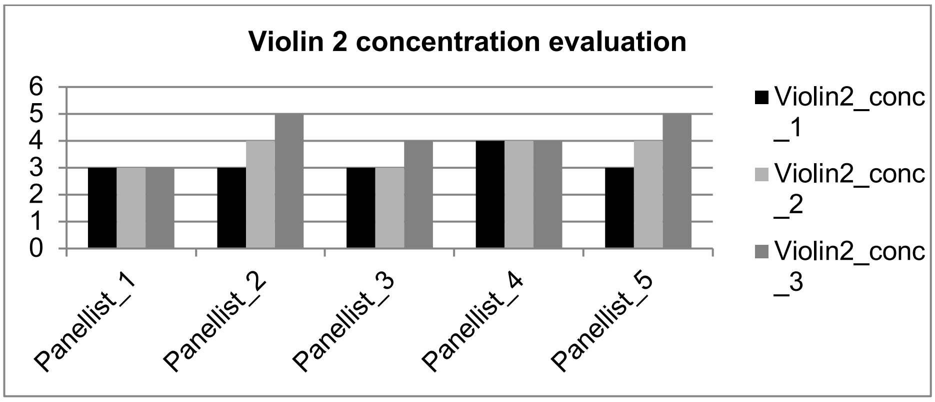


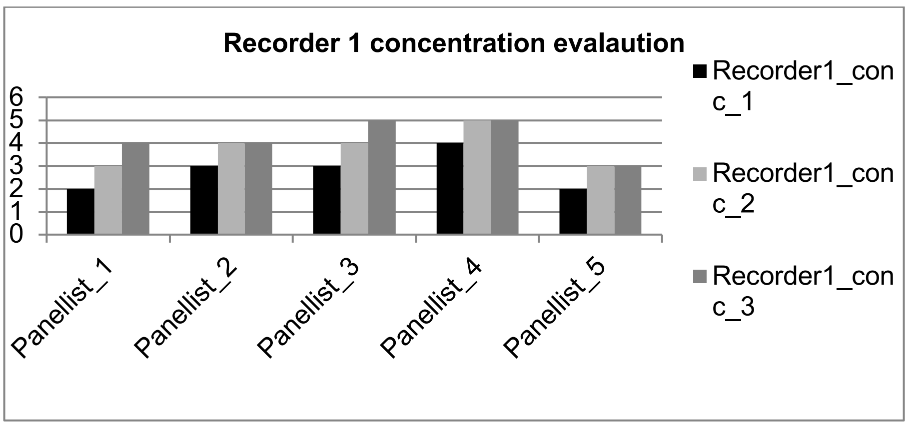
14.4 Concentration

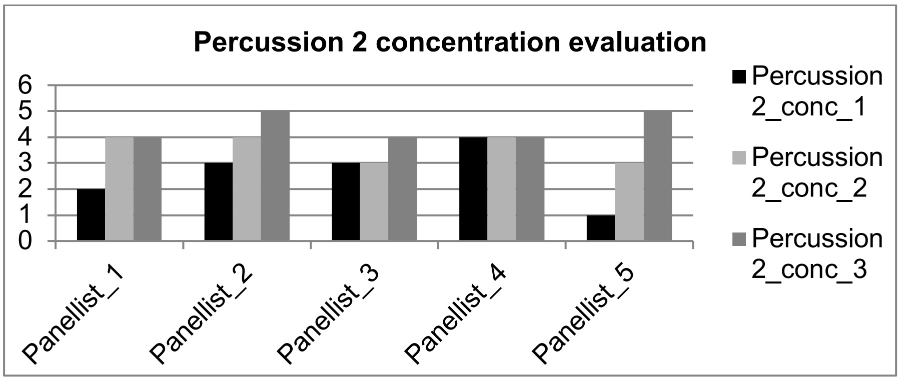
The panellists were asked to observe whether the musicians increased their concentration over the three performances and the extent to which they were focused and engaged. Their posture, facial expression, and the time they needed to prepare before starting to play was also taken into account (see Chapter 11; Table 11.4 and Figure 11.6 in the appendices). Concentration refers to the status of 'being totally immersed in the here and now, in the present' (Castle & Buckle, 2009: 16). This concept, applied to performative acts, means to 'direct and maintain the attention on a set of synchronized skilled actions avoiding any distractions' (Moran, 2004b: 209). Although the panellists allocated different scores for each musician, all of them noted increased concentration in most of the musicians mainly during the third task. This phenomenon was particularly noticeable in Violin 2, Percussion 2, Viola 2, and Guitar 3 by three of the panellists (see Figure 18), and in Piano 1 and Recorder 1 by two.

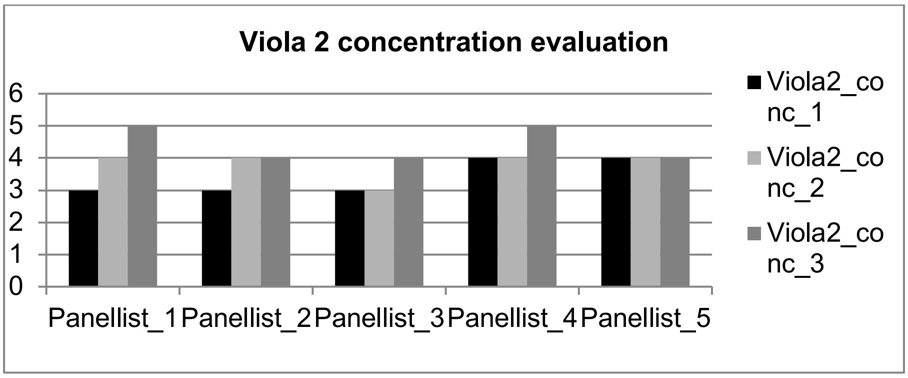
Figure 18. Concentration evaluation during 1st, 2nd, and 3rd performance

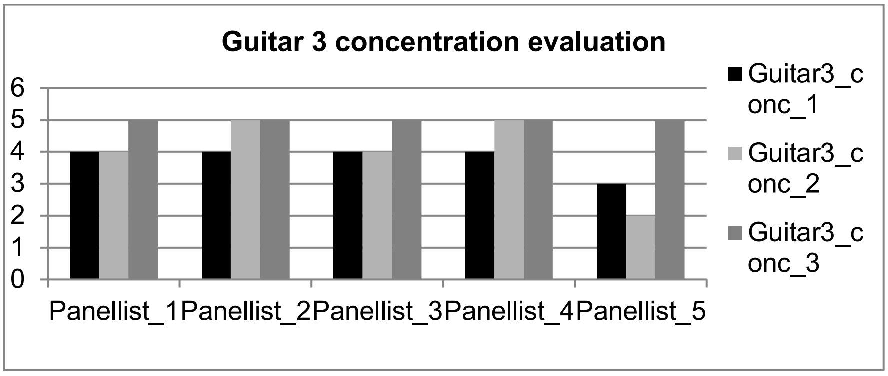










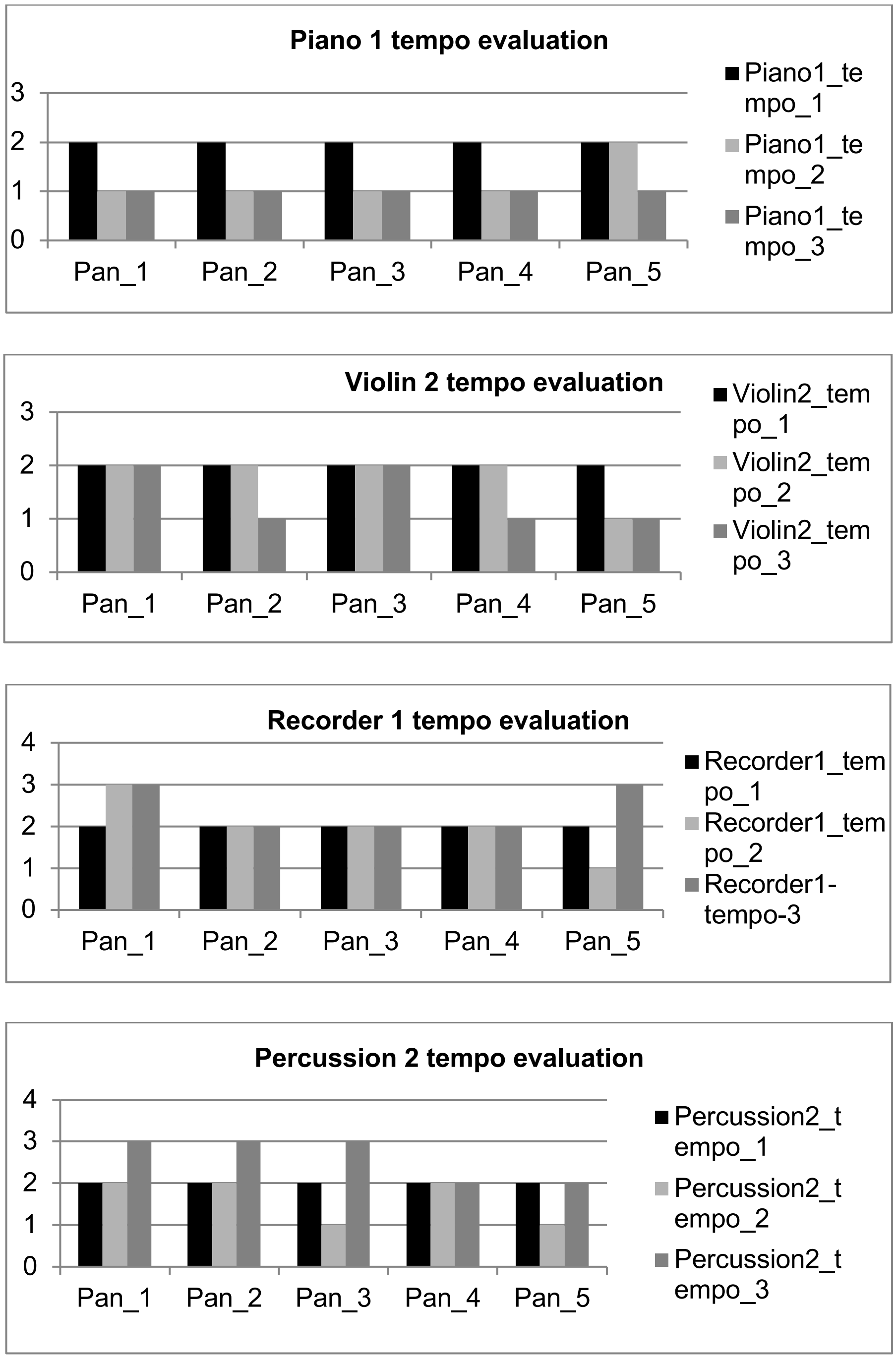


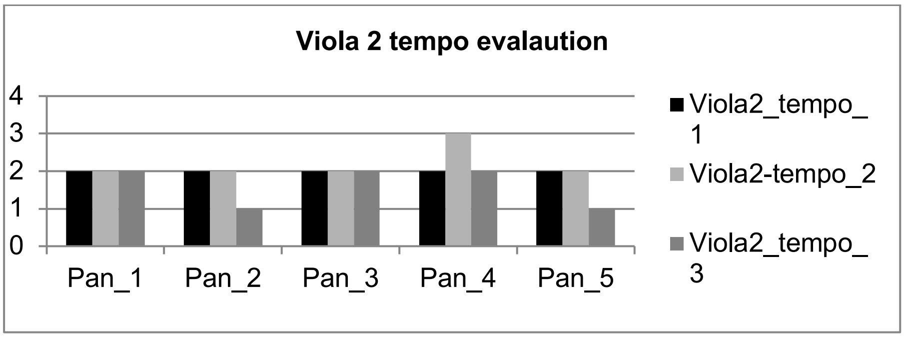
14.5 Tempo

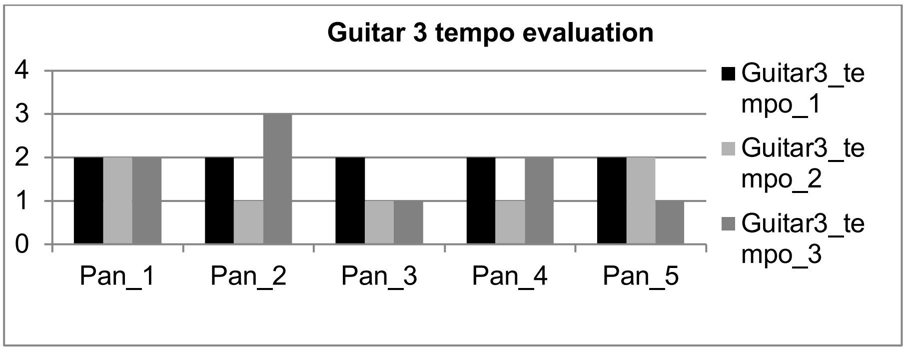
The parameter *Tempo* was included because some of the musicians mentioned it when speaking about their performances (Piano 1 and Percussion 2). After completing Task 2, Piano 1 said that during mental rehearsal she felt the need to slow down the piece (see Chapter 8). Four of the panellists' evaluations noted this (see Figure 19). She slowed down in the second and the third performances compared with the first. Percussion 2 referred to Tempo after completing Task 3 saying that he needed to play more slowly as he had explored this when he had 'played mentally' during the simulation (see Chapter 12). Four panellists (see

Figure 19) observed that his third performance was faster than others. The panellists' analysis of Tempo relating to Violin 2, Recorder 1, Viola 2, and Guitar 3 (see Figure 19) were not consistent. Each panellist perceived Tempo differently as Figure 19 shows.

Figure 19. Tempo evaluation during 1st, 2nd, and 3rd performance



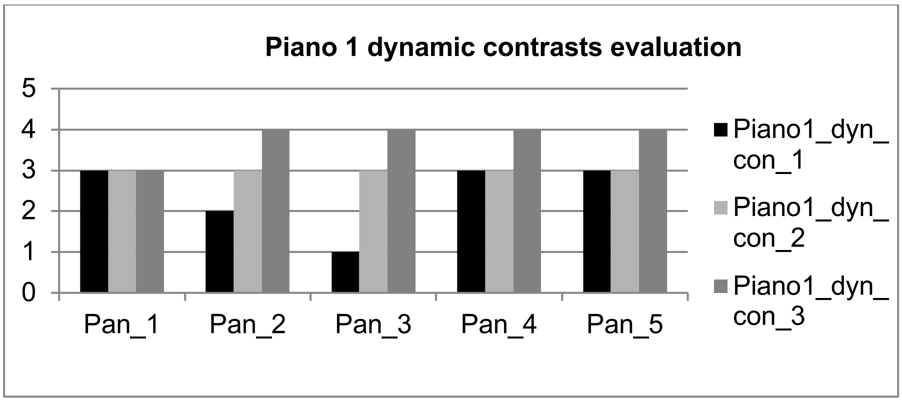


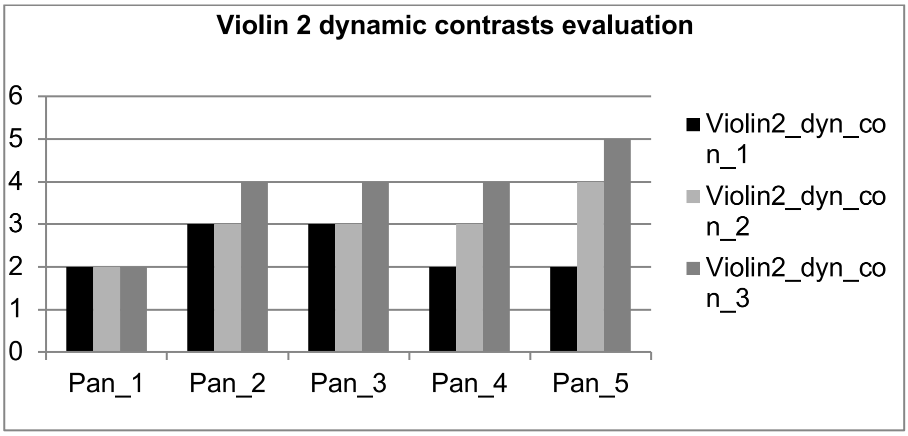


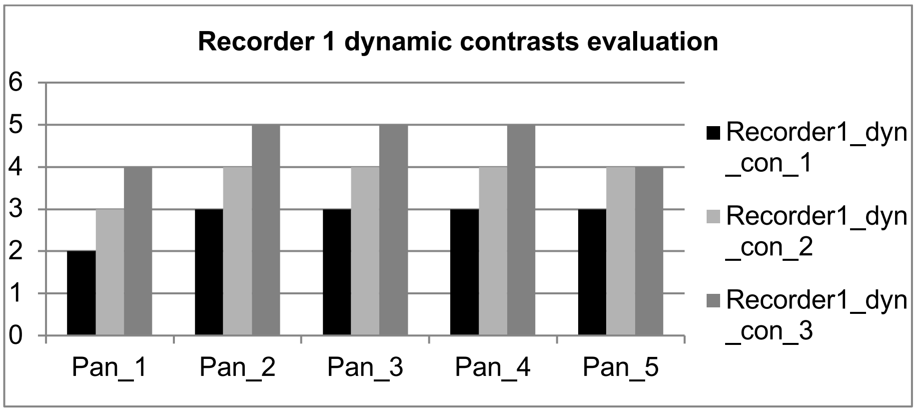
14.6 Dynamic contrasts

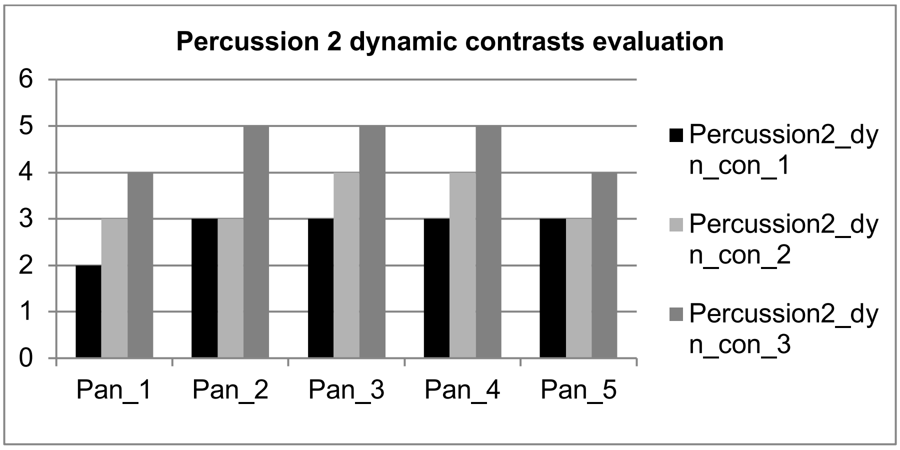
The parameter 'dynamic contrasts' seemed to be a more effective measure of change over the three performances. Most of the panellists noticed that the musicians made more dynamic contrasts particularly during the third performance. This phenomenon was particularly evident with Percussion 2 who was assessed as gradually increasing dynamic contrasts over the three performances. All the other musicians' dynamic contrasts evaluation is presented in Figure 20.

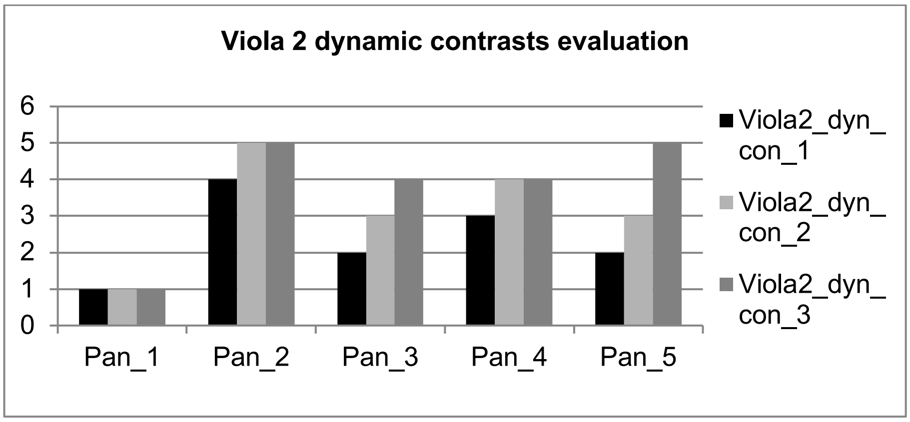
Figure 20. Dynamic contrasts evaluation during 1st, 2nd, and 3rd performance

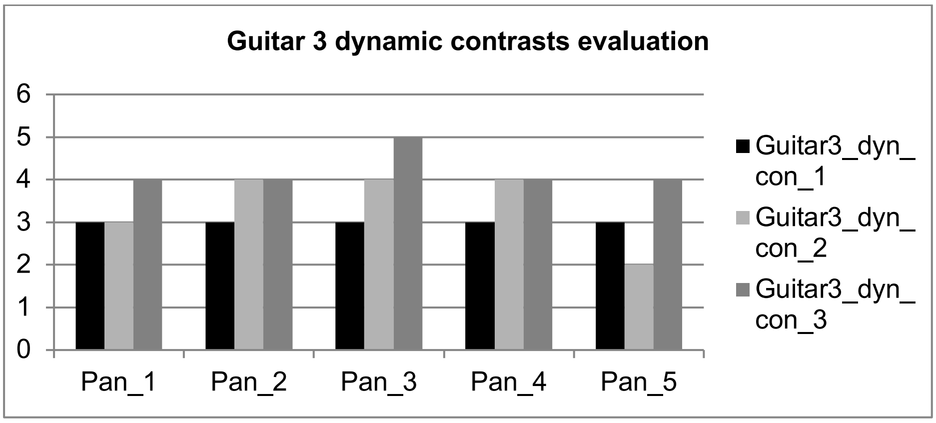



Violin 2 dynamic contrasts evaluation
6
5
4
3
2
1
0
Pan_1
Pan_2
Pan_3
Pan_4
Pan_5
Violin2_dyn_con_1
Violin2_dyn_con_2
Violin2_dyn_con_3


Recorder 1 dynamic contrasts evaluation
6
5
4
3
2
1
0
Pan_1
Pan_2
Pan_3
Pan_4
Pan_5
Recorder1_dyn_con_1
Recorder1_dyn_con_2
Recorder1_dyn_con_3


Percussion 2 dynamic contrasts evaluation
6
5
4
3
2
1
0
Pan_1
Pan_2
Pan_3
Pan_4
Pan_5
Percussion2_dyn_con_1
Percussion2_dyn_con_2
Percussion2_dyn_con_3

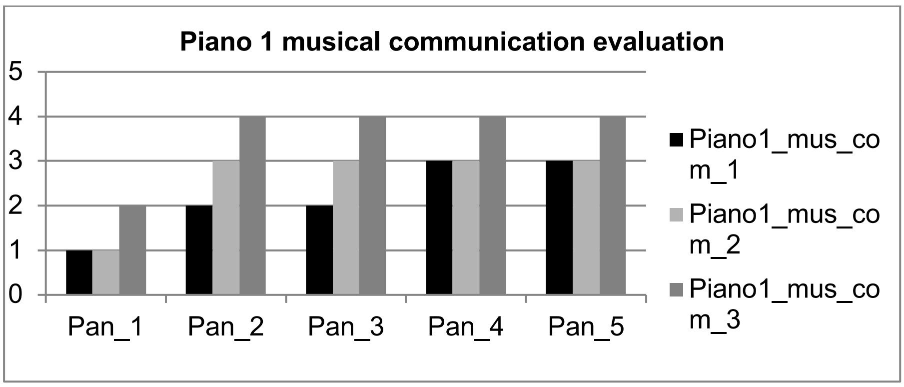

Viola 2 dynamic contrasts evaluation
6
5
4
3
2
1
0
Pan_1
Pan_2
Pan_3
Pan_4
Pan_5
Viola2_dyn_con_1
Viola2_dyn_con_2
Viola2_dyn_con_3

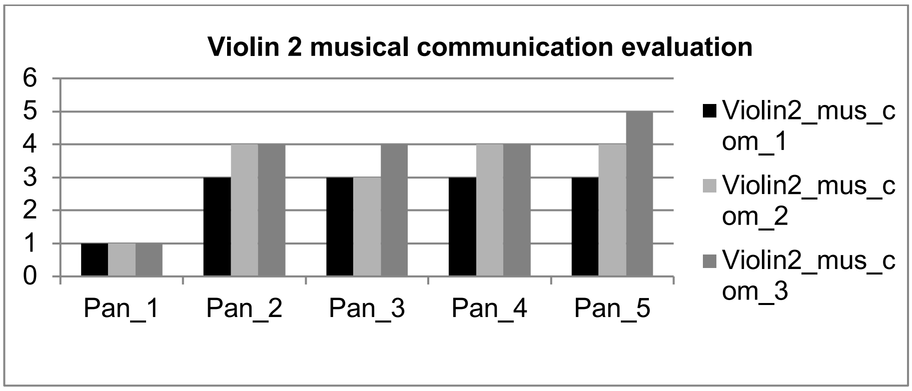


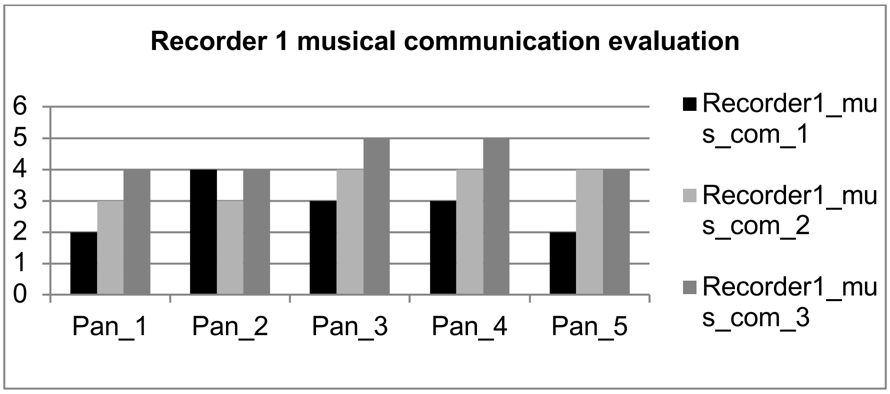
14.7 Musical communication

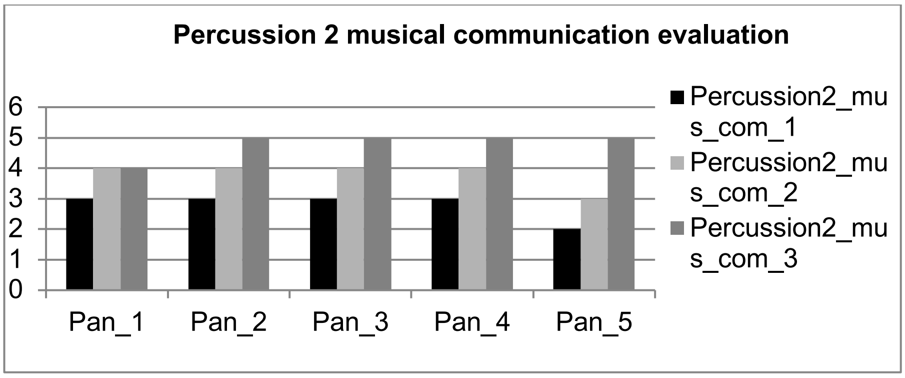
As discussed in Chapter 3, communication has a fundamental role in public music performance. It consists in 'sharing meanings, understanding and intentions on the part of performers and audience' (Hallam, 2008: 101). The audience is affected by two main factors: how musicians interpret music, and 'expressive variation' (Hallam, 2008: 101-102). The panellists noted a considerable increase (from moderate to high/very high) in musical communication from all the musicians (see Figure 21). Only Panellist 1 did not notice any variation at all in Violin 2 over the three performances (see Figure 21), unlike the other panellists who reported an increase in the second (Panellists 2 and 4), and in the third (Panellists 3 and 5).

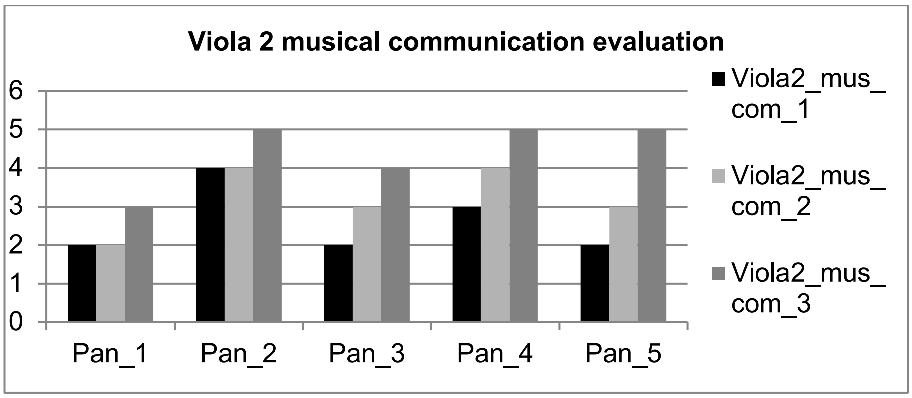
Figure 21. Musical communication evaluation during 1st, 2nd, and 3rd performance

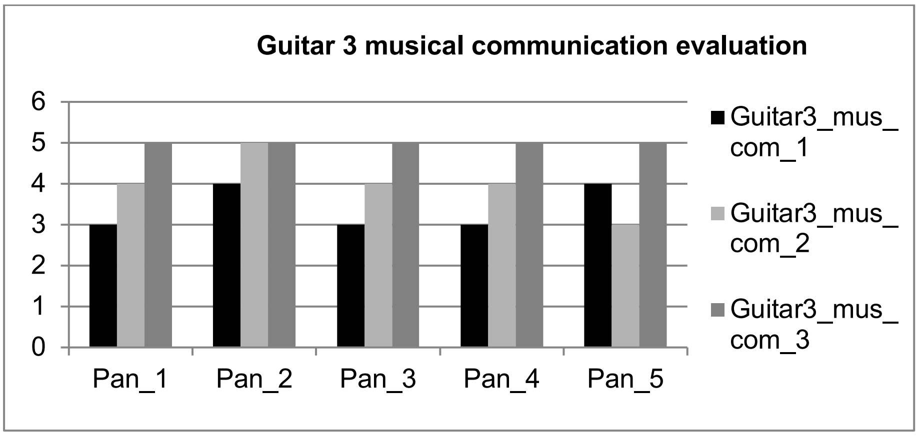



Violin 2 musical communication evaluation
6
5
4
3
2
1
0
Pan_1
Pan_2
Pan_3
Pan_4
Pan_5
Violin2_mus_com_1
Violin2_mus_com_2
Violin2_mus_com_3


Recorder 1 musical communication evaluation
6
5
4
3
2
1
0
Pan_1
Pan_2
Pan_3
Pan_4
Pan_5
Recorder1_mus_com_1
Recorder1_mus_com_2
Recorder1_mus_com_3


Percussion 2 musical communication evaluation
6
5
4
3
2
1
0
Pan_1
Pan_2
Pan_3
Pan_4
Pan_5
Percussion2_mus_com_1
Percussion2_mus_com_2
Percussion2_mus_com_3

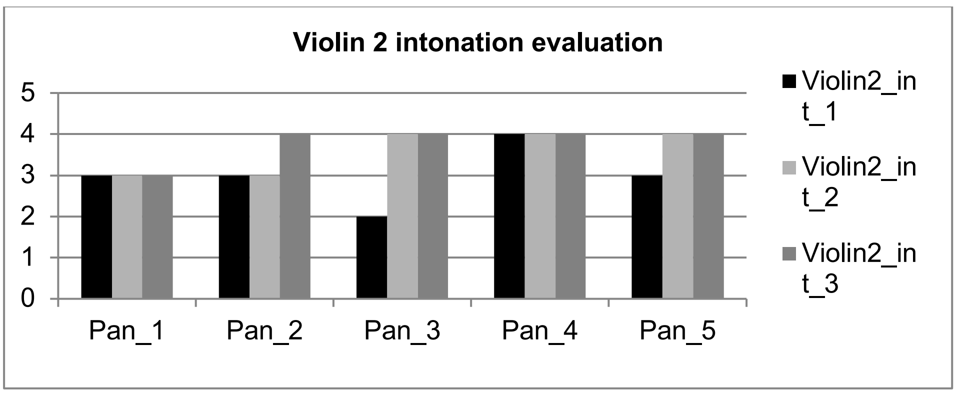

Viola 2 musical communication evaluation
6
5
4
3
2
1
0
Pan_1
Pan_2
Pan_3
Pan_4
Pan_5
Viola2_mus_com_1
Viola2_mus_com_2
Viola2_mus_com_3

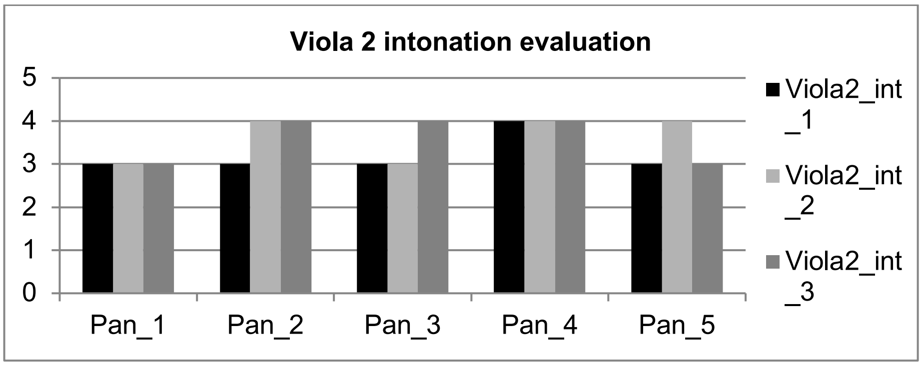


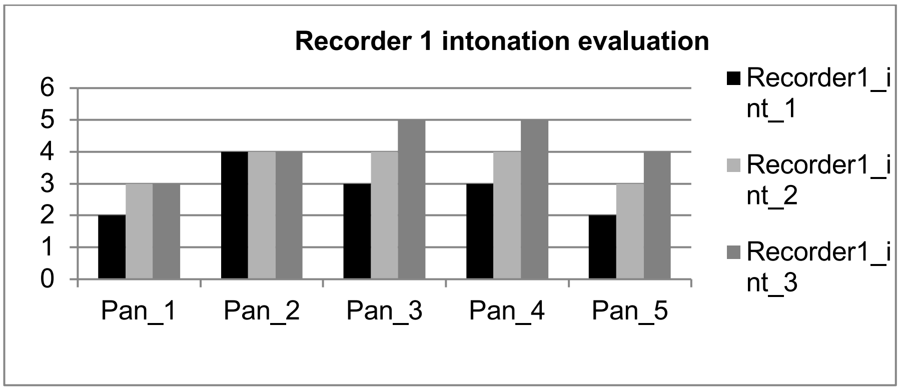
14.8 Intonation

Only three musicians (Violin 2, Viola 2, and Recorder 1) were included in the intonation evaluation. This was due to the fact that the musicians playing piano, guitar, and marimba were playing non-tempered instruments whose intonation could vary relating to the instrument's tuning and/or possible mistakes they may have made while playing. Here the panel attributed completely different assessments to a parameter that should easily be assessed objectively. Some panellists noted no improvement in intonation across the performances, while others did so. In addition, some evaluation differences emerged between panellists even when they did not notice any improvement as shown in Figure 22.

Figure 22. Intonation evaluation during 1st, 2nd, and 3rd performance







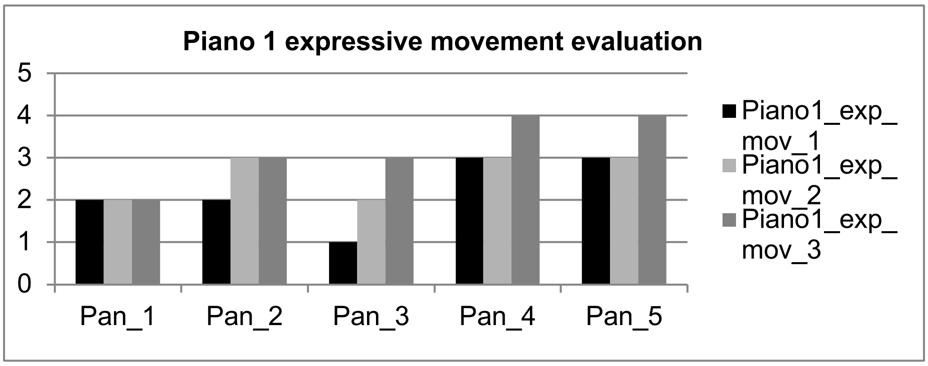
14.9 Features of musical gestures

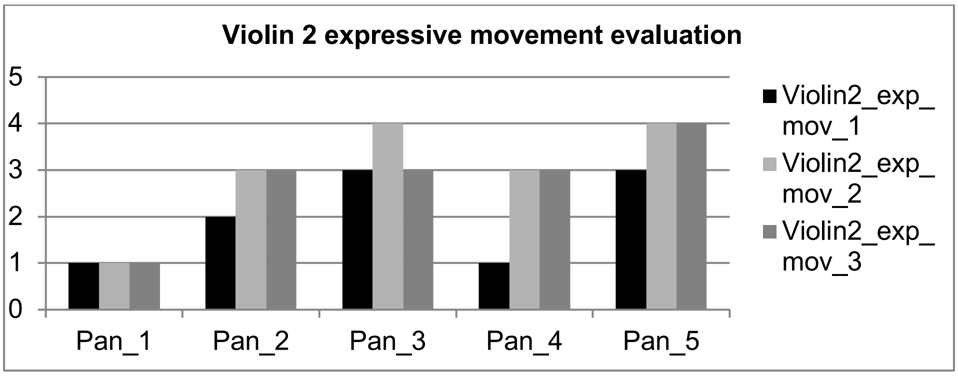
The final part of the panellists' evaluation focused on musical gestures which are defined as 'gestures as equivalent to physical (playing) techniques or performer actions' (see Chapter 2; Cadoz & Wanderley, 2000: 73). In assessing musical performances, musical gestures are taken into account from expressive and technical points of view. In this study, the panelists evaluated three kinds of gestures which consisted of *Expressive Movements*, *Accuracy of Gestures,* and *Fluidity of Gestures* and have been identified referring to the literature (see below; Davidson & Correia, 2002 ; Fautley, 2010)

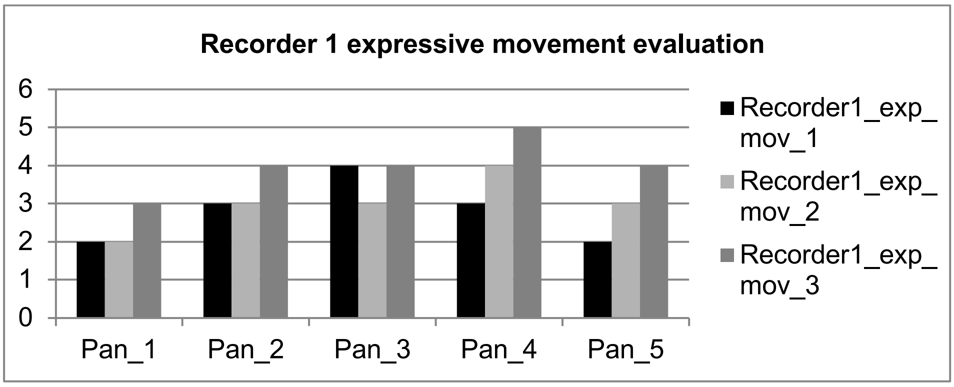
14.9.1 Expressive movements

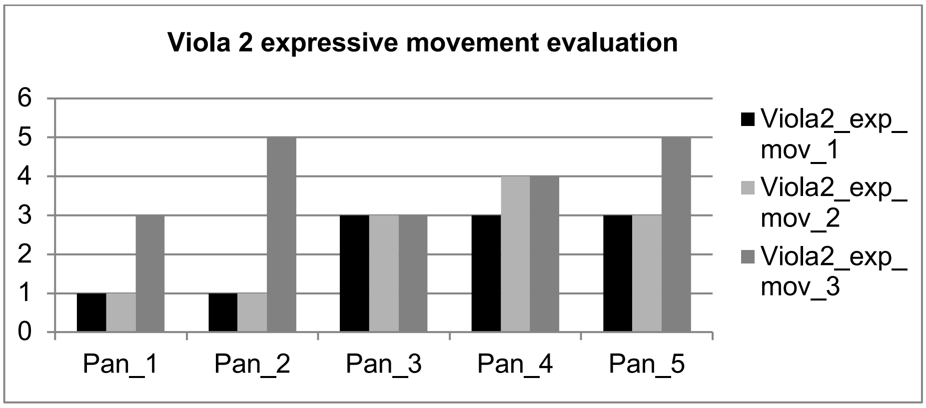
This concept refers to the involvement of the body in performing expressive musical ideas. The quality of body movement is fundamental for generating sound quality, shaping musicians' intentions and helping them to communicate their ideas to the audience (see Davidson & Correia, 2002; Davidson, 2011; 2012). When analyzing expressive movements, four out of the five panellists observed an increase in this parameter for four musicians, while all of them noticed a considerable increase in Percussion 2 particularly during the third performance (see Figure 23). Although all the panellists observed an increase in this parameter, they expressed different score values for each musician as Figure 23 shows.

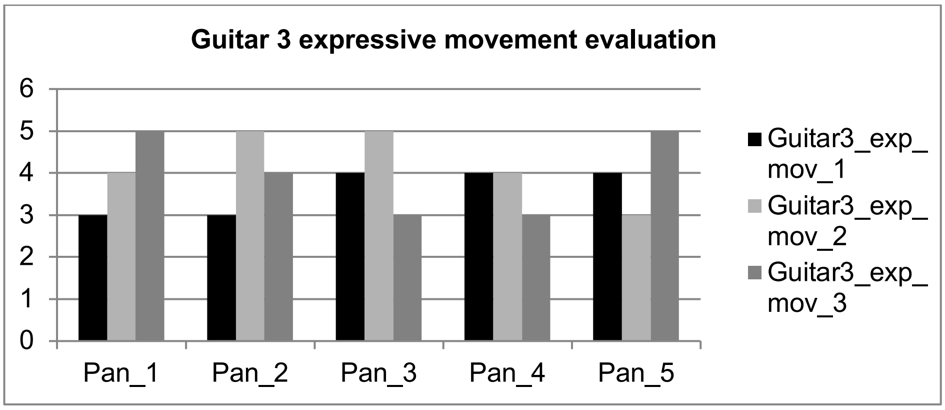
Figure 23. Expressive movement evaluation during 1st, 2nd, and 3rd performance







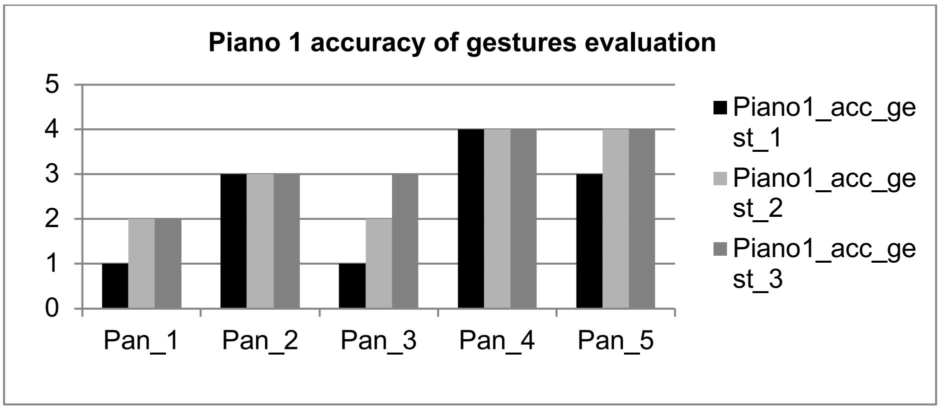


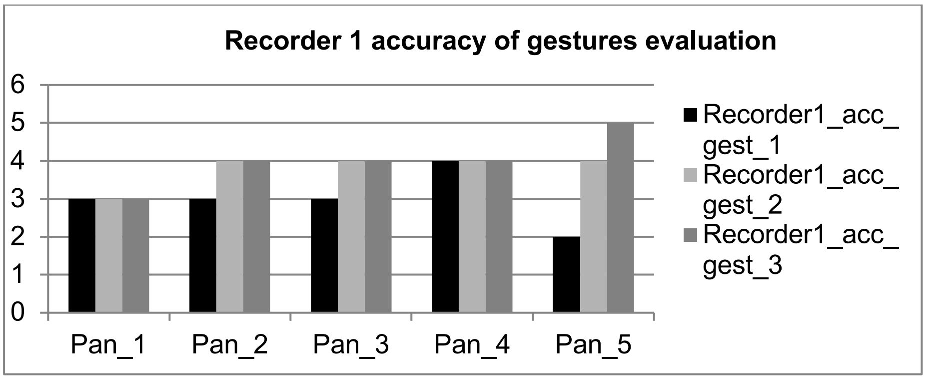


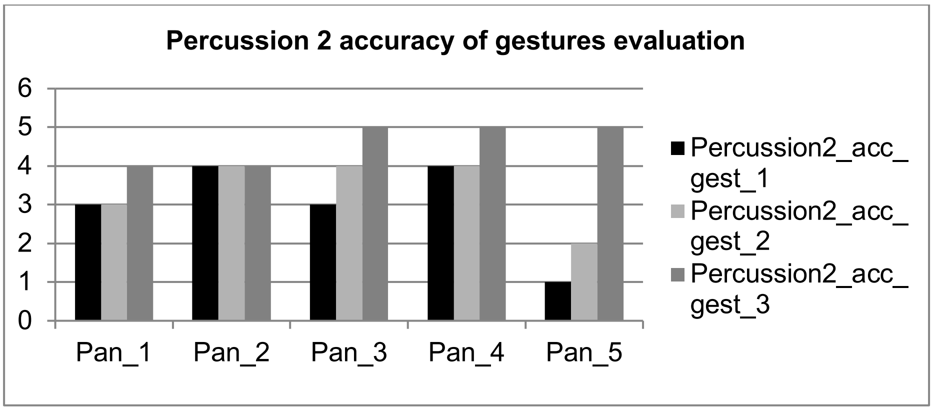
14.9.2 Accuracy of gestures

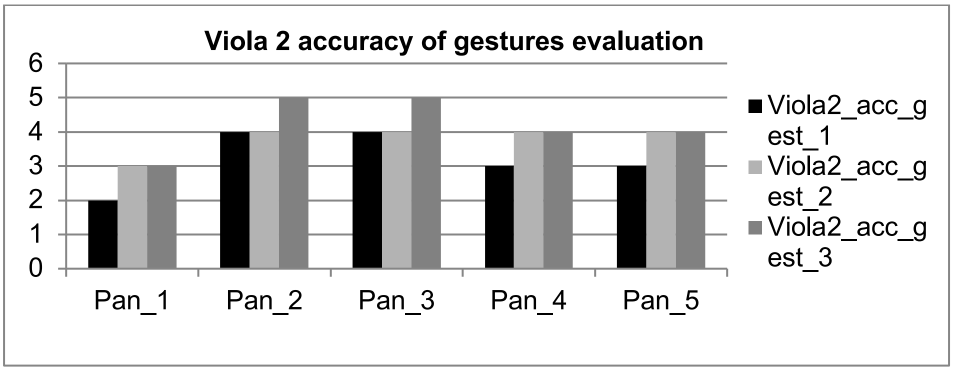
As addressed in Chapter 3, *Accuracy of Gestures* was defined in relation to the term *accuracy* used by Fautley to indicate the sensory-motor control which is acquired through technique and is necessary to play the right notes and rhythm (Fautley, 2010: 118). In order to perform these correctly, accuracy of gestures related to the specific instrument 'in an appropriate manner' is needed (Fautley, 2010: 119). Although expressing different evaluations, the panellists noticed an increase in gesture accuracy in most of the musicians mainly during the second performance. This phenomenon was maybe due to the effect of mental rehearsal in which a sort of 'anticipatory thought' (Depraz, 2014: 279) generated an internal image of the movement of playing where attention was focused on it. The Figure 24 presents the musicians' changes about this parameter.

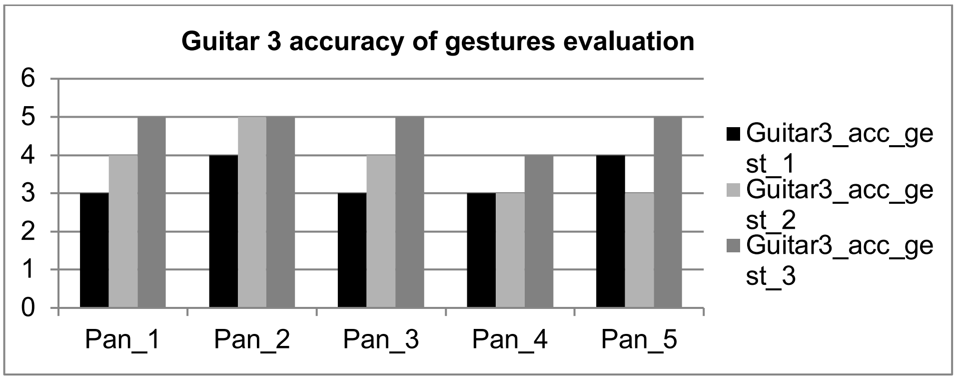
Figure 24. Accuracy of gestures evaluation during 1st, 2nd, and 3rd performance







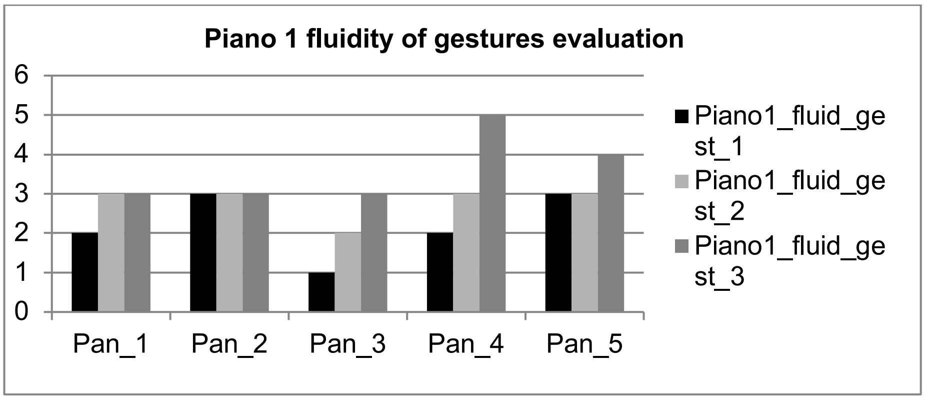


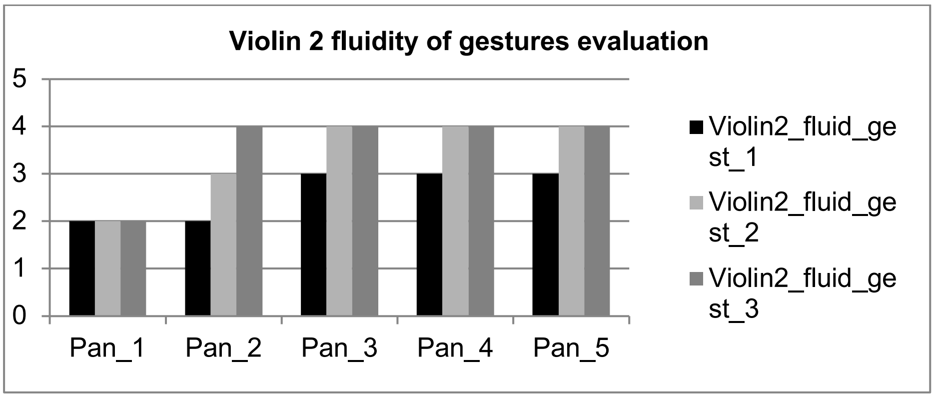


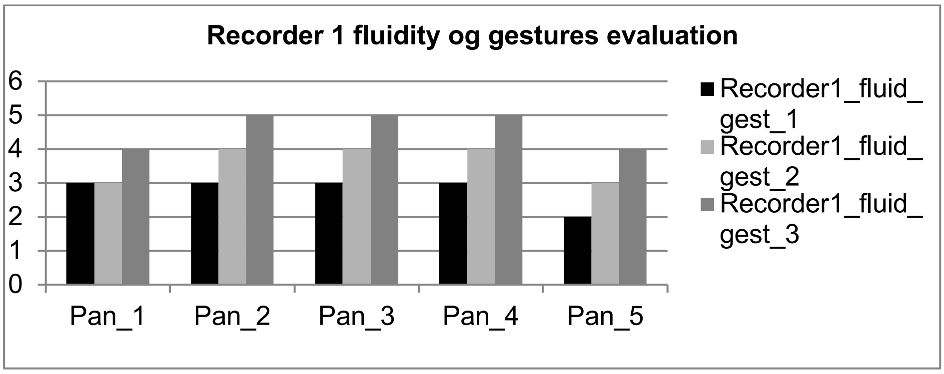
14.9.3 Fluidity of gestures

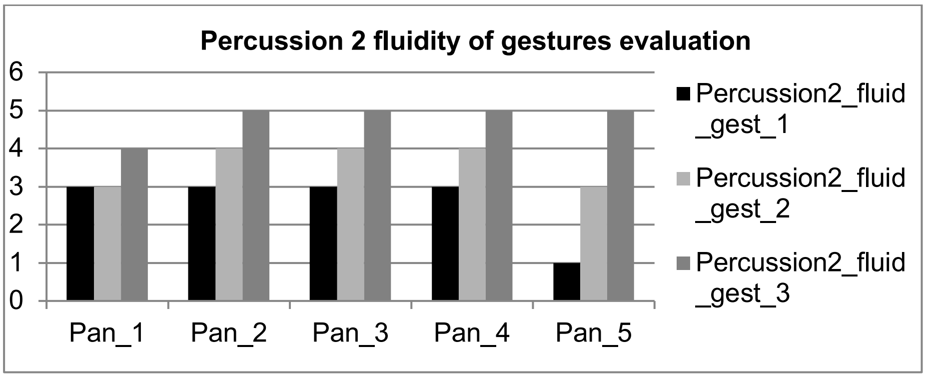
This category was formulated taking into account Fautley's (2010) analysis (see Chapter 3). He argued that 'once a degree of mastery has been achieved, then the sensory-motor movements of an individual tend to become more fluid' (Fautley, 2010: 119). As the participants were all professional musicians, it was expected that they had a high degree of mastery in playing and fluidity of gestures appropriate to their instrument (Fautley, 2010). The increase of gesture fluidity mainly in the third performance suggests that the simulation could have had an effect on playing. While performing the simulation, the musicians were focused on technical movement. Figure 25 shows the panellists' evaluations of fluidity of gesture across the performances.

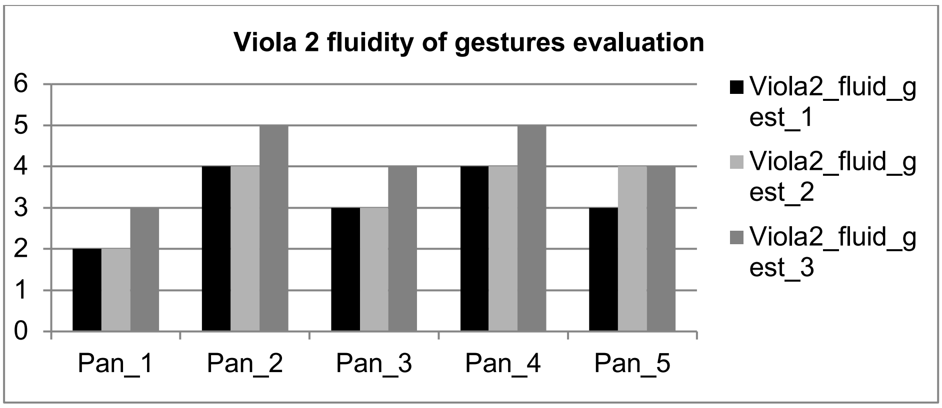
Figure 25. Fluidity of gestures evaluation during 1st, 2nd, and 3rd performance

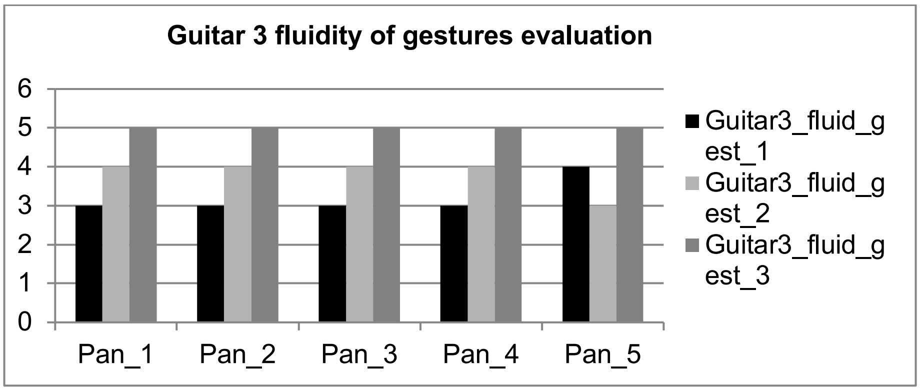



Violin 2 fluidity of gestures evaluation
5
4
3
2
1
0
Pan_1
Pan_2
Pan_3
Pan_4
Pan_5
Violin2_fluid_gest_1
Violin2_fluid_gest_2
Violin2_fluid_gest_3


Recorder 1 fluidity og gestures evaluation
6
5
4
3
2
1
0
Pan_1
Pan_2
Pan_3
Pan_4
Pan_5
Recorder1_fluid_gest_1
Recorder1_fluid_gest_2
Recorder1_fluid_gest_3


Percussion 2 fluidity of gestures evaluation
6
5
4
3
2
1
0
Pan_1
Pan_2
Pan_3
Pan_4
Pan_5
Percussion2_fluid_gest_1
Percussion2_fluid_gest_2
Percussion2_fluid_gest_3


Viola 2 fluidity of gestures evaluation
6
5
4
3
2
1
0
Pan_1
Pan_2
Pan_3
Pan_4
Pan_5
Viola2_fluid_gest_1
Viola2_fluid_gest_2
Viola2_fluid_gest_3



14.10 Summary of the chapter

The purpose of the panel was to provide external validation for the findings arising from the research and to reduce possible researcher bias when analysing the performed tasks. The panellists noted a reduction in anxiety particularly following the third performance alongside an increase in concentration, musical communication, expressive movements, accuracy and fluidity of gestures. Where triangulation with the musicians' verbal responses was possible, the panel's assessment reflected the musicians' responses thus substantiating the claim that the effect of mental rehearsal and the simulation made the musicians calmer and assisted them in developing concentration.

Chapter 15

Discussion of the findings

15.1 Introduction

This research addressed professional musicians' self-body awareness related to movement during performance from the first-person perspective (Vermersch, 2002). Adopting a neurophenomenological approach (Varela et al., 1993), the body-mind relationship was considered through the application of three phenomenological reductions (Vermersch, 2002), while participants performed three tasks in order to explore how and whether body self-awareness could be enhanced and subsequently affect performance. The specific research questions addressed were:

1) How can professional musicians' body self-awareness be explored considering the relationship between movement and performance?

2) How can mental rehearsal help professional musicians to self-reflect on the relationship between movement and performance?

3) How can simulating playing help professional musicians to self-reflect on the relationship between movement and performance?

4) To what extent do interventions focusing on movement impact on performance?

The findings related the first three research questions, which each corresponded to a different task, revealed how the musicians were affected by the interventions and the introspective process at different levels. During the third task, they seemed to be particularly influenced by the simulation that they performed before playing the piece of music for the third time. The simulation seemed to lead to kinaesthetic and sensory-motor feedback assisting the musicians in shaping their thoughts and developing body self-awareness even when they expressed negative feelings about it. The findings relating to the last research question are derived from evaluation by expert panellists who observed a reduction in anxiety, particularly following the third performance, and an increase in concentration, musical communication, accuracy and fluidity of gestures. The following sections seek to summarise the findings related to each research question in terms of the existing literature.

15.2 The "journey" of the introspective process toward body self-awareness

Overall, the musicians seemed to experience a sort of introspective "journey" across the three phenomenological reductions. This process allowed them to focus on a way of paying attention to that *lived experience* (Zahavi, 2010) and 'making sense of it' (Smith, 2004: 40). Each phenomenological reduction identified two moments in which the musicians verbalised their feelings. The first corresponded to the musicians' reflection on each task requirement before starting it, and the second after completing each task while reflecting on their performance and verbalizing their feelings. When beginning this introspective "journey", most of the musicians were disconcerted and exhibited *state anxiety* (Grös et al., 2007) as they were asked to self-reflect, in most cases for the first time. This reaction suggested that they were not used to self-reflecting on their movement when playing, in phenomenological terms, performing through pre-reflective body self-awareness (see Chapter 2; Zahavi, 1998). Guiding the musicians in self-reflecting (Vermersch, 2002) across the second and third phenomenological reduction processes seemed to develop their body self-awareness. At the end of this self-reflective "journey", all of the musicians had been affected by the mental rehearsal and the simulation. The latter seemed to bring them to a deeper level of body self-awareness even when they clearly did not want to complete the tasks. The changes which occurred across this "journey" were also noticed by the expert panellists when evaluating the performances particularly following the third task.

15.3 Starting the "introspective journey". The first phenomenological reduction: musicians' body self-awareness through

The findings related to the first research question addressed the verbal and nonverbal behaviour that the musicians expressed across the first phenomenological reduction process in which they were asked to self-reflect on their movement while playing in order to explore their body self-awareness.

15.3.1 Prior to perform Task 1

Prior to undertaking Task 1 the musicians were asked to self-reflect on their movement while playing the piece of music that they had previously chosen. As manifested by their nonverbal communication, in order to understand the task, all of the musicians showed a high level of attentiveness looking at the interviewer (Samovar et al., 2009) while listening to the instructions task. However, for most of the musicians, the unusual request of playing during a videoed interview that could leave permanent evidence of their performance, and their verbalized feelings about their playing generated unexpected findings such as concern and *state anxiety* (Grös et al., 2007). These reactions suggested that the musicians were not used to self-reflecting on their movements indicating that movements had become automatized and were not controlled 'by explicit thought processes' (Holgersen, 2010: 33). This, in phenomenological terms, means playing through pre-reflective body self-awareness (see Chapter 2; Zahavi, 1998). Due to their discomfort, the musicians tried to re-balance their internal equilibrium (see Chapter 2; *autopoiesis* -Maturana & Varela, 1980) and adapt to the stressful situation that the interview context generated, adopting various strategies such as *Taking time* and *Needing reassurance* (Andrews, 1945; Fareed, 1994). Some musicians (see Chapter 4; e.g. Violin 1 and Guitar 3), who showed *state anxiety* mainly through their body language (see Keltner, 1995; 2005), seemed to unconsciously re-balance and kinaesthetically recover the body-self relationship (see Chapter 2; Husserl, 1989; Sheets-Johnstone, 2011) through re-establishing physical contact with their instrument and the environment. Although this was undertaken to self-reassure them, this involved their body in a cognitive process that was activated when ‘it tried to touch itself while being touched’ (Merleau-Ponty, 1945/2002: 107). Another factor which contributed to difficulties in self-reflection and to anxiety was underestimating the stress of performing in front of the camera. Although all of the musicians had been informed before being interviewed that they would be requested to perform a short and easy piece of music from memory, some of them (see Chapter 4; e.g. Clarinet and Oboe) were unprepared and did not know what to play. Other musicians revealed low self-efficacy (Bandura, 1977) (see e.g. Viola 1 and Recorder 2) maybe due to insufficient practice of the piece (Hallam, 1998; 2001; McCormick & McPherson, 2003). In contrast, three musicians (see Chapter 4; Piano 3, Recorder 1, and Harp) seemed to follow instructions and began the self-reflection process. They showed collaborative and calm behaviour trying to create a positive relationship with the interviewer (Glenn & Holt, 2013).

15.3.2 After completing Task 1: verbalization process

The findings from the second part of the first phenomenological reduction process seemed to be in line with those emerging prior to starting the task and confirmed that the musicians were used to performing through ‘pre-reflective self-awareness’ (Zahavi, 1998) appearing “to be not aware of being aware” (see Chapter 2; Gallagher & Zahavi, 2008). Most of the musicians seemed to experience *state anxiety* (Grös et al., 2007) that, compared with prior to performing the task, persisted or increased when they were asked to reflect and verbalise about their perceptions of their body. The request to 'slow down' (see Chapter 3; Petitmengin-Peugeot, 2002) their mental activity appeared difficult as if they were not used to doing it. This generated discomfort and embarrassment (Keltner & Buswell, 1997) as communicated by their nonverbal language. Most of the musicians appeared to be unable to verbalise in detail their feelings as if they did not have sufficient 'introspective competence' (Vermersch, 2009: 22) to make explicit their mental state. Some of them (e.g. Piano 2 and Bassoon) seemed to adopt a self-protection strategy (Sedikides, 2012) to maintain their internal emotional equilibrium (see Chapter 2; *autopoiesis*) and preserve their self-esteem. Although stating that they felt relaxed, they seemed to misunderstand the question, eluded answering, and changing the topic of conversation while their nonverbal language communicated that they were concealing their feelings (Ekman, 1991). They tried to avoid being involved in any introspective process which might impact on their emotions and make them face any weaknesses. They preserved their reassuring thoughts without subjecting them to any kind of confrontation (Ekman, 1991). Some of the musicians (see Chapter 6; e.g. Guitar 2, Viola 1, Cello 1) recognised that they felt tense and had to admit to something which may have been perceived as a weakness in front of two witnesses: the interviewer and the video-camera. Other musicians (e.g. Piano 1, Guitar 3, and Recorder 1) were aware of being anxious or tense, but showed some embarrassment in formalizing their thoughts. They seemed to find a common behavioural strategy which developed across the interview. In a circular and dynamic process (see Chapter 2; Varela et al., 1993), they seemed to discover their feelings through receiving kinesthetic feedback from movements which constituted the link with their emotional experiences (Sheets-Johnstone, 1999a) and the basis for the emergence of 'first consciousness' (see Chapter 2; Sheets-Johnstone, 2011). The musicians seemed to spontaneously perform these movements seemingly being unaware of them. This phenomenon seemed to occur because 'the neuromuscular tensions contributed to perceived emotions inasmuch as they are parts of human beings' mental activity (Jacobson, 1970). During the kinaesthetic process, the body was simultaneously experienced as object and subject by combining the external experience of touching the body with the internal experience of perceiving it through the feeling of being touched (see Chapter 2; Drummond, 2003). There were also musicians (e.g. Violin 3 and Clarinet) who were aware of having not paid attention to their body while playing. It appeared as if reflecting on their body was unimportant for them. Their nonverbal communication showed a high level of discomfort and embarrassment (Givens, 2002; Navarro, 2008) when being requested to reflect on their body.

15.4 The second phenomenological reduction: musicians' self-reflection on the relationship between movement and performance assisted by mental rehearsal

The findings related to the second research question addressed how the musicians reflected on the second task prior to, during, and after completing it. Their verbal and nonverbal communications were analysed clustering the emerging themes (Braun & Clarke, 2006) to make sense of their *lived experience* (Smith, 2004). Their physiological responses showed that the musicians seemed to change the way that they paid attention to their body.

15.4.1 Prior to perform Task 2

The second phenomenological reduction process guided the musicians towards changing the quality of their attention 'redirecting [it] from the "exterior" to the "interior" suspending the "natural attitude" (Depraz et al., 2003: 25). They began this process when being asked to perform the piece through mental rehearsal (see Chapter 3 and 7; Ross, 1985; Lim & Lippman, 1991; Moran, 2004a; 2004b; Watson, 2006; Malouin & Richards, 2009) in which they had to intentionally pay attention to the mental content of that experience (see Chapter 2; Seager, 2007). Although being informed about the nature of the tasks before the interview, this request seemed unexpected for most of the musicians (see Chapter 7). This seemed to generate anxiety and uncertainty, and/or embarrassment maybe because they did not know how to make sense of that experience. They showed *Uncertainty and State anxiety* which was revealed through the need to take time and seek reassurance. These needs were essential to understand and adapt to the stressful situation of the research context, and also re-balancing their internal equilibrium (see Chapter 2; *autopoiesis* -Maturana & Varela, 1980). However, comparing *state anxiety,* also manifested by their nonverbal communication with that revealed prior to Task 1 fourteen musicians seemed to have had a reduction in this feeling and were adopting positive strategies such as reducing the time before starting to perform the task and self-reassurance. This behaviour suggested that they were adapting to the research context and directing their attention towards the task (see Chapter 7; Lazarus & Folkman, 1984). One of these strategies consisted of self-explanation and/or repeating the task instructions. While self-explaining, twelve musicians revealed that they were self-reflecting both through their verbal responses and nonverbal communication. For example, closing their eyes seemed to assist them in detaching themselves from the environment and facilitating 'internal control' (Glenberg et al., 1998: 654). Self-reflection seemed to be revealed by the reduction of spontaneous gestures (Ekman, 1991) that usually accompany speech (see Chapter 2; McNeill, 1992; Cassell, 1998; Calbris, 2011), and self-adaptors, which are unconsciously performed to alleviate discomfort and adapt to the situation (Ekman, 2004; Harrigan et al., 1986; Harrigan, 2005). Six musicians infrequently showed a kind of movement which has been defined as *Semi-conscious* which includes two other kinds of movements: kinaesthetic and the simulation of playing. Although these movements initially seemed to be unintentionally performed through pre-reflective self-consciousness (see Chapter 2; Zahavi, 1998; Lutz & Thompson, 2003; Gallagher & Zahavi, 2008), they appeared fundamental to constituting the basis of self-reflection (see Chapter 2; Sheets-Johnstone, 2011) when explaining task instructions to themselves. For example, Violin 2 appeared to 'slow down' her mental activity (see Chapter 3; Petitmengin-Peugeot, 2002) when simulating the movements of playing slowly. Eight musicians manifested the need to be reassured through asking questions. They showed uncertainty about mental rehearsal as if it was unfamiliar to them. Four musicians displayed defensive reactions to relieve their discomfort (Lazarus & Folkman, 1984). They appeared to misunderstand the task instructions and were reluctant to perform the task. Their nonverbal language also manifested strong uneasiness as if they were concealing negative feelings when they were smiling (Ekman et al., 1990; Keltner, 2005; Glenn & Holt, 2013; Gunnery & Hall, 2015), being silent (Samovar et al., 2013), or exhibiting self-adaptors (Ekman, 2004; Harrigan et al., 1986; Harrigan, 2005).

15.4.2 During performing mental rehearsal

The findings emerging from observing the musicians' behaviour during performing mental rehearsal revealed the way in which each musician redirected their attention (Depraz et al., 2003: 29) onto an 'inner doing' (Louchakova-Schwartz, 2013: 64). This phenomenon occurred when they were required to pay attention to their inner sensory-motor perceptions without expressing any judgement. Sixteen musicians showed relaxation while six manifested tension and/or uncertainty. Those who manifested relaxation seemed to show similar physiological effects to those occurring during meditation experiences (Austin, 1998), such as abdominal breathing (Austin, 1998), a decrease in respiratory rate and muscle tone (Benson, 1985: 16). These bodily reactions, defined as 'relaxation responses' (Benson, 1985), consisted of 'generalized decreased sympathetic nervous system activity' (Benson, 1985: 15) and have been observed when people are comfortably meditating. Most of these musicians manifested analogous kinesic ensemble such as closing their eyes, relaxing the chin and/or face while parting their lips, abdominal breathing, an erect spine, and slightly smiling (Austin, 1998). This last cue seemed to be an involuntary reaction and a consequence of the 'relaxation response' which leads to a corresponding emotion (Austin, 1998). As some neuroscientific studies carried out on meditation have shown (see Benson, 1985; Austin, 1998; Esch et al., 2003; Hölzel et al., 2016), when the mind focuses on an internal state of consciousness such as images linked to sound, as occurs during mental rehearsal, psychophysical well-being is generated. The act of closing the eyes suggests that they needed to 'disengage from the environment to facilitate internal control' (Glenberg et al., 1998: 654) and maintain their attention on the task while reflecting on it. The musicians who appeared tense or uncertain when performing mental rehearsal exhibited similar facial expressions, such as lip and jaw tension (Givens, 2002), self-adaptors (Harrigan et al., 1986; Harrigan, 2005) including scratching their hands frequently, and/or moving their gaze downwards (Ekman, 1991).

15.4.3 Musicians' concentration before playing the piece the second time

Behavioural differences emerged comparing the moments prior to playing the piece the first and second times. Although twenty-one musicians took time, were silent and still, appearing to focus their attention on what they were going to do, sixteen increased the time span between task instructions and playing. They seemed to need time to concentrate before starting to play giving the impression of focusing their attention on their body. The musicians who took time seemed to be more introspective than at the first performance as if they were slowing down (Petitmengin-Peugeot, 2002) their mental activity and had been affected by the mental rehearsal. Three musicians decreased their preparation time maybe because they were adapting to the research context. Only Cello 1 behaved similarly to prior to Task 1 taking no time to prepare and starting playing immediately.

15.4.4 After completing Task 2: verbalization process

The superordinate theme *Awareness* acted to group the findings which emerged from the musicians' verbal responses and nonverbal communication after completing Task 2. Twenty-one of them appeared more "aware of being aware" than when undertaking Task 1. This phenomenon may have been due to the research context in which an *enactive* approach (see Chapter 2; Varela et al., 1993), based on a 'common intercorporality' (Fuchs & De Jaegher, 2009), generated an 'interindividual interaction' (De Jaegher & Froese, 2009: 445) between each musician and the interviewer. This interaction allowed the researcher to make sense of the musicians' *lived experience* (Smith, 2004) and make them feel at ease. The musicians seemed to manifest a deeper degree of subjective experiential awareness (see Chapter 2; Thompson & Zahavi, 2007; Hutto, 2011) about their bodily feelings expressing 'some kind of cognitive assessment of them' (Seager, 2007: 10). The fact that nineteen musicians still took time before verbalizing appeared related to their mental effort (Frank et al., 2013) to re-live and self-reflect on the experience that they had just had. They seemed to need time to assess sensorial and emotional dimensions (Petitmengin-Peugeot, 2002) generating the process of 'retrospective introspection' (Vermersch, 2009: 23) after being required to reflect on the second performance and compare it with the first. They felt free to evaluate their performance and referred to their body perception in much more detail than after

Task 1. Bodily responses during verbalizing seemed to assist the musicians in the introspection process, unveiled their thinking processes and led them to be more aware of their body. A combination of kinesic ensembles (Calbris, 2011) seemed to reveal musicians' self-reflection. For example, alternating focusing the gaze on a fixed point (Frischen et al., 2007; Navarro, 2008) with closed eyes (Glenberg et al., 1998) and being silent seemed to reveal that they were 'slowing down' their mental activity (Petitmengin-Peugeot, 2002). While executing *Semiconscious movements*, which included kinaesthetic and simulated movements of playing (see above), the musicians received sensorial feedback when moving and touching specific parts of the body (Sheets-Johnstone, 2011). According to Alibali and colleagues (2014), this phenomenon can be explained by the fact that 'mental simulation of actions and perceptual states activate the same neural areas that are used in actual actions and perception, [which] can be expressed in gestures' (Alibali et al., 2014: 150). This seemed to affect the musicians in formalizing their thoughts (Alibali et al., 2014) contributing to the development of body awareness (e.g. Viola 1 and Piano 3). Moreover, being absorbed into the self-reflection process seemed to reduce levels of state anxiety and increase calmness. These musicians seemed to achieve a higher degree of awareness in self-evaluating their performance than after performing Task 1. They appeared to pay more attention to sound quality (e.g. Violin 1, Cello 2, and Clarinet), be more involved in playing, and felt freer to follow the flow of the music. Some of them were self-critical such as Piano 1 who realized she should have slowed down and played the piece more delicately. Although nine musicians were aware that the second performance was better, they were not able to verbalize what the differences between the first and the second were. Six musicians seemed to focus their attention on the specific parts of their body involved in playing their instrument. They expressed this through touching or simulating playing (e.g. Violin 2) developing a sort of kinaesthetic thinking (see

Chapter 2; Merleau-Ponty, 1945/2002; Sheets-Johnstone, 2011) which assisted them in formalizing their thoughts, for instance in relation to relaxation. Ten musicians referred to the effect of mental rehearsal on their performance and/or how this had assisted them in becoming aware of their body or parts of it (e.g. Guitar 3 and Recorder 1). When required to verbalize about the feelings they experienced during the task four musicians manifested discomfort glancing at the camera and/or smiling (Keltner, 2005) while manipulating their instrument (Harrigan et al., 1986; Ekman, 2004) or appearing tense compressing their lips (Givens, 2002). Five musicians were reluctant to engage in mental rehearsal. This may be because they are orchestral musicians who continually perform in concerts where their musical expertise is sufficient to guarantee good performance. They may not feel the need to find 'new ways' of practising or 'new ways' of reflecting.

15.5 The third phenomenological reduction: musicians' self-reflection on the relationship between movement and performance assisted by simulating playing.

The third research question addressed how the musicians' self-reflection on the relationship between movement and performance was assisted by the simulation of playing. The self-reflection process, corresponding to the third phenomenological reduction, began from the moment in which the musicians listened to the Task 3 requirements before undertaking it, continued through performing the task, and concluded through the verbalization process. The findings reported musicians' verbal responses and nonverbal communication related to the experience of the simulation and its possible effect on playing, and a comparison with possible behavioural change in comparison with prior to Task 1 and 2.

15.5.1 Prior to perform Task 3

The third phenomenological reduction process guided the musicians to 'redirect [their] attention from the "exterior" to the "interior" suspending the "natural attitude" (Depraz et al., 2003: 25). This process started when the musicians were asked to sing the piece mentally and sense their body moving while intentionally paying attention to the qualities of their movements (Clark et al., 2015). For nineteen musicians', the request to perform the simulation created uncertainty as most of them had never performed simulation before and the outcomes were therefore uncertain (Harrigan et al., 1992; Grös et al., 2007; Labbé, 2008). However, there seemed to be a decrease in these negative feelings compared with nonverbal communication prior to Task 1 and 2. There was an increase of embarrassed or nervous smiling (Keltner, 2005) when listening to the task requirements. This was followed by the appearance of fear of being unable to complete the task and low self-efficacy. The musicians seemed to view the task as difficult and conceived of it negatively (Bandura, 1977). As in their responses prior to Task 1 and 2, to re-balance their internal equilibrium (see Chapter 2; *autopoiesis*), eighteen musicians *Needed reassurance* to reduce their anxiety and restore self-confidence (Fareed, 1994). Some were able to self-reassure repeating the instructions for completing the task (e.g. Guitar 1 and Oboe), while nine (e.g. Guitar 1, Viola 1, and Percussion 2) self-reassured by explaining the task to themselves showing self-encouragement, but also indicating disbelief, surprise, perplexity, uncertainty, and embarrassment. Some musicians self-reassured when indicating that they were starting the simulation (e.g. Cello 2). Others (e.g. Piano 1, Recorder 2, and Clarinet) seemed to express uneasiness, uncertainty, and needed reassurance from the interviewer. This request was expressed through asking for further explanation about the task (e.g. Percussion 1), permission (e.g. Flute), and manifesting difficulties (e.g. Viola 2). When self-reassuring, fifteen musicians seemed to be assisted by kinaesthetic feedback enhancing their understanding of the task and making sense of that experience implicitly becoming aware of it (Petit, 2010). These musicians seemed to start the self-reflection process, perhaps because they began to mentally simulate the action of playing (Depraz, 2014). According to Alibali and colleagues (2014: 150) this 'activated the same neural areas that are used in actual actions and perception'. These movements also seemed to replace other gestures, such as anticipatory, (see Chapter 2; McNeill, 1992; Cassell, 1998; Calbris, 2011) performed by the musicians during the interview. Six musicians seemed to experience the request as stressful and unpleasant and adopted *Defensive reactions*, such as being reluctant to perform the simulation (e.g. Piano 2), to relieve their uneasiness (Lazarus & Folkman, 1984). Two musicians quietly accepted the task requirements and self-reflected appearing to 'slow down' their mental activity (Petitmengin-Peugeot, 2002) through explaining the task to themselves, whispering, speaking slowly, and simulating playing.

15.5.2 During performing the simulation of playing

The third phenomenological reduction continued when the musicians simulated the movements that they needed in playing while focusing on those movements and their sensory-motor feedback. The musicians' body simultaneously constituted the subject and the object of reflection that, at this stage, was more complex. They had to simultaneously pay attention to various elements. The sensory-motor system triggered circular proprioceptive feedback engendered by the musicians while intentionally (Seager, 2007) guiding the action of the simulation of playing or actually playing. Their nonverbal behaviour, observed from the moment they concentrated before the simulation, assisted the researcher in interpreting their feelings and attitude towards the task. The musicians seemed to adopt various strategies to perform the simulation. Some of them (e.g. Guitar 1, Clarinet, and Percussion 2) behaved as if they were playing the real instrument looking at it while their fingers moved on it. When looking at their imaginary instrument, the musicians seemed to envisage their physical contact with it. This appeared to reassure and assist them in concentrating on the task. They also seemed to realize the importance of touch and kinetic feedback, which is fundamental in developing the concept of body-self (Husserl, 1989). While simulating, other musicians looked into space as if they were reading the score and internally listening to playing the piece of music. Nine musicians adopted the strategy of closing their eyes to enhance attention on the task through the suppressing of information coming from external stimuli (Glenberg et al., 1998). These musicians appeared to be very focused on the movement they were performing and totally involved in the music. For example, Piano 3 appeared very relaxed and aware of the movement she was executing related to the sound that she was imagining producing. Six musicians (e.g. Viola 1) seemed to consciously breathe while simulating. They seemed to release tension and concentrate on the music and their posture. They appeared to recognise the important role of the respiratory control system which consists of maintaining ‘homeostasis, regulating breathing, to optimize oxygen and carbon dioxide exchange’ (Feldman et al., 2009). In contrast, sixteen musicians seemed to not consider their breathing at all, perhaps because they were not used to consciously breathing before playing. This phenomenon was manifested by three wind players (e.g. Recorder 1, Clarinet, Oboe) who seemed to forget about their breathing. While simulating, sixteen musicians executed expressive bodily movements (Davidson & Correia, 2002; Davidson, 2005; Davidson & Malloch, 2009; Davidson, 2011; 2012) which seemed to indicate the extent of their engagement with the task. These movements appeared to be non-functional in achieving technical aims, but revealed the bodily involvement of the musicians, and assisted them in shaping and communicating their musical intentions. Similarly to spoken language, expressive movements appeared a sort of ‘thought in action' (McNeill, 1992: 1) which revealed the musicians' thoughts (Montero, 2016) through a combination of 'intellectual/conceptual understanding and motor skill' (Davidson, 2005: 217). The musicians exhibited expressive bodily movements at different levels of awareness. Moreover, the way they displayed these movements contributed to the identification of three main attitudes towards the task which were identified as *automatization of bodily expressive movements*, *exploration of movements*, and *bodily self-comforting expressive bodily movements*. *Automatization of bodily expressive movements* grouped seven musicians such as Violin 3. He appeared unaware of showing expressive bodily movements seeming to have automatized these movements at specific points in the piece of music. They were embedded within technical movements (Davidson, 2005). These kinds of expressive bodily movements could be compared to those unconsciously performed in spoken language (see Chapters 4, 5, 7, 9, 10; McNeil, 1992; Goldin-Meadow, 2003). Ten musicians seemed to show *Exploration of movements* exploring the movements that they were making as if they were adapting to the task and becoming aware of the parts of the body involved in playing. For example, Guitar 3 seemed to gradually reduce each of the expressive automatic movements shown during Performances 1 and 2. According to Hoppenot (2006, see Chapter 1), her behaviour seemed to have changed to achieve the optimal performance outcome. She seemed to adopt an analytical procedure of deconstructing the movements concentrating on each of them (Hoppenot, 2006). *Bodily self-comforting expressive bodily movements* were manifested by one musician. She appeared to be not involved in the music as if the simulation disturbed her, swayed very frequently in automatic and stereotypical movement as if it was comforting her. The swaying may have stimulated accelerometers of the inner ear assisting her in removing her attention from concerns about the task stimulating the vestibular activity which arouses pleasure (Givens, 2002; Davidson, 2005). She appeared lost as if she was not able to link her inner singing with the technical movements she needed in playing. Some musicians revealed tension and anxiety exhibiting high muscle tone (The Oxford Companion to the Body, 2001) when contracting muscles in 'playing' their virtual instrument or the muscles of the face (Givens, 2002). Fourteen musicians showed *specific instrumental expressive movements* which appeared typical for their instrument such as the lifting of forearms and their rotation (Davidson, 2005) shown by Piano 1 and Piano 3. Six musicians did not show any expressive bodily movements, although they revealed different attitudes towards the simulation. Some (e.g. Percussion 1) did not express any negative evaluation about the simulation, but gave the impression that this practice was of no use to them.

15.5.3 The simulation effect prior to and during the last performance

Comparison of the musicians' behaviour during the simulation with that in previous performances revealed that most of them showed more self-confidence and were more involved in the music. The musicians seemed to be affected by the simulation making their movements more effective and/or economical so that they could better transmit their musical intentions. Before starting the third performance musicians took time to focus their concentration, but this decreased in comparison with Performance 2. The *lived experience* (Merleau-Ponty, 1945/2002) of the mental rehearsal and the simulation seemed to lead them to find the right time span between the first and the second performance. During playing, the musicians manifested the same attitudes toward the task that they had shown during the simulation. Some musicians appeared very focused on their body performing the movements and the feedback from sound as revealed by their body posture and the tempo of the music. In comparison with the previous performances, most of the musicians seemed to increase expressive bodily movements, but also economised and made these movements more functional in relation to the musical intentions that they wanted to transmit. Although the simulation was relatively short as training, it seemed to reinforce the musicians' physical experience and develop muscular memory when playing (see Chapter 3; Liao & Davidson, 2016).

15.5.4 After completing Task 3: verbalization process

The findings related to the concluding part of the phenomenological reduction addressed the kinaesthetic feedback received from the simulation, the status of musicians' body self-awareness, and the possible simulation effect on their performance. The musicians seemed to exhibit reduced anxiety appearing to have adapted to the research context. They were more at ease in expressing their thoughts as revealed by the reduced time they took to respond. These reactions may have arisen for two reasons. The first could be connected to the 'interindividual interaction' (De Jaegher & Froese, 2009: 445) developed between each musician and the interviewer. The second may have been generated by the reflection process that the musicians undertook during the simulation. This process was triggered when the musicians saw themselves moving and receiving sensory-motor feedback from the movement itself. The embodied experience of simulating seemed to affect the musicians' reasoning and (Alibali et al., 2014) contributed to shape their thoughts (Goldin-Meadow & Beilock, 2010). The experience of paying attention to each movement related to the lack of sound during the third task engendered different responses in analysing the musicians' *embodied self-awareness* (Fogel, 2013). Similar patterns across cases made it possible to generate connections between the musicians' responses (Smith et al., 2009). When referring to kinaesthetic feedback received from the simulation and its possible effect on performance, the musicians appeared surprised. This seemed to lead them to self-reflecting, while others appeared surprised and embarrassed. This feeling seemed to be provoked by the fact that this was the first time that they had carried out a simulation. Their bodily responses seemed to affect the musicians' verbalizations and lead them to reflect on their body. Although all of them showed more body self-awareness when speaking about variations in breathing, physical tension, relaxation, touch, mood and the mental images experienced during the task, they expressed different reactions toward the simulation. These were identified as *Awareness* and *Rejecting the task and/or Avoiding answering*. For example, when being asked to compare the third performance with the previous two, five declared that it was better, seven worse, while nine referred to the third playing as a physical experience. Some of these musicians seemed to be assisted in their thinking process by the simulation of playing and/or kinaesthetic movements. They appeared to re-live the simulation experience and preferred describing their thoughts through physical actions (see Chapter 12; Alibali et al., 2014) rather than words. This behaviour supports Varela and colleagues' idea that knowledge has an embodied root (Varela et al., 1993). The musicians seemed to become aware of their *Leib*, the lived body (see Chapter 2; Merleau-Ponty, 1945/2002), in which tactile and kinetic sensations play a fundamental role (Husserl, 1989). The *physical experience* appeared fundamental for four musicians who transferred the perceptions they experienced during the simulation to their playing. For example, Piano 1 realized that she was playing automatically or through pre-reflective self-awareness (see Chapter 2; Colombetti, 2014; Zahavi, 1998) in the previous performances. She seemed to support the idea that when playing musicians often automatize movements without 'controlling them by explicit thought processes' (see Chapter 2; Holgersen, 2010: 33). Two musicians seemed to intentionally simulate playing and perform kinaesthetic movements substituting words with movements which seemed to be more effective for communicating their thoughts. They appeared to shift from pre-reflective self-awareness toward reflective self-awareness focusing their attention on the performed movements (Sheets-Johnstone, 2006). Some musicians (e.g. Guitar 3) recognized that becoming aware of various sensorial channels such as visual, auditory and kinaesthetic modalities (Gault, 2005) positively affected their playing. Seven musicians referred to various types of kinaesthetic feedback interacting with sound. From a neurophenomenological perspective (see Chapter 2; Varela et al., 1993), musicians *enact* or interact through 'a relation of dynamic sensorimotor engagement with [their] environment' (Gangopadhyay et al., 2010: 1) which is made up of sound and movements that they simultaneously generated. This process does not result only from '*looking* and *seeing*' the body in movement, but also from 'a bodily felt sense of the direction of our movement' and its qualities (Sheets-Jonhstone, 2011: 49). This means that 'when we hear sound, we also tend to imagine the body motion we believe has generated the sound' (Godøy, 2017: 115). Some musicians (e.g. Piano 1 and Percussion 2) referred to the need to slow down the piece when performing it as if the simulation affected their performance. Their reactions reflect Montero's research (2016) in which she showed that when expert musicians are asked to pay attention to their movements and think about them, they slow the tempo. This suggests that musicians typically automatize their movement (Holgersen, 2010) apparently ignoring kinaesthetic and visual information feedback that their body receives through this movement (Toner et al., 2016). Five musicians declared that the third performance was *better* than the previous two appearing positively surprised about the simulation effect on their playing. In contrast, seven musicians declared that the third performance was worse than the others. The simulation disturbed them (e.g. Piano 2) and did not allow them to properly focus on the music and/or be involved in it (e.g. Clarinet) as, for example, had occurred during the second task. This reaction was perhaps provoked as they were performing a simulation for the first time and observing, reflecting, and verbalizing on the performed movements. Two musicians (e.g. Piano 3 and Guitar 1) appeared completely involved with body and mind during performing. Although they did not show this kind of involvement, sixteen musicians seemed to be engaged with their bodily movements manifesting a sort of ‘proprioceptive sensory bodily awareness’ (Montero, 2010: 113) which affected their cognition (Sheets-Johnston, 2011). When performing simulated and kinaesthetic movements during verbalizing, they seemed to become aware through ‘an awareness of various sound-related actions’ (Godøy, 2011: 231) related to their body or parts of it. For example, while speaking, Piano 3 seemed to consciously perform simulated and kinaesthetic movements as if these assisted her in re-living what she felt during performing. She seemed to become aware of her moving hands and sound as one unit. Nine musicians, six of them wind players, said that they perceived less or the same body awareness than during the previous performances. These reactions may have been because of the unfamiliar nature of the task, leading them to reject it intellectually as they believed that their playing was intuitive (Montero, 2010). These reactions were particularly notable amongst the wind players. They seemed to be reluctant to engage with the simulation rejecting it or avoided answering the questions about it. This may be because when playing, they do not need to move their arms as much as pianists or string players who affect the sound that they make through movement. Eight musicians expressed discontent about the task. They appeared disconcerted (e.g. Flute) or annoyed by the simulation (e.g. Harp) and this seemed to provoke a sort of negative surprise such as ‘feeling strange’ (e.g. Piano 2). They also said that they had been negatively affected by the task requirement of thinking about their movement. This “thinking” process decreased their awareness level (e.g. Harp). Their reactions seemed to be a consequence of their habit of playing intuitively (see above, Montero, 2010) using their highly automatized skill levels which had always guaranteed good performance. The lack of physical contact with the instrument and sound during the simulation seemed to be another factor generating discomfort in the musicians. The reason for this reaction may be that their movements previously were completely embedded in producing sound. This suggests that they were playing through pre-reflective self-awareness (see Chapter 2; Colombetti, 2014; Zahavi, 1998) and did not move from pre-reflective to reflective body self-awareness when performing. According to Toner and colleagues (2016), musicians seem to experience a sort of marginal or recessive awareness of their body retaining 'a sense of agency and ownership over [their] movement' (Toner et al., 2016: 304) through proprioceptive and kinaesthetic sensations during performance. Musicians' nonverbal behaviour combined with verbal responses seems to support the idea that cognition emerges from interaction or *enaction* with movement of the body and mind and not 'solely "in the head"' (Larkin et al., 2011: 319). The musicians' body movements contributed to revealing their thinking processes and how they redirected their attention from the "exterior" to the "interior" (see Chapter 3; Depraz et al., 2003: 25). In this process kinaesthesia and the simulation of playing seemed to have a substantial role (Husserl, 1989) in developing musicians' body self-awareness as shown by twenty of the musicians who touched and/or looked at the parts of their body they were speaking about. Looking at and receiving kinaesthetic feedback from movements and specific localized 'touch-sensations' of the body seemed to lead the musicians to became aware of it (Husserl, 1989: 152 § 36). The musicians seemed to intentionally redirect their attention (Depraz, 2014) to the simulated movements which seemed to activate 'cognition-in-action'. They seemed to consciously employ the simulation for assisting self-reflection while looking at themselves and/or conveying their feelings and thoughts to the interviewer when looking at her (Cartmill et al., 2012). Simulating while speaking seemed to recall content from their 'implicit memory' which was generated when their body learned actions required for playing through 'repetition and exercise' (Fuchs, 2012: 10) and that, once automatized, became embodied and was difficult to verbalize (Fuchs, 2012).

At the end of the “introspective journey”, all the musicians showed an increase in their body self-awareness that was identified through kinaesthetic and or simulated movement that they displayed while self-reflecting. This phenomenon seemed to be due to the simulation of playing which also seemed to affect those musicians who reacted negatively to undertaking the task showing embarrassment. Moreover, there seemed to be a reduction in the musicians’ anxiety when the findings of their nonverbal language were compared with that manifested after completing Tasks 1 and 2.

15.6 To what extent do interventions focusing on movement impact on performance?

The findings related to the last research question refer to the analysis process involving an external panel of five expert musicians. This was to provide rigorous validation (Meyrick, 2006) and reduce possible researcher bias when evaluating whether the intervention affected the musicians’ performances. The panellists evaluated the videos of six selected musicians inasmuch as sixty-six performances (three for each of the twenty-two musicians) was considered to present too great a demand on the panel’s time.

The panel did not express any judgement about the technical aspects of the performances, but only on possible changes between the first and third performances. These were presented randomly for each participant to avoid the panel expecting the third performance to be different. After making their evaluations, the panellists were told about the interventions. The performances were evaluated by means of nine parameters, which were identified from the literature, using a five point Likert scale. Although the panellists all used the same scale, the evaluations of performances were different for the same musicians.

This is a common research finding. Expert listeners may take account of different factors which make assessment 'inevitably subjective' (Hallam, 2008: 160). When possible, the panellists' evaluation was triangulated with the musicians' responses in order to compare musicians' subjective experience (Labbé, 2008) with external observations that in phenomenological terms consist of 'first-/third-person interactions' (Depraz et al., 2017: 190). Although the panellists did not always rate the same musician similarly, they noted changes in *Anxiety*. The evaluators noticed a decrease in the musicians' anxiety level across the performances in terms of observing motor expressive behaviour, such as changes of facial expression (Kesselring, 2006: 309), particularly following the third performance. Although allocating different scores for each musician to *concentration,* all of the panelists noted an increase in it mainly during the third task. The *time* that the musicians needed to prepare before starting to play, and their posture and facial expression during playing were used to evaluate concentration. These factors showed an increase in the status of 'being totally immersed' (Castle & Buckle, 2009: 16) in the synchronized actions of playing without distractions (Moran, 2004b: 209) during the three performances. Other parameters such as '*Dynamic contrasts*' (Fautley, 2010: 80) and '*Musical communication*' (Hallam, 2008: 101) were a more effective measure of change over the three performances, but particularly during the third. This was noted by most panelists. However, the evaluations of *Tempo* and *Intonation* were not consistent. Each panellist seemed to perceive *Tempo* differently (e.g. Guitar 3) and attributed completely different assessments to *Intonation* something that should easily be assessed objectively. Some panellists noted no improvement in intonation across the performances, while others did so. This evaluation concerned the three musicians who played non-tempered instruments, violin, viola, and recorder. Their intonation could vary depending on the instrument's tuning and/or possible mistakes made while playing. The final part of the panellists' evaluation consisted of assessing musical gestures (see Chapter 2; Cadoz & Wanderley, 2000). Although different score values were given for each musician, overall, the panellists observed that most of the musicians increased their expressive movements across the three performances. Only Panellist 3 noted that Guitar 3 seemed to voluntarily reduce unnecessary movements during the third performance. This observation reflected Guitar 3's response. She reported that, when giving the third performance, drawing on the experiences of mental rehearsal and the simulation, she paid attention to her body in a different way which may have made her monitor and economise her movement. Most of the panellists noticed an increase in *Accuracy of gesture* in most of the musicians mainly during the second performance. This parameter refers to the sensory-motor control which is acquired as technique develops related to a specific instrument 'in an appropriate manner' and is necessary to play the right notes and rhythm (Fautley, 2010: 118-119). This phenomenon was maybe due to the effect of mental rehearsal in which a sort of 'anticipatory thought' (Depraz, 2014: 279) generated an internal image of the movements of playing where attention was constantly maintained on them. The last parameter to be evaluated was *Fluidity of gestures*. All the panellists assessed an increase in gesture fluidity for Recorder 1, Percussion 2, and Guitar 3 across the three performances, while four evaluators noted an increase in Viola 2 during the third performance. The increase of gesture fluidity mainly in the third performance suggests that the simulation may have had an effect on playing as the musicians were very focused on technical movement as they performed the simulation.

15.7 Contribution to knowledge

This research contributes to the field of philosophy of music education particularly through combining theory with practice with reference to neurophenomenological principles (Varela et al., 1993; Varela, 1996). The key contributions were.

1. The musicians developed body self-awareness and well-being in playing through the first-person mediator method.
2. Kinaesthetic and simulated movements were fundamental in achieving body self-awareness.
3. Most of the musicians shifted from *state anxiety* and pre-reflective body self-awareness to reflective body self-awareness in playing.
4. The effect of mental rehearsal and the simulation made the musicians calmer and assisted them in developing concentration.
5. The body involvement in the introspection revealed how the conscious mind is embedded in physicality developing a sort of “thought in action”.
6. Most of the musicians recognised the benefits of being self-aware in playing and practicing.
7. Mental rehearsal, simulation, and verbalization are complementary tools to develop body self-awareness to positively affect well-being in playing.

15.7.1 The first-person mediator method

This paradigm offered me the possibility to combine first-and-third person data to explore the process through which expert musicians shifted from implicit knowledge to movement awareness According to the Husserlian principle of going ‘back to the things themselves’ (Husserl, 1983:35), the musicians described the experience of playing in the way it appeared to their consciousness without any judgment. Becoming aware of tensions or inappropriate postures and habits in playing, they were able to self-correct improving their well-being and playing. This result was achieved across three phenomenological reductions through applying the first-person mediator method. It also contributed to gradually change the quality of their attention (Depraz, 2013) re-orienting it ‘from the “exterior” to the “interior”’ (Depraz et al., 2003: 25). For the musicians, this mental act was crucial to become aware of unnoticed (pre-reflective) experience.

15.7.2 Kinaesthetic and simulated movements

The musicians increased their body self-awareness during the interview mainly through the verbalization process when being supported by specific movements that I identified as kinaesthetic and simulated. When going in deep self-reflecting, the musicians increased the execution of these movements which were essential in strengthening their body self-awareness. In this embodied process the sense of touch was fundamental. The musicians received kinaesthetic feedback from movements and specific localized "touch-sensations" of the body. Awareness was achieved when the musicians intentionally involved these movements and sensorimotor feedback in their self-reflection process (Gallagher & Zahavi (2008); Husserl, (1973/1997), Although at different levels, in each phenomenological reduction process the musicians observed and described the movements and feelings in playing which were unnoticed (Bitbol & Petitmengin, 2017) prior to be engaged in the introspective process in a non-judgmental way, synchronically and diachronically (Vermersch, 2002). These movements were part of the analysis of nonverbal language which was fundamental in observing the process through which the musicians directed and changed attention toward their body.

15.7.3 Shifting from state anxiety and pre-reflective body self-awareness to self-reflective body self-awareness

When listening to the first task requirements, corresponding to the start of the first phenomenological reduction, the musicians manifested *state anxiety* and embarrassment. These reactions suggested that the musicians were used to playing through pre-reflective body self-awareness having automatized the movements they needed when playing. Once automatized, these movements become embodied and difficult to verbalize (Fuchs, 2012). However, the moment of listening to the first task requirements was the starting point when the musicians began changing the quality of their attention about their body. When they started to intentionally focus on movements and parts of the body involved in playing 'a transformation of [their] mental field' (Merleau-Ponty, 1945/2002) began. This also constituted the moment when their body simultaneously became the subject and object of their reflection. When intentionally directing the attention on itself, the body was subject and concurrently the object of its reflection. This process showed the embodied root of consciousness constitution through the body-mind relationship as 'internally united' (Drummond, 2003: 65). This phenomenon particularly emerged when the musicians began supporting their self-reflection executing kinaesthetic and simulated movements. At the beginning of the introspection process, the musicians appeared to perform these movements semiconsciously or pre-reflexively. However, when receiving kinaesthetic and sensory-motor feedback from these movements, the musicians began developing body self-awareness. When the execution of these movements increased, the musicians gradually shifted from pre-reflective to self-reflective body self-awareness. This phenomenon was particularly noticed across the second and the third phenomenological reduction process. The musicians were more accurate in referring to their body and more concentrated in playing. After performing each task during the verbalization process, the musicians formalized their experiences. The number of the musicians who performed kinaesthetic and simulated movements gradually increased. This suggested that they were going in deep in their self-reflection being more involved in the body-mind relationship.

15.7.4 The effect of mental rehearsal and the simulation

Mental rehearsal made the musicians calmer and assisted them in developing concentration. This practice guided the musicians to experience mindfulness which made them completely present in their own actions (Varela et al., 1993). In experiencing mental rehearsal, the musicians were guided to change or interrupt 'automatic patterns of conditioned behaviour' (Varela et al., 1993: 122) of which they become fully aware when verbalizing. Mental simulation performed during mental rehearsal led the musicians to internally direct their attention and concentrate on imagined movements and sound. Moreover, the simulated mental actions generated kinaesthetic feedback which affected first the musicians when playing, then when verbalizing. This phenomenon was provoked by the fact that 'mental simulations of actions and perceptual states activate the same neural areas that are used in actual actions and perception' (Alibali et al., 2014: 150). When verbalizing, the musicians re-evoked and re-lived the experiences of mental rehearsal and playing being supported by kinaesthetic movements and kinaesthetic feedback. Through these movements they interacted or *enacted* in a continuous perception and action in a dynamic circularity between cognition and behaviour (Varela et al., 1993) changing and deepening their self-body perception.

An intersubjective behaviour was noticed across the third phenomenological reduction. All of the musicians showed an increase in awareness. In each step of the third phenomenological reduction, the musicians showed a higher level of concentration than the previous tasks. They were more focused in directing and maintaining their attention to movements, and being mindful. This was particularly evident when verbalizing and manifesting a deeper level of self-body awareness. When being guided to describe their movements, they slowed down their mental activity and appeared to consciously execute the simulation of playing. In doing that action, they changed the quality of their verbalization and consciously re-lived the same physical tactile and kinetic sensations experienced during the simulation. Kinaesthetic and simulated movements assisted the musicians in internally and externally directing their attention on their body. From perceiving internal sensations from kinaesthetic feedback, the musicians learned '"which thing [they] are" by moving and listening to [their] movement' (Sheets-

Johnstone, 2011: 49) through a sort of 'attentive presence' (Depraz et al., 2003: 16).

However, although all of the musicians showed an increase in body self-awareness, some showed disconcert about the lack of physical contact with the instrument and sound during the simulation. This suggested that their movement was completely embedded in producing sound and that they did not actually move from pre-reflective to reflective body self-awareness when performing. Some musicians seemed to be disturbed by the mental rehearsal and the simulation and did not feel the need to find 'new ways' of practicing. This was also due to being asked to think both when simulating and playing. As experts, such as orchestral musicians, they are used to performing movements without awareness, but intuitively inasmuch as they have highly automatized skill levels which guarantee good performance. This reaction was particularly notable amongst the wind players who do not need to move their arms as much as pianists or string players who affect sound through movement.

15.7.5 "Thought in action" effect

The musicians developed various kinds of awareness which positively affected their practice and playing through a sort of "thought in action". The body involvement in the introspection revealed how the conscious mind is embedded in physicality. According to embodied cognition theory, the musicians' behaviour supports the idea that cognition emerges from interaction or *enaction* with movement of the body and mind and not 'solely "in the head"' (Larkin et al., 2011: 319). Through combining thought with movement, the musicians manifested the re-discovery of pleasant feelings that seemed to have been unconsciously stored when pre-reflexively playing. Some musicians referred to the pleasure of feeling the movement itself and or the tactile sensations with their instrument. The fact of re-discovering these feelings suggests that professional musicians pay little attention to sensorial pleasure received from performing movements when playing. This may increase the desire of practicing and playing, reducing frustration.

15.7.6 The benefits of being self-aware in playing and practicing

Some of the musicians reported the benefits of becoming aware while playing. They recognized that awareness of various sensorial channels such as visual, auditory and kinaesthetic modalities (Gault, 2005) positively affected their playing. Due to the simulation, some musicians noticed that they economised and made movements more functional to their musical intentions removing the automatic elements when playing. Other musicians observed that developing movement awareness through the simulation could be a new way of practicing making it more effective. Focusing only on the movement and its sensorimotor feedback has positive effects in practicing. The simulation allows dividing the practice into sections easily identifying and solving technical issues, avoids perceiving the instrument as an obstacle, and develops awareness of physical tensions, wrong postures, breathing and specific parts of the body involved in playing. Moreover, '*a qualitatively kinetic flow*' (Sheets-Johnstone, 2010b: 218), perceived by the kinesthetic feedback across the simulation, led the musicians to recognize and correct technical movements generating a body memory which avoided repeating mistakes when playing. The act of reflecting on simulated movement was possible as the musicians previously performed mental rehearsal. In internally directing attention, this practice produced physiological effects similar to meditation such as calm and relaxation. These physical responses allowed the musicians to be more able to self-evaluate their performance, such as paying more attention to sound quality, being more involved in the music, and focusing on their body achieving a deeper level of concentration and body self-awareness.

15.7.7 Complementarity of mental rehearsal, simulation, and verbalization

The findings from this research suggest that mental rehearsal, simulation, and verbalization can be complementarily adopted. This approach assisted the musicians in reducing anxiety, developing concentration and body self-awareness which positively affected practice, playing, and musicians' well-being. These kinds of changes were also noticed by the panellists particularly following the third performance where they observed an increase in concentration, musical communication, accuracy and fluidity of gestures.

In summary, in line with embodied music cognition this research showed the embodied root of consciousness. According to Husserl (1989), the musicians became aware of the experience of playing through describing it without expressing any judgment and being supported by kinaesthetic movements.

This suggests that theoretical neurophenomenological principles can be concretely applied to the practice and playing through kinaesthesia where by as the musicians become aware of their tensions or inappropriate postures and habits in playing they can be assisted in self-correcting and improving their well-being. Combining the introspection process with mental rehearsal and the simulation of playing were effective tools to achieve these goals. The practices of mental rehearsal and the simulation supported the development of the body-mind relationship which was strengthened through the verbalization process. The musicians were guided to intentionally direct and focus their attention on bodily movements. This enhanced their concentration and mindfulness, improved their perception of the parts of the body involved in playing, and economised their movements when playing. Where the musicians responded positively to the interventions appearing totally engaged in the body-mind relationship, their performances were improved as judged by themselves and an independent panel. This phenomenological approach can be applied to instrumental music tuition and contribute to developing musicians' well-being in playing. Musicians and instrumental teachers can be engaged through an appropriate and rigorous training of self-reflection which lead them to become aware of their lived experience (Varela, 1996; Bitbol & Petitmengin, 2017) of playing.

15.8 Limitations of the study

15.8.1 Researcher's Subjectivity

Subjectivity is 'inescapably' part of knowledge which 'depends on individual observation and experience' (Varela & Shear, 2002: 1). This assists us in making sense of the world, but also has implications for scientific research from which subjectivity cannot be completely eliminated. Through their subjectivity researchers create their work (Bitbol & Petitmengin, 2017). In this study, I was aware that the research was based on my subjective experience (Bitbol & Petitmengin, 2017) and also of my emotional involvement when carrying out some of the interviews and analysing the data. I was also aware of the "power" of being behind the camera when interviewing. Although I told the musicians before the interview they were free to not answer the questions, I sometimes felt that they seemed 'pushed' to answer because of the presence of the camera and also to please me. In these situations I sought to control my "power" although I was conscious that it could not be eliminated. Moreover, to reduce my bias in data analysis, I sought to follow neurophenomenological directions (Varela, 1996) identifying intersubjective patterns within the musicians' subjective experiences to objectify data (Bitbol & Petitmengin, 2017) and, when possible, triangulate data.

15.8.2 Numbers and categories of musicians

I identified two main kinds of limitations with reference to the sample of the musicians who participated to this study. The first was that not all categories of instruments were represented in the study. The second was that the categories included a small number of musicians or only one musician. This made it difficult or impossible to identify similarities in musicians' behaviour related to specific instruments and 'measure recurrence across cases' (Smith et al., 2009: 106), such as occurred with Harp and the wind players. This issue of recruitment was particularly relevant for Italian musicians especially the wind players. They were suspicious of being interviewed and were reluctant to be recorded playing their instrument. The fact that little research in music education is carried out in Italy may have contributed to these difficulties and could explain the musicians' reactions. However, recruiting a larger number of musicians and analysing additional data would have required a level of resources which were not available to me.

15.8.3 Musicians' introspective skills

Some musicians appeared reticent in verbalize their feelings or behaved as if they had nothing to describe. This reaction was maybe due to a lack of introspective skills (Vermersch, 2009) or 'adequate vocabulary to describe experience' (Petitmengin, 2011: 46). According to Vermersch (2017) these musicians were responding 'in a concealed manner' (Vermersch 2017: 1) meaning that they had unconsciously stored information when pre-reflexively having performed actions. The musicians may have needed more time to self-reflect alone to develop these introspective skills. In future research, this issue may be resolved through interviewing them once more. A second interview may have led to them being more self-confident in evoking unconscious information.

15.8.4 Panellists' evaluation

Although I tried to reduce my bias by involving a panel of expert musicians to assess the musicians' performances, some issues arose from these evaluations which were 'inevitably subjective' (Hallam, 2008: 160). When assessing the same elements of performance, the panellists' evaluations were different for the same musicians. Their evaluation was also not consistently related to Tempo and Intonation which should easily be objectively assessed. To overcome this issue, I should perhaps have analysed the performances using resources such as computers and movement interfaces. These were not available to me. There was also some bias in the selection of the musicians who were assessed as those who responded most positively to the interventions were selected.

15.9 Generalisation

As the findings are based on qualitative research, they cannot be generalised and may not be exactly replicated if other researchers repeat the study. However, the procedures offered by the method of inquiry that I adopted are reliable and allow the possibility of identifying similar strategies and patterns across cases (Petitmengin et al., 2013) which may lead to conceptual and theoretical generalisations.

15.10 Implications

The interdisciplinary approach, the ideas and the methods adopted in undertaking this research have theoretical, methodological and practical/training implications beyond the focus of this study. This includes pilosophical fields such as embodied cognition, and psychological phenomenology, as well as education, drama, and music education and also children and adults with dyslexia.

15.10.1 Theoretical Implications

Theoretically the findings are an empirical example in embodied cognition, empirical phenomenology, psychological phenomenology, social phenomenology, and philosophy of education. As it emerged in this research, the phenomenological first-person mediator method constitutes a useful tool to introspectively access and study individuals' lived experience from the embodied cognition perspective. The findings revealed embodied roots of our knowledge by the interrelation with movement and the development of the concept of body-self. This may be a significant example for better understanding the role that the body and movement have in shaping our thoughts and the learning process. Philosophical and neurophenomenological research such as collective intentionality may benefit from this.

15.10.2 Methodological implications

Nonverbal language plays a fundamental role in social interactions and in the learning process. This occurs at school or college, for example, not only between teachers and students, but also between peers. Examining nonverbal social interactions in these settings could assist in improving teaching methodologies in all disciplines. This could be especially pertinent among young people who are disengaged from education and report poor student-teacher relationships (Rogers, 2015).

The application of kinaesthesia, similarly, may be effective in many areas. When learning is linked with kinaesthesia, recalling information becomes easier. For instance, learning new languages through combining kinaesthesia with games and the first-person mediator method may activate conscious body memory generating a new learning style. In turn, the memorization process of new words may benefit, along with increased motivation and concentration. Dyslexic children may also benefit from this approach as various kinaesthetic and sensorial channels are activated during the learning process. This methodological approach could also be applied with actors. Similarly to musicians, actors may develop awareness related to their body and their emotions complementarily combining mental rehearsal, the simulation, with the introspective verbalization process. This procedure may positively affect their well-being, leading them to improve their concentration and proprioception on the stage, internalising the character they deal with, recognising and overcoming their limits.

15.10.3 Practical/training implications in music education

Although this study focused on expert musicians there are wider implications for novice musicians especially around the students-teachers relationship and the understanding of nonverbal communication when speaking about outcomes and/or performances. Teachers can better understand their students' feelings and needs, while self-reflecting students may autonomously realise their weakness and learn by themselves. The combination of the first-person perspective and video-recordings may be useful. The field of music education may benefit from this research in other ways. As the initial findings suggest, most of the musicians seemed to play though pre-reflective self-awareness without paying attention to the way that their body performed movements. Training all musicians in developing body self-awareness through mental rehearsal and the simulation of playing in which attention is paid to kinaesthetic feedback may positively affect their well-being. This training may help musicians become aware of their tensions, enabling them to self-correct inappropriate postures, and enhance concentration. This could be particularly important when beginning to learn an instrument assisting students in avoiding frustrations and developing positive self-criticism Training musicians to direct their attention towards their movements and kinaesthetic feedback may assist them in reducing their anxiety when playing. Being intentionally and constantly focused on the complex actions performed by the body and the sensory-motor and sound feedback may develop a kind of embodied attention which facilitates body self-awareness.

15.11 Further directions

Following the research, many questions related to the possible effects of mental rehearsal and the simulation of performances over a period of time remain. One issue was related to the lack of consistency of the panellists' evaluations which might be overcome studying movement through using motion capture and appropriate computer software. This would need cross disciplinary team-working collaboration. An important further development would be the investigation of musicians' attentional processes as few systematic studies have been carried out on the structures and strategies involved. This would also require multi-disciplinary research including experts in the neurology of attention to enable the study of the interaction between the first-person phenomenological method and third-person approach.

References

Agnus, O. M. (2012). Proxemics: The Study of Space. *Irwle*. 8 (I):1-7. http://worldlitonline.net/archives.htm Accessed: 28.12.2014

Aherne, C., Moran, A. P. & Lonsdale, C. (2011). The effect of mindfulness training on athletes' flow: an initial investigation. *The Sport Psychologist*. 25: 177-189. http://journals.humankinetics.com/AcuCustom/Sitename/Documents/DocumentItem/04_tsp_2010_0001_177-189.pdf Access:4.7.2016

Alderson, P. (2004). Ethics. In A. Fraser, V. Lewis, S. Ding, M. Kellet & C. Robinson (Eds), *Doing research with children and young people*. London: Sage. pp: 97-111.

Alibali, M. W., Boncoddo, R. & Hostetter, A. B. (2014). Gesture in reasoning. An embodied perspective. In L. Shapiro (Ed.), *The Routledge Handbook of Embodied Cognition*. New York: Routledge. pp. 150-159.

Andersen, P. A. (2003). In different dimensions: nonverbal, communication, and culture. In L. A. Samovar, R. E. Porter (Eds), *Intercultural communication. A reader. Tenth edition*. Belmont, USA: Wadsworth/Thomson Learning. pp. 239-252.

Andrews, J. S. (1945). Directive Psychotherapy: I. Reassurance. *Journal of Clinical Psychology*. 1(1): 52-66.

Aronson, E., Wilson, T. D. & Akert, R. M, (2007). *Social psychology. Eighth Edition*. Boston: Pearson.

Argyle, M. & Dean, J. (1965). Eye-contact, distance and affiliation. *Sociometry*. 28 (3): 289-304.

Austin, J. H. (1998). *Zen and the brain. Toward an understanding of meditation and consciousness*. MA (USA): The MIT Press.

Baily, K. (2006). *Metodi della ricerca sociale. III. I metodi qualitativi*. Bologna: Il Mulino. Original Ed. (1982). Methods of Social Research. New York: The Free Press.

Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological review*. 84 (2): 191-215.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American psychologist*. 37 (2): 122-147. https ://www.uky.edu/~eushe2/Bandura/Bandura1982AP.pdf. Access: 19.6.2013.

Beilock, S. L. & Goldin-Meadow, S. (2010). Gesture changes thought by grounding it in action. *Psychological Science*. 21(11): 1605–1610. DOI: 10.1177/0956797610385353

Benson, H. (1985). Stress, health, and the relaxation response. In D. Gentry, H. Benson & C. de Wolff (Eds.), *Behavioral medicine: Work, stress and heath*. Boston: Martinus Nijhoff Publishers. pp. 15-32.

Berthoz, A., & Petit, J.-L. (2006). *Phénoménologie et physiologie de l'action*. Paris: Odile Jacob.

Bickhard, M. H. (2008). Is embodiment necessary?. In P. Calvo & T. Gomila (Eds.), *Handbook of cognitive science. An embodied approach*. Amsterdam: Elsevier. pp. 29-40.

Birdwhistell, R. L. (1970). *Kinesics in context: Essays on body-motion communication*. Harmondsworth: Penguin.

Bitbol, M. & Petitmengin, C. (2017). Neurophenomenology and the micro-phenomenological interview. In S. Schneider & M. Velmans (Eds.), *The Blackwell Companion to Consciousness. Second Edition*. Chichester, West Sussex (UK): John Wiley & Sons Ltd. pp. 726-739.

Blake, M.k. (2007). Formality and Friendship: Research Ethics Review and Participatory Action Research. *Journal compilation ACME* Editorial Collective. pp: 412-421.

Bockelman, P., Reinerman-Jones, L. & Gallagher, S. (2013). Methodological lessons in neurophenomenology: review of a baseline study and recommendations for research approaches. *Frontiers in Human Neuroscience*. 7: 1-9
doi: 10.3389/fnhum.2013.00608
http://journal.frontiersin.org/article/10.3389/fnhum.2013.00608/full
Accessed: 30.3.2016

Bowman, W. (1998). *Philosophical perspective on music*. New York: Oxford University Press.

Braun, V. & Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*. 3 (2): 77-101.

Bradford, L. & Petronio, S. (1998). Strategic embarrassment: the culprit of emotion. In P. A. Andersen, L. K. Guerrero (Eds), *Handbook of communication and emotion. Research, theory,applications, and contexts*. London: Academic Press. pp. 99-121.

Bresler, L. (Ed.), (2004). *Knowing Bodies, Moving Minds*. Netherlands: Springer

Bresler, L. (2006). Embody Narrative Inquiry: A Methodology of Connection. *Research Studies in Music education*. 27: 21-43.

Brown, R. M. & Palmer, C. (2013). Auditory and motor imagery modulate learning in music performance. *Frontiers in Human Neuroscience.* 7, article 320: 1-13.
doi:10.3389/fnhum.2013.00320
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3696840/
Accessed: 04.03.2015

Cadoz, C. & Wanderley, M. M. (2000). Gesture -Music. In M. M. Wanderley & M. Battier (Eds.). *Trends in Gestural Control of Music*. Paris: Ircam - Centre Pompidou. pp. 71-94.

Calbris, G. (2011). *Elements of meaning in gesture*. Amsterdam: John Benjamin Publishing Co.

Cartmill, E., Beilock, S. & Goldin-Meadow, S. (2012). A word in the hand: action, gesture and mental representation in humans and non-human primates. *Philosophical Transactions of the Royal Society B*. 367: 129–143. doi:10.1098/rstb.2011.0162 http://rstb.royalsocietypublishing.org/content/royptb/367/1585/129.full.pdf Accessed: 25.6.2014

Cassell, J. (1998). A Framework for Gesture Generation and Interpretation. In R. Cipolla & A. Pentland (Eds.), *Computer Vision in Human-Machine Interaction*. Cambridge: Cambridge University Press. pp. 248–265.

Castle, P. & Buckle, S. (2009). *How to be a successful teacher: strategies for personal and professional development*. London: Sage.

Clark, D., Schumann, F. & Mostofsky, S.H. (2015). Mindful movement and skilled attention. *Frontiers in Human Neuroscience*. 9, article 297:1-23. doi: 10.3389/fnhum.2015.00297 http://journal.frontiersin.org/article/10.3389/fnhum.2015.00297/full Access: 30.7.2015

Clarke, D. & Clarke, E. (Eds.), (2011). *Music and consciousness. Philosophical, psychological, and cultural perspective*. Oxford: Oxford University Press.

Clarke, E. (2011). Music, perception and musical consciousness. In D., Clarke and E. & Clarke, (Eds.), *Music and consciousness. Philosophical, psychological, and cultural perspective*. Oxford: Oxford University Press. pp. 193-213.

Cohen, L., Manion, L. & Morrison, K. (2007). *Research methods in education*. London: Routledge.

Colombetti, G. (2011). Varieties of Pre-Reflective Self-Awareness: Foreground and Background Bodily Feelings in Emotion Experience. *Inquir*y. 54 (3): 293–313.

Colombetti, G. (2014). *The feeling body. Affective Science Meets the Enactive Mind*. Cambridge (MA): The MIT Press.

Cohn, J. F. & Ekman, P. (2005). Measuring facial action. In J.A. Harrigan, R. Rosenthal & K. R. Scherer (Eds.), *The new handbook of methods in nonverbal behavior research*. Oxford: Oxford University Press. pp. 9-64.

Costa, M., Dinsbach, W., Manstead, A. S. R. & Ricci Bitti, P. E. (2001). Social presence, embarrassment, and nonverbal behavior. *Journal of Nonverbal Behavior*. 25 (4): 225-240.

Cox, A. (2016). *Music and Embodied Cognition. Listening, Moving, Feeling, and Thinking*. Bloomington (USA): Indiana University.

Creswell, J. W. (2009). *Research Design. Qualitative, Quantitative, and Mixed Methods Approaches*. London: Sage.

Creswell, J. W. (2012). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. Boston: Pearson.

Crozier, W. R. (1990a). Social psychological perspectives on shyness, embarrassment, and shame. In W. R. Crozier (Ed.), *Shyness and embarrassment perspectives from social psychology*. Cambridge: Cambridge University Press. pp. 19-58.

Crozier, W. R. (1990b). Introduction. In W. R. Crozier (Ed.), *Shyness and embarrassment perspectives from social psychology*. Cambridge: Cambridge University Press. pp. 1-15.

Cuddy, A. (2012). Your body language shapes who you are. *TED talks*. https://www.youtube.com/watch?v=Ks-_Mh1QhMc Accessed: 13.2.2016

Damasio, A. (1994). *Descartes' Error: Emotion, Reason and the Human Brain*. New York: Putnam.

Damasio, A. (2010). *Self comes to mind. Constructing the conscious brain.* New York: Pantheon books.

Darwin, C. (1890/2009). *The Expression of the Emotions in Man and Animals*. Cambridge: Cambridge University Press.

Davidson, J. W. & Correia J. S. (2002). Body movement. In R. Purncutt & G. E. McPherson (Eds.), *The science and psychology of music performance: Creative strategies for teaching and learning*. New York: Oxford University Press. pp. 237-250.

Davidson, J. W., (2005). Bodily communication in musical performance. In D. Miell, R. MacDonald & D. Hargreaves (Eds.), *Musical Communication*. Oxford: Oxford University Press. pp. 215-237.

Davidson, J.W. (2007). Qualitative insights into the use of expressive body movement in solo piano performance: a case study approach. *Psychology of Music*. 35 (3): 381–401.

Davidson, J. W. & Malloch, S. (2009). Musical communication: the body movements of performance. In S. Malloch & C. Trevarthen (Eds.), *Communicative musicality*. Oxford: Oxford University Press. pp. 565- 583.

Davidson, J. W. (2011). Movement and collaboration in musical performance. In S. Hallam, I. Cross & M. Thaut (Eds.), *The Oxford handbook of music psychology*. Oxford: Oxford University Press. pp. 364-376.

Davidson, J. W. (2012). Bodily movement and facial actions in expressive musical performance by solo and duo instrumentalists: Two distinctive case studies. *Psychology of Music*. 40(5): 595–633. DOI: 10.1177/0305735612449896

Decety, J. (2002). Neurophysiological evidence for simulation of action. In J. Dokic & J. Proust (Eds.), *Simulation and Knowledge of Action.* Amsterdam: John Benjamin Publishing Company. pp. 53-72.

Decety, J. (2007). A social cognitive neuroscience model of human empathy. In E. Harmon-Jones & P. Winkielman (Eds.), *Social neuroscience. Integrating biological and psychological explanations of social behavior*. London: The Guilford Press. pp. 246-270.

De Jaegher, H. & Froese, T. (2009). On the Role of Social Interaction in Individual Agency. *Adaptive Behavior*. 17(5): 444–460. DOI: 10.1177/1059712309343822

Delalande F., (1993). *Le condotte musicali Comportamenti e motivazioni del fare e ascoltare musica*. G. Guardabasso e L. Marconi (a cura di). Bologna: Clueb.

De Meijer, M. (1989). The contribution of general features of body movement to the attribution of emotions. *Journal of Nonverbal Behavior*. 13 (4): 247-268. ftp://www.infomus.org/pub/BiologicalMotion/Survey-Kleinsmith/Meijer%20-%20The%20contribution%20of%20general%20features%20of%20body%20movement%20to%20the%20attribution%20of%20emotions.pdf Accessed: 16.9.2015

Dennett, D. (2001). The fantasy of first-person science. *Nicod Lectures*. Private circulation. http://ase.tufts.edu/cogstud/papers/chalmersdeb3dft.htm Accessed: 26.06.2012

Depraz, N., Varela, F. J. & Vermersch, P. (Eds.) (2003). *On becoming aware: A pragmatics of experiencing*. Amsterdam: John Benjamins Publishing.

Depraz, N. (2013). An Experiential Phenomenology of Novelty: The Dynamic Antinomy of Attention and Surprise. *Constructivist Foundations*. 8 (3): 280-287. http://www.univie.ac.at/constructivism/journal/8/3/280.depraz Accessed: 4.3.2015.

Depraz, N. (2014). *Attention et vigilance. Á la croisée de la phénoménologie et des sciences cognitives*. Paris: PUF.

Depraz, N., Gyemant, M. & Desmidt, T. (2017). A First-Person Analysis Using Third-Person Data as a Generative Method. A Case Study of Surprise in Depression. *Constructivist Foundations*. 12(2):190-203. http://constructivist.info/12/2/190.depraz Accessed: 22.3.2017

Dewey, J. (1928). *Human Nature and Conduct: An Introduction to Social Psychology*. New York: Henry Holtand Company.

Doğantan-Dack, Mine, (2011). In the beginning was Gesture: piano touch and the phenomenology of the performing body. In A. Gritten & E. King (Eds.), *New perspective on musical gesture*. Farnham: Ashgate. pp. 243-265

Drummond, J., (2003). The Structure of Intentionality. In D. Welton (Ed.), *The new Husserl*. Bloomington: Indiana University Press. pp. 65-92.

DSM IV (1994). *Diagnostic and statistical manual of mental disorders*. Washington: American Psychiatric Press Inc.

Ekman, P. & Friesen, W. V. (1967). Head and body cues in the judgement of emotion: a reformulation. *Perceptual and motor skills*. 24: 711-724. https://www.paulekman.com/wp-content/uploads/2013/07/Head-And-Body-Cues-In-The-Judgement-Of-Emotion-A-Reformulat.pd Accessed: 20.9.2015.

Ekman, P. & Friesen, W. (1969a). The repertoire of nonverbal behavior: Categories, origins, usage, and coding. *Semiotica.* 1(1): 49-98. http://homes.di.unimi.it/~boccignone/GiuseppeBoccignone_webpage/CompAff2011_files/EkmanFriesenSemiotica.pdf. Accessed: 5.8.2014.

Ekman, P. & Friesen, W. (1969b). Nonverbal leakage and clues to deception. *Psychiatry: Journal for the Study of Interpersonal Processes*. 32 (1): 88-106. https://www.paulekman.com/wp-content/uploads/2013/07/Nonverbal-Leakage-And-Clues-To-Deception.pdf. Accessed: 20.9.2015.

Ekman, P., Friesen, W. V. & Ellsworth, P. (1972). *Emotion in the human face: Guidelines for research and an integration of findings*. Oxford: Pergamon Press Inc.

Ekman, P., Davidson, R. J. & Friesen, W. V. (1990). The Duchenne Smile: Emotional Expression and Brain Physiology II. *Journal of Personality and Social Psychology*. 58 (2): 342-353. http://doi.apa.org/journals/psp/58/2/342.pdf Accessed:21.10.2014.

Ekman, P. (1991). *Telling lies. Clues to deceit in the marketplace, politics, and marriage*. London: W. W. Norton & Company, Inc.

Ekman, P. & Friesen, W. V. (2003). *Unmasking the face. A guide to recognizing emotions from facial expressions*. Cambridge, MA: Malor Books.

Ekman, P. (2004). Emotional and conversation nonverbal signals. In J. M. Larrazabal & L. A. Pérez Miranda (Eds.), *Language, knowledge and representation*. Dordrecht, The Netherlands: Kluwer Academic Publishers. pp. 39-50.

Ellis, M. V. (1999). Repeated Measures Designs. *The counseling psychologist*. 27 (4): 552-578.

Erickson, F. (2011). Uses of video in social research: a brief history. *International Journal of Social Research Methodology*. 14(3): 179–189.

Esch, T., Fricchione, G. L. & Stefano, G. B. (2003). The therapeutic use of the relaxation response in stress-related diseases. *Med Sci Monit*. 9 (2): RA23-34 http://www.MedSciMonit.com/pub/vol_9/no_2/3454.pdf. Accessed: 15.10.2016

Fareed, A. (1994). A philosophical analysis of the concept of reassurance and its effect on coping. *Journal of Advanced Nursing*. 20: 870-873.

Fautley, M. (2010). *Assessment in music education*. Oxford: Oxford University Press.

Feldenkrais, M. (1981). *The elusive obvious*. California: Meta Publications.

Feldman, J. L., McCrimmon, D.R., Mitchell, G. S., & Del Negro, C. A. (2009). Brainstem respiratory circuits. L.R. Squire (Ed.), in *Encyclopedia of neuroscience. Vol. 1.* London: Elsevier. pp. 463-470.

Fogel, A. (2013). *Body sense: the science and practice of embodied self-awareness*. London: Norton & Company Ltd.

Fox, E., Calder, A., Mathews, A. & Yiend, J. (2007). Anxiety and Sensitivity to Gaze Direction in Emotionally Expressive Faces. *Emotion*. 7 (3): 478-486.

Frank, M. G., Maroulis, A. & Griffin, D. J. (2013). The voice. In D. Matsumoto, M. G. Frank & H. S. Hwang (Eds.), *Nonverbal communication. Science and applications*. London: Sage. pp. 53-74.

Freud, A. (1966). *The ego and the mechanisms of defense*. London: Karnac Books.

Freud, S. (1926/2013). Inhibitions, symptoms, and anxiety. In S. Arbiser & J. Schneider (Eds.), *On Freud's "inhibitions, symptoms and anxiety"*. London: Karnac. pp. 9-99.

Frischen, A., Bayliss, A. P. & Tipper, S. P. (2007). Gaze Cueing of Attention: Visual Attention, Social Cognition, and Individual Differences. *Psychological Bulletin*. 133 (4): 694–724. doi:10.1037/0033-2909.133.4.694. http://espace.library.uq.edu.au/view/UQ:185900 Accessed: 19.9.2015

Fuchs, T. & De Jaegher, H. (2009). Enactive intersubjectivity: Participatory sense-making and mutual incorporation. *Phenomenology and the cognitive sciences*. 8:465–486. DOI 10.1007/s11097-009-9136-4

Fuchs, T. (2012). The phenomenology of body memory. In S. C. Koch, T. Fuchs, M. Summa & C. Müller (Eds.), *Body Memory, Metaphor and Movement*. Amsterdam: John Benjamins Publishing Company. pp. 9-22.

Galamian, I. (1985). *Principles of Violin Playing & Teaching*. Englewood Cliffs, NewJersey: Prentice-Hall, Inc.

Gallagher, S. (2005). *How the body shapes the mind*. Oxford: Oxford University Press.

Gallagher, S. & Zahavi, D. (2008). *The phenomenological mind. An introduction to philosophy of mind and cognitive science*. New York: Routledge.

Gallagher, S. & Zahavi, D. (2012). *The phenomenological mind. 2nd Edition*. New York: Routledge.

Gallagher, S. (2014). Phenomenology and embodied cognition. In L. Shapiro (Ed.), *The Routledge Handbook of embodied cognition.* New York: Routledge. pp. 9-18.

Gallagher, S. & Zahavi, D. (2014). Phenomenological approaches to self-consciousness. In E. N. Zalta (Ed.), *The Standford Encyclopedia of Philosophy*. (Spring 2015 Edition). http://plato.stanford.edu/entries/self-consciousness-phenomenological Accessed: 29.01.2015

Gallese, V. (2001). The 'Shared Manifold' hypothesis from mirror neurons to empathy. *Journal of Consciousness Studies.* 8 (5–7): 33–50

Gallese, V. (2003a). La molteplice natura delle relazioni interpersonali: la ricerca di un comune meccanismo neurofisiologico. *Networks.* 1: 24-47. http://www.swif.uniba.it/lei/ai/networks Accessed: 02.01.2009

Gallese, V. (2003b). The roots of empathy: the shared manifold hypothesis and the neural basis of intersubjectivity. *Psychopathology.* 36:171–180. DOI: 10.1159/000072786. http://old.unipr.it/arpa/mirror/pubs/pdffiles/Gallese/Gallese%20Psychopathology%202003.pdf. Accessed: 26.11.2011

Gallese, V., (2006). Corpo vivo, simulazione incarnata e intersoggettività. Una prospettiva neuro-fenomenologica. In M. Cappuccio (a cura di), *Neurofenomenologia. Le scienze della mente e la sfida dell'esperienza cosciente*. Milano: Mondadori. pp. 293-326.

Gallese, V. (2008). Empathy, embodied simulation, and the brain: commentary on Aragno and Zepf/Hartmann. *Journal of the American Psychoanalytic Association*. 56 (3): 769-781.

Gallese, V. (2009). Mirror Neurons, Embodied Simulation, and the Neural Basis of Social Identification. *Psychoanalytic Dialogues*. 19: 519–536.

Gallese, V. (2010a). Le basi neurofisiologiche dell'intersoggettività. *La società degli individui*. 37: 48-53. http://www.unipr.it/arpa/mirror/pubs/pdffiles/Gallese/2010/la_societa_degli_individui_37_2010.pdf Accessed 4.5.2012

Galvao, A. & Kemp, A. (1999). Kinaesthesia and instrumental music instruction: some implications. *Psychology of music.* 27: 129-137.

Gangopadhyay, N., Madary, M. & Spicer, F. (2010). Perception, action, and consciousness. In N. Gangopadhyay, M. Madary & F. Spicer (Eds.), *Perception, Action, and Consciousness. Sensory Dynamics and Two Visual Systems*. Oxford: Oxford University Press. pp. 1-18.

Gault, B. (2005). Music Learning Through All the Channels: Combining aural, visual, and kinesthetic strategies to develop musical understanding. *General Music Today*. 19(1): 7-9. doi.org/10.1177/10483713050190010103

Gaunt, H., (2006). *Student and teacher perceptions of one-to-one instrumental and vocal tuition in a conservatoire*. PhD thesis. London: Institute of Education.

Gilbert, P., Clark, M., Hempel, S., Miles, J.N.V. & Irons, C. (2004). Criticising and reassuring oneself: An exploration of forms, styles and reasons in female students. *British Journal of Clinical Psychology*. 43: 31-50.

Givens, D.B. (1977). Shoulder Shrugging: A Densely Communicative Expressive Behavior. *Semiotica.* 19 (1/2): 13-28.

Givens, D. B. (2002). *The nonverbal dictionary of gestures, signs & body language cues*. Spokane, Washington: Center for Nonverbal Studies Press.

Givens, D. B. (2016). *The nonverbal dictionary of gestures, signs & body language cues*. Spokane,Washington: Center for Nonverbal Studies Press. http://center-for-nonverbal-studies.org/6101.html Accessed: 9.2.2016

Glenberg, A. M., Schroeder, J. L. & Robertson, D. A. (1998). Averting the gaze disengages the environment and facilitates remembering. *Memory & Cognition*. 26 (4): 651-658. https://link.springer.com/article/10.3758/BF03211385. Accessed: 28.8.2015

Glenn P. (2013). Interviewees Volunteered Laughter in Employment Interviews: A Case of “Nervous” Laughter?. In P. Glenn & E. Holt (Eds.), *Studies of Laughter in Interaction*. London: Bloomsbury Publishing Plc. pp. 255-275.

Glenn, P. & Holt, E. (2013). Introduction. In P. Glenn & E. Holt (Eds.), *Studies of Laughter in Interaction*. London: Bloomsbury Publishing Plc. pp. 1-22.

Godøy, R. I. & Leman, M. (Eds.) (2010). *Musical gestures: Sound, movement, and meaning*. New York: Routledge.

Godøy, R. I. (2011). Sound-action awareness in music. In D. Clarke & E. Clarke (Eds.), *Music and consciousness*. Oxford: Oxford University Press. pp. 231-243.

Godøy, R. I. (20 Apr 2017). Postures and Motion Shaping Musical Experience. In M. Lesaffre, P.-J. Maes & M. Leman (Eds.), *The Routledge Companion to Embodied Music Interaction Routledge*. New York: Routledge. pp. 113-121. https://www.routledgehandbooks.com/doi/10.4324/9781315621364.ch12 Accessed on: 26.12.2017

Goldin-Meadow, S. (2003). *Hearing gesture. How our hands help us think*. Cambridge: Belknap Press of Harvard University Press.

Goldin-Meadow, S. & Beilock, S. L. (2010). Action's Influence on Thought: The Case of Gesture. *Perspectives on Psychological Science*. 5(6): 664–674. DOI: 10.1177/1745691610388764

Gordon, S. (2013). Editor's preface. In S. Gordon (Ed.), *Neurophenomenology and its application to psychology*. New York: Springer science. pp. xv-xxii.

Graham, G., Horgan, T. & Tienson, J. (2017). Consciousness and Intentionality. In S. Schneider & M. Velmans (Eds.), *The Blackwell Companion to Consciousness. Second Edition*. Oxford: John Wiley & Sons Ltd. pp. 519-535.

Gregory, I. (2003). *Ethics in research*. London: Continuum.

Gritten, A. & King, E. (2006). Introduction. In A. Gritten, & E. King (Eds.), *Music and Gesture*. Aldreshot: Ashgate. pp. xix-xxiv.

Gritten, A. & King, E. (2011). *New Perspectives on Music and Gesture*. Farnham (England): Ashgate.

Grös, D. F., Antony, M. M., Simms, L. J. & McCabe, R. E. (2007). Psychometric Properties of the State–Trait Inventory for Cognitive and Somatic Anxiety (STICSA): Comparison to the State–Trait Anxiety Inventory (STAI). *Psychological Assessment.*19 (4): 369–381. DOI: 10.1037/1040-3590.19.4.369

Gunnery, S. D. & Hall, J. A. (2015). The Expression and Perception of the Duchenne Smile. In A. Kostic & D. Chadee (Eds.), *The social psychology of nonverbal communication*. London: Palgrave Macmillan. pp. 114-133.

Haak, M., Bos, S., Panic, S. & Rothkrantz, L.J.M. (2009). *Detecting stress using eye blinks and brain activity from eeg signals*. Conference paper. http://www.researchgate.net/publication/221024391 Accessed: 30.8.2015

Haggard, P., Aschersleben, G., Gehrke & J., Prinz, W. (2002). Action, binding, and awareness. In W. Prinz, & B. Hommel (Eds.), *Common Mechanisms in Perception and Action Attention and Performance XIX*. Oxford: Oxfrod University Press. pp. 266-285.

Hall, E. T. (1966). *The hidden dimension*. London: Anchor Books Doubleday.

Hallam, S. (1998). *Instrumental teaching: a practical guide to better teaching and learning*. Oxford: Heinemann.

Hallam, S. (2001). The Development of Expertise in Young Musicians: Strategy Use, Knowledge Acquisition and Individual Diversity. *Music Education Research*. 3 (1): 7-23.

Hallam, S. (2008). *Music Psychology in Education*. London: Institute of Education.

Hallam, S. (2010). The power of music: Its impact on the intellectual, social and personal development of children and young people. *International Journal of Music education*. 28 (3): 269–289.

Hammersley, M., & Traianou, A. (2012a). *Ethics in qualitative research. Controversies and contexts*. London: Sage.

Hammersley, M. and Traianou, A. (2012b) Ethics and Educational Research. *British Educational Research Association on-line resource*. http://www.learnersfirst.net/private/wp-content/uploads/Ethics-and-Educational-Research.pdf

Harrigan, J. A., Weber, J. G. & Kues, J. R. (1986). Attributions of self-touching performed in spontaneous and posed modes. *Journal of Social and Clinical Psychology*. 4 (4): 433-446.
http://search.proquest.com.libproxy.ucl.ac.uk/docview/848853661/E23A520CE0B143C2PQ/5?accountid=14511
doi: 10.1521/jscp.1986.4.4.433
Accessed: 15.9.2015

Harrigan, J. A., Lucic, K. S., Bailyn, K. L., Zarnowiecki, S., & Rosenthal, R. (1992). Judging others' anxiety. *Journal of Applied Social Psychology*. 22 (11): 855-873.
doi 10.1111/j.1559-1816.1992.tb00929.x
http://onlinelibrary.wiley.com/doi/10.1111/jasp.1992.22.issue-11/issuetoc
Accessed: 9.10.2015

Harrigan, J. A. (2005). Proxemics, kinesics, and gaze. In J. A. Harrigan, R. Rosenthal & K. R., Scherer (Eds.), *The new handbook of methods in nonverbal behavior research*. Oxford: Oxford University Press. pp. 137-198.

Harris, C. R. (2013). Embarrassment. In H. Pashler (Editor-in-chief), *Encyclopedia of the mind*. Volume one. Los Angeles: Sage. pp. 281-282.

Holgersen, S.-E., (2010), Body Consciousness and Somaesthetics in Music Education. *Action,Criticism & Theory for Music Education*. 9(1): 32-44.
http://act.maydaygroup.org
Accessed: 19.9.2010

Hölzel, B. K., Brunsch, V., Gard, T., Greve, D. N., Koch, K., Sorg, C., Lazar, S. W. & Milad, M. R. (2016). Mindfulness-based stress reduction, fear conditioning, and the uncinated fasciculus: a pilot study. *Frontiers in behavioral neuroscience.* Vol. 10. Article 124: 1-12
www.frontiersin.org
http://journal.frontiersin.org/article/10.3389/fnbeh.2016.00124/ful
Accessed: 15.10.2016

Homan, R. (1991). *The Ethics of Social Research*. London: Longman.

Homan, R. (1992). The Ethics of Open Methods. *The British Journal of Sociology*. 43(3): 321-332.

Hoppenot, D. (2006). *Il Violino interiore*. P. Barsuglia, Traduzione Italiana. Cremona: Cremonabooks. (Le violon interior, Paris: Van De Velde, 1981).

Hugot, V. (2007). *Eye gaze analysis in human-human interactions. Master's Thesis in Speech Communication*. Royal Institute of Technology-School of Computer Science and Communication. Stockholm: Sweden.
www.speech.kth.se
Accessed: 3.4.2015.

Husserl, E. (1973/1997). *Thing and Space: Lectures of 1907*. Trans. R. Rojcewicz. Dordrecht: Kluwer Academic Publishers.

Husserl, E. (1977). *Phenomenological Psychology. Lectures, summer semester, 1925*. Trans. by J. Scanlon. The Hague: Martinus Nijhoff Publishers.

Husserl, E. (1983). *Ideas pertaining to a pure phenomenology and to a phenomenological philosophy. First book. General introduction to a pure phenomenology* (F. Kersten). The Hague: Martinus Nijhoff Publishers.

Husserl, E. (1989). *Ideas pertaining to a pure phenomenology and to a phenomenological philosophy. Second book. Studies in the phenomenology of constitution* (R. Rojcewicz & A. Schuwer). Dordrecht: Kluwer Academic Publishers.

Hutto, D. (2011). Consciousness. In J. Garvey (Ed.), *The Continuum companion to philosophy of mind.* London: Continuum International Publishing Group. pp. 35-53.

Hutto, D.D. & Myin, E. (2013). *Radicalizing Enactivism. Basic Minds without Content*. London: The MIT Press.

Iverson, J.M. & Goldin-Meadow, S. (1998). Why people gesture when they speak. *Nature.* 396 (19): 228.
www.nature.com.
Accessed: 22.11.2013.

Jacobson, E. (1970). *Modern Treatment of Tense Patients*. Springfield IL: Charles C. Thomas.

Jeannerod, M. (1995). Mental imagery in the motor context. *Neuropsychologia.* 33 (11): 1419-1432.

Jeannerod, M. (2017). Consciousness of Action. In S. Schneider & M. Velmans (Eds.), *The Blackwell Companion to Consciousness. Second Edition*. Oxford: Wiley Blackwell. pp. 576-587.

Jaques-Dalcroze, E. (1921). *Rhythm, music and education*. (H. F. Rubinstein, Trans.) London: Chatto & Windus.

Jensenius, A. R. (2007). *Action-Sound. Developing Methods and Tools to Study Music-Related Body Movement. Ph.D. Dissertation*. University of Oslo. No. 234 ISSN 0806-3222.

Johnson, T. & Fendrich, M. (2002). A *validation of the Crowne-Marlowe Social Desirability Scale.* http://www.srl.uic.edu/publist/Conference/crownemarlowe.pdf Accessed: 5.12.2016

Juntunen, M.-L. (2004). *Embodiment in Dalcroze Eurhythmics. PhD thesis.* University of Oulu ISBN 951-42-7402-4 (PDF) http://herkules.oulu.fi/isbn9514274024 Accessed: 27.10.2011

Juntunen, M.-L. (2017). Embodiment in music teaching and learning. *Musiikkikasvatus.*1(20): 119-126.

Keltner, D. (1995). Signs of Appeasement: Evidence for the Distinct Displays of Embarrassment, Amusement, and Shame. *Journal of Personality and Social Psychology*. 68 (3): 441-454. http://greatergood.berkeley.edu/dacherkeltner/docs/keltner.embarrassment.jpsp.1995.pdf. Accessed: 18.8.2015.

Keltner, D. & Buswell, B. N. (1997). Embarrassment: Its distinct form and appeasement functions. *Psychological Bulletin*. 122 (3): 250-270.

Keltner, D. (2005). Signs of Appeasement: Evidence for the Distinct Displays of Embarrassment, Amusement, and Shame. In P. Ekman & E. L. Rosenberg (Eds.), *What the face reveals. Basic and Applied Studies of Spontaneous Expression Using the Facial Action Coding System (FACS). Second Edition*. Oxford: Oxford University Press. pp.133-157.

Kempter, S. (2003). *How Muscles learn*. Miami: Summy-Bichard Inc.

Kendon, A. (1967). Some functions of gaze-direction in social interaction. *Acta Psychologica*. 26: 22-63.

Kesserling, J. (2006). Music performance anxiety. In E. Altenmüller, M. Wiesendanger & J. Kesserling (Eds.), *Music, motor control and the brain*. Oxford: Oxford University Press. pp. 309-318.

Kim, J.-K. & Zatorre, R. J. (2010). Can you hear shapes you touch?. *Experimental Brain Research*. 202 (4): 747-754.

Knapp, M. L., Hall, J. A. & Horgan, T. G. (2014). *Nonverbal communication human interaction. Eight Edition*. Boston (USA): Wadsworth Cengage Learning.

Knoblauch, H. (2012). Introduction to the special issue of Qualitative Research: video-analysis and videography. *Qualitative research*. 12(3): 251–254.

Krippner, S. (2013). Foreword. In S. Gordon (Ed.), *Neurophenomenology and its application to psychology*. London: Springer. pp. xi-xiii.

Labbé, D. (2008). The feeling of anxiety. Phenomenology and neural correlates. Institutionen för kommunikation och information. *Examensarbete i kognitionsvetenskap* 15hp. C-nivå. pp. 1-26.

www.diva-portal.org/smash/
Accessed: 8.4.2015.

Langdrige, D. (2007). *Phenomenological psychology. Theory, research and method*. Harlow: Pearson Prentice Hall.

Larkin, M., Watts, S. & Clifton, E. (2006). Giving voice and making sense in interpretative phenomenological analysis. *Qualitative Research in Psychology*. 3: 102-120.

Larkin, M., Eatough, V. & Osborn, M. (2011). Interpretative phenomenological analysis and embodied, active, situated cognition. *Theory & Psychology*. 21(3): 318–337.
DOI: 10.1177/0959354310377544

Larkin, M. & Thompson, A. R. (2012). Interpretative phenomenological analysis in mental health and psychotherapy research. In A. Thompson & D. Harper (Eds.), Q*ualitative Research Methods in Mental Health and Psychotherapy: A Guide for Students and Practitioners*. Oxford: John Wiley & Sons, Ltd. pp. 101-116.

Lavin, D. & Maynard, D. W. (2001). Standardization vs. rapport: Respondent laughter and interviewer reaction during telephone surveys. *American Sociological Review*. 66: 453–79.
https://www.ssc.wisc.edu/soc/faculty/pages/DWM_page/PDF%20files/2001Lavin_Maynard_Rapport.pdf.
Accessed: 6.10.2015

Lazarus, R.S & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer.

Leitan, N. D. & Chaffey, L. (2014). Embodied cognition and its applications. *Sensoria: A Journal of Mind, Brain & Culture*. 10 (1): 3-10.
http://sensoria.swinburne.edu.au/index.php/sensoria/article/view/384/340
DOI: http://dx.doi.org/10.7790/sa.v10i1.384
Accessed: 21.01.2015

Leman, M. (2008). *Embodied music cognition and mediation technology*. London: The MIT Press.

Leman, M. & Maes, P.-J. (2014). The Role of Embodiment in the Perception of Music. *Empirical Musicology Review.* 9(3-4): 246.

Leman, M., Lesaffre, M. & Maes P.-J. (2017). Introduction. What Is Embodied Music Interaction?. In M. Lesaffre, P.-J. Maes & M. Leman (Eds.), *The Routledge Companion to Embodied Music Interaction Routledge*. New York: Routledge. pp. 1-10.
https://www.routledgehandbooks.com/doi/10.4324/9781315621364.ch12
Accessed on: 26.12.2017

Liao, M.-Y. & Davidson, J.W. (2016). The effects of gesture and movement training on the intonation of children's singing in vocal warm-up sessions. *International Journal of Music Education.* 34(1): 4-14.

Lewis, M. (2008). Self-Conscious Emotions. Embarrassment, Pride, Shame, and Guilt. In M. Lewis, J. Haviland-Jones & L. Feldman Barrett (Eds.), *Handbook of emotions. Third edition*. London: The Guilford Press. pp. 742-756.

Lim, S. & Lippman, L. G. (1991). Mental practice and memorization of piano music. *The Journal of General Psychology*. 118 (1): 21-30.
DOI: 10.1080/00221309.1991.9711130

Llinás, R. R. (2001). *I of the Vortex: From Neurons to Self*. Cambridge, Massachusetts: The MIT Press.

Loizos, P. (2000). Video, film, and photographs as research documents. In M. W. Bauer & G. Gaskell (Eds.), *Qualitative researching with text, image and sound*. London: Sage. pp. 93-107.

Louchakova-Schwartz, O. (2013). Cognitive phenomenology in the study of Tibetan meditation: phenomenological description versus meditation styles. In S. Gordon (Ed.), *Neurophenomenology and its applications to psychology*. New York: Springer science. pp. 61-87.

Lutz, A. & Thompson, E. (2003). Neurophenomenology Integrating Subjective Experience and Brain Dynamics in the Neuroscience of Consciousness. *Journal of Consciousness Studies*. 10 (9-10): 31-52.

Macrae, C. N., Hood, B. M., Milne, A. B., Rowe, A. C. & Mason, M. F. (2002). Are you looking at me? Eye gaze and person perception. *Psychological Science*. 13 (5): 460-464.

https://www0.gsb.columbia.edu/mygsb/faculty/research/pubfiles/3300/mason.pdf
Accessed: 3.4.2015

Malouin, F. & Richards, C. L. (2010). Mental practice for relearning locomotor skills. *Physical therapy*. 90 (2): 240-251.
http://ptjournal.apta.org/content/90/2/240
Accessed: 17.11.2011

Matsumoto, D., Keltner, D., Shiota, M. N., O'Sullivan M. & Frank, M. (2008). Facial Expressions of Emotion. In M. Lewis, J. M. Haviland-Jones & L. Feldman Barrett (Eds). *Handbook of emotions. Third edition*. New York: The Guilford Press. pp. 211-234.

Matsumoto, D. & Hwang, H. S. (2013). Body and gestures. In D. Matsumoto, M. G. Frank & H. S. Hwang (Eds.), *Nonverbal communication. Science and applications*. London: Sage. pp. 75-96.

Maturana, H. R. & Varela, F. J. (1980). *Autopoiesis and cognition. The realization of the living.* Dordrecht: D. Reidel Publishing Company.

Mc Angus Todd, N. P. (1999). Motion and music: a neurobiological perspective. *Music perception.* 17(1): 115-126.
http://www.jstor.org/stable/40285814
Accessed: 21.9.2017

McCormick, J. & McPherson, G. (2003). The role of self-efficacy in a musical performance examination: an exploratory structural equation analysis. *Psychology of Music*. 31 (1): 37-51.

McNeill, D., (1985). So you think gestures are nonverbal?. *Psychological Review*. 92 (3): 350-371. http://www.cogsci.ucsd.edu/~nunez/COGS160/McNeill_PS.pdf. Accessed: 7.12.2012

McNeill, D. (1992), *Hand and Mind. What gestures reveal about thought*. London: The University of Chicago Press.

McNeill, D. & Duncan, S. (2000). Growth points in thinking-for-speaking. In D. McNeill (Ed.), *Language and gesture*. Cambridge: Cambridge University Press. pp. 141-161.

McNeill, D. (2005). *Gesture and thought*. London: The University of Chicago Press.

Mehrabian, A. (2009). *Nonverbal communication*. London: Aldine Transaction.

Merleau-Ponty, M. (1945/2002). *Phenomenology of Perception*. New York: Routledge.

Meyrick, J. (2006). What is good qualitative Research? A first step towards a comprehensive approach to judging rigour/quality. *Journal of Health Psychology*. 11(5): 799-808.

Montero, B. (2010). Does Bodily Awareness Interfere with Highly Skilled Movement?. *Inquiry*. 53(2): 105–122. https://doi-org.libproxy.ucl.ac.uk/10.1080/00201741003612138

Montero, B. G. (2016). *Thought in action. Expertise and the Conscious Mind*. Oxford: Oxford University Press.

Moran, A. P. (2004a). *Sport and exercise psychology. A critical introduction*. London: Routledge

Moran, A. P. (2004b). Attention and concentration in sport. In C. Spielberger (Ed.) (2004). *Encyclopedia of applied psychology*. New York: Elsevier Inc. pp. 209-214.

Müller, U. & Newman, J. L. (2008). The Body in Action: Perspectives on Embodiment and Development. In W. F. Overton, U. Müller & J. L. Newman (Eds.), *Developmental Perspectives on Embodiment and Consciousness*. New York: Lawrence Erlbaum Associates. pp. 313-342.

Navarro, J. (2008). *What every Body is saying: An Ex-FBI Agent's Guide to Speed-Reading People*. Harper Collins Publishers.

Noë, A. (2006). *Action in perception*. Cambridge (MA): The MIT Press.

Nutt, D., Garcia de Miguel, B. & Davies, S. J.C. (2008). Phenomenology of anxiety disorder. In R. J. Blanchard, D. C. Blanchard, G., Griebel & D. Nutt (Eds.), *Handbook of anxiety and fear*. Amsterdam: Elsevier Academic Press. pp. 365-393.

Oberhaus, L. (2015). Body – Music – Being. Making Music as Bodily Being in the World. In F. Pio & Ø. Varkøy (Eds.), *Philosophy of Music Education Challenged: Heideggerian Inspirations*. *Music, Education and Personal Development*. London: Springer. pp. 101-112.

Oppenheim, A. N. (1992). *Questionnaire design, interviewing and attitude measurement*. New York: Basic Books.

O'Shaughnessy, B. (2000). *Consciousness and the world*. Oxford: Clarendon Press.

Oxford Advanced learner's Dictionary (2010). 8th Edition. Oxford: Oxford University Press.

Pio, F. & Varkøy, Ø. (Eds.) (2015). *Philosophy of Music Education Challenged: Heideggerian Inspirations. Music, Education and Personal Development*. London: Springer.

Peñalba Acitores, A. (2011). Towards a theory of proprioception as a bodily basis for consciousness in music. In D. Clarke & E. Clarke (Eds.), M*usic and consciousness. Philosophical, psychological, and cultural perspective.* Oxford: Oxford University Press. pp. 215-210.

Petit, J-L. (2006). La spazialità originaria del corpo proprio. Fenomenologia e neuroscienze. In M. Cappuccio (Ed.), *Neurofenomenologia. Le scienze della mente e la sfida dell'esperienza cosciente*. Milano: Mondadori. pp. 163-194.

Petit, J-L. (2010). A Husserlian, Neurophenomenologic Approach to Embodiment. In S. Gallagher & D. Schmicking (Eds.). *Handbook of Phenomenology and Cognitive Science*. London: Springer. pp. 201-216.

Petitmengin-Peugeot, C. (2002). The Intuitive Experience. In F. J. Varela & J. Shear (Eds.), *The View from within. First-person approaches to the study of consciousness*. Thorverton: Imprint Academic. pp. 43-77.

Petitmengin, C., Remillieux, A., Cahour, B. & Carter-Thomas, S. (2013). A gap in Nisbett and Wilson's findings? A first-person access to our cognitive processes. *Consciousness and Cognition*. 22 (2): 654–669.
Accessed: 18.12.2014

Petitmengin, C., van Beek, M., Bitbol, M., Nissou, J.-M. & Roepstorff, A. (2017). What is it Like to Meditate? Methods and Issues for a Micro-phenomenological Description of Meditative Experience. *Journal of Consciousness Studies*. 24(5–6): 170–98.

Pietkiewicz, I. & Smith, J. A. (2014). A practical guide to using Interpretative Phenomenological Analysis in qualitative research psychology. *Psychological Journal*. 20 (1): 7-14

Proske, U. & Gandevia, C. (2009). The kinaesthetic senses. *The Journal of Physiology*. 587.17: 4139-4146.
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2754351/
Accessed: 24.2.2015

Raffagnino, R. & Occhini, L. (2000). *Il Corpo e L'Altro: Sapere, Saper fare, Saper essere. Imparare la comunicazione non-verbale*. Milano: Guerini Studio.

Reybrouck, M. (2001). Biological roots of musical epistemology: Functional cycles, Umwelt, and enactive listening. *Semiotica*. 134 (1-4):599-633. Accessed: 15.3.2012

Ricoeur, P. (1974). *La sfida semiologica*. Roma: Armando Editore.

Riscica, D. (2017). *Vera Gobbi Belcredi. Il turbine della perfezione*. Firenze: Polistampa.

Rizzolatti G., Fadiga L., Gallese V. & Fogassi L. (1996). Premotor cortex and the recognition of motor actions. *Cognitive Brain Research*. 3: 131-141.

Rocci, L. (1943/1991). *Vocabolario Greco-Italiano*. Roma: Società Dante Alighieri.

Rogers, L. (2015). *Disangagement from education*. London: Trentham Books Limited.

Rose, D. (2000). Analysis of moving images. In M. W. Bauer & G. Gaskell (Eds.), *Qualitative researching with text, image and sound*. London: Sage. pp. 246-262.

Ross, S. L. (1985). The effectiveness of mental practice in improving the performance of college trombonists. *Journal of Research in Music Education*. 33(4): 221-230.

Russell, J. A. & Fernandez-Dols, J. M. (1997) (Eds.). *The psychology of facial expression*. Cambridge: Cambridge University Press.

Samovar, L. A., Porter, R. E. & McDaniel, E. R. (2009). *Communication between cultures*. Boston: Wadsworth.

Samovar, L. A., Porter, R. E. & McDaniel, E. R. (2013). *Communication between cultures. Eighth Edition*. Boston: Wadsworth.

Schön, D. A. (1987). *Educating the Reflective Practitioner*. San Francisco: Jossey-Bass Publisher.

Schulkin, J. (2004). *Bodily Sensibility: Intelligent Action*. Oxford: Oxford University Press.

Sedikides, C. (2012). Self-protection. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity. Second edition*. London: The Guilford Press. pp. 327-353.

Seager, W. (2007). A brief History of philosophical problem of consciousness. In P. D. Zelazo, M. Moscovitch & E. Thompson (Eds.), *The Cambridge handbook of consciousness*. Cambridge: Cambridge University Press. pp. 9-33.

Sestito, M., Raballo, A., Stanghellini, G. & Gallese, V. (2017 December). Editorial: Embodying the Self: Neurophysiological Perspectives on the Psychopathology of Anomalous Bodily Experiences. *Frontiers in Human Neuroscience*. 11:1-4.
doi: 10.3389/fnhum.2017.00631
www.frontiersin.org
Accessed: 4.1.2018

Shapiro, L. (2011). *Embodied cognition*. London : Routledge.

Shear, J. & Jevning, R. (2002). Pure consciousness: scientific exploration of meditation techniques. In F. J. Varela & J. Shear (Eds.), *The view from within. First-person approaches to the study of consciousness*. Thorverton: Imprint Academy. pp. 189-209.

Sheets-Johnstone, M. (1999a). Emotion and movement: A beginning empirical-phenomenological analysis of their relationship. *Journal of Consciousness Studies*. 6: 259–277.

Sheets-Johnstone, M. (1999b). Sensory-kinetic understanding of language. An inquire into origins. *Evolution of Communication*. 3 (2): 149-183.

Sheets-Johnstone, M. (2006). Essential clarifications of ‘self-affection and Husserl’s ‘sphere of ownness: First steps toward a pure phenomenology of (human) nature. *Continental Philosophy Review.* 39: 361–391.
DOI: 10.1007/s11007-006-9039-9
Accessed: 28.12.2017

Sheets-Johnstone, M. (2010a). Kinaesthetic experience: understanding movement inside and out. *Body, Movement and Dance in Psychotherapy*. 5 (2): 111-127.

Sheets-Johnstone, M. (2010b). Body and Movement: Basic Dynamic Principles. D. Schmicking and S. Gallagher (Eds.), *Handbook of Phenomenology and Cognitive Science*. London: Springer. pp. 217-234.

Sheets-Johnstone, M. (2011). *The primacy of movement*. Amsterdam: John Benjamins Publishing Company.

Sheets-Johnstone, M. (2012). Kinesthetic memory. Further critical reflections and constructive analyses. In S. C. Koch, T. Fuchs, M. Summa & C. Müller (Eds.), *Body Memory, Metaphor and Movement*. Amsterdam: John Benjamins Publishing Company. pp. 43-72.

Sloboda, J. (2005). *Exploring the musical mind. Cognition, Emoption, Ability, Function*. Oxford: Oxford University Press.

Smilek, D., Carriere, J.S.A. & Cheyne, A. J. (2010). Out of Mind, Out of Sight: Eye Blinking as Indicator and Embodiment of Mind Wandering. *Psychological Science*. 21 (6): 786–789.
DOI: 10.1177/0956797610368063
Accessed: 30.8.2015

Smith, J. A., Jarman, M. & Osborne, M. (1999). Doing interpretative phenomenological analysis. In M. Murray & K. Chamberlain (Eds.), *Qualitative health psychology*. London: Sage. pp. 218-240.

Smith, J. A. & Osborne, M. (2003). Interpretative phenomenological analysis. In J. A. Smith (Ed.), *Qualitative psychology. A practical guide to research method*. London: Sage. pp. 51-79.

Smith, J. A. (2004). Reflecting on the development of interpretative phenomenological analysis and its contribution to qualitative research in psychology. *Qualitative Research in Psychology*. 1: 39-54.

Smith, M. B. (2005). Foreword. In P. Ekman & E. L. Rosenberg (Eds.). *Basic and Applied Studies of Spontaneous Expression Using the Facial Action Coding System (FACS) Second Edition.* Oxford: Oxford University Press. pp. v-vi.

Smith, J. A., Flowers, P. & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method and research.* London: Sage.

Spinicci, P. (2000). *Sensazione, Percezione, Concetto*. Bologna: Il Mulino

The Oxford Companion to the Body (2001). Oxford: Oxford University Press 2001.
http://www.encyclopedia.com/medicine/encyclopedias-almanacs-transcripts-and- maps/muscle-tone
Accessed: 24.9.2017

Thompson, E. (2001). Empathy and consciousness. *Journal of Consciousness Studies*. 8 (5-7): 1-32.

Thompson, E., Lutz, A. & Cosmelli, D. (2005). Neurophenomenology: an introduction for neurophilosophers. In A. Brook & K. Akins (Eds.), *Cognition and the brain. The philosophy and neuroscience movement.* Cambridge: Cambridge University Press. pp. 40-97.

Thompson, E. & Zahavi, D. (2007). Philosophical issues: Phenomenology. In P. D. Zelazo, M. Moscovitch & E. Thompson (Eds.), T*he Cambridge handbook of consciousness.* Cambridge: Cambridge University Press. pp. 67-87.

Toner, J., Montero, B.G. & Moran, A. (2016). Reflective and Prereflective Bodily Awareness in Skilled Action. *Psychology of Consciousness: Theory, Research, and Practice*. 3(4): 303–315.
http://dx.doi.org/10.1037/cns0000090
Accessed: 4.1.2018

Trevarthen, C. (1979). Communication and cooperation in early infancy: a description of primary intersubjectivity. In M. Bullowa (Ed.), *Before Speech. The beginning of interpersonal communication.* Cambridge: Cambridge University Press. pp. 321-347.

Trevarthen, C. (2008). Foreword Shared minds and the science of fiction. Why theories will differ. In I. Zlatev, T. P. Racine, C. Sinha & E. Itkonen (Eds.), *The shared Mind*. Amsterdam: John Benjamins Publishing. pp. vii-xiii.

Valentine, E. (2004). Alexander Technique. In A.Williamon (Ed.), *Musical excellence: Strategies and techniques to enhence performance*. Oxford: Oxford University Press. pp. 179-195.

van de Mortel, T.F. (2008). Faking it: social desirability response bias in self-report research. *Australian Journal of Advanced Nursing*. 25(4): 40-48. http://www.ajan.com.au/Vol25/Vol_25-4_vandeMortel.pdf Accessed: 5.12.2016

van der Schyff, D. (2016). From Necker cubes to polyrhythms: fostering a phenomenological attitude in music education. *Phenomenology & practice*. 10 (1): 4-24. https://ejournals.library.ualberta.ca/index.php/pandpr/article/view/27998/20585 Accessed: 4.7.2016

van Manen, M. (2014). *Phenomenology of practice: Meaning-giving methods in phenomenological research and writing*. Walnut Creek, CA: Left Coast Press.

Varela, F. J., Thompson, E. & Rosch, E. (1993). *The embodied mind: Cognitive science and human experience*. Cambridge: MIT Press.

Varela, F.J. (1996). Neurophenomenology. A Methodological Remedy for the Hard Problem. *Journal of Consciousness Studies*. 3 (4): 330-349.

Varela, J. F. (1998). A science of consciousness as if experienced mattered. In S. R., Hameroff, A., W. Kaszniak, A. & Scott (Eds.), *Toward a science of consciousness II. The second Tucson discussions and debates*. Cambridge: MIT Press. pp. 31-44.

Varela, J. F. (1999). *Ethical Know-How: Action, Wisdom, and Cognition*. Standford: Standford University Press.

Varela, F. J. & Shear, J. (2002). First-person accounts: why, what and how. In F. J. Varela & J. Shear (Eds.), *The view from within. First-person approaches to the study of consciousness*. Thorverton: Imprint Academy. pp. 1-14.

Vermersch, P. (1993). Pensée privée et représentation dans l'action. In A. Weill-Fassina, P. Rabardel & D. Dubois (Eds.), *Représentations pour l'action.Toulouse: Octarès Éditions*. pp. 209-232.

Vermersch, P. (2002). Introspection as practice. In F. J. Varela & J. Shear (Eds.), The view from within. First-person approaches to the study of consciousness. Thorverton: Imprint Academy. pp. 17-42.

Vermersch, P. (2009). Describing the practice of introspection. *Journal of Consciousness Studies*. 16 (10–12): 20–57.

Vermersch, P. (2017). Au-delà des limites de l'introspection descriptive:l'inconscient organisationnel et les lois d'association. *Expliciter*. 114: 1-17. English translation: *Beyond the limits of descriptive* *introspection: The organizational unconscious and the laws of association* https://123slides.org/document/traduction-article-au-dela-des-limites-pdf Accessed:3.6.2017

Vredeveldt, A., & Perfect, T. J. (2014). Reduction of environmental distraction to facilitate cognitive performance. *Frontiers in psychology*. Volume5|Article860: 1-2.
doi: 10.3389/fpsyg.2014.00860
http://journal.frontiersin.org/researchtopic/1507/
Accessed: 28.8.2015

Watson, A. H. D. (2006). What can studying musicians tell us about motor control of the hand?. *Journal of anatomy*. 208: 527–542.
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2100211/
Accessed: 24.2.2015.

Wiles, R., Heath, S., Crow, G. & Charles, V. (2005). Informed Consent in Social Research: A Literature Review. ESRC National Centre for Research Methods. *NCRM Methods Review Papers* NCRM/001.
http://eprints.ncrm.ac.uk/85/1/MethodsReviewPaperNCRM-001.pdf

Wilms, M., Schilbach, L., Pfeiffer, U., Bente, G., Fink, G. R. & Vogeley, K. (2010). It's in your eyes-using gaze-contingent stimuli to create truly interactive paradigms for social cognitive and affective neuroscience. *SCAN*. 1-10
doi:10.1093/scan/nsq024
http://m.scan.oxfordjournals.org/content/5/1/98.long?view=long&pmid
Accessed: 3.4.2015

Wittry, D. (2014). *Baton Basics. Communicating Music through Gestures*. Oxford: Oxford University Press.

Wynn Parry, C. (2004). Managing the physical demands of musical performance. In A. Williamon (Ed.), *Musical excellence: Strategies and techniques to enhance performance*. Oxford: Oxford University Press. pp. 41-60.

Yuan, Y. (2014). Turning Friends into Research Participants: Rationale, Possibilities and Challenges. *CORERJ: Cambridge Open-Review Educational Research*. 1(1): 88-104.
www.corerj.educ.cam.ac.uk ISSN 2056-7804
http://corerj.educ.cam.ac.uk/v1n1_2014/Yuan2014_Turning_friends_into_research_K.pdf

Yoshimoto, D. K., Shapiro, A., O'Brien, K. and Gottman, J. M. (2005). Nonverbal communication coding systems of committed couples. In J.A. Harrigan, R. Rosenthal, K. R. Scherer (Eds), *The new handbook of methods in nonverbal behavior research*. Oxford: Oxford University Press. pp. 370-397.

Zahavi, D. (1998). The fracture in Self-awareness. In D. Zahavi (Ed.), *Self-awareness, temporality and alterity*. Dordrecht: Kluwer Academic Publishers. pp. 21-40.

Zahavi, D. (2010). Naturalized Phenomenology. In S. Gallagher & D. Schmicking (Eds.), *Handbook of Phenomenology and Cognitive Science*. London: Springer. pp. 3-19.

Zlatev, J. , Racine, T., Sinha, C. & Itkanen, E. (2008). Intersubjectivity. What makes us humans? In J. Zlatev, T. Racine, C. Sinha & E. Itkanen (Eds.). *The shared mind*. Amsterdam: John Benjamin Publishing Company. pp.1-14.

Zlatev, J. (2012). Prologue. Bodily motion, emotion and mind science. In A. Foolen, U. M. Lüdtke, T. P. Racine & J. Zlatev (Eds.), *Moving ourselves, moving others. Motion and emotion in intersubjectivity, consciousness and language*. Amsterdam: John Benjamins Publishing Company. pp. 1-25.

Zhu, J. (2004). Locating volition. *Consciousness and Cognition.* 13(2): 302–322. http://www.sciencedirect.com.libproxy.ucl.ac.uk/science/journal/10538100/13/2?sdc=1
doi:10.1016/j.concog.2003.09.003
Access: 3.9.2017

APPENDIX 1

Semi-structured interview questions

1) Which instrument do you play?
2) How old were you when you started to play?
3) Where did you study?
4) Do you do any teaching?
5) During your instrumental tuition, did you learn pieces of music through movement? (For example, linking together singing and walking or other…)
   -If yes, could you describe/explain about it?
6) Are you currently playing?
7) Can you think of a calm piece of music, what piece are you thinking about?
8) Could you play just few bars?
9) Could you describe what you feel now?
   -For example: are you thinking about breathing, the sensations in your arms or another part of your body: do they feel heavy, relaxed, tense, or do you have some kind of visual image….
10) Can you imagine yourself playing the same bars again and describe the kind of movements you make?
11) Can you please play the same piece of music again?
12) Do you feel that this performance was different from the first one?
   -If yes, what kind of differences?
13) Can you please simulate the movement of playing that piece of music?
   (Please make the same movements as when you perform it and focus on tactile sensations and "muscular feeling")
14) Please, could you play that again without saying anything?
15) Do you feel that this performance was different from the others?
   -If yes, what kind of differences?
16) Could you describe how you felt?
17) Did the simulation exercise make you feel more effective?
   -If yes, how?
18) After the mental rehearsal and simulation, were you more aware of your body or parts of your body than before?

APPENDIX 2

Sample of Ethics Informed Consent Form

Leading education and social research
Institute of Education
University of London

Research Participant Consent

Title of project: Exploring Kinaesthetic and Body Self-Awareness in Professional Musicians

Study approved by Faculty Research Ethics Committee.

Thank you for agreeing to take part in this research. I explained the project to you and you should have read any accompanying information sheet before you complete this form.

If you have any questions arising from the Information Sheet or explanation already given to you, please ask me before you decide whether to participate. You will be given a copy of this Consent Form to keep and refer to at any time.

-You decide if you want to take part and, even if you say 'yes', you can drop out at any time or say that you don't want to answer some questions.

- A short report will be sent at the end of research with the final outcomes.

-Your identity will be made anonymous and your name will not be revealed in any subsequent publication. Images, tapes and notes will be kept in a safe place.

- I consent to the processing of my personal information for the purposes explained to me.

Participant's Statement:

I, ____, agree that

(full name)
the research project named above has been explained to me to my satisfaction and I agree to be interviewed. I have read both the notes written above and the Information Sheet about the project, and understand what the research involves.

APPENDIX 3

Sample - Information Sheet for Participants

Title of project: Exploring Kinaesthetic and Body Self-Awareness in Professional Musicians

Study approved by Faculty Research Ethics Committee

Taking Part: I would like to invite you to participate in a PhD research project that I am undertaking at the Institute of Education. I would be pleased if you, as professional musician, would help me with my research answering my questions related to your playing. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. I would be pleased to answer any questions you have. Please take time to read this leaflet which explains you about my research.

Aims of the Research: I am interested in exploring the relationship between sound and movements to produce it and its possible effect on performances. Developing movement awareness may assist professional musicians in reducing tension and improve their well-being in playing.

What will participation involve? I would be pleased to invite professional musicians -without making any preference about the instrument they play- to answer some questions related to your playing.

What will happen during the research?
-Interviews will be carried out one-to-one in quite calm studio.
-Interviews will be video-recorded with your consent.
-Musicians will answer some questions and will play a calm slow piece of music they want to play three times from memory.
I am not looking for right or wrong answers or procedures, only for what every musician thinks about movement in order to help me to explore and develop movement awareness in playing.

What questions will be asked?
The musicians will be invited to answer about these topics:
1) Do you actually play?
2) When do you play, do you to experience some physical tension?
3) Do you usually use mental rehearsal?
4) Can you think of a calm piece of music, what piece are you thinking about?
5) Could you describe what you feel after playing?

Could there be problems for you if you take part?
I hope you will enjoy talking to me. If you want to stop talking, we will stop. Given the nature of the research, there are no physical or psychological risks.
If you have any problems with the project, please tell me or contact me.

Will doing the research help you?

Your participation will contribute to the development of knowledge. This research specifically will help me to explore and develop movement awareness in playing. I hope that the findings may be applied in the future and that help musicians to improve their well-being in playing.

Who will know that you have been in the research?

I will guarantee anonymity for all participants and I will change all names. I will keep images, tapes and notes in a safe place and I will use data only for academic conferences and scientific publications.

Do you have to take part?

You decide if you want to take part and, even if you say 'yes', you can drop out at any time or say that you don't want to answer some questions.
You can tell me that you will take part by signing the consent form.

Will you know about the research results?

I will send you a final summary of the findings.

Thank you for reading this leaflet.

Project Supervisor: Prof. Susan Hallam (Inst. of Education)
Researcher: Annamaria Minafra
PhD Student, Institute of Education

If you have any questions please contact me:
Tel: xxxxx
Email: xxxxx@ioe.ac.uk

APPENDIX 4 - Sample of Initial Coding of a Transcript -Task 1

Initial Coding and Annotation of Transcript from Task 1
Violin 1

Could you play few bars of a calm piece of music and then describe what you feel after playing?		
Viol.1	(while listening to the question, looking into space) sitting down (while indicating the chair with the index finger, and the keeping the violin and the bow with the left hand looking at the interviewer)?	L.S. Emb:O.M Reassurance request Emb:O.M L.I. I.G.
Int.	if you stay there I can see you (standing and preparing for playing, looking into space)	L.S.
Viol.1	(while moving the chair and preparing himself to play, being silent)	B.M. . S
Int.	Maybe you can go a little bit back... great okokok	
Viol.1	(preparing playing, taking the position and concentrate himself starting playing stopping playing)	0.3”
Int.	(finishing playing) Thank you. can... can you describe (while putting down the violin and looking at interviwer) your feelings about... everything you.. how you feel... tensions, relaxation	L.I.
Viol.1	(fast looking at his right blinking, then looking at interviewer) I’m… quite relaxed I think (looking at me blinking)	L.S.blink. L.I. S L.S.blink **taking time** Relaxed
Int.	yes	
Viol.1	So… I don't have (moving around the head looking at right and left) any tension to of course (deep breathing raising shoulder)…. and (looking at his right, breathing out relaxing shoulders) If if I have to think (while laughing, looking up at his right) to my my (looking at interviewer laughing) performance (while moving up his right arm in front of him) about my performance……maybe I would say something (laughing, moving all the trunk, and raising his right hand up in front of him) bad hem, no, I (bending down the lips) am relaxed	S B.M. L.S. Emb.S. B.M L.S. B.M S Emb.S L.S. L.I. Emb.L. B.M. Emb.S B.M. I.G. F.E. Self-criticism
Int.	It's not an evaluation about	
Viol.1	(interrupting) yea I know (while nodding and horizontally opening both arms, and then scratching the chin with the right hand, looking at interviewer)	B.M. S.T. L.I.

LEGENDA of CODES SYMBOLS

LEGENDA	
Verbal Codes	**Nonverbal Themes**
Reassurance request Taking time Relaxed Self-criticism	L.S. = Looking into Space Emb S./L= Embarrassed smile/ Laughing O.M =Object Manipulation S.T. = Self-Touching L.I.=Looking at the interviewer I.G= Iconic Gestures S = Silence B.M.= Body Movements F.E. = Face expression

APPENDIX 5A-

List of Initial Codes and Clustering Verbal Themes – prior to Task 1

1) Codes Musicians' Verbal Responses prior to Task 1

Asking permission
Contradiction
Reassurance from interviewer
Repeating instructions for completing the task
Procrastination
Speaking about the piece of music
Self-assessing
Taking time
Self-reflection
Total of 9 Initial Codes

2) 1st Step of Clustering Themes

1) Reassurance request
Ask permission
Reassurance from interviewer
2) Taking time
3) Self-reassurance
Contradiction
Procrastination
Repeating instruction completing task
Self-assessing
4) Self-reflection

3) 2nd Step of Clustering Themes

<table>
<tr><td>1) Reassurance request</td><td rowspan="8">NEEDING
REASSURANCE</td><td rowspan="9">A
N
X
I
E
T
Y</td></tr>
<tr><td>Ask permission</td></tr>
<tr><td>Reassurance from interviewer</td></tr>
<tr><td>2) Self-reassurance</td></tr>
<tr><td>Contradiction</td></tr>
<tr><td>Procrastination</td></tr>
<tr><td>Repeating instruction completing task</td></tr>
<tr><td>Self-assessing</td></tr>
<tr><td>3) Taking time</td><td></td></tr>
<tr><td>4) Self-reflection</td><td colspan="2">SELF-REFLECTION</td></tr>
<tr><td colspan="3">Repeating instruction completing task</td></tr>
<tr><td colspan="3">Taking time</td></tr>
</table>

At this stage:

2 Superordinate themes, 2 Subordinate themes,
4 Sub-themes, 7 Codes

APPENDIX 5B- List of Initial Codes of Nonverbal Themes-

Clusters of Themes prior to Task 1

NON VERBAL			
Looking interviewer	**Eyes Behaviour**	**KINESIC ENSEMBLE**	**ANXIETY**
Looking into space			
Closing eyes			
Looking camera			
Smiling	**Kind of Smile**		
Laughing			
Indicating instrument	**Gestures**		
Anticipatory gestures			
Beats			
Nodding	**Body Movements**		
Leaning forward			
Rocking			
Shoulder-shrugging			
Adam's apple up-and-down			
Raising eyebrows	**Facial Behaviour**		
Lowering eyebrows			
Narrowing the lips			
Rubbing thighs, ring tip, thumb	**Self-adaptors**		
Manipulating bow, instrument,			
Plucking strings			
Silence	**Silence**		
Silence	**Silence**	**SELF-REFLECTION**	

At this stage:
2 Superordinate themes, 1 Subordinate theme,
7 Sub-themes, 21 Codes

LIST OF TABLES AND FIGURES

Chapter 3 -Tables

Table 3.1 Musicians' nationality

INSTRUMENT	MUSICIANS NUMBER	COUNTRY
Piano	3	BRASIL, GREECE, CZECH REPUBLIC
Guitar	3	IRLAND, ITALY
Violin	3	SPAIN, BELGIUM
Viola	2	ITALY
Cello	2	ITALY
Recorder	2	DENIMARK, GREECE
Percussion	2	ITALY
Flute	1	ITALY
Oboe	1	ITALY
Clarinet	1	ITALY
Bassoon	1	UNITED KINGDOM
Harp	1	ITALO-BRITISH
TOTAL	**22**	

Table 3.2 Musicians' background and job

Musicians background	**Number of Musicians participants**	**Musicians' job**
Classical musical background	N. 20	Performers and teachers
Classical musical background	N. 1	Performer
Folk music field	N 1	Performer and teacher
Total	**N. 22**	

Table 3.3 Musicians' gender

MUSICIANS' GENDER		
Instrument	**Female**	**Male**
1.Piano 1	f	
2.Piano 2	f	
3.Piano 3	f	
4.Guitar 1		m
5. Guitar 2		m
6. Guitar 3	f	
7. Violin 1		m
8. Violin 2	f	
9. Violin 3		m
10. Viola 1		m
11. Viola 2		m
12. Cello 1		m
13. Cello 2	f	
14. Recorder 1	f	
15. Recorder 2	f	
16. Flute		m
17. Clarinet		m
18. Oboe		m
19. Bassoon	f	
20. Percussion 1		m
21.Percussion 2		m
22. Harp	f	
Total	**10**	**12**

Table. 3.4a Evaluation sheet

1st Performance					Instrument	Other (specify)
Anxiety	Very low 1	Low 2	Moderate 3	High 4	Very high 5	
Concentration	Very low 1	Low 2	Moderate 3	High 4	Very high 5	
Tempo	Slower 1	Same 2	Faster 3			
Dynamic contrasts	Very low 1	Low 2	Moderate 3	High 4	Very high 5	
Musical communication	Very low 1	Low 2	Moderate 3	High 4	Very high 5	
Intonation	Very poor 1	Poor 2	Adequate 3	Good 4	Very good 5	
Espressive Movements	Very poor 1	Poor 2	Moderate 3	High 4	Very high 5	
Accuracy of gesture	Very poor 1	Poor 2	Moderate 3	High 4	Very high 5	
Fluidity of gesture	Very poor 1	Poor 2	Moderate 3	High 4	Very high 5	
OTHER CONSIDERARTIONS:						

Table. 3.4b Evaluation sheet

2nd Performance					Instrument	Other (specify)
Anxiety	Very low 1	Low 2	Moderate 3	High 4	Very high 5	
Concentration	Very low 1	Low 2	Moderate 3	High 4	Very high 5	
Tempo	Slower 1	Same 2	Faster 3			
Dynamic contrasts	Very low 1	Low 2	Moderate 3	High 4	Very high 5	
Musical communication	Very low 1	Low 2	Moderate 3	High 4	Very high 5	
Intonation	Very poor 1	Poor 2	Adequate 3	Good 4	Very good 5	
Espressive Movements	Very poor 1	Poor 2	Moderate 3	High 4	Very high 5	
Accuracy of gesture	Very poor 1	Poor 2	Moderate 3	High 4	Very high 5	
Fluidity of gesture	Very poor 1	Poor 2	Moderate 3	High 4	Very high 5	
OTHER CONSIDERARTIONS:						

Table. 3.4c Evaluation sheet

3rd Performance Instrument						Other (specify)
Anxiety	Very low 1	Low 2	Moderate 3	High 4	Very high 5	
Concentration	Very low 1	Low 2	Moderate 3	High 4	Very high 5	
Tempo	Slower 1	Same 2	Faster 3			
Dynamic contrasts	Very low 1	Low 2	Moderate 3	High 4	Very high 5	
Musical communication	Very low 1	Low 2	Moderate 3	High 4	Very high 5	
Intonation	Very poor 1	Poor 2	Adequate 3	Good 4	Very good 5	
Espressive Movements	Very poor 1	Poor 2	Moderate 3	High 4	Very high 5	
Accuracy of gesture	Very poor 1	Poor 2	Moderate 3	High 4	Very high 5	
Fluidity of gesture	Very poor 1	Poor 2	Moderate 3	High 4	Very high 5	
OTHER CONSIDERARTIONS:						

Chapter 4 -Tables

Table 4.1 Verbal reactions before playing 1st task: anxiety

SETTING: VERBAL REACTIONS before PLAYING								
Musicians	**ANXIETY**							
	Take time before playing	**Needing Reassurance**						
		Reassurance request		**Self-reassurance**				
		Ask permission	Reassurance from interviewer	Repeating instruction completing task	Procrastination	Speaking on the piece of music	Contradiction	Self-assessing
1.Piano 1	0.49”			✓		✓		
2.Piano 2	0.28”					✓		
3.Guitar 1	0.36”		✓					
4.Guitar 2	0.45”		✓					✓
5.Guitar 3	0.30”	✓				✓		
6. Violin 1	0.16”	✓						
7. Violin 2	0.42”					✓		
8.Violin 3	0.33”			✓		✓	✓	
9.Viola 1	1.17”	✓	✓	✓			✓	
10.Viola 2	0.15”					✓	✓	
11.Cello 1	0.20”							
12.Cello 2	0.33”			✓				✓
13.Rec. 2	0.50”	✓	✓					
14.Flute	0.53”	✓	✓			✓		
15.Clar.	1.04”			✓		✓		
16.Oboe	3.23”		✓		✓			
17.Bass.	0.14”					✓		
18.Perc. 1	1.36”		✓	✓				
19.Perc. 2	2.03”	✓	✓		✓	✓		
TOTAL		**6**	**8**	**6**	**2**	**10**	**1**	**2**

Table 4.2 Nonverbal reactions before playing 1st task: anxiety/embarrassment

SETTING: NONVERBAL REACTIONS before PLAYING											
Musicians	**ANXIETY/EMBARRASSMENT**										
	Kinesic ensemble									**Self-adaptors**	**Silence**
	Eyes behaviour				**Gestures**		**Body movement**	**Facial behaviour**	**Smile**		
	Look Space	Look interviewer	Look camera	Closed eyes	Anticipatory	Iconic or simulation					
1.Piano 1	4	3	1	3	4	1	4	3	4	4	5
2.Piano 2	4	3	1	1	1	2	2	2	4	4	3
3.Guitar 1	4	3	1	1	3	3	3	3	1	3	4
4.Guitar 2	1	5	1	3	1	1	3	2	3	3	2
5.Guitar 3	4	3	1	1	1	1	3	2	4	3	3
6. Violin 1	4	2	1	1	1	4	4	2	1	4	2
7. Violin 2	3	2	4	1	1	4	3	2	5	2	4
8.Violin 3	4	3	1	1	1	1	2	3	3	3	2
9.Viola 1	4	4	1	1	1	1	4	4	4	5	5
10.Viola 2	2	2	1	1	1	1	1	1	1	3	2
11.Cello 1	3	3	1	1	1	2	4	2	1	4	1
12.Cello 2	4	3	2	1	1	1	1	3	4	4	4
13.Rec. 2	3	4	1	1	1	3	3	4	3	5	2
14.Flute	4	2	1	1	1	4	4	3	3	5	3
15.Clar.	3	4	1	1	1	3	3	3	3	4	3
16.Oboe	4	3	5	1	3	3	3	2	3	5	4
17.Bass.	1	5	1	1	1	1	3	1	1	3	1
18.Perc. 1	5	3	1	1	1	3	4	4	2	3	1
19.Perc. 2	4	2	2	1	1	3	4	3	4	4	2
20.Piano 3	1	5	1	1	1	1	2	1	1	1	1
21. Rec.1	1	5	1	1	1	1	2	1	3	1	2
22. Harp	1	5	1	1	1	1	1	1	3	1	1
Total	**17**	**22**	**4**	**2**	**3**	**11**	**19**	**17**	**16**	**19**	**17**

Table 4.3 Facial behaviour: eyebrows movements

Facial behaviour: eyebrows movements		
Musicians	**Lowering eyebrows**	**Raising eyebrows**
1.Piano 1	✓	
2.Viola 1	✓	✓
3.Oboe	✓	✓
4.Guitar 1		✓
5.Perc. 1		✓
6.Perc. 2		✓
7.Rec. 2		✓

Table 4.4 Types of smiling

TYPES of SMILING		
Musicians	**Embarrassment**	**Affiliation**
1.Piano 1	✓	
2.Piano 2	✓	
3.Guitar 2	✓	
4.Guitar 3		✓
5.Violin 2	✓	
6.Violin 3	✓	✓
7.Viola 1	✓	✓
8.Cello 2		✓
9.Rec. 2		✓
10.Flute		✓
13.Clar.	✓	✓
14.Oboe	✓	✓
15.Perc. 1	✓	
16.Perc. 2		✓
Total	**9**	**9**

Table 4.5 Self-adaptors exhibited prior to Task 1

SELF-ADAPTORS prior to TASK 1					
SELF-TOUCHING					OBJECT MANIPULATION
	RUBBING	STROKING	SCRATCHING	LIP-COMPRESSION	
1.Piano 1	thighs				
2.Piano 2	the top of the left thumb on other hand				
3.Guitar 1	right thumb, the ring tip				
4.Guitar 2			Chin		Plucking strings
5.Guitar 3					touching guitar neck
6. Violin 1					Moving fingers on neck violin
7.Violin 2					Manipulating violin
8. Violin 3					Moving fingers on neck violin
9.Viola 1					Manipulating viola and bow
10.Viola 2					Manipulating viola and bow
11. Cello 1					Rubbing fingers on one hand on the chair, manip. cello
12.Cello 2		Crossed fingers between them			Manipulating cello
13. Rec. 2				✓	Manipulating recorder
14.Flute	thighs	chin, beard		✓	
15.Clarinet		One thumb on the back other hand, cheek			Manipulating clarinet
16.Oboe	thigh	tip one hand with other hand			Reed sucking, reed manip., oboe manip.
17.Bass.					Bassoon manip.
18.Perc. 1					Drum-sticks manip.
19. Perc. 2			Eye		Drum-sticks manip., Marimba manip.

Chapter 5 -Tables

Table 5.1 Nonverbal communication after playing Task 1.

NONVERBAL COMMUNICATION AFTER TASK 1														
ANXIETY/EMBARRASSMENT through UNCONSCIOUS CUES													**SEMI-CONSCIOUS MOVEMENTS**	
Musicians	**Kinesic ensemble**										**Silence**	**Self-adaptors**		
	Eye behaviour				**Gestures**			**Body Mov**	**Facial behav.**	**Smile**			Kinaesthetic mov	Simulated mov
	Look space	Look Interviewer	Look camera	Closed eyes	Anticipatory	Iconic	Beats							
1.Piano1	5	3	1	5	1	1	1	4	4	2	5	5	3	1
2.Piano2	5	5	1	2	1	5	1	5	2	5	2	2	1	1
3.Piano3	3	5	1	1	1	1	1	2	2	2	2	1	5	2
4.Guit.1	5	2	1	2	2	1	1	3	2	5	5	3	1	1
5.Guit.2	5	4	1	2	2	2	3	3	2	4	4	2	1	1
6.Guit.3	5	5	1	1	1	2	2	3	2	4	3	3	2	2
7.Viol.1	4	3	1	1	1	2	1	4	2	4	2	2	1	1
8.Viol.2	4	3	1	1	1	1	1	3	1	2	2	1	4	3
9.Viol.3	5	5	1	2	1	3	3	3	3	3	2	2	1	2
10.Viola1	5	5	2	4	1	4	2	4	3	3	5	4	2	1
11.Viola2	5	5	1	2	2	4	5	5	4	2	2	5	1	2
12.Cello1	3	4	2	1	1	3	2	4	5	3	2	3	1	1
13.Cello2	3	5	2	1	2	2	4	3	2	4	2	2	1	2
14.Rec.1	5	5	1	1	2	2	2	3	2	5	3	3	3	1
15.Rec.2	5	5	1	3	3	2	3	4	2	2	3	5	1	1
16.Flute	5	5	2	2	2	1	2	4	2	4	2	5	1	1
17.Clar.	5	4	1	2	2	3	2	3	2	4	4	5	1	1
18.Oboe	4	5	3	2	1	4	2	5	4	5	1	4	1	1
19.Bass.	4	4	1	1	1	2	1	2	2	1	1	3	2	1
20.Perc.1	4	5	1	1	1	4	1	5	4	4	4	4	2	4
21.Perc.2	5	4	2	2	1	4	1	5	3	3	2	3	1	1
22.Harp	4	5	1	2	1	1	1	3	1	3	2	1	1	1
TOTAL	**22**	**22**	**6**	**13**	**8**	**16**	**12**	**22**	**20**	**21**	**20**	**19**	**8**	**7**

Table 5.2 Nonverbal communication: Differences of eye behaviour prior to and after playing Task 1.

Differences Eye behaviour before and after playing								
Musicians	**Looking space**		**Looking Interviewer**		**Looking camera**		**Closing eyes**	
	Bef play	**After play**	Bef play	**Aft play**	Bef play	**Af play**	Bef play	**Af play**
1.Piano1	4	**5**	3	**3**	1	**1**	3	**5**
2.Piano2	4	**5**	3	**5**	1	**1**	1	**2**
3.Piano3	4	**3**	3	**5**	1	**1**	1	**1**
4.Guit.1	1	**5**	5	**2**	1	**1**	3	**2**
5.Guit.2	4	**5**	3	**4**	1	**1**	1	**2**
6.Guit.3	4	**5**	2	**5**	1	**1**	1	**1**
7.Viol.1	3	**4**	2	**3**	1	**1**	1	**1**
8.Viol.2	4	**4**	3	**3**	4	**1**	1	**1**
9.Viol.3	4	**5**	4	**5**	1	**1**	1	**2**
10.Viola1	3	**5**	2	**5**	1	**2**	1	**4**
11.Viola2	3	**5**	3	**5**	1	**1**	1	**2**
12.Cello1	4	**3**	3	**4**	1	**2**	1	**1**
13.Cello2	3	**3**	4	**5**	2	**2**	1	**1**
14.Rec.1	4	**5**	2	**5**	1	**1**	1	**1**
15.Rec.2	3	**5**	4	**5**	1	**1**	1	**3**
16.Flute	4	**5**	3	**5**	1	**2**	1	**2**
17.Clar.	1	**5**	5	**4**	1	**1**	1	**2**
18.Oboe	5	**4**	3	**5**	5	**3**	1	**2**
19.Bassoon	4	**4**	2	**4**	2	**1**	1	**1**
20.Perc.1	1	**4**	5	**5**	1	**1**	1	**1**
21.Perc.2	1	**5**	5	**4**	1	**2**	1	**2**
22.Harp	1	**4**	5	**5**	1	**1**	1	**2**
TOTAL	**17**	**22**	**22**	**22**	**4**	**6**	**2**	**13**

Table 5.3 Nonverbal communication: Gesture frequences prior to and after playing Task 1

GESTURES BEFORE and AFTER PLAYING TASK 1					
Musicians	ANTICIPATORY		ICONIC		BEATS
	Bef. play	**After play**	Bef. play	**After play**	**After play**
1.Piano 1	4	**1**	1	**1**	**1**
2. Piano 2	1	**1**	2	**5**	**1**
3. Piano 3	3	**1**	3	**1**	**1**
4. Guitar 1	1	**2**	1	**1**	**1**
5. Guitar 2	1	**3**	1	**2**	**3**
6. Guitar 3	1	**1**	4	**2**	**2**
7. Violin 1	1	**1**	4	**2**	**1**
8.Violin 2	1	**1**	1	**1**	**1**
9. Violin 3	1	**1**	1	**3**	**3**
10. Viola 1	1	**1**	1	**4**	**2**
11. Viola 2	1	**2**	2	**4**	**5**
12. Cello 1	1	**1**	1	**3**	**2**
13. Cello 2	1	**2**	3	**2**	**4**
14. Rec. 1	1	**2**	4	**2**	**2**
15. Rec. 2	1	**3**	3	**2**	**3**
16. Flute	3	**2**	3	**1**	**2**
17. Clar.	1	**2**	1	**3**	**2**
18. Oboe	1	**1**	3	**4**	**2**
19. Bass.	1	**1**	3	**2**	**1**
20. Perc. 1	1	**1**	1	**4**	**1**
21. Perc. 2	1	**1**	1	**4**	**1**
22. Harp	1	**1**	1	**1**	**1**
TOTAL	3	**8**	11	**16**	**12**

Table 5.4 Nonverbal communication: Frequency of Body Movements before and after palying Task 1

BODY MOVEMENTS PERFORMED PRIOR to and AFTER TASK 1		
MUSICIANS	Bef. play	**Af. play**
1.Piano 1	4	4
2. Piano 2	2	5
3. Piano 3	3	2
4. Guitar 1	3	3
5. Guitar 2	3	3
6. Guitar 3	4	3
7. Violin 1	3	4
8.Violin 2	2	3
9. Violin 3	4	3
10. Viola 1	1	4
11. Viola 2	4	5
12. Cello 1	1	4
13. Cello 2	3	3
14. Rec. 1	4	3
15. Rec. 2	3	4
16. Flute	3	4
17. Clarinet	3	3
18. Oboe	4	5
19. Bass.	4	2
20. Perc. 1	2	5
21. Perc. 2	2	5
22. Harp	1	3
TOTAL	19	**22**

Table 5.5 Nonverbal communication: body movements after playing Task 1

BODY MOVEMENTS CLASSIFICATION AFTER PLAYING TASK 1												
Musicians	Lean forward	Lean backwards	Raise shoulders	Shake head	Turn head	Head backward	Head-tilt-side	Nodding	Adam apple jump	Rocking	Trembling leg	Step ahead/ back
1.Piano 1	✓	✓										
2. Piano2	✓	✓	✓	✓				✓		✓		
3. Piano3							✓					
4. Guit 1				✓				✓				
5. Guit 2			✓	✓								
6. Guit 3				✓			✓	✓	✓	✓		
7. Viol 1			✓					✓				
8.Viol 2												✓
9. Viol 3							✓	✓				
10. Viola1		✓			✓			✓				
11. Viola2	✓		✓		✓		✓	✓	✓			
12. Cello1			✓					✓			✓	
13. Cello2			✓		✓							
14. Rec. 1			✓	✓	✓		✓	✓				
15. Rec. 2			✓				✓	✓		✓		
16. Flute			✓	✓	✓	✓		✓				
17. Clar.		✓				✓			✓		✓	
18. Oboe	✓		✓	✓			✓	✓	✓			
19. Bass.			✓				✓					
20. Perc1	✓	✓	✓	✓		✓	✓	✓				
21. Perc2	✓		✓	✓		✓	✓					✓
22. Harp	✓			✓	✓		✓					
TOTAL	**7**	**5**	**13**	**10**	**6**	**4**	**11**	**13**	**4**	**3**	**2**	**2**

Table 5.6 Facial behaviour values before and after playing Task 1

FACIAL BEHAVIOUR VALUES BEFORE AND AFTER PLAYING TASK 1		
MUSICIANS	Before playing	**After playing**
1.Piano 1	3	**4**
2. Piano 2	2	**2**
3. Piano 3	3	**2**
4. Guitar 1	2	**2**
5. Guitar 2	2	**2**
6. Guitar 3	2	**2**
7. Violin 1	2	**2**
8.Violin 2	3	**1**
9. Violin 3	4	**3**
10. Viola 1	1	**3**
11. Viola 2	2	**4**
12. Cello 1	3	**5**
13. Cello 2	4	**2**
14. Rec. 1	3	**2**
15. Rec. 2	3	**2**
16. Flute	2	**2**
17. Clarinet	1	**2**
18. Oboe	4	**4**
19. Bassoon	3	**2**
20. Perc. 1	1	**4**
21. Perc. 2	1	**3**
22. Harp	1	**1**
TOTAL	17	**20**

Table 5.7 Facial behaviour performed before and after palying Task 1

FACIAL BEHAVIOUR BEFORE and AFTER PLAYING TASK 1										
MUSICIANS	Raising eyebrows		Lowering eyebrows		Narrowing lips		Lips down	Hiding face	Parted lips	Relaxed face
	Bef play	**Af play**	Bef play	**Af play**	Bef play	**Af play**				
1.Piano 1		✓	✓							
2. Piano 2										
3. Piano 3										✓
4. Guitar 1	✓								✓	
5. Guitar 2		✓				✓				
6. Guitar 3		✓								
7. Violin 1					✓		✓			
8.Violin 2										✓
9. Violin 3		✓							✓	
10. Viola 1	✓		✓		✓			✓		
11. Viola 2		✓		✓		✓				
12. Cello 1								✓		
13. Cello 2						✓	✓			
14. Rec. 1									✓	
15. Rec. 2	✓								✓	
16. Flute										
17. Clar.					✓	✓			✓	
18. Oboe	✓	✓	✓							
19. Bass.						✓				
20. Perc. 1	✓	✓					✓		✓	
21. Perc. 2	✓	✓				✓		✓		
22. Harp										
TOTAL	6	**8**	3	**1**	3	**6**	**3**	**3**	**6**	**2**

Table 5.8 Smiling frequency before and after playing Task 1 and kinds of smiling identified after playing

SMILING FREQUENCY before and after PLAYING TASK 1-KINDS of SMILING after PLAYING					
MUSICIANS	SMILING before T1	**SMILING after T1**	**KINDS of SMILING AFTER PLAYING TASK 1**		
			EMBARRASSED	NERVOUS	AFFILIATION
1.Piano 1	4	**2**	✓		✓
2.Piano 2	4	**5**	✓		
3.Piano 3	1	**2**			✓
4.Guitar 1	1	**5**	✓		
5.Guitar 2	3	**4**		✓	
6.Guitar 3	4	**4**	✓		✓
7.Violin 1	1	**4**		✓	
8.Violin 2	5	**2**	✓		✓
9.Violin 3	3	**3**	✓		✓
10.Viola 1	4	**3**	✓		✓
11.Viola 2	1	**2**	✓		
12.Cello 1	1	**3**	✓		
13.Cello 2	4	**4**	✓		✓
14.Rec.1	3	**5**	✓		✓
15.Rec. 2	3	**2**			✓
16.Flute	3	**4**	✓		✓
17.Clar.	3	**4**	✓		
18.Oboe	3	**5**		✓	
19.Bass.	1	**1**			
20.Perc 1	2	**4**	✓		✓
21.Perc 2	4	**3**	✓		✓
22.Harp	3	**3**			✓
TOTAL	**16**	**21**	**13**	**3**	**13**

Table 5.9 Silence performed before and after playing Task 1

MUSICIANS'S SILENCE before and after PLAYING TASK 1		
Musicians	Before playing	**After palying**
1.Piano 1	5	5
2.Piano 2	3	2
3.Piano 3	1	2
4.Guit. 1	4	5
5.Guit. 2	2	4
6.Guit. 3	3	3
7.Violin 1	2	2
8.Violin 2	4	2
9.Violin 3	2	2
10.Viola 1	5	5
11.Viola 2	2	4
12.Cello 1	1	2
13.Cello 2	4	2
14.Recorder 1	2	3
15.Recorder 2	2	3
16.Flute	3	2
17.Clarinet	3	5
18.Oboe	4	1
19.Bassoon	1	1
20.Percussion 1	1	4
21.Percussion 2	2	2
22.Harp	1	2
TOTAL	**17**	**20**

Table 5.10 Self-adaptors frequency before and after playing Task 1

SELF-ADAPTORS FREQUENCY BEFORE AND AFTER PLAYING TASK 1		
Musicians	Before playing	**After playing**
1.Piano 1	4	5
2.Piano 2	4	2
3.Piano 3	3	1
4.Guit. 1	3	3
5.Guit. 2	3	2
6.Guit. 3	4	3
7.Violin 1	2	2
8.Violin 2	3	1
9.Violin 3	5	2
10.Viola 1	3	4
11.Viola 2	4	5
12.Cello 1	4	3
13.Cello 2	5	2
14.Recorder 1	5	3
15.Recorder 2	4	5
16.Flute	5	5
17.Clarinet	3	5
18.Oboe	3	4
19.Bassoon	4	3
20.Percussion 1	1	4
21.Percussion 2	1	3
22.Harp	1	1
TOTAL	**19**	**19**

Chapter 6 –Tables

Table 6.1 Verbal information: State anxiety after playing TASK 1

STATE ANXIETY AFTER PLAYING TASK 1							
DIFFICULTIES in REFLECTING and VERBALIZING BODY FEELINGS							
	Awareness of being anxious or tense	Feeling tense	SELF-PROTECTION				
			Declaring Relaxation but concealing anxiety	Declaring unawareness	Self-Justification Self-criticism	Intellectual answer/ misunderstanding	Speaking about Piece of music/instrument
1.Piano 1	✓						
2.Piano 2			✓				✓
3.Guitar 1			✓				
4.Guitar 2		✓			✓		
5.Guitar 3	✓						
6.Violin 1			✓				
7.Violin 3				✓			
8.Viola 1		✓			✓		
9.Viola 2					✓	✓	
10.Cello 1		✓			✓		✓
11.Cello 2					✓	✓	
12.Rec.1	✓				✓		
13.Rec.2						✓	✓
14.Flute			✓		✓		✓
15.Clar.				✓			✓
16.Oboe		✓			✓		
17.Bass.			✓		✓		
18.Perc.1					✓	✓	
19.Perc.2		✓			✓		✓
TOTAL	**3**	**5**	**5**	**2**	**11**	**4**	**7**

Table 6.2 Verbal information: being relaxed after playing Task 1

BEING RELAXED after PLAYING TASK 1		
	Kinaesthetic thought	Speaking piece of music
1.Piano 3	✓	
2.Violin 2	✓	
3. Harp		✓

Chapter 7 –Tables & Figures

Table 7.1 Musicians' verbal reactions prior to performing Mental Rehearsal in Task 2

Musicians' verbal reactions prior performing Mental Rehearsal										
Musicians	**Uncertainty and State anxiety**								**Self-reflection**	
	Needing reassurance						**Defensive reactions**		**Take time**	**Self-explain task instructions**
	Taking time	**Self-reassuring reactions**			**Reassurance request**					
		Self-explain task instructions	Repeat Instructions task	Need comm. start mental rehearsal	Ask confirmation/ explanations	Ask permission	Misunderstand task	Reluctant perform task		
1.Piano1	2.19	✓			✓					
2.Piano2	1.04				✓		✓	✓		
3.Piano3									0.03	✓
4.Guitar1	0.48	✓	✓							
5.Guitar 2	0.02									
6.Guitar3	0.32	✓			✓	✓				
7.Violin1	0.03									
8.Violin2									0.27	✓
9Violin3	0.03									
10.Viola1	0.22	✓			✓					
11.Viola2	0.10	✓		✓						
12.Cello1	0.35	✓			✓			✓		
13.Cello2	0.05	✓		✓						
14.Rec1									0.02	
15.Rec2	0.17	✓				✓				
16.Flute	0.33	✓	✓							
17.Clar.	1.07	✓			✓		✓			
18.Oboe	0.12	✓								
19.Bass.	0.18	✓								
20.Perc1	0.16						✓			
21.Perc2	0.13			✓	✓					
22.Harp									0.02	
TOTAL		**12**	**2**	**3**	**7**	**2**	**3**	**2**		**2**

Table 7.2 Taking time differences prior to performing 1st and 2nd Task

TAKING TIME DIFFERENCES prior TASK 1 and TASK 2		
Musicians	Prior Task 1	**Prior Task 2**
1.Piano1	0.49”	**2.19”**
2.Piano2	0.28”	**1.04”**
3.Piano3	0.02”	**0.03”**
4.Guitar1	0.36”	**0.48”**
5.Guitar 2	0.45”	**0.02”**
6.Guitar3	0.30”	**0.32”**
7.Violin1	0.16”	**0.03”**
8.Violin2	0.42”	**0.27”**
9Violin3	0.33”	**0.03”**
10.Viola1	1.17”	**0.22”**
11.Viola2	0.14”	**0.10”**
12.Cello1	0.20”	**0.35”**
13.Cello2	0.30”	**0.05”**
14.Recorder1	0.10”	**0.02”**
15.Recorder2	0.50”	**0.17”**
16.Flute	0.53”	**0.33”**
17.Clarinet	1.04”	**1.07”**
18.Oboe	3.27”	**0.12”**
19.Bassoon	0.14”	**0.18”**
20.Percussion1	1.36”	**0.16”**
21.Percussion2	2.03”	**0.13”**
22.Harp	0.01”	**0.02”**

Table 7.3 Summary of musicians’ taking time between prior to 1st and 2nd Task

SUMMARY MUSICIANS’ TAKING TIME between prior TASK 1 and TASK 2			
	Taking time No significant variation	**Taking time Increasing**	**Taking time Decreasing**
Musicians number	**4**	**5**	**13**

Table 7.4 Musicians' nonverbal communication prior to playing Task 2

NONVERBAL COMMUNICATION PRIOR PLAYING TASK 2														
Musicians	ANXIETY/EMBARRASSMENT THROUGH UNCONSCIOUS CUES													
	Kinesic ensemble										**Silence**	**Self-adaptors**	**SEMICONSCIOUS MOVEMENTS**	
	Eye behaviour				**Gesture**			**Body movement**	**Facial behaviour**	**Smile**				
	Look space	Look Interviewer	Look camera	Closed eyes	Anticipatory	Iconic	Beats						Kinaesthetic mov	Simulated mov
1.Piano1	4	5	1	4	2	2	1	3	3	4	5	1	2	1
2.Piano2	5	4	1	1	1	2	3	5	2	5	4	3	2	1
3.Piano3	2	2	1	1	1	1	1	2	1	1	1	1	1	1
4.Guit.1	2	5	1	2	1	1	1	5	5	1	4	4	1	2
5.Guit.2	2	4	1	1	1	1	1	3	2	1	1	1	1	1
6.Guit.3	3	5	1	2	1	1	1	3	1	2	2	1	1	1
7.Viol.1	1	2	1	1	1	1	1	2	1	1	1	1	1	1
8.Viol.2	1	5	1	1	1	1	1	3	1	5	1	1	2	2
9.Viol.3	3	2	1	1	1	1	1	2	2	2	1	2	1	1
10.Viola1	3	3	1	2	1	2	1	3	2	1	1	2	1	2
11.Viola2	2	4	1	2	1	1	1	4	2	3	1	2	1	1
12.Cello1	3	5	1	1	1	1	1	5	3	3	1	4	1	2
13.Cello2	2	3	1	2	1	1	1	2	1	1	1	2	1	1
14.Rec.1	1	2	1	1	1	1	1	2	1	1	1	1	1	1
15.Rec.2	2	3	1	2	1	2	1	2	2	3	1	3	1	1
16.Flute	2	5	1	1	2	1	2	4	4	2	1	3	1	1
17.Clarin	4	5	1	2	3	1	1	5	2	5	5	2	1	1
18.Oboe	2	2	1	1	1	1	1	2	3	2	1	1	1	1
19.Bass.	2	3	1	1	1	1	1	1	1	1	2	2	1	1
20.Perc.1	1	2	1	1	1	1	1	2	1	2	1	1	1	1
21.Perc.2	2	4	1	1	1	1	1	5	1	2	1	1	1	1
22.Harp	2	3	1	1	1	1	1	1	1	2	1	1	1	1
TOTAL	**18**	**22**	**0**	**8**	**3**	**4**	**2**	**20**	**12**	**14**	**6**	**11**	**3**	**4**

Table 7.5 Differences of Eye behaviour prior to 1st 2nd Task.

Differences of Eye behaviour prior Task 1 and Task 2								
Musicians	**Looking space**		**Looking Interviewer**		**Looking camera**		**Closing eyes**	
	Prior T. 1	**Prior T. 2**	Prior T. 1	**Prior T. 2**	Prior T. 1	**Prior T. 2**	Prior T. 1	**Prior T. 2**
1.Piano1	4	**4**	3	**5**	1	**1**	3	**4**
2.Piano2	2	**5**	3	**4**	1	**1**	1	**1**
3.Piano3	1	**2**	5	**2**	1	**1**	1	**1**
4.Guit.1	4	**2**	3	**5**	1	**1**	1	**2**
5.Guit.2	1	**2**	5	**4**	1	**1**	3	**1**
6.Guit.3	3	**3**	3	**5**	1	**1**	1	**2**
7.Viol.1	4	**1**	2	**2**	1	**1**	1	**1**
8.Viol.2	3	**1**	2	**5**	4	**1**	1	**1**
9.Viol.3	4	**3**	3	**2**	1	**1**	1	**1**
10.Viola1	4	**3**	4	**3**	1	**1**	1	**2**
11.Viola2	3	**2**	2	**4**	1	**1**	1	**2**
12.Cello1	3	**3**	3	**5**	1	**1**	1	**1**
13.Cello2	4	**2**	3	**3**	2	**1**	1	**2**
14.Rec.1	1	**1**	5	**2**	1	**1**	1	**1**
15.Rec.2	3	**2**	4	**3**	1	**1**	1	**2**
16.Flute	4	**2**	2	**5**	1	**1**	1	**1**
17.Clar.	3	**4**	4	**5**	1	**1**	1	**2**
18.Oboe	4	**2**	3	**2**	5	**1**	1	**1**
19.Bass.	1	**2**	5	**3**	1	**1**	1	**1**
20.Perc.1	5	**1**	3	**2**	1	**1**	1	**1**
21.Perc.2	4	**2**	2	**4**	2	**1**	1	**1**
22.Harp	1	**2**	5	**3**	1	**1**	1	**1**
TOTAL	**17**	**18**	**22**	**22**	**4**	**0**	**2**	**8**

Table 7.6 Summary of differences musicians' eye behaviourbetween prior to 1st 2nd Task

SUMMARY DIFFERENCES MUSICIANS' EYES BEHAVIOUR between prior to 1st and 2nd TASK			
	Musicians number Same	**Musicians number Increasing**	**Musicians number Decreasing**
Looking space	4	6	12
Looking Interviewer	2	10	10
Looking camera	18	0	4
Closing eyes	13	8	1

Figure 7.1 Looking into space prior to 1st and 2nd Task

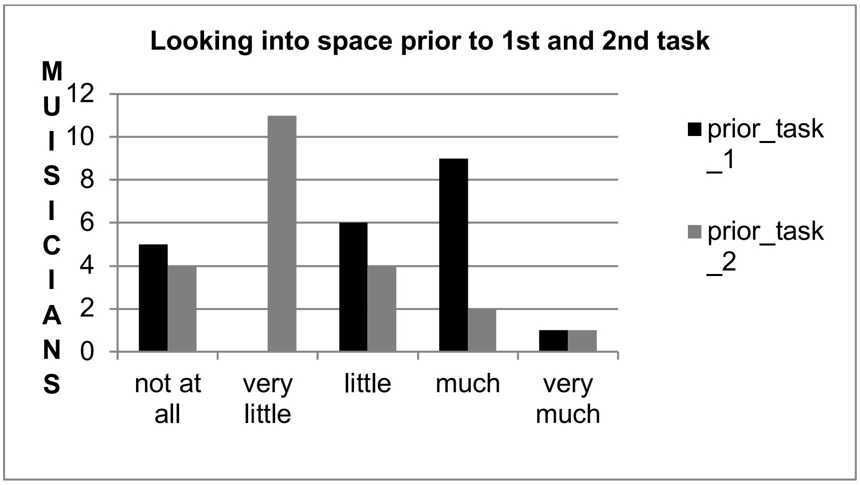


Figure 7.2 Looking at the interviewer prior to 1st and 2nd Task

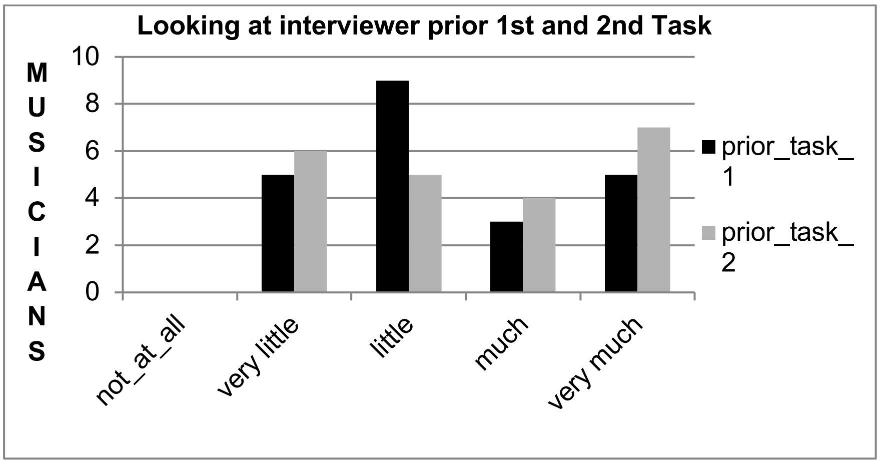


Figure 7.3 Looking at the camera prior to 1st and 2nd Task

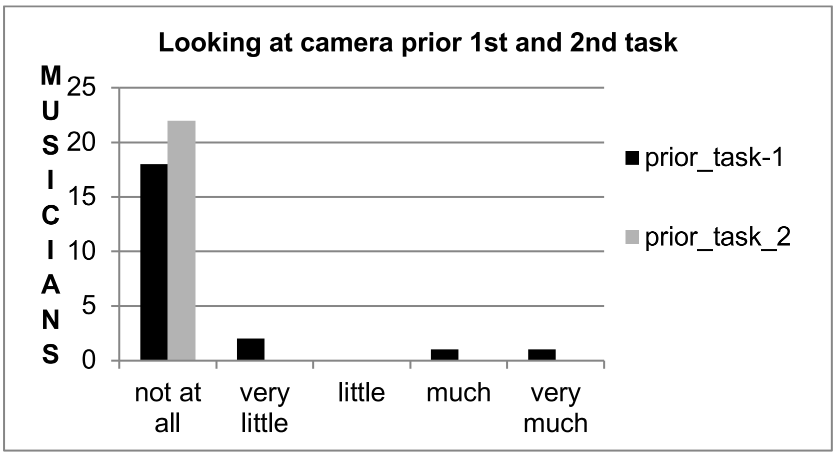


Figure 7.4 Closing eyes prior to 1st and 2nd Task

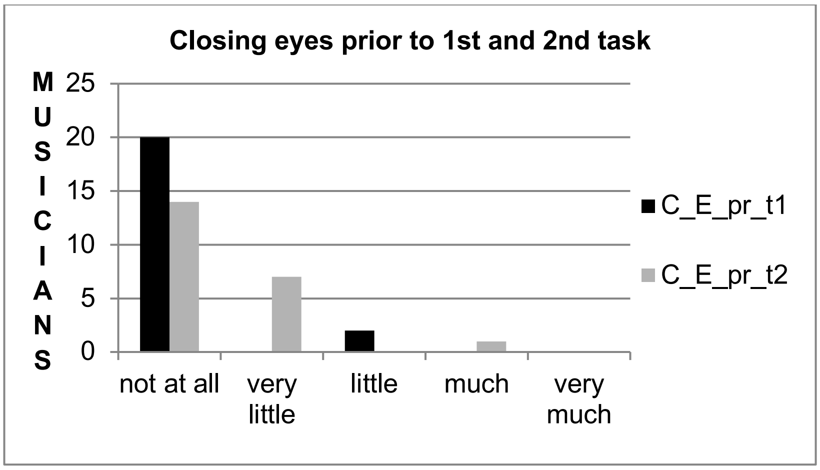


Table 7.7 Frequency of gestures performed prior 1st and 2nd Task

FREQUENCY of GESTURES PERFORMED PRIOR 1st & 2nd TASK					
Musicians	ANTICIPATORY		ICONIC		BEATS
	Prior Task 1	**Prior Task 2**	Prior Task 1	**Prior Task 2**	**Prior Task 2**
1.Piano 1	4	**2**	1	**2**	1
2. Piano 2	1	**1**	2	**2**	3
3. Piano 3	1	**1**	3	**1**	1
4. Guitar 1	3	**1**	1	**1**	1
5. Guitar 2	1	**1**	1	**1**	1
6. Guitar 3	1	**1**	4	**1**	1
7. Violin 1	1	**1**	4	**1**	1
8.Violin 2	1	**1**	1	**1**	1
9. Violin 3	1	**1**	1	**1**	1
10. Viola 1	1	**1**	1	**2**	1
11. Viola 2	1	**1**	2	**1**	1
12. Cello 1	1	**1**	1	**1**	1
13. Cello 2	1	**1**	3	**1**	1
14. Rec. 1	1	**1**	4	**1**	1
15. Rec. 2	1	**1**	3	**2**	1
16. Flute	1	**2**	3	**1**	2
17. Clarinet	1	**3**	1	**1**	1
18. Oboe	3	**1**	3	**1**	1
19. Bassoon	1	**1**	3	**1**	1
20. Perc. 1	1	**1**	1	**1**	1
21. Perc. 2	1	**1**	1	**1**	1
22. Harp	1	**1**	1	**1**	1
TOTAL	3	**3**	11	**4**	**2**

Figure 7.5 Anticipatory gestures performed prior to 1st and 2nd Task

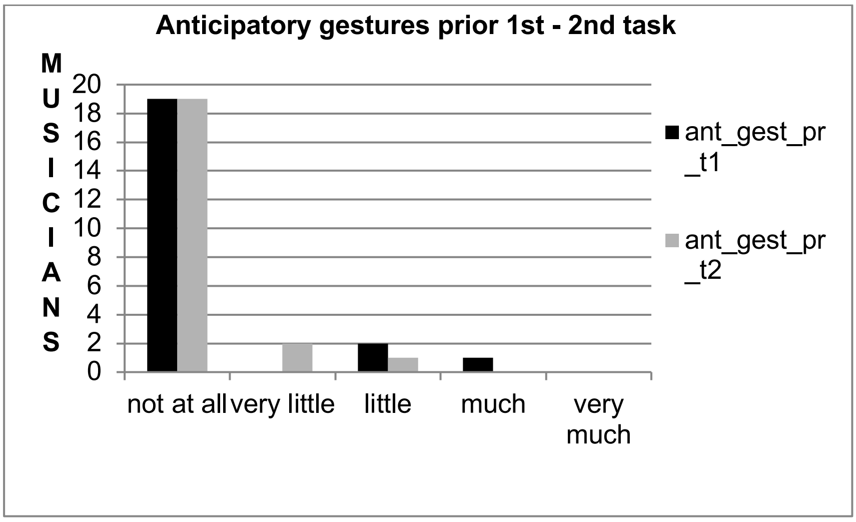


Figure 7.6 Iconic gestures performed prior to 1st and 2nd Task

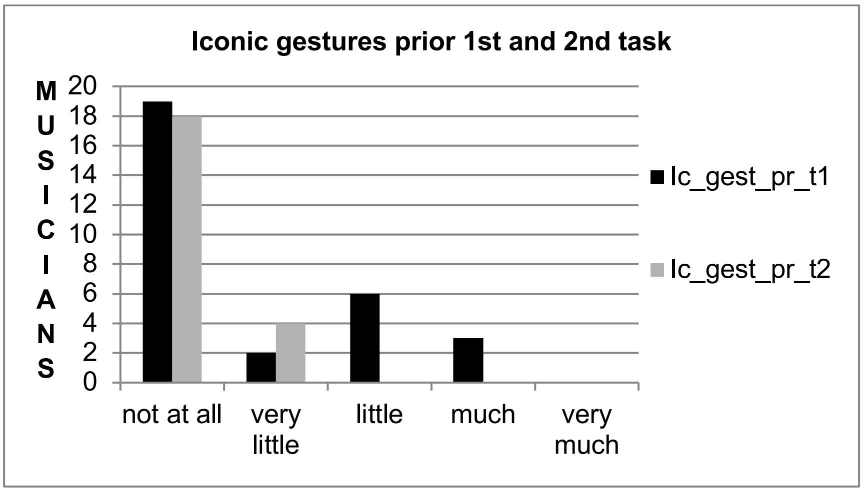


Table 7.8 Frequency of body movement performed prior to 1st and 2nd Task

FREQUENCY of BODY MOVEMENT PERFORMED prior TASK 1 and TASK 2		
	Body movement	
Musicians	Prior Task 1	**Prior Task 2**
1.Piano 1	4	**3**
2. Piano 2	2	**5**
3. Piano 3	2	**2**
4. Guitar 1	3	**5**
5. Guitar 2	3	**3**
6. Guitar 3	3	**3**
7. Violin 1	4	**2**
8.Violin 2	3	**3**
9. Violin 3	2	**2**
10. Viola 1	4	**3**
11. Viola 2	1	**4**
12. Cello 1	4	**5**
13. Cello 2	1	**2**
14. Recorder 1	2	**2**
15. Recorder 2	3	**2**
16. Flute	4	**4**
17. Clarinet	3	**5**
18. Oboe	3	**2**
19. Bassoon	3	**1**
20. Percussion 1	4	**2**
21. Percussion 2	4	**5**
22. Harp	1	**1**
TOTAL	19	**20**

Table 7.9 Summary of differences body movement performed prior to 1st and 2nd Task

SUMMARY: DIFFERENCES of BODY MOVEMENT FREQUENCY PERFORMED prior 1st and 2nd TASK			
	Musicians number Same	**Musicians number Increasing**	**Musicians number Decreasing**
Musicians number	8	7	7

Figure 7.7 Body movement performed performed prior to 1st and 2nd Task

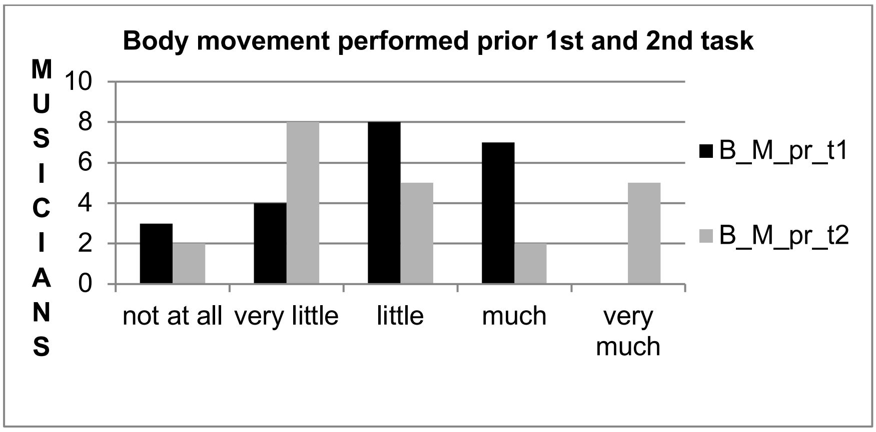


Table 7.10 Body movement classification performed during prior to Task 2

BODY MOVEMENT CLASSIFICATION PRIOR TASK 2										
Musicians	Leaning forward	Leaning backwards	Shrugging	Shaking head	Head backward	Head-tilt-side	Nodding	Adam apple jump	Rocking	Crossed arms
1.Piano 1							✓			
2. Piano 2		✓		✓			✓			
3. Piano 3						✓	✓			
4. Guitar 1		✓	✓				✓	✓		
5. Guitar 2		✓					✓	✓		
6. Guitar 3							✓			
7. Violin 1							✓			
8.Violin 2			✓				✓			
9. Violin 3							✓			
10. Viola 1							✓			
11. Viola 2						✓	✓			
12. Cello 1			✓			✓	✓			
13. Cello 2							✓			
14. Rec. 1						✓	✓			
15. Rec. 2							✓		✓	
16. Flute	✓		✓				✓			✓
17. Clar.	✓	✓			✓					
18. Oboe							✓			
19. Bass.										
20. Perc. 1							✓			
21. Perc. 2						✓	✓		✓	
22. Harp										
TOTAL	**2**	**4**	**4**	**1**	**1**	**5**	**19**	**2**	**2**	**1**

Table 7.11 Frequency of facial behaviour performed prior to 1st and 2nd Task

FREQUENCY of FACIAL BEHAVIOUR prior 2nd and 2ndTASK		
	Facial behaviour	
Musicians	Prior T. 1	**Prior T. 2**
1.Piano 1	3	**3**
2. Piano 2	2	**2**
3. Piano 3	1	**1**
4. Guitar 1	3	**5**
5. Guitar 2	2	**2**
6. Guitar 3	2	**1**
7. Violin 1	2	**1**
8.Violin 2	2	**1**
9. Violin 3	3	**2**
10. Viola 1	4	**2**
11. Viola 2	1	**2**
12. Cello 1	2	**3**
13. Cello 2	3	**1**
14. Recorder 1	1	**1**
15. Recorder 2	4	**2**
16. Flute	3	**4**
17. Clarinet	3	**2**
18. Oboe	2	**3**
19. Bassoon	1	**1**
20. Percussion 1	4	**1**
21. Percussion 2	3	**1**
22. Harp	1	**1**
TOTAL	17	**12**

Table 7.12 Summary of facial behaviour performed prior to 1st and 2nd Task

SUMMARY: DIFFERENCES of FACIAL BEHAVIOUR FREQUENCY between prior 2nd and 2ndTASK			
Musicians number	**Same**	**Musicians number Increasing**	**Musicians number Decreasing**
	7	5	10

Figure 7.8 Frequency of facial behaviour performed prior to 1st and 2nd Task

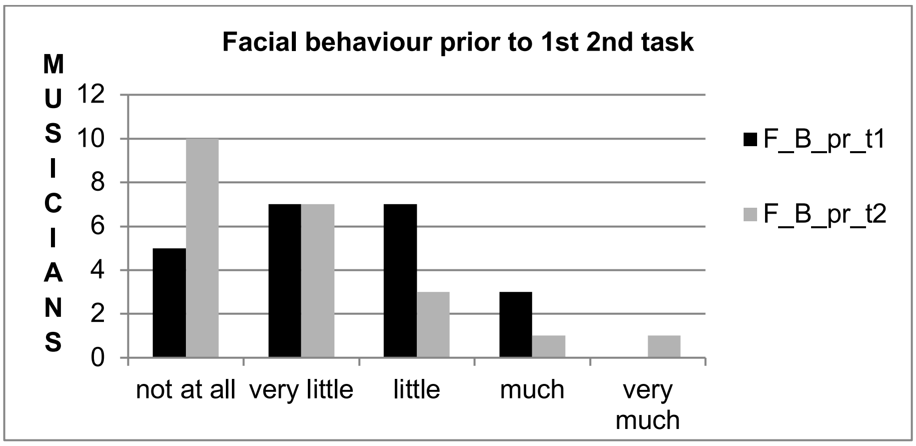


Table 7.13 Facial behaviour performed during prior to 1st and 2nd Task

FACIAL BEHAVIOUR Prior TASK 1st 2nd TASK									
Musicians	Raising eyebrows		Lowering eyebrows		Narrowing lips		Lips down	Parted lips	Hiding face
	Prior T.1	**Prior T.2**	Prior T.1	**Prior T.2**	Prior T.1	**Prior T.2**	**Prior T.2**	**Prior T.2**	**Prior T.2**
1.Piano 1			✓			✓		✓	
2. Piano 2				✓					
3. Piano 3									
4. Guitar 1	✓	✓				✓		✓	
5. Guitar 2								✓	
6. Guitar 3									
7. Violin 1					✓				
8.Violin 2									
9. Violin 3								✓	
10. Viola 1	✓		✓	✓	✓				
11. Viola 2				✓					
12. Cello 1						✓			✓
13. Cello 2									
14. Rec. 1									
15. Rec. 2	✓	✓							
16. Flute				✓		✓			
17. Clar.					✓		✓		
18. Oboe	✓	✓	✓			✓			
19. Bass.									
20. Perc. 1	✓								
21. Perc. 2	✓								
22. Harp									
TOTAL	**6**	**3**	**4**	**4**	**3**	**5**	**1**	**4**	**1**

Table 7.14 Smiling frequency prior to playing 1st and 2nd Tast-
Kinds of smiling prior Task 2

SMILING FREQUENCY prior 1st and 2nd TASK					
Musicians	**Smiling**				
	Prior T. 1	**Prior T. 2**	Embarrassed	Affiliation	Nervous
1.Piano1	4	**4**		✓	✓
2.Piano2	4	**5**	✓		
3.Piano3	1	**1**			
4.Guit.1	1	**1**			
5.Guit.2	3	**1**			
6.Guit.3	4	**2**		✓	
7.Viol.1	1	**1**			
8.Viol.2	5	**5**		✓	✓
9.Viol.3	3	**2**	✓		
10.Viola1	4	**1**			
11.Viola2	1	**3**	✓		✓
12.Cello1	1	**3**	✓	✓	
13.Cello2	4	**1**			
14.Rec.1	3	**1**			
15.Rec.2	3	**3**	✓		
16.Flute	3	**2**		✓	
17.Clar.	3	**5**	✓	✓	
18.Oboe	3	**2**	✓		
19.Bassoon	1	**1**			
20.Perc.1	2	**2**		✓	
21.Perc.2	4	**2**	✓		
22.Harp	3	**2**		✓	
TOTAL	16	**14**	**8**	**8**	**3**

Table 7.15 Summary of Smiling prior to 1st and 2nd Task

SUMMARY: DIFFERENCES of SMILING FREQUENCY prior 1st and 2nd TASK			
Musicians number	**Same behaviour**	**Musicians number Increasing**	**Musicians number Decreasing**
	8	4	10

Figure 7.9 Frequency of smiling performed prior to 1st and 2nd Task

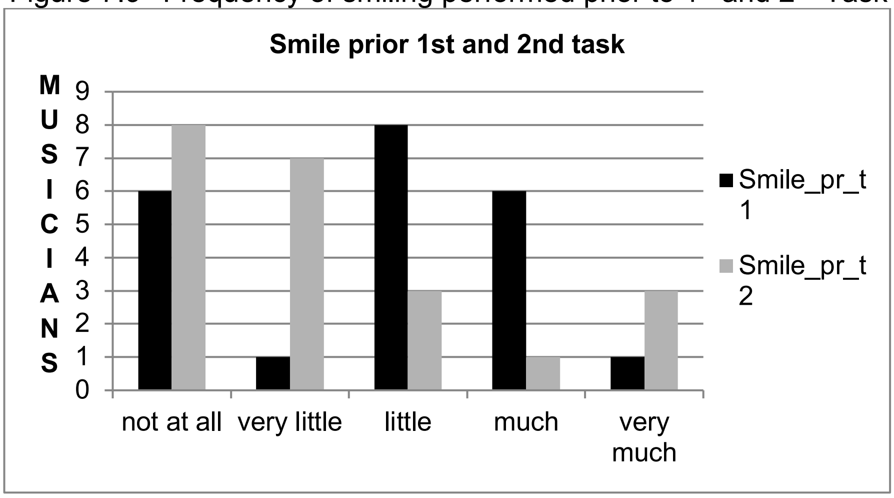


Table 7.16 Frequency of musicians' silence prior to performing 1st and 2nd Task

FREQUENCY of MUSICIANS' SILENCE prior 1st and 2nd TASK		
Musicians	**Silence**	
	Prior Task 1	**Prior Task 2**
1.Piano1	5	**5**
2.Piano2	3	**4**
3.Piano3	1	**1**
4.Guit.1	4	**4**
5.Guit.2	2	**1**
6.Guit.3	3	**2**
7.Viol.1	2	**1**
8.Viol.2	4	**1**
9.Viol.3	2	**1**
10.Viola1	5	**1**
11.Viola2	2	**1**
12.Cello1	1	**1**
13.Cello2	4	**1**
14.Rec.1	2	**1**
15.Rec.2	2	**1**
16.Flute	3	**1**
17.Clar.	3	**5**
18.Oboe	4	**1**
19.Bassoon	1	**2**
20.Perc.1	1	**1**
21.Perc.2	2	**1**
22.Harp	1	**1**
TOTAL	17	**6**

Table 7.17: Summary of Silence prior to 1st and 2nd Task

SUMMARY: DIFFERENCES of SILENCE FREQUENCY between prior 1st and 2nd TASK			
Musicians number	**Same behaviour**	**Musicians number Increasing**	**Musicians number Decreasing**
	6	3	13

Figure 7.10 Frequency of silence performed prior to 1st and 2nd Task

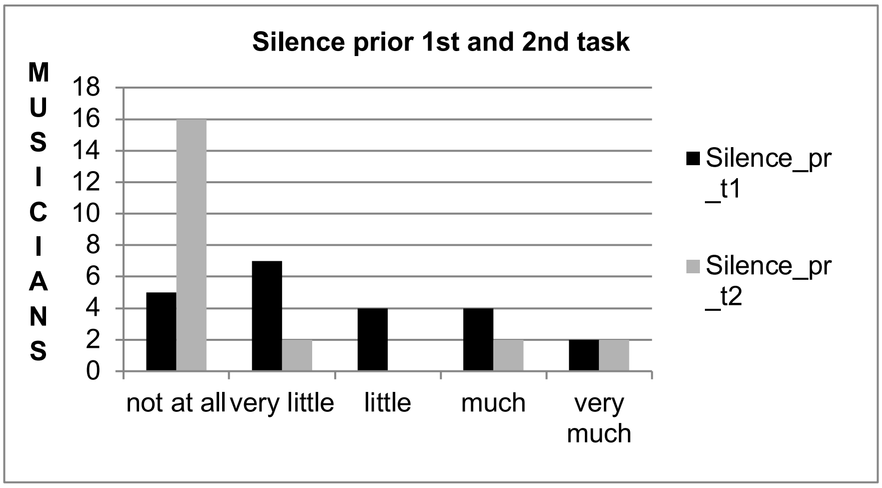


Table 7.18 Frequency of self-adaptors prior to performing 1st and 2nd Task

FREQUENCY OF SELF-ADAPTORS prior to 1st and 2nd TASK		
Musicians	**Self-adaptors**	
	Prior Task 1	**Prior Task 2**
1.Piano1	4	**1**
2.Piano2	4	**3**
3.Piano3	1	**1**
4.Guit.1	3	**4**
5.Guit.2	3	**1**
6.Guit.3	3	**1**
7.Viol.1	4	**1**
8.Viol.2	2	**1**
9.Viol.3	3	**2**
10.Viola1	5	**2**
11.Viola2	3	**1**
12.Cello1	4	**4**
13.Cello2	4	**2**
14.Rec.1	1	**1**
15.Rec.2	5	**3**
16.Flute	5	**3**
17.Clar.	4	**3**
18.Oboe	5	**1**
19.Bassoon	3	**2**
20.Perc.1	3	**1**
21.Perc.2	4	**1**
22.Harp	1	**1**
TOTAL	19	**10**

Table 7.19 Summary of Self-adaptors prior to performing 1st and 2nd Task

SUMMARY: DIFFERENCES of SELF-ADAPTORS FREQUENCY prior to 1st and 2nd TASK			
Musicians number	**Same behaviour**	**Musicians number Increasing**	**Musicians number Decreasing**
	4	1	17

Figure 7.11 Frequency of self-adaptors performed prior to 1st and 2nd Task

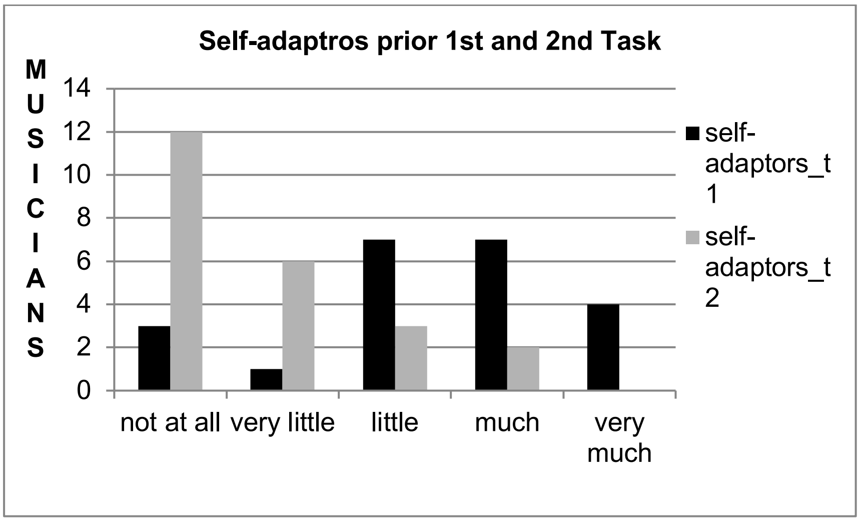


Table 7.20 Self-adaptors exhibited prior to Task 2

SELF-ADAPTORS						
SELF-TOUCHING						OBJECT MANIPULATION
Musicians	Hiding Hands	Stroking	Scratching	Lip-Compression	Tongue Between Lips	
Piano 2		fingers, hair				
Guitar 1		fingers		✓	✓	guitar neck
Violin 3					✓	
Viola 1	hands	fingers				
Cello 1		fingers	fingers			cello
Cello 2		hands				
Rec. 2			cheek		✓	recorder
Flute		chin				zipper sweater
Clarinet	hands	knee				
Bassoon						bassoon

Chapter 8 –Tables & Figures

Table 8.1. Task 2: Musicians' behaviour during mental rehearsal

TASK 2: MENTAL REHEARSAL BEHAVIOUR											
Musicians	**SHOWING RELAXATION**							**TENSION/UNCERTAINTY**			
	Kinesic ensemble						**Abdominal breathing**	**Kinesic ensemble**			
	Eye behaviour		**Facial behaviour**		**Body movement**			**Eye behaviour look space**	**Facial behaviour**		**Self-adaptors**
	Closed eyes	Look space	Relax face/ lips part	Relax smile	Rocking	Erect Spine			Tension	Smile	
1.Piano 1	5	1	4	1	3	5	Yes				1
2.Piano 2	1	5			5	5	No		3	5	4
3.Piano 3	5	1	5	1	2	5	Yes				1
4.Guitar 1	1	5		1	1	4	No		3		1
5.Guitar 2	1	5	3	1	1	5	Yes				1
6.Guitar 3	1	5	4	1	4	5	Yes				1
7.Violin 1	1	5	3	1	3	5	Yes				1
8.Violin 2	5	1	5	2	3	5	Yes				1
9.Violin 3	3	1	5	2	4	4	Yes				1
10.Viola 1	2	4	5	2	3	4	Yes				1
11.Viola 2	5	1	5	2	3	5	Yes				1
12.Cello 1	1				1	3	No	5	3	3	3
13.Cello 2	1	5		1	1	5	No		3		1
14.Rec 1	1	5	4	1	2	5	Yes				1
15.Rec. 2	5	1	4	2	4	5	Yes				1
16.Flute	5	1	5	2	1	4	Yes				1
17.Clar.	1	5	4	2	1	5	Yes				1
18.Oboe	1				1	5	No	5	3	2	1
19.Bass.	1	5	3	1	2	5	Yes				1
20.Perc.1	5	1	4	2	3	5	Yes				1
21.Perc.2	2			1	1	5	No	4	3		4
22.Harp	1	5	5	2	3	5	Yes				1
TOTAL	**10**	**11**	**16**	**9**	**14**	**22**	**16 Yes**	**3**	**6**	**3**	**3**

Table 8.2 Concentration prior to performing 1st and 2nd Task

MUSICIANS' CONCENTRATION TIME prior to PERFORMING 1st and 2nd Task			
	1st time seconds	2nd time seconds	Time Differences
1. Pianist 1	0.9	0.5	-0.04
2. Pianist 2	0.6	0.7	+0.01
3.Pianist 3	0.1	0.3	+0.02
4. Guitar 1	0.1	0.4	+0.03
5.Guitar 2	0.3	0.3	same
6.Guitar 3	0.1	0.5	+0.04
6. Violin 1	0.3	0.18	+0.15
7. Violin 2	0.3	0.6	+0.03
8. Violin 3	0.7	0.12	+0.05
9. Viola 1	0.5	0.9	+0.04
10. Viola 2	0.1	0.5	+0.04
11. Cello 1	0.0	0.0	same
13. Cello 2	0.3	0.5	+0.02
14. Recorder 1	0.4	0.3	-0.01
15. Recorder 2	0.4	0.3	-0.01
16. Flute	0.1	0.5	+0.04
17. Clarinet	0.5	0.7	+0.02
18. Oboe	0.2	0.4	+0.02
19. Bassoon	0.1	0.3	+0.02
20. Percussion 1	0.4	0.4	same
21. Percussion 2	0.0	0.6	+0.06
22. Harp	0.0	0.4	+0.04

Table 8.3 Summary of musicians' concentration before performing 1st and 2nd Task

SUMMARY MUSICIANS' CONCENTRATION TIME BEFORE PERFORMING 1st and 2nd TASK			
Musicians number	**Concentration time Decreasing**	**Concentration time Same**	**Concentration time Increasing**
	3	3	16

Figure 8.1: Musicians' concentration time before performing 1st and 2nd Task

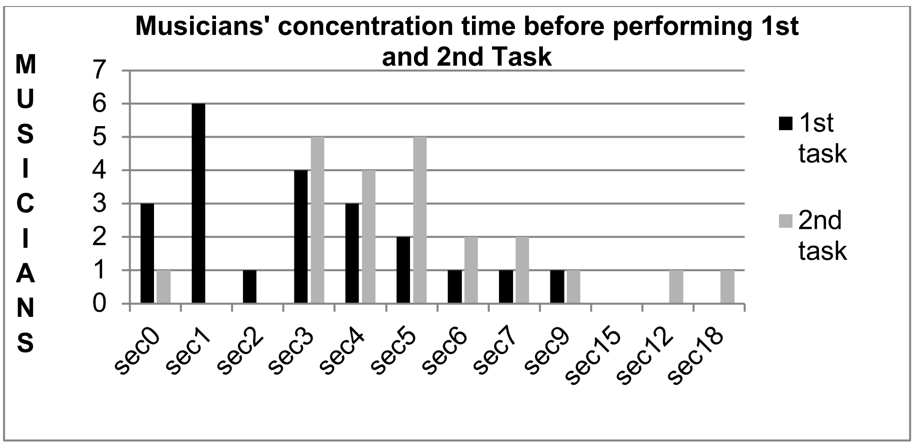


Table 8.4 Verbal information after playing Task 2

VERBAL INFORMATION after PLAYING TASK 2													
AWARENESS											**Self-Justification Afr Aid Judged**	**PERCIEVING TASK IRRILEVANT**	
Musicians	Take time Silence and/or speech latency	**PERFORMANCE AWRENESS**					**BODY PERCEPTION**			**Mental Rehearsal Effect**			
		Involved in music	Sound quality	Flow music	2nd time better	Being not sure differences	Breathing	Body presence/ concentration	Relaxation			Eluding answer	Worst / Same 2nd Time
1.Piano 1	0.8”	✓					✓			✓	✓		
2.Piano 2	0.5”					✓		✓	✓	✓			
3.Piano 3	0.4”			✓									
4.Guit 1	✓	✓			✓			✓	✓	✓			
5.Guit 2	✓	✓			✓					✓			
6.Guit 3	✓						✓	✓		✓			
7.Viol. 1	0.8”		✓			✓	✓	✓		✓			
8.Viol. 2	✓		✓					✓		✓			
9.Viol. 3	✓	✓	✓				✓	✓					
10.Viola 1	✓	✓		✓				✓			✓		
11.Viola 2	0.4”				✓			✓					
12.Cello 1	✓		✓		✓				✓		✓	✓	
13.Cello 2	✓		✓						✓				
14.Rec. 1	0.5”			✓				✓	✓	✓			
15.Rec. 2	✓			✓			✓						
16. Flute	0.4”		✓			✓				✓	✓		
17.Clar.	0.3”	✓	✓				✓						
18.Oboe	0.3”				✓							✓	
19.Bass.										✓			✓
20.Perc. 1													✓
21.Perc. 2	✓	✓			✓								
22.Harp													✓
TOTAL		**7**	**7**	**4**	**6**	**3**	**6**	**9**	**5**	**11**	**4**	**2**	**3**

Chapter 9 –Tables & Figures

Table 9.1 Nonverbal behavior after playing Task 2

Nonverbal behaviour after playing Task 2														
Musicians	**Self-reflection / Anxiety-Embarrassment**													
	Kinesic ensemble										**Silence**	**Self-adaptors**	**SEMICONSCIOUS MOVEMENTS**	
	Eye behaviour				**Gestures**			**Body Movement**	**Facial behaviour**	**Smile**				
	Look space	Look Interviewer	Closed eyes	Look camera	Anticipatory	Iconic	Beats						Kinaesthetic mov	Simulated mov
1.Piano 1	5●	5*	5●	1	5●	2	1	5*	4	4	5●	2	5●*	1
2.Piano 2	5●	4*	3 ●	1	3●	1	1	5	3	4	3●	3*	3●	1
3.Piano 3	4●	5	1	1	1	4	1	2	1	1	2●	1	1	1
4.Guitar 1	5●	4*	2●	1	1	1	2	3	5^	3	4●	4^	2*	2*
5.Guitar 2	5●	5	1	2	1	2	5	3	2	1	2●	2	1	1
6.Guitar 3	4●	5*	1	1	1	2	2	3	1	5	3	3	3●*	3*
7.Violin 1	5●	4^	1	1	3●	3	2	5	5	4*	4●	3*	2●^	2●
8.Violin 2	4●	5*	1	2^	2●	1	1	3	2	2^	2	1	1	5●*
9.Violin 3	5●	5*^+	1	1	2●	2*	1	4+	1	4+	2●	2	2	5●^
10.Viola 1	4●	5*	2^	1	2^	3	2	5	3	3	3●	3	2*	2*
11.Viola 2	5●	5*	3●	1	2*	3	5	5*	5	2	2●	5	1	4●*
12.Cello 1	5●	3*	1	1	1	2	2	5●	3*	4●*	2	3●	1	1
13.Cello 2	3●	5*	1	2^	3*	1	2	2	2	3^	3●	2	2*	1
14.Rec 1	5●	4	2●	1	1	2	1	2	1	3	5●	1	2●	1
15.Rec. 2	5●	5*	3●	1	1	2	2	4●*	3	2	2●	4●	1	1
16.Flute	5●	5	2●	1	1	2	1	5	4	2	3●	1	1	1
17.Clar.	4●	5*^	1	1	2●	1	2	4	3	4	4●	5	2^	3●^
18.Oboe	2●	4*	1	1	2*	2	2	2	1	2	2●	2	1	1
19.Bass	5●	5*	2●	2^	1	2	1	3	4^	2	2●	3●^	2●*	1
20.Perc.1	2●	5*	2	1	1	2	1	3	2	2	2●	1	2*	2●
21.Perc.2	3●	5*	1	1	3●	1	2	2	3	3	2●	2	1	3●*
22.Harp	2	4*	1	1	1	1	2	2	3	3*	1	1	1	1
TOTAL	**22**	**22**	**10**	**4**	**11**	**15**	**13**	**22**	**17**	**20**	**21**	**16**	**12**	**10**

Legenda: The symbols •, *, ^, + indicate cues that musicians concurrently performed.

Table 9.2 Musicians' eyes behaviour after playing 1st and 2nd Task

Musicians' eyes behaviour after playing 1st and 2nd Task								
Musicians	Look space Af. play T1	**Look space Af. play T2**	Look Interviewer Af. play T1	**Look Interviewer Af. play T2**	Look camera Af. play T1	**Look camera Af. play T2**	Closed eyes Af. play T1	**Closed eyes Af. play T2**
1.Piano1	5	**5**	3	**5**	1	**1**	5	**5**
2.Piano2	5	**5**	5	**4**	1	**1**	2	**3**
3.Piano3	3	**4**	5	**5**	1	**1**	1	**1**
4.Guit.1	5	**5**	2	**4**	1	**1**	2	**2**
5.Guit.2	5	**5**	4	**5**	1	**2**	2	**1**
6.Guit.3	5	**4**	5	**5**	1	**1**	1	**1**
7.Viol.1	4	**5**	3	**4**	1	**1**	1	**1**
8.Viol.2	4	**4**	3	**5**	1	**2**	1	**1**
9.Viol.3	5	**5**	5	**5**	1	**1**	2	**1**
10.Viola1	5	**4**	5	**5**	2	**1**	4	**2**
11.Viola2	5	**5**	5	**5**	1	**1**	2	**3**
12.Cello1	3	**5**	4	**3**	2	**1**	1	**1**
13.Cello2	3	**3**	5	**5**	2	**2**	1	**1**
14.Rec.1	5	**5**	5	**4**	1	**1**	1	**2**
15.Rec.2	5	**5**	5	**5**	1	**1**	3	**3**
16.Flute	5	**5**	5	**5**	2	**1**	2	**2**
17.Clar.	5	**4**	4	**5**	1	**1**	2	**1**
18.Oboe	4	**2**	5	**4**	3	**1**	2	**1**
19.Basso.	4	**5**	4	**5**	1	**2**	1	**2**
20.Perc.1	4	**2**	5	**5**	1	**1**	1	**2**
21.Perc.2	5	**3**	4	**5**	2	**1**	2	**1**
22.Harp	4	**2**	5	**4**	1	**1**	2	**1**
TOTAL	**22**	**22**	**22**	**22**	**6**	**4**	**13**	**10**

Figure 9.1 Looking into space and silence after Task 2

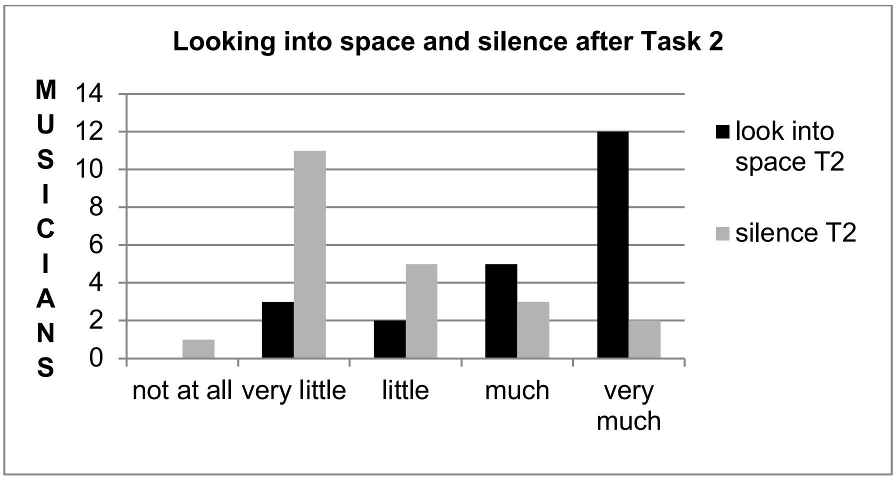


Figure 9.2 Looking into space after playing 1st and 2nd Task

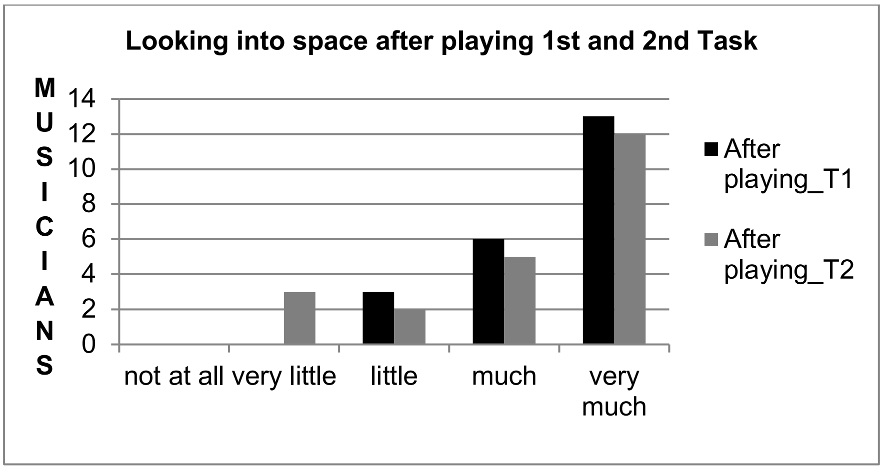


Figure 9.3 Looking at the interviewer after playing 1st and 2nd Task

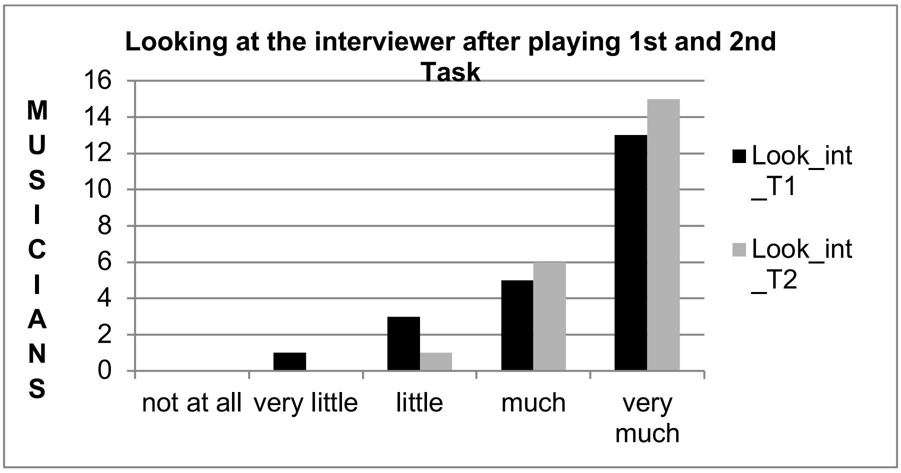


Figure 9.4 Looking at the camera after playing 1st and 2nd Task

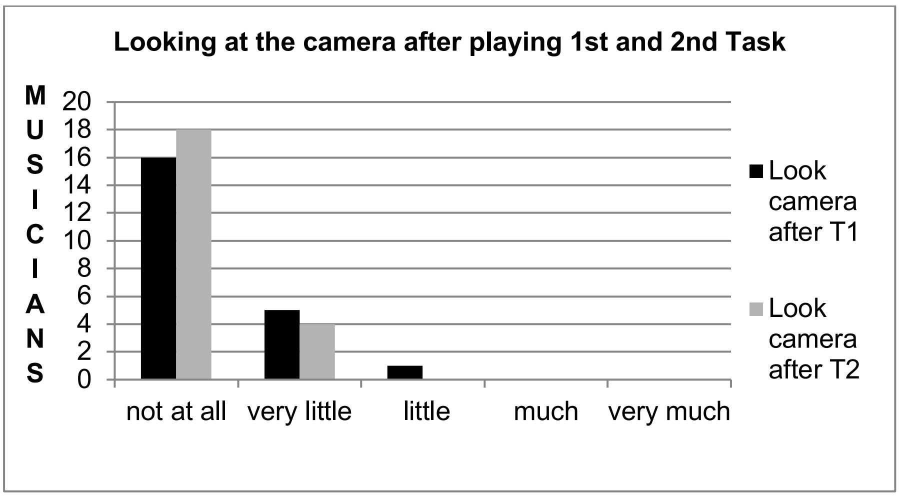


Figure 9.5 Closed eyes after playing 1st and 2nd Task

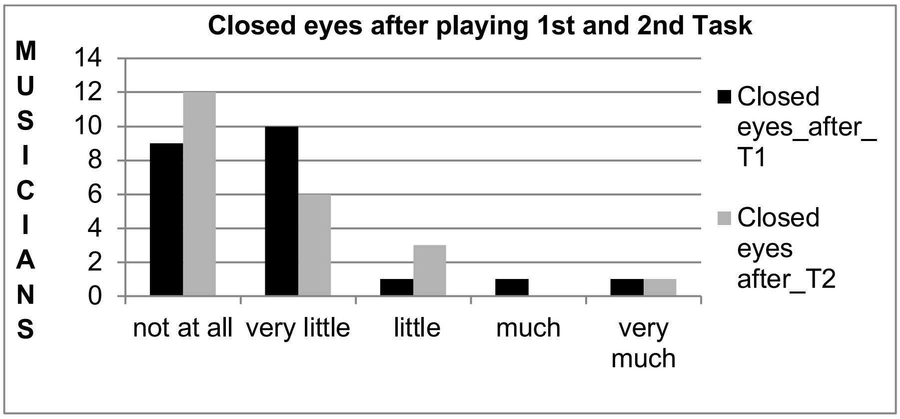


Table 9.3 Summary of differences Musicians' eyes behaviour after 1st and 2nd Task

SUMMARY DIFFERENCES MUSICIANS' EYES BEHAVIOUR after 1st and 2nd TASK			
	Musicians number Same	**Musicians number Increasing**	**Musicians number Decreasing**
Looking space	**11**	**4**	**7**
Looking Interviewer	**9**	**8**	**5**
Looking camera	**14**	**3**	**5**
Closing eyes	**10**	**5**	**7**

Table 9.4 Musicians' semiconscious movements after playing 1st and 2nd Task

Musicians' semiconscious movements after playing 1st and 2nd Task				
	Kinaesthesia		**Simulated movements**	
Musicians	After play T1	**After play T2**	After play T1	**After play T2**
1.Piano1	3	**5**	1	**1**
2.Piano2	1	**3**	1	**1**
3.Piano3	5	**1**	2	**1**
4.Guit.1	1	**2**	1	**2**
5.Guit.2	1	**1**	1	**1**
6.Guit.3	2	**3**	2	**3**
7.Viol.1	1	**2**	1	**2**
8.Viol.2	4	**1**	3	**5**
9.Viol.3	1	**2**	2	**5**
10.Viola1	2	**2**	1	**2**
11.Viola2	1	**1**	2	**4**
12.Cello1	1	**1**	1	**1**
13.Cello2	1	**2**	2	**1**
14.Rec.1	3	**2**	1	**1**
15.Rec.2	1	**1**	1	**1**
16.Flute	1	**1**	1	**1**
17.Clar.	1	**2**	1	**3**
18.Oboe	1	**1**	1	**1**
19.Bass.	2	**2**	1	**1**
20.Perc.1	2	**2**	4	**2**
21.Perc.2	1	**1**	1	**3**
22.Harp	1	**1**	1	**1**
TOTAL	8	**12**	7	**10**

Table 9.5 Summary of Musicians' semiconscious movements after playing 1st and 2nd Task

SUMMARY of DIFFERENCES MUSICIANS' SEMICONSCIOUS MOVEMENTS after 1st and 2nd TASK			
	Musicians number Same	**Musicians number Increasing**	**Musicians number Decreasing**
Kinaesthesia	**11**	**8**	**3**
Simulated movements	**10**	**9**	**3**

Figure 9.6 Kinaesthesia after playing 1st and 2nd Task

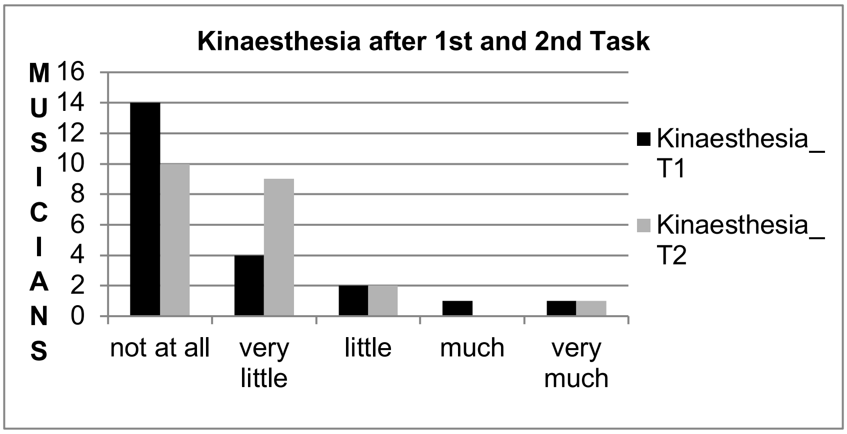


Figure 9.7 Simulated movements after playing 1st and 2nd Task

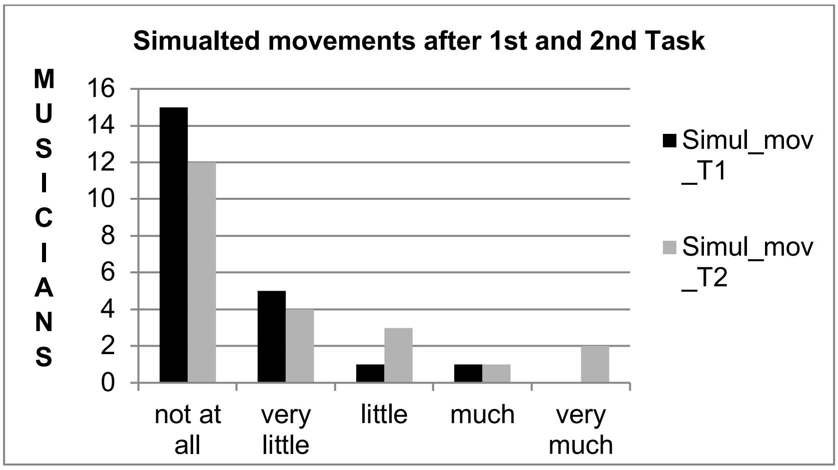


Figure 9.8 Look into space, Kinaesthesia and Simulated movements after playing 1st Task

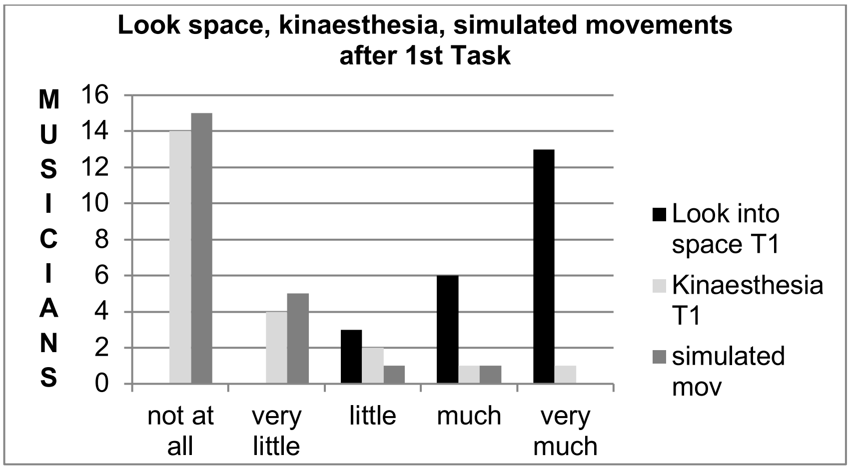


Figure 9.9 Look into space, Kinaesthesia and Simulated movements after playing 2nd Task

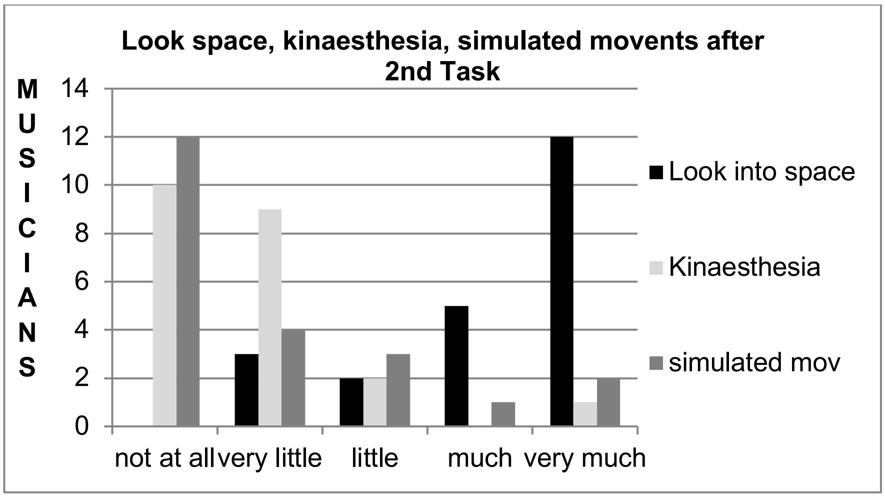


Table 9.6 Gesture after playing 1st and 2nd Task

GESTURES after PLAYING 1st and 2nd TASK						
Musicians	ANTICIPATORY		ICONIC		BEATS	
	After Play T1	**After Play T2**	After Play T1	**After play T2**	After Play T1	**After play T2**
1.Piano 1	1	**5**	1	**2**	1	**1**
2. Piano 2	1	**3**	5	**1**	1	**1**
3. Piano 3	1	**1**	1	**4**	1	**1**
4. Guitar 1	2	**1**	1	**1**	1	**2**
5. Guitar 2	3	**1**	2	**2**	3	**5**
6. Guitar 3	1	**1**	2	**2**	2	**2**
7. Violin 1	1	**3**	2	**3**	1	**2**
8.Violin 2	1	**2**	1	**1**	1	**1**
9. Violin 3	1	**2**	3	**2**	3	**1**
10. Viola 1	1	**2**	4	**3**	2	**2**
11. Viola 2	2	**2**	4	**3**	5	**5**
12. Cello 1	1	**1**	3	**2**	2	**2**
13. Cello 2	2	**3**	2	**1**	4	**2**
14. Rec. 1	2	**1**	2	**2**	2	**1**
15. Rec. 2	3	**1**	2	**2**	3	**2**
16. Flute	2	**1**	1	**2**	2	**1**
17. Clar.	2	**2**	3	**1**	2	**2**
18. Oboe	1	**2**	4	**2**	2	**2**
19. Bass.	1	**1**	2	**2**	1	**1**
20. Perc. 1	1	**1**	4	**2**	1	**1**
21. Perc. 2	1	**3**	4	**1**	1	**2**
22. Harp	1	**1**	1	**1**	1	**2**
TOTAL	8	**11**	16	**15**	12	**13**

Figure 9.10 Anticipatory gestures after 1st and 2nd Task

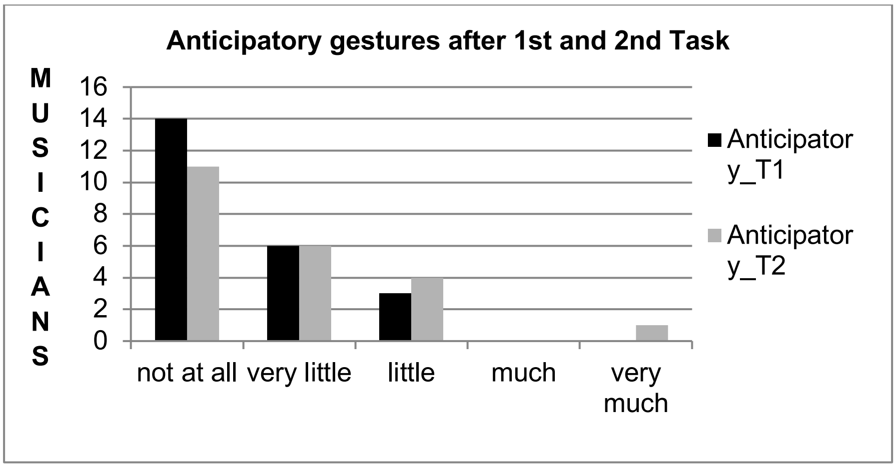


Figure 9.11 Iconic gestures after 1st and 2nd Task

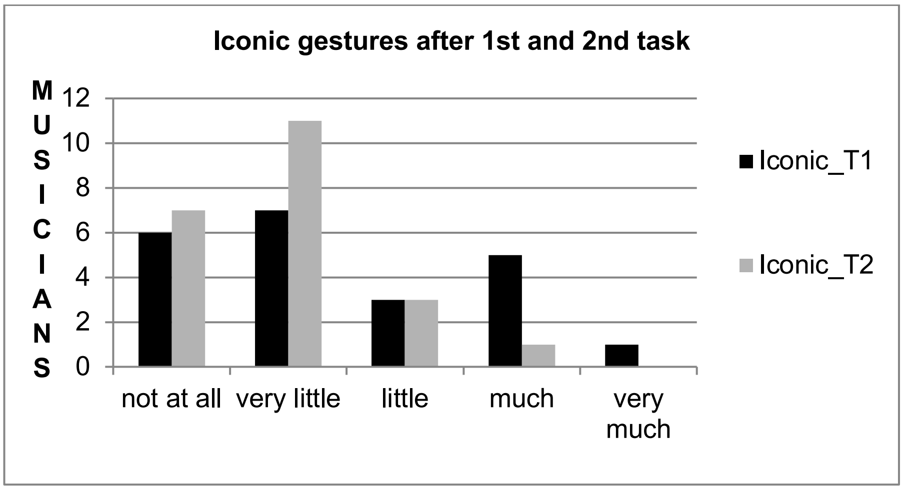


Figure 9.12 Beats gestures after 1st and 2nd Task

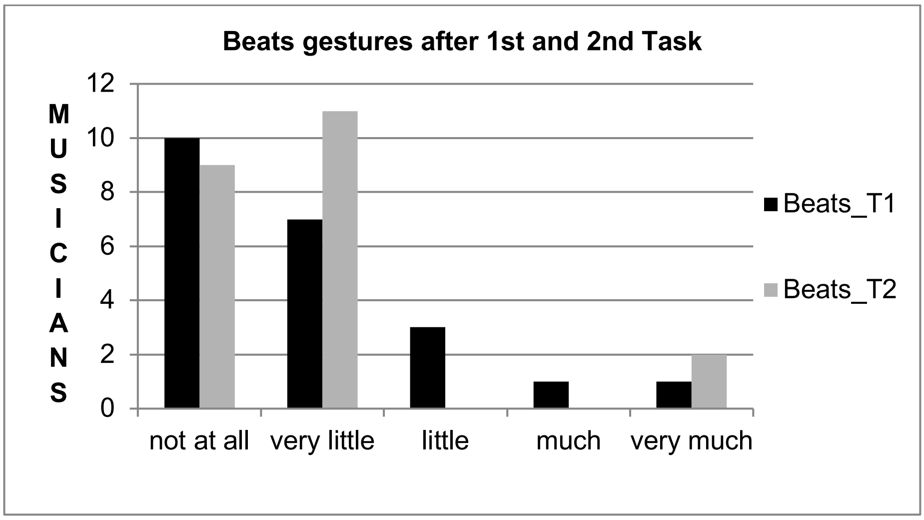


Table 9.7 Summary of differences Musicians' gestures after 1st and 2nd Task

SUMMARY of DIFFERENCES MUSICIANS' GESTURES after 1st and 2nd TASK			
	Musicians number Same	Musicians number Increasing	Musicians number Decreasing
Anticipatory	8	9	5
Iconic	8	4	10
Beats	12	5	5

Table 9.8 Frequency of body movements performed after 1st and 2nd Task

FREQUENCY of BODY MOVEMENTS PERFORMED AFTER 1st and 2nd TASK		
Musicians	**Body movement**	
	After Task 1	**After Task 2**
1.Piano 1	4	**5**
2. Piano 2	5	**5**
3. Piano 3	2	**2**
4. Guitar 1	3	**4**
5. Guitar 2	3	**4**
6. Guitar 3	3	**3**
7. Violin 1	3	**5**
8.Violin 2	3	**3**
9. Violin 3	4	**4**
10. Viola 1	5	**5**
11. Viola 2	5	**5**
12. Cello 1	3	**5**
13. Cello 2	3	**2**
14. Recorder 1	3	**2**
15. Recorder 2	5	**4**
16. Flute	5	**5**
17. Clarinet	3	**4**
18. Oboe	5	**2**
19. Bassoon	2	**3**
20. Percussion 1	5	**3**
21. Percussion 2	5	**2**
22. Harp	3	**2**
TOTAL	22	**22**

Table 9.9 Summary of body movements performed after 1st and 2nd Task

SUMMARY of DIFFERENCES MUSICIANS' BODY MOVEMENTS after 1st and 2nd TASK			
Body movements	**Musicians number Same**	**Musicians number Increasing**	**Musicians number Decreasing**
	8	**7**	**7**

Figure 9.13 Body movements performed after 1st and 2nd Task

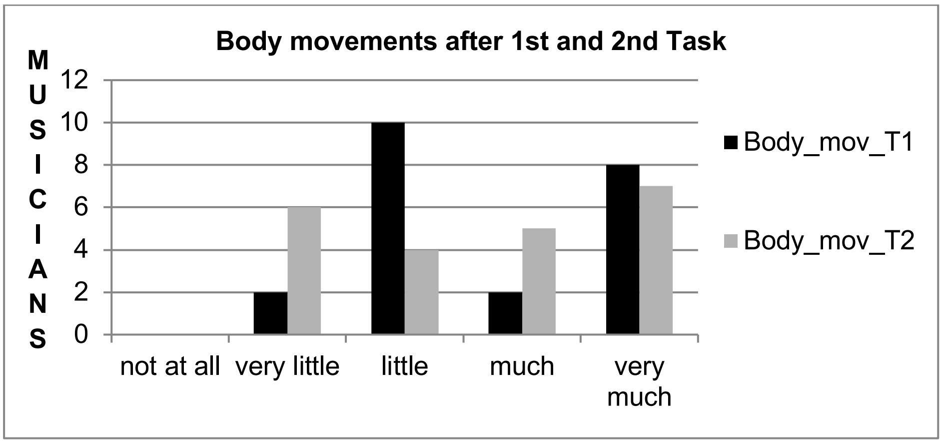


Table 9.10a Body movements performed after 1st and 2nd Task

BODY MOVEMENTS PERFORMED after 1st and 2nd TASK										
Musicians	Leaning forwards		Leaning backwards		Raise/shrugg shoulders		Shaking head		Head-tilt-side	
	Af. T.1	**Af. T.2**	Af. T.1	**Af. T.2**	Af. T.1	**Af. T.2**	Af. T.1	**Af. T.2**	Af. T.1	**Af. T.2**
1.Piano 1	✓	✓	✓	✓		✓		✓		✓
2. Piano 2	✓		✓	✓	✓		✓			✓
3. Piano 3									✓	
4. Guit 1				✓			✓	✓		
5. Guit 2				✓	✓		✓	✓		
6. Guit 3				✓			✓		✓	✓
7. Viol 1		✓		✓	✓	✓				✓
8.Viol 2										✓
9. Viol 3		✓						✓	✓	✓
10. Viola1	✓	✓	✓	✓		✓	✓	✓		✓
11. Viola2	✓	✓		✓	✓	✓		✓	✓	✓
12. Cello1		✓		✓	✓	✓		✓		✓
13. Cello2					✓					✓
14. Rec. 1		✓			✓		✓		✓	✓
15. Rec. 2			✓		✓	✓	✓	✓	✓	✓
16. Flute				✓	✓	✓	✓	✓		✓
17. Clar	✓		✓	✓		✓				✓
18. Oboe	✓	✓			✓		✓		✓	
19. Bass					✓			✓	✓	
20. Perc.1	✓		✓		✓	✓	✓	✓	✓	✓
21. Perc.2	✓				✓	✓	✓		✓	✓
22. Harp	✓						✓		✓	
TOTAL	9	**8**	6	**11**	13	**10**	12	**11**	11	**16**

Table 9.10b Body movements performed after 1st and 2nd Task

BODY MOVEMENTS PERFORMED after 1st and 2nd TASK									
Musicians	Nodding		Adam-apple-jump		Rocking		**Cross arms**	**Adjust sitting**	**Hide hands**
	Af T.1	**Af. T.2**	Af. T. 1	**Af. T.2**	Af. T.1	**Af. T.2**			
1.Piano 1	✓	✓							
2. Piano 2	✓	✓			✓	✓			
3. Piano 3		✓							
4. Guit 1	✓	✓							
5. Guit 2							✓	✓	
6. Guit 3	✓	✓	✓		✓	✓			
7. Viol 1	✓			✓			✓		
8.Viol 2		✓							
9. Viol 3	✓	✓							
10. Viola 1	✓	✓		✓				✓	
11. Viola 2	✓	✓	✓					✓	
12. Cello 1	✓	✓							✓
13. Cello 2	✓								
14. Rec. 1	✓								
15. Rec. 2	✓	✓			✓	✓			
16. Flute	✓	✓							✓
17. Clar.			✓				✓		✓
18. Oboe	✓		✓					✓	
19. Bass		✓							✓
20. Perc. 1	✓	✓						✓	
21. Perc. 2									
22. Harp		✓							
TOTAL	15	**15**	4	**2**	3	**3**	**3**	**5**	**4**

Table 9.11 Facial behaviour frequency after playing 1st and 2nd Task

FACIAL BEHAVIOUR FREQUENCY AFTER PLAYING 1st and 2nd TASK		
Musicians	After Task 1	**After Task 2**
1.Piano 1	4	**4**
2. Piano 2	2	**3**
3. Piano 3	2	**2**
4. Guitar 1	2	**4**
5. Guitar 2	2	**2**
6. Guitar 3	2	**2**
7. Violin 1	2	**4**
8.Violin 2	1	**2**
9. Violin 3	3	**2**
10. Viola 1	3	**3**
11. Viola 2	4	**4**
12. Cello 1	5	**3**
13. Cello 2	2	**2**
14. Rec.1	2	**2**
15. Rec. 2	2	**3**
16. Flute	2	**4**
17. Clar.	2	**2**
18. Oboe	4	**2**
19. Bass.	2	**4**
20. Perc.1	4	**2**
21. Perc. 2	3	**2**
22. Harp	1	**3**
TOTAL	20	**22**

Table 9.12 Summary of Musicians' facial behaviour after playing 1st and 2nd Task

SUMMARY of DIFFERENCES MUSICIANS' FACIAL BEHAVIOuR after 1st and 2nd TASK			
Facial beahviour	**Musicians number Same**	**Musicians number Increasing**	**Musicians number Decreasing**
	9	**8**	**5**

Figure 9.14 Face behaviour frequency performed after 1st and 2nd Task

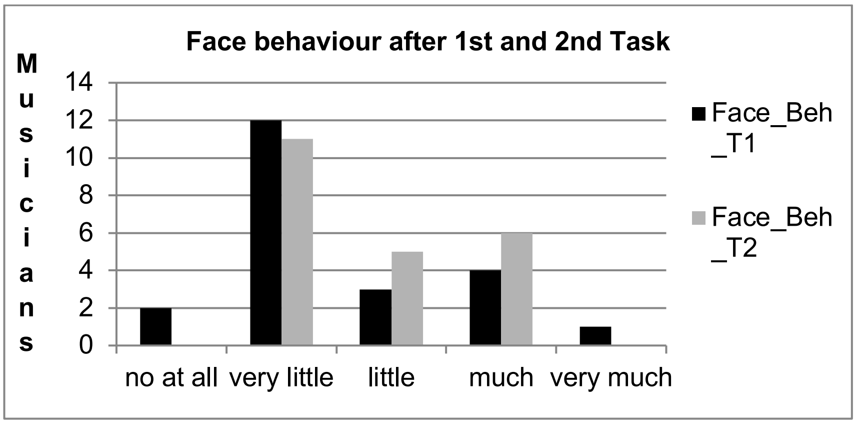


Table 9.13 Facial behaviour after playing 1st and 2nd Task

FACIAL BEHAVIOuR AFTER PLAYING 1st and 2nd TASK																	
Musicians	Raise yebrows		Lower eyebrows		Narrow lips		Lips down		Parted Lips		Hiding face		Relaxed face		Lick lips	Bit lips	Grimaces
	Af T1	**Af T2**	Af T1	**Af T2**	Af T1	**Af T2**	Af T1	**Af T2**	Af T1	**Af T2**	Af T1	**Af T2**	Af T1	**Af T2**			
1.Piano 1	✓							✓		✓							
2. Piano 2			✓	✓						✓							✓
3. Piano 3													✓	✓			
4. Guitar 1		✓						✓	✓						✓	✓	
5. Guitar 2	✓				✓			✓									
6. Guitar 3	✓	✓															
7. Violin 1		✓		✓		✓	✓	✓								✓	
8.Violin 2										✓			✓	✓			
9. Violin 3	✓								✓						✓		
10. Viola 1		✓								✓	✓					✓	
11. Viola 2	✓	✓	✓		✓					✓							
12. Cello 1											✓	✓					
13. Cello 2					✓		✓	✓									
14. Rec. 1									✓					✓			
15. Rec. 2		✓		✓					✓								✓
16. Flute				✓						✓						✓	
17. Clar.					✓				✓	✓							
18. Oboe	✓	✓															
19. Bass.				✓	✓	✓				✓							
20. Perc. 1	✓						✓	✓	✓								
21. Perc. 2	✓	✓			✓					✓	✓						✓
22. Harp		✓		✓													
TOTAL	8	**9**	2	**6**	6	**2**	3	**6**	6	**9**	3	**1**	2	**3**	**2**	**4**	**3**

Table 9.14 Smiling frequency after playing 1st and 2nd Task
and kinds of smiling identified after playing 2nd Task

SMILING FREQUENCY after PLAYING 1st & 2nd TASK -KINDS of SMILING after 1st & 2nd TASK								
Musicians	Smile Af T1	**Smile Af T2**	**KINDS of SMILING after PLAYING 1st and 2nd Task**					
			Embarrassed		**Nervous**		**Affiliation**	
			Af T1	**Af T2**	Af T1	**Af T2**	Af T1	**Af T2**
1.Piano 1	2	**4**	✓	✓		✓	✓	✓
2. Piano 2	5	**4**	✓	✓		✓		
3. Piano 3	2	**1**					✓	
4. Guitar 1	5	**3**	✓	✓				
5. Guitar 2	4	**1**			✓			
6. Guitar 3	4	**5**	✓				✓	✓
7. Violin 1	4	**4**		✓	✓			✓
8.Violin 2	2	**2**	✓				✓	✓
9. Violin 3	3	**4**	✓	✓		✓	✓	✓
10. Viola 1	3	**3**	✓	✓			✓	✓
11. Viola 2	2	**2**	✓	✓				
12. Cello 1	3	**4**	✓	✓		✓		
13. Cello 2	4	**3**	✓	✓			✓	✓
14. Rec. 1	5	**3**	✓				✓	✓
15. Rec. 2	2	**2**					✓	✓
16. Flute	4	**2**	✓	✓			✓	✓
17. Clar.	4	**4**	✓	✓		✓		✓
18. Oboe	5	**2**		✓	✓			
19. Bass.	1	**2**		✓				
20. Perc. 1	4	**2**	✓				✓	✓
21. Perc. 2	3	**3**	✓	✓		✓	✓	
22. Harp	3	**3**		✓		✓	✓	
TOTAL	21	**20**	**13**	**15**	3	**7**	13	**12**

Table 9.15 Summary of musicians' smiling after playing 1st and 2nd Task

SUMMARY of DIFFERENCES MUSICIANS' SMILING after 1st and 2nd TASK			
Smiling	**Musicians number Same**	**Musicians number Increasing**	**Musicians number Decreasing**
	8	**6**	**8**

Figure 9.15 Smiling frequency performed after 1st and 2nd Task

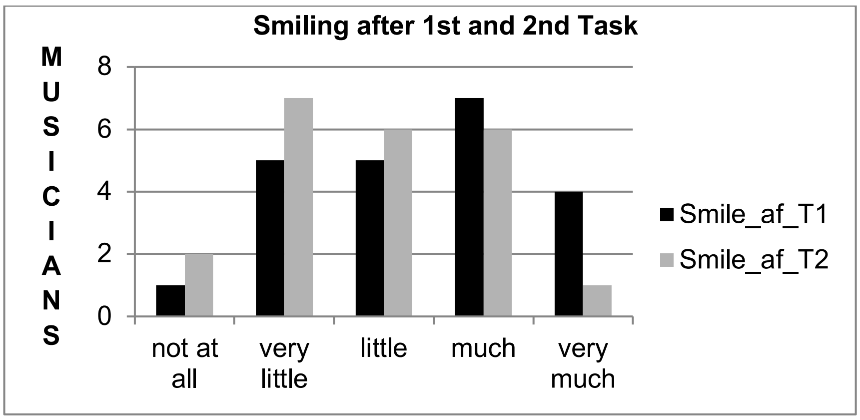


Table 9.16 Frequency of Silence while verbalizing after 1st and 2nd Task

SILENCE after 1st and 2nd TASK		
Musicians	After T1	**After T2**
1.Piano 1	5	**5**
2. Piano 2	2	**3**
3. Piano 3	2	**2**
4. Guitar 1	5	**4**
5. Guitar 2	4	**2**
6. Guitar 3	3	**3**
7. Violin 1	2	**4**
8.Violin 2	2	**2**
9. Violin 3	2	**2**
10. Viola 1	5	**3**
11. Viola 2	2	**2**
12. Cello 1	2	**2**
13. Cello 2	2	**3**
14. Rec. 1	3	**5**
15. Rec. 2	3	**2**
16. Flute	2	**3**
17. Clar.	4	**4**
18. Oboe	1	**2**
19. Bass.	1	**2**
20. Perc. 1	4	**2**
21. Perc. 2	2	**2**
22. Harp	2	**1**
TOTAL	**20**	**21**

Table 9.17: Summary of musicians' silence after playing 1st and 2nd Task

SUMMARY of DIFFERENCES MUSICIANS' SILENCE after 1st and 2nd TASK			
Silence	**Musicians number Same**	**Musicians number Increasing**	**Musicians number Decreasing**
	9	**7**	**6**

Figure 9.16 Silence frequency performed after 1st and 2nd Task

Table 9.18 Self-adaptors frequency after playing 1st and 2nd Task

SELF-ADAPTORS FREQUENCY after PLAYING 1st and 2nd TASK		
Musicians	After T1	**After T2**
1.Piano 1	5	**2**
2. Piano 2	2	**3**
3. Piano 3	1	**1**
4. Guitar 1	3	**4**
5. Guitar 2	2	**2**
6. Guitar 3	3	**3**
7. Violin 1	2	**3**
8.Violin 2	1	**1**
9. Violin 3	2	**2**
10. Viola 1	4	**3**
11. Viola 2	5	**5**
12. Cello 1	3	**3**
13. Cello 2	2	**2**
14. Rec. 1	3	**1**
15. Rec. 2	5	**4**
16. Flute	5	**1**
17. Clar.	5	**5**
18. Oboe	4	**2**
19. Bass.	3	**3**
20. Perc. 1	4	**1**
21. Perc. 2	3	**2**
22. Harp	1	**1**
TOTAL	19	**16**

Table 9.19 Summary of musicians' self-adaptors after playing 1st and 2nd Task

SUMMARY of DIFFERENCES MUSICIANS' SELF-ADAPTORS after 1st and 2nd TASK			
Silence	**Musicians number Same**	**Musicians number Increasing**	**Musicians number Decreasing**
	11	**3**	**8**

Figure 9.17 Self-adaptors frequency performed after 1st and 2nd Task

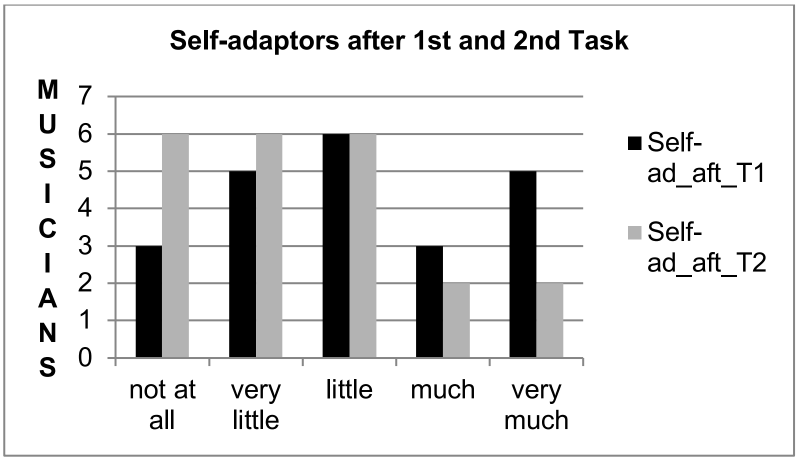


Table 9.20 Self-adaptors exhibited after Task 2

SELF-ADAPTORS					
SELF-TOUCHING					OBJECT-MANIPULATION
	Stroking	Rubbing	Biting Lips	Licking Lips	
1. Piano 1	Thighs				
2.Piano 2	Nose/ Grooming Hair	Hands			
3.Guit.1		Nose	✓	✓	
4.Guit.2		Hands			
5.Guit.3	Thighs	Hands			Clothes
6.Viol.1			✓		
7.Viol.3				✓	
8.Viola 1			✓		Bow
9.Viola 2	Thighs/ Nose	Hands			Bow/viola
10.Cello 1		Hands/ Forehead			
11.Cello 2					
12.Recor 2	Cheek		✓		Recorder/Reed
13.Clar	Thighs	Eyes			
14.Oboe	Chest				Oboe
15.Bass.	Thighs/ Chin				
16.Perc. 2					Drumsticks

Chapter 10 –Tables & Figures

Table 10.1 Musicians' verbal reactions prior toperforming Simulation in Task 3

Verbal communication before undertaking Task 3									
	Uncertainty/state anxiety								**Self-reflection**
	Needing reassurance						**Defensive reactions**		
	Self-reassurance			Reassurance request					
Musicians	Repeat instructions	Explain Task to self	Communic Start simulation	Ask task explanation/confirmation	Ask permission	Express Difficulties/strange	Being Reluctant Reject task	Manifest embarrassment	Explain task to self
1.Piano 1				✓					
2.Piano 2			✓			✓	✓		
3.Piano 3									✓
4.Guitar 1	✓	✓				✓			
5.Guitar 2		✓							
6.Guitar 3				✓					
7.Violin 1		✓							
8.Violin 2			✓			✓			✓
9.Violin 3							✓		
10.Viola1		✓		✓				✓	
11.Viola 2						✓			
12. Cello 1							✓		
13.Cello 2		✓	✓						
14.Rec.1		✓				✓			
15.Rec.2			✓	✓					
16.Flute					✓				
17. Clar.		✓		✓			✓	✓	
18.Oboe	✓	✓		✓					
19.Bass.									
20.Perc 1				✓					
21.Perc. 2		✓			✓				
22.Harp				✓					
TOTAL	**2**	**9**	**4**	**8**	**2**	**5**	**4**	**2**	**3**

Table 10.2 Musicians' needing reassurance prior to undertaking 1st, 2nd, and 3rd Task

Needing reassurance prior to Task 1, 2, & 3													
Musicians	**Self-reassuring**							**Reassurance request**					
	T.1 Repeat instruction	T.2 Repeat instruction	**T.3 Repeat instruction**	T.2 Explain task to self	**T.3 Explain task to self**	T.2 communic start Mental rehearsal	**T.3 communic start Simulation**	T. 1 permission	T. 2 permission	**T. 3 permission**	T. 2 explanation	**T. 3 explanation**	**Express Difficulties**
1.Piano1	✓			✓							✓	✓	
2.Piano2							✓				✓		✓
3.Piano3													
4.Guit 1		✓	✓	✓	✓								✓
5.Guit 2					✓								
6.Guitar3				✓				✓	✓		✓	✓	
7.Violin1					✓			✓					
8.Violin2						✓	✓						✓
9Violin 3	✓												
10.Viola1	✓			✓	✓			✓			✓	✓	
11.Viola2				✓		✓							
12.Cello1				✓							✓		
13.Cello2	✓			✓	✓	✓	✓						
14.Rec.1					✓								✓
15.Rec. 2				✓			✓	✓	✓			✓	
16.Flute		✓		✓				✓		✓			
17.Clar.	✓			✓	✓						✓	✓	
18.Oboe			✓	✓	✓							✓	
19.Bass.				✓									
20.Perc.1	✓											✓	
21.Perc.2					✓	✓		✓		✓	✓		
22.Harp												✓	
TOTAL	**6**	**2**	**2**	**12**	**9**	**3**	**4**	**6**	**2**	**2**	**7**	**8**	**4**

Table 10.3 Musicians' nonverbal communication prior to playing Task 3

NONVERBAL COMMUNICATION PRIOR PLAYING TASK 3													
ANXIETY-EMBARRASSMENT THROUGH UNCONSCIOUS CUES/ SEMICONCIOUS and CONSCIOUS MOVEMENTS													
Musicians	**Kinesic ensemble**								**Silence**	**Self-adaptors**	**SEMICONSCIOUS/ CONSCIOUS MOVEMENTS**	
	Eye behaviour				**Gesture**		**Body movement**	**Facial behaviour**	**Smile**				
	Look space	Look Interviewer	Look camera	Closed eyes	Antic. gestures	Iconic gestures						Kinaesthetic mov	Simulated mov
1.Piano1	2	5	1	2	1	1	5	2	4	1	2	1	2
2.Piano2	3	5	1	1	1	1	5	4	5	5	3	1	1
3.Piano3	2	3	1	1	1	1	3	1	2	1	1	1	2
4.Guit.1	2	5	1	1	1	1	5	1	5	1	4	1	2
5.Guit.2	2	3	1	2	1	1	2	1	1	1	1	1	2
6.Guit.3	2	3	1	1	1	1	2	1	1	1	1	1	2
7.Viol.1	1	4	1	1	1	1	2	2	1	1	1	1	2
8.Viol.2	2	2	2	2	1	1	1	2	4	1	1	3	3
9.Viol.3	2	2	1	1	1	1	2	1	2	1	3	1	2
10.Viola1	4	5	1	1	1	1	4	1	2	1	3	2	3
11.Viola2	1	3	1	1	1	1	3	1	1	1	2	1	1
12.Cello1	4	5	1	1	1	2	4	1	4	1	3	1	3
13.Cello2	1	4	2	1	1	1	2	1	3	1	1	1	1
14.Rec.1	1	2	1	1	1	1	1	1	2	1	1	1	1
15.Rec.2	2	5	1	2	1	1	5	1	2	1	2	1	2
16.Flute	2	5	1	1	1	1	3	2	2	1	3	1	2
17.Clarin	5	5	1	1	2	1	3	2	4	3	5	2	4
18.Oboe	1	5	1	1	1	1	1	4	2	1	2	1	3
19.Bass.	1	2	1	1	1	1	1	1	2	1	2	1	1
20.Perc.1	1	2	1	1	1	1	1	1	1	1	1	1	1
21.Perc.2	3	4	1	1	1	1	3	1	1	1	1	3	1
22.Harp	2	3	1	1	1	1	2	2	3	1	1	1	2
TOTAL	**15**	**22**	**2**	**4**	**1**	**1**	**17**	**8**	**16**	**2**	**12**	**4**	**15**

Table 10.4 Differences of Eye behaviour prior to 1st, 2nd, and 3rd Task

Differences of Eye behaviour prior 1st , 2nd , & 3rd Task												
Musicians	**Looking space**			**Looking Interviewer**			**Looking camera**			**Closing eyes**		
	Pr T 1	Pr T 2	**Pr T 3**	Pr T 1	Pr T2	Pr T 3	Pr T 1	Pr T2	**Pr T3**	Pr T1	Pr T2	**Pr T 3**
1.Piano1	4	4	**2**	3	5	**5**	1	1	**1**	3	4	**2**
2.Piano2	2	5	**3**	3	4	**5**	1	1	**1**	1	1	**1**
3.Piano3	1	2	**2**	5	2	**3**	1	1	**1**	1	1	**1**
4.Guit.1	4	2	**2**	3	5	**5**	1	1	**1**	1	2	**1**
5.Guit.2	1	2	**2**	5	4	**3**	1	1	**1**	3	1	**2**
6.Guit.3	3	3	**2**	3	5	**3**	1	1	**1**	1	2	**1**
7.Viol.1	4	1	**1**	2	2	**4**	1	1	**1**	1	1	**1**
8.Viol.2	3	1	**2**	2	5	**2**	4	1	**2**	1	1	**2**
9.Viol.3	4	3	**2**	3	2	**2**	1	1	**1**	1	1	**1**
10.Viola1	4	3	**4**	4	3	**5**	1	1	**1**	1	2	**1**
11.Viola2	3	2	**1**	2	4	**3**	1	1	**1**	1	2	**1**
12.Cello1	3	3	**4**	3	5	**5**	1	1	**1**	1	1	**1**
13.Cello2	4	2	**1**	3	3	**4**	2	1	**2**	1	2	**1**
14.Rec.1	1	1	**1**	5	2	**2**	1	1	**1**	1	1	**1**
15.Rec.2	3	2	**2**	4	3	**5**	1	1	**1**	1	2	**2**
16.Flute	4	2	**2**	2	5	**5**	1	1	**1**	1	1	**1**
17.Clarin	3	4	**5**	4	5	**5**	1	1	**1**	1	2	**1**
18.Oboe	4	2	**1**	3	2	**5**	5	1	**1**	1	1	**1**
19.Bass.	1	2	**1**	5	3	**2**	1	1	**1**	1	1	**1**
20.Perc.1	5	1	**1**	3	2	**2**	1	1	**1**	1	1	**1**
21.Perc.2	4	2	**3**	2	4	**4**	2	1	**1**	1	1	**1**
22.Harp	1	2	**2**	5	3	**3**	1	1	**1**	1	1	**1**
TOTAL	17	18	**15**	22	22	**22**	4	0	**2**	2	8	**4**

Table 10.5 Summary of differences musicians' eye behaviour between prior to Task 2 and Task 3

SUMMARY DIFFERENCES MUSICIANS' EYES BEHAVIOUR between prior 2nd and 3rd TASK			
	Musicians number Same	**Musicians number Increasing**	**Musicians number Decreasing**
Looking space	**9**	**5**	**8**
Looking Interviewer	**10**	**7**	**5**
Looking camera	**20**	**2**	
Closing eyes	**13**	**2**	**7**

Figure 10.1 Looking into space prior to 1st, 2nd, and 3rd Task

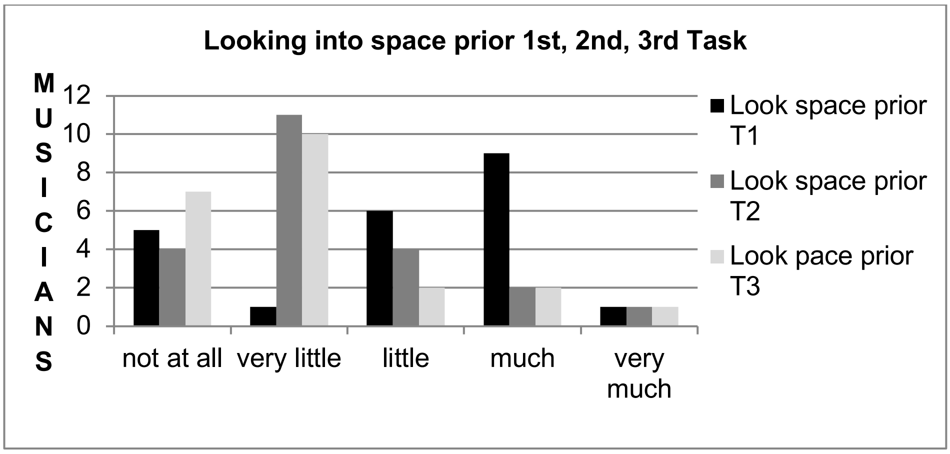


Figure 10.2 Looking at the interviewer prior to 1st, 2nd, and 3rd Task

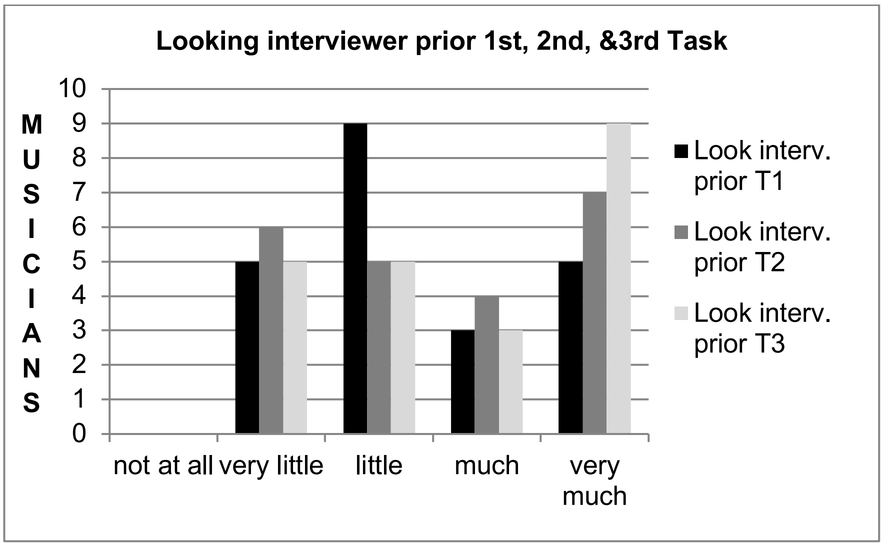


Figure 10.3 Closing eyes prior to 1st, 2nd, and 3rd Task

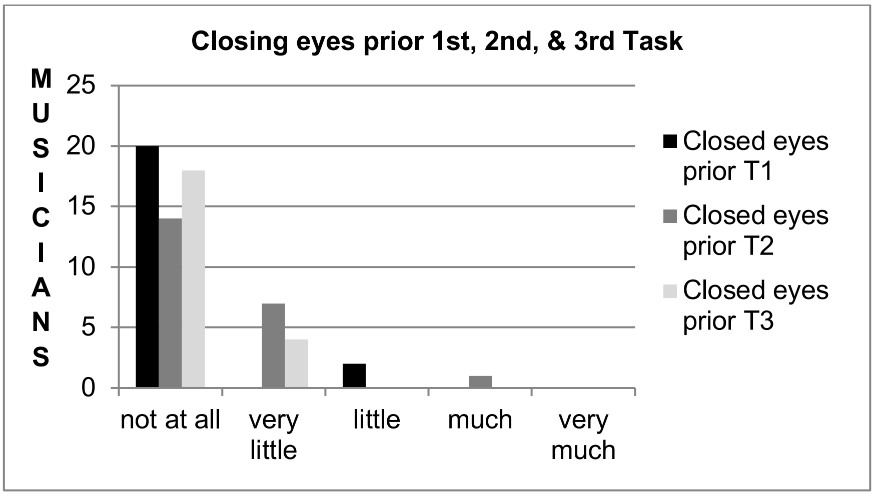


Table 10.6 Frequency of gestures performed prior to 1st, 2nd, and 3rd Task

FREQUENCY of GESTURES PERFORMED PRIOR 1st, 2nd , & 3rd TASK						
Musicians	ANTICIPATORY			ICONIC		
	Pr. T. 1	Pr. T 2	**Pr. T 3**	Pr. T. 1	Pr. T. 2	**Pr. T 3**
1.Piano 1	4	2	**1**	1	2	**1**
2. Piano 2	1	1	**1**	2	2	**1**
3. Piano 3	1	1	**1**	3	1	**1**
4. Guitar 1	3	1	**1**	1	1	**1**
5. Guitar 2	1	1	**1**	1	1	**1**
6. Guitar 3	1	1	**1**	4	1	**1**
7. Violin 1	1	1	**1**	4	1	**1**
8.Violin 2	1	1	**1**	1	1	**1**
9. Violin 3	1	1	**1**	1	1	**1**
10. Viola 1	1	1	**1**	1	2	**1**
11. Viola 2	1	1	**1**	2	1	**1**
12. Cello 1	1	1	**1**	1	1	**2**
13. Cello 2	1	1	**1**	3	1	**1**
14. Rec. 1	1	1	**1**	4	1	**1**
15. Rec. 2	1	1	**1**	3	2	**1**
16. Flute	1	2	**1**	3	1	**1**
17. Clar.	1	3	**2**	1	1	**1**
18. Oboe	3	1	**1**	3	1	**1**
19. Bass	1	1	**1**	3	1	**1**
20. Perc.1	1	1	**1**	1	1	**1**
21. Perc. 2	1	1	**1**	1	1	**1**
22. Harp	1	1	**1**	1	1	**1**
TOTAL	3	3	**1**	11	4	**1**

Figure 10.4 Anticipatory gestures performed prior to 1st, 2nd and 3rd Task

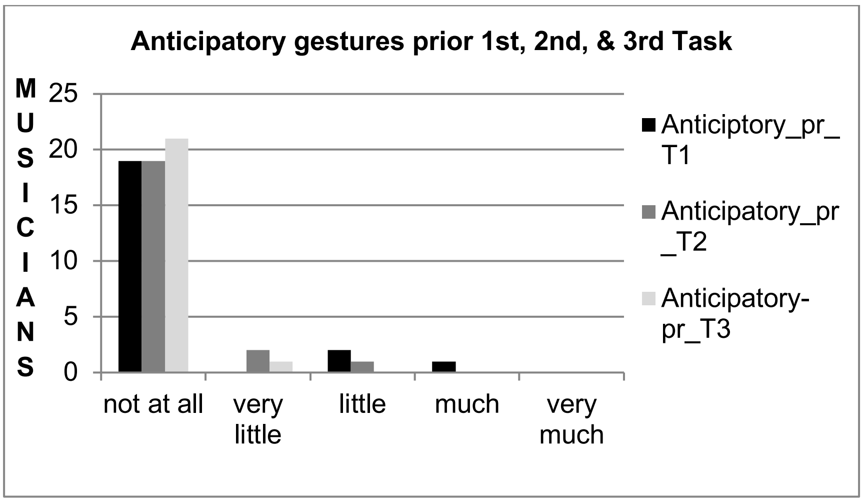


Figure 10.5 Iconic gestures performed prior to 1st, 2nd, and 3rd Task

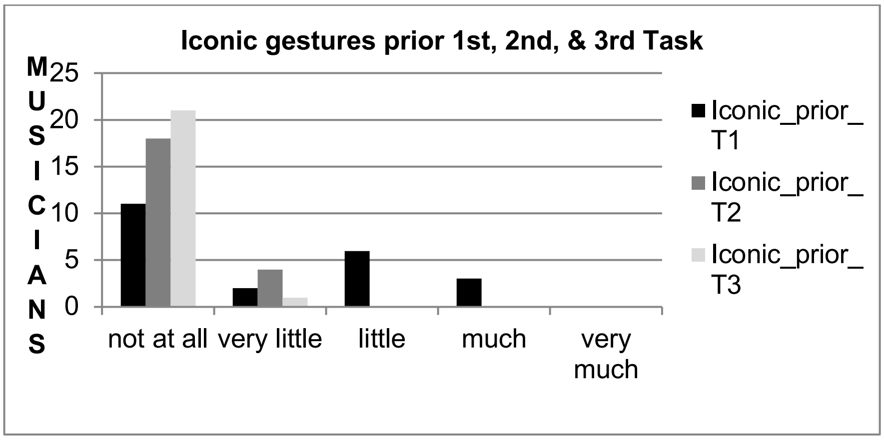


Table 10.7 Frequency of body movement performed prior to1st, 2nd, and 3rd Task

FREQUENCY of BODY MOVEMENT PERFORMED prior to 1st, 2nd, & 3rd TASK			
	Body movement		
Musicians	Prior Task 1	Prior Task 2	**Prior Task 3**
1.Piano 1	4	3	**5**
2. Piano 2	2	5	**5**
3. Piano 3	2	2	**3**
4. Guitar 1	3	5	**5**
5. Guitar 2	3	3	**2**
6. Guitar 3	3	3	**2**
7. Violin 1	4	2	**2**
8.Violin 2	3	3	**2**
9. Violin 3	2	2	**2**
10. Viola 1	4	3	**4**
11. Viola 2	1	4	**3**
12. Cello 1	4	5	**4**
13. Cello 2	1	2	**2**
14. Rec.1	2	2	**2**
15. Rec. 2	3	2	**5**
16. Flute	4	4	**3**
17. Clarinet	3	5	**3**
18. Oboe	3	2	**1**
19. Bass.	3	1	**1**
20. Perc. 1	4	2	**1**
21. Perc. 2	4	5	**3**
22. Harp	1	1	**2**
TOTAL	19	20	**19**

Table 10.8 Summary of differences body movement performed prior to 2nd and 3rd Task

SUMMARY: DIFFERENCES of BODY MOVEMENT FREQUENCY PERFORMED prior 2nd and 3rd Task			
	Musicians number Same	**Musicians number Increasing**	**Musicians number Decreasing**
Musicians number	**7**	**5**	**10**

Table 10.9 Body movement classification performed during prior to Task 3

BODY MOVEMENT CLASSIFICATION PRIOR TASK 3							
Musicians	**Nodding**	**Lean forward**	**Lean back**	**Head tilt-side**	**Sheak head**	**Shrugging**	**Rocking**
1.Piano 1	✓		✓				
2. Piano 2	✓		✓		✓		
3. Piano 3	✓			✓			
4. Guitar 1	✓						
5. Guitar 2	✓						
6. Guitar 3	✓						
7. Violin 1	✓						
8.Violin 2	✓						
9. Violin 3	✓						
10. Viola 1	✓	✓		✓			
11. Viola 2		✓	✓				
12. Cello 1	✓					✓	
13. Cello 2	✓						
14. Rec. 1	✓						
15. Rec. 2	✓	✓	✓	✓			✓
16. Flute	✓						
17. Clar.		✓	✓				
18. Oboe							
19. Bass.							
20. Perc. 1							
21. Perc. 2	✓			✓			
22. Harp	✓						
TOTAL	**17**	**4**	**5**	**4**	**1**	**1**	**1**

Figure 10.6 Body movement performed prior to 1st, 2nd, and 3rd Task

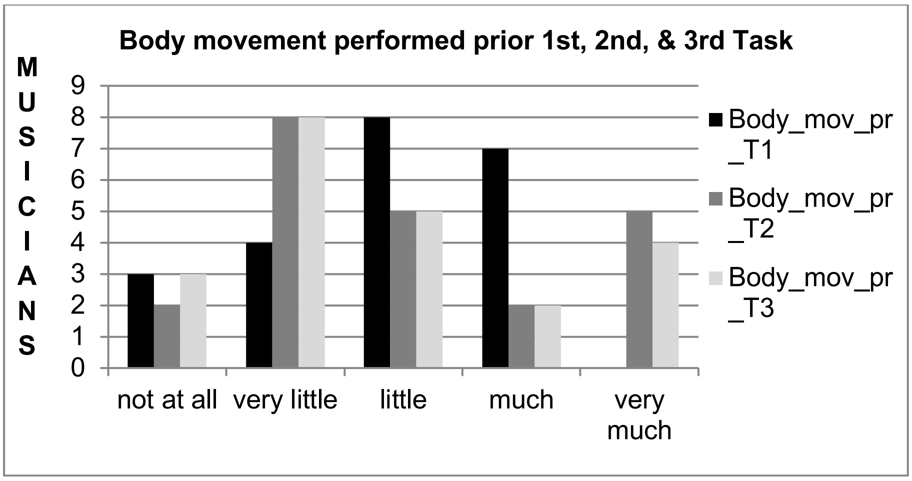


Table 10.10 Frequency of facial behaviour performed prior to 1st, 2nd, and 3rd Task

FREQUENCY of FACIAL BEHAVIOUR prior 1st 2nd, & 3rd TASK			
Musicians	**Facial behaviour**		
	Prior Task 1	Prior Task 2	**Prior Task 3**
1.Piano 1	3	3	**2**
2. Piano 2	2	2	**4**
3. Piano 3	1	1	**1**
4. Guitar 1	3	5	**1**
5. Guitar 2	2	2	**1**
6. Guitar 3	2	1	**1**
7. Violin 1	2	1	**2**
8.Violin 2	2	1	**2**
9. Violin 3	3	2	**1**
10. Viola 1	4	2	**1**
11. Viola 2	1	2	**1**
12. Cello 1	2	3	**1**
13. Cello 2	3	1	**1**
14. Rec. 1	1	1	**1**
15. Rec. 2	4	2	**1**
16. Flute	3	4	**2**
17. Clar.	3	2	**2**
18. Oboe	2	3	**4**
19. Bass.	1	1	**1**
20. Perc. 1	4	1	**1**
21. Perc. 2	3	1	**1**
22. Harp	1	1	**2**
TOTAL	17	12	**8**

Table 10.11 Summary of facial behaviour performed prior to 2nd and 3rd Task

SUMMARY: DIFFERENCES of FACIAL BEHAVIOUR FREQUENCY between prior 2nd and 3rd TASK			
Musicians number	**Musicians number Same**	**Musicians number Increasing**	**Musicians number Decreasing**
	8	**5**	**9**

Figure 10.7 Frequency of facial behaviour performed prior to 1st, 2nd, and 3rd Task

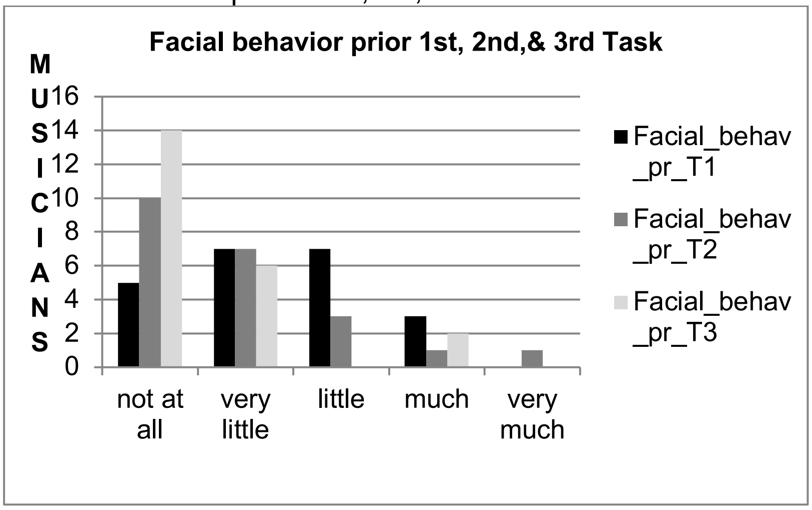


Table 10.12 Facial behavior performed prior to 1st, 2nd, and 3rd Task

FACIAL BEHAVIOUR PRIOR 1st, 2nd, & 3rd TASK														
Musicians	Parted Lips		Bit lips	Narrowing lips			Lips down		Raising eyebrows			Lowering eyebrows		
	Pr T2	**Pr T3**	**Pr T3**	Pr T1	Pr T2	**Pr T3**	Pr T2	**Pr T3**	Pr T1	Pr T2	**Pr T3**	Pr T1	Pr T2	**Pr T3**
1.Piano 1	✓	✓	✓		✓							✓		
2. Piano 2		✓				✓					✓		✓	✓
3. Piano 3														
4. Guit 1	✓				✓				✓	✓				
5. Guit 2	✓													
6. Guit3														
7. Violin 1		✓		✓										✓
8.Violin 2								✓						
9. Violin 3	✓													
10. Viola 1				✓					✓			✓	✓	
11. Viola 2													✓	
12. Cello 1					✓									
13. Cello 2														
14. Rec1														
15. Rec2									✓	✓				
16. Flute		✓			✓								✓	✓
17. Clar				✓			✓				✓			
18. Oboe		✓			✓				✓	✓	✓	✓		✓
19. Bass														
20. Perc1									✓					
21. Perc2									✓					
22. Harp						✓								
TOTAL	4	**5**	**1**	3	5	**2**	1	**1**	6	3	**3**	4	4	**4**

Table 10.13 Smiling frequency prior to performing 1st, 2nd, and 3rd Task-
Kinds of smiling prior to Task 3

SMILING FREQUENCY prior 1st, 2nd, and 3rd TASK				**KINDS OF SMILING PRIOR 2nd and 3rd TASK 3**					
Musicians	Pr T. 1	Pr T. 2	**Pr T. 3**	Embarrassed		Affiliation		Nervous	
				Pr. T.2	**Pr. T.3**	Pr. T.2	**Pr. T.3**	Pr. T.2	**Pr. T.3**
1.Piano1	4	4	**4**		✓	✓		✓	✓
2.Piano2	4	5	**5**	✓	✓				✓
3.Piano3	1	1	**2**		✓				
4.Guit.1	1	1	**5**		✓				
5.Guit.2	3	1	**1**						
6.Guit.3	4	2	**1**			✓			
7.Viol.1	1	1	**1**						
8.Viol.2	5	5	**4**		✓	✓		✓	✓
9.Viol.3	3	2	**2**	✓	✓				
10.Viola1	4	1	**2**		✓				✓
11.Viola2	1	3	**1**	✓				✓	
12.Cello1	1	3	**4**	✓	✓	✓			
13.Cello2	4	1	**3**				✓		
14.Rec.1	3	1	**2**				✓		
15.Rec.2	3	3	**2**	✓			✓		
16.Flute	3	2	**2**		✓	✓			
17.Clar.	3	5	**4**	✓	✓	✓			✓
18.Oboe	3	2	**2**	✓	✓				
19.Bass.	1	1	**2**		✓				
20.Perc.1	2	2	**1**			✓			
21.Perc.2	4	2	**1**	✓					
22.Harp	3	2	**3**		✓	✓			
TOTAL	16	14	**16**	**8**	**13**	8	**3**	3	**5**

Table 10.14 Summary of Smiling prior to 2nd and 3rd Task

SUMMARY: DIFFERENCES of SMILING FREQUENCY prior 2nd & 3rd TASK			
Musicians number	**Musicians number Same**	**Musicians number Increasing**	**Musicians number Decreasing**
	7	**8**	**7**

Figure 10.8 Frequency of smiling prior to 1st, 2nd, and 3rd Task

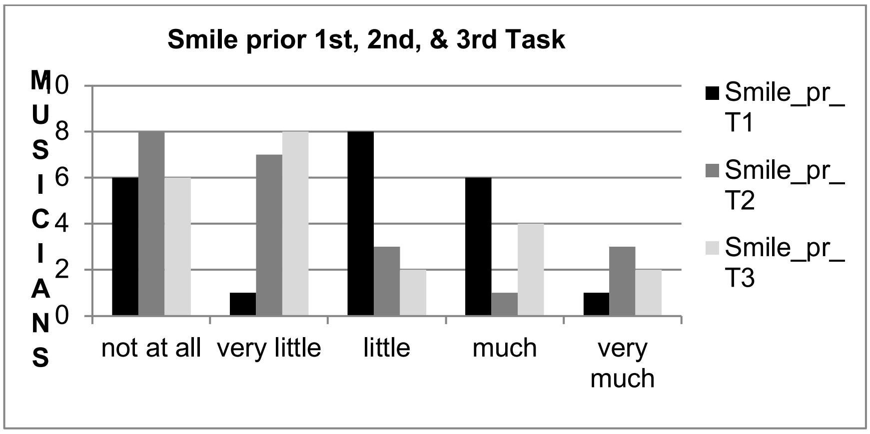


Table 10.15 Frequency of musicians' silence prior to performing 1st, 2nd, and 3rd Task

FREQUENCY of MUSICIANS' SILENCE prior 1st, 2nd, & 3rd Task			
Musicians	Prior Task 1	Prior Task 2	**Prior Task 3**
1.Piano1	5	5	**1**
2.Piano2	3	4	**5**
3.Piano3	1	1	**1**
4.Guit.1	4	4	**1**
5.Guit.2	2	1	**1**
6.Guit.3	3	2	**1**
7.Viol.1	2	1	**1**
8.Viol.2	4	1	**1**
9.Viol.3	2	1	**1**
10.Viola1	5	1	**1**
11.Viola2	2	1	**1**
12.Cello1	1	1	**1**
13.Cello2	4	1	**1**
14.Rec.1	2	1	**1**
15.Rec.2	2	1	**1**
16.Flute	3	1	**1**
17.Clar.	3	5	**3**
18.Oboe	4	1	**1**
19.Bass.	1	2	**1**
20.Perc.1	1	1	**1**
21.Perc.2	2	1	**1**
22.Harp	1	1	**1**
TOTAL	17	6	**2**

Table 10.16 Summary of Silence prior to 2nd and 3rd Task

SUMMARY: DIFFERENCES of SILENCE FREQUENCY between prior to 2nd and 3rd TASK			
Musicians number	**Musicians number Same**	**Musicians number Increasing**	**Musicians number Decreasing**
	16	**1**	**5**

Figure 10.9 Frequency of silence prior to 1st, 2nd and 3rd Task

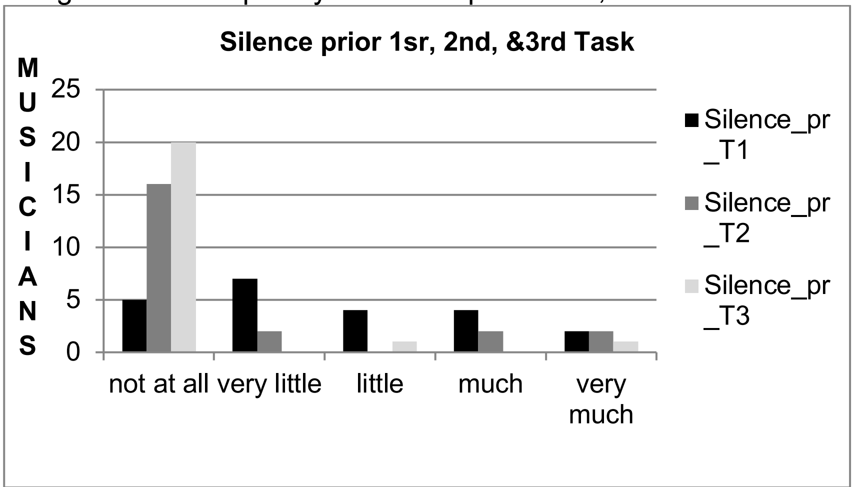


Table 10.17 Frequency of self-adaptors prior to performing 1st, 2nd, and 3rd Task

FREQUENCY OF SELF-ADAPTORS prior 1st, 2nd, & 3rd TASK			
Musicians	**Self-adaptors**		
	Prior Task 1	Prior Task 2	**Prior Task 3**
1.Piano1	4	1	**2**
2.Piano2	4	3	**3**
3.Piano3	1	1	**1**
4.Guit.1	3	4	**4**
5.Guit.2	3	1	**1**
6.Guit.3	3	1	**1**
7.Viol.1	4	1	**1**
8.Viol.2	2	1	**1**
9.Viol.3	3	2	**3**
10.Viola1	5	2	**3**
11.Viola2	3	1	**2**
12.Cello1	4	4	**3**
13.Cello2	4	2	**1**
14.Rec.1	1	1	**1**
15.Rec.2	5	3	**2**
16.Flute	5	3	**3**
17.Clar.	4	3	**5**
18.Oboe	5	1	**2**
19.Bass.	3	2	**2**
20.Perc.1	3	1	**1**
21.Perc.2	4	1	**1**
22.Harp	1	1	**1**
TOTAL	19	10	**12**

Table 10.18 Summary of Self-adaptors frequency prior to 2nd and 3rd Task

SUMMARY: DIFFERENCES of SELF-ADAPTORS FREQUENCY between prior to 2nd and 3rd TASK			
Musicians number	**Musicians number Same**	**Musicians number Increasing**	**Musicians number Decreasing**
	13	**6**	**3**

Figure 10.10 Frequency of self-adaptors prior to 1st, 2nd, and 3rd Task

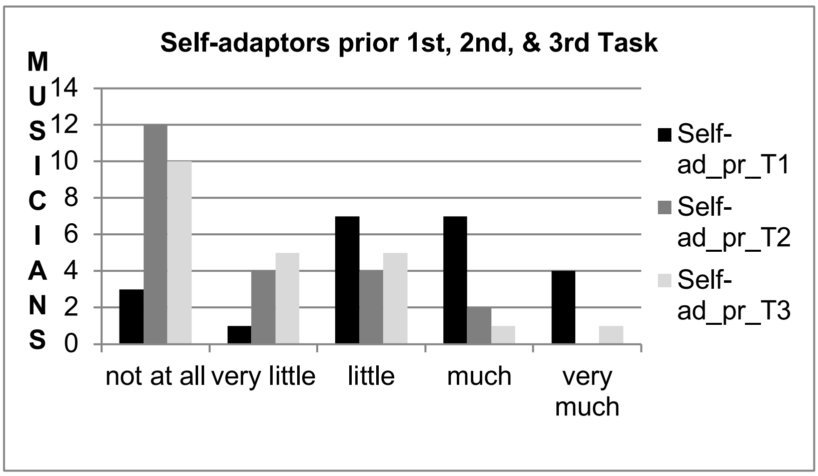


Table 10.19 Kinds of Self-adaptors exhibited prior to Task 3

KINDS of SELF-ADAPTORS PRIOR TASK 3							
Musicians	**Rubbing**	**Stroking**	**Hiding**	**Tongue between lips**	**Biting lips**	**Scratching**	**Grasping**
Piano 1	Tights						
Piano 2		Hair	Face				
Guitar 1		Hands	Hands	✓			
Violin 3		Face				Eyes	
Viola 1						Forehead/ Head	
Viola 2		Chin/lips					
Cello 1			Hands		✓		
Rec. 2						Head	
Flute	Hands						
Clar.		Thumb				Ear/Eye/ Cheek	Nose
Oboe					✓		
Bass.							Arm
TOTAL	**2**	**5**	**3**	**1**	**2**	**4**	**2**

Table10.20 Frequency of Semiconscious/Conscious movement exhibited prior to 2nd and 3rd Task

SEMICONSCIOUS/CONSCIOUS MOVEMENTS FREQUENCY prior 2nd and 3rd TASK				
Musicians	**Kinaestetic movement**		**Simulated movement**	
	Prior T 2	**Prior T 3**	Prior T 2	**Prior T 3**
1.Piano1	2	**1**	1	**2**
2.Piano2	2	**1**	1	**1**
3.Piano3	1	**1**	1	**2**
4.Guit.1	1	**1**	2	**2**
5.Guit.2	1	**1**	1	**2**
6.Guit.3	1	**1**	1	**2**
7.Viol.1	1	**1**	1	**2**
8.Viol.2	2	**3**	2	**3**
9.Viol.3	1	**1**	1	**2**
10.Viola1	1	**2**	2	**3**
11.Viola2	1	**1**	1	**1**
12.Cello1	1	**1**	2	**3**
13.Cello2	1	**1**	1	**1**
14.Rec.1	1	**1**	1	**1**
15.Rec.2	1	**1**	1	**2**
16.Flute	1	**1**	1	**2**
17.Clar.	1	**2**	1	**4**
18.Oboe	1	**1**	1	**3**
19.Bass.	1	**1**	1	**1**
20.Perc.1	1	**1**	1	**1**
21.Perc.2	1	**3**	1	**1**
22.Harp	1	**1**	1	**2**
TOTAL	**3**	**4**	**4**	**15**

Table 10.21 Summary of Semiconscious/Conscious movement frequency of prior to 2^{nd} and 3^{rd} Task

SUMMARY: DIFFERENCES of SEMICONSCIOUS/CONSCIOUS FREQUENCY between prior to 2^{nd} and 3^{rd} TASK			
	Musicians number Same	**Musicians number Increasing**	**Musicians number Decreasing**
Kinaesthetic movements	**16**	**4**	**2**
Simulated movements	**8**	**14**	

Figure 10.11 Frequency of Kinaesthetic movements performed prior to 2^{nd} and 3^{rd} Task

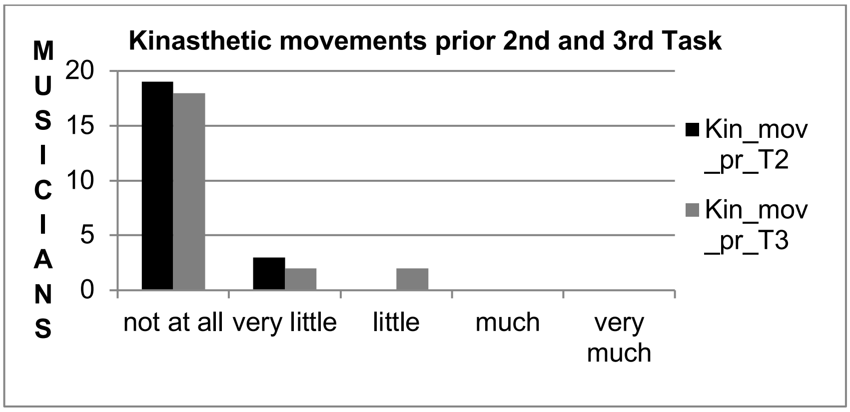
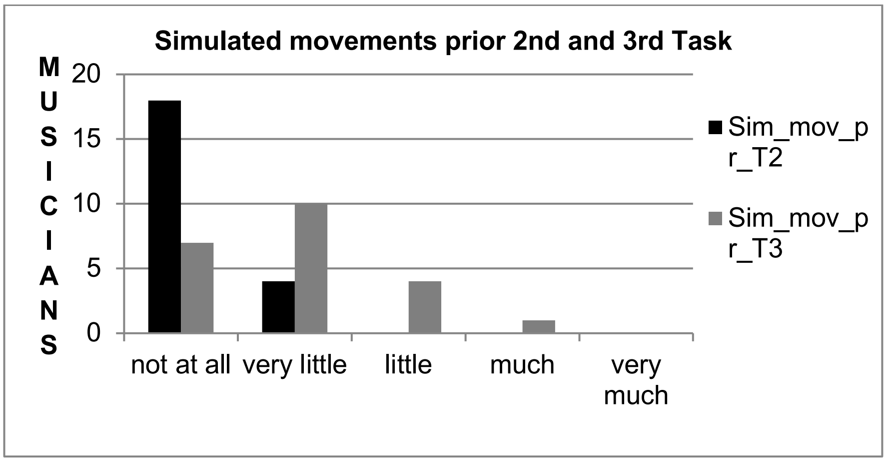


Figure 10.12 Frequency of Simulated movements performed prior to 2^{nd} and 3^{rd} Task



Chapter 11 –Tables & Figures

Table 11.1 Attitude towards Task 3 manifested through nonverbal behavior prior to and during the simulation

Attitude towards the task: tense/at ease prior to and during the simulation										
Musicians	**Conce-ntra-tion before start simulation**	**Kinesic ensemble**								
		Eye behaviour				**Body Movement before simul.**	**Expressive bodily movement**	**Facial behaviour**		**Smile**
		Look at "Instrument"	Look space	Close eyes	Look camera			Tense Face	Relaxed face	
1.Piano 1	0.2	4	1	2	1	2	1	3	1	4
2.Piano 2	0.2	5	1	1	1	1	3	3	1	3
3.Piano 3	0.2	1	1	5	1	1	2	1	5	2
4.Guitar 1	0.2	5	1	1	1	1	3	2	2	2
5.Guitar 2	0.2	1	5	1	1	1	1	4	1	1
6.Guitar 3	0.4	1	3	2	1	1	3	2	3	1
7.Violin 1	0.4	1	1	5	1	1	3	2	1	1
8.Violin 2	0.3	1	5	1	1	1	1	2	3	2
9.Violin 3	0.5	2	1	4	1	1	5	2	1	2
10.Viola 1	0.3	4	2	1	1	1	2	2	1	1
11.Viola 2	0.2	1	1	5	1	1	3	2	3	2
12.Cello 1	0.0	1	5	1	1	1	2	4	1	3
13.Cello 2	0.2	1	5	1	2	1	2	3	1	1
14.Rec. 1	0.2	1	5	1	1	1	2	2	2	2
15.Rec. 2	0.2	1	1	5	1	1	3	2	1	2
16.Flute	0.3	1	1	5	1	1	2	2	1	1
17.Clar.	0.2	5	1	1	1	1	1	2	2	1
18.Oboe	0.1	1	1	5	1	1	2	2	2	2
19.Bass.	0.2	1	5	1	1	1	1	3	1	1
20.Perc.1	0.0	1	5	1	1	1	1	1	1	3
21.Perc.2	0.3	5	1	1	1	1	2	2	2	2
22.Harp	0.2	2	3	1	1	1	2	2	1	2
TOTAL		**8**	**10**	**9**	**1**	**1**	**16**	**20**	**9**	**14**

Table 11.2: Differences of eye behaviour during Mental rehearsal-Task 2 and Simulation-Task 3

Differences of eye behaviour during Mental rehearsal, and Simulation						
Musicians	**Task 2 Mental rehearsal**		**Task 3 Simulation of playing**			
	Closed eyes	Look space	Look instrument	Look space	Closed eyes	Look camera
1.Piano 1	5	1	4	1	2	1
2.Piano 2	1	5	5	1	1	1
3.Piano 3	5	1	1	1	5	1
4.Guitar 1	1	5	5	1	1	1
5.Guitar 2	1	5	1	5	1	1
6.Guitar 3	1	5	1	3	2	1
7.Violin 1	1	5	1	1	5	1
8.Violin 2	5	1	1	5	1	1
9.Violin 3	3	1	2	1	4	1
10.Viola 1	2	4	4	2	1	1
11.Viola 2	5	1	1	1	5	1
12.Cello 1	1	5	1	5	1	1
13.Cello 2	1	5	1	5	1	2
14.Rec. 1	1	5	1	5	1	1
15.Rec. 2	5	1	1	1	5	1
16.Flute	5	1	1	1	5	1
17.Clar.	1	5	5	1	1	1
18.Oboe	1	5	1	1	5	1
19.Bass.	1	5	1	5	1	1
20.Perc.1	5	1	1	5	1	1
21.Perc.2	2	4	5	1	1	1
22.Harp	1	5	2	3	1	1
TOTAL	**10**	**14**	**8**	**10**	**9**	**1**

Figure 11.1 Looking into space during Mental rehearsal-Task 2 and Simulation-Task 3

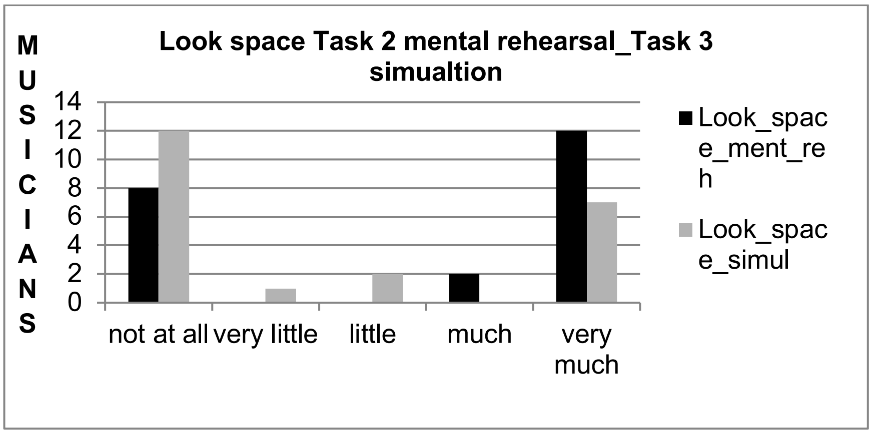


Figure 11.2 Closing eyes during mental rehearsal Task 2 and Simulation Task 3

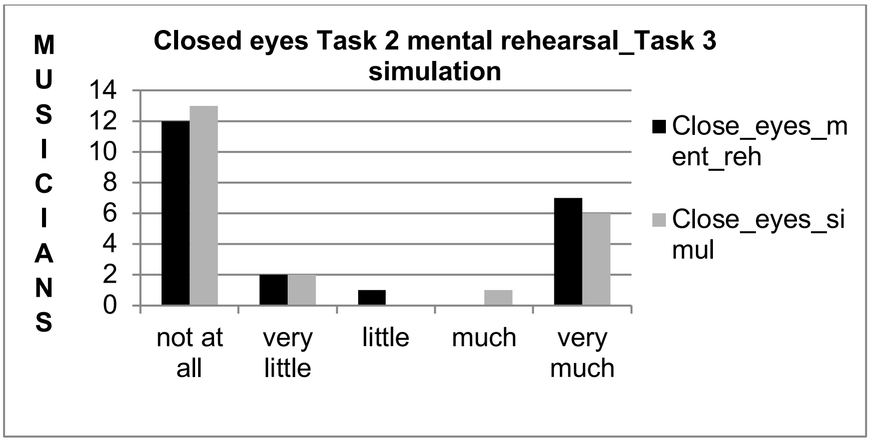


Table 11.3 Differences of expressive bodily movement between Simulation and performance

*Breathing: 1= without breathing; 2= breathing

Differences of expressive bodily movements between Simulation and performance										
Musicians	**SIMULATION**					**PERFORMANCE**				
	Breath before start*	Head nods	Trunk sway	Muscle tone	Specific instr mov	Breath before start*	Head nods	Trunk sway	Muscle tone	Specific instr. mov.
1.Piano 1	1	1	1	5	2	1	2	2	5	3
2.Piano 2	1	2	5	5	1	1	3	5	5	1
3.Piano 3	2	2	2	5	2	1	3	3	5	3
4.Guitar 1	1	3	1	5	2	1	4	2	5	3
5.Guitar 2	1	1	1	5	1	1	1	1	5	1
6.Guitar 3	1	3	3	4	3	1	3	3	5	3
7.Violin 1	1	3	2	4	2	1	3	4	5	2
8.Violin 2	1	1	1	4	1	1	1	2	5	1
9.Violin 3	2	5	3	3	2	2	4	5	5	4
10.Viola 1	2	2	2	5	2	2	4	4	5	4
11.Viola 2	1	3	3	4	3	1	3	2	5	3
12.Cello 1	1	2	2	4	2	1	2	1	5	1
13.Cello 2	1	2	1	3	1	1	3	1	5	1
14.Rec. 1	1	2	1	4	2	2	3	2	5	4
15.Rec. 2	2	2	3	4	3	2	2	4	5	3
16.Flute	2	2	1	4	2	2	2	1	5	2
17.Clar	1	1	1	4	1	2	2	2	5	3
18.Oboe	1	2	1	4	2	2	2	2	5	3
19.Bass.	2	1	1	5	1	2	1	1	5	1
20.Perc.1	1	1	1	4	1	1	1	1	5	1
21.Perc.2	1	2	1	5	2	1	2	3	5	4
22.Harp	1	2	1	4	1	1	2	2	5	2
TOTAL	**6**	**16**	**8**	**22**	**14**	**8**	**18**	**16**	**22**	**16**

Figure11.3 Expressive bodily movements:
Head nods during Simulation and 3rd performance

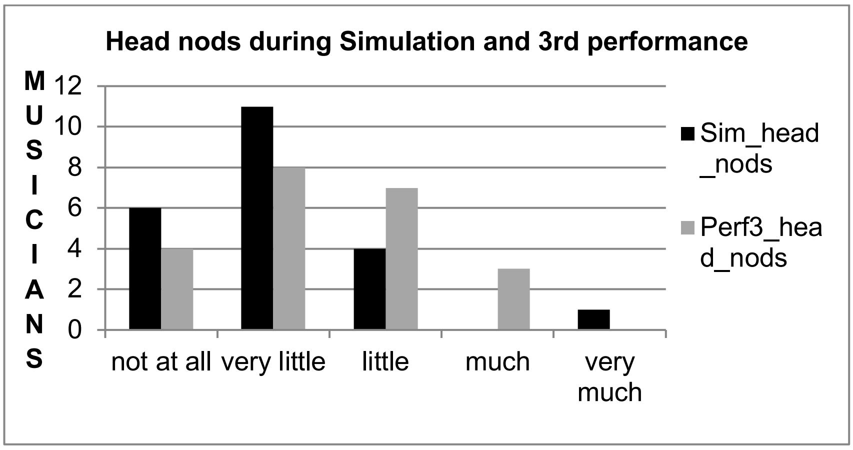


Figure 11.4 Expressive bodily movements:
Trunk swaying during Simulation and 3rd performance

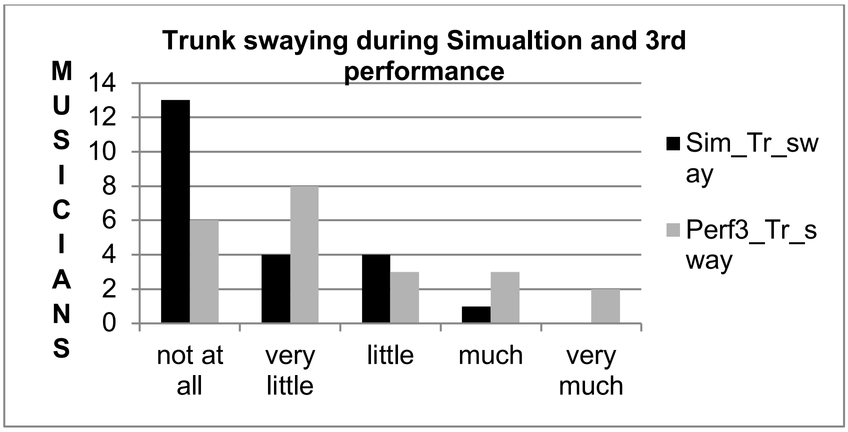


Figure 11.5 Expressive bodily movements:
Specific instrumental movements during simulation and 3rd performance

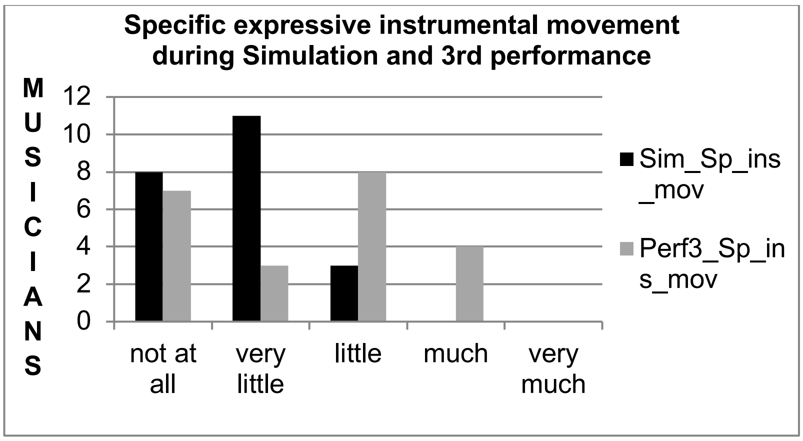


Table 11.4 Musicians' concentration time before performing 1st, 2nd , and 3rd Task

MUSICIANS' CONCENTRATION TIME BEFORE PERFORMING 1st , 2nd and 3rd Task			
Musicians	**1st time seconds**	**2nd time seconds**	**3rd time seconds**
1. Pianist 1	0.9	0.5	0.5
2. Pianist 2	0.6	0.7	0.5
3.Pianist 3	0.1	0.3	0.2
4. Guitar 1	0.1	0.4	0.3
5.Guitar 2	0.3	0.3	0.2
6.Guitar 3	0.1	0.5	0.4
6. Violin 1	0.3	0.18	0.4
7. Violin 2	0.3	0.6	0.3
8. Violin 3	0.7	0.12	0.3
9. Viola 1	0.5	0.9	0.2
10. Viola 2	0.1	0.5	0.2
11. Cello 1	0.0	0.0	0.1
13. Cello 2	0.3	0.5	0.4
14. Recor 1	0.4	0.3	0.2
15. Recor 2	0.4	0.3	0.5
16. Flute	0.1	0.5	0.3
17. Clarinet	0.5	0.7	0.2
18. Oboe	0.2	0.4	0.2
19. Bass	0.1	0.3	0.3
20. Perc.1	0.4	0.4	0.0
21. Perc. 2	0.0	0.6	0.5
22. Harp	0.0	0.4	0.1

Table 11.5 Summary of musicians' concentration before performing 2nd and 3rd Task

SUMMARY MUSICIANS' CONCENTRATION TIME BEFORE PERFORMING 2nd and 3rd Task			
Musicians number	**Concentration time Decreasing**	**Concentration time Same**	**Concentration time Increasing**
	18	**2**	**2**

Figure 11.6 Musicians' concentration time before performing 1st, 2nd, and 3rd Task

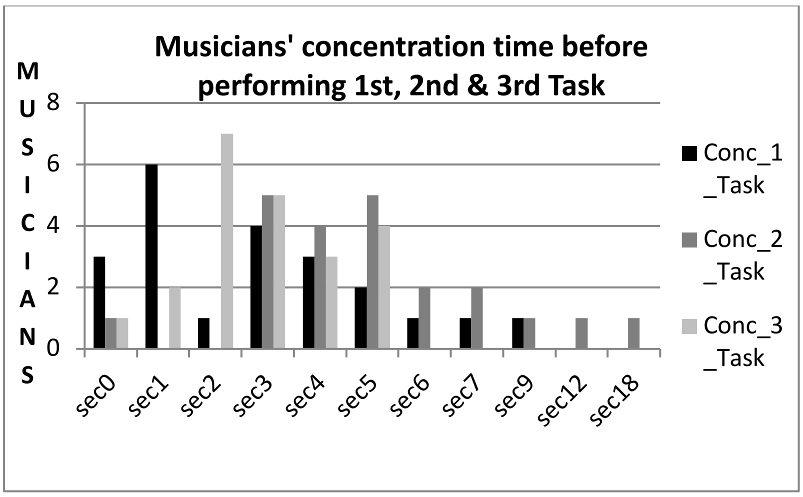


Table 11.6 Differences of expressive bodily movements
between 1st, 2nd, & 3rd Performance

Differences of Expressive bodily movements between 1st, 2nd, & 3rd Performance												
	Performance 1				**Performance 2**				**Performance 3**			
Musicians	Breath bef start	Head nods	Trunk sway	Spec. instr mov	Breath bef. start	Head nods	Trunk sway	Spec. instr mov	Breath bef. start	Head nods	Trunk sway	Spec. instr mov.
1.Piano 1	1	2	2	4	1	1	1	2	1	2	2	3
2.Piano 2	1	2	5	2	1	2	5	2	1	3	5	1
3.Piano 3	1	2	2	2	1	2	3	2	1	3	3	3
4.Guit.1	1	1	1	2	1	3	1	2	1	4	2	3
5.Guit. 2	1	1	1	1	1	1	1	1	1	1	1	1
6.Guit. 3	1	4	5	3	1	4	4	3	1	3	3	4
7.Violin1	1	2	5	3	1	2	4	2	1	3	4	2
8.Violin2	1	1	3	2	1	1	2	1	1	1	2	1
9.Violin3	2	5	3	3	2	5	3	3	2	5	4	4
10.Viola1	2	3	4	3	2	3	3	3	2	4	4	4
11.Viola 2	1	2	1	2	1	2	1	2	1	3	2	3
12.Cello 1	1	2	1	2	1	2	1	1	1	2	1	1
13.Cello 2	1	1	1	1	1	2	1	1	1	3	1	1
14.Rec. 1	2	2	2	4	2	2	2	4	2	2	2	4
15.Rec. 2	2	2	3	4	2	3	4	4	2	2	3	3
16.Flute	2	3	2	1	2	2	1	1	2	2	1	2
17.Clar.	2	2	2	2	2	2	3	3	2	2	2	3
18.Oboe	2	2	2	3	2	2	3	4	2	2	2	2
19.Bass.	2	1	2	1	2	2	1	1	2	1	1	1
20.Perc.1	1	1	1	2	1	1	1	2	1	1	1	3
21.Perc.2	1	1	1	1	1	2	2	2	1	2	3	4
22.Harp	1	2	4	3	1	1	2	2	1	2	3	2
TOTAL	**Yes 8**	**15**	**15**	**17**	**Yes 8**	**17**	**13**	**16**	**Yes 8**	**18**	**16**	**16**

Figure 11.7 Expressive bodily movements:
Head nods during 1st, 2nd, and 3rd performance

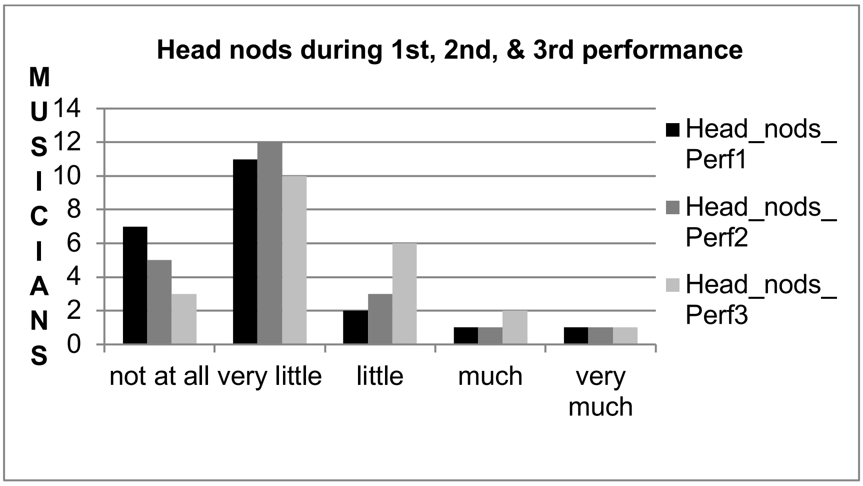


Figure 11.8 Expressive bodily movements:
Trunk swaying during 1st, 2nd, and 3rd performance

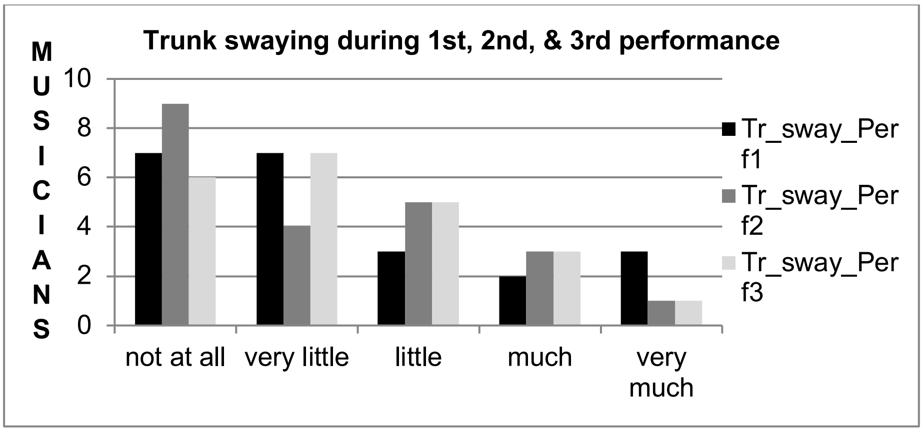
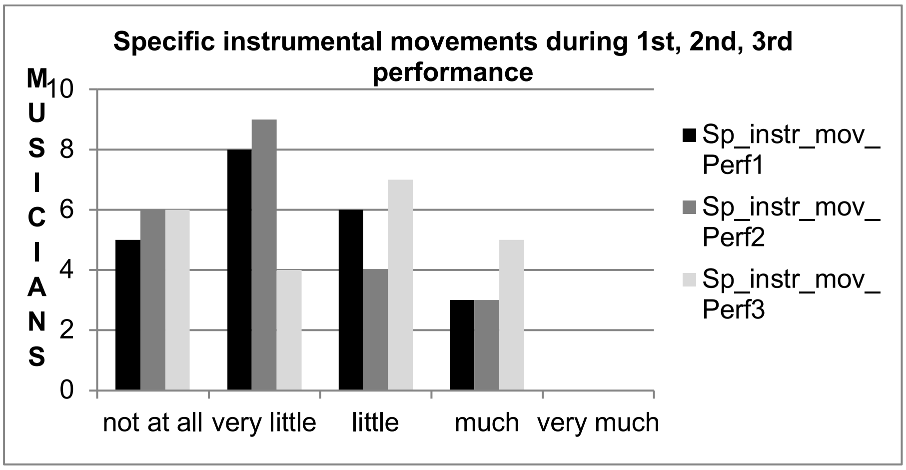


Figure 11.9 Expressive bodily movements:
Specific instrumental movements during 1st, 2nd, and 3rd performance



Chapter 12 –Tables

Table 12.1 Differences of Taking time after 2nd and 3rd Task

Musicians	Taking time through Silence and/or speech latency	
	After Task 2	**After Task 3**
1.Piano 1	0.8”	**0.7”**
2.Piano 2	0.5”	**0.3”**
3.Piano 3	0.4”	
4.Guitar 1	✓	
5.Guitar 2	✓	
6.Guitar 3	✓	**0.3”**
7.Violin 1	0.8”	
8.Violin 2	✓	
9.Violin 3	✓	**0.3”**
10.Viola 1	✓	
11.Viola 2	0.4”	
12.Cello 1	✓	
13.Cello 2	✓	**0.3”**
14.Recorder 1	0.5”	
15.Recorder 2	✓	
16.Flute	0.4”	
17.Clarinet	0.3”	**0.4”**
18.Oboe	0.3”	**0.3”**
19.Bassoon		
20.Percussion 1		
21.Percussion 2	✓	
22.Harp		

Table 12.2 Simulation effect

SIMULATION EFFECT															
Musicians	**Awareness**												**Reject task/ avoid answer**		
	Kinaesthetic/ simulated movements	Differences between performances							Body perception			Showing surprise for unusual Practice			
		Physical experience	Kinaesthtesia sound connection	Slower tempo	Unsure differences	Better	Worse	Involved music	More Body awareness	Same/less Body awareness	Relaxation/ tension	Positive reactions	Dissenting reactions	Too much think	Missing physical contact instrument & sound
1.Piano 1	5	✓		✓	✓				✓			✓			
2.Piano 2	3						✓			✓	✓		✓		✓
3.Piano 3	5	✓	✓					✓	✓						
4.Guit. 1	4		✓			✓		✓	✓		✓	✓			
5.Guit. 2	2						✓		✓				✓	✓	
6.Guit. 3	4	✓							✓			✓			
7.Violin 1	4		✓		✓				✓					✓	
8.Violin 2	5	✓			✓				✓		✓	✓			
9.Violin 3	5	✓	✓			✓			✓			✓	✓		
10.Viola 1	5	✓	✓			✓	✓		✓			✓			
11.Viola 2	4						✓		✓			✓	✓		✓
12.Cello 1	5								✓				✓		✓
13.Cello 2	5		✓	✓	✓				✓		✓				
14.Rec. 1	1				✓		✓			✓			✓		
15.Rec. 2	2					✓				✓			✓	✓	
16.Flute	4	✓				✓			✓	✓			✓		
17.Clar.	2	✓					✓			✓			✓		
18.Oboe	3	✓			✓					✓			✓		
19.Bass.	2				✓					✓			✓	✓	
20.Perc. 1	2		✓						✓		✓				
21.Perc. 2	4			✓						✓	✓		✓		
22.Harp	2						✓			✓			✓	✓	✓
TOTAL	**21**	**9**	**7**	**3**	**7**	**5**	**7**	**2**	**14**	**9**	**6**	**7**	**13**	**5**	**4**

Chapter 13 – Tables & Figures

Table 13.1 Nonverbal behaviour after playing Task 3

	Embodied self-awareness													
Musicians	**Showing Self-reflection, Surprise and/or Embarrassment**													
	Kinesic ensemble										**Silence**	**Self-adaptors**	**SEMI-/or CONSCIOUS MOVEMENTS**	
	Eye behaviour				**Gestures**			**Body Movement**	**Facial behaviour**	**Smile**				
	Look space	Look Interviewer	Closed eyes	Look cam	Anticipatory	Iconic	Beats						Kinaest mov.	Simulated Mov
1.Piano 1	5	4	5	1	1	2	1	5	4	4	5	4	2	5
2.Piano 2	5	5	2	1	1	2	2	5	2	4	3		2	4
3.Piano 3	5	4	1	1	1	2	1	2	1	3	1	1	4	5
4.Guit. 1	5	5	3	1	1	1	1	4	4	4	2	4	1	5
5.Guit. 2	5	4	2	1	3	1	3	4	1	3	2	3	1	2
6.Guit. 3	4	5	1	1	1	3	1	4	2	4	3	2	5	2
7.Viol.1	5	5	1	1	2	1	2	5	5	5	2	2	2	3
8.Viol. 2	5	5	1	1	1	1	1	3	2	3	4	1	3	5
9.Viol. 3	5	5	1	1	1	1	1	5	3	5	1	5	5	5
10.Viola 1	4	5	3	1	1	1	1	5	2	4	4	4	5	5
11.Viola 2	5	5	2	2	1	1	2	5	5	5	2	5	4	5
12. Cello1	5	4	1	2	1	1	1	5	3	2	1	2	3	5
13.Cello 2	5	5	5	3	2	1	1	5	2	5	2	2	4	5
14. Rec. 1	5	5	3	1	1	1	1	5	2	5	2	2	2	1
15.Rec. 2	4	5	2	1	2	1	1	5	5	2	2	5	2	3
16.Flute	5	5	1	1	2	1	1	5	2	5	5	5	2	4
17. Clar.	5	4	1	1	2	1	3	5	1	5	4	5	2	1
18.Oboe	5	4	2	3	2	1	1	5	5	2	2	5	2	4
19. Bass.	5	5	1	1	1	1	1	4	5	4	1	4	2	2
20.Perc. 1	3	5	2	2	1	2	1	4	3	1	1	1	2	3
21.Perc.2	5	4	1	1	1	1	1	5	2	2	3	5	4	3
22.Harp	4	5	1	1	1	1	1	5	4	2	1	3	2	4
TOTAL	**22**	**22**	**11**	**5**	**7**	**5**	**5**	**22**	**19**	**21**	**16**	**18**	**20**	**20**

Table 13.2 Musicians' eyes behaviour after playing 1st, 2nd , and 3rd Task

Musicians' eyes behaviour after playing 1st , 2nd, and 3rd Task												
Musicians	Look space A. T1	Look space A. T2	**Look space A. T3**	Look Interviewer A. T1	Look Interviewer A. T2	**Look Interviewer A. T3**	Look camera A. T1	Look camera A. T2	**Look camera A. T3**	Closed eyes A. T1	Closed eyes A. T2	**Closed eyes A. T3**
1.Piano1	5	5	**5**	3	5	**4**	1	1	**1**	5	5	**5**
2.Piano2	5	5	**5**	5	4	**5**	1	1	**1**	2	3	**2**
3.Piano3	3	4	**5**	5	5	**4**	1	1	**1**	1	1	**1**
4.Guit.1	5	5	**5**	2	4	**5**	1	1	**1**	2	2	**3**
5.Guit.2	5	5	**5**	4	5	**4**	1	2	**1**	2	1	**2**
6.Guit.3	5	4	**4**	5	5	**5**	1	1	**1**	1	1	**1**
7.Viol.1	4	5	**5**	3	4	**5**	1	1	**1**	1	1	**1**
8.Viol.2	4	4	**5**	3	5	**5**	1	2	**1**	1	1	**1**
9.Viol.3	5	5	**5**	5	5	**5**	1	1	**1**	2	1	**1**
10.Viola1	5	4	**4**	5	5	**5**	2	1	**1**	4	2	**3**
11.Viola2	5	5	**5**	5	5	**5**	1	1	**2**	2	3	**2**
12.Cello1	3	5	**5**	4	3	**4**	2	1	**2**	1	1	**1**
13.Cello2	3	3	**5**	5	5	**5**	2	2	**3**	1	1	**5**
14.Rec.1	5	5	**5**	5	4	**5**	1	1	**1**	1	2	**3**
15.Rec.2	5	5	**4**	5	5	**5**	1	1	**1**	3	3	**2**
16.Flute	5	5	**5**	5	5	**5**	2	1	**1**	2	2	**1**
17.Clar.	5	4	**5**	4	5	**4**	1	1	**1**	2	1	**1**
18.Oboe	4	2	**5**	5	4	**4**	3	1	**3**	2	1	**2**
19.Bass.	4	5	**5**	4	5	**5**	1	2	**1**	1	2	**1**
20.Perc.1	4	2	**3**	5	5	**5**	1	1	**2**	1	2	**2**
21.Perc.2	5	3	**5**	4	5	**4**	2	1	**1**	2	1	**1**
22.Harp	4	2	**4**	5	4	**5**	1	1	**1**	2	1	**1**
TOTAL	22	22	**22**	22	22	**22**	6	4	**5**	13	10	**11**

Table 13.3 Summary of Differences musicians' eyes behaviour after 1st and 2nd Task

SUMMARY of DIFFERENCES MUSICIANS' EYES BEHAVIOUR after 1st , 2nd and 3rd TASK						
	Same frequency 1 st, 2 nd, 3 rd task	Increasing frequency af. 2 nd task	Decreasing frequency af. 2 nd task	**Same frequency af. 2 nd and 3 rd task**	**Increasing frequency af. 3 rd task**	**Decreasing after 3 rd task**
Looking space	**8**	4	7	**5**	**8**	**1**
Look Interviewer	**8**	8	5	**3**	**6**	**5**
Look camera	**11**	3	5	**3**	**5**	**3**
Closed eyes	**6**	5	7	**5**	**6**	**5**

Figure13.1 Looking into space after playing 1st and 2nd Task

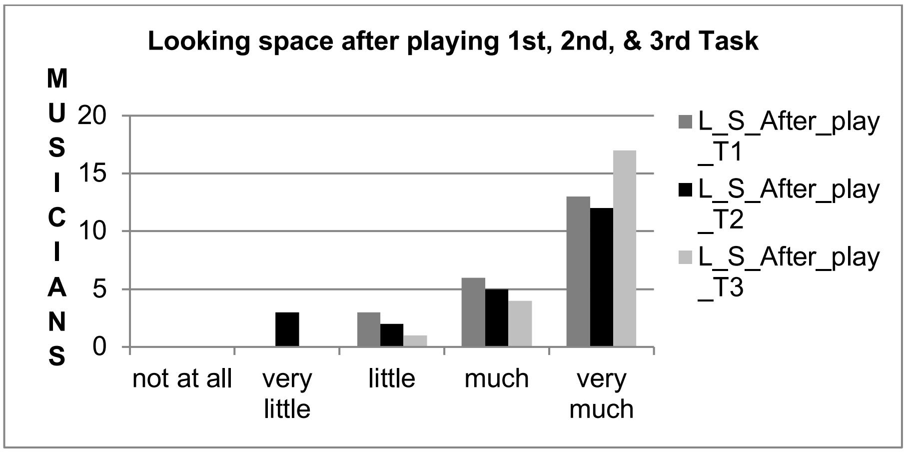


Figure 13.2 Looking at the interviewer after playing 1st, 2nd, and 3rd Task

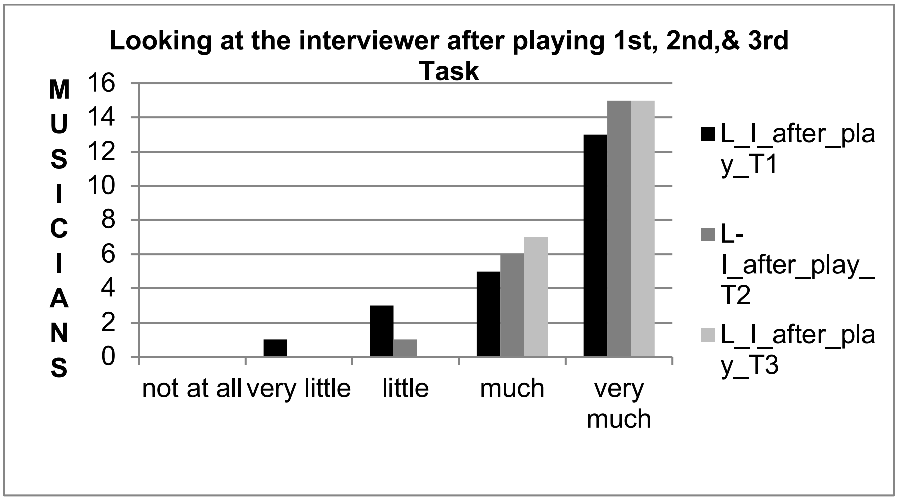


Figure 13.3 Looking at the camera after playing 1st, 2nd, and 3rd Task

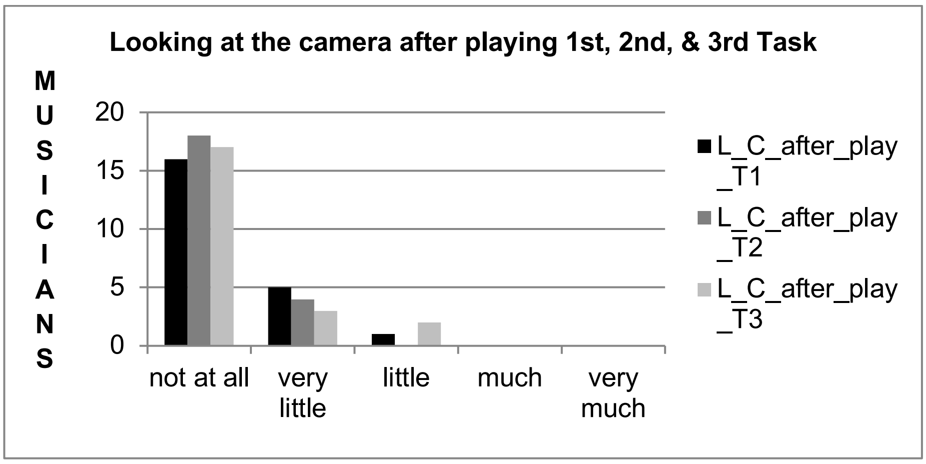


Figure 13.4 Closed eyes after playing 1st, 2nd, and 3rd Task

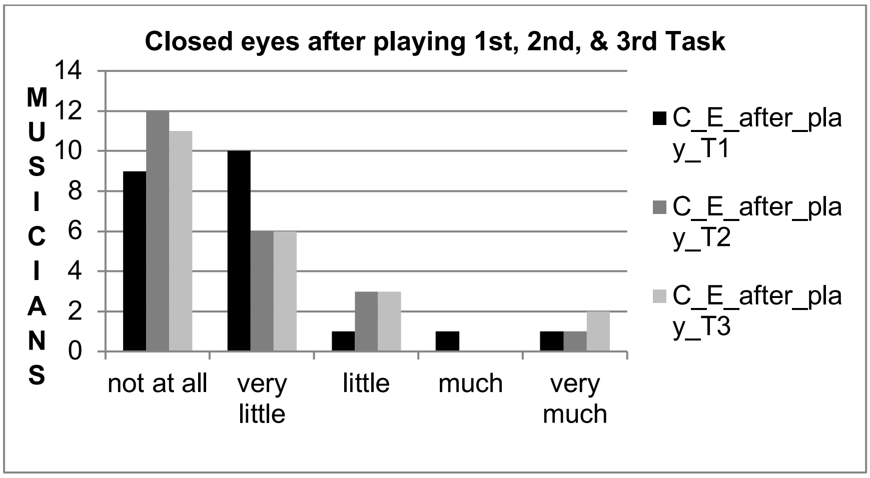


Table13.4 Gesture after playing 1st, 2nd , 3rd and Task

GESTURES after PLAYING 1st , 2nd , and 3rd TASK									
Musicians	ANTICIPATORY			ICONIC			BEATS		
	Aft. Play T1	Aft. Play T2	**Aft. Play T3**	Aft. Play T1	Aft. Play T2	**Aft. Play T3**	Aft. Play T1	Aft. Play T2	**Aft. Play T2**
1.Piano 1	1	5	**1**	1	2	**2**	1	1	**1**
2. Piano 2	1	3	**1**	5	1	**2**	1	1	**2**
3. Piano 3	1	1	**1**	1	4	**2**	1	1	**1**
4. Guitar 1	2	1	**1**	1	1	**1**	1	2	**1**
5. Guitar 2	3	1	**3**	2	2	**1**	3	5	**3**
6. Guitar 3	1	1	**1**	2	2	**3**	2	2	**1**
7. Violin 1	1	3	**2**	2	3	**1**	1	2	**2**
8.Violin 2	1	2	**1**	1	1	**1**	1	1	**1**
9. Violin 3	1	2	**1**	3	2	**1**	3	1	**1**
10. Viola 1	1	2	**1**	4	3	**1**	2	2	**1**
11. Viola 2	2	2	**1**	4	3	**1**	5	5	**2**
12. Cello 1	1	1	**1**	3	2	**1**	2	2	**1**
13. Cello 2	2	3	**2**	2	1	**1**	4	2	**1**
14. Rec.1	2	1	**1**	2	2	**1**	2	1	**1**
15. Rec.2	3	1	**2**	2	2	**1**	3	2	**1**
16. Flute	2	1	**2**	1	2	**1**	2	1	**1**
17. Clar.	2	2	**2**	3	1	**1**	2	2	**3**
18. Oboe	1	2	**2**	4	2	**1**	2	2	**1**
19. Bass.	1	1	**1**	2	2	**1**	1	1	**1**
20. Perc 1	1	1	**1**	4	2	**2**	1	1	**1**
21. Perc 2	1	3	**1**	4	1	**1**	1	2	**1**
22. Harp	1	1	**1**	1	1	**1**	1	2	**1**
TOTAL	8	11	**7**	16	15	**5**	12	13	**5**

Table 13.5 Summary of Gesture after playing 1st, 2nd, 3rd and Task

SUMMARY of DIFFERENCES MUSICIANS' GESTURES after 1st , 2nd , and 3rd TASK						
	Same frequency 1 st, 2 nd, 3 rd task	Increase frequency after 2 nd task	Decrease frequency after 2 nd task	**Same frequency after 2 nd and 3 rd task**	**Increase frequency after 3 rd task**	**Decreae after 3 rd task**
Anticipatory	**7**	9	5	**3**	**3**	**9**
Iconic	**3**	4	10	**5**	**2**	**12**
Beats	**5**	5	5	**4**	**2**	**11**

Figure 13.5 Anticipatory gestures after 1st, 2nd, and 3rd Task

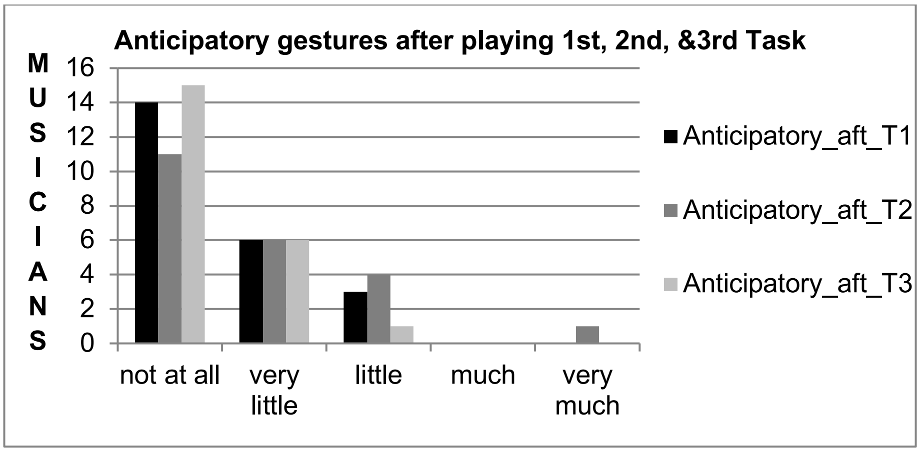


Figure 13.6 Iconic gestures after 1st , 2nd, and 3rd Task

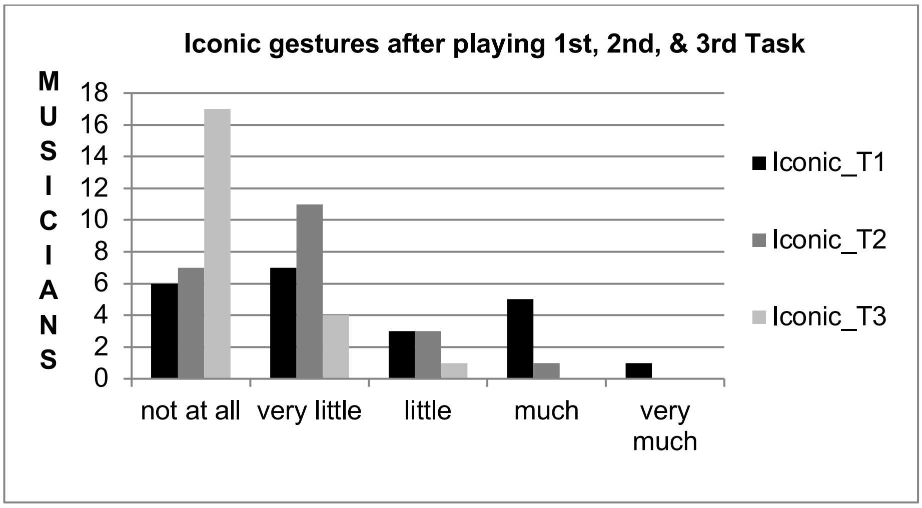


Figure13.7 Beats gestures after 1st , 2nd, and 3rd Task

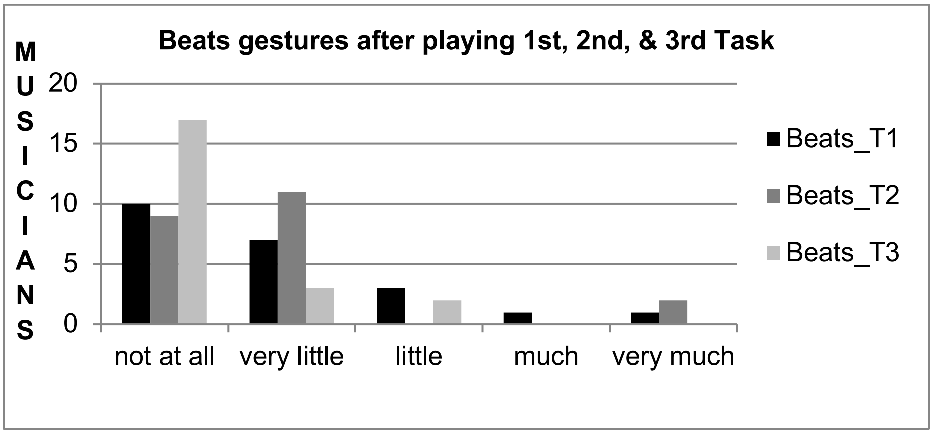


Table 13.6 Frequency of body movements performed after 1st , 2nd, and 3rd Task

FREQUENCY of BODY MOVEMENTS PERFORMED after 1st , 2nd and 3rd TASK			
Musicians	**Body movement**		
	After Task 1	After Task 2	**After Task 3**
1.Piano 1	4	5	**5**
2. Piano 2	5	5	**5**
3. Piano 3	2	2	**2**
4. Guitar 1	3	4	**4**
5. Guitar 2	3	4	**4**
6. Guitar 3	3	3	**4**
7. Violin 1	3	5	**5**
8.Violin 2	3	3	**3**
9. Violin 3	4	4	**5**
10. Viola 1	5	5	**5**
11. Viola 2	5	5	**5**
12. Cello 1	3	5	**5**
13. Cello 2	3	2	**5**
14. Recorder 1	3	2	**5**
15. Recorder 2	5	4	**5**
16. Flute	5	5	**5**
17. Clarinet	3	4	**5**
18. Oboe	5	2	**5**
19. Bassoon	2	3	**4**
20. Perc. 1	5	3	**4**
21. Perc. 2	5	2	**5**
22. Harp	3	2	**5**
TOTAL	22	22	**22**

Table 13.7 Summary of body movements performed after 1st , 2nd , and 3rd Task

SUMMARY of DIFFERENCES MUSICIANS' BODY MOVEMENTS after 1st , 2nd and 3rd TASK						
Musicians number	**Same frequency 1 st, 2 nd, 3 rd task**	Increase after 2 nd task	Decrease after 2 nd task	**Same frequency after 2 nd and 3 rd task**	**Increase after 3 rd task**	**Decreae after 3 rd task**
	6	**7**	**7**	**5**	**11**	

Figure 13.8 Body movements performed after 1st , 2nd , and 3rd Task

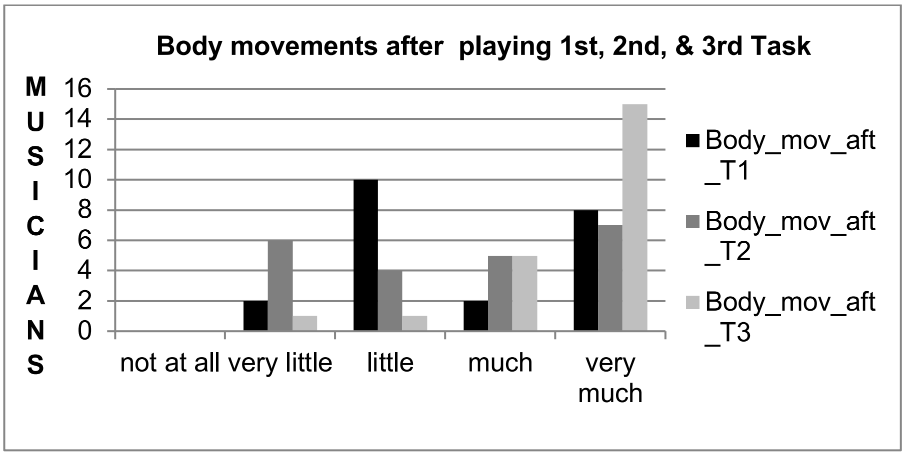


Table 13.8a Body movements performed after 1st , 2nd , and 3rd Task

BODY MOVEMENTS PERFORMED after 1st, 2nd, & 3rd TASK															
Musicians	Leaning forwards			Leaning backwards			Raise/shrugging shoulders			Shaking head			Head-tilt-side		
	Af T1	Af T2	**Af T3**	Af T1	Af T2	**Af T3**	Af T1	Af T2	**Af T3**	Af T1	Af T2	**Af T3**	Af T1	Af T2	**Af T3**
1.Piano 1	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓		✓	✓
2.Piano 2	✓		✓	✓	✓	✓	✓			✓		✓		✓	
3.Piano 3													✓		
4.Guit.1					✓					✓	✓				
5.Guit. 2			✓		✓		✓		✓	✓	✓	✓			
6.Guit. 3			✓		✓					✓		✓	✓	✓	
7.Viol. 1		✓	✓		✓	✓	✓	✓	✓					✓	✓
8.Viol.2			✓						✓					✓	
9.Viol.3		✓				✓			✓		✓	✓	✓	✓	✓
10.Viola 1	✓	✓	✓	✓	✓	✓		✓		✓	✓			✓	✓
11.Viola 2	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
12.Cello 1		✓	✓		✓		✓	✓	✓		✓	✓		✓	
13.Cello 2							✓							✓	✓
14.Rec. 1		✓	✓				✓		✓	✓		✓	✓	✓	
15.Rec.2			✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓
16.Flute					✓		✓	✓		✓	✓			✓	✓
17.Clar.	✓			✓	✓	✓		✓	✓					✓	
18.Oboe	✓	✓	✓				✓		✓	✓		✓	✓		✓
19.Bass.							✓		✓		✓	✓	✓		✓
20.Perc.1	✓		✓	✓			✓	✓	✓	✓	✓		✓	✓	
21.Perc.2	✓						✓	✓	✓	✓			✓	✓	✓
22.Harp	✓		✓			✓				✓		✓	✓		✓
TOTAL	9	8	**14**	6	11	**8**	13	10	**14**	12	11	**12**	11	16	**12**

Table 13.8b Body movements performed after 1st , 2nd , and 3rd Task

BODY MOVEMENTS PERFORMED after 1st , 2nd , & 3rd TASK															
Musicians	Nodding			Adam-apple-jump			Rocking			**Adjust sitting**		**Cross arms**		**Hide hands**	
	Af T1	Af T 2	**Af T3**	Af T 1	A f T 2	**Af T3**	A f T 1	A f T 2	**Af T 3**	A f T 2	**Af T3**	A f T 2	**A f T 3**	Af T 2	**Af T3**
1.Piano 1	✓	✓	✓			✓					✓				
2.Piano 2	✓	✓	✓				✓	✓			✓				
3.Piano 3		✓	✓												
4.Guit.1	✓	✓	✓												
5.Guit. 2			✓							✓	✓	✓			
6.Guit. 3	✓	✓	✓	✓			✓	✓							
7.Viol. 1	✓		✓		✓						✓	✓			
8.Viol.2		✓	✓												
9.Viol.3	✓	✓	✓												
10.Viola1	✓	✓	✓		✓					✓					
11.Viola2	✓	✓	✓	✓					✓	✓					
12.Cello1	✓	✓	✓											✓	
13.Cello2	✓		✓												
14.Rec.1	✓		✓												
15.Rec.2	✓	✓	✓				✓	✓	✓						
16.Flute	✓	✓	✓											✓	
17.Clar.				✓		✓						✓	✓	✓	✓
18.Oboe	✓		✓	✓		✓				✓					✓
19.Bass.		✓	✓											✓	
20.Perc.1	✓	✓	✓							✓	✓		✓		
21.Perc.2															
22.Harp		✓	✓								✓				
TOTAL	15	15	**20**	4	2	**3**	3	3	**2**	5	**6**	3	**2**	4	**2**

Table 13.9 Facial behaviour frequency after playing 1st, 2nd, and 3rd Task

FACIAL BEHAVIOUR FREQUENCY AFTER PLAYING 1st , 2nd , & 3rd TASK			
Musicians	After T.1	After T.2	**After T. 3**
1.Piano 1	4	4	**4**
2. Piano 2	2	3	**3**
3. Piano 3	2	2	**1**
4. Guitar 1	2	4	**4**
5. Guitar 2	2	2	**1**
6. Guitar 3	2	2	**2**
7. Violin 1	2	4	**5**
8.Violin 2	1	2	**2**
9. Violin 3	3	2	**3**
10. Viola 1	3	3	**2**
11. Viola 2	4	4	**5**
12. Cello 1	5	3	**3**
13. Cello 2	2	2	**2**
14. Recorder 1	2	2	**2**
15. Recorder 2	2	3	**5**
16. Flute	2	4	**2**
17. Clarinet	2	2	**1**
18. Oboe	4	2	**5**
19. Bassoon	2	4	**5**
20. Percussion 1	4	2	**3**
21. Percussion 2	3	2	**2**
22. Harp	1	3	**4**
TOTAL	20	22	**19**

Table 13.10 Summary of Musicians' facial behaviour after playing 1st , 2nd and 3rd Task

SUMMARY of DIFFERENCES MUSICIANS' FACIAL BEHAVIOUR after 1st , 2nd and 3rd TASK						
Musicians number	**Same frequency 1 st, 2 nd, 3 rd task**	Increasing after 2 nd task	Decreasing after 2 nd task	**Same frequency after 2 nd and 3 rd task**	**Increasing after 3 rd task**	**Decreasing after 3 rd task**
	4	8	5	**5**	**8**	**5**

Figure 13.9 Face behaviour frequency performed after 1st , 2nd , and 3rd Task

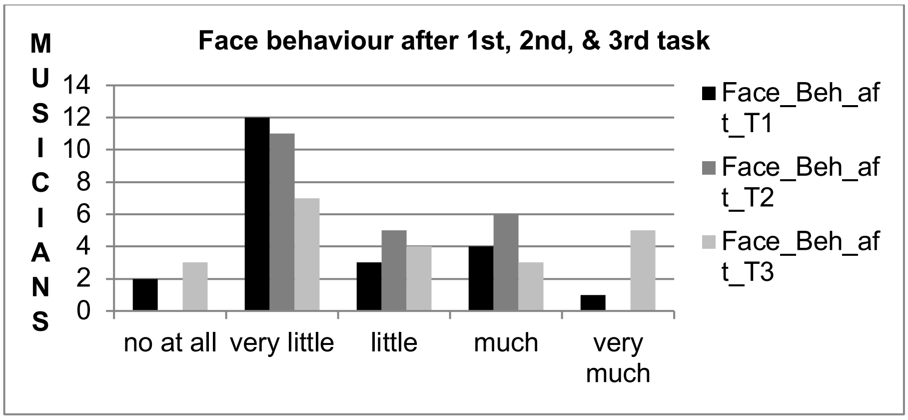


Table 13.11a Facial behaviour after playing 1st , 2nd and 3rd Task

FACIAL BEHAVIOR AFTER PLAYING 1st , 2nd, and 3rd TASK									
Musicians	Raising eyebrows			Lowering eyebrows			Narrowing lips		
	AT1	AT2	**AT3**	AT1	AT2	**AT3**	AT1	AT2	**AT3**
1.Piano1	✓					✓			
2. Piano2				✓	✓				
3. Piano3									
4. Guit 1		✓	✓						
5. Guit 2	✓						✓		
6. Guit 3	✓	✓	✓						
7. Viol 1		✓			✓	✓		✓	
8.Viol 2			✓						
9. Viol 3	✓		✓			✓			
10.Viola1		✓	✓						
11.Viola2	✓	✓	✓	✓		✓	✓		
12.Cello1									
13.Cello2						✓	✓		
14.Rec.1									
15.Rec. 2		✓			✓	✓			
16. Flute					✓	✓			
17. Clar.							✓		
18. Oboe	✓	✓	✓			✓			✓
19. Bass.			✓		✓		✓	✓	✓
20.Perc.1	✓		✓						
21.Perc.2	✓	✓	✓				✓		
22. Harp		✓	✓		✓				✓
TOTAL	8	9	**11**	2	6	**8**	6	2	**3**

Table 13.11b Facial behaviour after playing 1st , 2nd and 3rd Task

FACIAL BEHAVIOUR AFTER PLAYING 1st , 2nd, and 3rd TASK									
Musicians	Lips down			Parted Lips			Hiding face		
	AT1	AT2	**AT3**	AT1	AT2	**AT3**	AT1	AT2	**AT3**
1.Piano1		✓			✓	✓			
2. Piano2					✓	✓			
3. Piano3						✓			
4. Guit 1		✓		✓		✓			
5. Guit 2		✓							
6. Guit 3									
7. Viol 1	✓	✓				✓			
8.Viol 2					✓				
9. Viol 3				✓					
10.Viola1					✓		✓		
11.Viola2			✓		✓	✓			
12.Cello1							✓	✓	✓
13.Cello2	✓	✓				✓			
14.Rec.1				✓		✓			
15.Rec. 2			✓	✓		✓			
16. Flute					✓				
17. Clar.				✓	✓				
18. Oboe			✓						
19. Bass.			✓		✓	✓			
20.Perc.1	✓	✓		✓					
21.Perc.2					✓		✓		
22. Harp			✓			✓			
TOTAL	3	6	**5**	6	9	**11**	3	1	**1**

Table 13.12 Smiling frequency after playing 1st, 2nd, and, 3rd Task-
Kinds of smiling identified after playing 3rd Task

SMILING FREQUENCY after PLAYING 1st , 2nd ,3rd TASK -KINDS of SMILING after 1st , 2nd, & 3rd TASK												
Musicians	Smile after T1	Smile after T2	**Smile after T3**	**KINDS of SMILING after PLAYING 1st , 2nd , & 3rd Task**								
				Embarrassed			**Nervous**			**Affiliation**		
				Af T1	Af T2	**Af T3**	Af T1	Af T2	**Af T3**	Af T1	Af T2	**Af T3**
1.Piano 1	2	4	**4**	✓	✓	✓		✓		✓	✓	✓
2. Piano 2	5	4	**4**	✓	✓	✓		✓			✓	
3. Piano 3	2	1	**3**							✓		✓
4. Guit.1	5	3	**4**	✓	✓	✓			✓			
5. Guit. 2	4	1	**3**				✓		✓			✓
6. Guit.3	4	5	**4**	✓		✓				✓	✓	✓
7. Violin 1	4	4	**5**		✓	✓	✓		✓		✓	
8.Violin 2	2	2	**3**	✓					✓	✓	✓	✓
9. Violin 3	3	4	**5**	✓	✓	✓		✓	✓	✓	✓	
10. Viola1	3	3	**4**	✓	✓	✓				✓	✓	✓
11. Viola2	2	2	**5**	✓	✓	✓						
12. Cello1	3	4	**2**	✓	✓	✓		✓				
13. Cello2	4	3	**5**	✓	✓	✓				✓	✓	✓
14. Rec. 1	5	3	**5**	✓						✓	✓	✓
15. Rec. 2	2	2	**2**			✓				✓	✓	
16. Flute	4	2	**5**	✓	✓	✓			✓	✓	✓	
17. Clar.	4	4	**5**	✓	✓	✓		✓			✓	
18. Oboe	5	2	**2**		✓	✓	✓					
19. Bass.	1	2	**4**		✓	✓						
20.Perc. 1	4	2	**1**	✓						✓	✓	
21.Perc. 2	3	3	**2**	✓	✓	✓		✓		✓		
22. Harp	3	3	**2**		✓	✓		✓		✓		
TOTAL	21	20	**21**	15	15	**17**	3	7	**6**	13	12	**8**

Figure 13.10 Smiling frequency performed after 1st , 2nd and 3rd Task

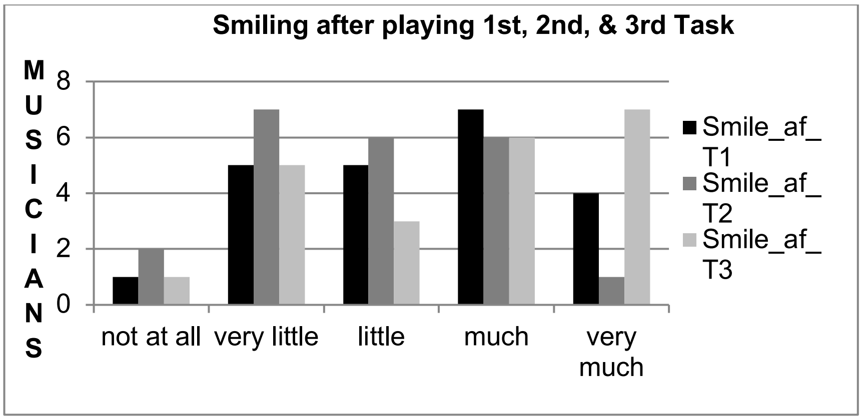


Table 13.13 Frequency of Silence while verbalizing after 1st , 2nd , and 3rd Task

SILENCE after 1st, 2nd, and 3rd TASK			
MUSICIANS	After T 1	After T2	**After T3**
1.Piano 1	5	5	**5**
2. Piano 2	2	3	**3**
3. Piano 3	2	2	**1**
4. Guitar 1	5	4	**2**
5. Guitar 2	4	2	**2**
6. Guitar 3	3	3	**3**
7. Violin 1	2	4	**2**
8.Violin 2	2	2	**4**
9. Violin 3	2	2	**1**
10. Viola 1	5	3	**4**
11. Viola 2	2	2	**2**
12. Cello 1	2	2	**1**
13. Cello 2	2	3	**2**
14. Rec. 1	3	5	**2**
15. Rec. 2	3	2	**2**
16. Flute	2	3	**5**
17. Clar.	4	4	**4**
18. Oboe	1	2	**2**
19. Bass.	1	2	**1**
20. Perc. 1	4	2	**1**
21. Perc. 2	2	2	**3**
22. Harp	2	1	**1**
TOTAL	**20**	**21**	**16**

Table 13.14 Summary of musicians' silence after playing 1st , 2nd , and 3rd Task

SUMMARY of DIFFERENCES MUSICIANS' SILENCE after 1st , 2nd and 3rd TASK						
Musicians number	**Same frequency 1 st, 2 nd, 3 rd task**	Increase frequency after 2 nd task	Decrease frequency after 2 nd task	**Same frequency after 2 nd and 3 rd task**	**Increase Frequency after 3 rd task**	**Decrease after 3 rd task**
	4	7	6	**5**	**4**	**9**

Figure 13.11 Silence frequency performed after 1st , 2nd , and 3rd Task

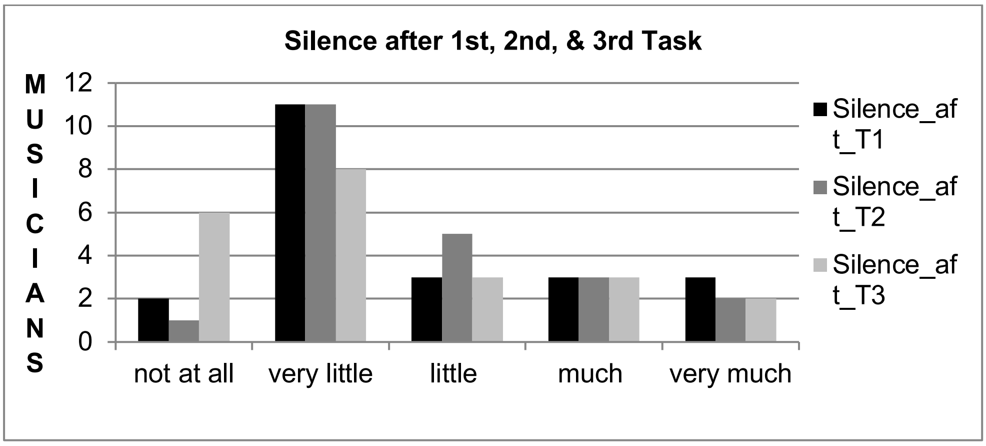


Table 13.15 Self-adaptors frequency after playing 1st , 2nd, and 3rd Task

SELF-ADAPTORS FREQUENCY after PLAYING 1st , 2nd, and 3rd TASK			
Musicians	After T1	After T2	**After T3**
1.Piano 1	5	2	**4**
2. Piano 2	2	3	**3**
3. Piano 3	1	1	**1**
4. Guitar 1	3	4	**4**
5. Guitar 2	2	2	**3**
6. Guitar 3	3	3	**2**
7. Violin 1	2	3	**2**
8.Violin 2	1	1	**1**
9. Violin 3	2	2	**5**
10. Viola 1	4	3	**4**
11. Viola 2	5	5	**5**
12. Cello 1	3	3	**2**
13. Cello 2	2	2	**2**
14. Rec. 1	3	1	**2**
15. Rec. 2	5	4	**5**
16. Flute	5	1	**5**
17. Clar.	5	5	**5**
18. Oboe	4	2	**5**
19. Bass.	3	3	**4**
20. Perc. 1	4	1	**1**
21. Perc. 2	3	2	**5**
22. Harp	1	1	**3**
TOTAL	19	16	**18**

Table 13.16 Summary of musicians' self-adaptors after playing 1st, 2nd , and 3rd Task

SUMMARY of DIFFERENCES MUSICIANS' SELF-ADAPTORS after 1st , 2nd and 3rd TASK						
	Same frequ. 1 st, 2 nd, 3 rd task	Increase frequ. after 2 nd task	Decrease frequ. after 2 nd task	**Same frequ. after 2 nd & 3 rd task**	**Increase frequ. after 3 rd task**	**Decrease after 3 rd task**
Musicians number	**5**	3	8	**3**	**11**	**3**

Table 13.17 Self-adaptors exhibited after Task 3

SELF-ADAPTORS						
SELF-TOUCHING						**OBJECT-MANIPULATION**
Musicians	**Stroking**	**Rubbing**	**Biting Lips**	**Scratching**	**Licking lips**	
1.Piano1	Thumbs Tips					
2.Piano2	Hair					
3.Guitar1	Chin, nose, lips, fingers					
4.Guitar2	Fingers	Hand				Guitar
5.Guitar3	Nose Chin, knee					
6.Violin1		Lips				
7.Violin3	Chin, cheek			Heads houlder	✓	
8.Viola 1	Chin, lips			Cheek thigh		
9.Viola 2		Ankle	✓		✓	Viola, bow
10.Cello 1	lips					
11.Cello 2	lips					
12.Rec.1			✓			
13.Rec.2	Hand, chin, elbow, neck, lips		✓	Head		Recorder
14.Flute	Bear, cheek, lips	Eye		Head		
15.Clar.	Neck, chin, fingers, nose	Eyes, cheek		Head, elbow		Button
16.Oboe	Forehead, neck	Nose		Head		Zip sweater, oboe, glasses
17.Bass.	Chin					Bassoon
18.Perc. 2	Chin, lips, tips	Abdomen	✓			
19.Harp	Cheek	Hands tips				
TOTAL	**16**	**8**	**4**	**6**	**2**	**6**

Figure 13.12 Self-adaptors frequency performed after 1st, 2nd, and 3rd Task

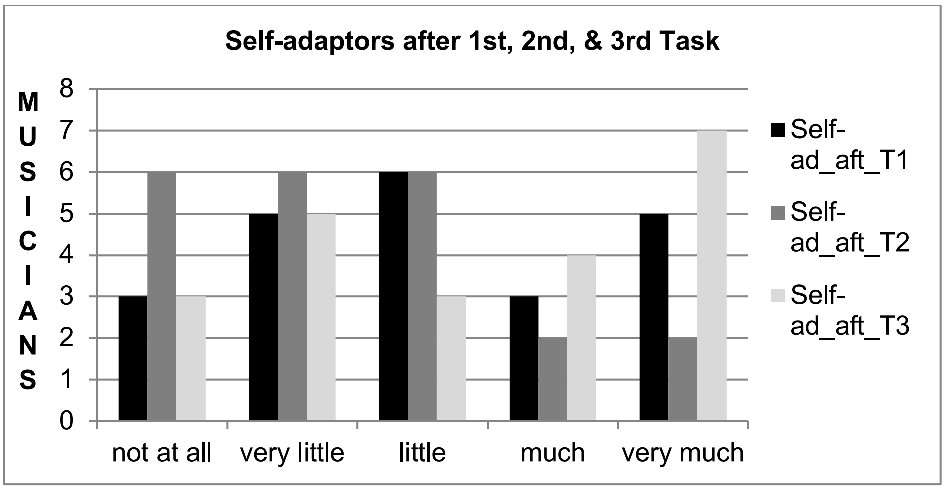


Table 13.18 Musicians' semiconscious/conscious movements after playing 1st, 2nd Task, and 3rd Task

Musicians' semiconscious/conscious movements after playing 1st, 2nd , and 3rd Task						
Musicians	**Kinaesthesia**			**Simulated movements**		
	After playing T1	After playing T2	**After playing T3**	After playing T1	After playing T2	**After playing T3**
1.Piano1	3	5	**2**	1	1	**5**
2.Piano2	1	3	**2**	1	1	**4**
3.Piano3	5	1	**4**	2	1	**5**
4.Guit.1	1	2	**1**	1	2	**5**
5.Guit.2	1	1	**1**	1	1	**2**
6.Guit.3	2	3	**5**	2	3	**2**
7.Viol.1	1	2	**2**	1	2	**3**
8.Viol.2	4	1	**3**	3	5	**5**
9.Viol.3	1	2	**5**	2	5	**5**
10.Viola1	2	2	**5**	1	2	**5**
11.Viola2	1	1	**4**	2	4	**5**
12.Cello1	1	1	**3**	1	1	**5**
13.Cello2	1	2	**4**	2	1	**5**
14.Rec.1	3	2	**2**	1	1	**1**
15.Rec.2	1	1	**2**	1	1	**3**
16.Flute	1	1	**2**	1	1	**4**
17.Clar.	1	2	**2**	1	3	**1**
18.Oboe	1	1	**2**	1	1	**4**
19.Bass.	2	2	**2**	1	1	**2**
20.Perc.1	2	2	**2**	4	2	**3**
21.Perc.2	1	1	**4**	1	3	**3**
22.Harp	1	1	**2**	1	1	**4**
TOTAL	8	12	**20**	7	10	**20**

Table 13.19 Summary of Musicians' semiconscious movements after playing 1st2nd, and 3rd Task

SUMMARY of DIFFERENCES MUSICIANS' SEMICONSCIOUS/CONSCIOUS MOVEMENT after 1st, 2nd and 3rd TASK						
	Same frequ. 1st, 2nd, 3rd task	Increase frequ. after 2nd task	Decrease frequ. after 2nd task	**Same frequ. after 2nd & 3rd task**	**Increase frequ. after 3rd task**	**Decrease after 3rd task**
Kinaesthesia	**3**	11	3	**3**	**13**	**3**
Simulated movements	**1**	9	3	**3**	**16**	**2**

Figure 13.13 Kinaesthesia after playing 1st, 2nd, and 3rd Task

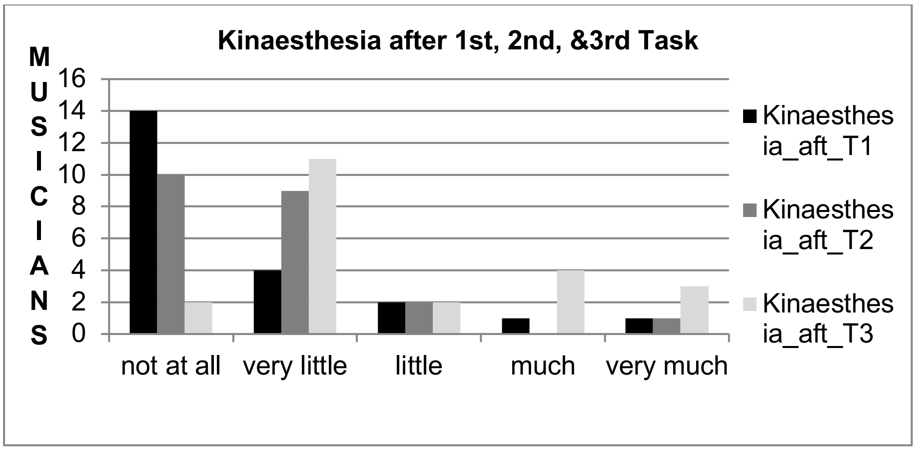


Figure 13.14 Simulated movements after playing 1st, 2nd, and 3rd Task