



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

The influence of trauma on musicians

by

Inette Swart

Submitted in partial fulfilment of the requirements for the degree

Doctor Musicae (Performing Arts)

in the

Department of Music

School for the Arts

Faculty of Humanities

University of Pretoria

Promoter: Prof. Caroline van Niekerk

Co-promoter: Dr. Woltemade Hartman

Pretoria – November 2009

Abstract

The aim of this study was to shed light on the influence of trauma on aspects of musicians' music-making, particularly but not exclusively limited to its effects on emotional expression and memory during music performance and study. Effects on performers and teachers were considered, explicated and discussed in the light of the rapidly expanding body of knowledge about factors involved in psychological sequelae following exposure to traumatic event(s).

Examples are given of how trauma has affected famous musicians and composers. Questionnaires sent to healthcare professionals and music teachers and four case study investigations illuminated specific signs of trauma. Findings underlined that, while responses to trauma are always of a very individual nature, these often particularly affected emotional expression and altered the perceived experience of emotions. Dissociative symptoms were found to affect memory and concentration. Trauma sequelae caused interference, drained energy levels, affected motivation, interpersonal relationships and self-esteem but also led to growth and trauma-catalyzed transformation. Anxiety and tension-related problems had pronounced effects on music performance and high levels of 'stage fright' were reported by previously traumatized participants. Trauma was shown to influence the career paths and decisions of musicians.

As gleaned from the literature and research surveys, the following therapeutic approaches appear to be effective: Psychotherapy, trauma counselling, Cognitive-Behavioural therapy, hypnotherapy, EMDR (Eye Movement Desensitization and Reprocessing), EMI (Eye Movement Integration), pharmacological treatment, natural supplements, body therapies such as SE (Somatic Experiencing) and complementary techniques such as acupuncture. Sound and music were identified by respondents and participants as playing an extremely beneficial role in the healing process. The possible benefits of incorporating alternative healing modalities are discussed, but it is made clear that this should only be used in conjunction with scientifically proven and thoroughly researched psychotherapeutic intervention strategies.

This study's results, appropriately disseminated, are intended to increase awareness and knowledge in performers and teachers, and enable particularly teachers to refer students to appropriate healthcare services in ways not risking further traumatization. Findings can assist healthcare

professionals to better understand particular manifestations of trauma responses in musicians and enable them to intervene in more effective ways.

List of Keywords:

Dissociation, emotion, healing therapies, healthcare professionals, holistic paradigm, memory, musicians, music teachers, psychotherapy, trauma.



DEDICATION

To fellow musicians...

Too very often do circumstances challenge us to the utmost, or even prevent us from reaching our full potential. In most cases this can be avoided.

It is my hope that this mini-thesis will contribute towards helping performers and teachers understand trauma better and inspire researchers to tirelessly search for solutions.

ACKNOWLEDGEMENTS

I wish to express my sincere gratitude to the following people for assistance during the theoretical as well as practical components of this research:

The promoter for this study, Prof Caroline van Niekerk, for her expertise and invaluable assistance throughout the course of this study. Her intellectual support, editorial suggestions, efficiency and the timely manner in which feedback was given are highly regarded. It was a great privilege to work under her professional and knowledgeable guidance.

The co-promoter for this study, Dr Woltemade Hartman, for his immense knowledge of the subject of psychology and his particular interest in trauma and its effects. His enthusiasm to assist with this interdisciplinary project and his dedication to this study are greatly appreciated.

Isobel Rycroft and part-time staff of the music library at the University of Pretoria for assistance with assembling library materials. Their friendly support and the expedient way in which requests were handled are appreciated.

Dr Jolanta Welbel from the department of Music Psychology of the Fryderyk Chopin University of Music in Warsaw (Uniwersytet Muzyczny Fryderyka Chopina w Warszawie) for taking the time to discuss the subject of trauma and musicians and sharing her very valuable insights during time spent in Warsaw in September 2009.

This study would not have been possible without the contributions of those who have taken the time to respond to the questionnaires and have generously shared their knowledge and experience on the subject. The four individuals volunteering as case studies are also thanked for their time, insights, courage and willingness to participate in the hope that this study could make a difference in the lives of other musicians.

I would like to thank Proff Jan Kadlubiski and Joseph Stanford for guidance with the performance component of this study. I am indebted to them for graciously sharing their knowledge and for the enormous amount they taught me about music and culture. I also owe a debt to the late Prof Lionel

Bowman who was perhaps the first person to alert me to how traumatic experience could influence music performance.

Thanks are due to the following people for advice and for pointing me in the direction of additional source material and information (in alphabetical order): Drs Jan Bastiaan Fouché, Gerda Fourie, Annalie Swanepoel and Ronél Yu. In this regard, the input of Mary-Ann Jacobs and Voula Samouris is also recognised. Others whose support and encouragement are greatly appreciated include: Fang Heng, Hanna Kaminska, Bertha le Roux, Merryl Monard, Małgorzata and Jacek Ostrowski and Gerhard van Wyk.

I would like to acknowledge the contribution of Polish friends who bravely shared accounts of war-time experiences as well as experiences whilst Poland was under communist rule – their own as well as those of previous generations. This was but one motivating factor behind this research and, like countless other accounts of traumatic experiences, far surpasses thresholds of pain and endurance and is testimony of human courage and resilience.

TABLE OF CONTENTS

Abstract	ii
Dedication	iv
Acknowledgements	v
List of figures	xiii

CHAPTER 1: BACKGROUND

1.1 Motivation for the study	1
1.2 Theoretical framework	3
1.3 Hypotheses	4
1.4 Research questions	4
1.5 Aims of the study	5
1.6 Research method	5
1.7 Delimitation of the study	6
1.8 Value of the study	7
1.9 Discussion of contents	7
1.10 Literature overview	8
1.11 Notes to the reader	9

CHAPTER 2: EMOTION AND MEMORY

2.1 Introduction to the relationship between emotion and memory	13
2.2 Defining emotion	14
2.3 Biological basis of emotions	16
2.4 Emotion and motivation	18
2.5 Expression and perception of emotion in music performance and appreciation	20
2.5.1 Expression of emotion in music performance	20
2.5.2 Perception of emotion in music appreciation	24
2.6 Defining memory	26
2.7 Types of memory	27
2.8 Emotion, memory and trauma	30
2.8.1 Processing of emotion during traumatic situations	30
2.8.2 Traumatic memories	33
2.8.3 Biological basis of traumatic memories	34

2.8.4 The effects of trauma on memory for music	36
2.8.5 The recovered memory debate	40
2.9 Performance from memory and stage fright	41

CHAPTER 3: TRAUMA

3.1 Defining trauma	47
3.2 Types and dynamics of trauma	49
3.3 Acute Stress Disorder	51
3.4 Post-traumatic Stress Disorder	53
3.5 Vulnerability to PTSD	55
3.6 Effects of trauma	58
3.7 Dissociation	63
3.8 Treatment of trauma symptoms	67
3.8.1 Pharmacological intervention	68
3.8.2 Cognitive-Behavioural Therapy (CBT)	69
3.8.3 Eye Movement Desensitization and Reprocessing (EMDR) and Eye Movement Integration (EMI)	71
3.8.4 Hypnosis	72
3.8.5 Body therapies and the role of movement	73
3.8.6 Logotherapy	75
3.9 Alternative viewpoints regarding treatment of trauma	76
3.9.1 Chinese medicine	76
3.9.2 Ayurveda	77
3.9.3 Homeopathy	78
3.9.4 Energy medicine or vibrational medicine	78
3.9.5 The EPFX/SCIO as vibrational medicine intervention device	80

CHAPTER 4: TRAUMA AND MUSIC

4.1 Psychological aspects of music performance	82
4.1.1 Mental focus, integration and musical identity	82
4.1.2 Factors influencing level of performance	83
4.1.3 Concentration and memory breakdown	85
4.1.4 Uniqueness of each human brain	86
4.2 The effects of trauma on musicians	86

4.2.1	Attributing negative symptoms to trauma	87
4.2.2	Symptoms involving the emotions	87
4.2.3	Re-enactment, area of perceived threat and internal perception of time	88
4.2.4	Symptoms involving memory and concentration	89
4.3	The influence of past trauma on famous musicians	90
4.3.1	Physical and occupational disabilities, extra-ordinary lives and extra-ordinary tenacity	91
4.3.2	Mood disturbances, familial trauma and re-enactment	91
4.3.3	Positive outcomes and the prevention of traumas	92
4.4	The use of music and art in the recovery process after trauma	94
4.4.1	The healing role of art as representation and expression of human experience	94
4.4.2	Ways in which music and art can facilitate healing	96
4.4.3	Music therapy as a means of facilitating the communication process	98
4.4.4	Music as coping mechanism, its anxiolytic effects and potential as counter-vortex to the trauma-vortex	99
4.5	Responsibilities of music teachers regarding witnessing and referring	100

CHAPTER 5: RESEARCH METHODOLOGY

5.1	Introduction	104
5.2	Research design	107
5.3	Qualitative psychological research	109
5.4	Methodology	110
5.4.1	Background on emotion, memory and trauma	111
5.4.2	Questionnaires	111
5.4.3	Case studies	112
5.4.4	Discussion	114
5.5	Limitations	115
5.6	Ethical considerations	117

CHAPTER 6: OUTCOMES OF THE RESEARCH SURVEY

6.1	Opinions of participant healthcare professionals	120
6.1.1	Population of respondents	120
6.1.2	Signs and symptoms of trauma affecting musicians	121

6.1.3 Treatment	123
6.1.4 Effects on professional functioning of musicians	126
6.1.5 Medication	127
6.1.6 Different types of trauma	130
6.1.7 The roles and responsibilities of music teachers	131
6.1.8 Trauma and psychiatric diagnosis	134
6.1.9 Additional comments	135
6.2 Opinions of participant music teachers	136
6.2.1 Population of respondents	136
6.2.2 Types of trauma and teachers' interpretations of its influence	137
6.2.3 Teachers' experiences in working with traumatized students	139
6.2.4 Effects on emotion	140
6.2.5 Effects on memory	141
6.2.6 Interference with optimal performance	144
6.2.7 Referring students to healthcare professionals	146
6.2.8 Additional comments	148
6.3 Self-reports of trauma experienced by teachers	149
6.4 Case studies	152
6.4.1 Participant A	153
6.4.2 Participant B	155
6.4.3 Participant C	158
6.4.4 Participant D	160

CHAPTER 7: RESEARCH FINDINGS

7.1 Observations emerging from the research survey	165
7.1.1 The active nature of observation	165
7.1.2 Obtaining treatment in the aftermath of trauma and the matter of referral	166
7.1.3 Ways observed by respondents in which trauma affects musicians	167
7.1.4 Treatment	168
7.1.5 Possible bias in population of respondents	169
7.2 Aspects relevant to self-reports of teachers	170
7.2.1 Impact of teachers' own experiences of trauma on assessment of students	170
7.2.2 Ways observed by respondent teachers how trauma affected their memory	171

7.2.3 Overview of effects identified in self-reports	171
7.3 Observations emerging from the case study investigations	172
7.3.1 Influence particular to musicians: general overview of symptoms	172
7.3.2 Effects on emotion including emotional illness	172
7.3.3 Effects on memory	173
7.3.4 Effects of trauma on interpersonal relationships and on teaching	173
7.3.5 Dissociative symptoms	174
7.3.6 Treatment	175
7.3.7 Professional career path, spirituality and growth	176
7.4 General observations applicable to the research survey and case studies	176
7.4.1 Unconscious processing of music, witnessing and projection	176
7.4.2 Audible effects	178
7.4.3 The place of movement therapies and alternative or complementary medicine	179
7.4.4 Music's healing role	179
7.5 Comparison of research findings to literature on trauma	180
7.5.1 Effects of trauma and their extent	180
7.5.2 Effects of trauma experienced early in life	181
7.5.3 Concerns particular to survivors of sexual abuse and incest	182
7.5.4 The eyes as a means of non-verbal communication	183
7.5.5 Dissociation	183
7.5.6 Medication	184
7.5.7 Challenge of ascertaining accurate diagnoses	185
7.5.8 Functioning in the present moment	186
7.5.9 Importance of co-operation between the teaching and healthcare professions	186

CHAPTER 8: CONCLUSIONS AND RECOMMENDATIONS

8.1 Answering the research questions	188
8.2 Proving or disproving the hypotheses	190
8.3 Conclusions	192
8.3.1 Identification of signs of trauma and communication between musicians and professionals	192
8.3.2 Definition of trauma found to be applicable to musicians	193
8.3.3 Incorporating music, sound and movement in the healing process	193

8.3.4 From the universality to the uniqueness of traumatic experience: creating meaning	193
8.3.5 Awareness as prerequisite for appropriate referrals leading to effective treatment	194
8.4 Recommendations for further study	194
8.4.1 Collaboration between different disciplines	195
8.4.2 Effects of trauma on musicians at different levels of accomplishment	195
8.4.3 Personal experiences of trauma by healthcare professionals affecting their views	195
8.4.4 Gender differences	196
8.4.5 Effects of trauma on musicians' cognitive functioning, memory and concentration	196
8.4.6 Biological considerations	198
8.4.7 Rate of recovery	198
8.4.8 Aspects related to music's role in healing and the place of vibrational medicine	199
8.4.9 Providing good support structures for students in schools and lessening the risk of secondary traumatization to professionals	199
8.5 Recommendations regarding areas that should be implemented in the training of music educators	200
8.5.1 Implementing training in psychology in the music teaching curriculum	201
8.5.2 Benefits of incorporating movement as part of music training	202
8.5.3 Reaching teachers in rural areas	202
8.6 Epilogue	203
Appendix A: Questionnaire to Healthcare Professionals	204
Appendix B: Questionnaire to Music Teachers	207
Appendix C: Case Study Interviews	210
List of References	212

LIST OF FIGURES

Figure 1: Musicing: Four dimensions (Elliott 1995:40)	9
Figure 2: Different aspects of the chain of musical communication of emotion (Juslin 2005:87)	24
Figure 3: Defensive responses to fear that have been conserved through evolution (Kandel 2006:339)	42
Figure 4: Model for positive and negative manifestation of performance arousal (Gorrie 2009b:208)	44
Figure 5: The Dissociative Spectrum as assimilated by Hartman (2009) from the work of Peichl (2007a:162), Nijenhuis <i>et al.</i> (2004) and Watkins & Watkins (1997:32)	64
Figure 6: Five areas of Cognitive-Behavioural assessment (<i>Royal College of Psychiatrists</i> 2007)	70



Resonance is a wonderful skill, the ability to see the world, and even our own selves, through the eyes of another. By internalising perceptions of another, we invest our own self energy and turn “it” into “me”. If resonance were more practised, parents would understand children, teachers would understand students, and nations would understand one another.

- Watkins 2005:8

CHAPTER 1: BACKGROUND

1.1 Motivation for the study

When listening to music being performed, this researcher has often asked the following question: What factors make it favourable for some performers to freely express their emotions, seemingly nothing hindering their emotional intent and the realisation of this intent in their interpretations, while others have audibly much more difficulty in communicating their feelings through sound? In addition to the more obvious factors such as personality variables, quality of the musical education, emotional maturity, intellectual grasp of the music and performance experience, one factor that increasingly featured in the literature studied (Sacks 2007, Stein 2007 and Cutting 1997), as well as in narratives by musicians themselves, is the psychological impact of trauma.

Beaulieu (2003:28) describes a traumatic experience as “any event that leaves an imprint that continues to give rise to negative effects and recurrences in one or more of the sensory, emotional or cognitive systems.” Julie Sutton (2002:23) expands on traditional definitions of trauma by suggesting that it can be thought of as “something so far beyond the ordinary that it will overwhelm one’s resilience and defences. It becomes impossible to feel the full impact of the trauma, or to function as normal ... One’s perception of the world changes irrevocably.” An interesting observation is the often very moving characteristics of performances by individuals known to have been exposed to trauma, possibly due to their greater emotional maturity developed by living through difficult experiences. However, the quality of these performances is frequently hampered by memory lapses caused by intrusive memories (Cutting 1997:6). It is important to investigate the influence of trauma, because an overwhelming traumatic event cannot be fully and meaningfully processed by the human brain without proper intervention and assistance. Due to the high level of arousal and elevations of stress hormones accompanying such events, traumatic memories can become more deeply engrained in neural pathways than

ordinary memories (Roth & Friedman 1998:12). This greatly increases the probability that a traumatic event, although it belongs to the past, will continue to have an influence on an individual and his or her music-making.

The question needs to be asked: How does being confronted with events beyond the ordinary have an impact on the inner world of the musician? Numerous groups of musicians from diverse cultures have been affected by abuse, violence and war throughout various stages of history. One need only think of musicians who survived the concentration camps of World War II or those who have been confronted with violent crime in South Africa, to mention but two scenarios. The abovementioned are given as examples, while the predominant feedback from respondents was from healthcare professionals and musicians who, although some might have lived and studied in various parts of the world, found themselves operating within the South African music environment at the time during which they responded to the research survey. Music performance is a personal activity, requiring sensitivity, imagination, the ability to draw on previous life experience as well as many other qualities, and as a result musicians are often known to be very sensitive individuals. This sensitivity could possibly play a role in increasing their vulnerability to being affected by trauma.

In everyday interaction with colleagues, this researcher became painfully aware that very often one of the factors motivating highly talented fellow students was not stable and happy families, but instead many seem to come from less than desirable circumstances. Some even emerge from previously disadvantaged communities. Potentially this could give rise to negative effects. Yet through dedication these musicians continue to improve and many become highly successful. However, many are not aware of the ways in which their experiences can affect their performance, and even fewer are aware of the possibilities that exist for facilitating recovery and healing. Many music teachers have no background in educational psychology and thus are unable to recognize warning signs indicating that a student might be having difficulties that could be related to the experience of trauma. Having to teach the technique of the instrument or voice and all the necessary skills, there is so much to take care of in guiding the development of a student that many teachers are not aware of, or are unlikely to admit, that traumas experienced can have an influence on their students. Yet if left untreated, progress can be adversely affected. One motivation for this study is to increase the awareness of music teachers.

The possibility of talent not being developed to its full capacity due to the inadequate knowledge of both teachers and performers in dealing with the effects of trauma is a reality that in my view is overlooked or even avoided by many musicians. If disorders such as Acute Stress Disorder (ASD) or Post-traumatic Stress Disorder (PTSD) may develop, the effects thereof can be debilitating. With various survival ‘coping strategies’, some severe traumas can remain hidden for many years until a subsequent event or events trigger memories of past trauma. Therefore it is not always initially evident which individuals may be affected.

1.2 Theoretical framework

From the aforementioned it is clear that there are many facets to trauma and many important factors influencing the trauma response. Therefore this thesis will be written from a holistic theoretical framework. The term ‘holism’ was coined by the South African statesman and philosopher, Jan Christiaan Smuts. He believed that matter and life consist of unit structures that group together in orderly ways to form wholes called bodies or organisms (Smuts 1926:85-7). He explained that, through evolution, holism is self-creative and in nature wholes are greater than the sum of their parts. Smuts emphasized that attempting to explain an organism should include reference to its past, its future as well as the present. Strauch (2003:454) explains that the conviction that defines holism is that “[t]he only way to understand a system is to understand that entire system”. He also writes that holism is a supposition of Individual Psychology, stating that this means that aspects of a person such as thinking, feeling and actions connect to other aspects of that person in orderly but also dynamic and changing ways. The psychological, psychosocial, as well as some medical factors associated with trauma will be investigated in this study. Many of the sources consulted were written by traditional allopathic medical practitioners who went on to adopt a more integrative approach with related disciplines.

The perspective from which the thesis is written is in alignment with aspects of the postmodern paradigm of thinking. The researcher’s approach has moved beyond the modern paradigm particularly in the sense that factors beyond those which can be measured exactly by scientific methods are taken into account and not discarded as inexplicable. The postmodern recognition by Hlynka and Yeaman (1992:3) that “if there are multiple ways of knowing then there must be multiple truths” is important for this study. Wilson (n.d.) writes that “[t]he goal of artist, or critic, is not so much to explain, predict, and control, but to *create*, *appreciate* and *interpret* meanings”. This should also be the attitude from which the researcher and participants in this study view

their contribution. It needs to be stated that most of the subjects from the population in which the field research was conducted are primarily living within the borders of South Africa.

The research was largely conducted in a qualitative manner. As described by Henwood and Pidgeon (1992:98-9,108), qualitative psychological research avoids the problem of inappropriately fixing meanings; it takes into account internal subjective meanings and allows the researcher to report on the contextual features of a study. However, these authors draw a distinction between the experimental method and the naturalistic or interpretative paradigm. Since this study investigated only reports of real-life events of the respondents, it was conducted from a naturalistic perspective. Research findings were in line with other goals of qualitative research as defined by the abovementioned source, namely results were interpreted from the perspective of the participant musicians and the meanings musicians gave to their experiences were discussed. In addition, the qualitative nature of the research remains true to the holistic framework of the study since phenomena are studied in their contexts.

1.3 Hypotheses

Dealing with music performance means dealing with translating motions into sound and into emotion (Sandor 1981:3-4). Therefore it can be hypothesized that trauma can affect this route of musical expression by influencing the emotional intent, emotional state, or capacity for expression of the performer as well as affecting his or her physical motions, both having an impact on the musical result. In view of the aforementioned, it is hypothesized that where various coping mechanisms come into play, trauma can also have a profound influence on a musician's memory during music performance and study. It is also hypothesized that these effects can influence teachers as well as performers. Since the study is qualitative in nature, investigation of these hypotheses is seen as pertaining to the subject group of this study within the context set out for the research and should in no way be generalized to all musicians, healthcare providers or music teachers.

This study aims to investigate the above by attempting to answer the following: Do the findings of a literature survey, the answers given to circulated questionnaires, as well as the data collected from the case studies support the following two hypotheses:

Firstly, that a number of noticeable and/or observable signs exist, particularly manifesting in but not exclusively limited to their expression of emotion and memory during music performance, in individuals affected by trauma;

Secondly, that these signs are alleviated in musicians who have received treatment.

Traumatized individuals considered for this study included those showing signs of acute and complex trauma.

1.4 Research questions

The main research question on which this study was based is the following:

In what ways can trauma that also includes psychological sequelae influence musicians?

This question gives rise to closely related sub-questions, namely:

- 1) In what ways can a musician's capacity to express emotion be influenced by trauma?
- 2) In what ways can trauma influence a musician's memory during music performance?
- 3) What are the warning signs of adverse influence caused by underlying trauma that teachers and performers should be aware of?
- 4) What treatment interventions did musicians participating in the study find to be effective for trauma?

1.5 Aims of the study

The aim of this study is to shed light on the impact of trauma on aspects of musicians' music-making, particularly but not exclusively limited to its effects on memory during music performance and on emotional expression. Effects on musicians were considered, explicated and discussed in the light of the rapidly expanding body of knowledge about factors involved in the trauma response. The study aims to increase awareness in performers and teachers, and with the increased knowledge enable particularly teachers to refer students to appropriate healthcare services in ways not risking further traumatization of the individuals. Further study by researchers in the fields of psychology and music research can investigate whether the findings could be applicable to other subject groups living in different countries.

Much research is done in the discipline of Performing Arts Medicine on musicians' physical injuries, the stress factors and psychological aspects that could have an influence on their performance. However, it is an aim of this study to increase interest in research on how trauma, with its associated psychological effect(s) not necessarily directly related to the instrument or voice itself, can have an influence on musicians, specifically affecting their careers.

1.6 Research method

The first phase of this study comprised a survey of relevant literature. Literature was consulted on emotion, the expression of emotion, memory, types of trauma, the interaction of biological and psychological factors in trauma, and the use of music by professionals working with individuals recovering from trauma. Thereafter questionnaires were sent to prominent healthcare professionals who indicated that they have worked with musicians. Their views and experiences were obtained of how trauma influences musicians' expression of emotion and memory, as well as knowledge on which psychotherapeutic intervention strategies and other healing therapies proved most effective with the various types of traumas encountered. The experiences, symptoms and insights of four case study participants who were affected by trauma are discussed in order to gain greater insight into how musicians themselves interpreted the effects and outcomes of their experiences.

A supposition underlying this study is that it is possible for musicians and music teachers, provided that they possess the necessary awareness, to identify signs of trauma that are influencing their and their students' performances and musical development. With increased awareness and more accurate detection of problems, possible solutions and early intervention can be sought. This is discussed in the light of the possibility that such musicians can, provided the right action is taken, ultimately emerge as better musicians and integrated individuals.

A more comprehensive description of the research methodology can be found in chapter 5.4.

1.7 Delimitation of the study

The scope of this study has been limited to musicians who have experienced trauma. While a few international responses were gleaned, specifically from Germany, the Netherlands and Poland,

the vast majority of musicians participating in this study were operating within the South African music context at the time when they kindly participated in the study. Any trauma that includes psychological sequelae can be taken into account in the research. To distinguish psychological from exclusively physical trauma, the 1973 definition given by Laplanche and Pontalis (1973:465) describes the type of trauma considered here: “an event in the subject’s life defined by its intensity, the subject’s incapacity to respond adequately to it, and by the upheaval and long-lasting effects that it brings about in the psychical organization”. This researcher agrees with more recent definitions of trauma that emphasize the effects on and experience of the individual (see definition by Beaulieu quoted on p. 1). Another definition to take note of is by Robert Scaer (2005:71). He defines trauma as “a disorder of the perception of time, of the body, and of the self”.

Healthcare professionals who have worked with musicians and/or assisted in the treatment of traumatized individuals were also invited to participate in the research survey. In addition, questionnaires were sent to music teachers. Four individuals over the age of 21 who were previously exposed to trauma were selected as case studies. They gave informed consent after full explanation of the nature of the study. The main focus of the semi-structured interviews was on these individuals’ own interpretations of how traumatic experiences affected their music-making.

1.8 Value of the study

The outcome of this study provides insight into how trauma can influence musicians. Light is shed on particularly its influence on expression of emotion and memory in their music-making. Increasing knowledge concerning signs of possible trauma sequelae as well as possibilities for treatment will assist teachers as well as performers to identify problems early on, obtain suitable treatment, investigate inter-disciplinary collaboration in the treatment process and facilitate steady progress on their instrument(s) or voice. It is shown throughout how important aspects of the trauma response, as generally discussed by experts in the field, can have particular effects on musicians due to the demands their profession places on them. Since the study presents its subject matter primarily from the perspective of musicians, healthcare professionals will benefit by gaining deeper insights into the experience of musicians. This in turn could assist healthcare professionals in developing creative intervention strategies. An awareness of how trauma can

influence musicians should inspire further research. During the study many areas warranting further research were identified and are discussed in the final chapter.

1.9 Discussion of contents

The first part of the study gives a thorough background on the matters central to this study, namely emotion, memory and trauma. In chapter 4 more direct correlations are drawn between music and trauma, influence on famous musicians of the past, the use of music and art in the recovery process and trauma and mental aspects of performance. Thereafter opinions and findings of healthcare professionals and music teachers as well as the case studies are discussed. Significant trends and considerations emerging from the research survey are discussed in chapter 7, followed by a comparison of the research results to available literature on the subject of trauma. The hypothesis and research questions are proven/disproven and discussed in chapter 8. The last section of this study is devoted to conclusions that can be drawn from research results, recommendations for further study and general recommendations.

1.10 Literature overview

In music therapy literature, much has been written on how music is used in the facilitation of healing from severe trauma. Ways in which individuals who have experienced trauma express their experiences in music therapy settings are documented in great detail (e.g. McClary 2007, Kellerman & Hudgins 2000 and Heal & Wigram 1993). However, very rarely do people, including teachers working most closely with performing musicians, ask the question as to how experiencing severe trauma influences the expression of emotion and memory during music performance in advanced students and professional musicians. It was clearly evident to the researcher that, while the research on trauma is very advanced, there is very little specifically written about the influence of trauma on musicians. Peretz (2001:106) also notes that the neuropsychological study of musical emotions lags behind other research on the emotions. In another article (Peretz & Hebert 1995:128) the authors also state that research and models on particular brain structures involved in music processing are lacking.

Music and art may even be used in recovery processes following exposure to traumatic events. Habboushe and Maranto (1991:201) refer to the possibility that the areas of Performing Arts

Medicine and Music Therapy may meet when musicians incorporate music as a healing modality in the treatment of their health problems.

The study of the consequences of traumatic experiences has been pursued by many great thinkers. Writings by famous psychologists and psychiatrists such as Sigmund Freud, Carl Jung and Victor Frankl have been consulted for their insights about trauma. The understanding of the subject today is built on work done by these and other professionals. However, for the purposes of this study the focus is on the most recent trauma research which sheds light on the research questions.

The standard texts in the fields of psychology and psychiatry have been consulted, most importantly the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders. Fourth Edition: Text Revision (DSM-IV-TR)* (APA 2000)¹. Different sides of the debate on memory are mentioned in this study. Books and articles by musicians on emotion in music were consulted, such as Juslin and Sloboda's 2001 *Music and Emotion: Theory and Research* and, from a different angle, Malcolm Budd's 1992 *Music and the Emotions: The Philosophical Theories*.

Various psychotherapeutic intervention strategies and other healing therapies for trauma victims and PTSD symptoms have been studied. The work of Van der Hart, Nijenhuis & Steele (2006), Robert Scaer (2005, 2001), Robert Levine (2005, 1997), Nijenhuis, Van der Hart & Steele, (2004), Van der Hart, Nijenhuis, Steele & Browne (2004), Danie Beaulieu (2003), Peter Chappell (2003), Louise Montello (2002) and Bessel van der Kolk (1996 a and b) proved to be very useful in this regard.

1.11 Notes to the reader

At a basic level, music can be defined as 'organised sound' (Levitin 2006:111). The majority of musicians who participated in this study play Western art music, or what is also commonly known as 'Classical music'. However, the concepts dealt with regarding

¹ The *DSM-IV* was the diagnostic manual most frequently consulted by the researcher. This study refers to this source where diagnostic criteria are concerned. However, the researcher acknowledges that she is aware that the *ICD-10* is currently the most commonly used diagnostic manual in South Africa, while the *DSM-IV* is more frequently used in the USA.

trauma, emotion, memory, as well as additional aspects discussed are equally applicable to other genres of music. Elliott’s description of ‘musicing’ and ‘musicers’ is appropriate for this study (1995:49, 109). As depicted in the figure below, he (1995:40) describes music as a four-dimensional concept involving a doer which he calls a ‘musicer’, some kind of doing which he calls ‘musicing’, something done which he describes as music as well as the complete context in which these actions take place. His definition of ‘musicing’ includes all five forms of music-making which he lists as performing, improvising, composing, arranging and conducting.

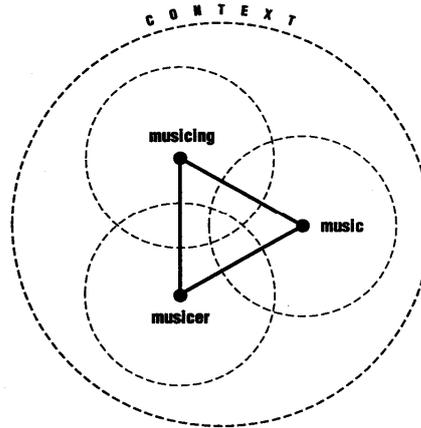


Figure 1: Musicing: Four dimensions (Elliott 1995:40)

Musicians included in this study are not restricted to the ranks of elite performers only, but an inclusive definition of music, music-making and musicians is adopted. In the mission statement for the journal *Musical Perspectives*, Holmgren (2008/9) describes music performance and those involved with the process in a way that is applicable to this study:

Music performance is not so narrowly defined as to be simply a concert or a recital. It is an experience, encompassing teaching and learning, analysis and critique, and the combined experiences of those who interact in diverse ways with the processes and products of making music.

It is an unfortunate reality that the possibility of misapplication of this information or the honing in on vulnerabilities of traumatized musicians exists in a highly competitive environment such as the professional music scene. However, after thoughtful consideration the researcher became convinced that the potential benefits of this information to those who truly wish to ameliorate the challenges facing traumatized clients and students outweigh the potential risks of misapplication.

Readers without a background in psychology should take care not to impose metanarratives on individual cases of trauma. An example of such is the mistaken belief that all students who have experienced a certain type of trauma would react in a particular way. Responses from the research survey and the narrative quality of feedback from case studies served to emphasize the fact that individual reactions to trauma are determined by a great variety of factors and are unique to the individual. Therefore it should be accepted that both reactions and duration of recovery period cannot be accurately predicted by others. The personality attributes of empathetic understanding and imagination are most helpful to those wishing to understand a situation from the perspective of another.

The research survey presented great challenges insofar as obtaining responses from healthcare professionals was concerned. The researcher is deeply concerned about the apparent apathy of many healthcare professionals in giving special thought to how trauma affects musicians. At the same time she is very grateful to that minority of professionals who indeed responded to the survey, even when it was only to confirm that they have not worked with traumatized musicians in their practice. Seen against this practical experience obtained whilst conducting the survey, the researcher believes that comments regarding risks involved in treatment and advice regarding care that needs to be taken in making decisions regarding modes of intervention are justified. A possible consequence of the relatively low response rate from healthcare professionals could be that a certain type of individual, perhaps those more sympathetic towards either musicians or trauma victims, is likely to be disproportionately represented amongst the respondents. It is acknowledged that this could have implications for a degree of bias to be reflected in the research results.

The researcher is of the opinion that aspects that could have been of help to clients or patients are too often overlooked by practitioners who specialise in their particular field, in whichever of the healthcare professions they might have attained their qualifications. Since the researcher is not bound to any specific discipline, the liberty was taken to adopt a broad approach, in line with the holistic framework from which this thesis is written. Perhaps at times it may appear that many different viewpoints are upheld. However, in the end similarities found whilst investigating essentially the same phenomena from different angles could bring greater understanding and clarity to the subject of trauma.

The other motivation for this broad approach is respect for the different cultures that music students come from. Some may immigrate to and emigrate from different countries; others travel great distances to obtain high level tuition. Since trauma can affect anyone, the researcher believes that it is imperative that teachers have adequate knowledge of the wide variety of intervention strategies existing in different cultures in order to enable them to refer students to healthcare services with which they will feel comfortable and familiar.

Assurance is given that the research data is stored according to the regulations stipulated by the Ethics Committee of the University of Pretoria.

Regarding references, in cases where Internet sources did not have page numbers, only the date is given. Subject fields are referred to using capital letters.

Spelling of the names of composers is according to the *Suid-Afrikaanse Musiekwoordeboek/South African Music Dictionary*, second revised and enlarged edition (Otterman & Smit 2000).

In the concluding chapter there may be some overlap between recommendations for further research and general recommendations in the sense that some general recommendations could indeed be interpreted as warranting further study.

It is conceded that many concepts discussed are explained only briefly. In such instances the reader is referred to sources where more in-depth information can be found. This is particularly relevant to psychological theories and intervention strategies developed by professionals and referred to in this study.

Sound is a vehicle for emotion, which it can either reinforce or release.

- Frawley 1997:228

An effort, an emotion, can bring suddenly to consciousness words believed definitely lost. These facts, with many others, unite to prove that in such cases the brain's function is to choose from the past, to diminish it, to simplify it, to utilize it, but not to preserve it. ... It is enough to be convinced once and for all that reality is change, that change is indivisible, and that in an indivisible change the past is one with the present.

- Bergson 1946:154-5

CHAPTER 2: EMOTION AND MEMORY

2.1 Introduction to the relationship between emotion and memory

Emotion and memory are discussed together in this chapter as they can sometimes be very closely related. The quotation by Frawley (1997:228) above (on p 13) serves to illustrate that sound and emotion are closely linked. In turn, the quotation by Bergson (1946:154-5) not only draws attention to the important link between emotion and memory but also reflects on the passing nature of experience as well as the processing, perception and memory thereof. By stating that “the past is one with the present” Bergson leaves the impression that he adopts a holistic perspective on cumulative experience not unlike that postulated by quantum mechanics nearly half a century later.

Not only are both emotion and memory processed by similar brain structures, but the emotional nature and associations of events play an important role in the way in which events are remembered or not. Adequate motivation, in itself also linked to the emotions, is needed for musicians to be successful and reach their goals. Both emotion and memory are integral parts of music performance. Fear is an emotion often encountered by performers in connection with the professional demands of public performance. It is argued that such performance anxiety may perhaps be more pronounced in previously traumatized individuals. Regardless of whether a performance is done entirely ‘from memory’, processes that involve highly specialized memory skills are utilised in any form of musical activity.

Firstly emotion is defined. Thereafter aspects related to emotion relevant to trauma and music are discussed in the first part of this chapter. Section 2.6 defines memory followed by discussions on various aspects of memory. The chapter concludes with a discussion of a section about performance from memory and stage fright.

2.2 Defining emotion

The first part of this chapter aims to highlight how emotion plays a central role in human existence and human motivation. In the field of music, the role of emotion and the subjective nature of the musical experience is perhaps more prominent than in most other careers. However, music can also have a profound influence on the emotional state of musicians and non-musicians alike. An appreciation for the complex nature of interacting factors in emotional responses especially to trauma and music is important.

Corsini (2002:324) defines emotion as “[a]ny mental state characterized by various degrees of feeling and usually accompanied by motor expressions, often quite intense.” In turn, Corsini (2002:371) defines feeling as “[t]he emotional aspects of an experience” while LeDoux (2002:225) describes a feeling as “the conscious experience of an emotion”. In addition, Mithen (2005:90) distinguishes between mood and emotion by pointing out that mood is a prolonged feeling while an emotion may be short-lived. Vocabulary associated with emotion and feeling plays an important role when reactions to and memories of traumatic events are described, as well as in the description of the subjective nature of experiencing or performing music. Concerning the identification of different types of emotion, Mithen (2005:86) distinguishes between basic emotions and complex emotions. He identifies variants of happiness, sadness, anger, fear and disgust as basic emotions, while he classifies shame, guilt, embarrassment, contempt and love as complex emotions. It is interesting that Zukav (1990:190) writes that the human emotional system can be broken down into the elements of love and fear, since according to Mithen’s distinction the former is a complex emotion while the latter is a basic emotion.

Emotion can also be defined on psycho-physiological levels. According to Spintge (1991:59), three levels, namely the cognitive-verbal, vegetative-physiological and nonverbal levels of emotion, can be objectively measured and quantified. The first determines thinking, processing of incoming stimuli, and verbal behaviour. The second can be measured through physiological

measurements such as hormone levels and skin resistance, while the third involves psychomotor behaviour such as facial expressions and fight-or-flight reactions. Spintge also refers to the aspects concerning emotion which cannot be measured but can only be described qualitatively. Both measurable and subjective experiences of emotion accompany the perception of music.

Mithen (2005:100) points out that emotions provide a guide to action and therefore are fundamentally important to thought and behaviour. He explains (2005:85-6) that academic attitudes have changed from viewing emotions as the antithesis of rationality toward placing them at the centre of human thought and mentality. In terms of how emotion guides people, John Bradshaw describes it as “the fuel that moves us to defend ourselves and get our basic needs met” (1990:13). He continues to define emotion as ‘energy in motion’ and describes various different emotions as the energies of anger, fear and sadness respectively. Savage (2002:108) classifies all expressions of human emotion as belonging to one of two primary emotional areas, namely love and fear. In the spectrum of what can be described as emotion as well as the purpose of emotion, much more subtle varieties can be discerned. Indeed every aspect of human living involves emotion on some level. Spintge (1991:61) asserts that there is no behaviour without emotion. This is supported by Jensen’s statement that most of our behaviours are influenced by peptides associated with emotion (1998:75).

Budd (1992:1) highlights three important questions that can be asked regarding emotion, namely what emotion is and what separates experience of emotion from other mental experiences; how emotions are distinguished from each other; and how different emotions are defined. In a more practical manner, Bradbury (2008:58) differentiates three constituent elements of an emotion: mental (‘feelings’), physiological (for example, heart rate and respiration), and behavioural (for example, posture and movement). He also explains that, through appraisal of any given situation, an emotion comes about. This is a valid explanation that relies heavily on the cognitive aspects associated with experiencing an emotion, involving the neo-cortex. Bradbury (2008:59) goes on to clarify this by distinguishing the slower routes along which nerves communicate information from sensory organs to the amygdala in the brain as being “via the conscious, wilful parts of the brain”, as opposed to the quicker routes via subcortical pathways. Radford (1989:75) points out that emotion can have many vectors and therefore has both magnitude and direction. He also explains that experiencing an emotion is not dependent on whether it is in actuality directed at an object (or at a situation or person).

Quotations from the work of the abovementioned authors give an overview of the philosophical and experiential complexities underlying emotions. Human emotion evolved from a primitive survival mechanism to being highly developed and refined. However, the major purpose of emotion is still to aid in our survival, and when conditioned responses become inappropriate to the situation of modern living, intervention is desirable. This can be deduced from Jensen's description related to learned helplessness, one effect of trauma rewiring the brain, and his suggestion that intervention is necessary when a serious condition is present (Jensen 1998:58).

The biological basis of emotion will be discussed in the following section. The advances in current scientific knowledge about the working of these chemical messengers give the possibility to develop means of intervention when circumstances or experiences adversely influence emotional states. In cases where neurological associations were formed which can be detrimental to the optimal functioning of the organism, recent developments in medical knowledge make solutions possible.

2.3 Biological basis of emotions

As seen in the previous section, it can be a challenging pursuit to define emotions. However, on a biological level emotions can be understood in terms of chemical changes involving neurotransmitters, peptides, hormones and other substances (Jensen 1998:76-78). These are not only present in our brains but are transported throughout our bodies. As stated by Jensen (1998:75), emotions create 'mind-body states'. He goes so far as to call the bloodstream "the body's second nervous system". Of importance to this study is only a basic explanation of the role of abovementioned chemical messengers, which will be linked in chapter 3 to their role played in trauma and resultant trauma manifestations.

Cory (2000:386-7) describes Paul MacLean's concept of the 'triune brain' as consisting of the protoreptilian complex governing our 'life-support operations', the palleomammalian complex comprising the limbic system and the most recently developed neocortex or neomammalian complex. In addition he states that older brain parts became more complex when the neocortex evolved. This is important in this context since human emotional responses would therefore be more refined than those of animals. In Cory's view (2000:406), MacLean's triune brain concept is so important that he even sees it as providing the basis for the study of moral consciousness.

While the unconscious component of emotion involves the autonomic nervous system and the hypothalamus, the conscious component of emotion involves the cerebral cortex (Kandel 2006:342). However, not everybody agrees about the accuracy of the triune brain theory. More than ten years ago already, Jensen (1998:4) wrote that the triune brain theory as proposed by MacLean was outdated. The importance of the role of brain chemicals is currently the focus of most of the neuropsychological attempts at altering or improving the function of the brain. Spintge (1991:61) writes that neuro-hormones and stress hormones can be measured in the blood and cerebrospinal fluid. Amendolia (1998:1) states that affect and primitive memory or sensory input are processed in the limbic system. She explains that sensory input first reaches the thalamus, whereafter the amygdala determines the significance of the sensory data received. It is the role of the hippocampus to form a cognitive map of the input received, according to its significance.

The last brain structures to develop are the frontal lobes. In both humans and other animals, the subcortical brain structures are associated with the limbic system. However, Peretz (2001:106) points out that emotions also recruit portions of the frontal lobes. This means that the whole brain is involved in the processing of emotion and neurotransmitters associated with the emotions affect the whole brain as well as the body. Rose (1993:505) supports this contention:

As neuroscience now tells us, this is because of the way the central nervous system is constructed: affects, sensations, and memory functions are processed by the same or parallel neuroanatomical corticolimbic circuits and structures with interconnecting shunts. Theoretically, then, any one of the three can stimulate the other two.

Emotions (described above as affects and sensations) involved in music processing can also stimulate memory function and *vice versa*. Levitin writes about the importance of connections in the brain's involvement with music (Levitin 2006:192):

It involves a precision choreography of neurochemical release and uptake between logical prediction systems and emotional reward systems. When we love a piece of music, it reminds us of other music we heard, and it activates memory traces of emotional times in our lives.

Specific neurotransmitters are linked to specific emotions. Discussed here are only those that play important roles in the trauma response, since a basic understanding of those is necessary to the understanding of certain concepts that will be discussed in chapter 3. Neurotransmitters and hormones associated with fear include adrenaline and noradrenaline. Holford (2007:51-3) notes that dopamine aids in dealing with stress, gaba-aminobutyric acid is linked to the modulation of

anxiety levels, while decreased serotonin levels could also be a cause of anxiety. Holford (2007:52) states that many other substances in the brain also act like neurotransmitters. This supports Jensen's statement (1998:75) in connection with the influence of peptides on our behaviour, as referred to at the beginning of this section. It should also be noted that, in addition to the immediate biological reactions taking place in the brain, trauma and its aftermath can also deplete the body of amino acids necessary in the formation of vital neurotransmitters. *Neurogenesis* (n.d.:1) identifies dopamine, GABA, norepinephrine, enkephalin and endorphins as particular neurotransmitters, the availability of which is diminished by the effects of trauma. Sahley (2009:1) is of the opinion that amino acid therapy can rectify the situation. She also identifies magnesium as the first mineral to be depleted by trauma and recommends supplementation with magnesium chloride.

Emotional illnesses of a biological nature are prevalent among musicians and others in the creative arts, as writers such as Kay Redfield Jameson argue at length (Jameson 1993). Some authors attempt to fit creative artists into specific moulds. For instance, Hershman and Lieb (1998) hypothesize that creativity and manic depression (bipolar disorder) necessarily correlate. In their words (1998:11): "We claim that manic-depression (*sic*) is almost indispensable to genius because of the advantages it can supply, and that if there have been geniuses free from manic-depression, they have been a minority." In addition they (1998:197) also write: "According to tradition, creative individuals must suffer beyond what ordinary mortals endure on the assumption that suffering is essential to creativity." The researcher wants to state clearly that not only does she disagree with such limited approaches to the understanding of creativity, but also that this study does not attempt to and should not be erroneously interpreted to claim that trauma is either a necessity for musical maturation or that all musicians have experienced serious trauma. However, what could perhaps be learnt from the limitations of the abovementioned viewpoints of Hershman and Lieb is that trauma symptoms and the symptoms of mood disorders often overlap, and that many of the same neurotransmitters are implicated as the cause of symptoms in various manifestations of symptoms. Therefore care should be taken and scientific investigation pursued in distinguishing what the true causes are in every individual case, plus under what circumstances, in order to avoid serious diagnostic mistakes (for an example see chapter 6.4.2 and 7.5.7).

2.4 Emotion and motivation

As seen in section 2.2, it is evident that emotions influence behaviour. However, not all emotions or feelings are goal-directed. Sternberg (1998:541) elucidates that emotion and motivation are similar in many aspects, but also differ in essential ways. An important difference is that responses to emotions are inner-directed while responses to motives are goal-directed. Other differences that Sternberg points out include that the stimuli for motives are mostly unobserved while stimuli leading to the experience of emotions are often apparent. Motives are cyclical and energise, direct and sustain activity while emotions are not normally cyclical and may interfere with everyday activity. Motives are experienced as desires to attain goals and are active in contrast to emotions that are experienced as feelings and are passive.

From the above it is evident that emotion and motivation are not the same but are closely related. To succeed in the music profession people are required to be highly motivated and to persist with often solitary activities such as practising instruments. Potgieter (1997:6) distinguishes between intrinsic and extrinsic motivation, the former being derived from rewards gained from participation in an activity as such and the latter associated with external rewards such as social recognition, status, awards and money. Both intrinsic and extrinsic motivational factors are associated with participation in music. Whilst music itself can be intrinsically motivating, complexities may arise when traumas experienced influence the emotions and in turn have an effect on motivation. This can have a profound influence on how musicians function in their studies and careers. Perceived effects on professional functioning can be either positive or negative. However, so-called professional accomplishment is not always an accurate measure of happiness and contentedness in personal life, since for some work can become an escape from circumstances.

Gorrie (2000b:97) draws attention to the influence that a difficult past may have on performers. He makes it clear that it is a person's conscious or subconscious decision whether their past will equal their future which is the decisive factor determining whether they break free from their past circumstances. He states that many of the greatest performers came from a background of poverty or some form of hardship and that this provided the intense motivation to make changes and work towards drastically different futures. Various motivations for the changes that he mentions include being dissatisfied with their current situation, the want to ensure a better future

for their children and the simple refusal to continue their current life situation. It can be seen that such appraisal incorporates elements of emotion experienced as a result of circumstances or situations that in turn become catalysts for instilling and sustaining the motivation to change.

The expectations of teachers and the way in which they treat students can have a profound impact on students' motivation to achieve and persevere. Potgieter (1997:23) emphasizes that the expectations and levels of value that teachers and coaches hold of students influence their levels of motivation, pointing out that levels and tone of communication between them are interpreted as a measure of their value and potential.

For optimal performance in the music profession, emotional expression should be unhampered. In addition, musicians must be highly motivated to reach high levels of expertise. Traumatic experiences can interfere with both the emotions and motivation. Perhaps the emotional nature of music and opportunities it lends for creative expression are what makes it an intrinsically motivating activity. The relationship between emotions and motivation is relevant to this study to the extent that the directionality of emotions impact the professional functioning of musicians by having an influence on their levels of motivation. In the next section expression of emotion and perception of emotion in music are discussed.

2.5 Expression and perception of emotion in music performance and appreciation

Studying and defining expression of emotion in music, the mechanisms by which music is interpreted by the listener, and whether or not the message that is received resembles that which was intended, is a complex pursuit. Expression and perception of emotion in music are related but not the same and can be compared to other forms of communication where there is exchange of ideas and intent. The following two sections of this chapter discuss these aspects of the experience of music.

2.5.1 Expression of emotion in music performance

It is perhaps challenging to satisfactorily describe music and its effect on people by means of language. However, people such as Budd (1992), the author of a monograph about the philosophical theories behind music and the emotions, have consciously given careful thought to

music and the emotions. He (Budd 1992:175-6) concludes his study with the contention that he has not yet come across a clearly satisfactory theory of music. He is of the opinion that such a theory should not be as monolithic as the ones he has rejected. Various other opinions, some of a more practical than philosophical nature, were encountered in the literature, as discussed below.

It cannot be denied that it is expected of professional musicians and music students alike to possess some innate ability. Music training generally includes further developing both skills of appropriate expression of emotions in music and fine-tuning of perception skills. Perhaps consciously considering how others have grappled to define these processes could be helpful in enhancing the verbal vocabulary used for teaching and guiding students, including traumatized students in whom these mechanisms may temporarily be affected.

Mithen (2005:100) writes that all people intuitively understand music to be the ‘language of emotion’. He also states that, not only can music express our emotions, but it can also be used to manipulate the emotions and even the behaviour of others. These elements of communication will be referred to in various contexts in this thesis. The great piano pedagogue György Sándor (1912-2005) aptly describes the role of music in communicating emotions in the following words (1981:198):

We cannot use it to communicate facts or convey ideas. What music can do is generate and communicate moods – the emotional responses that accompany facts and ideas ... Music will circumvent events, communications and information, and will evoke emotional responses by direct aural contact, whether they are stimulating, soothing or depressing. Unquestionably sound alone can represent and affect the entire human emotional gamut.

When we think of music, the expression of different moods and atmospheres comes to mind. It is the performer’s role to communicate to the listener by means of sound. Therefore during both practice and performance such individuals have to experience emotions more frequently than is the case with people not involved in music performance. This is alluded to by Mithen (2005:94) who writes that although it might be difficult to test formally, music induces emotional states in both performers and listeners. In addition, the mood that a particular section in a given piece of music requires is most likely not the state of emotion the individuals themselves are naturally experiencing at the given point in time. Therefore associations have to be made to past events and feeling states more frequently than would be the case for individuals not involved in music performance and teaching. When their own internal emotional state has been interfered with by

trauma, these continuous emotional demands made on the person when practising and performing on the instrument (including voice) can become a problem in some cases. In other cases it could possibly become a necessary and beneficial outlet of emotion. Responses to the research questionnaire sent to music teachers as well as the case studies shed more light on these possibilities. These are discussed in chapter 6.2, 6.3 and 6.4. It should be added that, in part, the outcome and particular way chosen to ‘deal with’ these emotions may depend on how the situation is managed by those supporting the student or artist.

Gestures form an important aspect of a performer’s possibilities of conveying the meaning of the music to the audience. Altenmüller, Bangert, Liebert and Gruhn (2000:103) state that the complex movement patterns required from musicians are closely linked to the emotions. These authors draw attention to the difficulties that may arise when a musician wants to communicate feelings but at the same time may be afraid to make mistakes. Strains of professional musicianship include what they refer to as this ‘double linkage’ to the emotions and the reward-punishment system. Much is required of the professional musician in terms of the expectations and emotional demands of the career. It follows that trauma could further add complexities to the equation. An example of how altered bodily motions in a traumatized musician could interfere with musical expression, as observed by Alice Miller (1997:12), is cited in chapter 4.1.

In attempting to explain how music exerts its emotional effects on people, Radford (1989:74) writes that “perhaps, sad music echoes the rhythms, cadences, intonations of the voices, movements, and demeanor of persons who are sad.” He considers himself to be an ‘emotivist’ and contrasts his view with what he calls the ‘cognitivists’ who he says reject the emotivist’s assertion that listening to music that is intended to express sadness can make listeners feel sad. The researcher cannot help but feel that this philosophical attempt to describe emotions and music fails to adequately explain what Radford sets out to do. Perhaps the reason for this is that it fails to mention anything about the essence of sound vibration and how it travels, influences and is perceived by listeners. Skar (2002:632) does point out that music is movement in the same way as sound is vibration, observing that feelings move and transform. In some instances music’s potential function as a medium for conveying emotions is intuitively understood, even without finding scientific theories and proof necessary.

Writers from traditions outside Western art music also grapple with the question as to what the role of music and the arts in the expression of emotion entails. As Gold and Brinner (2007:678)

refer to, the Rasa theory of Southeast Asian Tantric readings holds that the performing arts express one or more of the nine Rasas. When communicated in music, the Rasas are considered as emotions or qualities inherent in the performed work. According to this view, music functions as a medium for conveying emotions.

An important consideration is music's ability to bypass the conscious mind. McClary (2007:159) describes this ability of music as providing a direct pathway to emotional and unconscious material. In connection with William Shakespeare's use of the concept of creative sound and his manipulation of 'combinations of sound frequencies', Wooldridge (2007:2) writes that "[Shakespeare] was aware that music as tone bypasses the intellectual guards and filters and goes straight to the heart of the matter." It can therefore be asked how much we do indeed express and/or perceive consciously and to what extent the expression and/or perception of music involves unconscious processes.

Regarding brain damage and observed changes in the emotions, Sacks (2007:302-304) refers to a case where the patient lost the ability to feel and express emotion entirely except for when he sang. This man's frontal lobes were damaged by a brain aneurysm. He states that the right hemisphere was more extensively damaged than the left, and the man became severely emotionally impaired. However, when this man sang, Sacks and others treating and caring for him observed that he showed every emotion appropriate to the music. Sacks writes (2007:303): "It was as if music, its intentionality and feeling, could 'unlock' him or serve as a sort of substitute or prosthesis for his frontal lobes and provide the emotional mechanisms he seemingly lacked."

Notwithstanding the differences of opinion as to exactly how music communicates emotion, it cannot be denied that music's central role in society is inherent in all cultures. The truth in this statement can be illustrated by analyzing the concept of the archetype of music. Jung (1959:3-4) described what he termed the 'collective unconscious' as a universal phenomenon consisting of modes of behaviour and content, indeed the themes inherent to human life, shared in similar forms by all people. He calls the 'collective unconscious' a "common psychic substrate of a suprapersonal nature". Archetypes are related to this, but Jung (1959:5) explains that they are not unconscious but are indeed collective psychic experiences that have become conscious. He adds that esoteric teaching and fairytales are ways in which archetypes are transmitted. McClary (2007:156) explains that inherited archetypes cause individuals to tend to experience things in

certain ways. She refers to the ‘archetype of music’, thereby implying that music is a universal experience that is transmitted from generation to generation. She (2007:156) further explains the origins of music as efforts of humans to take audible sounds and silences from the environment and organise them into musical form. In all cultures, music is a means of communicating and it forms a vital part of some of the most important ceremonies and institutions in cultures, such as religious ceremonies, marriages, healing rituals, entertainment and art. However, Marshman (2003:27) draws attention to the fact that specific genres of music, such as Western art music, are not necessarily universal, but that the underlying values in various forms of music are indeed universal.

2.5.2 Perception of emotion in music appreciation

In order for communication to occur it is essential that an intended message is received by another. In this process, many variables determine whether this is the same as was intended. However, even if erroneous, if a message was transmitted and received, some form of communication has indeed occurred. This pertains to all life forms, but for the purposes of this study is limited to that of human beings. Budd (1992:151) argues that just as linguistic utterances can be miscomprehended, so can a musical work. Juslin (2005:87) describes the necessary aspects for music to communicate, the minimum requirement being acoustic performance perceived by a listener. When the listener’s affective response matches the composer’s expressive intention, maximal artistic expression or communication is achieved. Juslin illustrated this spectrum by means of the following figure:

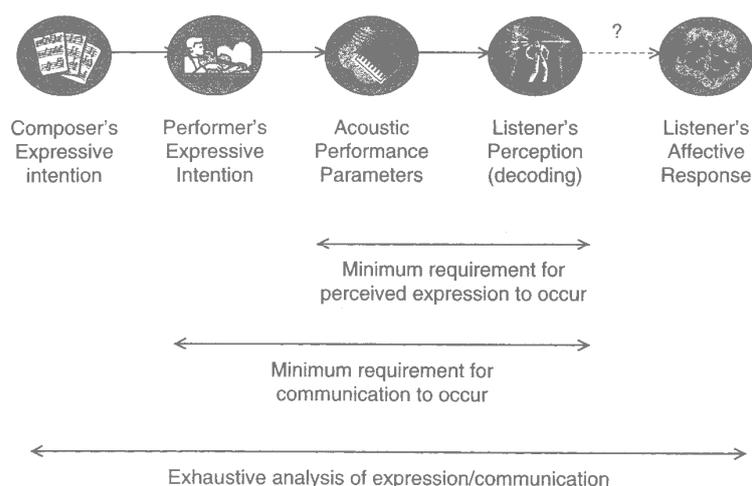


Figure 2: Different aspects of the chain of musical communication of emotion (Juslin 2005:87)

In order for a listener to perceive emotion in music, composers and performers make use of an infinite number of communicative devices. Levitin (2006:111) elucidates that knowing what our expectations are and controlling when those will and will not be met is the means that composers use to communicate emotion. He writes: “The thrills, chills, and tears we experience from music are the result of having our expectations artfully manipulated by a skilled composer and the musicians who interpret that music.”

Stein (2007:444) construes the interaction between music and auditor as an ‘object relation’ in which the inter-relationship consists of psychical operatives such as the phenomena of projection and transference. According to this viewpoint, the subjective nature of musical experience is paramount and past experiences play a formidable role in the way in which music is perceived. Stein states that in describing music’s effect within us we are focused on the subject’s internal psychological world. Perception of music is a subjective process for yet another reason, namely that, as Lathom-Radocy and Radocy (1996:69) point out, human information processing is required to create music from incoming aural stimuli.

Responses of subjects in Thompson and Robitaille’s study (1992:88) on whether composers can convey emotions through music showed a clear positive correlation in identifying the emotions of joy, sorrow, excitement, dullness, anger and peace. Resnicow, Salovey and Repp (2004:145) state that music is a form of non-verbal communication to which individuals may be differentially receptive. A study by these authors found that there is a connection between identification of emotions in music performance and emotional intelligence.

Maranto (1993:158-159) describes the capacity of music to elicit responses in humans as including, but not limited to, eliciting physiological, psychological and cognitive responses. Music may also cause physiological and/or psychological entrainment such as synchronising heart and respiration rates to the pulse of a piece of music. This underscores what powerful influences music has on the physiological as well as psychological aspects of human emotions. In support of this, Spintge (1991:61) states that music is a very complex stimulus, influencing conscious brain functions as well as autonomic and unconscious cerebral processes in various ways.

Bharuca (1999:435) proposes a model of neural nets to explain a possible way in which the brain may be wired. This is consistent with how the brain forms associations between bits of related information and has significance to how traumatic memories may impact other brain systems involved in music-making. As pertains to the brain structures underlying the perception of music, research focuses on locating neurons that respond selectively to the basic elements of music. Weinberger (1999:60) affirms that no single approach can provide a full account of the brain mechanisms underlying the perception of music. The complexity of processing music involves many different structures in the brain. Research by Peretz (2001:118) indicates that emotional judgements of music can remain unimpaired even after the occurrence of injuries resulting in severe deficits in perceptual processing. This suggests, in her view, a specialized cortical arrangement for musical emotions. In addition, the possibility of music to stir the emotions is more fundamental than memory for music. Sacks came to the following conclusion (2007:346): “The perception of music and the emotions it can stir is not solely dependent on memory, and music does not have to be familiar to exert its emotional power.”

Bearing all the above in mind, perhaps considering neurochemical reactions, brain structures, object relations and archetypal material are in and of themselves insufficient to explain the mechanisms by which emotion is expressed and perceived in music. Mithen (2005:278) indeed concludes that words are inadequate to describe the nature of music, including its influence on our minds and bodies. Schwartz and Begley (2002:37-39) argue that the totality of our neurochemical reactions does not provide an adequate explanation for feeling, attention and memory, but that mind and volition interact with and influence the purely biological side of such experience. In the context dealt with in this study, this viewpoint would imply that we are not at the mercy of our emotions. Seen in this light, both trauma victims and musicians have greater control over their own experiences.

2.6 Defining memory

Eric Kandel, winner of the Nobel Prize in Physiology or Medicine in 2000, describes memory as “a form of mental time travel; it frees us from the constraints of time and space and allows us to move freely along completely different dimensions” (Kandel 2006:3). It is important to distinguish between the process of remembering and memory as a representation of past experience or of the external world previously experienced through the senses and stored in the

central nervous system, available for retrieval. Corsini (2002:581) defines memory firstly as the “[a]bility to revive past experience, based on the mental processes of learning or registration, retention, recall or retrieval, and recognition; the total body of remembered experience” and secondly as “[a] specific past experience recalled”.

LeDoux states (2002:134) that most neuroscientists now believe that alterations in synaptic connectivity are necessary for learning to take place, and that memory of learnt material constitutes the stabilization and maintenance of these changes over time. For instance, at a given point in time a musician can be playing a piece of music ‘from memory’, or in other words, be recalling the music, while many other pieces may be stored in memory, available for future recall. The degree of accuracy of recall may vary depending on the solidity of consolidation processes and relative recency of past revision of material, but the music is indeed stored in various memory systems and available for retrieval.

Perry (1999:1) defines memory as “the capacity to bring elements of an experience from one moment in time to another.” He draws attention to the fact that this capacity is unique to all life forms. Perry continues by describing this capacity to carry aspects of previous experience forward in time as the basis of the immune, the neuromuscular and neuroendocrine systems. He acknowledges that the human nervous system is the most sophisticated biological system to store representations of both the external and internal worlds. This illustrates the importance and complexity of memory of various systems in the human body and underlines that, even in relation to music, a purely cognitive explanation of memory cannot account for all aspects involved.

Scaer (2005:38) states that we acquire skills necessary for survival primarily through a process of trial and error, constituting learning, which in turn requires memory. It can be deduced that we depend on our acquired memories for our very survival.

2.7 Types of memory

The aim of this discussion of different types of memory is to clarify concepts that will again be referred to throughout this study where the impact of trauma on musicians’ memory processes is discussed.

Perhaps the most important types of memory to distinguish between are explicit or declarative memory as opposed to implicit or procedural memory. Things remembered and learned, in other words memory utilised in the “specific process of conscious learning” (Scaer 2005:38), is called explicit or declarative memory. Scaer (2005:38) distinguishes between episodic and semantic declarative memory. According to him, we use the former to guide our immediate activities and the latter to learn or gather information. LeDoux (2002:116) explains that implicit memory operates without our awareness and is reflected in many aspects of our outward behaviour and inner life. Scaer (2005:40) states that nondeclarative or procedural memory is intrinsically unconscious and mostly stored in the midbrain, cerebellum and brainstem. Procedural memory is employed to acquire sensorimotor skills such as the technique of playing a music instrument. Memory used in learning and performing music requires implicit and explicit memory. What was learned by using declarative memory later becomes automatic, or in other words, part of procedural memory. However, a musician is conscious of and can perhaps later recall many or even most aspects of the performance that was previously contained in working memory (also known as short-term memory). Corsini (2002:1076) makes it clear that working memory is involved in holding items briefly before they are either stored in long-term memory or forgotten. Working memory is also responsible for retrieving previously stored information for a specific purpose. Such information is held in working memory while it is used. Weber, Clark, McFarlane, Moores, Morris and Egan (2005) illustrated abnormalities in the functioning of working memory in patients with PTSD (see section 2.8.4). This will be highlighted later as relevant to musicians and their specific trauma responses.

Scaer (2005:39) identifies the area of the brain that processes declarative memory as the hippocampus. A crucial consideration relating to matters discussed later in this study is that, according to LeDoux (2002:131), the hippocampus makes awareness possible. He writes that the hippocampus is synaptically connected in a manner ensuring availability of its activity to brain systems that mediate conscious awareness while this is not the case with the connection of implicit systems. LeDoux (2002:123) also states that the amygdala is involved in implicit learning and as a result we only become consciously aware of an emotional stimulus when it is being processed by working memory. A basic understanding of these different memory systems is important to facilitate an attempt to understand how memory for music and memory of trauma could mutually influence (or interfere with) each other.

Memory systems often referred to in relation to music are visual, acoustic (or aural), kinaesthetic, motoric and analytical (see section 2.9, Sándor 1981:192-197, Ahrens & Atkinson 1955:80-83). Jensen (1996:205) categorises retrieval systems slightly differently, namely as categorical/semantic, procedural, contextual/episodic, and sensory and synaesthetic memory. Synaesthesia is defined by Corsini (2002:972) as “[a]n experience in which stimulation of one sensory modality also arouses sensations in another; for example, words or sounds (and sometimes tastes and odors) may be experienced as colors. Musical notes may yield specific colors. Or numbers are experienced as sounds.” Some music teachers actually cultivate synaesthetic memory to enhance creative possibilities for interpretation. Aiello (2001:393) found that concert pianists participating in her study seemed to have developed more precise cognitive plans for memorising a new piece, while participant students tended to learn by rote. In terms of the above discussion about memory systems, the former method employs more memory systems, particularly making fuller use of explicit memory systems than the latter which makes use mostly of motoric or procedural memory.

Kandel (2006:218) states that short-term memory results from functional change and long-term memory from anatomical change. In addition, learning changes ‘cortical maps’. He also identifies plasticity as the mechanism underlying learning and states that the architecture of each person’s brain is unique. Both short-term and long-term memory are required by music performance and teaching. However, changes in short-term memory (also referred to as ‘working memory’) could be more directly observable and play a very important role in both learning and performing music.

All technical passages as well as interpretative aspects have to be executed in real time when performing a musical composition. For lack of a better term this could be described as ‘time-based sequential memory’. The relentless expectations for exact renditions of previously consolidated material are what distinguish memory required of performing artists from memory for other kinds of previously learnt information. Perhaps this contributes to the influence of phenomena such as concentration deficits due to trauma being more destructive to and noticeable in the performing arts than in other occupations.

Teachers may work with students and artists from all cultures. Therefore it is important to recognize that some traditions such as Ayurveda, a system of traditional medicine native to India, view memory differently from the definitions as set out in section 2.2. More specifically,

the Ayurvedic and Buddhist understandings of memory tend to be more multi-dimensional, described by Tiwari (1995:39) as “[c]ontaining the truth of the entire universe”. Some ‘alternative’ practitioners maintain that people indeed have access to memories extending over a longer period of time in the existence of life forms than is generally accepted in allopathic medicine. Ayurvedic practitioners distinguish between what they call cosmic, cognitive and experiential memory (Tiwari 1995:39-40). Tiwari defines ‘cosmic memory’ as “the complete recollection of the entire universe from the beginning of time”. According to her, ‘cognitive memory’ holds our past knowledge, while ‘experiential memory’ is our recollections of experiences through the mind, body and senses. Perhaps the concept closest to this description that is accepted in Western thought is the notion of ‘DNA memory’, as described by Hammons (2006), focusing on genetic memories encoded in the DNA helix. He raises the question as to whether it is possible that the DNA helix holds memories of our ancestors and argues that acquired experience necessary for survival of a species could be saved as ‘unconscious genetic memory’. These phenomena of which our understanding is limited could all potentially impact a musician’s memory for music. However, they require highly specialized investigation and therefore are beyond the scope of this particular study where the emphasis will be on more clearly definable and observable characteristics of memory.

2.8 Emotion, memory and trauma

Reactions to trauma involve emotional responses and can also include alterations in the normal functioning of memory. Therefore emotion, memory and trauma must all be discussed to form the foundation for later explaining how a complex interaction of these processes can affect traumatized musicians and their music-making. Section 2.8.4 particularly describes some effects of trauma on memory for music.

2.8.1 Processing of emotion during traumatic situations

There are many opinions regarding the processing of emotion during traumatic situations (for example see Scaer 2005, Nijenhuis *et al.* 2004, Beaulieu 2003). However, most sources agree that during a traumatic situation, sensory overload occurs, survival is the primary goal, and emotions cannot be processed fully. The various reactions possible are the fight, flight, or freeze responses, and secretion of peptides and hormones in the body during the traumatic event prepares the body and provides the energy needed for any one of these responses. The reaction to

trauma is a two-way process, since according to LeDoux (2002:228) once alarm-related behaviours are elicited, the brain begins to receive feedback from bodily responses. These include sensory messages from internal organs or muscles as well as feedback from hormones and peptides released in the body which again reach the brain. He states (2002:228): “[It] is likely that working memory has access to this information in one form or another.”

There are medical explanations for the processes, symptoms and individual differences associated with the trauma response. Intense emotions experienced and the inability of the brain to process and integrate the overwhelming amount of incoming information can lead to trauma symptoms, most notably dissociative symptoms (Nijenhuis *et al.* 2004). In addition, according to Levine (1997:99-100), the failure to discharge the frozen energy accumulated during the immobility or freeze response, due to the neo-cortex overriding the instinctual responses, leads to traumatization and the symptoms associated therewith.

In addition to differences between individuals, differences exist in how people of different ages react to and remember the same events. Van der Kolk and Saporta (1991:199) state that the biological effects of trauma at different times in human development can be different. According to research results published by the *Society for Neuroscience* (2008:1), it is possible that fears unlearned at an early enough age can, in fact, be erased. However, as structures close to the amygdala develop, their role in the formation of fear memories increases and it becomes virtually impossible to erase such memories.

Scaer (2005:51-52) explains that during a threatening situation the frontal and central areas of the right cerebral hemisphere attend to incoming information and the brain’s response thereto. He states that the primary senses first warn us of danger and this information is then sent to the locus ceruleus. Thereafter messages are sent to the amygdala from where they are further sent to the hippocampus as well as other brain regions. Kandel (2006:342) states that the amygdala is involved in both the conscious experience of feeling and bodily expressions of emotion. Next the information is sent to the orbitofrontal cortex which Scaer (2005:52) calls “the master regulator of survival behaviour, both conscious and unconscious”. Information is then sent to other parts of the brain responsible for initiating behaviour patterns to assist in survival. The orbitofrontal cortex also activates the hypothalamic/pituitary/adrenal (HPA) axis which is responsible for the endocrine response, activating the sympathetic nervous system. Scaer continues by explaining that the pituitary stimulates the adrenal glands to produce cortisol,

lowering norepinephrine levels which modulate the remainder of the brain's arousal response. This aids in managing ongoing stress with the aim of restoring homeostasis.

According to Huopainen (2002:103), modern neurobiological research underscores Jean-Martin Charcot's hypothesis that traumatic experiences impair the brain's ability to process emotions. It follows that impaired ability to process emotions will inevitably have a negative effect on musicians for whom an integral part of their job is processing and communicating diverse emotions. In this, working memory plays an important role. Regarding integration of sensory information, particularly pertaining to fear reactions, LeDoux (2002:229) explains the processes involved as follows:

working memory integrates sensory information about the immediately present physical stimulus with memories from past experiences with such stimuli and with the current emotional consequences of those stimuli.

The aftermath of a traumatic event can bring with it a host of confusing and overwhelming emotions or it can leave feelings of apathy. Unique to humans is the ability to appraise and evaluate our own emotions (or lack thereof) as well as those of others or those of animals. The famous late violin pedagogue Dorothy De Lay (1917-2002) is quoted by Sand (2000:69) on planning and the meaning of discipline:

There has to be a transition point where we realize that our own reactions have validity. We have to realize that our own thoughts, our own ideas, our own emotions, really are all we've got. But because we are intelligent people, they are reliable, very valuable, very interesting.

These observations are as valid to the processing of traumatic situations as they are to planning and to discipline. Unlike animals, we can reflect and come to understand why we have responded in one way and not in another.

Those coming into close contact with traumatized individuals can bear the burden of secondary traumatization. In the long term, processing negative emotions can take its toll in various aspects of their existence. The protection and well-being of researchers in the field of trauma currently is their own responsibility. Exposure to secondary traumatization is high in this group of individuals, as well as in healthcare workers and perhaps even in teachers. After it came to the attention of the researcher that a South African psychologist who had recently made a very valuable contribution in the field of trauma had been diagnosed with advanced cancer, certain questions emerged. Although professionals are advised to be regularly debriefed, it is not so

often considered to what extent long-term secondary exposure to trauma, which takes its toll on the emotions, can also be detrimental to the physical well-being of healthcare professionals. Perhaps a more important question is simply: What can be done to assist them to remain healthy? Dharmananda (1999) writes that, in contrast to the view of allopathic medicine of linking changes in the DNA to the development of cancer, Traditional Chinese medicine views the emotions as a principle cause in cancer aetiology. It should be asked to what extent emotional influences contribute to physical illness in cases such as that mentioned above. Such enquiry may lead to a conclusion amongst open-minded individuals that interdisciplinary collaboration may be necessary to lessen the risk to those investing their energy and resources to help others.

2.8.2 Traumatic memories

The previous section concerned the processing of emotion during traumatic situations. The last paragraph illustrated how the burden of processing traumatic memories can take its toll on the body when the traces and memories of such events and emotions become embedded in our being. However, the cognitive memories themselves and encoding thereof should also be discussed. The topic of the difference between encoding of ordinary memories and that of traumatic memories is a topic of great scientific interest, and in some cases also of forensic interest. Huopainen (2002:94) writes that traumatic memories are chiefly encoded as sensory, experiential and emotional fragments unlike what is usually the case with everyday memories. Therefore it is the role of treatment to facilitate cognitive processing of these fragmentary memories.

Humans tend to remember events that elicited a greater emotional response more clearly than neutral events. The results of a study conducted by Canli, Zhao, Brewer, Gabrieli and Cahill (2000:1) confirmed that greater amygdala activation and therefore higher emotional arousal during encoding correlated with increased recall of events. Although emotionally charged events are better remembered than events with less emotional significance, Roth and Friedman (1998:12) state that in cases of extreme arousal, attention can be limited so much that little memory of the event is retained. Mechanisms offered as explanation for this phenomenon by the same authors include failure to encode, dissociation, simple forgetting, repression, conditional extinction, state-dependent learning and long-term depression.

Dissociation is commonly employed as a psychological defence mechanism to mentally survive devastating events and is associated with the freeze response. Risk for this is greatest when the

victim is unable to fight or flee. According to Huopainen (2002:103), dissociation could be explained as a block between the amygdala and the hippocampus. In the case of a traumatized musician, if instead of entering the optimal concentration zone, which is in itself similar to the dissociative state, the musician enters a pathological dissociative state on stage, memory and emotion arguably disintegrate. Partial diversion into such a condition can lead to confusion.

From the above there seem to be significant differences in the way traumatic memories are stored in the brain as compared to how ordinary memories are stored. However, our 'memories' as we define them cannot function normally if we retrieve interfering or irrelevant information. Beck (2008) discusses the importance of forgetting in daily life. She quotes neuro-researchers Gayatri Devi, James McGaugh and Anthony Wagner as explaining that without forgetting we would be overwhelmed by extraneous information and that this would interfere with our ability to function in our daily lives. The negative impact of traumatic memories on the individual will be discussed later in this chapter as primarily pertaining to malfunctioning of what should be within the normal boundaries of not remembering. The mechanisms involved in forgetting traumatic memories tend to be either a pathological type of suppression as defence mechanism, or failure to forget. Ways in which the forgetting of traumatic memories are different from forgetting ordinary memories include the complete forgetting of memories, the use of dissociative mechanisms (including the forgetting aspect of dissociation) as a survival strategy, and the disproportionately strong memories caused by trauma that fails to be erased or modified even when this is desired.

2.8.3 Biological basis of traumatic memories

The hippocampus is the brain structure responsible for organizing memory storage and retrieval (Spiegel 2008). This brain structure is part of the limbic system and memory and emotions therefore mutually influence each other. The amygdala is primarily associated with the processing of emotions, but together with the hippocampus it also plays an important role in emotional memories. Burdick (2001:1) states that conscious memory is mediated by the hippocampus while the amygdala is implicated in emotional memory. Although these structures involuntarily process emotional stimuli, a person can utilise other brain structures to exert control over emotional reactions. However, according to Robertson (1999:212) these structures respond more slowly than the amygdala and also developed later in the evolution of the brain. Robertson (1999:212) identifies the frontal lobes, located in the cerebral cortex, as structures that can exert control over emotional reactions. He explains that connecting fibres from the frontal

lobes to the amygdala can either dampen its excitability or initiate action when the cortex detects a complex or subtle threat. This detection will most likely be determined by sifting through past memories of fear-inducing or traumatic situations.

During a traumatic situation, secretion of massive amounts of endogenous stress hormones is responsible for formation of deeply engrained memory, except in cases where overload is such that formation of memory is interfered with. The reality is that trauma can lead to extremes both of retention and of forgetting (Van der Kolk 1996b:282). The hormone most closely associated with the strength of memories is norepinephrine (Van der Kolk 1996b:291). Robertson (1999:233) explains that exhausting hypervigilance results when the locus ceruleus in the brain stem continues to pump noradrenaline² into the brain.

The hippocampus is noted to be smaller in sufferers of trauma-related disorders. Spiegel (2008) states that a smaller hippocampus would likely have a limiting influence on a person's capacity to encode, store and retrieve memories and to manage associated emotions. Numerous other authors also refer to changes in hippocampal volume associated with trauma and especially with complex trauma (eg. Scaer 2005:75, Bremner 2002:60-2, Robertson 1999:236). This researcher can only wonder how much this can or does influence the memory of the musician, including studying new pieces of music, recalling and length of time taken to relearn works performed previously, and performance from memory. The phrase "performance from memory" refers to playing a music instrument or singing in public without sheet music. It is conventional amongst especially professional pianists and singers, as well as amongst some other instrumentalists. As discussed above, since it seems that more brain structures are involved in processing memory of music than in many other memory tasks, it may be expected that compensatory mechanisms may spring into action in the brains of traumatized musicians and their music skills may appear to be less affected than other previously learned skills. This is certainly an area which warrants further research and perhaps even laboratory research.

The fact that traumatic memories have a biological basis also led scientists to investigate whether it is possible to erase such memories. It is reported in the journal *Neuron* that researchers had rapidly and selectively erased traumatic memories in mice by injection of a specific enzyme at the time of recall (Cao, Wang, Mei, An, Yin, Wang & Tsien 2008:353). This

² Also known as norepinephrine (Corsini 2002:649).

team of researchers claim that “recall-induced erasure of fear memories is highly restricted to the memory being retrieved while leaving other memories intact”. They propose that this technique could be developed to the extent that it could be used in humans suffering from traumatic memories and phobias. In addition, Carey (2009:5) writes about a similar technique being developed by Dr Todd C. Sacktor and his team, also with the objective of using it in future to erase traumatic memory, amongst other undesirable forms of memory. It was conceded in Carey’s article that the possibility of losing other painful memories in the process, not targeted by the treatment, exists.

Some scholars have come to believe that we are not as much a product of our biological processes, our circumstances and our experience as neuroscientists have sometimes claimed. Schwartz and Begley (2002:371) write that the mind has the power to change the brain and to direct attention in ways that can alter the brain. They (2002:370) also state that the mind chooses to which aspect of experience, the content of which is determined by the brain, it directs its attention. Perhaps this may be more difficult in cases where trauma had a powerful impact on biological and developmental aspects of a person’s existence, but it is still a valid and powerful viewpoint.

The following quotation from Schwartz and Begley (2002:373) should serve as a warning against overestimating the power of biological processes, perhaps altered by traumatic experience, in our lives:

It is the brain’s astonishing power to learn and unlearn, to adapt and change, to carry with it the inscriptions of our experiences, that allows us to throw off the shackles of biological materialism, for it is the life we lead that creates the brain we have.

2.8.4 The effects of trauma on memory for music

As will be mentioned in chapter 3, trauma can trigger a response of avoiding memories of the account. In the *DSM IV-TR* (APA 2000:468) this is described as efforts to avoid thoughts, feelings, people, places, etcetera. associated with the trauma. Memory may be altered by an inability to recall aspects of the trauma.

It is also possible for intrusive memories to appear. The *DSM IV-TR* (APA 2000:468) describes these in the following manner: “recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions”, “recurrent distressing dreams of the event” and

“acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur on awakening or when intoxicated”. These descriptions make it clear that the trauma has been ingrained permanently in the memory, due to high levels of arousal accompanying the event.

Weber *et al.* (2005) demonstrated abnormal function in brain networks associated with working memory in patients with PTSD. They (2005:41) linked these abnormalities to common PTSD symptoms and demonstrated that, even when presented with trauma-neutral words, patients experienced difficulty attending to new information and integrating this into working memory. Working memory is crucial for musicians both whilst practising and integrating material and during performance. The extents of abnormal functioning of working memory could therefore have far-reaching effects on musicians: this an area that warrants further study.

Complicating the situation for musicians who were previously traumatized is the fact that, when performing, the brain is in a hyper-aroused state and adrenaline is coursing through the veins. This is nearer to the state in which traumatic memories were encoded than the normal state. It therefore elevates the chances of unwanted flashbacks, particularly during performance. This effect is more pronounced in individuals with PTSD, since it is a chronic condition and memories are constantly either being suppressed or re-experienced.

Linda Katherine Cutting’s autobiographical portrait, *Memory Slips* (Cutting 1997), is a personal testimony of a way in which traumatic memories can interfere with performance on stage. Cutting experienced severe incest during childhood and adolescence, perpetrated by her father while she received no protection from her mother. As a result of growing up in this dysfunctional family, her two brothers had both committed suicide. Shortly after the suicide of her second brother she attempted to take her own life and was admitted to the National Center for Treatment of Trauma and Dissociation where she received treatment for one month (Cutting 1997:14). Of value here is her account of what she calls the fourth type of memory slip, the type she does not tell her students about. Cutting (1997:6) describes this as “when one memory slips, another intrudes, and you don’t find your way back for a very long time”. This can be called a flashback.

Cutting (1997:12) writes that “time is never strictly chronological in the way that it is lived” and also states that musicians specifically know this. This is an acknowledgement of how the past of

a trauma survivor can haunt the person in the present, but also an interesting analogy of how meaning can become associated with music at various points in time, affecting the individual's perception thereof. Throughout her book it is clear how pieces of music can become associated with life events in the minds of the musicians. Particularly her accounts of playing pieces from Schumann's *Kinderszenen* for her fellow patients in the hospital are a moving statement of the personal nature of memories associated with a piece, and the value attached to a particular piece by a select group of listeners. The emotional meaning she derived from the particular situation served to help her remember the pieces although she had not practised in a long time.

Another example of how the memory of events and dates could bring new meanings to abstract music for the individual performer or listener is Stein's explanation for Szpilman's choice of composition when asked to present proof of his occupation to a German guard who thereafter helped him to survive. Wladyslaw Szpilman³ was playing Chopin's posthumous Nocturne in C-sharp minor as part of a recital for a radio broadcast on the first day of German attacks on Warsaw, 31 August 1939 (Szpilman 1999:22, 217). The first attacks took place during the early morning hours, he went for his last pre-war day of work, played the complete recital which was broadcast live, but had to wait before returning home. The emotional significance of the situation assisted Szpilman to remember a piece of music when discovered by a German guard years later although he had not practised in years and his physical strength was tapped by extreme circumstances he encountered in the war. He himself summed the situation up as follows (1999:177-8): "So this time, for a change, I had to buy my life by playing the piano!"

Apart from the obvious restrictions of choice due to his physical condition at the time and lack of practice, Stein proposes a possible explanation for Szpilman's motivation behind choosing the abovementioned Chopin Nocturne as a "reparative act, the attempted continuation of a life-giving dialogue that had been precipitously and catastrophically interrupted" (Stein 2007:452). Szpilman yet again confirmed the significance the piece had for him by also choosing this as the first piece he would play when he opened the broadcast service after the war (Szpilman 1999:217). It seems plausible that he attached great value and special memories to this piece for

³ Szpilman is referred to at various places in this thesis, as his written account of his experiences made such referencing possible. However, the researcher would like to acknowledge that, as had been pointed out by other Polish survivors of WWII, many others could possibly describe similar experiences, if not worse, not to mention those who have been silenced forever.

the reasons Stein pointed out, but also perhaps because there was a shared fate between Chopin and Szpilman: the former lived in Paris at a time when Polish territory was conquered by Austria, Prussia and Russia, while the latter settled in re-established Poland as a Jew, faced WW II there, and rejoiced when after much suffering he could return to his job, albeit having lost his family and most of his friends.

Some traumatic memories may be retrieved only when a person is in the same state as when the memories were encoded in the first place. Roth and Friedman (1998:13) refer to this as a mechanism called ‘state-dependent learning’. Perry (1999:15) writes: “Indeed, it is likely that many ‘states’ of distress are activated by accessing state or affect memories without any clear cognitive or narrative associations to a specific trauma or experience.” Again it is seen that by accessing the same affect experienced during trauma, residues of and associations to distressing memories can be unwittingly activated.

It is the role of the unconscious⁴ mind to protect us from danger, keep us alive and store and process everything that we experience in our lives with our five senses (Gray 2009). Any situation perceived as threatening will elicit a fight, flight or freeze reaction (Scaer 2005:28). The term ‘fight or flight’ was first coined by Walter Cannon in 1929 (Cannon 1929:195-7, Bracha, Ralston, Matsukawa, Matsunaga, Williams & Bracha 2004:448). Bracha *et al.* (2004:679) build the argument that the correct sequence of reactions to threat is ‘freeze, flight, fight or fright’. Bracha (2004:679,684) even proposes a ‘freeze, flight, fight, fright, faint’ sequence as a more complete description of the human response to stress. According to him the ‘faint’ response is an adaptive measure which aims to compensate for the dangers associated with lowered blood pressure when blood loss is experienced.

If musicians experience problems that can be traced to a maladaptive stress response cycle, it may be useful to investigate in which sequence reactions appear and to determine whether the freeze response does indeed precede other reactions. Since the stress response was defined as a response initiated by the unconscious mind, it is imperative that observers such as teachers, coaches or therapists, and not the performers themselves, determine the sequence of these reactions.

⁴ Term in some sources used interchangeably with subconscious mind, defined by Corsini (2002:956) as “[a]n aspect of the mind not in immediate awareness, but which affects behavior, and is available to consciousness under a variety of circumstances.”

Hartman (2009a) describes the unconscious mind as the core of the personality, the deep self and ‘inner fountain of resources’. According to him, ‘gut feelings’ and the ‘sixth sense’ are all phenomena associated with communication received from the unconscious mind. When certain parts of a piece of music for any reason become associated with a traumatic event, the unconscious mind may want to avoid re-experiencing such a threatening situation and might want to avoid that part of the music by means of a flight reaction. However, since the person should not leave the stage, a freeze response may take place and cause the experience commonly known as ‘striking a blank’ on stage. It then depends on the tenacity of the individual to overcome this challenge, or succumb to it.

Other factors could also cause this type of memory slip, such as the fear of public performance and associated criticism. A particularly important factor for sensitive individuals is the situation where they are aware that others whom they might associate with their trauma, such as parents or teachers, are present in the audience. Southcott and Simmons (2008:32) indeed identified the performer’s perception of the audience as particularly significant in determining the subject in their case study’s levels of performance anxiety. Maladaptive as a memory slip might seem, it could in some cases be an effort of the unconscious mind to protect the individual against perceived danger.

2.8.5 The recovered memory debate

In a discussion about the effects trauma has on memory, it is important to mention the controversy about recovered memories. Although a detailed discussion is beyond the scope of this thesis, a few facts will be mentioned below. Advocates of ‘recovered memory’ and of the ‘false memory syndrome’ stand in vehement opposition to each other. After much reading it became evident that both sides of the debate could be valid, depending on the circumstances. It cannot be argued that imprints of all situations encountered in a life-time are left on the brain. Having said this, research and experience also illustrate that memory is not a fixed phenomenon. It is malleable and can be influenced by subsequent events as well as the opinions, statements or suggestions by others and by news reports. Even the article ‘The Reality of Repressed Memories’ (1993) by Elizabeth Loftus, a woman associated with questioning the validity of repressed memories in court, takes the stand of admitting that the repression of traumatic memories is a reality in many cases, but warns about the possibility of altering or even fabricating memories.

Roth and Friedman (1998:8) state that memory is reconstructive and imperfect. It cannot be overemphasized that great care should be taken when working with memory, so as not to implant false suggestions but also to believe those who deserve to be believed. Every adverse symptom that presents in a client cannot merely be assumed to be the result of repressed trauma, while sufficient evidence pointing to the possibility has to be investigated. McFarlane and Van der Kolk (1996:567) write: “The ‘false memory debate’ is, at least in part, a product of the adversarial environment of the courtroom.” They criticise participants in the debate for paying selective attention to one side of the argument and for neglecting to acknowledge the complexity of the issues involved.

Regarding the retrieval of ordinary memories, Beck (2008) quotes neuro-psychiatrist Dr Gayatri Devi as stating: “Each time you retrieve a memory, you're reconstructing a puzzle very quickly and breaking it down again. Some of the pieces get put back in different places.” Indeed, Dobbs (2009:2) writes that memory is unreliable and that people, details, settings and actions are added and subtracted from memories regularly: he calls these processes conflating, inventing and editing. These viewpoints seem to support the argument that retrieved memories are not always exact renditions of past events. Research by Cao *et al.* (2008) on the possibility of erasing traumatic memories shows how malleable memory can indeed be when there is a resort to chemical intervention (see chapter 2.8.3). This could encourage one to admit that, seeing as such drastic erasure of memories is possible, we cannot always measure the extent of the effect which even environmental conditions and toxins could have on our neural functioning.

Roth and Friedman (1998:12) postulate that traumatic memories may differ from ‘ordinary’ memories in some respects. Potential differences include that traumatic situations activate implicit and explicit memories to a greater extent than non-traumatic situations, and elevations in stress hormone levels may facilitate memory formation. However, they also attest that in cases of extreme levels of arousal a number of mechanisms may interfere with encoding. Mechanisms responsible for forgetting may include the failure to encode, dissociation, simple forgetting, repression, conditioned extinction, state dependent learning and long-term repression (1998:13).

2.9 Performance from memory and stage fright

The exact nature of memory for music is not completely understood. Many writers refer to the importance of involving all memory systems, namely visual, acoustic (or aural), kinaesthetic, motoric and analytical, in the memorization of music (see for example Sándor 1981:192-197 and Ahrens and Atkinson 1955:80-83). The complexity and overlapping of the memory systems involved in memory for music may be a reason why research results have demonstrated that in some cases neural pathways involving the memory for music show capabilities not expected to be still retained in individuals, based on observed and measured deterioration in their other memory capacities such as procedural memory and that for language (Sacks 2007:346-7). The important work and observations of Sacks (2007: 335-47) show and describe how in some cases people with severe memory disturbances such as advanced Alzheimer's disease retain their memory for music and even retain the ability to memorize new music. However, on a basic level memory for the auditory sensation of music, one of the most important memory systems used by performers and teachers, is not unlike the memory processes for any other sensory perception (Bartlett 1996:177).

Fear can interfere with the function of memory. Kandel (2006:339) distinguishes between instinctive and learned fear. He adds that instinctive anxiety can be pathological when it paralyzes action and learned anxiety becomes pathological when provoked by stimuli that do not present real threat. Defensive responses to fear are set out in figure 3 below.

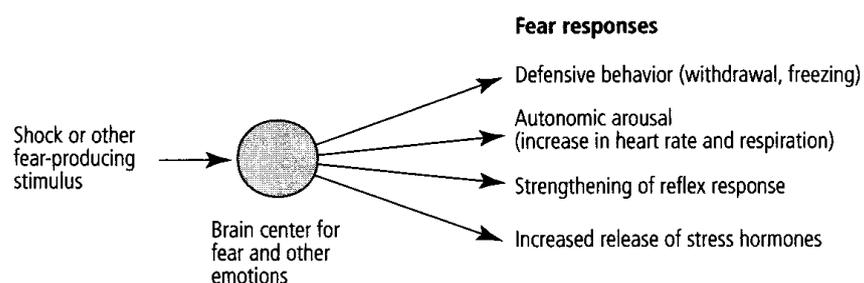


Figure 3: Defensive responses to fear that have been conserved through evolution (Kandel 2006:339)

For many musicians, performance from memory or any type of public performance brings up the issue of stage fright. In an exaggerated form, Southcott and Simmons (2008:32) call stage fright performance anxiety and contend that it can be incapacitating. When one part of the brain is occupied by fear, the capacity of the rest of the brain to function normally is greatly inhibited. If

this fear becomes a constant state, a marked decrease in functionality can be expected. Kandel (2006:343) classifies stage fright as a form of anticipatory anxiety, which he describes as a future event becoming associated with the expectation of something going wrong.

Fear is an emotion that involves neurotransmitters and hormones. Bradbury (2008:58) classifies stage fright as ‘an emotion of fear’. In the previous chapter it was mentioned that emotion can have many vectors (Radford 1989:75). However, it was also discussed that not every emotion experienced can be rationalized as caused by a particular object or situation. Therefore it can be argued that in the event of stage fright the perceived experience of fear can become linked, perhaps even unconsciously, to other experiences of fear in the past of the musician. The context of and occasion when fear was previously experienced can thus in reality influence the musician’s interpretation and handling of that fear. More particular examples of how trauma-related symptoms - including maladaptive fear responses - can influence music performance are discussed in chapter 4.1 and 4.4.

Levine (1997:128) explains that trauma victims have a strong distrust of the arousal cycle, as associated with the perception of danger. He explains that for them arousal became associated with the overwhelming experience of being immobilised by fear. He further predicts that a traumatized person will prevent the completion of the arousal cycle and remain within a cycle of fear. At the very least, the implications for the performing musician will be a very negative perception of the experience of nervousness preceding and during public performance. More serious consequences are also possible, perhaps even panic, as well as distrust and uncertainty about one’s ability to perform under pressure. Certainly traumatized musicians who find themselves in a cycle of fear will not be able to play or sing to the best of their ability. Healthy nervousness accompanying public performance or competition enables not only musicians but actors, dancers and athletes alike to perform to the best of their ability. Correctly channelled, this can even give them an edge to transcend their previous ‘best performance’.

Not all nervousness is healthy, however. Gorrie (2009b:209) writes that levels of performance arousal can be controlled; he distinguishes between negative performance arousal manifesting as anxiety and positive performance arousal presenting as excitement. He provides a graphic explanation of this as depicted in figure 4 below:

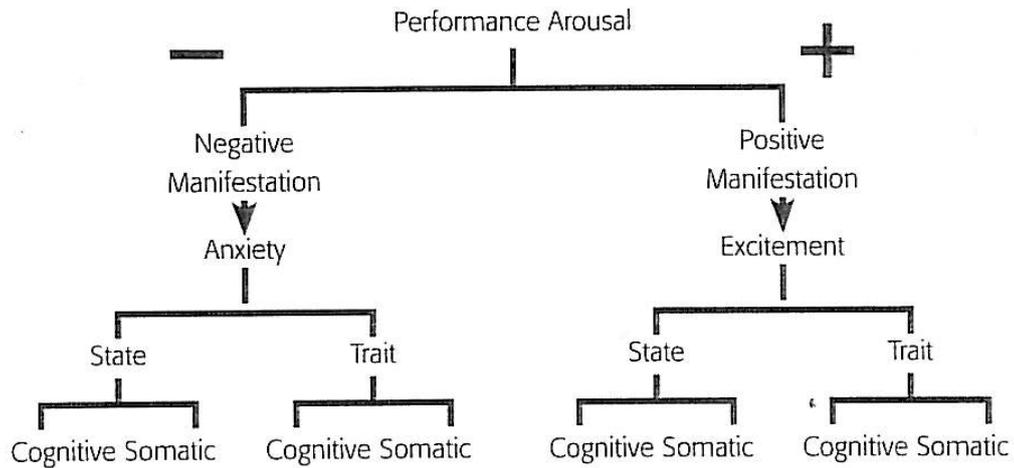


Figure 4: Model for positive and negative manifestation of performance arousal (Gorrie 2009b:208)

It can be seen from Gorrie’s model that both anxiety and excitement consist of state and trait components and that individuals tend towards certain states. In addition the cognitive and somatic components are important for performers to the extent that Gorrie (2009b:40) advocates that performers can gain control over their degrees and types of performance arousal by rating them on a scale from negative 5 to positive 5. He explains that different levels of optimal performance arousal are appropriate for different situations and suggests that the optimal level for the activity participated in should be determined in order to arrive at a mental estimation of change required to move from the experienced level to the optimal level. For instance, he fixes the most suitable level at positive 2 for a violinist playing a solo recital (Gorrie 2009b: 210). This is where cognitive components play an important role. It can be argued that, deduced from the above, severe traumatic experience or the absence thereof may be a factor influencing whether an individual seems predisposed towards exhibiting positive or negative types of performance arousal. In addition, any trauma sequelae that have interfering cognitive effects or somatic residues could also play a role in this process, creating a challenging and complex situation for traumatized performers.

This chapter’s discussion may indeed sound as if the odds are against traumatized people aiming to perform at their best under pressure. However, according to Levine (1997:128) healing will

begin when a person can trust the arousal cycle and (again) become able to flow⁵ with it. Levine advocates that the healing process requires becoming aware of physical and mental signs of arousal, acknowledging them, letting them peak and thereafter diminish and resolve. To the researcher it is obvious that to facilitate this it will be necessary that such individuals create adequate mock, practice or informal performance situations (or what may be better known as ‘dress rehearsals’) to allow them adequate time for the completion of this perhaps unpredictable process. In addition, both cognitive as well as somatic aspects would need to be taken into account. When this process is completed, individuals may find that they are more frequently able to perform at their optimal level. Levine calls this ‘flow’ while it is the same as Gorrie’s description of the ‘zone’ defined by him as follows (Gorrie 2009b:21):

The Zone is intangible. It is that mind state where everything clicks, everything is easy, where your actions are effortless, and when your results are up to or even exceed your previous expectations. The Zone is quite simply being in the perfect state of mind for a given performing situation, resulting in optimal level of performance.

When an individual performer is identified as having been exposed to trauma, it seems that the first important step to take to prevent this from negatively impacting performance under stress is to ascertain in what ways this individual responds to fear, including stage fright. After determining if the individual primarily uses the fight, flight or freeze response to anxiety-provoking situations, it can be ascertained to what extent he or she resorts to such reaction when performing on the instrument in public. Thereafter interventions can be sought to minimize the negative impact of the maladaptive response, if such indeed exists. It should be noted that Montello (n.d.:2) identifies unresolved early trauma as usually being at the root of severe manifestations of performance anxiety. She empowers her students by encouraging them to use their own music in exploring and transforming traumatic feeling states which cause their excessive anxiety and inhibit expression. In essence, they have to face their fears in order to transcend and overcome them. This is similar to Levine’s advice described in the previous paragraph.

Subsequently the focus will shift to trauma. After comprehensively defining trauma, types and dynamics, related diseases and disorders, effects and treatment thereof will be discussed. The

⁵ Farmer writes in “‘Flow’ and Mihaly Csikszentmihalyi” (1999:1): “Csikszentmihalyi accounted for this feeling of being consciously outside of the creation as due to the psychological limits of consciousness, that at higher levels of consciousness the more mundane aspects become subconscious in order to restrict conscious attention to the number of items it can manage. So a pianist described not noticing the room, his hands, the keys, the score, but rather being conscious of only ‘being one with the music and expressing emotion’.”

current chapter's illustration of the relationship between emotion and memory is highly relevant to the following chapter on trauma, as it will again be seen that emotion, emotional reactions, memory and associations are integral aspects of the experience of traumatic encounters.

The energies that are released when we heal from trauma are the wellspring of our creative, artistic, and poetic sensibilities, and they can be summoned to propel us into the wholeness of our intelligence.

- Levine 2005:80

CHAPTER 3: TRAUMA

3.1 Defining trauma

The literature is saturated with definitions of trauma. For a long time healthcare professionals have been grappling with the question of what exactly trauma constitutes: consequently definitions have evolved a great deal over a number of years. For the purposes of this study, the focus will primarily be on more recent definitions. These also tend to emphasize the individual's own perception of the trauma and to make provisions for subtleties that were previously given less consideration.

Spiegel (2008) describes the essence of traumatic stress as helplessness, which he defines as “a loss of control over one's body”. He continues to clarify this in the following words (Spiegel 2008): “[t]he mental imprint of such frightening experiences sometimes takes the form of loss of control over parts of one's mind – identity, memory, and consciousness – just as physical control is regained”. Peichl (2007b:23) describes trauma as a toxic condition, a mixture of intense anxiety, absolute helplessness and a loss of control⁶. According to Levine (1997:128-9), the factor that determines whether an event could be classified as traumatic to the person is whether its impact remains unresolved. The importance of the perception of the real nature of an event by an individual is tantamount to ascertaining whether an experience was traumatic to a person. The term ‘perceived life-threatening experiences’ or ‘perceived overwhelming experiences’ features repeatedly in the literature (e.g. Levine 2005:7, Van der Kolk & McFarlane 1996:6). It is also the perception of the event that will determine the extent and nature of the impact it has on the person.

The term ‘trauma’ originates from the Greek *trauma* (“wound”). This term can be interpreted in the context of both physical and psychic wounding. In this chapter trauma leaving a

⁶ In Peichl's own words (2007b:23): “Trauma, so wissen wir, ist ein toxischer Zustand, eine Mischung aus Todesangst, absoluter Hilflosigkeit und Kontrollverlust.”

psychological impact is discussed, not physical trauma or injury as such. However, the boundaries between events and their effects often overlap, and physical trauma that leaves a lasting psychological impact also qualifies in the context dealt with.

To ensure clarity, it is important for the purposes of this study that a distinction be drawn between trauma and traumatic events. This is clear in Corsini's (2002:1019) description of trauma as the *result* of a painful event, while the 'traumatic event or experience' constitutes the injurious event itself. Corsini's definitions of the former are quoted below, followed by his definition of the latter (2002:1019):

1. The result of a painful event, physical or mental, causing immediate damage to the body or shock to the mind. Psychological traumas include emotional shocks that have an enduring effect on the personality, such as rejection, divorce, combat experiences, civilian catastrophes, and racial or religious discrimination.
2. Continuing result of such an event to the body or mind or both. Plural is traumata, traumas.

Physical or psychic injury stressful or shocking (*sic*), that may be the original cause of some emotional or mental disorder. Some such events early in life may be the foundations for adult neuroses or psychoses.

Scaer (2005:58) describes the effects of trauma on the brain as follows:

In the brain of the trauma victim, the synapses, neurons, and neurochemicals have been substantially and indefinitely altered by the effects of a unique life experience. Not surprisingly, the perceptual experience that constitutes the mind has been equally altered ... Trauma thus represents a time-based corruption of learning. The brain in trauma has lost its ability to distinguish past from present, and as a result it cannot adapt to the future. This confusion of time further immobilizes the trauma victim, who still remains immobilized by a thwarted freeze discharge. Procedural memory is bombarded by environmental and internal cues that represent old, unresolved threat.

From the above description it can be seen how the alteration of neurological processes can give rise to the manifestation of various physical and psychological symptoms. This illustrates how the barrier between physical and psychological trauma overlaps. Sutton (2002:25) confirms this when she explains that sensory overload occurring during a traumatic event can indeed result in lasting damage to brain processes. Struwig (2008:13) is of the opinion that the incident and symptoms cannot be separated when defining trauma. She writes that different aspects such as the event, culture, resilience, social support and trauma-related symptoms should be considered together. Van der Kolk and Saporta (1991:199) emphasize the fact that trauma is different from stress in that it causes lasting biological emergency responses while stress does not. It is

precisely the extent of the effects of these lasting responses on the musician that is being investigated in this study. Scaer (2005:206) considers both stress and trauma as lying on the same continuum, but makes the distinction that the sympathetic nervous system, responsible for the fight/flight response, plays a greater role in stress while the parasympathetic nervous system, responsible for initiating the freeze response, is often involved in trauma-related diseases.

All the above mentioned definitions hold truth. However, the definition by Peichl is perhaps the most appropriate for this study and best takes into account precisely those aspects that will be highlighted later as applicable to musicians. In addition, Scaer's (2005:71) description of trauma as "a disorder of the perception of time, of the body, and of the self" has significant implications for affected musicians. This will be illustrated later in this study.

3.2 Types and dynamics of trauma

In a discussion on the various types of trauma it is important to distinguish between traumas experienced collectively by a whole group of people or segment of the population, and traumas experienced by an individual. In the former category belong victims of war, natural disasters such as hurricanes, tsunamis, volcanoes and earthquakes, groups of people present during an armed robbery, multiple passengers in a bus or automobile accident, etcetera. The latter category includes abuse, rape, incest, post-abortion trauma, etcetera. Where more than one person suffers through the same ordeal, there is a shared burden and the way of dealing with this during and after the event differs from trauma experienced by a solitary victim at a particular time.

The extent of the influence of a traumatic event on a particular individual depends on the dynamics, duration, and severity of the particular trauma, as well as the subjective experience of the individual victim. The past experience of the individual plays a role in shaping the persons' perception of the extent of the threat and the capacity to respond adequately and defend themselves. Factors that Sikorski (n.d.:2) identifies to be of subjective nature are the degree of intensity, the experience of the stress and helplessness, the cognitive, affective and behavioural reactions to both recollections of and external events that may serve as reminders of the traumatic experience.

In the most damaging cases of individual trauma, usually those caused by a human perpetrator, the effect can be injury to the self or self-concept of the victim. Freud (1965:14) observed that traumas and suffering inflicted upon us by other humans leave the most powerful and painful traumatic imprint. Luxenberg, Spinazzola and Van der Kolk (2001:374) identify the developmental level at which the trauma occurs and whether it occurs in the context of an important relationship in the victim's life as critical elements in determining psychopathology outcomes.

Scaer (2005:215) states that complex trauma is associated with PTSD (Post-traumatic Stress Disorder) victims who were subjected to many episodes of traumatic stress. He (2005:262) particularly states that multiple events and forms of trauma experienced in childhood lead to complex trauma and he specifies the associated syndromes to be conversion, somatisation, dissociation, borderline and narcissistic personality disorders. Van der Kolk (1996a:203) states that if the psychopathology of these patients is understood, it becomes possible to understand much of their symptomatology as caused by adaptations that were necessary at the developmental level at which the trauma occurred in order to survive the experiences.

Intergenerational trauma is the transmission of the consequences of trauma from one generation to the next (Maviglia 2006:1). Sources making mention of and attempting to explain intergenerational trauma include Levine (1997), Yehuda, Schmeidler, Elkin, Houshmand, Siever, Binder-Brynes, Wainberg, Aferiot, Lehman, Guo and Yang (1997), Heart (2005) and Maviglia (2006). Segments of the population affected to a large extent include Native Americans, Jews and Holocaust survivors, slaves and oppressed peoples, generations born after wars, and generations following Apartheid and other regimes of racial segregation and discrimination. Musicians are found in all these categories. It is important to acknowledge that trauma does not only affect people directly involved during the exact time of its occurrence, but that its remnants could be carried over into the following generations. A practical example for the music teacher is that awareness of the intergenerational nature of trauma implies that sensitivity to the background and psychic disposition of 'previously disadvantaged' music students in South Africa is advisable.

Two categories under which the manifestation of trauma symptoms is clinically classified are ASD (Acute Stress Disorder) and PTSD. These will be discussed at length in the following two sections since they feature prominently in discussions in this study. It is important to note that

various types of traumatic experience, including all those discussed above, can all lead to reactions that fit under these diagnostic categories. Educators should be familiar with all these types of trauma to enable them to understand whatever situations they might encounter.

3.3 Acute Stress Disorder

Those who have experienced a traumatic event or events can respond in a number of ways following the event(s). Factors obvious to others that will influence a person's response are the nature and severity of the event. Perhaps not equally obvious to others is the individual's own past history and experience. This in itself can influence the way in which the person responds, as well as contribute to the level of resilience or level of vulnerability of a person in any given circumstance. Vulnerability to trauma is discussed in section 4.5. Sadock and Sadock (2003:624) emphasize that the stressors that cause ASD as well as PTSD are severe enough to affect almost anyone. As was illustrated by the definitions of trauma as quoted in section 3.1, many sources have expanded on this view to include events that are traumatic to an individual as a consequence of the context in which they occur and would not necessarily affect everyone experiencing the same event.

When a person responds in ways that meet a number of different criteria as set out in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR)* (APA (American Psychiatric Association) 2000:469-72), ASD can be diagnosed. Another source frequently used as a diagnostic guideline is the ICD-10 (*International Statistical Classification of Diseases and Related Health Problems*) (World Health Organization 2007:F43.0). Therein the disorder is referred to as *Acute Stress Reaction*. The description of ASD in the *DSM-IV-TR* (2000:469) makes it clear that the condition is a reaction to a traumatic event or events and is recognized by characteristic anxiety, dissociative and other symptoms with its onset being during or after a traumatic event. For a diagnosis of ASD to be made according to the *DSM-IV-TR*, the disorder must last for a minimum of two days and resolve within four weeks after the event. For complete diagnostic criteria the abovementioned sources should be consulted. Sadock and Sadock (2003:595-99, 623-31) contain useful comparative information as significant differences exist between the various diagnostic guidelines available.

Important symptoms of ASD as identified by the *DSM-IV-TR* are listed below (APA 2000:469, 471-2):

Dissociative symptoms during or after the event such as a subjective sense of numbing; detachment or absence of emotional responsiveness; derealisation; depersonalization; or dissociative amnesia. These are also clarified as guilt feelings, concentration difficulties, feeling detached from their bodies, experiencing the world as unreal and inability to recall details of the event.

The event is persistently re-experienced or reminders of the trauma are avoided. Hyperarousal or anxiety is experienced, such as difficulty sleeping, exaggerated startle response, motor restlessness, flashback episodes, etcetera. Experiencing significant impairment in areas of daily functioning.

The most acute symptoms of ASD are experienced in the period of 48 hours following a traumatic event. Symptoms lasting up to one month after the event are still classified as such (Sutton 2002:23). Bremner (2002:180) even warns that the possibility of ASD in patients who have been retraumatized should be considered. The condition can be a predictor of PTSD (Post-traumatic Stress Disorder). In fact, according to *Psychology Today* (2007) the diagnosis was established in order to help identify individuals at risk for PTSD. *Psychology Today* also claims that Cognitive-Behavioural Therapy can diminish the chances of a person with ASD of developing PTSD from eighty percent to twenty percent. After careful consideration of additional sources (see sections 3.8 and 3.9), this researcher concluded that it may be safer to predict such high rates of recovery if a more integrative approach with therapies enhancing and complementing cognitive-behavioural intervention is adopted. Cognitive-behavioural and verbal therapies on their own cannot adequately address the completion of the immobility response, which Levine (1997:105) explains is necessary to prevent the accumulation of ‘frozen energy’.

According to Gibson (2007), there are a greater number of dissociative symptoms for ASD (Acute Stress Disorder) than for PTSD, although the symptoms of the two disorders overlap. She describes these additional symptoms to be the feeling of not knowing where one is or feeling as if one is outside one’s own body.

Levine classifies symptoms which he states constitute the ‘core of the traumatic reaction’. These are (Levine 1997:147):

- Hyperarousal
- Constriction
- Dissociation and denial
- Feelings of helplessness.

These symptoms will again feature prominently in the discussion on PTSD, dissociation and psychosomatic symptoms.

According to *Psychology Today* (2007), the most effective psychotherapeutic intervention strategy in cases of ASD is Cognitive-Behavioural Therapy. As can be seen in section 6.1, the respondents to the Research Questionnaire indicated that some treatments used in PTSD are also successful in treating ASD.

3.4 Post-traumatic Stress Disorder

When the stress reaction to a traumatic event persists for a period of longer than one month, or emerges even years after the event, a diagnosis of PTSD should be considered after comparing symptoms to the criteria listed in the *DSM IV-TR* (APA 2000).

The diagnostic criteria of PTSD, as specified in the *DSM IV-TR* (APA 2000:467-468), are exposure to a traumatic event that involved either threatened death or serious injury to the individual, or threat to the physical integrity of the self or others. The person's response at the time of the traumatic event must have involved intense fear, helplessness, or horror. This event is persistently re-experienced: avoidance of the stimuli associated with the trauma, numbing of general responsiveness and symptoms of increased arousal exist. In order to diagnose PTSD the duration of the symptoms has to be more than one month and the symptoms must cause stress or impairment in social or occupational functioning. It must be noted here that in cases of delayed onset the symptoms can appear at least six months up to years after the traumatic event. Scaer (2001:8) points to the cyclical nature of the symptomatic criteria for PTSD which he says reflect “cyclical autonomic instability, with patterns of heightened sympathetic arousal alternating at times with clear and dramatic parasympathetic dominance”. Scaer (2005:2-6) cautions about the narrowness of conventional definitions of events that are classified as capable of causing PTSD. He argues that these do not take into account accumulation of multiple traumas.

A diagnostic classification closely related to PTSD is that of Disorders of Extreme Stress Not Otherwise Specified (DESNOS). Luxenberg *et al.* (2001:375) explain that DESNOS is associated with complex types of trauma such as interpersonal trauma and extended trauma or multiple traumas. The criteria for DESNOS or complex trauma have far-reaching implications for musicians. According to Luxenberg *et al.* (2001:375), disturbances in affect and impulse regulation, in attention or consciousness, in self-perception, in relations with others, in somatisation and in systems of meaning are required for diagnosis. If self-perception is altered,

this will also manifest in self-confidence which directly affects the way a student works as well as the way he or she performs on stage. Since music is a form of communication, any disturbance in relations with others also affects musical communication, while disturbances in attention were the most common concern for teachers working with traumatized music students (see chapter 6.2).

Broadly defined symptoms of PTSD include the re-experiencing of the event, a lack of affect or numbness, and active avoidance of any reminder of what took place (Sutton 2002:22). Bradshaw (1990:217) particularly lists symptoms of PTSD as anxiety attacks, over-control, memory lapses, depression, age regressions and hypervigilance. Noticeable is his use of the term ‘unresolved grief’ in close association with his definition of PTSD.

Definitions of PTSD by practitioners of traditional medicine such as Ayurvedic practitioner Das (n.d.:1) underline that trauma is an unintegrated or unresolved past experience that leaves an imprint which triggers emotional or physiological symptoms. This is very similar to, albeit slightly more inclusive than, the viewpoint held by the allopathic healthcare profession, as quoted in the *DSM IV-TR*. Writers like Levine, Nijenhuis *et al.* and Scaer frequently referred to in this chapter are concurrently moving very much in the same direction. Chinese medicine’s focus on meridians or energy channels (Hammer n.d.) and Levine’s method of ‘somatic experiencing’ have some aspects in common. It is clear that the definition some authors give is much broader than the concept defined in the *DSM IV-TR*. This also includes the concept of the impact of many consecutive small traumas potentially resulting in the manifestation of PTSD symptoms.

Psychology Today (2006) identifies a cause behind the symptom of blunting of the emotions as possibly that people with PTSD continue to produce high levels of natural opiates, hormones that are responsible for enabling a person to endure pain, even after the danger has passed. In addition, the same source states that studies have shown that cortisol levels tend to be low in people suffering from PTSD while epinephrine and norepinephrine levels tend to be high. The authors argue that high norepinephrine levels could be a reason why traumatic memories are often engraved more strongly than ordinary memories. Roth and Friedman (1998:12) agree with this statement but also point out that extreme levels of arousal could limit attention to the extent that little memory is retained.

Antelman, Caggiula, Gershon, Edwards, Austin, Kiss and Kocan (1997:297-9) refer to a very important aspect of PTSD symptoms, namely the oscillatory nature of the presentation of symptoms. They specify that systems affected could be the neurochemical, physiological or endocrine systems. According to their reasoning, oscillation is an attempt to restore homeostasis when highly sensitized systems reach their limits. When these systems are affected, changes in behaviour pronounced enough to be observable by others can occur. It is in this cyclic nature of the presentation of PTSD symptoms that the possibility exists for them to be more easily identified by teachers who see students regularly over a long period of time than general practitioners who may sometimes only have one short consultation in which to make a diagnosis. If teachers could be more aware that changes in students' behaviour from week to week could be indicative of trauma-related symptoms, particularly pertaining to emotional behaviour, avoidance and over-reacting, they could notice problems early on. Therefore, this study proposes that if music teachers are adequately trained in recognising the presentation of such oscillatory phenomena in their students, they could find themselves in an excellent position to make appropriate referrals.

Whilst acknowledging the importance of the PTSD diagnosis, Winkel (2007) draws attention to a neglected component of the trauma response, namely Post-traumatic Anger which he refers to as 'the other face of PTSD'. He criticizes the view that sufferers of PTSD, categorized as an anxiety disorder, are full of fear and anxiety and not full of anger and argues that PTSD could also qualify as an anger disorder. Winkel's research belongs to the field of Victimology and he (2007:37-44) also addresses the issue of PTSD as a precursor for repeated victimization. Therefore he proposes that PTSD treatment may have preventive potential (2007:44).

3.5 Vulnerability to PTSD

Some people recover remarkably from the most harrowing experiences while others take much longer to 'bounce back' from extreme experiences, if they indeed ever recover fully. Regarding the roots of vulnerability, Chappell (2003:83) identifies them to be the family life history and parental conditioning. He also believes that vulnerability and causation each need the other to exist, but that no particular one precedes the other. In Chappell's words (2003:83): "Vulnerability and causation ... are the tools of the irritation and pain that create suffering, crisis, and the possibility of consciousness-raising, apparently the main purpose of life."

Researchers have singled out certain predictors and risk factors for the development of PTSD. According to various authors, including Van der Kolk, Van der Hart and Marmar (1996:311) and McFarlane and Yehuda (1996:175), dissociation at the time of the trauma increases an individual's chances of developing PTSD. Dissociation is such an important concept in the discussion of trauma that section 3.8 is devoted to a discussion thereof. If dissociation can be resolved, the probability for a positive outcome is greatly elevated. Levine (1997:99-100) is of the opinion that trauma (as a *result* of painful experience, see Corsini's definition quoted in section 3.1) will not occur, provided the person (or animal) can respond in a way such as fleeing or defending itself, discharging energy and resolving the threat. However, the authors quoted in this study all show that threats are often not resolved and that this causes the problems discussed. Scaer (2005:262) identifies prior childhood trauma as the most important predictor of dissociation when confronted with subsequent life trauma. Not only are these individuals' chances of developing problems elevated, but their prognosis may also be affected. Luxenberg *et al.* (2001:382) found low scores on early childhood measures of competence and/or safety and the presence of multiple forms of trauma during early childhood to be indicative of a poor prognosis. The researcher believes that Scaer's (2005:262) observation is of critical importance: "The very factors that tend to determine whether a person is likely to be traumatized by a specific event are those that also predispose the victim to tendencies to dissociate in the first place."

Levine (1997:18) states that people are vulnerable to the effects of trauma since they have genetic memory of being easy prey. Major trauma experienced in a previous generation could also increase the following generation's vulnerability to trauma. Yehuda *et al.* (1997) conclude that the children of Holocaust survivors may be psychologically and 'biologically' vulnerable to stress and trauma. Paul (1997) quotes Rachel Yehuda explaining that "[w]e don't walk into trauma equally, so we don't all come out of it equally." Other risk factors singled out in the same article are previous trauma, childhood abuse and a family history of alcoholism and depression.

Conclusions to the research by Liebschutz (2006:47) include that trauma and PTSD in primary care are associated with substance misuse and pain. Studies in progress by researchers at Kent State University Department of Psychology (2008) are based on previous pilot work that found a negative correlation between (elevated) levels of cortisol during motor vehicle accidents and the development of PTSD, and positive correlation between (elevated) levels of norepinephrine and

the development of PTSD. The cortisol connection had previously been researched by Yehuda, Southwick, Nussbaum, Wahby, Giller and Mason (1990). They found a correlation between low cortisol levels and the development of PTSD. It is predicted that there may come a time when a blood test can indicate who is at greater risk and needs specific treatment (Paul 1997). Although they concluded that low cortisol levels are associated with clinically significant PTSD symptoms, Yehuda *et al.* (1997) do not draw any links to its similar nature to Adrenal Fatigue Syndrome (AFS), as described by Wilson (2001). While one of the prime symptoms of AFS is lowered cortisol levels, the most important cause is chronic stress (Wilson 2001:48). Identifying a symptom of PTSD has merit, but it may be equally important to consider natural explanations for lowered levels of cortisol, such as Wilson's research on and conclusions about the functioning of the adrenal glands.

If the correct measures are taken immediately following trauma, including cognitive-behavioural intervention (*Psychology Today* 2006) and other therapeutic interventions, the chances of developing PTSD are reduced. However, according to Levine (2006), the longer the period that elapses between 'traumatic activation' and the resolution thereof, the longer the recovery period becomes. Levine's work (1997:101,103,105) places great importance on the resolution of the immobility response by discharge of the frozen energy accumulated during the traumatic response. He holds the opinion that a person will be traumatized when the neo-cortex overrides the instinctual completion of the immobility response, interrupting or preventing the trembling discharge from completing the cycle. In his view, if this cycle is properly facilitated and correct techniques for emotional and energetic support are offered in the immediate aftermath of trauma, as he describes (Levine 2005:83-90), PTSD will not develop. It follows that the indiscriminate use of medication to suppress reactions in the immediate aftermath of traumatic events may also interfere with the completion of the very response cycle that is so important to prevent development of long-term adverse symptoms.

Vulnerability can also include the possibility of subsequent future events triggering traumatic reactions. While Kandel (2006:342-3) points out that fear can easily become associated with neutral stimuli through learning, he explains that such learned fear, which he also associates with PTSD, can easily be reactivated by various stressful circumstances. With repeated exposure to even little traumas or the witnessing of apparently everyday forms of violence, resilience can be overpowered and people can manifest symptoms of PTSD. In her book *Common Shock: Witnessing Violence Every Day* Weingarten (2003) particularly highlights at length the influence

of such accumulated experience, including secondary traumatization caused by witnessing of even minor forms of violence.

From the above discussion it can be concluded that there are a variety of factors that should be considered and that could play a role in vulnerability to trauma. This is an important reason why individuals respond in many different ways to traumatic events that may seem similar. It is important that teachers are trained to develop an understanding of this fact.

3.6 Effects of trauma

A discussion about trauma is not complete without mentioning Sigmund Freud's work. Although knowledge on the subject has expanded greatly since Freud's time, he played a key role in framing ideas in the first place. Freud (1939:76) observed that trauma and the reactions to trauma have a great psychical intensity, that the effects of trauma can result in an organization within the mind independent of other mental processes, and that the possibility of psychoses exists when psychical reality takes precedence over external reality. These are all possible effects of trauma that can present in cases of particularly severe trauma or in individuals with vulnerabilities. However, fortunately most individuals have adequate resilience, support structures and coping mechanisms protecting them from developing such devastating symptoms. It is still likely that traumatized individuals will be affected by symptoms, perhaps less severe than those mentioned above, but still warranting detection, explanation and treatment.

Regardless of possible pathological manifestations and effects that can be categorized as illnesses, the most direct and immediate effect of trauma is a drain on the energy the musician has available for other tasks. Watkins (2005:2-8) explains at length how great amounts of 'self energy' are needed by artists in their professional capacity. He also classifies 'self energy' as an expendable commodity. Therefore it can be deduced that the extent of the toll any particular trauma takes on the available energy of the musician is directly related to a decrease in creative output. In addition, Montello (2002:202) describes that in cases of severe childhood abuse, a child subpersonality becomes frozen at the age when the primary trauma occurred. She declares that the core self is still always present, but that a great amount of psychic energy is required to deal with the unfulfilled needs of so-called subpersonality(ies). Montello describes this drain of energy and identifies awareness as an essential component of the healing process (2002:203):

Ideally, this same energy could be used more productively in facilitating creative growth and change, but instead, the subpersonalities, which are typically fear based, resist change and keep you centered in survival mode ... The way to harmonize and integrate these fragments into a whole is to first become aware of who they are and when they are throwing you off balance; and second, to find a way for your core self to lovingly communicate with these subpersonalities and get them on the same page with respect to your mission in life.

It can be concluded from the explanations of Watkins (2005) and Montello (2002) that trauma drains our energy. As will be seen in the remainder of this section, other authors also refer to the effect trauma has on energy, described in different ways such as ‘frozen energy’ of the immobility response (Levine 1997:99-100), energy released in order to prepare for fight or flight, and the release of energy when we heal from trauma (see the quotation from Levine’s work at the beginning of this chapter, p 47).

Sutton (2002:24) explains the series of processes that trauma starts as follows: “Trauma does not occur due to the external factor of a single event. Trauma is enmeshed in an external process of an attempt to assimilate how the event has irrevocably affected the individual.” She also explains that what traumatizes the individual in such a situation is the loss of the ability to experience, act on and re-experience one’s own influence, since the person is controlled by an event happening to him or her (Sutton 2002:31). Unfortunately, according to Jensen (1998:58-9), these effects of loss of control can be so powerful as to rewire the brain and result in learned helplessness. He also states that if the victim was able to make choices and act upon those during a traumatic situation, regardless of its outcome, learned helplessness would not occur in the aftermath. Nancy Coles, the clinical director of the centre where pianist Linda Cutting received treatment for traumatic response to incest during her childhood, illustrated trauma by drawing a black hole. Cutting (1997:73) quotes Coles as having said in a lecture on trauma theory at the abovementioned treatment centre: “It’s intrusive, unpredictable, creates a state of helplessness, and disrupts homeostasis. Trauma affects everything – even one’s balance”.

Reactions during and in the immediate aftermath of trauma as described by Spiegel (2008) include:

- Being dazed
- Unawareness of serious injury
- Experiencing the trauma as if it were in a dream, floating over their own body

Seeking comfort from imaginary protectors, also referred to as ego-states (in cases of child abuse).

If traumatic events are not handled adequately and there is no or insufficient intervention, trauma remains unresolved. Levine (2005:3) states that unresolved trauma can potentially have some or all of the following effects:

- Alter people's habits and outlook on life
- Take its toll on family and interpersonal relationships
- Trigger physical symptoms and disease
- Cause problems with decision-making
- Lead to addictions
- Cause dissociation
- Precipitate self-destructive behaviours.

Conversely, the effects of trauma, when observed, can provide signs that trauma is a cause of problems.

The list of long-term signs of unresolved trauma is so extensive that care has to be taken not to identify these as caused by trauma where none might exist. Stein (2007:443-444) explains that the experience may go beyond the capacity of words to express it and the victims may become silent. Often, in these cases, the impulse to retell may manifest via somatic, kinaesthetic or aesthetic registers (Stein 2007:443-444). This can lead to the development of what Scaer (2005:209-251) describes as a large variety of hard-to-understand or undiagnosable diseases. He also acknowledges that many of the diseases referred to below would be considered as psychosomatic in nature by other researchers and medical practitioners. Scaer (2005:214-250) classifies these under five broad categories as listed here with examples for each category:

- Diseases of abnormal autonomic regulation such as fibromyalgia, migraine and irritable bowel syndrome;
- Syndromes of procedural memory such as myofascial pain and other forms of chronic pain;
- Diseases of somatic dissociation, such as reflex sympathetic dystrophy;
- Disorders of endocrine and immune system regulation such as hyperthyroidism and diabetes,
- Disorders of cognition and sleep, such as attention deficit/hyperactivity disorder, narcolepsy and sleep paralysis.

An important aspect of the symptoms traumatized people exhibit is the immediacy of their emotional reactivity. They tend to respond immediately to potentially threatening stimuli, almost as if survival depended on their response to ordinary situations, without making psychological

assessment about the cause of their arousal. This could cause them to overreact and intimidate others (Van der Kolk & Saporta 1991:202) and is connected to the observation that under stress these people may feel as if they were traumatized again (Van der Kolk 1996b:291).

There is another aspect of unresolved trauma that should be referred to and this is the issue of the absence of unconditional love. The emotional trauma inflicted upon a child who does not receive unconditional love can, according to Miller (1997) and Weeks (2000), result in such a child not developing an inner sense of self. It can possibly even lead to the development of narcissistic personality disorder. Weeks argues that children and even adults traumatized in such a manner are frequently encountered under high-achieving musicians. Miller (1997:1) writes that emotional discovery about the history of our childhood is the only enduring weapon to combat mental illness. This is perhaps a limiting viewpoint. Although the truth of the influence of early experience cannot be negated, in reality whilst going through life we are continually confronted with traumatic or challenging encounters. Apart from time concerns of this method of treatment, revisiting old memories may even attract more unwanted circumstances into our lives. Due to the laws of resonance, a phenomenon that is repeatedly albeit briefly referred to in this chapter, the probability of experiences attracted being similar to the original traumatic experience is high as a result of the focus of energy on the particular experience. By focusing the attention on the past, treatment strategies that overemphasize revisiting past events can perhaps diminish capacity of taking control over current circumstances, capacity for making choices and responding to challenges, as well as overlooking so-called serendipitous opportunities for healing on the path through life.

In recent developments in the field of neuropsychology, biological changes caused by trauma are increasingly acknowledged as a causative factor in the symptoms characterising the aftermath. Van der Kolk and Saporta (1991:199) use the term ‘physioneurosis’ to describe this phenomenon. While Scaer (2005:58) refers to the relationship between changes in the brain of the trauma victim and alteration of perceptual experience, Nijenhuis *et al.* (2004) link trauma-induced neurobiological changes to difficulties with integrative functions.

Cutting’s description of how trauma can affect memory of music performers was discussed in chapter 3.5 and should also be explicated here. Scientific writers also emphasize trauma’s influence on memory. Bremner (2002:104-5) states that hormones released during stress such as norepinephrine and epinephrine can strengthen the laying down of memories while cortisol can

inhibit it. He further explains that such and other trauma-related changes in the brain can lead to distortions and other changes in memory of traumatized individuals. Bremner also observed that PTSD patients remember events that happened long ago but often suffer from an inability to learn new things (Bremner 2002:113). He (2002:111) describes flashbacks as automatic and uncontrollable events, not unlike Cutting's description of intrusive memories during music performance.

Scaer (2005:62) reasons that the process of kindling or neurosensitization leads to a situation where internal cues can trigger arousal related to a traumatic event. In PTSD this is the case when memories cause symptoms without external events explaining the reaction. Goddard (2005:2) states that each episode of remembering triggers a response by adrenergic hormones, causing recollection of the memory to potentially grow more vivid. Bradshaw (1990:180) calls neurologically imprinted experience 'anchors' and also confirms that experiences resembling the original trauma can trigger old existing anchors. Unfortunately, traumatic memories can become latent and re-emerge, even spreading themselves. Goddard (2005:1) compares the behaviour of traumatic memories with that of viruses in that they are inanimate pieces of information operating in a feedback loop and seeking to replicate themselves. He suggests that doctors may treat previously traumatized patients as persons infected with latent memories which may break out and subsequently cause new damage. In a more positive vein, Goddard (2005:1) believes that adrenoreceptor antagonists present some hope of helping to block reinforcing of the feedback loop. Notwithstanding the fact that trauma damages the brain, Scaer (2005:76) states that replication of new neurons in the hippocampus has been demonstrated, offering hope for recovery.

Different individuals will react differently to trauma. One's attitudes and beliefs play an important role in determining the extent of traumatic effects. Robertson (1999:223) identifies one's attitude to death and the degree to which a person feels that the world has become unpredictable as important factors influencing one's response to trauma. Important to consider is also the cumulative effect of multiple traumas: there comes a time when these effects cross the tolerance threshold of a person who previously showed high levels of resilience. However, there is a spectrum of clearly observable signs which can potentially indicate to the teacher that a problem exists. In addition to the symptoms described in the section on PTSD, the symptoms gleaned from responses to the teacher's questionnaire are listed in chapter 6.2.

The destructive potential of a traumatic event is a reality, while trauma can also be a catalyst for transformation. At different stages in recovery, both scenarios could be the case. Levine (2005:79) writes that several Buddhist and Taoist traditions see trauma as one of the ‘great portals’ or catalysts for surrender and awakening. He elucidates that transformation happens when we face an uncertain world and give up the illusion of safety. This process enables us to ‘reconnect with life’ and live fully in the present. In a similar vein, Tolle (1999:139) refers to the potential of emotional pain to bring an individual closer to awakening by stating that, ‘if you are trapped in a nightmare you will probably be more strongly motivated to awaken than someone who is just caught in the ups and downs of an ordinary dream’. The potential for traumatic events to precipitate growth in those who have experienced such events is also investigated from a scientific point of view. For instance, Drs Mark Chesler, Carla Parry and Bradley Zebrack devote themselves to the study of what they call ‘Post-Traumatic Growth’ (PTG). In an interview with Steven Ungerleider (2004:2-4), Chesler defines PTG as “the experience or expression of positive life change as an outcome of a trauma or life crisis”, contrasting it with resilience which he states is a ‘bounce-back’ while PTG suggests something gained in terms of quality of life. His work on PTG focuses on the study of long-term survivors of childhood cancer, acknowledging that PTG also occurs for survivors of other types of traumatic experience. (See also Tedeschi, Park & Calhoun 1998).

3.7 Dissociation

Neither the concept of dissociation as a consequence of trauma nor the thwarted freeze response is at all new to the literature; both have been discussed by Freud, Janet and others (Breuer and Freud 1974). More recently emphasis has increasingly been placed by researchers on these aspects of the trauma response, leading to a much more comprehensive understanding of dissociation. From data obtained, this researcher has come to the conclusion that these aspects of the trauma response can perhaps have the most profound impact on musicians.

Scaer (2005:177) defines dissociation as “a subjective experience, a continuum of abnormal perceptions and behaviours that occur in people subjected to a traumatic event or even to an intense period of stress”. He continues by explaining that it is a disruption of consciousness, memory identity and perception of the environment and it may alter any of these states and function. Watkins and Watkins (1997:38) describe dissociation as a ‘separating process’ that can

be a normal reaction which protects people from frightening reactions and lowers their fear. They state that in the moment of dissociation the self becomes an object and the individual is protected from the externally initiated pain or internal fright. Hartman (1993:43) clarifies the function of dissociation as initially enabling the individual to live without constantly experiencing emotional pain and fear associated with abuse. He draws attention to the fact that it can, however, eventually impede growth and become a destructive force within an affected individual. Hartman (1993:43) writes: “[W]hat started as a survival strategy – most of the time born out of fear, anger and pain – can become a desperate and often self-destructive life style.”

Dissociation exists on a continuum, ranging from adaptive differentiation to pathological dissociation. Hartman synthesised the models of Peichl (2007a:162), Nijenhuis *et al.* (2004) and Watkins and Watkins (1997:32) into a representation of the spectrum of dissociation.

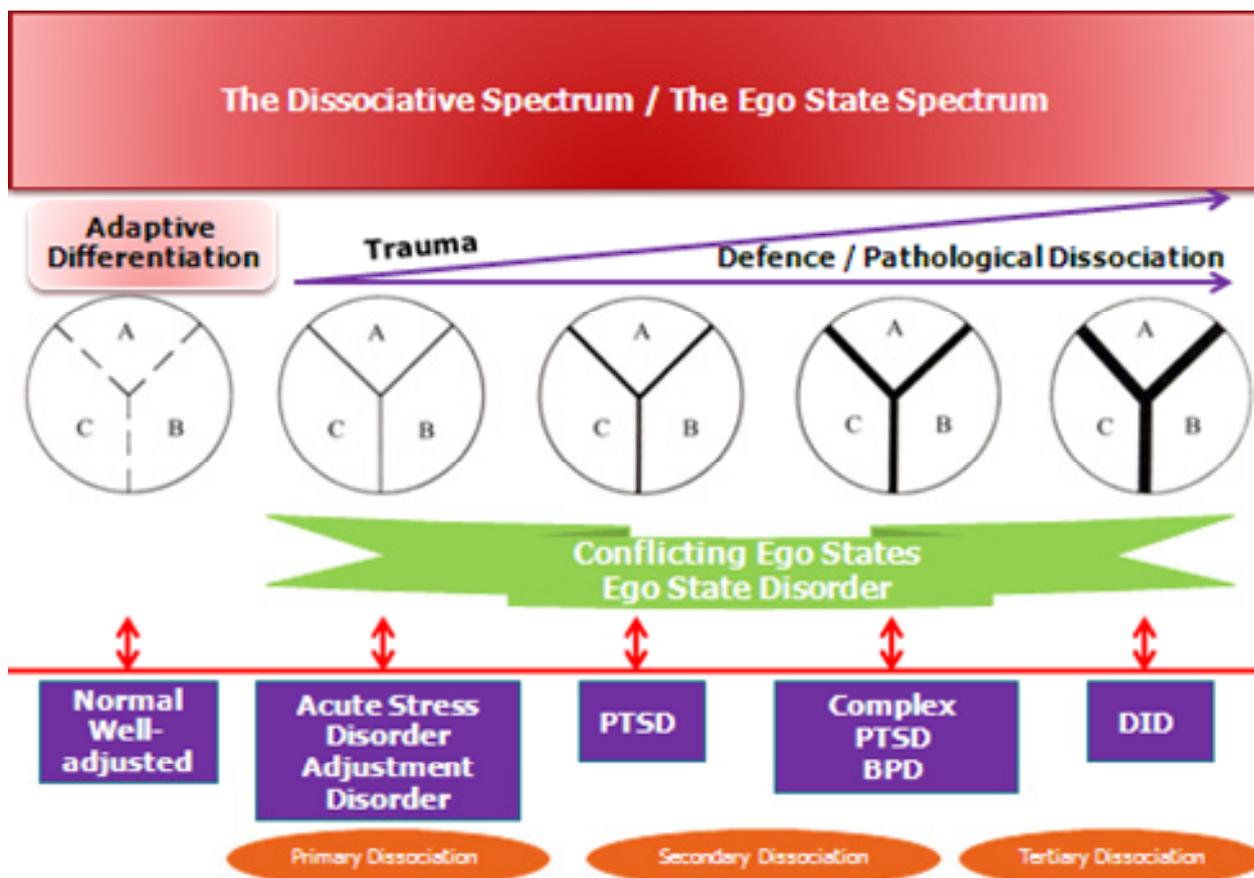


Figure 5: The Dissociative Spectrum as assimilated by Hartman (2009b) from the work of Peichl (2007a:162), Nijenhuis *et al.* (2004) and Watkins & Watkins (1997:32)

Nijenhuis *et al.* (2004) describe structural dissociation of the personality as ranging on a continuum from primary, through secondary to tertiary dissociation. This model holds that primary structural dissociation is characteristic of ASD and simple PTSD. At this level, the individual is unable to integrate the traumatic experience into his or her everyday experiences and parts of the traumatic experience are split off from the mainstream of consciousness. Symptoms such as flashbacks, nightmares, intrusive thoughts and partial amnesia may then occur. Secondary dissociation becomes evident in the manifestation of disorders such as PTSD and DESNOS. Hartman (2009b) notes that secondary dissociation is a manifestation of either a smaller or wider range of defensive subsystems (referred to as ego-states) that were not sufficiently integrated. Symptoms that can be experienced include out-of-body experiences, changed perception of time and pain, re-experiencing of traumatic memories or responding to cues that are salient reminders of recalled events. Secondary dissociation is often associated with childhood trauma. Tertiary structural dissociation is associated with Dissociative Identity Disorder (DID). The latter does not necessarily occur during a trauma but may emerge when inescapable aspects of daily life become associated with past complex trauma experiences (Hartman 2009b, Nijenhuis *et al.* 2004).

DID as depicted in the image on the far right of figure 5 is the most severe form of dissociation. Spiegel (2008) explains that the self of an individual suffering from this condition becomes fragmented and that different personalities may co-exist in one body. DID was previously known as Multiple Personality Disorder. A discussion thereof goes beyond the scope of this thesis. However, it should be noted that the abuser of one of the case study participants was diagnosed by healthcare professionals as suffering from this disorder. For more information on DID the reader is referred to the *DSM IV-TR* (APA 2000:526-529). Spiegel (2008) clarifies that DID can be regarded as a severe form of PTSD. He refers to the biological markers of DID as a smaller hippocampus and changes in certain neurotransmitters, as Scaer also points out for sufferers of PTSD, particularly for those with a history of childhood trauma (Scaer 2005:74).

Throughout his book, Scaer (2005) illustrates that the manifestation of dissociation can be multi-faceted, including physical and mental symptoms and ranging from normal adaptive dissociation to personality disorders and psychosomatic symptoms. Dissociation in its various forms is a common symptom in sufferers of PTSD. Fourie (2009:19) points out that according to Levine's model (1992:85-108), dissociation can be a "fragmentation of different dimensions of experience" as well as "over-association or over-coupling where experiences are joined together

in manners that cannot be integrated”. Fourie highlights that it is important that a distinction be made as to whether dissociation or over-association of traumatic responses occurred. Reaction to traumatic experience can cause dissociation, but what happens in the brain? Nijenhuis *et al.* (2004) explain that excessive release of stress hormones cause alterations in brain regions involved in major integrative functioning, leading to what he calls ‘threat-related integrative failure’ and the manifestation of dissociation.

Dissociation as such was discussed above. It can, however, play such an important role in the manifestation of various forms of attention deficit and concentration problems that can be observed by teachers in their students – and perhaps not always adequately understood - that some aspects specific to traumatized children deserve mention. Hartman (1993:42) has written the following about dissociation in abused children:

Children who have been emotionally neglected or physically, psychologically or sexually abused often dissociate from their feelings and from the memory of their abusive experiences to cope with the traumatic experiences. The abused child learns quickly that the expression of anger towards the abusers (frequently the parents) only results in more abuse. Accordingly, the child dissociates the anger and trauma, that means the ego splits in such a way that the feelings of pain, guilt, fear, confusion, powerlessness and so on are separated from the thinking self in order to survive the traumatic experiences.

It can therefore be deduced that the behaviour of children thus affected could appear very normal or, on the other hand, lack of integration may be evident when split-off parts of their experiences are expressed in various ways or lead to so-called ‘acting out’ behaviour. From the above it can also be seen that it may be a warning sign that trauma is affecting a child if he or she does not normally express his or her feelings.

Techniques to resolve dissociation include amongst others Nijenhuis’ action-oriented three-phase approach for the resolution of structural dissociation of the personality (Van der Hart *et al.* 2006) and Levine’s method of transformation and renegotiation by accessing memories through the felt sense which he calls Somatic Experiencing (SE) (Levine 2005 and 1997). What he means by that is the use of physical touch. Scaer (2005:265-7) recommends the use of touch (including acupressure and craniosacral techniques) and induced movement (including drawing, sculpting and dancing). In her work with five female adult survivors of childhood sexual abuse, Fourie found that hypnotherapy - in itself a dissociative phenomenon - can play a very important role in resolving dissociation (eg. Fourie 2009:100, 120-1, 372). This includes employing hypnosis to

access, re-associate, integrate and resolve traumatic material. On the other hand, music therapists very often work through means of controlled re-enactment of the traumatic encounter, providing the client with an opportunity to assert their own influence in the situation (eg. Sutton 2002:31). This aids the client in diminishing feelings of helplessness and can play a role in resolving the ‘freeze’ response so closely associated with dissociative symptoms.

3.8 Treatment of trauma symptoms

In consulting the available literature on the handling of trauma sequelae, various treatment modalities emerged. A discussion of all these models is beyond the scope of this thesis. A selection of some of the timeless as well as the most current models was made. The models discussed below were decided upon based on the frequency with which they appeared in the literature survey as well as in the feedback from the questionnaires. (It is conceded that any literature review is only within the scope of any researcher’s limited knowledge, experience and exposure to literature materials.) These are discussed below. Some psychotherapeutic intervention strategies such as Cognitive-Behavioural Therapy, hypnosis, EMDR (Eye Movement Desensitization and Reprocessing), EMI (Eye Movement Integration) and the use of medication are mentioned. Therapies that incorporate movement and somatic aspects are also referred to. At the end of this section there is reference to how victims may experience growth and come to the point of integrating their experiences after asking the question ‘why’. Frankl’s method of logotherapy is cited in this regard. In acknowledgement of the diversity of cultures from which music students come, this is followed by a brief discussion of intervention models stemming from other traditions as well. Thereafter some principles behind vibrational medicine are linked to the healing properties of music, which is in itself sound vibration. Section 3.9 refers to alternative modalities while chapter 4.4 discusses the use of music and art in the recovery process.

At the moment of imminent death, “animals shake, sweat, and breathe it all out” (Scaer 2005:285). Scaer identifies the main cause of problems in how humans deal with trauma as the fact that they do not do so in the same way as animals, and problems develop because the emotional response to the trauma is not allowed to be completed. Levine (1997:100-1) blames this on the neo-cortex, overriding the instinctual responses, which has the original function of completing this cycle. Bradshaw (1990:217) points to the fact that during traumatic events all

resources are used to survive and no time exists for experiencing and expressing the actual feelings accompanying the event. Time to express feelings is necessary to integrate the actual trauma.

In all the stages of psychotherapeutic intervention, including the referral and diagnostic stages, care should be taken not to retraumatize an individual. Retraumatization can engrave deeper memory circuits, possibly leading to intensification of symptoms that can in turn require increased duration of treatment in order to be effective. Modern trauma-based psychotherapy works on the principle of synthesis and integration of traumatic material (Huopainen 2002:97-98). Bradshaw (1990:217) makes it clear that the goals of treating PTSD include helping people to live in the present. Van der Kolk (1994:12) maintains that this entails locating the traumatic experience in time, separating it from the reality of the present moment and perception of potential future events. Intrusive recollection and re-enactment is counterproductive to this process. A goal of all treatment should be to enable the affected person to return to an optimal level of functioning in his/her daily life and effect growth. Treating trauma-related anger could involve various methods of restorative justice, an example of which is face-to-face meetings among various parties connected to a particular crime (Winkel 2007:27). However, a discussion thereof is beyond the scope of this study and the reader is referred to Winkel (2007) for further information.

3.8.1 Pharmacological intervention

The contribution of pharmacological intervention in the treatment of trauma can, if wisely administered under the supervision of a psychiatrist with the appropriate knowledge and experience, be of great value in treatment. While medication is used for the treatment of mood disturbances, Bremner (2002:249-50) states that there is hope for reversal of symptoms of trauma-related psychiatric disorders. He makes it clear that, in order to achieve this goal, medication such as selective serotonin reuptake inhibitors (SSRIs) and/or mood-stabilizing agents such as valproic acid or carbamazepine should be used in conjunction with psychotherapeutic intervention strategies.

Medication works by modulating the neural feedback system. It is Van der Kolk's (1994:12) conviction that a very effective pharmacological treatment at present is fluoxetine. He states that this is because, unlike the tricyclic antidepressants which are effective in reducing either the intrusive or the numbing symptoms in PTSD, fluoxetine has proved to be effective in the whole

spectrum of symptoms. The only negative factor is that the startle habituation becomes worse. Van der Kolk suggests that this could possibly be treated with the 5-HT_{1A} antagonist buspirone. Bremner (2002:252-5) states that the drugs Paxil and Prozac may reverse the effects of traumatic stress on the brain. He is also conducting research on the potential beneficial effects of Dylantin (phenytoin) on PTSD, the hippocampus and memory. It can be concluded that pharmacological intervention has an important role to play in the treatment of trauma and can have additional benefits for the reversal of symptoms on the physical or neurological levels.

The possible beneficial effects of natural supplements that enhance optimal brain function should also be considered (also see Sahley 2009:1, Holford 2007, *Neurogenesis* n.d.). The benefits of natural supplementation are that they assist the body's own capacity for self-healing and restoring homeostasis, a principle that is strongly emphasized in section 3.9 about alternative viewpoints regarding treatment. Drug abuse in the population of musicians as well as the dangers of self-medication or reverting to substance abuse as a means of self-medication is a separate area that warrants further research. Phillips and Frederick (1995:39) refer to the danger that patients may abuse alcohol or drugs to self-medicate dissociative symptoms. The same could be the case when patients attempt to dull emotional pain with the use of non-prescription substances.

While pharmacological treatment places the emphasis on neurotransmitters and the balance and amounts thereof in different parts of the brain, Le Doux (2002:261-2, 280, 294) argues that perhaps neural circuitry plays a greater role in brain pathology, including PTSD and depression, than neurotransmitters *per se*. This again place more control within the domain of the so-called victim, since it enhances possibilities for changing pathology by increased control and command of the thinking processes. In the case of depression, Le Doux (2002:280) is of the opinion that any treatment that re-engages a person with the world can help a patient. Perhaps traumatized patients also need help to re-engage with the world in a way that is true to reality and not to their perception of an exaggeratedly dangerous world.

3.8.2 Cognitive-Behavioural Therapy (CBT)

Blenkiron (2005) explains in short that Cognitive-Behavioural Therapy (CBT) deals with how people think about themselves, the world and other people and how what people do, affects their thoughts and feelings. He explains that CBT deals with problems in the present instead of focussing on the past, seeking ways to improve the client's current state of mind. There is strong

reliance on the way people think about problems as they directly affect how they feel physically, emotionally and how they behave. The following diagram, also incorporated by Blenkiron, shows how five areas representing individuals, their thoughts, feelings, emotions and behaviour and their interaction with their environment and others are mutually influential and how a change in any one area will lead to changes in others:

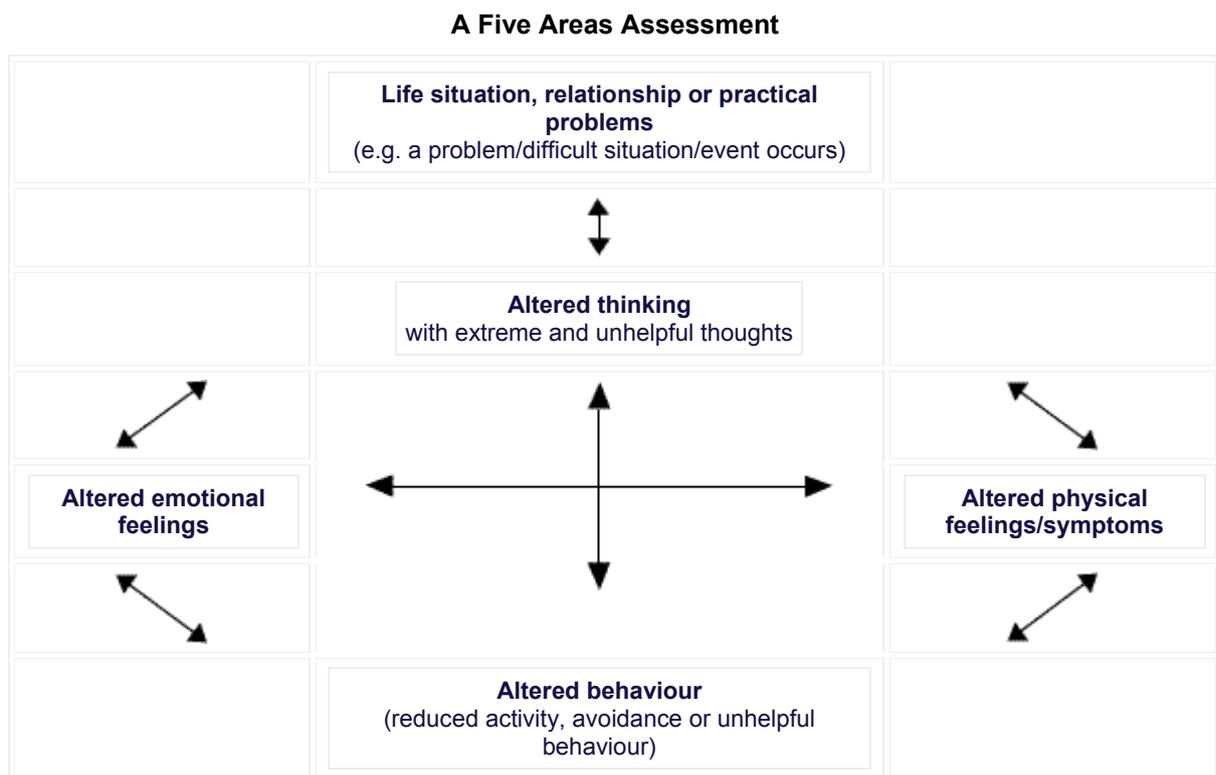


Figure 6: Five areas of Cognitive-Behavioural assessment (Royal College of Psychiatrists 2007)

The diagram above provides a condensed example of areas considered by therapists using Cognitive-Behavioural intervention when diagnosing and treating clients. Mulhauser (n.d.) explains that the therapist will help clients to explore whether their views really reflect reality. Blenkiron (2005) adds that together client and therapist will look at thoughts, emotions, bodily feelings and actions, work out how they affect the client and assist the client to change unhelpful thoughts and behaviours, a process that includes ‘homework’. With time, the client should become empowered to recognize when he or she is about to do something unhelpful and instead choose to do something more constructive.

Various sources note that CBT can be particularly effective in the treatment of PTSD and that its use with patients diagnosed with ASD can greatly reduce the chances that PTSD subsequently develops (e.g. see Kornør, Winje, Ekeberg, Weisæth, Kirkehei, Johansen & Steiro 2008).

3.8.3 Eye Movement Desensitization and Reprocessing (EMDR) and Eye Movement Integration (EMI)

EMDR (Eye Movement Desensitization and Reprocessing) is a psychotherapeutic intervention strategy for the treatment of trauma symptoms that was originally developed by Francine Shapiro. The *EMDR Institute* (2004) explains that EMDR is an information processing therapy that uses an eight-phase approach. This technique uses fast lateral movements similar to those encountered in Rapid Eye Movements (REM) sleep. The *EMDR Institute* explains that for ‘dual stimulation’ therapists use bilateral eye movements as well as auditory stimulation such as tones or tactile stimulation such as tapping. This technique helps to eliminate emotional distress associated with traumatic memories and it can obtain comprehensive results in a brief period of time. The *EMDR Institute* states that clients report elimination or decrease of emotional distress associated with memories as well as an increase in cognitive insights. Through modifying eye movements, processing of past, current and future events requiring different responses is facilitated (*EMDR Institute*, 2004). The above mentioned source states that three studies have found an elimination of PTSD diagnosis in 77-90% of cases within three to seven sessions. The control this technique facilitates makes it a potentially very valuable tool for musicians of whom stage performance is expected.

Brenner (2004:253-4) writes that newer research on EMDR shows that inter-hemispheric stimulation is responsible for the integrative effect of the technique. Indeed, Amendolia (1998:1) states that EMDR transfers data from the cortical right hemisphere to the left hemisphere. Emotionally charged information from the right hemisphere can then be analyzed and integrated by the cognitive function of the left hemisphere. Other forms of sensory stimulation that work on the principle of alternation between the hemispheres such as lights, sounds in either ear, and tactile cues to each hand could also be effective. Winkel (2007:19) identifies EMDR as being a therapeutically efficient intervention strategy for reducing Post-traumatic anger. Its effectiveness is multi-faceted and applies to a range of PTSD symptoms.

While EMDR utilises Rapid Eye Movements, EMI uses Smooth Pursuit Eye Movements (SPEM) in multiple directions (Beaulieu n.d.:8), guided by slower hand movements. This

technique helps the client's brain to form linkages between traumatic memories and more adaptive information. In addition it facilitates access to emotional memories retained in implicit memory. Beaulieu (2003:69-113) explains how eye movements relate to brain function, cognition and memory and how guided eye movements facilitated by a therapist can lead to the integration of traumatic memories. She further asserts that smooth pursuit eye movements permit the client to access fragments of memory more directly than would normally occur during ordinary reflection. In Beaulieu's (2003:25) opinion, EMI is an effective mode of intervention for distressing and repetitive memories of any kind that impact adversely in any area of a person's life, regardless of how such memories manifests their influence.

3.8.4 Hypnosis

Hypnosis is a technique that can be very effective in the treatment of trauma symptoms. Although no event can be voluntarily erased from a person's memory unless drastic new chemical means are resorted to (see research by Cao *et al.* 2008 and Carey 2009 referred to in section 2.8.3), hypnosis can be used to alter the meaning of a traumatic event by reducing the perception of threat and also possibly addressing somatic symptoms associated with the traumatic event. Amendolia (1998:1) describes hypnosis as structured dissociation and states that the goal of Ericksonian hypnotherapy is to recontextualize the memory, the effect of fear and physiological hyperarousal. O'Brien (2004) explains that Milton Erickson (1901-1980) used suggestion and post-hypnotic suggestion to tap into people's inner consciousness where they can access their own resources to improve the quality of their lives. O'Brien identifies techniques used by Erickson as hypnotic trance, metaphors and confusion techniques, to name only a few, and adds that followers of Erickson all have their own unique style. The Ericksonian perspective on trauma emphasizes the innate tendency of the organism to heal itself and views flashbacks and recurrent dreams as attempts to problem-solve that can be better facilitated by the use of hypnosis (Amendolia 1998:1).

In a personal interview with the researcher regarding this study, psychologist Gerda Fourie (2008) stated that trauma victims very often induce a state of auto-hypnosis in which negative self-talk prevails. The challenge lies in changing this negative state of mind, often accompanied by low self-confidence, and changing negative perceptions. She believes that hypnotherapy can be effective at this level. Van der Hart and Spiegel (1993:199) draw attention to the fact that for treatment with hypnosis to be successful, all aspects, including the physical sensations experienced during the trauma, must be integrated. They caution that without cognitive

integration of affective memories and enhanced control over memories, treatment can reinforce trauma instead of aiding symptoms to subside. Therefore the possibilities of hypnosis in treatment are numerous: namely the guided changing of the perception of helplessness and danger, changing negative auto-hypnosis, ego-strengthening, the integration of physical sensations experienced as well as verbal expression of events that took place.

An important and structured hypnotherapeutic intervention model for post-traumatic and dissociative conditions is Phillips and Frederick's (1995:36-45) four stages of treatment. They call their treatment approach the SARI model, an acronym representing the following stages of treatment (Phillips & Frederick 1995:36):

- Safety and stabilization;
- Accessing the trauma and related resources;
- Resolving traumatic experiences and restabilization; and
- Personality integration and the creation of a new identity.

This approach is a very controlled and gradual method of intervention, avoiding retraumatization at all costs. Phillips and Frederick (1995:35-36) are of the opinion that it is essential that a sense of external and internal safety is established for patients and that their daily lives are reasonably stable before therapeutic intervention is attempted. This is because when traumatic material is dealt with a patient can be overwhelmed if not yet equipped to handle this. Their model specifies that, if destabilization were to occur during the second or third stage, there should be a return to the first stage. A valuable aspect of this method is the use of 'hypnotic age progression' in order to help the patient create a hopeful future after successfully integrating traumatic experiences (Phillips & Frederick 1995:44).

3.8.5 Body therapies and the role of movement

A high rate of success in the treatment of trauma is claimed by advocates of 'body therapies'. Levine's Somatic Experiencing (SE) is an intervention specifically developed for trauma victims. Levine (2009) describes SE, a naturalistic approach to the healing of trauma, as follows:

Therapeutically this "instinct to heal" and self-regulate is engaged through the awareness of body sensations that contradict those of paralysis and helplessness, and which restore resilience, equilibrium and wholeness.

His theory is based on the premise that healing is achieved by accessing trauma-induced feelings and thoughts through the felt sense and resolving them through letting them take their natural course (Levine 1997:128). There are other movement therapies that are not strictly associated

with the treatment of trauma, but that the researcher would also like to refer to, based on her perception of their potential benefits at multiple levels, including that of traumatic consequences.

A form of therapy that also works with kinaesthetic experience of the body is the Feldenkrais method. The official website for the *Feldenkrais Method* of Somatic Education (2009) pronounces that the method helps people reconnect with their natural abilities to move, think and feel by focussing on the relationship between movement and thought. They state that it teaches people through movement how to improve their capabilities to function in their daily lives. This method is used for a wider variety of interventions, but can also potentially be helpful to people suffering from unresolved residues of traumatic experience. More information on this method can be found at http://www.feldenkrais.com/method/the_feldenkrais_method_of_somatic_education/.

Gorrie (2009b:191-3) describes an important contribution of the Alexander Technique as the realization that tension in the body and tension in the mind are mutually influential and states that the technique itself can allow the body and mind to act unhindered. He describes this technique as one of postural alignment, developed by F. Matthias Alexander to cure his own vocal ailment. Alexander achieved this through experimentation with a complex system of mirrors, leading to the realization that his subconscious mind was creating anticipatory tensions in his body. It is evident that the physiological effects of trauma can be a contributing factor to such habitual tensions.

The *Rolf Institute of Structural Integration* (2009) reports that Rolfing was developed by Ida P. Rolf fifty years ago. They state that it is a form of bodywork on the connective tissue to release, realign and balance the whole body. According to this source, it enhances posture and balance and can resolve pain and discomfort from various causes. As such, it can be useful in the resolution of dissociation, like acupressure mentioned in 3.9.1 below, and treatment of ‘psychosomatic’ trauma symptoms.

Dalcroze Eurhythmics was developed by Emile Jaques-Dalcroze (1865-1950). *Dalcroze Australia* (2009) describes this method as based on the assumption that the human body is the source of all musical ideas and provides a concrete approach to abstract music. This source states that it is specifically for music students and incorporates Eurhythmics (‘Good rhythm’), Solfège (the study of pitch) and Improvisation (presenting musical ideas instantaneously). Spencer

(2009) writes that Dalcroze found that teaching did not succeed in giving students a living experience of music. He therefore set out to develop his system that coordinates music with bodily movements. Spencer adds that the Dalcroze method can be used by both adults and children, and that it aims to promote alertness, expressiveness and a sense of phrasing and musical structure. The technique helps musicians with rhythmic problems and to develop 'inner hearing' while Solfège develops recognition of pitch. Dalcroze developed his method aimed at cultivating musicianship skills and not with any therapeutic goals in mind. However, it is possible that additional benefits of incorporating music and movement may be those of integrating the 'whole person', of 'centering', reducing stress in trauma victims (referred to in section 6.2.6 by one of the respondents), or of reaching unconscious emotional responses (as referred to by Peters, 1987:129). This could perhaps best be supported by reference to Brice's work (2004:63) where she explains that music channels physical sensation, that a body should be well-balanced to express what is experienced within and that music helps to accelerate students' awareness by bypassing intellectual analysis. She states that changing any element in the improvisation for the students is all that is needed for them to become aware. Brice writes (2004:78):

Music is the ever present element which appeals to the emotions and feelings: it suggests, it leads, it inspires, it corrects and it improves. It is the bridge between the instinctive and the abstract. It leads from intuition to knowledge ... Undoubtedly, Eurhythmics privileges the body – as much as an instrument of learning, as the first and principle instrument of music.

For more information on the Alexander technique see <<http://www.alexandertechnique.com/>>, on Rolfing <<http://www.rolf.org/>>, or on Dalcroze <<http://www.dalcroze.org.au/>>. The researcher believes that it may be important that therapies incorporating movement were found to be effective in the treatment of trauma, while success in advancing and fine-tuning music skills, improving posture and others treating injuries is also claimed by similar complementary disciplines which musicians are encouraged to incorporate for their own growth and well-being. These include the Alexander Technique, Rolfing as well as Dalcroze Eurhythmics. It is concluded that adopting a more integrative approach to music education could have the added advantage that aspects which could otherwise have remained blockages for the instrumentalist and performer can be addressed and overcome.

3.8.6 Logotherapy

The use of psychotherapy in the treatment of trauma victims is certainly important and essential. However, ultimately humans keep on asking the question ‘why?’ A survivor of the incredible atrocities of the concentration camps at Auschwitz and Dachau, the famous psychiatrist Victor Frankl, does not give much emphasis in his account of the war on importance of psychotherapy as such, but rather on the importance of finding a meaning in one’s life. Frankl (1959:115) indeed describes the ultimate meaning in life as finding meaning in suffering. His theory of *logotherapy* is a therapeutic philosophy dealing with the individual’s search for a meaning to life. This shifts the focus from the retrospective and introspective psychotherapy approaches to a focus on the future and the meanings to be fulfilled by patients in their lives (Frankl 1959:98). Frankl (1959:114) sees the deepest significance as lying in the meaning of suffering as actualized in the attitude with which the individuals take their suffering upon themselves. He often quotes Nietzsche’s famous phrase (Frankl 1959:vii): “He who has a *why* to live can bear with almost any *how*.” This should be a very important aspect in how the survivors of trauma face their fate and approach their futures, namely in finding some form of meaning in the experience. Finding meaning is a personal way of integrating one’s experience, not necessarily requiring any assistance from others. Neurobiological realities aside, the ability to find meaning in trauma may even be one of the strongest factors facilitating recovery, precisely because it assists the brain to integrate experience. The human being and artist are ultimately much more than a sum of biological processes.

3.9 Alternative viewpoints regarding treatment of trauma

This section on alternative viewpoints about the treatment of trauma is included to expand the awareness of teachers and performers alike. Traditional and alternative systems that may play a role in the treatment of trauma include Chinese medicine, Ayurveda, homeopathy and energy medicine or vibrational medicine.

3.9.1 Chinese medicine

Chinese medicine views the communication between different systems in the body as ‘meridians’ and ‘energy channels’. Smith (2008:25-6) explains that Traditional Chinese Medicine recognizes and treats disharmony among the various elements of the body, the fundamental textures which it terms as Qi, blood, essence, spirit and fluids. He explains that

these ‘textures’ are viewed in relation to organs. In addition, chakras are energy resonators associated with specific functions, each having a particular vibration (Smith 2008:27). Trauma can lead to disharmony; methods used by practitioners of Chinese Medicine to resolve these blockages include acupressure (also identified by Scaer, 2005:265-7, as useful in the resolution of dissociation) and, according to Yu (2009), acupuncture and the use of herbal medicines.

Chinese medicine is a holistic and integrated system and viewpoints expressed by its practitioners are often reconcilable with many of the viewpoints held by writers such as Levine who also focuses on the effects of energy, as referenced in section 4.4.4 (also briefly in sections 2.7.1, 3.3, 3.5, 3.6 and 8.4.7). Hammer (n.d.) states that an effect of ‘emotional shock’ is to deplete the Yin of the Heart meridian, and decrease the ability of Qi and blood to either enter or leave the Heart. This effect on Heart function leads to a decrease in peripheral circulation. Hammer (n.d.) adds that the consequent decrease in nutrients and increase in waste products ultimately affects every cell in the body. It should be mentioned here that ‘Qi’ in Chinese medicine refers to the life force, or described by Li (2000) as “the most basic substance of which the world is comprised” and, in connection to living beings, as ‘vital energy’. The researcher did not encounter such specific reference to the heart and circulation elsewhere in the literature on trauma. This is presumably since so much emphasis is placed on ‘psychological effects’. Consequently, immediate physical effects of emotional trauma could often be neglected, and failure to address these could possibly prolong duration of symptoms. Effects on the vibrational frequency of the body, another matter that fails to be addressed by traditional treatments, are discussed in section 3.9.4. As regards performance arousal, Gorrie (2009b:188) points out that according to Chinese Medicine theory, less than optimal levels of performance arousal would be viewed as a state of imbalance and treated as such.

3.9.2 Ayurveda

Ayurveda is the five thousand year old traditional healing system of India. Frawley (1997:4) states that Ayurveda views the human soul as pure awareness and that the mind-body complex is its instrument of manifestation. He claims that Ayurveda regards the mind as the reflection of the body, a storehouse of impressions that were accessed through the senses. Frawley (1997:1) describes Ayurvedic Psychology as ‘Yogic Mind-Body Medicine’. Three different primal qualities are found in Nature, namely Sattva as associated with intelligence, imparting balance, Rajas as associated with energy and which causes imbalance and Tamas as associated with substance and creating inertia (Frawley 1997:30). Ayurveda regards these as affecting the mind

and treats imbalances accordingly with a variation of herbal remedies, ancient and modern Ayurvedia formulas, oils, aroma therapies and incense as well as spiritual remedial measures, gem therapy and mantra (Frawley 1997, Tiwari 1995).

Regarding trauma, Ayurveda would treat emotional imbalances and particularly employ Yoga which, according to Frawley (1997:259), means unification. This could be compared to the traditional methods of integration of the personality and perhaps be an alternative method of resolving dissociation. In addition, Ayurveda views re-enactment as an attempt to integrate (Das n.d.:1). The emphasis in this philosophy is on individuals' control over their own physiological and psychological functioning. Das (n.d:1.), an Ayurvedic practitioner, states that PTSS (Post-traumatic Stress Syndrome) is similar to purely physical trauma in the sense that if the 'victim' can counteract, minimize or avoid it, the lasting consequences are much less serious or debilitating than if the victim succumbs to or becomes totally immersed in the victimization process.

3.9.3 Homeopathy

Samuel Hahnemann (1755-1843) is the founder of Homeopathy, a system of healing that is based on the principle that 'like cures like' (Chappell 2003:4). Remedies that resemble symptoms of the illness are given, usually in greatly diluted form, and stimulate the body's natural healing abilities. Homeopathic intervention in cases of trauma is described by Chappell (2003:86) as based on the concept of integrating traumatic fears and material. He writes that homeopathic remedies can bring traumatic material to the subconscious or semiconscious, precipitating an 'action replay' of the situation by re-experiencing the fears and feelings without the actual traumatic events. (He writes that the client need not be concerned about this being upsetting, since it mostly happens in dreams.) This resolves the trauma and unfreezes the person just like other modalities developed in various disciplines. He believes that people are frozen wholly or partially at the age at which overwhelming trauma happened and that after trauma is brought to the surface at a time when the person is capable of dealing with it, "[s]he can grow up naturally for the first time or grow up back to her old self if this was dented" (Chappell 2003:85-6).

3.9.4 Energy medicine or vibrational medicine

Oschman (2000:139) explains that the rationale behind energy medicine or vibrational medicine is that diseases and organisms alter the electromagnetic properties of molecules, cells, tissues and

organs. He maintains that imbalances in the electromagnetic function of the body can be corrected by substances with electromagnetic signatures that stimulate the repair systems of the body to respond and regain homeostasis. Oschman (2000:145) further explains that ‘subtle energies’ and ‘dynamic energy systems’ go to the foundation of life. Energy medicine or vibrational medicine is gaining recognition although more controlled scientific studies are needed to strengthen its validity.

Various modalities of energy medicine exist. These include homeopathy, flower essences, aromatherapy, sound and light therapies (Oschman 2000:145). Royal Raymond Rife invented the quantum resonator to treat disease by means of sending specific frequencies of sound through the body. The principle behind quantum resonators is described by Haltiwanger (2009:7) as based on the fact that all molecules of living beings (and indeed dead matter as well) are vibrating at specific frequencies. He further explains that, through ‘resonance’, this enables the body to emit and absorb electromagnetic and sound energy.

As regards the effects of trauma, writers claim that it influences the vibrational field of the body and blocks natural flow of energy. Tooley (2007) defines the “ability to travel through the range of polar opposites” (of matter) as the “natural state of being”. She states that trauma results in states of either no movement or constant movement, disrupting homeostasis. She adds that when registered too deeply, the system is unable to self-correct to a state of balance. Davies (n.d.) explains that the impact of loud sound or ‘acoustic trauma’ has effects on the body’s vibrational frequency. It could therefore also be deduced that other forms of trauma could change the vibrational frequency of the body, caused by wave interference of its impact, whether emotional or physical. This can lead to imbalance. Gorrie (2009b:62) distinguishes between energy passing through a person and energy stored within a person. He identifies potential negative causes for the latter as emotional baggage and unresolved negative experiences taking on chronic physiological symptoms. He adds that this is thoroughly documented by both Western and Eastern science.

Vibrational medicine or energy medicine utilises resonance to assist the body to correct imbalance and alters and accesses imprinted patterns. Tooley (2007) states: “The different aspects of our physical, emotional, mental and spiritual being resonate to various frequencies of vibration.” Tooley (2007) advocates consciously engaging our senses in order to heal trauma. She also advises using vibrational therapies to help the system “back into its core resonance, into

its true nature”. According to her, energy therapy can both assist in getting ‘stuck energy’ to vibrate again and over-stimulated energy to ‘explore stillness’. The researcher deduces that, unless an unhealthy source is chosen, no risk of retraumatization lies in this method of intervention.

3.9.5 The EPFX/SCIO as vibrational medicine intervention device

Two of the case study participants in this study used the EPFX/SCIO in their recovery process and both reported greatly positive results. Therefore it is necessary to give a brief explanation of how this biofeedback device, as developed by Prof. Bill Nelson, can be used in the treatment of trauma.

Quantum Energy Wellness (2008) states that SCIO stands for Scientific Consciousness Interface Operation System or Quantum Xrroid Consciousness Interface and SCIO is derived from the Latin ‘to know’. The newer EPFX/SCIO – that used by case study participants B and C – stands for Electrical Physical Feedback Xrroid. *Quantum Energy Wellness* calls this “a computerized system that both tests and balances the body at the subtle energy level”. This source explains that it incorporates electro-dermal screening, stress testing and biofeedback by integrating the sciences of mathematics, quantum physics, fractal dynamics, subspace theory, electronics and computer programming. These technologies enable the system to measure the body’s biological reactivity and resonance. This has great value for preventative intervention, because they explain that imbalances in the body’s subtle energies manifest long before physical disease develops. They state that it can indicate the body’s needs, dysfunction and vulnerabilities. They explain that the system communicates with the body since it is calibrated to measure the body’s reactions to a database of biological, psychological and medical items in electromagnetic form. This enables the device, mediated by the interpretations of a skilled practitioner, to determine what energy imbalances are affecting the client’s physical health as well as mental and emotional concerns. They state that the EPFX/SCIO stimulates conscious awareness of unconscious processes. It can be deduced that this could help clients to accept greater responsibility for their own well-being, made possible by increased awareness.

Coetzee (2009) describes the principle behind treating a patient with the EPFX/SCIO as that when the energy is changed by this device, the matter will subsequently also change as a result. *Quantum Energy Wellness* (2008) puts this in what can perhaps be considered ‘musical’ terms by stating that “[h]ealing can often be addressed by harmonising the subtle energies”. Nelson

(1996) explains that, at present, biology is an estimate science but predicts that as advances are made in applying quantum physics to biology, mathematical laws that apply exactly to biology will be found.

It was hypothesized in the first chapter that musicians may perhaps be especially vulnerable to trauma adversely affecting them. However, due to their sensitive understanding of the nature of sound and resonance, they may perhaps also find themselves in the best possible position to understand that healing could lie in choosing what to resonate with in order to restore balance. This applies to sound as well as to human interaction, as referred to in the quotation from Watkins at the beginning of the first chapter of this study (on p 1). This illustrates the strong links between vibrational medicine and the use of music in healing and forms a link between the use of music, art and movement therapies in the recovery process, the former discussed in section 4.4 and the latter in section 3.8.5. In the following chapter aspects pertaining to trauma and music as well as examples in the literature of how trauma influenced musicians are discussed first. An understanding thereof serves as foundation for section 4.4 which deals with the use of music and art in the recovery process. Like the intervention strategies discussed above in 3.8 and 3.9, music and art can also be used in a therapeutic sense.

Although there are times when art can effectively represent experiences and affects otherwise too intense or overwhelming to express directly, it can also destroy the protective mechanisms upon which the trauma victim relies to cover or obscure extreme experience.

- Stein 2007:451

CHAPTER 4: TRAUMA AND MUSIC

4.1 Psychological aspects of music performance

An essential component of successful performance is achieving the optimal psychological state for achieving top performance. The following section describes how trauma can affect this.

4.1.1 Mental focus, integration and musical identity

The mental focus required for top performance in music and the capacity for concentration and functioning fully in the present is similar to that required for top performance in sport. However, what distinguishes the performing arts from sport is the requirement of drawing on one's full field of past experience and acquired experience through learning, including intellectually and emotionally. This presents the unique possibility for single or repeated and perhaps more adverse experience to feature too strongly or out of balance during the performance situation. It can be argued that if a traumatic event or events are not integrated and worked through, it may remain difficult for the performer to achieve integration with his or her instrument. Cockey (2008:42) refers to the importance of this connection with the instrument as "that extraordinary interconnection of the body, mind and spirit that eventually becomes a paramount issue within musical artistry".

What was said in the previous paragraph can be understood by considering the extent to which the musical identity of the person and his or her self-identity mutually influence each other. Musical identity plays an integral role in the evolution and development of self-identity and vice versa. In her MMus dissertation "Influences of music education on the forming of musical identities in South Africa" Van Heerden (2007) shows that significant interaction and overlapping between musical identity and self-identity exist. Seen in the light that musical identity in many individuals forms an important part of self-identity, it follows that there is a great likelihood that trauma affecting individuals will also affect their music. Testimony to the influence of traumatic events on the works of specifically composers is evident in the dedications

of works to people or in memory of people, works written to celebrate or protest certain political events, and also in the correspondence and letters of composers where reference is made to their work and lives.

4.1.2 Factors influencing level of performance

A very simple equation can be used to estimate the actual influence of trauma on musicians, whether they are performers, composers or teachers. In an article on stage anxiety, Lehrer (2002:125) uses this equation, originally described by Green and Galway (1986:23), to define performance results:

$$\text{Performance} = \text{potential} - \text{interference}$$

The potential application of the simple logic of this equation extends far beyond stage fright, and can include factors such as trauma as well as more mundane events that can interfere with the work of a musician. A deduction that can be made is that, as long as trauma is not dealt with and continues to cause any form of interference for the musician, it will continue to negatively influence performance quality. This researcher would also like to expand this argument to make provision for the emotional type of interference, postulating that interference of an emotional type has higher risk of also influencing music expression. Considering the multiplicative character of interference of an emotional nature, a more complex description of the interference is desirable in order to give an accurate estimation of the severity of its influence.

This multiplicative character of interference is perhaps more closely estimated by Gorrie's (2009b:25) 'Alterative Performance Equation' quoted here:

$$\text{RLP} = (\text{c} + \text{p} - \text{e}) + \text{a}$$

Gorrie (2009b:25-7) explains that this equation signifies that the 'resulting level of performance' is a result of the sum of the performer's cognitive abilities 'c', such as performance intelligence, plus physical attributes 'p', such as capacity at the given point in time to realize performance intelligence, minus external interference 'e'. The latter he specifies to be events beyond the performer's control, which in this context can also include traumatic circumstances. Important to note is that he states that external interference always lowers the value of the RLP. To this is added the appropriateness of the level of performance arousal, 'a', as before and during the performance. As has been seen, it can be argued that trauma can also affect levels of

performance arousal, particularly shifting it to the negative or ‘anxiety’ end of the spectrum (see section 2.9 and figure 4). In Gorrie’s description, any level of performance arousal that is inappropriate for a particular performing situation – i.e. that is not in the appropriate ‘Zone’ - will result in a negative value for ‘a’ in his equation, lowering the RLP. It is therefore a very complex pursuit to achieve or even approach an ‘ideal’ performing state. Energy needs to be channelled and sustained correctly to perform in the ‘Zone’. Gorrie (2009b:63) believes that it is important to understand that the energy required for top performance comes from within the person. He (2009b:62) calls performance arousal “energy in motion, taking on particular forms as a result of our interactions with the physical world and direction from our minds”.

Mayerovich (2002:82) describes an ‘ideal musical world’ as follows: “Performers respond to the intellectual and emotional demands with a refined vocabulary of physical gestures that guarantees that what *needs* to be expressed *will* be expressed.” Insight into why less than optimal results are attained requires investigating what causes changes in these movements. Bradbury (2008:61) writes: “Changes in mental focus, attention and memory recall are caused by, rather than the cause of, changes in our behaviour and physiology.” If so, entering a similar physiological state as experienced during trauma, e.g. a state of heightened awareness and arousal, can possibly trigger changes in memory recall and unconscious behaviour. It follows that a traumatized individual is likely to have more negative associations with the particular physiological state accompanying music performance. However, it is likely that the individual may not even realize this and therefore cannot begin to take steps to change his or her situation. In addition, Levine (1997:121) explains that traumatized individuals have difficulty differentiating excitement from anxiety. This could have ramifications for the performing musician to the extent that music performance could become an anxiety-evoking rather than a positive experience. The message communicated to the audience could be one of anxiety rather than positive energy, causing anxiety to interfere with whatever the intentions of the composer for the specific piece were.

The connection between life circumstances in the time preceding performance and performance quality is confirmed by pedagogues. Neuhaus (1993:208) writes:

I could very easily establish a connection between the quality of the concert and the mode of life that preceded it and the way I worked. It almost always appeared that for me the most important condition for a good concert was preliminary rest, good health and vitality, freshness of spirit and body.

If ordinary circumstances are reported to be the factors most affecting performance quality, it can be speculated how much greater the influence of extreme circumstances and experiences could be. This includes its impact on concert preparation and physical health.

4.1.3 Concentration and memory breakdown

A momentary lapse in concentration during music performance can have a more immediately observable impact than in most other professions. In order to understand the difference between normal variations in attentional focus and traumatic interference, the nature of human attention needs to be understood. Jensen (1998:45) explains that the short duration of continuous high-level attention has adaptive reasons such as enabling the person to react quickly to predators and prey as well as rechoosing the attentional object regularly in order to react to environmental demands. From the perspective of a performing musician it would therefore make sense that a musician plagued by recent or not-so-recent fear-inducing experiences could be prone to periodically measuring present environmental input against past experience to evaluate danger. This could be occurring at the unconscious or semi-conscious level during performance. The unconscious nature of the defence mechanisms could be a reason why traumatic causes underlying stage anxiety are not always identified as such.

Concentration and attention is intimately linked to memory skills, all being of the utmost importance to the performer. Bartlett (1996:178) refers to differences in the ability of individuals to remember, identifying stimuli that compete for attention as an important factor causing difficulties in sustaining attention. He further elaborates that during a stressful performance situation, competition exists between internally created stimuli by what he calls an ‘involuntary autonomic nervous system’ and the task of retrieving stored information. Bartlett (1996:178) states that researchers have now moved their attention to examining voluntary cognitive activity in their search for finding reasons why memory breaks down since interference caused by the involuntary nervous system is better understood and perhaps even obvious. The researcher would like to suggest that, although the influence of the role that the autonomic nervous system plays in memory breakdowns may seem obvious, it is still worthwhile to investigate the extent of alterations in the normal functioning of the autonomic nervous system due to unresolved trauma as a contributing factor in memory and concentration breakdown.

There is also the issue of the mysterious process that occurs from first learning a piece to performing an artistic rendition of the work. Jensen (1998:46) states that generating meaning does not happen externally, but that it is an internal process. The researcher would like to affirm that, from experience, there is no reason to doubt that the process of generating meaning is the same for music. This processing is done at an unconscious or semi-conscious level. Unwanted threatening memories may return during processing time, precisely because the brain is constantly on guard and re-orienting towards what it was conditioned to perceive as potential threats in the environment.

Revisiting memories is one of the brain's ways of working through and integrating traumatic experience. In the aftermath of trauma, this may be a higher priority for the brain than integrating newly learned material which is acquired under less threatening conditions than the threatening event that is higher up on its list of survival priorities. If the brain's priority is working through trauma, integrating, understanding or changing a traumatic situation, this could obviously hamper and interfere with the processing time for music and consolidation of learned information.

4.1.4 Uniqueness of each human brain

Altenmüller *et al.* (2000:105) conclude that every person has his or her unique individual brain networks for music processing. Altenmüller (2004:28) writes that music is experienced differently by each person and that brain structures that process tunes adapt speedily to new circumstances. He is of the opinion that therefore “the world today holds about six billion unique ‘music centers’ – one for every human brain”. In the previous chapter it was seen that responses to trauma are equally individual. Therefore one could deduce that, although certain similar responses exist and could perhaps be predicted to a certain extent, mental aspects of traumatized music performers would be of a doubly individual nature: unique because of their unique ways of processing music as well as their unique ways of processing trauma.

4.2 The effects of trauma on musicians

The previous section described some psychological aspects of music performance and pointed out ways in which trauma can have an influence on these. Of practical concern is describing examples in this and the next sections of how this actually occurred for some individuals and

how they overcame their experiences and their circumstances. A literature study brought to light various concrete examples of how musicians were affected by trauma. Firstly, the likelihood of attributing negative effects on performance caused by ASD or PTSD respectively is compared. Examples discussed thereafter include effects such as numbing of the emotions, impact of stigma associated with experiencing trauma-related symptoms, re-enactment through music, ‘moments of unconsciousness’ (Levine 1997:190), noticeable effects on bodily motions, constriction in the area of the ‘peripheral perceptual boundaries’ (Scaer 2001:11) in which the threat was first perceived, altered sense of perception of time, increased arousal and positive aspects of dissociative states.

4.2.1 Attributing negative symptoms to trauma

Due to the relative recency of a traumatic event in the memory of a specific individual, the likelihood of performers and teachers attributing symptoms of ASD to difficulties experienced in music-making around the same time as the occurrence of a traumatic event is much greater than in cases of PTSD. When students are upset, it can directly interfere with performance and they themselves will often attribute this to the adverse event. However, long-term effects of PTSD may become more difficult to identify. A reason for this could be that a gradual decline in performance standard and practice discipline is harder to notice and musicians may have become accustomed to living with residual symptoms such as chronic hypervigilance, emotional numbing or memory lapses. Awareness that a problem exists is a prerequisite for seeking professional assistance. Since such a high percentage of people with ASD subsequently develop PTSD, it is emphasized here that early intervention may be advisable.

4.2.2 Symptoms involving the emotions

If one contemplates the symptoms discussed in the previous chapter, most have to do with the emotions, whether by blocking out of emotions or intensifying emotions inappropriate to the current situation but appropriate to the abnormal situation in which the trauma occurred. From musicians’ point of view, numbing of the emotions is a very serious obstacle to playing their instruments and expressing subtle nuances. Numbing of the emotions has the possibility of negatively influencing music teachers, since a big part of the job of a music teacher is to act in the capacity of very attentive listener to music. In this regard, such a teacher’s ability to respond to and guide the student’s interpretation of music may suffer.

An example of how numbing of emotions may influence listeners to music is the dismissal and disregard of pianist Wladyslaw Szpilman's music by Jews in the ghetto cafe where he performed. He (Szpilman 1999:13) even stated that he lost two illusions whilst working in Café Nowoczesna, one being his belief in the musicality of the Jews. Stein (2007:451) argues that perhaps Szpilman's music was too full of feeling and too much of a reminder of what had been irretrievably lost.

Stigma attached to experiencing trauma-related symptoms complicated the recovery process for Szpilman. The movie *The Pianist*, directed by Roman Polanski, is based on the novel by Szpilman about his experiences and miraculous survival as a Jew living in Poland during World War II. Szpilman's son Andrzej writes in the foreword to his father's memoir, first titled *Death of a City* and written in 1945, that he suspects that his father did not intend the book for the public at large but that he wrote it as a form of self-therapy. "It enabled him to work through his shattering wartime experiences and free his mind and emotions to continue with his life" (Szpilman 1999:8). Andrzej Szpilman also states that his father never spoke about his wartime experiences until late in life. Szpilman wrote his autobiography in an era when 'shell-shock' still carried a stigma. The debate whether 'shell-shock' was a consequence of the effect of cowardice or the physical environment was ongoing (Mc Farlane & Van der Kolk 1996:563). Therefore it could be expected that survivors of the war would be reluctant to openly discuss any severe emotional reactions to the war. Perhaps it could be argued that in writing his experiences down, Wladyslaw successfully debriefed himself. The extent of his success in debriefing himself could be debated, however, as Welbel (2009) relates that he always asked for as little light as possible when performing – even when performing chamber music – since he associated light with increased danger of being discovered during wartime. It is interesting that Andrzej observed that his father did not speak of his war-time experiences to his family or publicly until he reached a relatively advanced age, as Welbel notes that for survivors of WWII, spouses, friends and teachers fulfilled the role of therapists since these people's road to recovery entailed telling and retelling their experiences.

4.2.3 Re-enactment, area of perceived threat and internal perception of time

Re-enactment can affect performers of music. Miller (1997:12) describes a case where she noticed in the gestures and body stances of a well-known musician that he was unconsciously repeating his traumatic childhood and trying to discharge his fear by means of music and body language. At times, re-enactment can possibly cause lapses of concentration. In section 4.3.2 it is

described how re-enactment as an attempt at integration influenced the famous composer, Richard Wagner (1813-1883). Levine (1997:190) mentions that automobile accidents can be attributed to a moment of unconsciousness, which could have several causes, including traumatic re-enactment. If this is so, the possibility exists that in some instances slips in practised music technique could be attributed to ‘moments of unconsciousness’, related to traumatic re-enactment or interfering memories.

Another point to consider is the area in which the threat was first perceived. Scaer (2001:11) explains how other stimuli observed in the area in which an individual first perceived threat in the past can be interpreted as threatening. When musicians perform on stage, whether in groups or solo performance, the aim is not to be constricted but to have accurate sensory perception and eliminating influences which could potentially inhibit communication. Therefore, in performing musicians, these areas in their ‘peripheral perceptual boundaries’ (Scaer 2001:11) should be identified and ways found in which to resolve any ‘conditioned arousal reflexes’. In essence, this would mean re-grounding the musician.

Regarding the control of performance, Epstein (1995:139) writes that “the performance of music is so deeply bound to periodic order” while Skar (2002:632) points out that music experience takes place in time and that music constitutes movement. In addition, considering the implications of Scaer’s (2005:71) description of trauma as a ‘disorder of the perception of time’, it can be seen that influence on performance could be far-reaching since musicians are required to (re)produce structured sound and silence in time. If their internal perception of time is altered, even in its common manifestation of not being fully in the present (or fully ‘grounded’), it will influence their music-making regarding both rhythmic matters as well as communication of musical ideas.

4.2.4 Symptoms involving memory and concentration

Increased arousal can cause muscle tension and draining of energy for a musician required to practise many hours per day, and the re-experiencing of the event or so-called flashbacks can cause interference in functioning. During performance on the instrument increased arousal is a normal state and if channelled correctly should facilitate optimal performance ability in the normal individual. For individuals suffering from PTSD this performance nervousness is closer to the state when the traumatic event was encoded in the brain than during regular practice sessions. Therefore the risk for flashbacks in individuals suffering from PTSD arguably increases

when they are on the stage. This is a physiological brain response and has nothing to do with failure to obtain optimal focus. Cutting (1997:6) describes this type of interfering memories as a cause of memory lapses. Chapter 2.8.4 was devoted to an in-depth discussion thereof.

All the aforementioned can contribute to concentration problems which impact on technique, memory and fluency of performance. Important to note is that psychological absorption defined as “total attention that involves a full commitment of available perceptual, motoric, imaginative and ideational resources to a unified representation of the attentional object” (Decker 2004:2) is a normal dissociative state. Decker (2004:4) even argues that dissociative ability could be a personality trait that assists people in surviving traumas, while on the other hand helping untraumatized people to excel. Musicians themselves refer to music’s capability to induce quasi-hypnotic states. Fleisher remarked (2004:2): “The two Bach pieces, to me, are like mantra music. They serve to get us into the ‘zone’.” Gorrie (2009a:22-6) refers to this heightened state of awareness when performing as ‘playing in the zone’ and explains that it is attained when the ideal level of performance arousal is attained. This state is important for performing musicians, but it can be questioned how the similarity of these states, namely that of heightened attention and the pathological dissociative state, could interfere with each other and increase the possibility of flashbacks for the traumatized musician.

4.3 The influence of past trauma on famous musicians

A discussion of the numerous traumas suffered by famous musicians of the past is beyond the scope of this thesis. For readers with a background in music, many examples would likely come to mind. However, for the benefit of readers without a background in music some examples were chosen with the purpose of illustrating particular aspects of how trauma influenced famous musicians. For more complete information, biographical books and encyclopedias on music history that detail the life events of famous musicians can be consulted for more specific information (see *The New Grove Dictionary of Music and Musicians*, edited by Sadie and Tyrrell, 2001).

4.3.1 Physical and occupational disabilities, extra-ordinary lives and extra-ordinary tenacity

Some famous musicians had illnesses, lived through difficult circumstances and manifested emotional problems that could in various cases be classified as belonging to the spectrum of modern mental health diagnoses (see for example Martin 2000, Hershman and Lieb 1998 and Hildesheimer 1982), others lost limbs in wars, developed neurological disorders such as focal dystonia or had strokes affecting one side of the body and turned to playing the piano one-handedly (see for example Kahn 2006, Patterson 1999, Edel 1994 and Barchilon 1986).

The fact that so many famous composers and musicians endured tumultuous or extra-ordinary circumstances may be one reason for people's fascination with the stories of their lives. It is important that their admirers realise that some of the notorious mental symptoms observed in famous musicians could possibly have been a consequence of the after-effects of traumatic circumstances. However, respected biographers writing about the lives of the great musicians are clear about not only the capacity of the truly great artists to transcend their circumstances, but also about our inability to grasp their particular fate (Hildesheimer 1982:328). Hildesheimer criticises the tendency of programme notes to ask the concert public “to rate the degree of the creator’s nobility in defying fate with his works”. He writes that we do not know how Mozart experienced his fate, but that he knew how to control his fate “and compensate for it like no one else”. The researcher agrees with Hildesheimer that we cannot truly understand what influence trauma could allegedly have had on great artists of the past. This obstacle is circumvented in this study through gleaning the opinions of living musicians about their personal experience in this regard.

4.3.2 Mood disturbances, familial trauma and re-enactment

It is within human nature to speculate about the exact extent of traumatic influence on the work, relationships and behaviour of famous musicians. In the case of Ludwig von Beethoven (1770-1827), Hershman and Lieb (1998:63-92) attribute his notorious behaviour to bipolar disorder. However, it could be argued that the consequences of his traumatic upbringing should not be underestimated. Writers such as Bremner (2002:221-248) explain how trauma damages the brain, potentially leading to psychological disorders. Hershman and Lieb (1998:62) discuss the fact that Beethoven’s alcoholic father abused him, but do not acknowledge the possibility that this could have played a role in shaping his brain and affected his behaviour later in life. In fact, they choose to emphasize the possibility that Beethoven’s ‘mental abnormalities’ may have been

inherited without discussing the role of circumstances. Mood disturbances and trauma are in many cases not mutually exclusive and one can even lead to the other.

Familial trauma also affected Sergei Rakhmaninov (1873-1943). Gordon (1996:432) identifies the emotional upheaval caused by the separation of Rakhmaninov's parents as resulting in him failing his general examination in 1885. Some years later, severe criticism of his first symphony was sufficiently traumatic to lead to a depression lasting three years. Gordon (1996:433) recounts that hypnotherapy by Dr Nikolay Dahl in 1899 assisted Rakhmaninov to regain his former level of creativity, after which the first work he wrote was the famous second piano concerto, Op 18.

Re-enactment as an attempt at integration can be illustrated by considering the links between themes that the composer Richard Wagner used in his operas and Wagner's own troubled childhood. Berger (1998:15) writes that Wagner's uncertainties about whether Friedrich Wagner or Ludwig Geyer was his biological father are reflected in his operas since only one of Wagner's operatic heroes is not fatherless in some way. In a discussion of familial relationships in Wagner's *Ring des Nibelungen*, Smithey (2006:4) interestingly refers to poor decisions which lead to pathologies and are carried forward through generations, using as an example the abused son who becomes an abusive father. Lee (1999:20) refers to the attempts at integration of the conflicting forces in the human psyche in Wagner's mature works. He discusses Wagner's own faults and wounds and contrasts this with his art that he 'wrote for the rest of us'. Considering the troubled psychological make-up of Wagner, as described by his contemporaries and biographers, one could argue that he did not succeed in integrating and transcending events from his troubled childhood. However, he succeeded remarkably through his art in communicating his troubled legacy to his own and future generations.

4.3.3 Positive outcomes and the prevention of traumas

The potential positive effects of trauma should also not be underestimated. Even though some musicians discussed in this section did not acquire fame in their own lifetime, how they reacted to circumstances is testimony of determined, strong-willed people utterly dedicated to their art. In many cases, it seems that by having experiences beyond the ordinary, these people matured and that this played an important role in their composing music that goes beyond what others before them did, or interpreting music at a level demonstrating much deeper insight than their colleagues. One can ask the question whether treatment is therefore at all necessary? It is the

contention of this researcher that, having access to contemporary knowledge of the functioning of the human brain, it is evident that treatment carefully chosen to suit individual needs will be beneficial. In the past much less was understood about the working of the brain and therefore musicians active as recently as twenty years ago did not yet have access to the possibilities of treatment that exist today. It can be argued that doing all in their power to overcome adversity by resorting to medical intervention is a testimony to the commitment to their art and not a sign of weakness. Scaer's argument that "no person who has apparently overcome past trauma through sheer force of will is ever free from the vestiges of that past and the procedural memories associated with it" (2005:253) is supportive of this viewpoint.

While trauma can have positive effects, the prevention of traumas such as war, domestic violence, genocide and racial discrimination would obviously be more desirable. It may be asked how this could be achieved. On the factual level, Bremner (2002:162-73) states that domination over another is a compelling force and that cycles of violence have been perpetuated by humans for thousands of years. He comes to the conclusion that trauma-related disorders can be prevented only by eliminating violence in our society. One means of preventing trauma is employing music and art to foster memories of past traumas and to warn future generations against repeating history. The most obvious mediums are those of films, poetry and painting, but musical works such as operas, songs, and programmatic works inspired by specific events can also serve this purpose. Perry writes (1999:18): "Creative artists have always played the role of 'emotional' memory for a culture. In ways that standard recording of simple facts and figures cannot convey, a painting, poem, novel, or film can capture the emotional 'memory' of an experience."

In a positive vein, there are numerous examples of how musicians have been affected by trauma and still become truly great artists or managed to further their careers in spite of setbacks. A few examples are given below:

Itzhak Perlman contracted polio at the age of four, the effects of which necessitate his performing seated instead of standing as is conventional for violin recitals. Potter (2009) declares that Perlman has been recognized as the finest violinist of his generation and that playing whilst seated does not hamper his technique or tone on the instrument. Potter adds that Perlman generally makes light of his disability but has on occasion been a spokesman for the disabled.

The celebrated cellist Jacqueline du Pré suffered from multiple sclerosis, but continued performing until late in her illness (du Pré and du Pré 1998). Another great cellist, Misha Maisky, was imprisoned in 1970 for 18 months in a labour camp near Gor'kiy, interrupting his career in his early twenties, but was freed and left the USSR in 1972. He had been nicknamed the 'Rostropovich of the future' already in 1965 after which his successful international concert career spans up to the present (Maisky 2008).

Shostakovitch is an example of a musician on whom political circumstances had a great influence, namely through denunciation and censoring of his music (see Fanning 2009a and b). Great names who survived WW II include Gyorgy Solti (1912-1997) and Arthur Rubinstein (1887-1982), the latter who was the only member of his family to do so (Maniura 1997 and Rosen 2004). Welbel (2009) draws attention to the significance of Rubinstein's traumas, describing the first as his mother leaving him in Berlin at the age of 13 and the second as the Holocaust. She states that Berlin was the only place where he experienced stage anxiety.

4.4 The use of music and art in the recovery process after trauma

Numerous writers and highly respected professionals refer to the healing role that creative expression by means of music or art can play in the aftermath of trauma (see for example McClary 2007, Scaer 2005:267-8, Rose 1993 and Jung 1973).

4.4.1 The healing role of art as representation and expression of human experience

Before an attempt can be made to understand music or art as representative or expressive of human experience, it should be asked what music is for those involved with it. Welbel explains that from a psycho-analytic or developmental point of view music is an object relationship. Stein (2007:444) was also referred to earlier in this study as describing music and auditor in terms of an 'object relation' (see section 2.5.2). From the above can be deduced that the same psychic operatives are at work between performer and the instrument. Welbel explains that a relationship always exists between the artist and surroundings and states that while psycho-analysis is sometimes dismissed it is still cultivated by the way relationships are described. She even describes music as a substitute for the loved object that leaves and returns and notes that this view provides the possibility for mastering anxiety in some cases. In her view, music is the best way to re-enact trauma and performance of music is therapy in itself – translating into performers getting therapy every day.

The ability of art to contain, express and communicate emotions lies at the basis of its healing potential. While pointing out that degrees of tension and release underlie the experience of emotion, Rose (1993:509-510) describes art's biological and developmental roles as follows:

Whatever the mixture of regressive and progressive elements, art performs a valuable biological, that is, a developmental function: at its least it provides a normative mode or opportunity for stimulating and assimilating potentially dangerous degrees of affect — in short, extending the limits of the bearable. Instead of a traumatic reexperiencing of affective storms, or a repression of affective signals with regressive resomatization and fragmentation, a greater degree of integration and differentiation of affects can take place within the safe holding presence of the aesthetic structure.

McClary (2007), Marshman (2003), Skar (2002) and Tilly (1977), authors of a number of articles discussing music's role in the treatment of trauma, follow the psychotherapeutic philosophy of Carl Jung. Central to Jung's psychology is the concept of individuation. Furthermore, he believed that true works of art have their origin in the collective unconscious and could possibly bring balance to the conscious values of a society. The artistic impulse to create has similarities to a pathological state, but is not entirely the same (Marshman 2003:24, 26, 28). Despite all the biological explanations, the question can still be asked: On the continuum of past and present experience as well as future hopes, is it brain mechanisms that are responsible for behaviour and creativity, or is it deeper-lying inspirations, including philosophical constructs such as the collective unconscious, or both?

An example of one such individual deeper-lying inspiration could be traumatic influence. In Welbel's (2009) opinion, real trauma is often so deeply hidden in the unconscious mind that it never reaches the surface but lies at the core of artistic endeavour. She believes that in such cases artistic expression helps the artist to survive and that music can be associated with something of which the performer is not necessarily conscious. This could be possible in some cases, but there are many other factors that should also be taken into consideration. This includes the possibility that artistic expression of equal depth could be achieved even when a person is fully conscious of a trauma or has integrated such experience(s). As Welbel acknowledges, a person who has no memory for a major trauma personally experienced can sometimes be reminded thereof when others talk about the details of such an event or events. However, the value of art in dealing with traumatic material cannot be disputed and many great artists indeed suffered significant trauma as was discussed in section 4.2 and 4.3.

4.4.2 Ways in which music and art can facilitate healing

The question arises: in what ways does music facilitate healing? Jung (1973:542) wrote in this regard:

Music expresses, in some way, the movement of the feelings (or emotional values) that cling to the unconscious processes ... music represents the movement, development, and transformation of the motifs of the collective unconscious.

Jung is quoted by music therapist Margaret Tilly (1977:275) as having said that music reaches deep archetypal material and should be an essential part of every psychological intervention.

Patricia Skar (2002:631), working from her perspective as musician, piano teacher and Jungian analyst, observed in her adult students that their attraction to certain types of music could reveal dormant aspects of the unconscious. She says that these were often complementary qualities to the student's dominant conscious characteristics. Marshman (2003:26) is of the opinion that, in the psyche's quest to restore or maintain balance and achieve individuation, changes to a person's musical preference might be determined by current psychological needs.

Montello (2002:124) states that music bypasses cortical functioning, enabling it to directly enter emotional centres of the brain before being processed by the conscious mind. McClary (2007:159) explains that music's ability to bypass defences and provide a direct pathway to emotional and unconscious material is because music can act as symbolic representation for otherwise inexpressible experience. Peretz and Hebert (1995:128) illustrate by means of a case discussion of two brain-damaged patients that processing avenues of music and language are not the same. Therefore it can be argued that music may provide an avenue to the brain that cannot be accessed through traditional therapy. In the opinion of McClary (2007:156), the physicality and kinaesthetic aspects of making music could provide an avenue for releasing blocked feelings and accessing repressed memories. Therefore, in addition to the expressive nature of music, the physical nature of making music facilitates its healing potential. Another important aspect that McClary (2007:259) briefly refers to is the healing nature of musically induced vibrations. Frawley (1997:227) states: "Sound, as the most primary sensory potential, generates the strongest emotions. Each emotion creates a particular kind of sound." According to Tooley (2007), given that all matter vibrates to a precise frequency, it is possible to restore balance by means of using resonant vibration.

Aldridge quotes from his own earlier work as follows (Aldridge 1993:20):

It may be that different diseases differently affect the responses we have to music. If we consider our human biology in terms of musical form rather than mechanical construction and our responses to biological challenge as a repertoire of improvisations, we can view disease as a restriction of our abilities to improvise new solutions to challenges – in musical terms, a restriction of our abilities to play improvised music.

If this is true, what responses traumatized individuals, including traumatized musicians, have to music should be studied in greater detail. If a positive correlation is found, more weight can be given to the argument that trauma affects the music-making of musicians. In addition, Aldridge's statement would imply that creativity, including the ability to interpret written music, would be restricted in musicians suffering from pathology caused by trauma.

Music can be used as a therapeutic medium both to aid in restoring the communication process as well as refining the ability to communicate (Di Franco 1993:83). Sutton (2002:32-25) explains that what makes music therapy such a powerful tool is that through it can emerge a narrative which can be listened to and responded to, structure can be built and emotions expressed without the use of words. She expresses the view that, since trauma disturbs the sense of bodily connectedness and music is a means of experiencing oneself in time, music therapy can be useful because of its qualities of 'musical embodiment'. This can then be used to find a form to adjust to extreme experiences.

While music can assist in healing, art has the same ability because of its expressive nature. In Scaer's (2005:268) view this healing ability presumably lies in changing the meaning of the event or events to the 'survival brain'. He explains that a drawing or sculpture could be effective if it is created as a realistic or symbolical representation of traumatic events. This is particularly important in the case of victims of early childhood trauma, since, according to Scaer, they carry somatic experiences of traumatic events in procedural memory, the long-term memory of skills and procedures, unconsciously perceiving events and situations bearing some degree of resemblance to the trauma as threatening.

If music and sculpture can be healing, it follows that any art form that involves expressing the emotions can take on a healing role. In an interview with Barry Ronge (2008:18), Oscar-winning South-African actress Charlize Theron said:

Some people go to therapy, I go to work ... I feel incredibly blessed that I can deal with my demons when I go to work. It's a scary place, and that's why it is so important for me to be able to trust the director, so I can turn on some lights in places I haven't visited; confront emotions and feelings I haven't faced for a long time so I know I can deal with them.

A component of the job of professional musicians is also acting in the form of portraying musical drama by means of their instruments. Therefore when expressing emotions that are painful to access is approached with a positive mind-set, musicians can enjoy the same benefits from their work as Theron described enjoying from her job as actress. Indeed, if channelled correctly, having experienced emotionally challenging events could potentially aid in making the rendition of an acting role or the performance of a musical work more convincing.

4.4.3 Music therapy as a means of facilitating the communication process

Peters (1987:5-10) defines music therapy as the prescribed and structured use of music and music activities by a qualified professional music therapist to improve the client's physical, psychological or socio-emotional functioning and to rectify maladaptive conditions or behaviour patterns. Hanser (1999:1-2) refers to music's profound impact on human behaviour which she affirms is observable and measurable. As a music therapist, she states that she brings out the creative spirit in everyone she sees. She describes the client's 'music' as the part of each client that is free, that sings and that has rhythm. She explains that music therapy is based on scientific principles, objective observation and systematic assessment of the client's needs.

The effectiveness of music therapy in the treatment of trauma as well as mental disorders such as autism and schizophrenia lies in its capacity to express emotion and feeling in an abstract way. Di Franco (1993:83) contends that music can be used where pathology exists which involves a damaged communication process. If this is the case for individuals who are not professional musicians, the possibility also exists of music being helpful to professional musicians, provided the correct ambience is set and that it can be done in a non-threatening setting separate from the professional demands and high expectations of the career. One way of promoting such a beneficial scenario would be with the assistance of a competent and well-trained therapist who facilitates this process.

Needs that Hanser (1999:52) identifies in potential clients include communication, cognitive and emotional needs – these are all aspects of functioning that can be affected in trauma victims. Music therapy is often used to assist people affected by trauma. In addition, abused and sexually

abused children or adults are listed amongst categories of clients treated by music therapists (Hanser 1999:4). A technique used by some specially qualified music therapists to change their client's perception of a traumatic event, to create more positive associations and to thereby empower themselves is Guided Imagery and Music (GIM). GIM is a technique commonly used by music therapists in the treatment of trauma victims. Carol Lotter (2009), a registered music therapist, explained that GIM assists clients in accessing unconscious material. She continued:

Through this technique the therapist facilitates a process, through the use of carefully selected programmes of classical music which are played for a client. The role of the music is to evoke imagery which may have symbolic relevance in dealing with past stress or trauma. This technique may only be practised by therapists with the relevant training.

4.4.4 Music as coping mechanism, its anxiolytic effects and potential as counter-vortex to the trauma-vortex

In addition to aiding in the recovery process, music can aid survival during an extended traumatic situation, even without having access to an instrument or when not allowed to sing. The ability to vividly remember pieces of music, past performances and performances with other musicians can aid the victim of trauma in dealing with the fear, loss and separation experienced during the traumatic situation. Stein (2007:450) calls this the 'musical-hallucinatory coping mechanism'. Stein proposes that by imagining a performance as soloist with orchestra, music fulfilled Szpilman's psychological need of 'connectedness to others'.

Studies have shown that music has the potential of greatly reducing anxiety and aiding in significantly reducing distress in perioperative patients. Anxiolytic music also reduced the need for medication such as sedatives in such patients (Spintge 1991:65). Since these studies on music's role in reducing anxiety during and after medical procedures have shown such positive results, this could strengthen the argument for using music when debriefing victims of trauma. In addition, in the immediate aftermath of trauma, music can possibly provide an alternative stimulus, engaging the brain's attention to the music and thereby reducing intrusive traumatic memories.

Levine (1997:197-198) explains how the process of recovering from trauma should be a process of transformation and ultimately of renegotiation. He explains that the container of experience is ruptured by the trauma and this causes life-energy rushing out, creating what he calls a 'trauma vortex'. In an attempt at healing, nature provides a counter-vortex. Healing occurs when during

the process of moving between these two vortices, accumulated stuck energies are released at their cores (Levine 1997:199). For musicians, it is important to acknowledge that, if used intelligently, music could possibly be this counter-vortex. Since such a major part of musicians' lives are spent with music, they may even find it necessary that their 'healing vortex' incorporates music. This may also be true for non-musicians, simply because music expresses what language cannot.

4.5 Responsibilities of music teachers regarding witnessing and referring

The detailed discussion in this and the preceding chapters served to lay a foundation for the understanding of how trauma can influence musicians. More specific information as assimilated in the research survey is discussed in the remaining part of this thesis. From the examples and findings discussed it should be clear that there are times when intervention is necessary. It is also clear that at times the music teacher may be the person in the best position to take action. This may take the form of the immediate reaction of 'compassionate witnessing' as Weingarten (2003:163) refers to, but most importantly of appropriate referrals to professionals trained to intervene in such situations. An appreciation and understanding of the uniqueness of each student and of different students' and individuals' reactions to trauma are prerequisites to even begin to act in an appropriate manner.

The importance of showing an interest in and understanding for the different cultures from which students come cannot be overestimated. The world has become a 'global village' and interactions between cultures have greatly increased with the advent of modern transport and communication systems. Especially in large cities, music teachers may also find themselves teaching students from different parts of the world. The success of treatment and perhaps even the tone in which a referral may be accepted depends on respecting what may be culturally acceptable to the individual student or artist. Hlynka and Yeaman (1992:3) highlight that individuals who think in a postmodern way have arrived at the realization that there is no one best manner in which to communicate and to educate. On a practical level for this study this could also be interpreted to imply that there is also no one best way to deal with and guide traumatized students.

Teachers should know that they are not therapists and cannot act in that capacity. However, the importance of their influence on their students should never be underestimated. Welbel (2009)

explains that ultimately any relationship between human beings can have therapeutic components, but even more so the relationship between a teacher and a student. She goes as far as stating that teachers are therapists *nolens volens* – whether they want to be or not. Brice (2004:41) narrates a dialogue between Emile Jacques-Dalcroze (founder of Dalcroze Eurhythmics) and Howard Gardner (developer of the theory of ‘multiple intelligences’) that is supportive of this viewpoint, as Gardner is reported to have said that “[t]he teacher ... must be at once physiologist and psychologist.”

The responsibility that teachers have in the well-being and musical maturation of their students extends to choosing age-appropriate music for them to learn. Welbel (2009) is of the opinion that young children should not play too dramatized music since then they “take the trauma of the composer on their own soul”. Such music could include mature compositions or music written during times when composers were experiencing great individual or collective turmoil. Excessively virtuosic music written for themselves by young composers embarking on solo careers could also fall in this category. Types of compositions given to students to play have certainly become a concern recently as younger and younger musicians competing in contests are playing increasingly demanding music – both technically and interpretatively. Sometimes their life experience does not yet prepare them for this, but it could also be possible that children who had suffered trauma could be inclined to play more mature music. If Skar’s observation (2002:631, referred to in section 4.4.2) that adult students’ attraction to certain types of music could reveal dormant aspects of the unconscious could be applicable to younger students as well, this could perhaps suggest that giving younger students freedom to indicate their musical preferences could circumvent such problems. In addition, Welbel (2009) explains that teachers actually perform music therapy just by being, relating to their students, hearing and experiencing. Identifying emotions appropriate to the music and guiding students to assimilate the development of these into the musical structure, for instance how the musical ideas and intent communicated transforms during the course of a work, such as through the exposition, development and recapitulation sections or a series of variations, is simply music therapy in a different form. Stein’s insight (2007:451) quoted at the beginning of this chapter is of particular relevance here as it can also be interpreted as cautionary advice pointing out the very delicate balance that exists between different possibilities: art can represent experiences that could otherwise be too overwhelming to express but it can also break down necessary protective mechanisms that trauma victims employ to obscure extreme experience.

Knowing signs of possible existing trauma can help educators to act in the best interests of their students and even possibly to avoid mistakes that could have been made had they not possessed that knowledge. Teachers have the responsibility to be familiar with various intervention strategies and be prepared to discuss such possibilities with parents of students or fellow music teachers whilst maintaining confidentiality. They should be prepared to refer students to the appropriate healthcare services in a timely manner. It is also important that any person in a teaching capacity is aware that there are clear linkages between childhood trauma and many psychiatric disorders. A broader knowledge of the effects of trauma and of the different types of trauma is also essential to empower teachers to exercise good judgement and intervene in an appropriate manner. Educators should be familiar with their legal responsibilities regarding the reporting of child abuse. Chapter 6.1.7 discusses teachers' legal responsibilities in more detail.

Knowledge of the immobility response and learned helplessness can aid teachers in having the necessary understanding to help re-instil their traumatized students' sense of control and mastery. Jensen (1998:58-9) draws attention to the potentially debilitating effects of learned helplessness, also a possible consequence of the immobility response. In cases where learned helplessness manifests as a result of trauma experienced, great patience is required by teachers or therapists in rectifying the situation. Many repetitions of being shown the ability to exercise control over their circumstances and encouraged to reengage in choice-making are required to reverse the effects that biological rewiring of the brain had on subjects who perceived themselves as helpless during a traumatic situation (Jensen 1998:58-9).

An understanding of how trauma can influence psychological aspects of music performance, amplify stage fright, lead to concentration problems and even cause memory lapses is important to enable teachers to assist all their students - and not only the more resilient or 'lucky' ones - to reach their full potential.

Adequate knowledge of examples of how trauma influenced other musicians, particularly famous musicians, can help equip teachers to highlight potential for growth. Such examples or identification with others could assist students to remain motivated even in the face of adverse circumstances. In line with the postmodern spirit, students can be guided to 'deconstruct' their responses to trauma and explore alternative responses and points of view. However, a prerequisite for such growth is that teachers begin by questioning their own metanarratives. Hlynka and Yeaman (1992:4) regard it as important to support one's 'way of knowing' by

operating from a mode of criticism yet not evaluation, and thereby finding dysfunctions as well as functions. Only by not judging and not evaluating can dysfunctional as well as functional responses to trauma be identified.

The key words are “reality,” “examination,” “knowledge,” “distrust,” “experience,” “discipline.” ... It is the scientific attitude that enables us to transform our personal experience of the microcosm into a personal experience of the macrocosm. We must begin by becoming scientists.

- Peck 1978:195

CHAPTER 5: RESEARCH METHODOLOGY

5.1 Introduction

The aim of this study is to shed light on the influence of trauma on musicians. These goals were set out in chapter 1, the background to the study. Since a holistic theoretical framework was adopted in conjunction with some aspects of the postmodern framework of thinking, the researcher decided to incorporate viewpoints from different angles. These include a survey of the available literature on the subject, the insights and observations of healthcare professionals, those of teachers, as well as an investigation of a limited number of case studies (see Methodology, section 5.4 below).

The holistic framework of thinking was discussed in chapter 1.2. The idea of looking at an individual, group, situation, system or phenomenon from a ‘holistic perspective’, taking all aspects into account, is perhaps generally intuitively understood. However, the postmodern framework of thinking can be more elusive. Aylesworth (2005) concurs that although postmodernism is indefinable, it can be described in the following manner:

[A] set of critical, strategic and rhetorical practises employing concepts such as difference, repetition, the trace, the simulacrum, and hyperreality to destabilize other concepts such as presence, identity, historical progress, epistemic certainty, and the univocity of meaning.

This is an appropriate point to clarify the basics of postmodernism, which, like many other disciplines, exist on a continuum. Aylesworth (2005) credits Jean-François Lyotard with the introduction of the term ‘postmodernism’ in 1979 with Lyotard’s publication of *The Postmodern Condition* (1984), while Wilson (n.d.) simply describes postmodernism as a response to modernity. In Wilson’s view, while modernity trusted science to reveal the truth and created inventions and technologies with the aim of improving human life, postmodernism questioned whether science alone could really provide all answers sought and whether the inventions of

modernism were genuinely improvements, seeing some of its dehumanizing and mechanizing effects. Hlynka and Yeaman (1992:3) call the defining characteristics of modernity “faith in science, in the positive benefits of technology, and in the belief progress is inevitable and good”. They continue by explaining that part of the reason behind dissatisfaction with the modernist world is that science and technology have been accompanied by unexpected side-effects.

Wilson (n.d.) defines adherents to the philosophy of postmodernism, i.e. postmodernists, as follows:

Postmodernists tend to reject the idealized view of Truth inherited from the ancients and replace it with a dynamic, changing truth bounded by time, space, and perspective. Rather than seeking for the unchanging ideal, postmodernists tend to celebrate the dynamic diversity of life.

Other important principles underlying the philosophy of postmodernism highlighted by Wilson include contextual construction and admitting that knowledge is constructed by people and groups of people; that there are multiple perspectives to reality; the idea that truth has its basis in everyday life and social interactions; and that life can be described as a text and thinking can be seen as the interpretation of the text of life. Hlynka and Yeaman (1992:3) highlight additional characteristics of the postmodern condition, namely plurality, ironic double-coding and critique of metanarratives and call postmodernism “a philosophic approach that questions all dimensions”. They show that such questioning takes the form of ‘deconstructing’ texts (and to this can be added perceptions, beliefs and ideas) to illuminate binary oppositions and show that those are not necessarily true. They state that postmodernism places the emphasis on criticism rather than on evaluation (Hlynka & Yeaman 1992:4).

Perhaps the most important aspects of relevance to this study are the acknowledgement that there is no one fixed truth, admitting that meanings are open to interpretation and the spirit of questioning accepted metanarratives and pre-conceived ideas. The importance of the role that interpretation plays in human life, scientific endeavour as well as art is also highly relevant. An equally important understanding accompanying the above is that people and things are mutually influenced and that it is not realistic to claim objective, unbiased observation with no influence on the subjects that are being observed. In addition, it should be accepted that this is the way things should be as it constitutes the normal reality of existence and there should not be an attempt to discover some unattainable fixed truth.

Ashworth (2003:21-22) explains that the assumptions of most psychological perspectives are modernist. He challenges this 'objective' nature of the modernist view of psychology by explaining that postmodernism questions it and views psychology as not being detached and looking into human society, but as one amongst many different discourses within the culture. He continues by explaining that qualitative psychology should not be concerned with revealing 'progressively true, universal human nature' (Ashworth 2003:22), but should instead increase awareness of implicit assumptions available to members of different social groups at different points in time. The unique nature of responses of participants in this study serves to underline the postmodern assumption articulated by Jacques Derrida (1930-2004), a very influential postmodern thinker, that there is no area in which 'absolute truth' exists (Grenz 1996:141).

For the purposes of this study it should be stated that Lawlor's (2006) description of Derrida as the founder of 'deconstruction' places him on the more extreme end of the continuum of postmodern thought. Lawlor (2006) defines deconstruction as a way of criticizing literary and philosophical texts as well as political institutions. According to him, deconstruction attempts to re-conceive the difference that divides self-reflection and it strives to render justice. He explains that this kind of thinking "never finds itself at the end" and how, in Derrida's description, things can be possible only as impossible, leading to Derrida's conclusion that for something to be possible it needs to exist unconditionally. Derrida's important contribution is embraced, but his more radical views are not adopted by this study.

The study aims to view musicians and how they are influenced by trauma and traumatic circumstances from a broad perspective, shunning preconceived notions and clinical categorization of data. This is consistent with recent arguments by writers such as Machery (2009:247) who warns against the dangers of using the term 'concept' in psychology. He proposes that more appropriate terms for the fulfilment of psychologists' goals are 'prototype', 'exemplar' and 'theory'. In comparison, concepts are generalised ideas derived from particular instances while connotations to the terms preferred by Machery are associated with less fixed ideas: they leave possibilities for expansion and change. Entities identified as prototypes or theories are models representative of norms but are not as static as concepts. This way of thinking is embraced by both holistic and postmodern thinkers.

5.2 Research design

Research design is defined as the clearly demarcated structures within which a study is implemented (Burns & Grove 2001:223). At this point the reader is referred back to Peck's (1978:195) description of the scientific attitude, quoted at the beginning of this chapter on p 104. While the researcher strives to adhere to scientific principles as set out by Peck, sight should also not be lost of the fact that, as Welbel (2009) reminds, psychology is an art form and not strictly only a scientific endeavour. The structure chosen within which this study is conducted aims to combine the scientific and artistic attitudes and the researcher is of the opinion that these were found to be completely reconcilable throughout the course of this study. Hanser's (1999:52) description of music therapy as "combining the best of art and science in the service of helping others" is also appropriate for this study which investigates phenomena in music and psychology in order to find ways to ease pain and suffering caused by traumatic stress.

The 'Three Worlds framework' of Mouton (2001:137) is helpful to demarcate the types of problems being addressed in this study. In this context, trauma affecting musicians is an unavoidable reality belonging to Mouton's first world of everyday life and lay knowledge or "the ordinary social and physical reality that we exist in" (Mouton 2001:138-9). He states that reflection on the nature of things in the first world is of pragmatic interest. According to Mouton (2001:138), the second world of science and methodological issues is entered when phenomena from world one are selected and subjected to rigorous and systematic enquiry in search of epistemic knowledge. This is achieved in the various methods of enquiry described later in this section, one aspect of which entails enquiry into the experiential, first world knowledge of research participants. Enquiry on its own is not enough, as Mouton (2001:139) points out that various 'quality checks' are needed to ascertain truthful and valid research results. Therefore his description of World 3, a mode of reflection of critical interest and meta-science, is of over-seeing and reflecting on scientific investigation and its nature. This includes theoretical frameworks, philosophy of science, research methodology and research ethics (Mouton 2001:138-140).

Studying the influence of trauma on musicians is an interdisciplinary pursuit. In order to arrive at an understanding of the ways in which trauma influences musicians, it was decided that the topic would be investigated from multiple angles. No single perspective would be sufficient to arrive

at reliable conclusions. Bell (2005:115) points out that the criteria for selecting methods are that they should provide the data required to construct a complete piece of research. The predominantly qualitative nature of this research, as described in section 5.3, places it in the class of non-experimental research (Marczyk, De Matteo, & Festinger 2005:123, 147, 156). However, since some aspects of quantitative measuring were also incorporated in conjunction with a comprehensive literature overview, some may argue that the study adopts a mixed methods approach. The permeable boundaries between these two methods of investigation could be demarcated by qualifying the research survey as constituting a qualitative investigation, with the exception of the quantitative measuring instrument the *Trauma Symptom Inventory* (Briere 2005a), used only as control measure, as well as the quantitative listings of frequency of symptoms reported in cases where lists were given in chapter 6. However, where thick descriptions of symptoms were given this constitutes qualitative reporting, while general references to the literature survey could be viewed as quantitative in nature. Johnson, Onwuegbuzie, and Turner (2007:123) explain what mixed methods research entails by stating that a researcher or team of researchers combining elements of qualitative and quantitative research approaches, viewpoints, data collections, analysis and inference techniques for the purpose of reaching a deep understanding of a subject is involved in mixed methods. Their more complete definition of the subject follows (2007:130):

Mixed methods research is an intellectual and practical synthesis based on qualitative and quantitative research; it is the third methodological or research paradigm (along with qualitative and quantitative research). It recognizes the importance of traditional quantitative and qualitative research but also offers a powerful third paradigm choice that often will provide the most informative, complete, balanced, and useful research results.

The researcher is of the opinion that the most important reason necessitating a mixed methods approach is that, while much research on trauma has been done and many personal accounts of musicians' experiences exist, this study is the first to particularly investigate the influence of trauma on musicians from a comprehensive perspective. In this regard, Johnson *et al.* (2007:120) state that mixed methods research offers an approach for both generating important research questions and providing warranted answers to such emerging questions.

The researcher thoroughly familiarized herself with available literature on emotion, memory, trauma, and trauma and music. Important aspects pertaining to this literature are discussed in chapters two, three and four. The research survey entailed questionnaires, sent to healthcare

professionals from different specialization areas within the field, on their experiences with traumatized musicians. The second part of the research survey consisted of questionnaires sent to music teachers to enquire about their observations with students. The last question contained in this questionnaire gave respondent teachers the option of referring to traumas experienced themselves. Four case studies were conducted to glean insights into musicians' own experiences and interpretations of their reactions to trauma as well as effective treatment approaches. Responses, reactions and methods of treatment or intervention are discussed and compared where applicable.

The study is exploratory in nature. According to Marczyk *et al.* (2005:151), naturalistic observation is useful for exploratory purposes. However, the wealth of existing literature on the subject of trauma as well as personal accounts of musicians who have experienced trauma strengthens its empirical roots.

Large parts of this research are of an explanatory nature. Further clarification is appropriate at this point to explicate why this study proposes that musicians and their music-making could possibly be influenced by traumatic experience and *vice versa*. Lathom-Radocy and Radocy (1996:69) define music as “a product of cognition and affect operating under particular psychological and physiological constraints”. From this it is very clear that music experienced by an individual or group involves many factors, including psychological and social factors, which determine the nature of the experience for the individual or group. Conversely, music is sometimes used in the treatment of trauma victims, as explained at length in section 4.4. Its role in treatment is sometimes deliberate and at other times participants described the act of playing music as healing.

5.3 Qualitative psychological research

One aspect that emerged very clearly during the literature survey is that individuals respond to trauma in ways that are unique and influenced by a variety of factors in their own lives, experiences and environments. Therefore it was decided that a qualitative investigation is most suited to providing the reader with a realistic understanding of the matter in question. Ashworth (2003:4) proposes that behind each different approach to qualitative psychology is “a concern with human experience in its richness”. He further states that some qualitative researchers

attempt to describe a person's experience within the realm of what they term the personal 'lifeworld', all facets of which may be specific but share universal features (Ashworth 2003:4, 23).

The research was largely conducted in a qualitative manner. Henwood and Pidgeon's description (1992:98-9,108) of qualitative psychological research was discussed in chapter 1.2. Internal subjective meanings and contexts in which events took place were taken into account, while the research was conducted from a naturalistic perspective. Leedy and Ormrod (2001:147) state that while several different approaches to research could be considered as qualitative in nature, all qualitative approaches have in common that they focus on phenomena occurring in natural settings and that they investigate the chosen phenomena in all their complexity. They further explain that a goal of qualitative investigation might be to reveal the nature of multiple perspectives of truth that emerge as held by different individuals involved, including the researcher. Supporting this is Ashworth's contention that qualitative psychology takes into account that people formulate their own reality and "that a world for each person exists which must be understood from each person's perspective" (Ashworth 2003:11).

Ashworth (2003:24) succinctly sums up the importance of qualitative research. In the context of this study, 'the excluded' to which he refers may be interpreted to have relevance to traumatized musicians who feel isolated and alone in their experience: "For, usually, it is only qualitative research that has a proper awareness of the diverse experiences of individuals – and will, in particular, provide a hearing for the voices of the excluded."

In distinguishing between qualitative and quantitative research, Smith (2003a:1) explains that the former is concerned with describing the constituent properties of an entity, while the latter seeks to determine how much of the entity there is. He also acknowledges that the differences between qualitative and quantitative research are not as categorical as is sometimes portrayed and that some overlap exists (Smith 2003a:2). In addition, Bell (2005:115) writes that although case studies are generally considered to be qualitative, they can combine a wide range of methods which could include quantitative techniques. Seen in this light, the use of a measuring instrument, namely the *Trauma Symptom Inventory* (Briere 2005a), to determine symptoms experienced by case study participants as well as the comparative nature of the discussion of research findings are valuable additions to the primarily qualitative nature of the investigation.

Smith (2003b:232) explains that there is growing dissatisfaction with the evaluation of the validity and reliability of qualitative research within the traditional framework which he states is applied to quantitative research. He further states that many qualitative researchers are of the opinion that appropriate criteria must be applied in evaluating qualitative research. Smith (2003b:232-5) further discusses some relevant aspects pertaining to the trustworthiness and reliability of qualitative research. He acknowledges that he builds his arguments on the work of Yardley (2000) and Elliott, Fischer and Rennie (1999). Principles highlighted include sensitivity to the context in which any given study is situated; the degree to which the study is sensitive to the data itself; commitment, rigour, transparency and coherence; as well as the impact and importance of such research.

5.4 Methodology

The methodology of the research entails a comprehensive investigation of the topic, including a literature survey, questionnaires sent to healthcare professionals and music teachers and case studies. Healthcare professionals practising in various disciplines were included, and the aim was to obtain responses from as wide a variety as possible of healthcare modalities that are utilized by fellow musicians. The latter information was gleaned from colleagues and is consequently limited by the knowledge and field of experience of the researcher.

5.4.1 Background on emotion, memory and trauma

The first phase of this study comprised a survey of relevant literature. The available literature on emotion, the expression of emotion, memory, types of trauma and the interaction of biological and psychological factors in trauma was consulted. Available literature about psychotherapeutic intervention strategies, the potential for the application of ‘alternative’ healthcare modalities and the use of music by professionals working with individuals recovering from trauma was researched. The discussion of the literature highlights how findings and observations of researchers in the field of trauma are applicable to musicians. It was also shown that differences and problems specific to the music profession exist, all of which can be addressed through a variety of intervention strategies. A prerequisite for the success of such intervention is an understanding of the specific demands of the music profession. For further illustration, particular examples of how trauma influenced famous musicians of the past were described.

5.4.2 Questionnaires

The original contribution of this research lies in that both musicians currently active in the profession and healthcare professionals currently in practice were questioned on their insights into ways that trauma affects the music-making of professional musicians and students as well as about possibilities of and responses to intervention. In order to reach as many professionals as possible, it was decided to use questionnaires as a means of data gathering. Questionnaires were sent to healthcare professionals from various disciplines in order to gain insights into their experience and methods used in treating musicians who have been affected by trauma. Their responses, as well as those obtained from the questionnaires sent to music teachers (as mentioned in the introduction to this study), are of an observational nature. In contrast, teachers' self-reports of trauma experienced, as found in the optional section of the questionnaire, are introspective in nature. It remained the respondents' choice in answering questionnaires sent to them to anonymously refer to situations experienced in their respective professional capacities.

Questionnaires were sent to healthcare professionals and music teachers by mail and email and some were given to them in person and distributed at conferences and teaching workshops. The researcher aimed to incorporate answers from at least twenty-five healthcare professionals and music teachers. This was achieved with the questionnaires sent to teachers. However, due to a poor response rate from healthcare professionals, mostly even after sending reminding messages, the researcher had to be satisfied with seventeen responses from this group.

5.4.3 Case studies

McBurney (1994:169) defines a case study as the investigation of a particular existing situation that comes to the attention of the researcher conducting the investigation. According to Yin (1994:147-52), the following criteria are important to arrive at meaningful case study findings:

- Be significant
- Be complete
- Consider alternative perspectives
- Display sufficient evidence
- Be composed in an engaging manner.

Semi-structured interviews were conducted under the supervision of the co-promoter of the study, Woltemade Hartman, Ph.D, a qualified clinical psychologist appointed by the University of Pretoria for this task. Healthcare professionals were approached regarding the selection of possible case study participants. A smaller number of musicians were asked in person by the co-

promoter and the researcher whether they were willing to participate in the study. Judging the semi-structured interviews by Yin's criteria it can be reported that all participants suffered significant trauma and its far-reaching effects on music-making were clearly articulated by respondents; narratives were complete but structured to be particularly relevant to the music careers of participants; situations were described from the unique perspectives of the participants themselves while some also experimented with various treatment methods; further perspectives obtained from the literature on trauma were highlighted in subsequent discussions while some comparisons were drawn between selected relevant aspects emerging from different case studies as well as the literature; and ample evidence was found that trauma indeed affected these individuals and that their narratives were reliable.

The general topics covered in the case study interviews were:

- Musical background
- Significant life traumas
- Effects of trauma on performance and in the lives of the participants
- Treatment
- Influence of trauma on professional life of the participants
- Insights gained through their experience.

Individuals participating as case studies were previously diagnosed by a psychologist as having been exposed to trauma. Details of life history that are relevant to subsequent discussions about the influence of trauma on music-making and professional functioning were included. Some specifics have been changed to protect the identity of the participants. In order for Dr Hartman to confirm the clinical impressions gained from only a few semi-structured interviews, the *Trauma Symptom Inventory Test* (Briere 2005a) was administered to these individuals. This inventory was used in this context only as an additional control measure to estimate the diversity of symptomatology in the professional assessment of these individuals: it does not constitute a formal part of the report of the research results. Its ten clinical scales measure the following:

- Anxious arousal
- Depression
- Anger/irritability
- Intrusive experiences
- Defensive avoidance
- Dissociation
- Sexual concerns
- Dysfunctional sexual behaviour
- Impaired self-reference
- Tension reduction behaviour.

The test has built-in validity scales that screen for the following:

- Atypical responses
- Response levels
- Inconsistent responses.

The test was used to determine symptoms experienced by the participants at only one point in time since no specific intervention was administered, in which case follow-up testing would have had to be done. This quantitative data-measuring instrument was used as an additional control measure to confirm the findings emerging from the interviews and self-reports of the participating individuals.

The bulk of the data collection constituted these individuals' self-reports in the semi-structured interviews. This included their views on how they may have perceived their symptomatology to have changed during the course of previous treatment or over the course of time, as well as their own interpretations of how the traumatic experience(s) affected their music-making. Murray (2003:111) explains that narrative accounts of this nature are concerned with the "human means of making sense of an ever-changing world." As will be seen in subsequent discussions in this study, making sense of traumatic experience(s) is an important aspect of integrating and resolving such experience(s). Murray further clarifies the need for narrative as enabling individuals to bring a sense of order to a seemingly disordered world, to define oneself as having a sense of temporal continuity and to formulate an understanding of how one is distinct from others (2003:111).

Narrative self-reports dealt with the participants' own perceptions, perspectives and understandings of situations. According to Leedy and Ormrod (2001:153), this is phenomenological study. They explain that phenomenology deals with people's perceptions of the meanings of events and is not concerned with the events themselves as they take place external to the people involved. In addition, traumatic encounters often entail interpersonal interaction or extraordinary natural occurrences. It is the individual's perception and understanding of such events that determine the extent to which those are experienced as traumatic. This is perhaps best described by Ashworth's preferred approach, namely existential phenomenology. He explains this to be 'lifeworlds' possessing common features including temporality, spatiality, subjective embodiment, intersubjectivity, selfhood, personal project and discursiveness (Ashworth 2003:23). The researcher agrees with Ashworth's opinion that the

perceptual orientation of existential phenomenology is “very alive to the constructed and social nature of experience”.

5.4.4 Discussion

Similarities and differences in opinions emerging from the research survey are discussed. Emphasis is placed on trauma-related symptoms and the experiences or opinions of the individual musicians are considered and of major importance in leading to a deeper understanding. Descriptions are qualitative in nature. Consideration is given to the findings of each case study investigated, and they are discussed against the background of information gained through the above-mentioned research methods. The purpose of the data collection was to obtain descriptive data. Reliance is on self-reports by individuals volunteering as case studies and the voluntary contribution of observations and experience of music teachers. In no way does this study aim to psychologically diagnose or evaluate the responses to the questions, but rather to gain a better understanding of these individual musicians’ unique responses to trauma. This is achieved by considering the respondents’ accounts of their experiences, their own interpretations and their insights. Special consideration was given to the opinions of the healthcare professionals and teachers participating in the research survey. Against the background of this knowledge, findings that emerged from the research survey and case studies are integrated and discussed. Ashworth (2003:19) makes it clear that in postmodern thinking, conclusions drawn from research activity should be viewed as interpretations. Particular emphasis is placed in the discussion of research results on the detection of problems and possibilities for growth. Answers to the research questions are discussed, and the hypotheses tested against each individual’s responses.

In the analysis of the data of the abovementioned material, qualitative data was sampled, grouped together with relevant groups of respondents i.e. music therapists or psychologists, frequency of responses determined and noted and thick descriptions recorded. Thereafter, the relevant literature, the supervisor and the co-supervisor were consulted for views and insights on the interpretation of data in order to arrive at relevant findings. The control measure applied for the descriptive and narrative case study interviews was a comparison to the symptoms measured by the *TSI*. In the final analysis in chapter 7, some comparison was also drawn between responses from the various groups of respondents; case studies and common themes which emerged were discussed.

5.5 Limitations

The exploratory nature of the research relies on individuals' own interpretations of their experiences, as well as their observations of the experiences of others, namely those of students and clients or patients. These are subjective evaluations that cannot be reliably quantified. It is not the aim of the research to provide any predictions about how musicians might respond when faced with traumatic circumstances, but rather to increase awareness, including awareness of appropriate professional ways of handling any such situations that may arise. Hlynka and Yeaman (1992:3) emphasize the fact that postmodern thinking goes beyond control and prediction. This study suggests that teachers may be well advised to relinquish controlling attitudes and refrain from predicting outcomes of traumatic encounters. However, in this regard the study can only provide knowledge to enlarge their frame of reference: it cannot provide recipes how to apply this.

It was acknowledged in section 5.1, the introduction to this chapter, that a participant observer, or in this case the researcher, is not divorced from the subject or situation being observed or researched, but is actually involved in the process, being a part of the 'discourse'. By the nature of the topic, the researcher could perhaps be biased towards over-attributing random symptoms to trauma. However, it should also be kept in mind that it has been clearly set out in other parts of this study how strongly researchers such as Levine (2005:7) write about trauma being "the most avoided, ignored, denied, misunderstood, and untreated cause of human suffering", in other words, about how far-reaching and multi-levelled its effects are. Recent quantum theories also very strongly point to the idea of the mutually influential nature of people and things and the role that participant observation plays in events and their manifestation (e.g. Schwartz & Begley, 2002:284-5, Weizmann Institute of Science, 1998). No attempt is made to deny the human element of observation, but it is regarded as a natural and inevitable aspect of such research. In addition, music itself is a dynamic and changing form of communication, as perception is a dynamic form of observation. Therefore research and findings of this nature cannot be regarded as fixed or universally applicable. They can, however, increase understanding and open avenues for continued investigation and research.

The relatively low response rate from healthcare professionals is unfortunate in that the scope of opinions that emerged was limited as a result. In addition it could have implications for a degree

of bias to be represented in the research results in connection with which healthcare professionals are more likely to respond to a survey about trauma, as mentioned in section 1.11.

The open-ended nature of the questions contained in the questionnaires is in line with the objectives of the qualitative nature of the study. Contact details were provided in the consent forms in the event that respondents felt that any questions needed clarification. Unfortunately, the lack of dialogue or clarification of questions in some cases led to premature conclusions being drawn by some healthcare professionals regarding the purpose of the data-gathering, as evident in their responses. The researcher would like to clearly state that an aim of this study is precisely to educate teachers about when to refer students to healthcare services, which, as could be gleaned from teachers' responses, does not always occur in a timely manner, if at all. In no way does the study intend to "equip teachers with semi-therapeutic recipes", as was inferred by a concerned respondent from the healthcare professions. However, the majority of respondents seemed to understand the questionnaire in the light that it was intended.

A limitation of non-experimental research designs as stipulated by Marczyk *et al.* (2005:147) is that, since no control is exerted over the variables and environments being studied, extraneous variables as the cause of observed phenomena and effects cannot be ruled out. Where multiple possible causative factors exist regarding effects or symptoms being attributed to traumatic experience, this is mentioned in the discussions.

A limitation of naturalistic observation identified by Marczyk *et al.* (2005:151) is that topics are limited to overt behaviour. The potential problem of not being able to study attitudes or thoughts is circumvented by the nature of the self-reports of teachers and case studies. The research survey also compensated for this limitation, since the abovementioned authors point out that surveys can enable researchers to study a wider variety of phenomena than can be studied in a typical naturalistic investigation. This is achieved by asking a number of people questions about behaviours and opinions (Marczyk *et al.* 2005:153-4).

Every effort was made to investigate case studies representing musicians who have experienced different types of traumatic experiences. While this was achieved, the researcher is disappointed that two male case study participants who indicated in writing that they would participate in the study eventually dropped out. Hlynka and Yeaman (1992:4) caution that groups who are not represented should be identified whilst working from a postmodern perspective. In this spirit, the

researcher would like to draw attention to the fact that she noticed throughout the period conducting the research for this study that females tended to be more likely to respond to both the questionnaires and case study investigations. The majority of musicians and healthcare professionals participating in this study were operating within the South African context at the time when the study was conducted, the only exceptions being individuals from Germany, the Netherlands and Poland.

5.6 Ethical considerations

Leedy and Ormrod (2001:107) alert readers to the fact that where human subjects are the focus of an investigation, ethical implications of what research is intending to investigate should be closely looked at. They stipulate that most ethical issues fall into the following four categories (Leedy & Ormrod 2001:107):

- Protection from harm, including both physical and psychological harm
- Informed consent
- Right to privacy
- Honesty with professional colleagues.

All the above were adhered to in this study. Case study interviews were supervised by the co-promoter of the study; all respondents and participants were informed about the exact nature of the study, participation was entirely voluntary and consent forms were signed; the identity of participants will not be disclosed, with the exception of cases mentioned in the paragraph below, and all reports of research data were done in an honest and complete manner with no withholding of information whether supporting or challenging the research questions and hypotheses. The researcher can confidently attest that this study adheres to what Mouton (2001:239) describes as “the ultimate goal of all science” namely the ‘search for truth’ – or perhaps, rather, the search for multiple truths.

The research proposal, questionnaires and interview schedule were approved by the Ethics Committee of the University of Pretoria. The ethical requirements of the University have been followed in the handling of all research data. Respondents to questionnaires as well as case study participants signed consent forms in which they were fully informed of the nature of the research. Data received was handled with the utmost confidentiality. Sapsford and Abbott (1996:318-19) stipulate that by promising confidentiality, the individuals involved can expect that they will not be identified or presented in identifiable form in the handling of and

dissemination of research findings. This was adhered to with the exception of cases where respondents specifically gave permission for their names to be used in the discussions and/or the quotations of definitions and opinions.

Due to ethical considerations, only individuals over the age of 21 who gave informed consent were selected as case studies. At the age of 21 individuals are considered to be of age, and parental consent is not required. The case studies were conducted under the supervision of Dr Hartman.

Mouton (2001:242) draws attention to the obligation of researchers to disseminate their research results in a free and open manner. He states that scientists have a responsibility to report their findings in order for it to be evaluated by one's peers. This will be adhered to with the completion of this study and subsequent submission of articles to journals and application for presenting the research at scientific conferences.

The oppressed and the oppressor alike are robbed of their humanity ... For to be free is not merely to cast off one's chains, but to live in a way that respects and enhances the freedom of others.

- Mandela 1994:751

CHAPTER 6: OUTCOMES OF THE RESEARCH SURVEY

6.1 Opinions of participant healthcare professionals

For an explanation of the methodology of the research survey, please refer to chapter 5.4.2. A template of the research questionnaire as circulated to participant healthcare professionals is contained in appendix A. The structure of the discussion follows the general outline of the order of questions contained in the questionnaire, while these are restated in bold typing with single spacing at the beginning of the relevant reports of the results.

6.1.1 Population of respondents

In order to ascertain which fields were represented by the respondents and what the extent of their experience working with musicians was at the time that the questionnaires were completed, the first two questions were formulated in the following manner:

1) In which capacity do you function in the healthcare professions? (e.g. Medical doctor, psychologist, psychiatrist, counsellor, physical therapist, homeopath, etcetera)

2) Have you worked with musicians in your practice? Please provide some detail (number of, approximate age group, levels of accomplishment).

Seventeen healthcare professionals responded to the research questionnaire: four psychiatrists, five clinical psychologists, three music therapists, two counsellors⁷, a speech-language pathologist whose special field of interest is voice problems of singers, a naturopath and a doctor in acupuncture and Chinese medicine. It was striking that two of these professionals indicated that they have worked with only one musician as practicing healthcare professionals, one specifying that this was a singer and choir conductor. In contrast, one psychiatrist indicated that he worked with over a hundred adult musicians at all levels of accomplishment, including

⁷ In the data collection, the category of health-care professional was extended to include two professionals without medical training who have particularly extensive experience in trauma counselling. Both these professionals hold doctoral degrees.

performers of international repute. The pool of data includes reported experience involving various instrumentalists and singers at all ages and levels of accomplishment.

Approximately ninety percent of healthcare professionals who were contacted failed to respond to the questionnaire. Of those, eight verbally indicated that they have not worked with any musicians in their practice. A homeopath indicated that legally she is not allowed to treat or counsel trauma victims, but would only provide supportive medical treatment in collaboration with other healthcare professionals such as psychologists.

Most professionals were open to inter-disciplinary treatment approaches and observations between practitioners in the healthcare professions. The music and speech therapist also suggested collaboration with the teacher, depending on the circumstances.

6.1.2 Signs and symptoms of trauma affecting musicians

After the respondents were provided with two relevant definitions clarifying the understanding of trauma in the context of this study, the third question was formulated as follows:

3) In your opinion, what are signs that teachers and performers should be aware of that could suggest the possibility of trauma adversely affecting the individual at the point in time the observation is made?

Below is a list of the signs that were identified by healthcare professionals as warning signals to teachers and performers of the possibility that trauma could be having an adverse effect on their careers. General signs and symptoms of trauma were discussed in chapter 4. Most prevalent signs identified by respondents were related to concentration problems, inability to focus, anxiety, uncharacteristic behaviour, mood swings or depression. Inability to adjust, withdrawal, insomnia, dissociation or regression, lack of creativity, loss of self-esteem and a drop in the standard of work performance were also frequently mentioned.

Music-related signs identified by respondents include:

- A change in commitment to practising (more or less); difficulty enduring long hours of practice
- Change(s) in music preference
- Decreased enjoyment of the music
- Seeming detachment from playing
- Repeated mistakes
- Low emotional content of the music
- Panic attacks, including before or during performances

Signs of anxiety, evident in changed breathing patterns or movements whilst playing music
Sudden voice loss for which no physical or functional cause could be found ('psychogenic vocal aphonia')
Periodic voice loss during or before performance
Physical and/or vocal fatigue, more severe than usually experienced.

General signs each mentioned by one respondent only:

Personality change
Heart palpitations
Blunting of the emotions or inability to express feelings
Re-experiencing the event in dreams or through intrusive memories, affecting attention span
Dreaming and night sweating
Pale complexion
Chronic headaches
Nausea
Anorexia
Indecisiveness
Resistance in various ways
Forgetfulness
Lack of drive and/or motivation
Fatigue
Restlessness
High levels of paranoia, terror, helplessness
Loss of interest in activities previously enjoyed
Feelings of 'being stuck'
Short-temperedness and aggression/outbursts
Viewing the world and everyday situations as unpredictable and uncontrollable
Loss of trust
Tearfulness
Downheartedness
Tendency to eat, drink or smoke more or loss of appetite
Increased use of tranquillisers or stimulants, both legal and illegal (PTSD patients are particularly vulnerable to substance abuse).

One psychologist wrote that the main symptom of the client was connected with the music profession. The dissociative symptom made it impossible for the client to mount the stage or perform. One psychiatrist warned that signs are typically caused by multiple factors and could often be attributable to other factors also. He cautioned that awareness of difficulties does not need to include causal presumptions, and should only go as far as that which would facilitate the identification of the suffering.

6.1.3 Treatment

The fourth question enquired about effective ways of treating traumatized musicians, divided into three categories regarding recency of trauma and whether PTSD was involved. The first part of the question was formulated as follows:

**4) In your opinion, what are the most effective ways of treating traumatized individuals:
a) In recent trauma?**

The therapies that featured most prevalently in the feedback from the population of respondents were immediate trauma debriefing and follow-up screening for symptoms of PTSD, counselling, EMDR and hypnotherapy.

Types of treatment each recommended by only one respondent are listed below:

- Individuals exposed to trauma should not undergo debriefing
- Ensure that plenty of psychosocial support is available and reassess the person after two weeks
- Stabilise the patient/client
- Voluntary uncoerced ventilation
- Trauma-specific psychotherapy and antidepressants should be indicated if needed
- Guided Imagery to replace flashbacks
- Utilise Ellert Nijenhuis's action-oriented three-phase approach
- Cognitive therapy
- Re-enforcement of ego strength
- Cognitive restructuring
- Rational behaviour therapy
- Intra-systemic integration
- Psycho-analysis should be indicated when unconscious family dynamics had been triggered by the trauma
- Short-term anxiolytic therapy
- Sedatives and tranquilizers should be avoided
- Calm the patient with natural supplements such as 5-HTP (5-Hydroxytryptophan) and GABA (gamma-Aminobutyric acid)
- Utilise any support structures and resources available to the person to enhance coping (this could include using music and sport as an 'outlet')
- Show compassion, listen to their stories, win their confidence and refer to professional trauma therapist or doctor
- Re-establish trust and allow space to "be" in the sadness".
- The therapist may have to "work through resistance".

A psychologist explained at length how effects could be different depending on the circumstances. This study supports this standpoint, as was set out in the previous chapter. The psychologist mentioned that a broad therapeutic repertoire is required from the healthcare professional to assess what type of therapy will be most effective for what type of patient with

what type of problem under what circumstances. Examples mentioned by the respondent were helping a professional musician who was traumatized a day before an important performance to cope; intervention to help a person traumatized a month ago who struggles to be creative with composition for an album that is due and assisting a Chartered Accountant who is now following a career in music because exposure to trauma had ‘unblocked’ his or her musical expression. Whether these were hypothetical or real examples could not be determined from the response itself.

Dr Yu⁸, the acupuncturist and Chinese medicine expert, stated that in any kind of trauma acupuncture could be used to calm the mind ‘(Shen = spirit of the Heart)’ and Chinese medicine could be taken to calm Shen ‘(Suan Zao Ren Tang)’.

One music therapist stipulated that music therapy would always be only a component of a treatment plan for a trauma victim. It could provide a medium for stress management, emotional support and serve as a creative medium through which emotional and psychological difficulties could be accessed. Another music therapist explained that the process involved in establishing a relationship with the client allows the client to journey through different experiences “as and when he is ready to do so”, with the “musical, emotional and cognitive support” (of the therapist).

A psychiatrist stated that the need for treatment depends on the “nature of the damage”. This respondent is of the opinion that exposure to trauma is hardly avoidable in anyone’s life and states that research has shown that people suffer “amazingly little, if any, damage in the face of severe trauma”.

The second part of question four read as follows:

b) In the case of past trauma currently having a clearly observable influence on the individual?

Various types of treatment were recommended for this scenario. Trauma counselling, Cognitive-Behavioural Therapy and hypnosis featured the most strongly in the responses.

⁸ A verbal interview was conducted in 2009, as referenced in the list of sources, during which Dr Yu granted the researcher permission to use her name.

Types of treatment each mentioned by only one respondent were:

Regression therapy
EMI
EMDR (with stabilisation it could be sufficient treatment for single events)
Guided Imagery and Music to assist clients in accessing unconscious material
Identifying associations made by the brain and re-establishing control of the situation
NLP (Neuro-Linguistic Programming) and imagery techniques appropriate to trauma therapy
Making use of existing support structures
Expecting that it may take longer to deal with than recent trauma being treated in a timeous manner
In cases of complex trauma or DDNOS (Dissociative Disorders Not Otherwise Specified), stabilise the client and employ the method of Nijenhuis
Appropriate psychotropic medication.

A natural practitioner explained that unresolved trauma acts on the adrenal glands, leading to constantly elevated cortisol levels. Treatments recommended in such situations are herbs, rest and counselling. A counsellor identified the most important aspects of treatment as prayer and guiding the victim to embrace his/her worth and value in the eyes of God. A music therapist was of the opinion that the music teacher can also play a “useful role in the process” (of recovery) but that it “will be for the best to search for the applicable help”. A psychologist pointed out that a clearly observable influence could also be positive and perhaps lead to the musician finding new creativity, energy, interpretations or becoming more motivated.

The third part of question four was formulated as follows:

c) In Post-traumatic Stress Disorder or related psychiatric diagnosis?

Types of treatment by respondents recommended were:

Cognitive-Behavioural Therapy (one respondent psychologist notably did not include medication)
Regression therapy
EMI
GIM
Improvisational music therapy, with or without verbal processing
Hypnosis
Trauma counselling
Insight-oriented dynamic psychotherapy
Making use of existing support structures
Assisting the person to think in a different manner about the past (which cannot be changed, but by thinking differently about the future recovery is facilitated)
In cases of complex trauma or DDNOS, stabilisation and the method of Nijenhuis
Medication forming part of the management if a psychiatrist was consulted for PTSD
Appropriate psychotropic medication

Cognitive-Behavioural Therapy and restructuring

Trauma debriefing, identify associations and re-establish order (in the life of the victim)

NLP techniques

Group treatment aimed at breaking isolation, building a sense of belonging and self-esteem, providing a “safe space to be with others before you can work into the past”

Providing a space where emotions and frustrations can be expressed without judgement.

It must be noted that many professionals referred back to the answers given under the previous two categories, those of recent and past trauma, and that not all were repeated in the condensed list above.

6.1.4 Effects on professional functioning of musicians

The fifth question was concerned with the effects of trauma on professional functioning of musicians and was formulated thus:

5) Please share your opinion and/or experience regarding ways in which trauma and PTSD can affect musicians in their professional capacity. This may include aspects such as emotional expression and memory during performance.

In the experience of respondents concerning how PTSD affected musicians in their professional capacity or studies the following points were addressed. The most prevalent were references to symptoms involving the emotions. These were irritability, aggressiveness, outbursts, emotional blunting, blunting of senses, ‘emotional roller-coasters’ and overly emotional behaviour. Anxiety, hypervigilance, fears and worries also featured strongly together with concentration problems. It was stated that trauma-related anxiety and tenseness may preoccupy the mind so severely that spontaneous expression of feeling associated with music is incapacitated. This all can lead to restrained creativity. Problems with interpersonal relationships such as with members of orchestras, bands, ensembles and conductors were also mentioned.

Symptoms related to intrusive experiences, memory and energy levels were the next most prominently highlighted by respondents. These were memory loss, forgetfulness, flashbacks, re-experiencing of the event, lack of energy or tiredness and inability to function or impairment of general function. It was mentioned that while professional musical performance can require enormous concentration, the ability to concentrate is often hampered by trauma. In addition, it was stated that aspects of the music can serve as ‘triggers’ for the trauma and that this can lead to flash-backs, reliving the trauma and even re-traumatization.

As pertains to traumatic growth, a psychologist made reference to the following case:

[A] particular musician client experienced new highs in his music expression by channelling all the energy due to trauma into musical expression. Not only was this very therapeutic, but it also opened up new genres in his musical career – which might never have been explored if he was not confronted with trauma.

Symptoms directly related to music-making that were identified by respondents were:

- Diminished interest in performing or participating in music activities
- Reduced sensitivity and lack of responsivity in ensemble activities
- Panic attacks before, during and after performances
- Inhibited confidence and doubting own abilities; feelings of hopelessness
- Low emotional content of the music
- Decreased enjoyment of the music
- Repeated mistakes
- Mental block during performance
- Becoming easily tired during a performance
- Feeling nauseous while performing
- Physical effects such as vocal fatigue
- Diminished vocal range as a consequence of extended vocal fatigue and indirect correlation with the influence of the limbic system on emotional expression
- Permanent prosthesis needed after a motor accident restricted the use of the vocal chords of a patient who is a singer, causing difficulty in sustaining phrases, coughing, and a noticeable decrease in self-confidence
- A music therapist described a client who found the onset and diagnosis of bipolar depression very traumatic, experiencing anxiety associated with this, feeling confident to play in ensembles but having difficulty performing in a solo capacity
- A psychologist described a case where the client lost control of the voice and while conducting also feeling naked, identified as an unbearable feeling.

More general ways in which trauma can affect musicians mentioned once each:

- Actually re-experiencing the event in the mind
- Inability to recall aspects of the event
- Avoidance behaviour
- PTSD can lead to Chronic Fatigue Syndrome
- “Various manifestations of anxiety, including palpitations, excessive autonomic nervous system functioning, dissociative features, experience of ill health, or intrusive fears about bodily health” (from a psychiatrist).

6.1.5 Medication

Two questions were posed regarding the issue of medicating trauma victims, the first of which follows below:

6) Would you suggest the use of medication in the treatment of traumatized individuals? Please specify under what circumstances.

Any substance that is prescribed by a healthcare professional with the aim of treating the symptoms of trauma, whether ‘natural’ or synthetic, is regarded as medication. It was evident that most respondents understood the question in this manner. In response to Question 6, whether medication should be indicated in the treatment of traumatized individuals, the following answers cautioning against medicating traumatized musicians were received:

Natural supplementation, including high dosages of 5-HTP and Tryptophan, is preferable to psychiatric drugs because supplementation does not elicit side effects

Dr Yu said that she only uses Chinese herbal medicine. She does not use allopathic medication in treating traumatized patients as she prefers to use medicine that can help permanently while allopathic medicine only offers temporary relief.

As medication is not a cure, it is preferable to avoid this mode of intervention if at all possible.

A music therapist explained that trauma entails loss on many different levels and that loss as such cannot be treated with medication. However, it was added that the grieving process needs to be closely monitored since it can turn into depression which might necessitate treatment with medication.

More neutral answers included:

If conventional therapies such as sleep therapy, trauma counselling and hypnosis do not produce positive results, medication should be indicated if trauma influences performance and life-style and/or causes loss of income.

Prefer psycho-analytic treatment and not medication if it is not necessary for the client to be hospitalised.

Two respondents stated that resorting to medicating traumatized individuals is desirable if the person cannot function adequately in his or her daily life. A psychologist added that, even so, it should preferably only be used for a limited time. Another respondent stated a personal preference to avoid medication if possible, but that there were times when it was indeed necessary. A psychologist remarked that the ego-strength of the client is an important factor determining whether medication is necessary. He added that, although good clinical judgement to refer a client to a psychiatrist is necessary, it is also important to allow clients the opportunity to utilise trauma to their advantage and guide them to use their inner strengths.

Answers in favour of medication include:

Short-term – sedatives

In cases of long-term PTSD – antidepressant medication

For obsessive compulsive tendencies, such as intrusive thoughts, medication against anxiety could be indicated

To prevent hospitalisation and enable clients to continue with daily life without experiencing a breakdown

When trauma leads to depression or catatonic stupor, prescribed medication has an important role to play

One psychiatrist stated that medication will be indicated if PTSD is diagnosed

Another psychiatrist would suggest the use of medication “[i]n practically all moderate to severe cases where obvious distress or clinically significant symptoms are present”

In cases where anxiety and depressive symptoms overlap, medication for syndromal depression will be indicated.

Question seven regarding the effects of medication on musicians is restated here:

7) Could you please provide knowledge of, in your own experience with clients, how the use of medication affects expression of emotion, performance of and memory during performance?

Three professionals indicated that this is very individual to the person. However, other answers also implied the same. In addition, it was mentioned that reactions to specific medications cannot be predicted and are unique to the patient. Dr Yu said that Chinese medicine does not have any side effects. Two respondents stated that they have no personal knowledge or experience of the matter while one indicated that the respondent was not in a position to be able to say if the observed effects were due to the medication or other factors in clients’ lives. Three respondents left this question blank.

Ways clearly identified in which the influence of medication was evident were:

Either enhancing or causing further deterioration of memory

Usually causes a blunting of emotion, resulting in a ‘bland’ expression of emotion

In some individuals the use of medication enables them to express emotion

Medication slows reaction time

Medication can destroy the “all important passion of the performer”

Loss of creativity is commonly experienced

Performance could become mechanical and lack passion as a result of the effects of some medications

Affecting emotional well-being possibly due to side-effects of medication and process of trial-and-error to find the correct medication and suitable dosage

Sedatives may influence emotion, performance and memory while newer antidepressants have fewer side effects.

In addition, the following were mentioned:

Effects are dependent on whether there is adherence to the prescription(s)

Effects of medication could be influenced by being taken together with other substances or medications

The challenge is to find the appropriate medication that does not affect emotion and memory.

A psychologist stated that the use of medication could stunt creativity and expression of emotion and lead to a flattening of affect. A psychiatrist conceded that the use of medication may dull emotional expression in some patients. It was suggested that if side-effects are present, medications could be changed and dosages adjusted until negative effects are eliminated. The psychiatrist was of the opinion that the illness will have more pronounced effects if not treated with medication.

The playing/improvisation of medicated individuals receiving music therapy was found to be monotonous and repetitive, the patients were “stuck in their thinking, unable to follow cues from the therapist, very often lacking dynamic differences and unable to express a variety of emotion without the therapist’s intervention/leadership”. Another music therapist described similar observations, including negatively affecting responsiveness in participation (in the treatment groups), slowed reactions, struggling to speak properly and/or to concentrate, feeling tired and flattened affect.

6.1.6 Different types of trauma

Question eight read:

8) Is there a specific type (or types) of trauma that is more difficult to treat and that particular care should be taken with?

There was some disagreement as to what types of trauma could be more difficult to treat than others and where particular care should be taken. A psychologist stated that chronic emotional family trauma is most difficult to deal with therapeutically and should be considered with special care. One respondent categorically stated that sexual trauma, especially repeated abuse, is the most difficult to address. This was echoed by a psychiatrist who identified severe childhood trauma, especially rape, as difficult to treat. Another respondent identified trauma involving violence. Yet another respondent wrote that treating PTSD in individuals who have co-morbid psychiatric disorders is the most challenging. A psychologist identified cases in which trauma caused DDNOS (Dissociative Disorders Not Otherwise Specified) or DID (Dissociative Identity Disorder) as the hardest to treat, requiring years.

Four respondents were of the opinion that each individual responds differently to whatever type of trauma(s) is encountered. This depends on previous coping mechanisms and personality structures and the person has to be treated wherever he or she is (at the time) in the recovery process. It was mentioned that sensitive individuals can be affected by events that have no adverse effect on others. One respondent mentioned that all types of trauma could be successfully treated with counselling, love and understanding, caring, change in diet and lifestyle, adequate rest and removal from the stressor.

A psychiatrist mentioned that the damage that the trauma caused determines the difficulty in treatment, rather than the nature of the trauma. The respondent mentioned that damage could amount to “such severity as to include psychotic features like delusions and hallucinations, that would certainly be more difficult to treat and special care enquiry be (*sic*) required”.

Dr Yu said that it is more challenging to treat a patient who previously used allopathic medication. According to her the side effects of allopathic medication will then first have to be addressed by acupuncture before the other illness/problem can be addressed.

A music therapist identified the difficulty in gaining the trust and willingness of the client to walk the road towards “systematic desensitization of the traumatic events”, and not the type of trauma *per se*. This therapist pointed out that since each individual experienced his or her trauma differently, each event is internalised differently.

6.1.7 The roles and responsibilities of music teachers

Questions nine through eleven were concerned with gleaning information from healthcare professionals that could be beneficial and insightful to teachers. Question nine follows below:

9) What are the most common mistakes that teachers make when dealing with students who have been exposed to serious trauma? The teacher may or may not be aware of the trauma.

Healthcare professionals warned against some common mistakes that teachers make when dealing with traumatized students. The most prevalent responses were scolding, reprimanding, comments or criticisms aimed at reactive behaviour from the student that is a result of trauma (but the teacher perhaps does not realise this) and not related to the abilities of the student. Other responses include:

Trying to handle this themselves

Not always realising that any behaviour that is different to the known profile could be a warning sign

Placing too much pressure on a student or increasing the workload so as to improve performance when progress perceived as deteriorating could be detrimental (from two respondents)

Insufficient understanding on the part of the teacher

Re-inflicting the damage by insensitive criticism or derogatory comments

Inappropriate probing

Labelling performers as people who should be able to overcome extra emotional stress (the old saying that “the show must go on”)

Not believing students, telling them “it is not so bad” or labelling them as troublesome

When the teacher misinterprets a disability as a lack of concentration or poor practice

Anything that causes anxiety in students and makes them feel unsafe to express their feelings and emotions

Ignoring the situation or saying ‘the wrong things’ which may worsen the situation

The possibility exists that symptoms may be triggered in repeatedly traumatized musicians while they practise, preventing them from continuing their careers.

Questions ten and eleven were concerned with the responsibilities of teachers and performers as regards referral and seeking professional intervention. Question ten is given here first:

10) As a healthcare professional, do you have any advice to teachers and performers regarding what action to take and what action not to take when they become aware of possible existing problems? This can include situations where families of musicians are involved.

Responses to question ten include:

Immediately referring the person to a trauma counsellor or doctor (advised by seven respondents). It was stated that the performer could go directly whilst teachers need to refer students. One respondent pointed out that the teacher can always later say that the referral was unnecessary, but that neglecting to refer could lead to more serious complications.

A forensic psychologist emphasized the importance of not questioning the person as this can lead to ‘contamination of evidence’ and adversely influence the relationship between teacher and student/performer.

Professional help should be sought, unnecessary suffering prevented and hindrances to optimal functioning as musicians removed.

Another respondent advised discussing the situation and referring or assisting in referring to a suitably qualified healthcare professional. Asking the person’s permission was advised before families are involved; however, in the case of a young minor it was stated that family members should be involved.

Another respondent cautioned that it could be damaging to the student if teachers attempt to deal with “these problems”. This was echoed by a respondent who advised letting musicians talk about it themselves and not probing them.

It was suggested that a teacher who suspects abuse refer the student for assessment under the guise of “assistance to reach his/her full potential”. In such a situation, any suspicions harboured by the teacher should be shared with the therapist only.

Immediate collaboration with other professionals and family.

A psychologist cautioned the teacher to respect the boundaries of the student musician and to be prepared to change the manner of teaching, perhaps on the advice of a trauma specialist.

In some cases 'human experience' may be enough to help the person, but could also cause more problems if lacking the necessary tools to handle the situation. Consult with professionals.

Praying for wisdom in picking the correct counsellor.

Take seriously the verbalisations of the student and believe him or her.

Allow expression of emotions and feelings.

Question eleven could have legal implications and was formulated as follows:

11) Confronted with a situation in which a minor is involved and in the opinion of the teacher the involvement of the parents is not desirable, what ways would you suggest of circumventing this problem without violating any legal requirements that may exist?

When teachers or medical practitioners find themselves in a position of being the first person to whom abuse is disclosed, they have certain responsibilities as required by law. The law is clear on this and the following background information is provided here before the answers of respondents.

Teachers and medical practitioners, amongst others, were listed in the article "Reporting child abuse or ill-treatment" on the website of the *South African Government Services* (2008), Section 42 of the Child Care Act, 1983, as being "obliged to report any suspicions of child abuse or ill treatment". The same source states that the steps to follow for these professionals are to report to any social worker and provide certain details, particulars of which are listed on their website. According to De Wet and Oosthuizen (2001:166-7), educators who are negligent about reporting child abuse can be convicted for a criminal offence and also possibly held liable for civil remedy. The abovementioned writers (De Wet & Oosthuizen 2001:169-70) further draw attention to the fact that teachers often do not fulfil their duties in cases where they become aware of child abuse. They discuss possible reasons for this.

Deciding what the best course of action will be in cases of suspected abuse may be a challenging matter for teachers. It can be assumed that victims of domestic violence or incest would form part of the category where the teacher may be of the opinion that the involvement of the parents is not desirable, at least in the stages of initial disclosure and the commencement of treatment. Advice offered was:

Teachers should report concerns to a Social Worker, providing as much detail as possible so as not to violate any legal requirements (from four respondents). Others mentioned the

Child Protection Unit, Child Commissioner, Welfare, a psychologist or the Police respectively.

One respondent warned that a person who specialises in child law should be consulted before action is taken. The respondent stated that “it is a very dangerous zone to be in”. Another stated that parental consent would be required for any Medical Aid related treatment.

“Get the (school) psychologist involved – the teacher should not make the judgement to decide whether the parents should be involved or not – it could have serious legal implications if things go wrong.”

One respondent suggested that the teacher refer the minor to a doctor for consultation and the doctor will take the appropriate steps to contact the parents before commencing any treatment.

Another respondent pointed out that it depends on the age of the minor and added that children over the age of fourteen may make their own decisions regarding the consultation of a healthcare professional.

To handle the situation with love.

A psychiatrist insisted that parents must be involved and the situation discussed with the minor, pointing out that problems such as fatal suicide, substance abuse and addiction may arise if the problem is not addressed. This leaves the question whether this respondent had taken the implications of involving the parents in suspected cases of domestic violence, abuse or incest into consideration – particularly regarding the possible reactions of the perpetrator – and whether he/she has plans in place to address this as part of the chosen intervention strategy.

6.1.8 Trauma and psychiatric diagnosis

Question twelve follows below:

12) Judging from your own experience in the healthcare professions, in the event of unclear psychiatric diagnoses, would you suggest to other healthcare professionals that the possibility of trauma as the cause of the symptoms should be investigated?

Please note that it was asked whether the *possibility* of trauma as cause of the symptoms in the event of unclear psychiatric diagnosis should be investigated and also that from the way in which the question was phrased it should be clear that answers were aimed at colleagues of respondents in the *healthcare* professions and not the teaching profession. The question was interpreted in a range of disparate ways by different individuals. Short answers received include “definitely”, “always”, two respondents simply wrote “yes” and another wrote “it may be of help”. Longer answers were:

“No – the more you investigate the more you traumatize”.

“No!!! Beware of “false memories” and suggestion!! People know if they have been subjected to a traumatic event/events.”

“Definitely”. “[T]here is always an underlying reason for everything”. The respondent stated that such a reason may not be obvious and that sensitive investigation will be needed.

“Yes, trauma past or present can be presenting as various psychiatric symptoms without a clear psychiatric diagnosis.”

It is possible, but is not the only possibility. Therefore a referral should be made to a professional who is in a position to investigate all possibilities.

The healthcare professional will develop a better understanding if complete information is offered.

A full case history should be taken before this can be determined. This includes multi-disciplinary assessment and possibly interviews with family members.

When a musician presents with ‘strange’ symptoms it might be useful to “follow the traces of trauma”. The same respondent wrote that the person usually feels or knows what happened to him or her. The respondent continued: “It is now the problem of the health care (*sic*) systems to follow concurrent systems of diagnosis, who (*sic*) often make the clients not sure about their diagnosis. It is our job to work out concrete handouts for the people. And by now we don’t do our job very well.”

Concern was expressed about who makes the diagnosis. It was stated that if it is the psychologist he/she will find out what needs to be known.

6.1.9 Additional comments

Comments generously added by the respondents when prompted with the following question, namely “[p]lease add any comments that you believe could be of value to this study and to the musicians who read the results of this study”, include:

Body and mind should be disciplined so that we can be one with the body again. It was mentioned that Jesus said that we are spirit, mind (soul) and body.

A psychologist stated that music is an extremely important component of our ‘being’ and that the effect thereof on our mood and functioning is still not recognized sufficiently.

Musicians should be made aware of the importance of seeking professional assistance. They should know that a combination of medical care as well as other therapies is available for rehabilitation. One respondent encouraged traumatized musicians to obtain treatment rather than be compromised by their suffering.

One respondent stated that many stressors are associated with music as a profession. This respondent is of the opinion that the addition of extra stressors can adversely affect performance and in many cases have an irreversible effect on social and emotional well-being.

The importance of referring the individual for therapy by the appropriate people was added by two respondents in the section for optional remarks.

The importance of working in a multi-disciplinary team where opinions can be shared in order to best assist an individual was also mentioned here.

Dr Yu said that acupuncture and Chinese medicine assist the body and mind to heal themselves. According to her, treating the emotion ‘worry’ protects the liver and treating ‘excess emotion’ protects the heart.

“To gain insight into oneself and explore further growth of self by using any form of traditional or alternative healing therapies. The more knowledge of self, the better understanding one has of self and one’s behaviours.”

A psychiatrist stated that although psychiatric illness is like any other illness, in that it affects the biochemistry of the brain, it still remains stigmatised. He added that music is a very stressful occupation with many challenges and that it is not a disgrace to consult a healthcare professional. However, “people do not reason in that way when it comes to psychiatric illnesses”.

“Early intervention is the obvious answer.”

As could be gleaned from some of the responses, healthcare professionals seemed to be extremely concerned that musicians would be making judgements or diagnoses in the terrain of trauma. The researcher would like to state clearly that the study is not aimed at suggesting to music teachers to start making diagnoses, but only to give them more clarity on when to refer students, what possibilities of referrals exist and how they can go about doing so tactfully. A related aim is to give them a better understanding of matters directly related to their occupational performance. However, the study is also aimed at healthcare professionals, perhaps assisting them in some ways to understand certain matters from the musicians’ perspectives. As will be discussed in the next section, the research findings indeed clearly showed that in many cases musicians feel that they have not had the help they needed.

6.2 Opinions of participant music teachers

For ease of reading, questions are restated at the relevant points in the following report of the research results. In addition, a template of the research questionnaire as circulated to participant music teachers is contained in appendix B.

6.2.1 Population of respondents

For the purposes of estimating the representativeness of this study and also to those who read the results of this study it is important that an indication of the range of instruments taught and the experience levels of respondent teachers is given. To gather the relevant information, the first two questions on the questionnaire were formulated as follows:

- 1) Which instrument(s) do you teach?**
- 2) For how many years have you been working as pedagogue or music teacher?**

Twenty-six music teachers responded to the questionnaire. The population of respondents includes teachers of voice, piano, organ, violin, cello, classical guitar, transverse flute, recorder,

clarinet, saxophone and trumpet. This is a balanced representation of the range of voice, keyboard, percussion, string, woodwind and brass instruments. Insights gained from the responses include effects particular to music performance on different instruments as well as more general effects. Years of experience in music teaching ranges from 6 years to 51 years, with the majority of respondents having 30 or more years of experience. The level taught ranged from beginners to concert artists, with most respondents having a balanced experience of teaching at different levels. A number of teachers have experience of teaching students from previously disadvantaged communities. In comparison to that of healthcare professionals, the reaction of music teachers to the study and to the research questionnaire was very enthusiastic.

6.2.2 Types of trauma and teachers' interpretations of its influence

For clarity of purpose, it was deemed necessary to question respondents as to whether they have previously given thought to the possible influence of trauma. Questions three is restated here:

3) Have you ever given the possible influence of severe trauma on the expression of emotion and memory during performance of students any conscious consideration? If yes, what were the aspects that came to mind?

Four teachers reported not being aware of any students exposed to serious trauma. The remainder of the respondents reported substantial experience of teaching traumatized students. Some teachers specifically reported the kinds of trauma that they were aware some of their students have experienced while others took a more general approach and focused on the signs of trauma. Kinds of trauma reported are abuse of various kinds including that of students' parents and self, verbal, sexual and physical abuse, dysfunctional family set-ups, the breaking up of families and divorce of parents, being raised by a single parent, the onset of mental illness, death of a parent, relative or friend, suicide attempts (students themselves or close friends), drug addiction, political violence, students hi-jacked and/or held at gunpoint, chronic hunger and suffering from HIV/Aids. The acute stress situation of a student having to perform immediately after her mother had a heart attack was described. Some teachers pointed out the difference between single, severe traumatic events and gradual, accumulative effect of multiple traumas.

Question 3 enquired whether teachers had given the possibility of trauma influencing their students conscious consideration. While four teachers left question 3 blank, another three had never given the influence of trauma on their students any consideration, one "only vaguely" considered this and eighteen teachers had indeed thought about this matter. Those who stated that they had given the possibility of trauma's influence on the expression of emotion and

memory during performance of students conscious consideration (question 3) answered in the following ways:

Trauma has a negative influence on a person's whole being and therefore influences aspects such as the expression and suppression of emotions, concentration, memory and relationships.

Aspects that came to mind were memory lapses and the expression of anger in the music such as playing lyrical pieces with aggression.

Possibility of memory lapses and errors are increased because capacity to concentrate is hampered by trauma. Another teacher also found that traumatized students are unable to play expressively and that lapses of concentration occur which adversely affect the memory.

While some find performance of music therapeutic, others struggle with interpretation. Negative effects to self-image cause many of the problems associated with trauma.

Aspects that came to mind include single severe incidents as well as accumulation of traumatic influence over a period of time. Destructive influence of over-ambitious parents and negative criticism from teachers became devastating to the students.

One teacher mentioned that most of the cases known were where the student stayed with a single parent. Another teacher observed that the traumas were mostly in connection with the breaking up of homes. It was observed that at times older students expressed themselves better while younger female students tended to use slimming medication and experienced a lot of peer pressure.

“ [A]s a teacher one tends to stress for these students during performances because they are very unpredictable during their performances.”

Aspects that came to mind of a teacher who works with previously disadvantaged students include concentration difficulties, frequent breakdowns during performance, lower achievement levels and poor concentration. The emotional nature of music lessons often leads to tears and breakdown.

Inability to express emotion and execute repertoire correctly.

Students affected by trauma struggled with memorization and concentration and severe inner tension was audible in their music. According to this teacher, 90% of students thus affected were from dysfunctional homes.

Trauma has an inhibiting influence on singers. Specifically the tone production and clarity of sound is affected (dull tone colour), possibly due to the energy with which the tone is produced. The effects tend to be less pronounced in more mature singers with more experience since they have previously developed greater control and solid technique.

Realising that students fail to progress according to their ability, noticing signs in body language as well as in interpretation, tempo and “heavy and dark” playing.

The teacher has a friend who suffers from severe manic depression that caused the friend to avoid performing due to difficulties experienced.

“As emotions play an important role in music it is often in a music lesson that pupils may get quite emotional and aspects of their lives that are negative are expressed.”

Students need to feel safe and to belong somewhere. They must have secure boundaries. A teacher observed that in cases where these were lacking a “floating emotion” was experienced. The teacher further described this as a “road to nowhere linked with severe depression”.

The teacher described a situation where on the same afternoon that a particular student's mother had a heart attack the student actually performed better than usual and went on to win three diplomas.

“Yes, persons exposed to trauma experience a lot of stress in their everyday activities. This leads to a wide range of physical and emotional difficulties such as tense body posture which inhibits movement at the instrument, as well as feelings of insecurity and worthlessness which affect motivation and performance.”

Strengthening the argument that trauma affects concentration, a teacher who was generally very sceptical stated that a student whom the teacher knew had been traumatized by political violence displayed erratic concentration that at times affected performance.

6.2.3 Teachers' experiences in working with traumatized students

Teachers were asked in the following manner whether they have particular experience regarding the matter:

4) Have you worked with students whom you are aware have been exposed to serious trauma? If yes, what did you learn from this experience?

While four teachers indicated that they have never worked with traumatized students, twenty-one indicated that they have indeed worked with traumatized students. Additional observations and remarks offered by teachers in response to Question 4 include:

Learnt by working with traumatized students that having knowledge of students' background helps with understanding the students “and where they come from”.

“Student needs to be treated with great patience and understanding. Do not apply pressure to achieve. Try to use music as a healer and not as adding pressure. Music often acts to relieve tension if not seen as adding pressure.”

Music has a “redemptive influence”. “In the case of young children, though, music and teacher are indivisible. A sympathetic teacher helps as much to re-establish stability as the music does.”

“To be patient and understanding, yet to encourage perseverance in order to achieve success. The latter being a healing process.”

In a similar vein another teacher remarked that traumatized students want to continue with their everyday tasks instead of withdrawing from society. In this regard, “[m]usic often serves as an ‘escape’ from the pain. Students do not want to be pitied, but respond well to heartfelt empathy.”

Three teachers specifically stated such students need to be treated sensitively and with patience. One drew attention to the differences between one-to-one teaching and normal classroom teaching.

One teacher learnt that empathy and listening with understanding, while not needing to provide the answers, were necessary. This teacher also wrote that constructive patience and reframing the thinking of the students, helping them to think positively, is important. Some students wanted to stop music lessons when traumatic events were impacting other areas of their lives.

Learnt that traumatized students have difficulty with learning the notes of and interpreting new pieces.

Learnt that they battled to maintain concentration, had difficulty studying any work, exhibited fluctuating mind-sets and were emotionally very vulnerable. Also learnt that it is hard to teach students who were verbally and psychically abused, resulting in a continuous battle to help them to change engrained negative thinking patterns. During the teenage years until early twenties they seldom have the emotional maturity to forgive.

In the case of previously disadvantaged students they often come from dysfunctional families, are hungry and suffer from HIV/Aids. This teacher learnt that music helps these students. “These children come to the music school every afternoon, irrespective if they have lessons that day. I later learnt that this is a means of escaping from their hardship.”

Learnt that it is very hard to teach drug addicts. The reason for the addiction must first be identified. Some respond well to music teaching and even rehabilitate from the addiction. The teacher stated that it is uncertain whether this was due to the music itself or because the surroundings became a place where the student felt a sense of belonging.

When aggression is channelled into singing it can lead to too much pressure on the vocal chords which in turn can cause damage.

Music is so closely associated with emotional experience that the impact of traumatic experience has a direct impact on the quality of performance.

One teacher mentioned that although one can identify problems it sometimes remains a challenge to find solutions since “the pupil may not want you to speak to anyone about it”.

Another teacher observed that students who were unable to function due to the overwhelming effects of trauma searched for therapeutic or psychiatric intervention over extensive periods of time.

Students exposed to mild to serious trauma were unresponsive during lessons and the teacher had to be satisfied if the students could play the correct notes. These students tended to not pay attention to dynamics and expressive features of the music. This teacher felt that it was better for the students to pretend not to notice the deterioration in performance.

Another teacher learnt to be “more patient and understanding than usual, as reactions were sometimes excessive. Anger and resentment were always near the surface”.

Caused extreme tension interfering with technique. Learnt that it was necessary to teach them relaxation techniques and where possible take away the pressure of exams and performances.

6.2.4 Effects on emotion

Question five is restated below, followed by responses thereto:

5) In your opinion and experience, how did this affect their expression of emotion at the instrument or through their voice (in the case of singing students)?

“All children bring their own life experiences to the lessons.”

All students are influenced, some more and others less.

Trauma is mostly converted to depression and anger, the latter being most characteristic. The teacher added that in wind instruments and voice this can be clearly detected.

“Playing is often thoughtless and mechanical, sometimes chaotic.”

The effects were mostly emotional which hampered expression at the instrument. This caused the students' playing to sound "almost as if they could not reach into themselves because of the trauma".

Difficulty in communicating musical expression; deprives the performance of emotion.

Unstable emotional expression which cannot be projected to the best of the student's ability.

Sometimes playing music leads to emotional outbursts to the extent that the student cannot continue playing.

Traumatized students are often very sensitive and musical students.

In connection with previously disadvantaged students it was observed that "[a]t first, emotions were reserved, but the more they discovered that music is a means where they can find their inner self, the more the emotions seem to be expressed in their playing/singing. This is only the case during their practical lesson, however during performances they seem to lose their self-confidence. The stress of the performance seems to make them relive their own personal stress and trauma."

One case of complete withdrawal resulting in playing devoid of all emotion while other students channelled emotions into playing, improving performance. Similar observations were succinctly described by another teacher: "Students who have experienced trauma have the ability to understand the underlying emotion of the works they perform better, and can therefore give a much more true emotional rendering of such repertoire. Some students do, though, react the opposite way, and cannot deal with repertoire during such times."

Variation between people ranging from holding back extremely to using the instrument as an outlet for their emotions, resulting in playing that has depth "beyond their years".

Deepened musical involvement.

It was audible that the student was only partially involved in the performance.

One teacher stated that playing always suffers during the time in which a student is/was traumatized. However, afterwards spiritual deepening occurs and becomes audible in the music.

No noticeable effect on expressing emotion when singing. However, the study of music benefited the students in working through their experiences.

Another voice teacher mentioned that singing itself could have great healing effects, provided the process is carefully guided and monitored and the student is not subjected to excessive stress. During these times students are particularly vulnerable to and discouraged by performances that did not go as well as they hoped.

"Performance was hesitant and mechanical without much feeling. The pupil often made mistakes, even when the work was familiar to her."

The respondents frequently mentioned that the effects on emotion tended to either enhance or hamper expression. Very few neutral answers were received.

6.2.5 Effects on memory

Question six was formulated as follows:

6) In your opinion and experience, how did this affect their memory during performance?

Perceived effects on memory elicited many different responses. Various reasons were given why some teachers did not have experience in this regard. While some left the question blank, others stated that they do not teach students who play from memory or that they only work with young students. In addition, one teacher stated not being aware of any effects and three teachers stated that trauma had no adverse effect on memory. Ten teachers confirmed that trauma indeed has identifiable effects on memory. Some of these responses are given below:

Trauma can affect both memory and attention span. To the listener it may sound as if the music does not make sense or the listener may be left with a general impression of incoherence. During the lesson it is possible for the teacher to detect that the attention wanders.

“Memory is often negatively influenced as concentration is poor, both in lessons, during practice as well as during performance.”

“Very often memory severely affected.”

Memory problems are due to increased vulnerability to distractions. Perhaps ensemble work will benefit the healing process and solo singing should temporarily be avoided.

After a single severe traumatic incident the student had a ‘camera flash’ memory (also called ‘flashback memory’) on stage during the Sanlam National Competition. This blanked the student’s memory.

“Parasitic thoughts break down concentration.”

Traumatized students often have a short concentration span and a lot of memory lapses, often caused by interrupted thoughts. Such students frequently experience extra tension which in turn leads to memory lapses.

Memory lapses in unexpected places from a student who previously never had memory lapses. The teacher only learnt of the trauma after the performance.

A guitar teacher observed that traumatized students often have a lot of memory lapses. On the other hand, provided students are of average or above average intellectual ability, those from stable, loving and disciplined homes seldom suffer from emotional or mental incompetence.

A teacher wrote that a friend suffering from manic depression has trouble on the violin with shifting and bow control. Technical difficulties that are within her abilities become enormous in her mind and she does not perform from memory due to worries.

Question seven enquired about signs of existing trauma. It is restated here:

7) Are there any specific signs that could indicate a student is having difficulties related to trauma that you believe teachers should be aware of? Referred to here are general signs and these need not be limited to having any relation to the music itself.

Those signs identified by teachers are listed below, ordered in descending frequency of symptoms encountered in the responses received.

Items encountered in multiple responses:

Concentration difficulties, lack of concentration or even inability to concentrate were mentioned in the majority of responses

Lack of progress
Significant weight changes
Cuts or marks on the body; always wearing long sleeves
Lack of preparation for lessons as well as excuses
Uncharacteristic impatience or snappy responses
Very little self-confidence regarding performing abilities; this can also be seen in the body language or posture at the instrument
Withdrawal, including avoiding other students
Emotional instability
Excessive talking about events
Progress regresses
Nervousness; anxiousness
Moodiness or change in general mood
Anger/ aggression
Showing no emotion and aloof behaviour
Tearfulness and sadness.

Items encountered once each (music-related or during lessons):

Unexpected overreactions to a comment or to a word used
Less open to change and more restricted in trying newly taught skills
Shallow breathing hampering the singing of long phrases
Tone quality in high voice register affected due to tension
Inadequate diaphragm support, consequently negatively affecting tone quality
Aggression and sadness can be heard in the music
Student became self-conscious and lacked dedication to and involvement in the process of learning
More difficulty than usual experienced in learning new concepts
Lack of interest
Change in attitude
Poor performance from a student who was previously a high achiever
Tenseness in the shoulder, hand and arm muscles
Hesitant to interact
Seldom talk or only speak a few words, predominantly negative
Lack of communication in the lessons
Hesitates to start playing and fearful glances at the teacher; fear is evident in the eyes
Avoiding eye contact.

Items encountered once each (general):

Dressing strangely or differently from normal
Behavioural problems such as bullying or attention-seeking
“Building a wall” around themselves
Restlessness; inability to sit still for extended periods of time
Emotional outbursts
Very introvert behaviour
“Responding ‘out of place’ in normal circumstances”, aspects affected identified as behaviour and emotional responses

Avoiding straight answers regarding the nature of the trauma
Tiredness
Lethargy
Paleness
Prone to fainting and nausea
Lack of sleep and rest
Complaining about school and life in general, including comments about hating school and life
Students uncomfortable with themselves and their bodies
Nails bitten to the quick
Nervous tics
Neurotic behaviour
Compulsive behaviour
Severe depression
Anorexia
Loss of hair
Hyperalertness
“Although obviously needing the music as an emotional safety valve, and never missing a lesson, sudden lack of practise (*sic*).”

One teacher remarked that since all students sometimes exhibit some of the abovementioned signs one should be aware of whether it is a chronic manifestation of symptoms or not.

A violin teacher taught a student who showed aversion to physical contact. Since teaching the violin involves physical contact with hands and arms, the teacher stated that it was necessary to find ways to avoid the pupil being uncomfortable with contact. One teacher stated that trauma has no influence on performance.

6.2.6 Interference with optimal performance

Question eight was regarding ways in which trauma interfered with optimal performance. It was illustrated by means of a simple equation:

8) Please consider the following statement: “Performance equals potential minus interference”⁹ (Phyllis Alpert Lehrer in *A Symposium for Pianists and Teachers: Strategies to Develop the Mind and Body for Optimal Performance*, edited by Kris Kropff, 2002:125). Please identify ways in which trauma interfered with optimal performance.

Teachers’ answers to this question include:

Sometimes maturity in expression can be the result (the researcher had to make a correction here in offering a second equation, namely “Performance equals potential plus

⁹ Equation originally derived from Green and Galway’s *The Inner Game of Music* (1986:23).

experience”, realising that the difficulty in measuring potential here lies in that it could be seen as already including experience)

Underachieving and a general decline in ability displayed at the instrument

Baggage can result in diminishing the student’s self-confidence

Inability to persevere

Trauma interfered by leading to poor concentration, poor memory and general underachievement; playing became mechanical and without feeling

Repeated memory lapses during the same performance

Trauma damaged self-confidence, leading to extreme nervousness and at times causing downright refusal to go on stage

“The student under stress and suffering from a pervasive sense of deep unhappiness usually finds it impossible to concentrate solely on the music to the exclusion of all else, which is, of course, detrimental to performance”

In the immediate recovery period following a very traumatic experience it seemed that the teacher was working with two different students: the advanced student’s performances would alternate between structurally and expressively incoherent renditions of a work and refined playing

Interference in the form of emotional flashbacks about the traumatic event is more prevalent during stressful situations such as Eisteddfod or competition performances, hampering concentration with the possibility of memory lapses

Extraneous traumatic events were identified as the interfering events themselves, including loss of parent or sibling and divorce

Lack of sleep and consequently lack of stamina and despondence as factors interfering with concentration during performance, leading to inaccuracies

Interference caused by being overly stressed; concentration deficits

One teacher agrees 100% with the equation by Lehrer, as quoted in the question, referring the reader to the work of Eckhard Tolle

Anxiety leads to difficulty with breath control and affects facial expression: such musicians sometimes experience an inability to focus on the expression required by the music and associate their own trauma with certain sounds and pitches

In cases where interference was caused by dysfunctional family set-ups which were not temporary the teacher had never witnessed stable or optimal performance and neither was positive progress maintained; in cases of temporary traumatic effects the trauma was sometimes transferred into aggressive practice sessions

Verbal abuse inflicted on students can cause them to believe that they are incapable of performing a specific piece well (the extent of the impact of verbal abuse depends on how closely the person making the abusive remarks is related to the student)

In the case of young students, concentration problems and emotional instability lead to mistakes during performance (younger children would then often be very upset and burst out in tears after the performance).

A certified Dalcroze Eurhythmics teacher stated that regular Dalcroze lessons may have helped a friend with bipolar disorder to stay “more centred personally and musically”. The teacher continued: “Dalcroze Eurhythmics and Improvisation take the musician away from the stress of musical performance and note-reading, to bring music into your person – ‘feeling’ it as a whole

person.” This could have implications for stress reduction in normal and traumatized students, potentially reducing interference due to such factors.

6.2.7 Referring students to healthcare professionals

Question nine is restated here:

9) Have you ever referred a student whom you became aware of have been affected by trauma or whom you suspect to having been affected by trauma to a healthcare professional? If appropriate, please provide more detail.

The abovementioned question has potential legal implications for teachers. In this regard, Section 6.1 includes a consideration of legal requirements (this can be found in the discussion of Question 11 of the questionnaire sent to Healthcare Professionals).

It was striking that, while twenty-one out of the twenty-five respondents have indeed worked with many traumatized students, only seven indicated that they have ever referred students to appropriate healthcare services. These range from referring one student to numerous referrals. In addition, six indicated that they have never referred students. Many of these teachers indicated that they did indeed speak to class teachers or remedial teachers of these students and/or to the headmaster or headmistress of the school and that these individuals took the prescribed steps. Another teacher reported extreme caution exercised in referring to the counsellors at the particular school because of negative experiences with the system. In some cases the student was already receiving treatment or a reference was made by someone else. In others a parent/parents took the initiative. Reasons given by teachers for not referring students include that their generation were taught to deal with problems on their own. Particular responses include:

In addition to suggesting that a traumatized student receive counselling, one teacher recommended that the student frequently listen to music with a calming effect instead of performing during the time.

A teacher talked with the student and referred to a psychologist.

Another teacher referred various students to therapists and medical practitioners in addition to speaking to their parents.

No direct referral was made but the matter was discussed. “I felt I didn’t want to tell them what to do. I did speak to the parents!”

Concern was expressed by a teacher regarding the reluctance of the school to follow up on a matter that was reported, presumably because the student “was a child of a very ‘high-profile’ family”.

Believe in removal of the problem instead of attempting to treat the symptoms with problem still present.

Drew attention to the importance of letting the student feel safe.

A student who was in an abusive situation was advised by a psychologist to move to private boarding. The teacher observed that the student became gradually more stable, relaxed and dedicated, less rebellious and irresponsible, and started performing with more self-confidence and emotional expression.

A teacher who regularly sent students to the Campus Counselling Centre found that many refused to go since they lacked the insight to recognize that they had problems.

Another teacher was very careful in choosing the correct type of intervention for each situation, stipulating that referrals were to a psychiatrist when severe psychiatric disorders were suspected, to a psychologist for cognitive therapy (particularly in instances of bullying), or to a pastoral counsellor specialising in trauma and abuse.

Question ten was concerned with outcomes witnessed by teachers when traumatized students received professional treatment and is restated here:

10) Whether referred by yourself or in a situation where you have knowledge that an individual student has been treated for trauma or Post-traumatic Stress Disorder, have the signs mentioned in your answer to question 5 subsided or completely been resolved? Could evidence of progress or recovery be seen in expression of emotion in music and memory for music? If so, in which ways and over how long a period of time?

Many teachers alluded to the fact that it can be a lengthy process before recovery is perceived in the lessons and performances. Regarding duration of treatment, one teacher indicated that it is individual. This is supported by various comments identifying the time span before positive outcomes were attained as between three and six months, between two to four years and as six months and longer. It was mentioned that there are cases where the problem is of such a nature that it will unfortunately continue to influence the student throughout life.

One teacher remarked that the symptoms are at their worst shortly after the onset of treatment, almost as if the student relives the trauma. Only thereafter does the healing process become visible and the symptoms diminish and sometimes recede completely. In addition, symptoms sometimes return when students again go through a difficult time.

Yet another teacher remarked that although signs diminished they recurred occasionally. This teacher did not see any “specific evidence of progress in their expression of emotion or memory”.

Symptoms never went away completely (in between two to four years) but treatment facilitated visible improvement.

Expression eventually deepened only in cases where the situation was resolved. Psychosomatic influences were prevalent.

Treatment helped students to gain control over emotions such as anger, grief and aggression. This was achieved in conjunction with the return of physical and psychic strength.

Another teacher remarked that it is a lengthy process with no 100% success rate.

Complete recovery was only attained in cases where the student was treated by “an experienced specialist in that particular field”. In these cases, communication of emotion became more secure, frequency of memory lapses declined, focus and dedication improved, restlessness ceased and depressive symptoms diminished. Some of these students even considered music as a future career.

In a similar vein, a teacher stated that sometimes signs improved and full recovery was attained, while in other cases “the students never fully regained lost ground”.

Emotions are often suppressed and after healing the playing again becomes more sensitive.

It is important that students themselves should take control and find ways to handle the situation when ‘triggers’ appear.

In a case where a very close friend of the student had committed suicide the teacher gently persuaded the student to attend the counselling sessions offered by the University. This had a positive outcome and the student became more responsive and recovered from the shock and grief.

Performance and self-confidence improved and signs diminished. However, it took about two years.

There were reports of cases where the problem was never completely resolved. Cases were also described where the music situation and experience became more positive with successful treatment, ranging from six to eighteen months.

Teachers working with students from previously disadvantaged communities state that they often adopt the role of counsellors. The students do not have the financial means to receive counselling. Teachers “might not have the means to change their situations at home, etcetera, but at least we try to give the necessary comfort, support and love”.

On the negative side, a teacher remarked that until quite recently “people didn’t go for help” but tried “to sort things out themselves”. Even survivors of war experiences are of the opinion that psychological intervention and debriefing are unnecessary, perhaps even artificial. “That’s life, we have to resist” is a comment made by a teacher who is a survivor of WW II.

6.2.8 Additional comments

Teachers were given opportunity to state their views and experiences regarding trauma not particularly covered in the questionnaire in the following manner:

Please add any comments that you believe could be of value to this study and to the musicians who read the results of this study.

Comments generously offered by teachers include:

Music could be an outlet for students, since it does not require that feelings be verbalised but provides a beneficial avenue for students “to express themselves in an alternative way”.

The music teacher plays an important role and can provide support in emotional issues such as ‘teenager problems’ and also provide support in trauma in collaboration with other helping professionals.

In dealing with the problem that person has to either get away from the circumstances or cut emotional connections with the problem.

Singing is a very personal “instrument” and therefore singers are more subjected to the effects of traumatic events than other performers.

“We need to be very aware of our students’ feelings and any changes. More than any other teachers the music teacher has a close relationship to the student. We may often be first to see signs.”

“Give teachers ‘tips’ on how to be more sensitive towards their pupils and to pick up things that went wrong in their lives. Teachers must be there to help pupils during difficult times and not just to teach music.”

“It is of vital importance that music teachers should be aware of any trauma (physical or emotional) in their students’ lives. The nature of one-on-one tuition requires the teacher to have close contact with his/her student and therefore the teacher should be alert to any changes in behaviour of his/her student.”

It was advised that teachers have a short conversation before a lesson or performance in order to ascertain the emotional state of the student. From this, wisdom can be gained regarding the most appropriate way or ways in which the situation can be handled.

“Become as noble and caring as possible – learn how to become empathic – walk the extra mile with others – yet focus on staying on the right side of professionalism.” This teacher included a graphic representation of ‘what goes around comes around’.

A teacher subsequently approached the researcher and said that, although the teacher indicated that influence of trauma on students was never given consideration previously, this teacher has subsequently come to different conclusions after giving the matter some thought as well as due to personal experience.

6.3 Self-reports of trauma experienced by teachers

In acknowledgment of the very different nature of self-reporting as compared to the nature of observation of others, the researcher decided to allocate a separate section to the discussion of teachers’ optional reports of own traumas experienced. This section is then naturally followed by the discussion of case studies in section 6.4. The latter constitutes more comprehensive self-reports. Another reason for this separation was the seeming discrepancies observed, particularly in the area of teachers who report that they have never given the influence of trauma on their students’ music-making any consideration, while giving detailed self-reports of traumas personally experienced. The question was formulated in the questionnaire as follows:

11) OPTIONAL: Have you yourself ever personally experienced serious trauma? How did you deal with this and what therapy did you seek, if any? If applicable, how did this influence performance on your instrument?

Out of twenty-five teachers who responded to the questionnaire, nineteen responded to the optional question (question eleven) by confirming that they have indeed personally experienced trauma. Identifying the type of trauma that they were exposed to was not a requirement of the question. However, a minority of teachers did provide more specific information and traumas reported included divorce, death of loved ones and having to play for their Requiem Masses, armed robberies, hijacking and childhood abuse.

Of those who stated that they have personally experienced trauma, four attested that it had no influence on their music performance during the time. One teacher attributed the reason for her ability to perform well while facing traumatic circumstances and loss to her many years of performance experience; one stated that she could cope musically but withheld emotions for months until releasing her inner feelings, while for another playing her instrument was therapy to her while she managed to distance herself from the problem when performing on her instrument. Although she stated not having experienced serious trauma, one teacher reported that personal problems sometimes came to mind during practising in the form of mental arguments with others. However, like the previous teacher she was also able to overcome this during performance.

Of the nineteen teachers who reported having experienced trauma, eight specifically mentioned having received professional treatment. Modes of treatment sought included seeing psychiatrists, psychologists (including cognitive therapists and hypnotherapists) and pastoral counsellors. Some attended support groups and courses on assertiveness, victimization and boundary-setting. None reported receiving EMDR or newer forms of 'body therapies'. A degree of reluctance to seek treatment was evident in some responses. Reports of initially trying to deal with the traumas themselves and only eventually seeking help confirm this. However, most of the respondents clearly did not attach stigma to seeking treatment. Uncertainty remains as to whether this is their everyday attitude or merely a result of the confidential nature of the data collection.

A number of teachers reported that support from loved ones and friends helped them to recover and/or that their religious faith greatly assisted in their healing. One teacher specifically reported finding it hard to perform in the period during which she worked through the trauma and stated that she avoided it as far as possible. Another teacher described a loss of interest in music during the time traumatic circumstances were experienced.

The observation made by a teacher that her performance was not affected, but that trauma seriously impacted on her listening pleasure and that she could not endure music of composers such as Beethoven which evokes strong emotions, is particularly noteworthy. The latter report serves to confirm that, while in some cases affecting performance quality, in others trauma can affect the emotional responses of professional musicians to music.

General effects of trauma reported include negative influence on quality of life. Confidence-related effects reported include loss of confidence, “having no self-image”, a loss of security, loss of focus in connection with continuity of involvement with music and concentration problems. A victim of an armed robbery reports concentration difficulties coupled with problems in emotional expression when acting in the capacity of collaborative artist. One teacher mentioned that trauma caused temporary emotional illness which affected her music-making. These descriptions confirm that, at least for some, emotional expression is indeed affected by trauma.

Some observed a negative effect on the quality of sound produced, described respectively as harsh and aggressive. One teacher observed that during treatment her music was aggressive and meaningless, while after the completion of six years of treatment her music contained the whole range of emotions and was deeper. Another described post-treatment improvement in sound production. In addition to effects on sound quality, technical and physical problems were reported.

Problems related to memory for music include struggling to focus and concentrate when playing from memory, as well as playing that “was full of memory lapses”. In total, four teachers mentioned memory problems experienced in the aftermath of traumatic experience. This excludes the overwhelming number who mentioned problems related to the functioning of accurate memory retrieval such as concentration problems and inaccurate playing. One teacher described experiencing memory and/or technical problems during performance whilst a deepening of musical expression, understanding and sensitivity occurred concurrently. A very noteworthy observation was made by a teacher who struggled to play from memory while also losing the natural and flowing qualities of playing, stating that during this time the teacher “played very mechanically”. Possible reasons for this will be discussed in chapter 7.2.2.

Three teachers mentioned medication-related effects. Only two of these were linked to medication received during treatment for trauma. A teacher who received medication and operations for an illness which had traumatic effects in the teacher's life and career reported an inability to play a wind instrument due to the severe mouth-drying effects of medication, leading to the cessation of public performance. Another reported short-term memory problems including severe difficulty in learning new works during a time that medication was prescribed. One reported inaccurate playing, possibly as a result of the side-effects of psychiatric medication.

Positive reports include finding the act of practising music as healing. One teacher performed with greater expression of emotion during the treatment period, while another reported a positive influence afterwards, described as a 'deepening of the soul'. It was also mentioned that their own experience(s) helped them to have greater understanding and tolerance for their students.

Three teachers who reported that they have personally experienced trauma indicated that they have not given the possible influence of traumatic experience on the music-making of their students any consideration. Possible reasons for this will be discussed in chapter 7.2.1.

Due to sensitive information, pp152-164 are withheld on
request of the author

This point is key: once the brains of observers are included in the quantum system, the wave function describing the state of the brain of any observer collapses to the form corresponding to his new knowledge.

- Schwartz and Begley 2002:284-5

CHAPTER 7: RESEARCH FINDINGS

7.1 Observations emerging from the research survey

Impressions drawn from the research survey are based on particular answers by the respondents, the general research conducted as well as experience gained through investigating the topic. Aspects that came to the fore most frequently and consistently as well as aspects which were most relevant in the opinion of the researcher were chosen for the following discussions.

Chapter six was divided into four main sections. This chapter will follow the same basic order. The responses received from healthcare professionals and teachers will be discussed first. It was decided to group these together under the first section, because there was some overlap in the nature of questions asked. This is preceded by an introductory section about the active nature of observation (section 7.1.1) - not particularly obtained from the research survey but rather from the literature survey - and deemed suitable by the researcher to set the stage for the discussions found thereafter which reflect themes that emerged from the data. This allows for appropriate comparisons to be drawn between the opinions of these two groups of professionals. A separate section is set aside for matters regarding the self-reports of participant teachers. This is followed by a section 7.3 which deals with observations emerging from the case study investigations. Important aspects that feature consistently from all the various routes through which the topic was investigated are discussed in section 7.4. These include unconscious processing of music, audible effects, the role of movement therapies and complementary healing techniques and music's healing role. The final section in this chapter, 7.5, constitutes a comparison of the research findings to the available literature on trauma.

7.1.1 The active nature of observation

The choice of quotation by Schwartz and Begley included at the beginning of this chapter is not an attempt to go into the detail of quantum theory but rather to focus the reader's attention on the vitally important role that the observer plays. The 'observer' could be the traumatized person

evaluating his or her own situation or those surrounding the traumatized individual who hold their own beliefs which affect their observations and interactions. Where the research survey is concerned, participants were observers in the respective capacities of healthcare professional and teacher and their reported experience results from interaction with traumatized musicians in these roles. The inclusion of this quotation aims to draw attention to the responsibility of the influence that active observers exert on the situation. It should create a mind-shift from merely regarding oneself as an onlooker to becoming a part of the solution. Weingarten (2003:163) draws attention to the importance of compassionate witnessing. She names awareness, safety, empathy, compassion and Aidos, which she states is associated with inner integrity, as personal capacities needed as a foundation for compassionate witnessing. She defines her concept of compassionate witnessing as “turning unwitting witnessing of violence and violation into something deliberately chosen”. If music teachers act as compassionate witnesses when confronted with trauma, this could soften and perhaps even transform its effect on their students.

Educators, including music teachers, play a very important role in shaping the characters of students. They should show an interest in their students’ lives, be sensitive to changes in behaviour and maintain open channels for communication, including non-verbal communication. However, they should always relate to students and parents of students in a professional manner. It may be suggested that training in ethics should be an important part of any teacher training curriculum.

7.1.2 Obtaining treatment in the aftermath of trauma and the matter of referral

It became clear from the responses to the questionnaires received from music teachers that musicians are indeed greatly affected by trauma. However, a large number of psychologists stated either verbally or in writing that they have never treated musicians. In the light of the fact that teachers and musicians were indicating high levels of exposure to trauma this could raise two questions: Do musicians and students seek healthcare intervention after exposure to trauma, or could affordability be a possible reason for failure to seek professional treatment? Some teachers indicated that they teach previously disadvantaged students. In such cases financial concerns could obviously play a role. Other teachers indicated that they are hesitant to refer students to school counselling services due to negative experiences with such services in the past.

Treatment in the aftermath of trauma raises a host of ethical considerations. The law is clear about teachers' responsibilities to bring suspected cases of child abuse to the attention of appropriate services such as offered by social workers or psychologists. This is referred to in section 6.1.7. Healthcare professionals stressed the importance of this. However, even though the collective teaching experience of the population of respondents was over 30 years per teacher, an alarming number of teachers indicated that they have never referred traumatized students to healthcare services. In a country such as South Africa which is greatly affected by trauma the issue of availability of intervention in the aftermath of trauma should, however, also raise debates on a societal level in the education and government sectors. Often immediate intervention is not sought, whether it was available or affordable or not. Many can indeed not afford intervention. Teachers see the negative effect this has on the progress of students but their choices of how to intervene are often very limited. The problem is not unique to one country and time. Many musicians who previously survived atrocities were never debriefed. In others, the forces for self-healing led them in the direction of transcending difficulties. Responses to the research questionnaire indicated that new effective modes of treatment such as EMDR and EMI were indeed used by participant healthcare professionals. However, it seems that in South Africa Levine's Somatic Experiencing (SE) is still not widely used. Music therapy is an accessible form of treatment and great potential exists for increased collaboration between musicians and music therapists. Perhaps a cost-benefit analysis (financial but also taking into consideration long-term effects on the well-being of individuals) done by the authorities is needed, aiming to devise more comprehensive intervention possibilities, affordable to all citizens. From the responses of teachers it became clear that treatment was indeed effective in most cases but that the main concern was that a great deal of time elapsed before recovery was achieved.

7.1.3 Ways in which trauma affects musicians as observed by respondents

It is clear that there is a large variation in both severities of trauma(s) experienced as well as the nature of and extent of influence reported as having been experienced in the music-making. Judging from the responses to the questionnaires, musicians are affected by trauma to a very large extent. However, it is possible that those who have experienced and witnessed the effects of severe trauma were perhaps more likely to take the time to complete the questionnaire.

It was mentioned that trauma causes interference (see chapters 4.1.2, 4.1.3, 4.2.4, 6.2.6 and 6.4.1). The disruptive effects can affect the focus of musicians and create problems with continuity of involvement with music. In turn, this can have a negative impact on motivation. In

addition, it drains energy and the effects are felt on available time and other resources. However, influence on motivation can also result in musicians practising more as they turn to their instruments as a way of dealing with trauma or even escaping from traumatic situations, as was reported by some teachers.

Changes and decline in attention (or concentration) are among the most consistently observed symptoms that teachers working with traumatized students reported. Concentration in this context could perhaps more accurately be referred to as the concentration (or focussing) of the attention. The term ‘concentration’ is simply used as a description of what is witnessed by the observer. However, the possibility of dissociation playing a role in some of these so-called concentration difficulties should be considered. This could perhaps be more accurately described by the word ‘spaces out’ that some teachers used.

Results could be interpreted to indicate a much more severe influence on music-making in cases of suspected PTSD. While a small number of musicians indicated no adverse influence on their music-making, there were a significant number who outlined detailed experience of symptoms. This includes intrusive memories and emotional numbing, two characteristic symptoms of PTSD. An alarming number of teachers mentioned that they observed that dysfunctional family circumstances had serious effects on their students and their progress.

7.1.4 Treatment

Each individual and circumstance is unique and therefore requires personal assessment and specific intervention. Treatments highlighted by the population of respondents as successful were discussed in chapter six at length. In no way does this imply that the modes of treatment mentioned here are exhaustive lists of all the successful ones.

It is imperative that musicians know before looking for treatment that, depending on whether they choose ‘alternative healthcare modalities’ or ‘allopathic treatment’, the treatment approach could be very different. This was illustrated in the feedback to the research questionnaire. It may be wise, if indeed possible, to obtain more than one opinion and back this up with background research. Musicians should take joint responsibility for their own health and/or recovery. Another point to keep in mind is that psychologists are not allowed to medicate, and will refer to a psychiatrist if they deem this to be necessary. It also became evident from the feedback that since it is within their domain to medicate, for psychiatrists the first resort and shortest road to

apparent improvement is often medication. As was seen in the results to the research questionnaire sent to healthcare professionals, this could potentially have adverse effects on performing abilities. It can be deduced from the feedback to the questionnaires is that there is an element of risk involved in treatment and that a time-frame cannot always be predicted. Uncertainties in how the individual is going to respond during treatment as well as the effect medication can have on a musician should not only be discussed by healthcare professionals with the musician, but should be seen as sufficient reason to encourage professional performers to take extreme caution in deciding whether or not to perform during such times and to seriously consider the potential outcomes. The risks to a hard-earned reputation in a world where it is often said that “one is only as good as your last performance” should be weighed against the anticipated benefits.

Treatment of long-term or severe trauma was thoroughly discussed in chapter 3.8 and 6.1.3. However, another important deduction that can be made from the feedback to the questionnaires is that there is an element of risk involved in treatment and that a time-frame cannot always be predicted. Uncertainties in how the individual is going to respond during treatment as well as the effect medication can have on a musician is sufficient reason to encourage professional performers to take extreme caution in deciding whether or not to perform during such times and to seriously consider the potential outcomes versus the risks to a hard-earned reputation.

It seems that a contributing factor as to why the residues of trauma are so often misunderstood, misinterpreted and misdiagnosed, is because all possible responses lie on a continuum. Not only do people who went through the same type of ordeal often exhibit exact opposites of symptoms, but these symptoms very often oscillate between extremes and even overlap with a myriad other physical and mental diseases. It cannot be sufficiently stressed that since this is such a complex subject, it warrants complex and even multidisciplinary evaluation and intervention.

7.1.5 Possible bias in population of respondents

As briefly mentioned in chapters 1.11 and 5.5, the research results may have been slightly influenced by the probability that persons more sympathetic towards the subject were more likely than others to respond to the research questionnaire. Where healthcare professionals are concerned this has important implications for musicians. Whilst the low response rate from healthcare professionals proved cause for concern, the exceptional quality and reflective nature of feedback from those who did indeed respond serves to emphasize the paramount importance

that, when musicians decide to look for assistance from the healthcare community, they should be cautious to ascertain that the professionals indeed have the experience and knowledge necessary to be in a position to treat them. The numbers of healthcare professionals who indicated that they have never worked with musicians are, however, disconcerting if searching for reliable treatment perspectives. However, a possible reason for this could be the fact that there are relatively few professional musicians in the general population.

7.2 Aspects relevant to self-reports of teachers

Respondent teachers were given the option to report whether they have personally experienced trauma or not. The majority of teachers did respond to this question. From this information insightful comparisons and deductions could be made.

7.2.1 Impact of teachers' own experiences of trauma on assessment of students

It was striking that some teachers who reported having personally gone through trauma and confirmed how they observed this to have had an influence on their music-making indicated that they had never given the influence of trauma on their students' performances and progress any consideration. However, it should also be stated that one teacher pointed out that in the past 'they' did not go for help, but tried working through their problems on their own. Even survivors of war experiences are of the opinion that psychological intervention and debriefing is unnecessary, perhaps even artificial. "That's life, we have to resist" is a comment made by a musician who is a survivor of WW II.

Ways in which the personal experiences of teachers interacted with their professional evaluation of the influence of trauma on their students seem to suggest that some who reported that they have been traumatized and had not received treatment were unlikely to notice the possibility that trauma could be affecting their students. This explanation is strengthened by the fact that one teacher mentioned that the questionnaire itself caused her to consider the influence of trauma on her musicianship and that of students for the first time. She stated that through subsequent observation and awareness she came to different conclusions and that she would perhaps now respond in a different manner to the same questionnaire. Swanepoel (2008) observed that there may be a tendency for musicians who have not dealt with their own trauma to feel alone and be less capable of recognising if and when others are also affected. On the contrary, those who have

integrated their traumatic experiences through therapy may perhaps be more likely to have come to realise that they are not alone in their suffering. The mere act of ‘dealing’ with past trauma possibly opens a person’s eyes to the fact that many others could also be affected. In the case of collectively experienced trauma such as natural disasters or war this argument loses its validity.

7.2.2 Ways observed by respondent teachers how trauma affected their memory

Related to memory for music, problems identified in self-reports include struggling to focus and concentrate when playing from memory, as well as playing that “was full of memory lapses”. The overwhelming majority of teachers mentioned problems related to the functioning of accurate memory retrieval such as concentration problems and inaccurate playing. Some specifically mentioned memory problems experienced in the aftermath of traumatic experience. One teacher described experiencing memory and/or technical problems during performance whilst a deepening of musical expression, understanding and sensitivity occurred concurrently. A very noteworthy observation was made by a teacher who struggled to play from memory while also losing the natural and flowing qualities of playing, stating that during this time she “played very mechanically”. A possible interpretation of such a scenario is that mechanical playing is due to emotional numbing which then adversely affects being ‘fully present’. This can cause concentration slips which in turn lead to memory difficulties. Emotional numbing is closely associated with PTSD which is also closely associated with changes in the normal functioning of memory. Trauma’s effects on concentration are often at the root of memory problems.

7.2.3 Overview of effects identified in self-reports

Self-reports further served to underline general findings, as teachers indicated that trauma affected their experience of emotion as well as emotional expression, their preference for music styles, confidence, as well as negative effects related to the use of medication. As stated above, problems related to memory and inaccurate playing were prevalent. However, as discussed in section 7.2.1, a minority of teachers reported that trauma had no influence on their music performance. In acknowledgement of the similar nature of teachers’ self-reports to that of case study narratives, this section is followed by a discussion of the observations emerging from the case study investigations, while for additional comparison the reader is referred back to chapter 6.3 and 6.4.

7.3 Observations emerging from the case study investigations

Four case studies were investigated. The significant traumas experienced respectively were as follows:

Participant A (female): Spousal abuse and various losses

Participant B (female): Maternal abuse, various losses, smash-and-grab incidents and motor vehicle accidents

Participant C (female): Violent father at early age, thereafter grew up without a father; sexual molestation by a friend of the family

Participant D (male): Suicide of a close friend and mentor; motor vehicle accident resulting in paralysis of three months' duration.

7.3.1 Influence particular to musicians: general overview of symptoms

Trauma affected emotional expression, concentration as well as memory in case study participants A, B and D. Participant C's main concerns were related to self-esteem, anxiety and procrastination of tasks. Participant A received minimal treatment and therefore did not experience any pronounced changes to her situation over any length of time. Participants B and C both needed many years' duration to heal from early and prolonged traumatic experiences which profoundly influenced their lives and emotional development, while music itself and specifically drumming played a catalytic role in Participant D's quest to regain his memory, movement and intellectual skills.

From the discussions with the case study participants it became evident that they were of the opinion that trauma does indeed influence musicians in ways not necessarily particular to other occupations. However, it also became clear that reactions are nevertheless very individual.

7.3.2 Effects on emotion including emotional illness

An example of effects is the descriptions of deepening of the emotions that were experienced. For some this happened immediately following trauma and was evident in performances given in the wake of trauma (see for example participant A) and for others this happened following or during treatment. At the professional level, heightened attention to detail translates into more effective communication of the intent (including emotional intent) of the composer. This was described as an immediate consequence of the first traumatic experience of participant D.

However, after his second traumatic experience he first experienced emotional numbing and only later a deepening of affect. He also stated that trauma helped him to better understand the work of certain composers.

A requirement for communication of emotion is security. Whether or not distressing emotions are experienced, it takes some form of security to convincingly communicate emotion in music as well as ‘label’ emotions experienced. (An example of the absence of such is case study participant B who, prior to therapy, found it difficult to define the emotions she experienced.) If present, this security could come from various sources. Participant D’s experience of emotional numbing and loss of passion for music are typical trauma sequelae. His conducting was also affected by his experience of aggression in the wake of trauma as well as his difficulties with interpersonal relationships.

Participant B developed depression and anxiety as an effect of trauma. Levine (1997:45) states that depression and anxiety often have traumatic antecedents. In addition, participant D became so depressed after the motor vehicle accident that he considered ending his career.

7.3.3 Effects on memory

Participant A mentioned intrusive thoughts as a cause of interference. Participants B attributed memory lapses under stress to sensory overload. She mentioned difficulty memorizing new music whilst in the grips of an abusive situation, while participant A observed the same difficulty in her daughter, a pianist. Participant D indeed lost all memory of music for some time after his accident, reporting not having a single melody in his head. Therefore it can be deduced that overload can occur, whilst traumatic shock can also lead to memory loss.

7.3.4 Effects of trauma on interpersonal relationships and on teaching

All four participants stated that their relationships with others were adversely affected by trauma. They identify these effects as manifesting particularly on an emotional level with descriptions of feeling emotionally completely drained and not having enough energy for social interaction and teaching (participant A), feeling distanced from other people and having difficulty approaching authority figures (participant B), loss of self-confidence and difficulties with social and romantic relations (participant C) and becoming suspicious of people, behaviouristic approach to the profession and wanting to “use people to create sound” (participant D). However, for participants B, C and D their traumatic experiences subsequently led to growth and better and more

meaningful interpersonal relationships. They achieved these improvements with the aid of therapy and conscious appraisal of their respective situations.

It is interesting to note that participant A reported hearing her abusive husband's voice like gunshots while performing, while a respondent teacher mentioned experiencing mental arguments with people going through her mind whilst practising. This could perhaps be interpreted as unconscious attempts at resolving or working out interpersonal differences, made whilst involved in music-making - itself a means of communication.

As regards the ways in which trauma affected these musicians in their teaching capacity, participant A reported that drained energy levels interfered with her ability to teach. In contrast, participant B was of the opinion that while the effects of trauma on her life and music performance were negative, they had a positive effect on her teaching and made her a better and more compassionate teacher. She acknowledges that it took time before she became more sensitive towards students' problems. Participant D indeed found teaching to play a major role in regaining his love of music after his first traumatic experience.

7.3.5 Dissociative symptoms

Participant D's detailed and faithful account of an out-of-body experience, as verified by other observers, raises questions about the very nature of out-of-body experiences. In order to perceive the students behind the cars, he was clearly observing from an angle not possible from where his body was lying during the accident. Therefore it can be asked if an observing entity that is part of the fuller reality of the 'self' of the person separated from the body during that time and was floating above the scene of the accident. Whatever the answer may be, such an out-of-body experience is a classic symptom of dissociation during a severely traumatic event. Seen from a psychological point of view, this is a dissociative experience. The extended duration of the paralysis could perhaps be viewed as an extreme example of the immobility response.

Dissociative symptoms related to trauma were experienced by all other case study participants. The trance state reported by case study participant A, as experienced during the time of her father's illness, is also a dissociative state.

Participant C's involvement in dance, which she identified as having an extremely healing effect, is yet another form of movement therapies that were previously mentioned. This serves to confirm again that, for some, movement plays an integral role in healing. Perhaps it even plays a role in discharging the freeze response.

7.3.6 Treatment

With the exception of participant A who sought almost no intervention apart from some counselling sessions which she terminated early on, participants B, C and D sought a much greater variety of available treatments than reported by the respondent teachers. This is yet another reason why it so important that musicians and teachers are made aware of the various possibilities for treatment: one first has to recognize that intervention is necessary, then has to search for and know about possibilities and only then can progress be made on the road to recovery. While traumatic events may strike without warning, they can leave the victim so drained that only much later, when problems have become particularly severe, do they find the energy or time to even start searching for solutions.

Case study participants A, B and C received psychotherapeutic intervention while participant D received medical treatment immediately following his accident. The variable factor in psychotherapeutic intervention was the duration thereof. Participant A did not receive extended treatment, while participant B received psychotherapeutic and psychiatric treatment (including CBT and medication) over the course of a number of years, up to the present. This was in conjunction with some alternative modalities. While participant C was diagnosed by a psychologist as suffering from trauma and received hypnotherapy that helped her to stop smoking, she resorted to alternative healthcare modalities lasting a number of years as main course of treatment. Alternative modalities used by her include the EPFX/SCIO, meditation, yoga, Reiki and herbs. The treatment identified by participant D to have been most beneficial was the use of drumming and trauma counselling while he also used Reiki but reports that it had been only partially beneficial.

It can be concluded that a variety of intervention techniques were effective, but that choosing suitable treatment remains a very individual matter. While some found psychotherapeutic intervention strategies such as CBT and trauma counselling most beneficial, others only remained in such treatment for a short period of time, one of these participants substituting it with alternative healthcare modalities.

7.3.7 Professional career path, spirituality and growth

The narratives of case study participants illustrate how trauma can influence the path a musician takes, even within the music profession, in addition to it possibly causing temporary interruptions in career. Participant B stopped performing due to trauma, while participant C became involved in music performing with the aim of healing others. In addition to causing temporary interruptions in the time that he was paralysed, trauma had a significant influence on the career path of participant D.

While the role that spirituality, religious convictions and faith play in healing is a personal matter and perhaps was not frequently discussed by musicians partaking in this study, participant D stated that his Christian faith played an important role in his recovery. Some healthcare professionals and teachers also made reference to the importance of faith.

Insights gained through their experience that they shared with other musicians through this study, as named in chapter 6.4, were in all cases very motivational in nature. This positive advice to other musicians could lead to a conclusion that these participants grew through their experiences and developed compassion for others in the process. Perhaps it can be argued that they are all compassionate people by nature, but their experiences played a role in deepening their concern for others.

7.4 General observations applicable to the research survey and case studies

Some aspects applicable to the research survey, case studies and literature survey are discussed in this section. As was the pattern followed in section 7.1, the first subsection is a general reflection about an important aspect not particularly emerging from the research data but rather from the literature survey, in this instance namely unconscious processing of music, witnessing and projection.

7.4.1 Unconscious processing of music, witnessing and projection

Music can be a very powerful communication medium, a significant amount of its processing possibly occurring at the unconscious level. The researcher referred to McClary's statement (2007:159) that music provides a direct pathway to emotional and unconscious material. It

follows that the way in which the unconscious mind deals with music and traumatic material can be powerful. It was stated in section 4.2.4 that the similarity of the states of heightened awareness experienced during performance and during traumatic events could even lead to an increased possibility of flashbacks during performance for musicians with PTSD. These are realities that performers and teachers should be aware of. Additional evidence for music's ability to transcend the conscious mind can perhaps be found in participant C's reference to trance states induced by drumming.

It was argued in chapter 4.5 that teachers have responsibilities regarding witnessing of events. It is appropriate at this point to refer to the very important cautionary advice of one psychiatrist that speculative attributions and explanations of possible signs of trauma by teachers (or others) may in themselves be harmful or traumatic to the person about whom the assumption is made. The researcher would like to add to the cautionary advice of the respondent psychiatrist that the danger of projection¹² exists when premature or inappropriate assumptions are made.

7.4.2 Audible effects

Some teachers made reference to hearing the effects of trauma in the playing and singing of their students. This included their perception of absence of emotion, hearing that students were only partially involved in a performance, detecting inhibiting influence and/or severe inner tension in their music, hearing effects on tone production such as forced tone or loss of clarity of sound in singers (see sections 6.2.2 and 6.2.4). Audible effects on sound production, most notably in the area of aggression, were noted by both music teachers and case study participant B. Zukav (1990:167) seems to confirm this when he writes that what an instrument produces depends both on the musician and the instrument. He points out that if the musician becomes consumed with anger or other negative emotions the instrument disintegrates and produces effects in line with those of the troubled musician. Case study participant D described aggression in a different context when he spoke of wanting to "use people" to produce a sound as a conductor. Such descriptions are not uncommon in the history of music as can be illustrated by Beethoven's aggressive playing and affinity for accents and thick bass textures that stretched the Viennese pianos of his day to their limits (Gordon 1996:143-4). This could perhaps be interpreted as augmented by his struggle with and emotions of anger experienced as a reaction to his

¹² Corsini (2002:767) offers four definitions of 'projection'. Two of these are particularly relevant in this context. According to him, in psychoanalytic theory, projection is "a defence mechanism of attributing to others what is actually true of the self" and "the misinterpretation of mental activity as actual events".

impending deafness. This eventually led to the expansion of the piano and according to Gordon (1996:144) the composer was grateful for the piano built by John Broadwood and shipped to Beethoven in 1818. In section 4.3.2 reference is made to Beethoven's behaviour as perceived by others, namely his aggressiveness and unstable moods, which some writers classified as bipolar disorder. The fact that a traumatized teacher could not endure Beethoven's music because of the emotions that it triggered supports the supposition that Beethoven's music can evoke strong emotions that can be interpreted as associated with trauma (see section 6.3).

7.4.3 The place of movement therapies and alternative or complementary medicine

The possibility that movement techniques such as Dalcroze Eurhythmics could be beneficial to traumatized musicians was raised in chapter 3.8.5. In addition, two respondents were qualified Dalcroze practitioners and also mentioned this possibility (chapter 6.2.6). Peters (1987:129) states that activities centred on movement to music can reach the level of unconscious emotional response and aid therapists to help clients in whom emotional expression is hampered. She indeed suggests that Dalcroze Eurhythmics can be useful in clinical settings where music therapists operate.

The role that alternative healthcare modalities have to play in the treatment of trauma became evident in the literature study as well as its positive effects for case study participants B and C. In addition to reference made by some respondent healthcare professionals about its potential benefits, case study participants B and C experienced positive outcomes after resorting to 'alternative intervention'. In addition to the convincing evidence found in the literature, many traditional psychologists and neurologists are moving in a direction of adopting more integrative approaches towards the treatment of trauma. These healing techniques were found to be beneficial by two case study participants, as will be discussed in section 7.2. The role of energy is often mentioned as well as the importance of viewing the body as a whole. It is not uncommon for writers to refer to the body with musical terms such as 'harmonics'. These are linked to frequencies that, provided they are in the correct range for human hearing, can be perceived as sounds. This serves to strengthen the argument for the interrelatedness of music, the body and healing. An example can be seen in the quotation of the work of Sheets-Johnstone at the beginning of chapter 8 (on p 188).

Many alternative or complementary treatment modalities were discussed in chapter 3.9. Most of these aim to correct problems at the energetic level and facilitate healing in this way. In the

preface to his comprehensive book on vibrational medicine, Gerber (2001:21) explains how the system of thought underlying the theories behind alternative medicine examines human functioning from the perspective of multiple interactive energy systems. He continues by explaining that this is an attempt to reach a deeper understanding of how our thoughts and emotions affect physiology and how therapies exert their healing potential. Perhaps one reason why two of the case study participants found both conventional psychotherapeutic intervention strategies as well as alternative treatment modalities helpful is because, in Gerber's (2001:24) words, "healing via systems that affect the elements of human subtle-energy anatomy is just an extension of existing medical science". For the reason that there have not yet been extensive studies done on their effectiveness, alternative therapies should preferably not be resorted to as the only method of intervention when treating victims of serious trauma. However, in the opinion of the researcher and various respondents to the survey it has a place in healing and could be used in conjunction with traditional psychotherapeutic intervention strategies.

7.4.4 Music's healing role

It was mentioned in the self-reports of participant teachers that they found practising music to have a healing effect. Music was an integral part of the healing process for all case study participants. Its healing nature was reportedly experienced at different points in time by all case study participants. In addition, music's intrinsic motivational nature plays an important role in the lives of these individuals. For participant A this was at no time particularly with a therapeutic goal in mind. However, the effect of playing was music healing. For participant B music was at times healing and at other times associated with abuse. She became more capable of expressing emotion through sound as her healing process progressed. Participant D consciously used drumming to aid in healing and restoring the full function of his brain. Not only did he attain healing, but also experienced a broadening of his perceptive and information processing capacities. At another stage, he found a creative outlet in composition which proved to be therapeutic at the time. Participant C used drumming to heal herself and now performs as a percussionist since she believes that, correctly employed with positive intentions, the effects of sound can have the same benefits for others. Participants B and C found 'alterative' therapies that incorporate sound, and therefore are closely related to music, to be helpful. These include the SCIO Biofeedback device's programmes that incorporate sound as well as those that operate by sending sound frequencies through the body.

Participant D reported expansion of right-brain activity due to his use of drumming in his own recovery process. Altenmüller (2004:6) indeed states that musicians generally process rhythms and metre in the right side of the brain, while the opposite side seems to be involved in the processing of rhythm by non-musicians. This participant also reports not needing morphine to reduce pain when playing drums. The value of music's anxiolytic properties was referred to by Spintge (1991:65, see section 4.4.4).

7.5 Comparison of research findings to literature on trauma

Some aspects emerging from the feedback to the research survey and case study interviews are compared with the literature on trauma. In order to avoid repetition, only aspects that were of particular relevance or that featured significantly are discussed. Similarities found serve to strengthen the validity of the results of the study. Different opinions were encountered and, where relevant, these are discussed.

7.5.1 Effects of trauma and their extent

Most teachers who replied to the questionnaire reported having witnessed the effects of trauma on their students and/or themselves. This appears consistent with statements in the literature, such as Levine's contention (2005:8) that "almost all of us have experienced some form of trauma, either directly or indirectly". Research findings indicate that trauma definitely has an influence that goes beyond localised effects but extends into the occupation of music and even relationships with colleagues. Levine (2005:60) acknowledges that the feelings of traumatized persons of being 'stuck and frightened' can extend into different areas of life.

Signs reported are consistent with the general literature on trauma and trauma symptoms. Areas in which musicians seemed to be particularly vulnerable, as gleaned from the research survey and case studies, are memory-related problems, concentration problems, aggressive expression on their instrument and altered emotional expression. The classic oscillatory nature of symptoms associated with PTSD, as discussed in chapter 3.4, namely blunting of the emotions or hyperarousal, was reported by some of the respondents. The literature supports the observations regarding concentration problems and attention deficit reported by teachers as witnessed in traumatized students. Scaer writes (2001:13): "Fluctuating symptoms of cognitive impairment especially related to attention and memory would be common in many of these conditions."

One response that could be interpreted as challenging the literature quoted in this study was by a respondent psychiatrist who stated that “[i]nterestingly, research has established that most people suffer amazingly little, if any, damage even in the face of severe trauma”. However, this respondent did not state to which research this claim refers. Even if it is perceived that “little damage” is suffered, it can be questioned whether this is necessarily an accurate perception. Writers such as Levine and Scaer make solid arguments that trauma influences us in ways that we do not even realise the full extent of, including influencing the choices we make in other aspects of our lives. Indeed, Levine (1997:45) writes that while most people are aware that exposure to types of trauma perceived as serious by society can alter people’s lives, most people do not realise that seemingly benign situations can be traumatic.

7.5.2 Effects of trauma experienced early in life

Szpilman (1999:22-32) titles the first chapter in his book “The hour of the children and the mad”. “The hour” refers to curfew time. It would seem that the number of people in the population who act irrationally during wartime, as perceived by others, is much higher than otherwise. This includes disregard of personal safety, seemingly lacking in common sense. This in itself should be sufficient evidence to seriously consider the correlation between trauma and unusual or strange behavioural manifestations. Under circumstances of war, people could be more likely to make a link between behaviour and circumstances, while the likelihood of overlooking this correlation is much greater in the case of trying circumstances of an individual. Domestic violence and/or poverty could arguably be like war to a child. Concluding a discussion on the effects that traumatic circumstances can have on children, Scaer writes (2001:15): “The sensitivity and vulnerability of the developing child to a loss of nurturing and safe boundary structure, and the adverse effects of this loss throughout life on emotional and physical health appear to be frighteningly clear.”

Scaer’s statement quoted above could be interpreted as applicable to case study participants B and C, both initially traumatized at an early age, in that their roads to healing spanned a number of years. In addition, participant A’s comparative resilience could perhaps be interpreted to be a result of her stable childhood. This is not necessarily a positive consequence, since participants B and C acknowledged their vulnerabilities and sought treatment while participant A tended to avoid treatment that could potentially be of benefit to her. The feedback of music teachers confirmed that, from the viewpoint of the majority of musicians participating in the study, trauma observably influenced young musicians. Considering time limitations, financial restrictions and

challenges facing educational systems, it cannot reasonably be expected of educational institutions to provide safe boundary structures in cases where these may have been lacking in the immediate environment in which children live and grow up. However, if care is taken to make circumstances within educational systems as safe and nurturing for the learners as possible, this can go a long way towards helping to diminish the adverse effects of a fractured and troubled society. This would be an investment in the future of a nation.

7.5.3 Concerns particular to survivors of sexual abuse and incest

The effects of sexual abuse and incest can be particularly far-reaching, not the least of which is the effects on other relationships, communication and emotion. While participant C was sexually abused by a friend of the family, participant B is a survivor of mother-daughter incest. According to Ogilvie (2004:105), group therapy is important to help survivors of the latter type of abuse to connect to others and express their individuality. The results of this study support this, as Participant B found a depression support group to be particularly helpful.

For the child, Ogilvie calls mother-daughter incest “the most profound disconnection possible in her world” (Ogilvie 2004:136). She writes that for survivors of such abuse by their biological mothers, the relationship with the mother is characterized by “the most severe physical, psychological and spiritual disconnections”. The titles to some chapters of the first part of Ogilvie’s book are cited here to highlight some of the most important issues. Capitals were removed for ease of reading. These are “acute shame”, “trapped with no place to go”, “identification with and differentiation from the mother” and “difficulty coping” (Ogilvie 2004:i). It was clear from the narrative that these were experienced to a large extent by participant B, as not only was no intervention attempted over the course of many years and was she clearly unable to extract herself from such an extremely abnormal and coercive situation, but she also displays self-destructive behaviours and describes relating to others as having been challenging at times. Ogilvie draws attention to societal and professional denial of the existence of mother-daughter incest in such strong terms as to call it “a world that believes she is telling an impossible lie, that mothers do not sexually abuse children and that the mother is the victim” (2004:51). In addition she points out that such abuse destroys the construction of the self that is formed and sustained in relation to others and that isolation and stigma, severe loss and disrupted patterns of attachment are experienced leading to survivors believing that rejection is the norm (2004:105, 116, 127). As suggested by Ogilvie’s research, participant B’s experience with a psychiatrist is disturbingly unsurprising: she sought treatment from a psychiatrist who did not

believe her and prescribed anti-psychotic medication since the psychiatrist mistakenly thought that the client must be delusional.

Of particular relevance to this study is Ogilvie's finding (2004:123) that survivors of mother-daughter incest experience problems in cognition and memory. In addition she points out that they relive their situations not only in memory but also in daily life. Other types of sexual abuse share similar characteristics, but some are also different in significant ways. For an understanding of transference and countertransference issues, Ogilvie's work can be consulted (2004:145-170).

It can be concluded that participant B's symptoms and reactions to her trauma are in line with professional evaluations of this matter, albeit perhaps not recognized or understood by society – including some in the healthcare and others in the teaching professions - which in turn contributes to further isolation. It can be seen that the impact is so profound that very careful handling of such situations is required and it follows that additional traumatization could result in irreparable damage. At times, turning to music as a safe haven is not so safe at all, especially when further abuse of whatever nature is experienced, as briefly mentioned by participant B. The description of participant B also suggests that, as stated in the literature, transference and countertransference play a role in professional treatment and initial lack of positive outcome. Perhaps it is time for society to start accepting that these types of abuse are a reality and to become more sensitive and less rejecting towards those affected.

7.5.4 The eyes as a means of non-verbal communication

Participant teachers wrote that hesitancy before starting to play, fearful glances at the teacher and avoidance of eye contact could be revealing signs that a student is experiencing trauma-related difficulties. In addition, participant D stated that he struggled to make eye contact as a consequence of one of his traumatic experiences.

Gorrie (2009b:75) states that the eyes can display emotions that can be interpreted by other people and animals. He explains that this is made possible by the external and internal muscles that control the movement of the eyes. In addition, he states that it can be seen in the eyes whether a person is experiencing positive or negative performance arousal. It can be concluded that this supports teachers' observations about how much is communicated by the expression in the eyes of their students and how the first signs of fear and trauma could be detected in the eyes.

7.5.5 Dissociation

The issue of dissociation as a defence mechanism in the face of threat featured repeatedly in the discussion of trauma symptoms in chapter 3 (section 3.6, 3.7, 3.8.3 etcetera), feedback of healthcare professionals on the issue, teachers' observations of concentration difficulties experienced by traumatized students, and case studies' reactions to trauma. Its various manifestations such as the primary, secondary and tertiary forms of dissociation (Nijenhuis *et al.* 2004) were discussed. Case study participants described dissociative symptoms, including an out-of-body experience (Participant D) and in some cases the *TSI* identified dissociative symptoms in participants. Some symptoms reported in the feedback to the teachers' questionnaires could be related to dissociation while healthcare professionals frequently made reference thereto. The importance of resolving dissociation in order for healing to occur was also touched upon (see sections 3.5, 3.7, 3.8.4, 3.8.5, 3.9.1 and 3.9.2). It was mentioned that a situation where the musician is not 'grounded' and where optimal mental focus is not attained is detrimental to performance (sections 4.1.1, 4.1.2 and 4.2.3). Reference was also made to the valuable role that resonance could play in the healing process (chapter 3.6, 3.9.4, 3.9.5, 6.4.2 and 6.4.3). In comparison with the literature, in addition to what has been discussed previously in this study, attention should be drawn here to the work of Louise Montello on "Essential Musical Intelligence" (2002:201):

Essential Musical Intelligence is the voice of your true self. When you are centered and secure in your identity as a valuable, creative human being, its expression is unimpeded. Unfortunately, not all people resonate with this ideal reality.

Montello (2002:201) states that a person can dissociate from his/her 'core being' in order to protect themselves. However, she also believes that a person's Essential Musical Intelligence can lead a person back to their true essence or true self.

7.5.6 Medication

The issue of medicating trauma victims evoked diverse responses from participant healthcare professionals. It was noticeable that respondent psychiatrists were the most likely to resort to medication when a diagnosis of PTSD is made according to the *DSM IV-TR* (APA 2000). On the contrary, others cautioned against the notorious side-effects of medication and the potential effects this may have on musicians (also see section 6.1.5). The researcher would like to quote Levine's observation and opinion here (2005:9):

The field of psychiatric medicine has chosen to view many of the long-term effects of trauma as an incurable disease, only marginally

controllable by drugs or through behavioural management. I do not agree. While medications can at times be quite helpful, they are – of themselves – insufficient.

Case study participant B initially had very negative experiences with incorrect medication before eventually finding medication that did not elicit side effects.

Some respondent healthcare professionals felt strongly that it should be kept in mind that, while it can be an aid in the short-term, medication is not a cure. The potential value of natural supplements and herbal medicines was mentioned by various respondents, and is discussed in section 6.1.5. Dr Yu stated that Chinese herbal medicines have no side effects. In support of natural intervention even for serious mental disorders, authors such as Holford (2007) advocate the correct and controlled use of supplements and diet, discussed at length in his book *Optimum Nutrition for the Mind*. In contrast to pharmacological substances, if used as treatment for deficiencies, natural supplements can and should be used in the longer term or even for life.

7.5.7 Challenge of ascertaining accurate diagnoses

Erroneous diagnosis resulting in delaying appropriate treatment was a concern that surfaced in the discussion of case study participant B. In connection with difficulties experienced to arrive at an accurate diagnosis, it seems that a contributing factor as to why the residues of trauma are so often misunderstood, misinterpreted and misdiagnosed is because all possible responses lie on a continuum. Not only do people who went through the same type of ordeal often exhibit exact opposites of symptoms, but these symptoms very often oscillate between extremes and even overlap with a myriad of other physical and mental diseases. Concern that patients often feel unclear about their diagnosis was echoed in one of the responses from a psychologist as quoted in chapter 6.1.8. It cannot be sufficiently stressed that, since trauma is such a complex matter, it warrants complex and even multidisciplinary evaluation and intervention. Too often the proverbial buck is passed when alternative resources are not available at the time when intervention is most needed to prevent more severe crisis.

The researcher searched for explanations in the literature and would like to refer to Bremner's opinion (2002:246-8) on the issue of psychiatric diagnosis. Bremner strongly believes that stress results in alterations in neurological function that are the cause of the symptoms that manifest in trauma-related psychiatric disorders. Firstly, he explains that stress is stress and that there is no reason to think that trauma experienced in any part of the world would be different to any other

trauma experienced in another part of the world. Another important observation is that traumatized patients present with an inability to cancel out fear responses, even in the absence of any existing threat. He proposes that neurological changes in the brain due to traumatic stress could provide an explanation for the substantial overlap that is seen in trauma-spectrum disorders such as PTSD, borderline personality disorder and dissociative disorders. He vehemently criticizes the approach to psychiatry which propagates finer and finer splitting of psychiatric diagnoses, as seen in successive versions of the ever-expanding *DSM*. Bremner (2002:248) believes that these disorders are not truly distinct, that they have a common basis in neurology and that they are treatable.

7.5.8 Functioning in the present moment

The idea of ‘living in the moment’ has become very popular with so-called ‘life coaches’ and motivational speakers and writers. Participant D drew attention to the importance of living in ‘perceptual presence’¹³ – this translates into living with awareness. Gorrie (2009b:88) explains why this is so important by calling the present or the now ‘[t]he best and only place in the world’. He states that thinking of the past is often reliving negative memories. This could of course increase the past’s negative influence, or, on a biological level, engrave deeper memory circuits of such negative experience. In this way, traumatized people can actually retraumatize themselves without being aware that they are doing this. Section 3.8 referred to Bradshaw (1990:217) identifying the goals of treating PTSD as helping people to live in the present.

On the relative importance of the past, Gorrie (2009b:86) makes it very clear that the events in a person’s past do not determine who they are, but that how they dealt with the events in their past makes up who they are. He also states the seemingly obvious but perhaps sometimes overlooked fact that performing does not take place in the past or the future but in the “here, and now”.

7.5.9 Importance of co-operation between the teaching and healthcare professions

In their comprehensive book *Medical Problems of the Instrumentalist Musician*, Tubiana and Amadio (2000:552) refer to the necessity of close cooperation between medical practitioners and appropriately trained teachers. The frequency with which respondents suggested collaboration between healthcare professionals and teachers confirms that there is agreement to some extent

¹³ It is very important that a traumatized participant specifically drew attention to this seemingly simple advice, since many of the explanations in this study could be interpreted to illustrate how aspects of existence not having any direct relevance to the present moment are negatively affecting it.

about the importance of interdisciplinary collaboration in the support of musicians suffering from various forms of medical problems (as seen from the perspective of Tubiana & Amadio), and from trauma (from the perspective of respondents). Respondents from the fields of music therapy and communication pathology placed particularly great importance on interdisciplinary collaboration even to the point of such collaboration extending beyond the point in time when a referral is made. This indicates that they view the teacher's continuous role in the student's life as warranting communication between professionals, the priority being the well-being of the student. Unfortunately, a high percentage of teachers indicated that they have never referred traumatized students to healthcare professionals.

Tubiana and Amadio discuss physical trauma in detail but never touch on the subject of psychological trauma. The closest this text comes to even connecting psychological trauma with problems of performing musicians is in the section on psychological problems and substance abuse (Tubiana & Amadio 2000:551). Here the influences of socioeconomic factors and family difficulties, as well as emotional and psychological stresses, are briefly referred to. These same factors were highlighted by participating musicians, albeit more specifically in the context of traumatic experiences encountered by musicians. One case study participant identified financial stressors to be traumatic, while some teachers expressed concern about the costs of treatment. One teacher referred to the circumstances of previously disadvantaged music students and their tendency to come to the music building as a place of safety and belonging. It can be deduced that failure to seek treatment can in some cases be attributed to financial reasons.

From the viewpoint of a balanced wholism, the first steps necessary to achieving a true metaphysics of sickness and health would lie in the realization and acceptance of the fact that there are living harmonies – dissonant ones and consonant ones – to be fathomed, that understanding these harmonies, in the sufferings of illness as in the flowerings of health, will lead us both to the insights we seek concerning our well-being and to a metaphysics true to the human bodies we are.

- Sheets-Johnstone 1992:154

CHAPTER 8: CONCLUSIONS AND RECOMMENDATIONS

8.1 Answering the research questions

At the outset of this study, the following main research question was posed:

In what ways can trauma that also includes psychological sequelae influence musicians?

From the responses to the research survey it was evident that trauma can influence musicians in the same ways that it does any other person. However, ways in which trauma can affect musicians specifically related to their occupation involved various aspects that impact on concentration, memory, emotional expression and altered experience of emotions, problems in interpersonal relationships, effects on self-esteem and self-confidence, mood changes affecting work, dissociation problems interfering with performance and practice and tension-related problems that affect sound production on the various instruments or voice.

The first two sub-questions that arose from the main research question were the following:

In what ways can a musician's capacity to express emotion be influenced by trauma?

In what ways can trauma influence a musician's memory during music performance?

It was indeed found that emotions and memory were particularly affected in traumatized musicians. In some cases the extent of traumatic sequelae was sufficient to influence professional functioning adversely. Particularly the oscillation between emotional numbing and hypervigilance, both specific symptoms associated with PTSD, were identified as interfering with optimal performance. Changes in mood were common symptoms reported. Emotional

changes, emotional experiences that are associated with trauma and drop in self-esteem were identified as symptoms interfering with motivation to succeed at the instrument or voice and leading to a decrease in creativity and productivity. In addition, anger expressed at the instrument was commonly mentioned by both teachers and performers as affecting functioning and performance. Anxiety reactions resulting from trauma residues were identified as possibly amplifying stage fright. Dissociative symptoms were identified in various cases to be at the root of memory and concentration difficulties. Symptoms associated with dissociation were identified in all four case study participants at various stages of their roads and it can be concluded that dissociation is the most important aspect of the trauma response to resolve in order to achieve recovery. ‘Flashbacks’ and intrusive thoughts as well as temporary amnesia for music due to dissociation were reported.

It needs to be stated that, as also emerged from the responses to the research survey, traumatic experiences do not in all instances have a residual effect on aspects of musicians’ music-making. However, it was also seen that, in cases where adverse influence manifests, this sometimes can have far-reaching effects, either in the immediate short-term or even in the long-term. The type of trauma also affects the reactions, but it can still not be predicted which reaction will follow exposure to what type of trauma. Two case studies experienced sexual trauma and in comparison to the other case studies, the effects of this took longer to overcome than those of other types of trauma.

The third sub-question that arose in the investigation of how trauma that includes psychological sequelae can influence musicians was the following:

What are the warning signs of adverse influence caused by underlying trauma that teachers and performers should be aware of?

A broad range of warning signs was identified and listed in chapter 6.1 and 6.2. In some cases these signs were general behavioural changes whilst at other times signs were very specific to the instrument or voice. Respondents shared their opinions of how symptoms interpreted as interfering with optimal functioning at times turned out to be trauma-related. It was also stated that care should be taken not to see trauma where none exists or to inappropriately question or make deductions that can be harmful to the student (due to the potentially damaging nature of suggestions). The importance of being alert for changes in students’ behaviour became

particularly clear since most warning signs are deviations from what was normal behaviour for the student.

The last sub-question was regarding treatment and was posed as follows:

What treatment interventions did musicians participating in the study find to be effective for trauma?

A wide variety of treatment interventions were found to be effective. Healthcare professionals often referred to (in alphabetical order) EMDR, EMI, hypnotherapy, the use of natural supplements, pharmacological treatment, psychotherapy, trauma counselling as well as other forms of treatment. A more comprehensive discussion hereof can be found in chapter 6.1.3. Teachers were not particularly questioned about types of effective strategies, but many stated that, in their experience with students, recovery takes a long time and some even mentioned that there are cases in which full recovery was never achieved. It became evident that music itself can have a healing effect for traumatized musicians. This includes listening to music as well as playing music. However, it was pointed out that when a musician is faced with having to deal with trauma, the demands of professional performing can become an additional burden and the exact mechanisms of dealing with trauma can at times interfere with performing at one's best. Case study participants found alternative therapies, CBT, counselling, hypnotherapy, psychotherapy and psychotropic medication to be helpful in their healing process. Two of the case study participants found vibrational medicine to be helpful. All case studies experienced music to be healing at various times, while two particularly referred to the healing effects of drumming and linked this to the 'healing' vibrations emitted.

8.2 Proving or disproving the hypotheses

The following hypotheses were considered for this study (see section 1.3):

Trauma can affect musical expression by influencing the emotional intent, emotional state, or capacity for expression of the performer as well as affecting his or her physical motions, both having an impact on the musical result.

Where various coping mechanisms come into play, trauma can also have a profound influence on a musician's memory during music performance and study.

The effects of trauma can influence teachers as well as performers.

The hypotheses were confirmed at many levels as reported during the course of the study. While some musicians experienced particular emotions related to trauma that could be identified and verbalized such as anger, sadness, anxiety and loss, others experienced emotional numbing while yet others experienced deepening of affect. It is not uncommon for all of these to be experienced by the same individual at various stages of the recovery process. However, the responses were very individual and it was seen that it is not possible to predict what the reactions will be. It was also hypothesized that, where various coping mechanisms come into play, trauma can have a profound influence on a musician's memory during music performance. Although this clearly did not occur in every traumatized musician, it was repeatedly confirmed by various respondents from the healthcare and teaching professions, as well as three of the four case study participants. Trauma-related concentration difficulties, intrusive memories and memory overload were reported at a high rate by these respondents. The abovementioned effects were reported to affect performers as well as teachers.

In order to answer whether trauma can influence musicians in their professional capacity, the following question was posed: **Do a number of noticeable and/or observable signs exist, particularly manifesting in but not exclusively limited to their expression of emotion and memory during music performance, in individual musicians affected by trauma?** The antithesis to this would be that trauma has no influence on musicians. A very small minority of the respondents to the teachers' questionnaire held this opinion. It was shown that reasons such as own unresolved trauma could have influenced such viewpoints. However, the overwhelming majority of respondents to both the teachers' and healthcare professionals' questionnaires clearly stated and provided examples of how trauma influences musicians. In addition, concrete and specific examples were given as to how trauma was perceived to have influenced music-making. Case study participants also showed a number of trauma-related symptoms as reported by themselves and measured by the *TSI*.

It was also investigated whether these signs were alleviated in musicians who have received treatment. This is more difficult to measure directly, since factors such as time elapsing after trauma, types and duration of treatment and subjective interpretation of changes or recovery can play a role in the real and reported outcomes. The prevailing opinion amongst teachers was found to be that students who have received treatment did indeed show signs of improvement but that this was a lengthy process, sometimes spanning more than a year. Healthcare professionals

also indicated that treatment is necessary and beneficial, but did not indicate specific treatment durations. They highlighted a wide variety of potentially beneficial intervention strategies and also emphasized the fact that treatment should be tailored to the unique needs of each individual. Case study participants B, C and D found a variety of interventions helpful on their respective roads to recovery, while case study participant A did not remain in treatment for an extended period of time. Spiritual and religious beliefs were also identified as playing a healing role. Mixed experiences and interpretations of the effectiveness of treatments were prevalent amongst the respondents. Some described certain treatment approaches as effective but conditional on certain prerequisites being met such as finding therapists who match personality types or are experienced in the particular type of trauma with which the client needs help or finding medication that works without producing harmful side-effects.

8.3 Conclusions

The following conclusions are interpretations of and deductions from the research data and should be viewed as such. It is of the utmost importance that these conclusions be viewed as limited to the participants of the study and not be generalized. This is in line with Ashworth's contention (2003:19) that, when working in a postmodern framework, conclusions drawn from research activity should be viewed as interpretations. When taking into account all factors influencing a particular phenomenon whilst working from a holistic perspective, interpreting situations is inevitable since research subjects and environments are not controlled but observed in an attempt at understanding the entity that is being studied. The nature of this study is such that observations of professionals and self-observations of case study participants were all interpretations, whether those of the self or of others.

8.3.1 Identification of signs of trauma and communication between musicians and professionals

Performing musicians affected by trauma can find themselves in situations with unexpected symptoms having a negative impact on their careers. Symptoms could be debilitating to a greater or lesser degree. Teachers working with students who were traumatized or being the first to whom information is disclosed could suddenly be faced with making difficult decisions and a responsibility greater than they may have been prepared for. It was seen that the channels of communication between teachers, musicians themselves and healthcare practitioners do not

always function satisfactorily and important points in connection therewith were raised. In addition, a prerequisite of successful teaching that encourages growth of both students and teachers is that teachers refrain from imposing their limited realities and their metanarratives (including their own pasts and their own traumas) on their students. This was briefly referred to in section 4.5.

8.3.2 Definition of trauma found to be applicable to musicians

Peichl's definition of trauma as a 'toxic condition' (Peichl 2007b:23) was indeed applicable to musicians, since it was shown how the toxic effects of trauma influence various aspects of the lives and careers of musicians. However, trauma also posed the very challenges of overcoming the helplessness and loss of control which Peichl associates with the condition. By going through this process, greater strength and control were attained in some cases. Scaer's (2005:71) definition of trauma as 'a disorder of the perception of time, of the body, and of the self' was found to apply to musicians in aspects pertaining to self-esteem, somatic symptoms, dissociative symptoms and changes in the ability to achieve optimal concentration and to function 'in the moment' or be fully present.

8.3.3 Incorporating music, sound and movement in the healing process

Writers such as Sheets-Johnstone (1992:154, quoted at the beginning of this chapter, p 188) describe the human body in musical terms. Such approaches open new possibilities for treatment and also contribute to explain why music and sound itself were found by some participants to play such a profound role in healing. In the results of this study, such intervention ranged from alternative modalities implementing sound frequencies to drumming. Movement (and movement can be linked to musical rhythm) was also identified as possibly playing an important role in discharging the freeze response.

8.3.4 From the universality to the uniqueness of traumatic experience: creating meaning

All people may experience trauma at some time in their lives. However, traumatic experiences fall within a wide range of severity and perhaps even wider range of ways in which they affect each different individual. Some can be attributed to the accumulation of many of 'life's little traumas' (Scaer 2005:2), which he believes to be significant enough to "shape virtually every aspect of our existence". On the other hand, some events can be so devastating as to defy any rational explanation. These latter cases can represent a dilemma even to experienced therapists. Should they try to change people's perception of their level of control during the event, should

they change the meaning of the event in hypnosis, or should they intervene on a pharmacological level, are but a few of the questions that arise. New ethical dilemmas are also raised by the latest brain research investigating how traumatic memories could be erased – although doubt must be expressed as to whether this would be possible without causing unwanted damage to other functional areas in the brain. When no human logic can assist to make an event more tolerable, the words of the psychiatrist Scott M. Peck come to mind. In seeking explanations of how people can survive or ‘absorb’ evil that they were exposed to and not be destroyed in the process, Peck writes (1983:269): “I do not know how this occurs. But I know that it does ... Whenever this happens there is a slight shift in the balance of power in the world”. Seen from a holistic perspective, finding such a meaning in traumatic experience could aid in creating consonance rather than dissonance for the survivor of the experience.

8.3.5 Awareness as prerequisite for appropriate referrals leading to effective treatment

From the research it became evident that there are various therapies which can be of value in the treatment of trauma and that different individuals react differently to various forms of intervention; each individual is unique. Trauma residues can and do have serious consequences. Therefore it is of the utmost importance that appropriate intervention is sought. It is advisable that musicians should be aware of their own reactions to trauma. Of perhaps even greater significance is that music teachers should be equipped to recognize trauma symptoms and make appropriate referrals. A realistic hope would be that, through intervention, musicians would gain awareness and insights into their own reactions to trauma and that such interventions would assist them to conquer traumatic experience and emerge stronger. Ultimately, when awareness is gained, musicians can assume a large part of the responsibility for their own healing.

8.4 Recommendations for further study

During the course of this study it became evident that ample aspects warranting further investigation and opportunities for rewarding research exist. Since not much research has been done, particularly about the influence of trauma on musicians, it can be expected that a large number of new questions emerged as a result of this investigation. Most notable is the question to what extent these findings could apply to other contexts as well, namely musicians living in countries other than South Africa and the minimal international response rate received in the current study. It is hoped that some of these could spark the interests of other researchers,

including musicians, music therapists, academics, psychologists and others from the healthcare professions, leading to future investigations. Below follow suggestions for such research. Where appropriate, the reader is referred to the parts of this thesis where the relevant topics were discussed and appropriate references can be found.

8.4.1 Collaboration between different disciplines

The study of the influence of trauma is a multidimensional pursuit and multidisciplinary involvement should be aimed for therein. Not only must trauma's intrapersonal effects be understood, but also its interpersonal manifestations and even intergenerational transmission. If researchers, musicians and teachers are to hope for truthful answers and conclusions, the first step is achieving sufficient awareness of the complexities of human existence. Studies should be conducted aimed at further educating professionals about complementary treatments that are available and implementing measures that would provide opportunities for interdisciplinary collaboration and communication between professionals.

8.4.2 Effects of trauma on musicians at different levels of accomplishment

What effects trauma has on musicians at different levels of accomplishment should be investigated. A relevant question to be asked is if there could possibly be a level of accomplishment attained by concert artists who started playing their instruments very early in life that is so deeply ingrained in the brain that subsequent trauma has less effect on them or on the quality of their performances than on those whose abilities were not as solidified at the time that traumatic activation occurred in the brain. Aspects that need to be investigated include the effects of traumatic events that occurred prior to embarking on music studies (as defined by starting to learn an instrument or voice), as compared to occurrences after the commencement of music studies. In addition, the extent of traumatic influence on musicians who develop illnesses or injuries which impact their careers is a subject warranting further investigation.

8.4.3 Personal experiences of trauma by healthcare professionals affecting their views

Ways in which the personal experiences of teachers interacted with their professional evaluation of the influence of trauma on their students were briefly discussed (see chapter 7.2.1). Considering the nature of this study and the fact that it was conducted by a musician and not a healthcare practitioner, it would obviously not have been appropriate to include a similar optional question regarding personal experience(s) of trauma at the end of the questionnaire sent to healthcare professionals (please see the questionnaire that was sent to music teachers, question

11, as contained in Appendix B). However, in order to gain more insight into how healthcare professionals came to appear to be either non-committal to the particular effects of trauma on musicians, or to be highly sensitive thereto, research investigations should be conducted by those authorised to do so. This could be extended to include the interaction of healthcare professionals with clients other than musicians.

8.4.4 Gender differences

A wealth of material documenting traumatic response exists in the literature. However, the researcher did not encounter scholarly material that particularly investigates how coping strategies and ways of dealing with trauma employed by men may differ from those of women. The exception was Bremner's brief explanation (Bremner 2002:199) of men and women's different responses to stressors as genetic differences involved in the preservation of the gene pool. Due to a relatively low return rate from male music teachers to whom questionnaires were sent, this study cannot begin to make any deductions in this regard apart from mentioning that female music teachers seemed to be more likely candidates to return the questionnaire. It is suggested that gender studies investigating differences in traumatic response and coping mechanisms could be pursued by another researcher.

8.4.5 Effects of trauma on musicians' cognitive functioning, memory and concentration

The exact influence of the dissociative symptomatology associated with ASD and PTSD on music performance warrants further investigation. The aim should be to determine exactly what occurs in the brain and thoughts of musicians thus affected during performance. Extensive questioning of musicians who perform from memory would have to form an integral part of an investigation aimed to determine the percentage of memory lapses during performance that can be attributed to trauma symptoms. However, to ensure objectivity this needs to be conducted in a way eschewing any form of leading questions.

Also, as discussed earlier in chapter 2.8.3, since it seems that more brain structures are involved in processing memory for music than in some other essential forms of memory, it may be expected that compensatory mechanisms could spring into action in the brains of traumatized musicians. Their music skills may appear to be less affected than other previously learnt skills. This is certainly a topic which warrants further research, preferably controlled studies conducted in laboratory settings.

Weber *et al.* (2005) illustrated abnormalities in the functioning of working memory in patients with PTSD (see section 2.8.4). Working memory is essential for musicians whilst practising, when integrating material and during performance. The extent to which such abnormalities have relevance to functioning of memory processes of musicians and their specific trauma responses should be investigated. Since Weber *et al.* (2005:41) implicate changes in verbal processing, perhaps affected singers could be used as case studies to determine this.

Concentration and attention are intimately linked to memory skills, all being of the utmost importance to the performer. In building on Bartlett's statements (1996:178) as referred to in section 4.1.3, the researcher would like to suggest that, through questioning of performers in controlled settings, more insights can be gained into how voluntary cognitive activity with its roots in traumatic experiences may play a role in the breakdown of memory. It may be even more important to investigate the extent of alterations in the normal functioning of the autonomic nervous system due to unresolved trauma as a contributing factor in memory and concentration breakdown. In some instances this may perhaps be related to pathological manifestations of stage fright.

Changes in hippocampal volume found by other researchers to be associated with trauma and especially with traumatic stress of an extended duration were discussed in chapter 2.8.3. This researcher could only wonder how much this can or does influence the memory of the musician, including studying new pieces of music, recalling and length of time taken to relearn works performed previously, and performance from memory. Since yet other researchers have argued that it seems that a particularly large number of brain structures are involved in processing memory for music, the observed effects of decreased hippocampal volume on the memories of musicians could perhaps be expected to be less pronounced than that for other skills. Nevertheless, performing from memory requires specialized skills. Therefore traumatized musicians could perhaps constitute an ideal group for the scientific investigation of the impact of decreased hippocampal volume on memory skills. Such studies would benefit both researchers and musicians, since it is not yet known what the influence of changes in hippocampal volume due to severe traumatic experience could be on musicians required to perform from memory. To investigate this, ideally three groups should be selected. The first group should consist of

normal control subjects, the second of subjects diagnosed as suffering from PTSD or related disorders but with normal hippocampal volumes and the third of traumatized musicians diagnosed with PTSD who also present with decreased hippocampal volume. Preferably, subjects compared to each other should play the same instrument (or be singers) and be from roughly the same age group. In order to investigate additional forms of memory in these same subjects, further studies could be conducted with these homogeneous selected groups.

8.4.6 Biological considerations

Links between PTSD and Adrenal Fatigue Syndrome should be investigated, possibly building on the research of Yehuda *et al.* (1997, 1990) on decreased cortisol levels in PTSD as well as the findings of Wilson (2001) on AFS. This was referred to in section 3.5.

It should be investigated whether self-medication and drug abuse in the population of musicians could be linked to painful traumatic experience. If a relationship is indeed found to exist, solutions and intervention strategies should be sought.

Aldridge's suggestion (1993:20) to view our responses to 'biological challenge' in terms of improvisations and to view disease as a restriction of those could be of value in achieving greater insights in the subject under investigation in this study. If, as he suggests, different diseases do differently affect our responses to music, it should be investigated whether musicians indeed employ a 'repertoire of improvisations' in response to challenge of a traumatic nature. Since Aldridge's statements imply that creativity would be restricted in musicians suffering from pathology caused by trauma, it should be determined whether creativity is indeed restricted in traumatized musicians (also see chapter 4.4.2).

8.4.7 Rate of recovery

Slow recovery rates reported by music teachers were cause for concern when it is considered that dedicated students find themselves in a competitive environment where rapid and efficient progress is expected. It could be investigated whether integrative approaches could address aspects not covered in traditional school counselling and perhaps speed up recovery time. It may have to be investigated which complementary therapies are most successful in aiding with the

accumulation of ‘frozen energy’ due to the immobility response as referred to by Levine (1997:105).

8.4.8 Aspects related to music’s role in healing and the place of vibrational medicine

Music’s potential application for anxiety reduction and balancing of the energy fields of the body as a component of psychotherapeutic intervention administered to victims of trauma should be investigated. Also see Spintge (1991:65) on music’s anxiolytic properties as referred to in section 4.4.4. Perhaps music can even provide an alternative stimulus, engaging the brain’s attention on the music and thereby possibly reducing intrusive traumatic memories.

Psychologists and neuroscientists have made great progress in the understanding of the functioning of the human mind. It should also be investigated, when playing or listening to music, how much people express and/or perceive consciously and to what extent the expression and/or perception of music involves unconscious processes. Once this is understood to a greater extent, informed decisions can be made on which music to listen to for what effects, especially in the therapeutic environment. This is a matter closely related to other applications of vibrational medicine, which also incorporates sound frequencies and music in treatment. These exert their influence not exclusively on the body but also have the potential – and are utilised for this purpose - to influence brain function and brainwaves.

More concrete research and controlled studies are required to gain greater insights about the exact extent to which systems such as the EPFX/SCIO biofeedback device could be helpful. It is suggested that, since a sensitive understanding of the nature of sound is an important aspect of the successful application of these technologies, musicians including those who also qualify themselves in the alternative healthcare field could play an important role in such research.

8.4.9 Providing good support structures for students in schools and lessening the risk of secondary traumatization to professionals

As mentioned in section 7.5.2, time limitations, financial restrictions and other problems facing educational systems challenge the ability of educational institutions in South Africa

and elsewhere to provide safe boundary structures in cases where these may have been lacking in the immediate environment in which children live and grow up. However, if care is taken to make circumstances within educational systems as safe and nurturing for the learners as possible, including providing reliable professional counselling services and equipping teachers with the necessary skills to appropriately deal with challenging situations, this can go a long way towards helping to diminish the adverse effects of a fractured and troubled society. It is suggested that authorities should conduct a cost-benefit analysis of the financial costs of implementing treatment programs in educational institutions as opposed to the long-term effects on the well-being of individuals when no intervention is offered. Thereafter decisions can be made regarding the incorporation of more comprehensive intervention structures.

Exposure to secondary traumatization can take its toll on the health of teachers, healthcare professionals and researchers in the field of trauma, as mentioned in chapter 2.8.1. It is recommended that interdisciplinary collaboration be sought and explored in order to find and implement effective ways of lessening the risk to those investing their energy and resources to help others. Enquiry about the extent to which emotional influences and trauma contribute to physical illnesses may lead to a conclusion amongst open-minded individuals that interdisciplinary collaboration may be necessary to lessen the risk to those investing their energy and resources to help others.

8.5 Recommendations regarding the training of music educators

There are only two ways of increasing teachers' and performers' awareness about trauma. The first is knowledge gained through personal experience (whether that of self or witnessing the effects of trauma in others) and the second is through education. In order to effectively inform the largest possible number of educators about the signs of and possible solutions to the effects of traumatic stress, the benefits of incorporating training herein should be seriously considered by those assigned the important responsibility of determining the curriculum covered in training teachers at the tertiary level.

8.5.1 Implementing training in psychology in the music teaching curriculum

Much research still needs to be done to determine what improvements in music education systems would be most valuable in order to empower teachers with knowledge about realities they might encounter in the profession but which are not addressed in tertiary studies. The aim should be to reach a more holistic educational outcome. Teachers should be familiar with general signs of trauma, including those connected to the instrument or voice. They should be familiar with the general manifestation of ASD and PTSD symptoms to enable them to understand whatever situations they might encounter. As discussed in chapter 3.4, recognising the oscillatory nature of symptoms associated with PTSD symptomatology could empower teachers to recognize this in students and make appropriate referrals. If teachers could be more aware that marked changes in students' behaviour from week to week, particularly pertaining to emotional behaviour, avoidance and over-reacting, they could notice problems early on and make appropriate referrals in a timely manner. Viable measures should be investigated which could be incorporated in the teaching curriculum of tertiary education institutions to educate teachers in this regard. Research should be done to determine how training in basic educational psychology could be incorporated in music curricula followed at tertiary institutions in South Africa and abroad. This pursuit could be refined and specialized according to needs encountered in different geographical areas by determining to what extent musicians from different countries are affected. The history of countries affected by wars, natural disasters and other extreme forms of violence such as those associated with racial segregation and slavery in the past hundred years should be taken into account in addition to determining where affected musicians are located at present.

In addition to incorporating basic educational psychology in a compulsory curriculum for music teachers, suggested curriculum should make provision for educating teachers about ways in which to handle cases of domestic abuse and incest in the correct manner and with the necessary sensitivity in order not to complicate the lives of the victims additionally. It can be concluded from the discussion of case study participant B that special care should be taken in the intervention of cases of incest, particularly because of its devastating effects. Evidently, cases of domestic abuse and/or incest have complexities of a sensitive nature and require highly specialized intervention. Sadly, investigating such a case in hindsight brought it to the researcher's attention that in such instances it can be easy for teachers to turn a blind eye. The particular concern of

handling cases of domestic abuse was not encountered in the responses by teachers to questionnaires, possibly indicating a low incidence of actually being informed of such cases.

A sensitive matter such as intervention in the aftermath of trauma requires wisdom regarding morally correct but practically viable and effective ways of conduct. It is suggested that training in ethics should be incorporated in teacher training programs and be extended to cover areas where tough decision-making could be required and where the consequences could be far-reaching.

8.5.2 Benefits of incorporating movement as part of music training

Where students specialising in performance are concerned, the scope of the benefits of Levine's SE, Dalcroze Eurhythmics, the Alexander Technique, the Feldenkrais method, Rolfing and Yoga, extending but not limited to traumatized music students, should be determined. Thereafter decisions could be made regarding the benefits versus costs of including such disciplines as part of the music curriculum (also see related paragraph under chapter 3.8.5). It is suggested that adopting a more integrative approach to music education could have the added advantage that aspects which could otherwise have remained blockages for the instrumentalist and performer can be addressed and overcome, sometimes achieving this balancing of the individual without deliberate intervention. Seeing that so many consequences of traumatic stress are overlooked until it becomes a debilitating problem, this could be an investment in the general well-being of musicians and music students.

8.5.3 Reaching teachers in rural areas

The number of music teachers, particularly in rural areas, who do not have tertiary music training will still not be reached by courses implemented at the tertiary level. Short training and enrichment courses offered by institutions such as UNISA (University of South Africa) and ABRSM (Associated Board of the Royal Schools of Music) are an ideal platform where concise handouts could be distributed in which teachers are made aware of the main points highlighted in this study.

8.6 Epilogue

The researcher is convinced that the findings of this study have indicated an imperative need for further investigation by researchers and other interested parties into the influence of trauma on musicians and others in the creative arts.

This study served to confirm from the perspective of most of the musicians generously taking part that, when Levine (2005:83) states that “[t]raumatic experiences are an unavoidable fact of life”, he is echoed by many others, including musicians and music teachers.

Andrzej Szpilman so eloquently writes in the foreword to his father’s book (Szpilman 1999:7) that in Poland his father would be described as ““a man in whom music lives””. From this it can be inferred that something as significant as traumatic experience(s) encountered in life surely also affect other important aspects of people’s ‘personhood’ or ‘selfhood’. Not only are trauma and music integral to human existence and important realities thereof and therein, but they can potentially impact each other in remarkable ways. It has been seen that these ways include music’s capacity of expressing what is difficult to formulate in words, as well as its role in facilitating healing.

Appendix A:

**QUESTIONNAIRE for doctoral study
circulated to participant healthcare professionals**

Where applicable, participants may be identified by occupation. Participants will otherwise remain anonymous.

Answers to questions about situations of which the respondent has no experience should be left blank.

This questionnaire should take no longer than 30 minutes to complete.

1) In which capacity do you function in the healthcare professions? (e.g. Medical doctor, psychologist, psychiatrist, counsellor, physical therapist, homeopath, etcetera)

.....

2) Have you worked with musicians in your practice? Please provide some detail (number of, approximate age group, levels of accomplishment).

.....
.....
.....

The concept of trauma relevant to this study is defined by Laplanche and Pontalis in *The Language of Psychoanalysis* (1973:465) as “an event in the subject’s life defined by its intensity, the subject’s incapacity to respond adequately to it, and by the upheaval and long-lasting effects that it brings about in the psychological organization”. This could be a single event, or be extended to include a series of events. Please also consider Beaulieu’s (2003:28) description of a traumatic experience as “any experience that leaves an imprint that continues to give rise to negative effects and recurrences in one or more of the sensory, emotional or cognitive systems” (In *Eye Movement Integration Therapy: The Comprehensive Clinical Guide*. Carmarthen: Crown House Publishing).

3) In your opinion, what are signs that teachers and performers should be aware of that could suggest the possibility of trauma adversely affecting the individual at the point in time the observation is made?

.....
.....
.....

4) In your opinion, what are the most effective ways of treating traumatized individuals:

a) In recent trauma?

.....
.....
.....

b) In the case of past trauma currently having a clearly observable influence on the individual?

.....
.....
.....
.....

c) In Post-traumatic Stress Disorder or related psychiatric diagnosis?

.....
.....
.....
.....

5) Please share your opinion and/or experience regarding ways in which trauma and PTSD can affect musicians in their professional capacity. This may include aspects such as emotional expression and memory during performance.

.....
.....
.....
.....
.....

6) Would you suggest the use of medication in the treatment of traumatized individuals? Please specify under what circumstances.

.....
.....
.....
.....

7) Could you please provide knowledge of, in your own experience with clients, how the use of medication affects expression of emotion, performance of and memory during performance?

.....
.....
.....
.....
.....

8) Is there a specific type (or types) of trauma that is more difficult to treat and that particular care should be taken with?

.....
.....
.....
.....

9) What are the most common mistakes that teachers make when dealing with students who have been exposed to serious trauma? The teacher may or may not be aware of the trauma.

.....

.....
.....
.....

10) As a healthcare professional, do you have any advice to teachers and performers regarding what action to take and what action not to take when they become aware of possible existing problems? This can include situations where families of musicians are involved.

.....
.....
.....
.....
.....

11) Confronted with a situation in which a minor is involved and in the opinion of the teacher the involvement of the parents is not desirable, what ways would you suggest of circumventing this problem without violating any legal requirements that may exist?

.....
.....
.....
.....

12) Judging from your own experience in the healthcare professions, in the event of unclear psychiatric diagnoses, would you suggest to other healthcare professionals that the possibility of trauma as the cause of the symptoms should be investigated?

.....
.....
.....
.....

Please add any comments that you believe could be of value to this study and to the musicians who read the results of this study.

.....
.....
.....
.....

Thank you for your valuable input!
Researcher: Inette Swart

Appendix B:

QUESTIONNAIRE for doctoral study circulated to participant music teachers.

Where data is quoted, music teachers may be identified by the instrument(s) they teach. Participants will otherwise remain anonymous.

Answers to questions about situations of which the respondent has no experience should be left blank.

This questionnaire should take no longer than 30 minutes to complete.

1) Which instrument(s) do you teach?

.....

2) For how many years have you been working as pedagogue or music teacher?

.....

The concept of trauma relevant to this study is defined by Laplanche and Pontalis in *The Language of Psychoanalysis* (1973:465) as “an event in the subject’s life defined by its intensity, the subject’s incapacity to respond adequately to it, and by the upheaval and long-lasting effects that it brings about in the psychical organization”. This could be a single event, or be extended to include a series of events. Please also consider Beaulieu’s (2003:28) description of a traumatic experience as “any experience that leaves an imprint that continues to give rise to negative effects and recurrences in one or more of the sensory, emotional or cognitive systems” (In *Eye Movement Integration Therapy: The Comprehensive Clinical Guide*. Carmarthen: Crown House Publishing).

3) Have you ever given the possible influence of severe trauma on the expression of emotion and memory during performance of students any conscious consideration? If yes, what were the aspects that came to mind?

.....
--

4) Have you worked with students whom you are aware have been exposed to serious trauma? If yes, what did you learn from this experience?

.....

.....

.....

.....

.....

.....

5) In your opinion and experience, how did this affect their expression of emotion at the instrument or through their voice (in the case of singing students)?

.....

.....

.....

.....

.....

6) In your opinion and experience, how did this affect their memory during performance?

.....

.....

.....

.....

.....

7) Are there any specific signs that could indicate a student is having difficulties related to trauma that you believe teachers should be aware of? Referred to here are general signs and these need not be limited to having any relation to the music itself.

.....

.....

.....

.....

.....

8) Please consider the following statement: “Performance equals potential minus interference”¹⁴ (Phyllis Alpert Lehrer in *A Symposium for Pianists and Teachers: Strategies to Develop the Mind and Body for Optimal Performance*, edited by Kris Kropff, 2002:125). Please identify ways in which trauma interfered with optimal performance.

.....

.....

.....

¹⁴ Equation originally derived from Green and Galway’s *The Inner Game of Music* (1986:23).

.....

.....

9) Have you ever referred a student whom you became aware of have been affected by trauma or whom you suspect to having been affected by trauma to a healthcare professional? If appropriate, please provide more detail.

.....

.....

.....

10) Whether referred by yourself or in a situation where you have knowledge that an individual student has been treated for trauma or Post-traumatic Stress Disorder, have the signs mentioned in your answer to question 5 subsided or completely been resolved? Could evidence of progress or recovery be seen in expression of emotion in music and memory for music? If so, in which ways and over how long a period of time?

.....

.....

.....

.....

11) OPTIONAL: Have you yourself ever personally experienced serious trauma? How did you deal with this and what therapy did you seek, if any? If applicable, how did this influence performance on your instrument?

.....

.....

.....

.....

Please add any comments that you believe could be of value to this study and to the musicians who read the results of this study.

.....

.....

.....

.....

Thank you for your valuable input!
Researcher: Inette Swart

Appendix C

Case Study Interviews

Introduction

The case studies were conducted in the form of semi-structured interviews. (Answers to questions determined the direction that the interviews took. Please find below an outline of the types of questions asked.)

Description of topics covered in interviews

1. Musical background

What instruments do you play and/or teach? How many years have you been involved in music?

2. Significant life traumas

You were selected for participation in this study since you have indicated that you have been exposed to significant trauma. What types of trauma(s) were you exposed to and please indicate how long ago these happened.

3. Effects of trauma(s) on performance

This constitutes the affective reactions of the person. Effects on expression of emotion. Effects on memory for music. Experiences on stage during this time.

4. Effects of trauma(s) in your life

This includes any areas in your life that were influenced by the traumatic experience(s), e.g. confidence, social functioning, anxiety responses, etcetera.

5. Treatment (if any)

This may include length of recovery period, observed changes and stages during treatment. You may include professional opinions on your case by people responsible for assisting in the recovery process.

6. Influence of the trauma on you as a musician

This could address aspects such as maturation of interpretations and performance. Observations made by others that came to your attention. Other examples include giving up on a planned performance career, shunning public performance.

7. Insights gained through your experience

By having and working through this experience, your knowledge about the subject must have expanded a great deal. Perhaps there are some things you would like to share with fellow musicians?

Thank you for your valuable input!
Researcher: Inette Swart

List of References

- Ahrens, C.B. & Atkinson, G.D. 1955. *For All Piano Teachers*. Ontario: The Frederick Harris Music Co.
- Aiello, R. 2001. Playing the Piano by Heart: From Behaviour to Cognition. Pp. 389-393. In: Zatorre, R.J. & Peretz, I. (eds.) *The Biological Foundations of Music. Annals of the New York Academy of Sciences*. Vol. 930 (June). New York, NY: New York Academy of Sciences.
- Aldridge, D. 1993. The music of the body: Music therapy in medical settings. *Advances*, Vol. 9 (1): 17-35.
- Altenmüller, E.O. 2004. Music in Your Head. *Scientific American Special Edition*. Jan: Vol. 14 Issue 1:24-31.
- Altenmüller, E.O., Bangert, M.W., Liebert, G. & Gruhn, W. 2000. Mozart in Us: How the Brain Processes Music. *Medical Problems of Performing Artists*, September.
- Amendolia, R. 1998. A Narrative Constructivist Perspective of Treatment of PTSD with Ericksonian Hypnosis and EMDR. *The American Academy of Experts in Traumatic Stress*. Available at <www.aaets.org/article32.htm>. Accessed 10 April 2008.
- Antelman, S., Caggiula, A., Gershon, S., Edwards, D., Austin, M., Kiss, S. & Kocan, D. 1997. Stressor-induced oscillation: A Possible Model of the Bidirectional Symptoms in PTSD. *Annals of the New York Academy of Sciences*. Vol. 821:296-304 (June).
- APA (American Psychiatric Association). 2000. *Diagnostic and Statistical Manual of Mental Disorders. Fourth Edition: Text Revision (DSM-IV-TR)*. Washington, DC: American Psychiatric Publishers.
- Ashworth, P. 2003. Chapter 2: The origins of qualitative psychology. Pp. 4-23, in: Smith, J.A. (ed.). *Qualitative Psychology: A Practical Guide to Research Methods*. London: SAGE.
- Aylesworth, G. 2005. Stanford Encyclopedia of Philosophy: Postmodernism. Available at <<http://plato.stanford.edu/entries/postmodernism/>>. Accessed 31 August 2009.
- Barchilon, J. 1986. *Crown Prince*. New York, NY: WW Norton & Co.
- Bartlett, D.L. 1996. Chapter 6: Tonal And Musical Memory. Pp. 177-195, in: Hodges, D.A. (ed.). *Handbook of Music Psychology*. Second Edition. San Antonio: Institute for Music Research Press.
- Beaulieu, D. 2003. *Eye Movement Integration Therapy: The Comprehensive Clinical Guide*. Carmarthen: Crown House Publishing.
- Beaulieu, D. n.d. Efficacy of Eye Movement Integration Therapy: A novel therapy for rapid, ecological integration of traumatic memories. Available at <<http://www.psykosyntesforum.se/uploads/EMI-paper.pdf>>. Accessed 20 July 2008.

- Beck, M. 2008. You Must Remember This: Forgetting Has Its Benefits. *The Wall Street Journal*. Tuesday, November 11. Available at <<http://online.wsj.com/article/SB122635803060015415.html>>. Accessed 12 November 2008.
- Bell, J. 2005. *Doing Your Research Project: A guide for first-time researchers in education, health and social science*. Fourth edition. Berkshire, England: Open University Press.
- Berger, W. 1998. *Wagner Without Fear: Learning to Love – and Even Enjoy – Opera’s Most Demanding Genius*. New York, NY: Vintage Books.
- Bergson, H. 1946. *The Creative Mind: An Introduction to Metaphysics*. New York, NY: Kensington.
- Bharuca, J.J. 1999. Chapter 11. Neural Nets, Temporal Composites, and Tonality. Pp. 413-441 in: Deutsch, D. (ed.). *The Psychology of Music*. Second Edition. San Diego, CA: Academic Press.
- Blenkiron, P. 2005. Cognitive Behavioural Therapy. *Royal College of Psychiatrists*. Available at <<http://www.rcpsych.ac.uk/mentalhealthinformation/therapies/cognitivebehaviouraltherapy.aspx>>. Accessed 1 September 2009.
- Bracha, H.S. 2004. Freeze, Flight, Fight, Fright, Faint: Adaptationist Perspectives on the Acute Stress Response System. *CNS Spectr*. Vol. 9(9):679-685.
- Bracha, H.S., Ralston, T.C., Matsukawa, J.M., Matsunaga, S.M., Williams, A.E., & Bracha, A.S. 2004. *Psychosomatics* 45:448-449, October. © *The Academy of Psychosomatic Medicine*. Available at <<http://psy.psychiatryonline.org/cgi/content/full/45/5/448>>. Accessed 10 March 2009.
- Bradbury, A. 2008. In the Spotlight. *The Strad*. June: 58-62.
- Bradshaw, J. 1990. *Homecoming: Reclaiming and Championing Your Inner Child*. New York, NY: Bantam Books.
- Bremner, D. 2002. *Does Stress Damage the Brain? Understanding Trauma-Related Disorders from a Mind-Body Perspective*. New York, NY: W.W. Norton.
- Brenner, I. 2004. *Psychic Trauma: Dynamics, Symptoms, and Treatment*. New York, NY: Jason Aronson.
- Breuer, J. & Freud, S. 1974. *Studies on Hysteria*. London: Pelican.
- Brice, M. 2004. *Unfolding human potential: An exploration of the teaching of Eurythmics In the light of the theory of Multiple Intelligences of Howard Gardner and the Socio-Cognitive approach of Britt-Mari Barth*. Genève: Edition Papillon.
- Briere, J. 2005a. *Trauma Symptom Inventory (TSI, TSI-A)*. Odessa, FL: Psychological Assessment Resources.

- Briere, J. 2005b. *Trauma Symptom Inventory (TSI) Professional Manual*. Odessa, FL: Psychological Assessment Resources.
- Budd, M. 1992. *Music and the Emotions: The Philosophical Theories*. London: Routledge.
- Burdick, D.J. 2001. The Neurobiology of Fear: Emotional Memory and Post-Traumatic Stress Disorder. Available at <<http://serendip.brynmawr.edu/bb/neuro/neuro01/web1/Burdick.html>>. Accessed 15 June 2008.
- Burns, N. & Grove, S.K. 2001. *The practice of nursing research: Conduct, critique, & utilization*. Fourth Edition. Philadelphia, PN: Saunders.
- Canli, T., Zhao, Z., Brewer, J., Gabrieli, J.D.E. & Cahill, L. 2000. Event-Related Activation in the Human Amygdala Associates with Later Memory for Individual Emotional Experience. *JNeurosci*. Vol. 20:RC99: 1-5.
- Cannon, W.B. 1929. *Bodily Changes in Pain, Hunger, Fear and Rage: An Account of Recent Research Into the Function of Emotional Excitement*, 2nd ed. New York, NY: Appleton-Century-Crofts.
- Cao, X., Wang, H., Mei, B., An, S., Yin, L., Wang, L.P. & Tsien, J.Z. 2008. Inducible and Selective Erasure of Memories. *Neuron*. Vol. 60(2):353-366.
- Carey, B. 2009. Ctrl+alt+delete: Dealing with trauma may soon be as easy as rebooting your brain. *Sunday Time: Lifestyle* (April 26).
- Chappell, P. 2003. *Emotional Healing with Homeopathy: Treating the Effects of Trauma*. Berkeley, CA: North Atlantic Books.
- Cockey, L. 2008. Body, Mind and Spirit: being at one with your instrument. *American Music Teacher*, June/July: 42-44.
- Coetzee, H. 2009. Personal communication on 3 August.
- Corsini, R.J. 2002. *The Dictionary of Psychology*. New York, NY: Brunner-Routledge.
- Cory, G.A. 2000. From MacLean's Triune Brain Concept to the Conflict Systems Neurobehavioral Model: The Subjective Basis of Moral and Spiritual Consciousness. *Zygon*. Vol. 23(2).
- Cutting, L.C. 1997. *Memory Slips: A Memoir of Music and Healing*. New York, NY: Harper Collins.
- Dalcroze Australia*. 2009. Available at <<http://www.dalcroze.org.au/>>. Accessed 14 August 2009.

- Das, S. n.d. You can't run away fast enough: Not wanting to be here. Understanding Trauma in Daily Life: The Relationship between Trauma in Body Psychotherapy and the formation of Samskaras (Triggers) in Yoga Philosophy. Available at <<http://www.rainbowbody.net/Ongwhehonwhe/traumaSam.htm>>. Accessed on 5 May 2008.
- Davies, A. n.d. Acoustic Trauma: Bioeffects of Sound. Available at <http://schizophonia.com/installation/trauma/trauma_thesis/index.htm>. Accessed 1 May 2009.
- Decker, M. E. 2004. Comparing Dissociative Ability of Musicians and Non-Musicians. Department of Psychology, Missouri Western State University.
- Deutsch, D. (ed.). 1999. *The Psychology of Music*. Second Edition. San Diego, CA: Academic Press.
- De Wet, A. & Oosthuizen, I.J. 2001. The educator's duty to report learner abuse and neglect. *Perspectives in Education*, Vol. 19(4):163-171.
- Dharmananda, S. 1999. How Emotions may Contribute to Cancer. Available at <<http://www.chinesemedicinedoc.com/uploads/File/Pract/Cancer/How%20Emotions%20May%20Contribute%20to%20Cancer.pdf>>. Accessed 1 March 2009.
- Di Franco, G. 1993. Chapter 9. Music therapy: A Methodological Approach in the Mental Health Field. Pp. 82-90 in: Heal, M. & Wigram, T. (eds.). *Music Therapy in Health and Education*. London: Jessica Kingsley.
- Dobbs, D. 2009. Soldier's Stress: What Doctors Get Wrong about PTSD. *Scientific American*. Available at <<http://www.scientificamerican.com/article.cfm?id=post-traumatic-stress-trap>>. Accessed 24 May 2009.
- Du Pré, H. & du Pré, P. 1998. *A Genius in the Family: An Intimate Memoir of Jaqueline du Pré*. London: Vintage.
- Edel, T. 1994. *Piano Music for One Hand*. Bloomington: Indiana University Press.
- Elliott, D.J. 1995. *Music Matters: A New Philosophy of Music Education*. Oxford: Oxford University Press.
- Elliott, R., Fischer, C.T. & Rennie, D.L. 1999. Evolving guidelines for publication of qualitative research studies in psychology and related fields. *British Journal of Clinical Psychology*, Vol. 38:215-29.
- EMDR Institute. 2004. A Brief Description of EMDR. Available at <<http://www.emdr.com/index.htm>>. Accessed 7 April 2008.
- Epstein, D. 1995. *Shaping Time: Music, the Brain, and Performance*. New York, NY: Schirmer Books.
- Fanning, D. 2009a. Shostakovich, D §3: 1936–53. *Grove Music Online*. Available at <<http://0-www.oxfordmusiconline.com.innopac.up.ac.za/subscriber/article/grove/music/52560pg3#S52560.3>>. Accessed 9 September 2009.

- Fanning, D. 2009b. Shostakovich, Dmitri §4: 1953–62. *Grove Music Online*. Available at <http://0-www.oxfordmusiconline.com.innopac.up.ac.za/subscriber/article/grove/music/52560pg4?q=Shostakovich&source=omo_t237&source=omo_gmo&source=omo_t114&search=quick&hbutton_search.x=27&hbutton_search.y=10&pos=6&_start=1#firsthit>. Accessed 9 September 2009.
- Farmer, D. 1999. “Flow” & Mihaly Csikszentmihalyi. Available at <<http://www.austega.com/education/articles/flow.htm>>. Accessed 20 April 2000.
- Feldenkrais Method*. 2007. The *Feldenkrais Method* of Somatic Education. Available at <http://www.feldenkrais.com/method/the_feldenkrais_method_of_somatic_education/>. Accessed on 5 November 2008.
- Fleisher, L. 2004. CD cover notes to the recording: *Two Hands*. New York, NY: Vanguard Classics.
- Fourie, G. 2009. An Integrated Ericksonian and Ego State Intervention for the Treatment of Survivors of Childhood Sexual Abuse. Unpublished Ph.D thesis. University of Johannesburg, Johannesburg.
- Fourie, G. 2008. Verbal communication with the researcher in September.
- Frankl, V.E. 1959. *Man's Search for Meaning: An Introduction to Logotherapy*. London: Hodder and Stoughton.
- Frawley, D. 1997. *Ayurveda and the Mind: The Healing of Consciousness*. Wisconsin: Lotus.
- Freud, S. 1965. *Civilization and its Discontents*. London: Hogarth Press.
- Freud, S. 1939. *Moses and Monotheism*. New York, NY: Vintage.
- Gerber, R. 2001. *Vibrational Medicine: The # 1 Handbook of Subtle-Energy Therapies*. Rochester, Vermont: Bear & Company.
- Gibson, L.E. 2007. Acute Stress Disorder: A Brief Description. Available at <http://www.ncptsd.va.gov/ncmain/ncdocs/fact_shts/fs_asd_public.html>. Accessed 20 August 2008.
- Goddard, J. 2005. New ways of looking at memory function: Certain traumatic memories function like viruses, replicating themselves. *Medical Hypotheses*, Vol. 65 (5): 989-991.
- Gold, L. & Brinner, B. 2007. Deep Listeners: Music, Emotion, and Trancing. *Journal of the American Musicological Society*. Vol. 60.3 (Fall):677-697.
- Gordon, S. 1996. *A History of Keyboard Literature: Music for the Piano and its Forerunners*. Belmont, CA: Schirmer Thomson Learning.
- Gorrie, J. 2009a. “Just Another Day at the Office...”: How to get better results in auditions ad other ‘high-pressure’ situations. Available at <www.thezonebook.com>. Accessed 22 June 2009.

- Gorrie, J. 2009b. *Performing in the Zone: Unleash your true performing potential!* Scotts Valley, CA: Create Space.
- Gray, S. 2009. The Power of Subconscious Mind. *ArticleBiz.com*. Available at <<http://www.articlebiz.com/article/87945-1-the-power-of-the-subconscious-mind>>. Accessed 15 March 2009.
- Green, B. & Galway, T.W. 1986. *The Inner Game of Music*. London: Pan Books.
- Grenz, S.J. 1996. *A Primer on Postmodernism*. Grand Rapids, MI: William. B. Eerdmans.
- Habboushe, F. & Maranto, C.D. 1991. Chapter Thirteen. Medical and Psychological Problems of Musicians: An Overview. Pp. 201-221 in: Maranto, C.D. (ed.). *Applications of Music in Medicine*. Washington, DC: The National Association for Music Therapy.
- Haltiwangler, S. 2009. The Science of Rife: A Technical Discussion of the Science, Electrical and Nutritional Relationships of Resonant Frequency Therapy. *Synergetica*.
- Hammer, L. n.d. Trauma and Shock in Chinese Medicine. *Traditional Chinese Medicine World, Vol. 5 (3)*.
- Hammons, S. 2006. Deep DNA memory theories: Can we remember our ancestors' lives? Available at <<http://www.redicecreations.com/specialreports/2006/07jul/DNAmemory.html>>. Accessed 29 March 2009.
- Hanser, S.B. 1999. *The New Music Therapist's Handbook*. Second Edition. Boston, MA: Berklee Press.
- Hartman, W. 2009a. Personal communication on 24 February.
- Hartman, W. 2009b. Unpublished teaching material. Directed: Milton H. Erickson Institute of South Africa, affiliated with the Milton H. Erickson Foundation in Phoenix, AZ.
- Hartman, W. 1993. Ego State Therapy with Sexually Traumatized Children. Doctoral Thesis. University of Pretoria, Pretoria.
- Heal, M. & Wigram, T. (eds.) 1993. *Music Therapy in Health and Education*. London: Jessica Kingsley.
- Heart, M.Y.H.B. 2005. From Intergenerational Trauma to Intergenerational Healing. *Wellbriety! White Bison's online magazine*. Vol. 6(6). Colorado Springs, CO: White Bison.
- Henwood, K.L. & Pidgeon, N.F. 1992. Qualitative Research and Psychological Theorizing. *British Journal of Psychology*. Vol. 83: 97-111.
- Hershman, D.J. & Lieb, J. 1998. *Manic Depression and Creativity*. Amherst, NY: Prometheus Books.
- Hildesheimer, W. 1982. *Mozart*. Translated from the German by M. Feiber. London: J.M. Dent & Sons.

Hlynka, D. & Yeaman, R. J. 1992. *Postmodern educational technology*. ERIC Digest No. EDO-IR-92-5. Syracuse NY: ERIC Clearinghouse on Information Resources.

Hodges, D.A. 1996. (ed.). *Handbook of Music Psychology*. Second Edition. San Antonio: Institute for Music Research Press.

Holford, P. 2007. *Optimum Nutrition for the Mind*. Laguna Beach, CA: Basic Health Publications.

Holmgren, E. (ed.). 2008/9. *Musical Perspectives: Perspectives and Research in Music Performance*. Available at <<http://www.musicalperspectives.com/Site/Welcome.html>>. Accessed 2 May 2009.

Huopainen, H. 2002. Freud's view of hysteria in light of modern trauma research. *The Scandinavian Psychoanalytic Review*, Vol. 25: 92-107.

Jameson, K.R. 1993. *Touched with Fire: Manic-Depressive Illness and the Artistic Temperament*. New York, NY: Free Press Paperback (Simon & Schuster).

Jensen, E. 1998. *Teaching with the brain in mind*. Virginia: ASCD.

Jensen, E. 1996. *Brain-Based Learning*. Del Mar, CA: Turning Point Publishing.

Johnson, R.B., Onwuegbuzie, A.J. & Turner, L.A. 2007. Toward a Definition of Mixed Methods Research. *Journal of Mixed Methods Research*. Vol 1(2): 112-33. SAGE.

Jung, C.G. 1973. *Letters*, Vol. I (1906-50), eds. G. Adler & A. Jaffe (R.F.C. Hull, trans.) Princeton, NJ: Princeton University Press.

Jung, C.G. 1959. *The Archetypes and the Collective Unconscious*. Second Edition. London: Routledge.

Juslin, P.N. 2005. From mimesis to catharsis: expression, perception, and induction of emotion in music. Pp. 85-115, in: Miell, D., MacDonald, R. & Hargreaves, D.J. (eds.). *Musical Communication*. New York, NY: Oxford University Press.

Juslin, P.N. & Sloboda, J.A. (eds.). 2001. *Music and Emotion: Theory and Research*. New York, NY: Oxford University Press.

Juslin, P.N. & Sloboda, J.A. 2001. Chapter 4. Psychological Perspectives on Music and Emotion. Pp. 105-134 in: Juslin, P.N. & Sloboda, J.A. (eds.). *Music and Emotion: Theory and Research*. New York, NY: Oxford University Press.

Kahn, N. 2006. *Two Hands: The Leon Fleisher Story*. (Documentary Film).

Kandel, E.R. 2006. *In Search of Memory: The Emergence of a New Science of Mind*. New York, NY: W.W. Norton.

Kellerman, P. & Hudgins, M.K. (eds.). 2000. *Psychodrama with Trauma Survivors: Acting Out Your Pain*. London: Jessica Kingsley.

Kent State University, Department of Psychology. 2008. Current Research: Psychophysiological Predictors of Posttraumatic Stress Disorder. Available at <http://www.personal.kent.edu/~ddelahan/lab/current_research.htm>. Accessed 13 November 2008.

Kornør, H, Winje, D, Ekeberg, Ø, Weisæth, L, Kirkehei, I, Johansen, K & Steiro, A. 2008. Early trauma-focused cognitive-behavioural therapy to prevent chronic post-traumatic stress disorder and related symptoms: A systematic review and meta-analysis. *BMC Psychiatry*. Vol 8:81.

Kropff, K. (ed.). 2002. *A Symposium for Pianists and Teachers: Strategies to Develop the Mind and Body for Optimal Performance*. Ohio: Heritage Music Press.

Laplanche, J. & Pontalis, J.B. 1973. *The Language of Psychoanalysis*. New York, NY: Norton.

Latham-Radocy, W.B., Radocy, R.E. & Hodges, D.A. (ed.). 1996. *Handbook of Music Psychology*. Second Edition. San Antonio: Institute for Music Research Press.

Latham-Radocy W.B. & Radocy, R.E. 1996. Chapter 3: Basic Physical and Psychoacoustical Processes. Pp. 69-82, in: Hodges, D.A. (ed.). *Handbook of Music Psychology*. Second Edition. San Antonio: Institute for Music Research Press.

Lawlor, L. 2006. Stanford Encyclopedia of Philosophy: Postmodernism. Available at <<http://plato.stanford.edu/entries/derrida/>>. Accessed 2 September 2009.

LeDoux, J. 2002. *Synaptic Self: How Our Brains Become Who We Are*. London: Macmillan.

Lee, M.O. 1999. *Wagner: The Terrible Man and His Truthful Art*. Toronto: University of Toronto Press.

Leedy, P.D. & Ormrod, J.E. 2001. *Practical Research: Planning and Design*. Upper Saddle River, NJ: Prentice-Hall.

Lehrer, P.A. 2002. Coping with Performance Anxiety: Inner Game of Music Strategies. Pp. 124-130 in: Kropff, K. (ed.). *A Symposium for Pianists: Strategies to Develop the Mind and Body for Optimal Performance*. Ohio: Heritage Music Press.

Levine, P.A. 2009. Welcome to SomaticExperiencing.com: Nature's Lessons in Healing Trauma. Available at <<http://www.somaticexperiencing.com/>>. Accessed 2 September 2009.

Levine, P.A. 2006. Nature's Lessons in Healing Trauma: Trauma is a fact of Life. Available at <http://www.traumahealing.com/art_nature.html>. Accessed on 5 September 2008.

Levine, P.A. 2005. *Healing Trauma: A Pioneering Program to Restore the Wisdom of Your Body*. Boulder: Sounds True.

Levine, P.A. (with A. Frederick). 1997. *Waking the Tiger-Healing Trauma*. Berkeley, CA: North Atlantic Books.

- Levine, P.A. 1992. The Body as Healer: A Revisioning of Trauma and Anxiety. Pp. 85-108 in: Sheets-Johnstone, M. (ed.). *Giving the Body Its Due*. Albany, N.Y.: State University of New York Press.
- Levitin, D. 2006. *This is Your Brain on Music: Understanding a Human Obsession*. London: Atlantic Books.
- Li, L. 2000. What is Qi in Chinese Medicine. Available at <<http://www.acuhealing.com/tcmtheory/whatisqi.htm>>. Accessed 30 April 2009.
- Liebschutz, J. 2006. Predictors of PTSD in Primary Care. Available at <http://www.hsph.harvard.edu/research/hicrc/files/Liebschut_Seminar_06.pdf>. Accessed 15 November 2008.
- Loftus, E.F. 1993. The Reality of Repressed Memories. *American Psychologist* Vol. 48:518-537.
- Lotter, C. 2009. Email correspondence on 25/05/09.
- Luxenberg, T., Spinazzola, J. & Van der Kolk, B.A. 2001. Complex Trauma and Disorders of Extreme Stress (DESNOS) Diagnosis, Part One: Assessment. *Directions in Psychiatry home-study CME*. Pp. 373-394. Long Island City, NY: The Hatherleigh Comp.
- Lytard, J.-F. 1984. *The Postmodern Condition: A Report on Knowledge*. Geoff Bennington and Brian Massumi (trans.). Minneapolis: University of Minnesota Press.
- Machery, E. 2009. *Doing without Concepts*. Oxford: Oxford University Press.
- Maisky, M. 2008. Mischa Maisky's Biographical Timeline. Available at <<http://www.mischamaisky.com/>>. Accessed 22 September 2009.
- Mandela, N.R. 1994. *Long Walk to Freedom: The Autobiography of Nelson Mandela*. London: Little, Brown & Co.
- Maniura, P. 1997. Solti: The Making of a Maestro. A Portrait. BBC/RM Arts Co. in Association with MTV Hungarian Television. [DVD Video Documentary]
- Maranto, C.D. 1993. Chapter 15. Applications of Music in Medicine. Pp. 153-174 in: Heal, M. & Wigram, T. (eds.). *Music Therapy in Health and Education*. London: Jessica Kingsley.
- Maranto, C. D. (ed.) 1991. *Applications of Music in Medicine*. Washington, DC: The National Association for Music Therapy.
- Marczyk, G., De Matteo, D. & Festinger, D. 2005. *Essentials of Research Design and Methodology*. Hoboken, NJ: John Wiley & Sons.
- Marshman, A.T. 2003. The Power of Music: A Jungian Aesthetic. *Music Therapy Perspectives*, Vol. 21(1): 21-26.
- Martin, R. 2000. *Beethoven's Hair: An Extraordinary Historical Odyssey and a Musical Mystery Solved*. London: Bloomsbury.

Maviglia, M.A. 2006. *Pol.it: The Italian on line psychiatric magazine*. Historical Trauma and PTSD: The “Existential” versus the “Clinical”. Available at <<http://www.priory.com/ital/fromstates2e.htm>>. Accessed 10 April 2009.

Mayerovich, R. 2002. Mind Over Muscle, Pp. 82-96 in: Kropff, K. (ed.). *A Symposium for Pianists: Strategies to Develop the Mind and Body for Optimal Performance*. Ohio: Heritage Music Press.

McBurney, D.H. 1994. *Research Methods*. Third Edition. Pacific Grove, CA: Brooks/Cole.

McClary, R. 2007. Healing the psyche through music, myth, and ritual. *Psychology of Aesthetics, Creativity, and the Arts*, Vol. 1(3) Aug: 155-159.

McFarlane, A. & Van der Kolk, B. 1996. Conclusions and Future Directions. Pp. 559-576, in: Van Der Kolk, B.A., McFarlane, A. C. & Weisaeth, L. (eds.). *Traumatic Stress: The Effects of Overwhelming Experience on Mind, Body, and Society*. New York, NY: Guilford Press.

McFarlane, A. & Yehuda, R. 1996. Chapter 8. Resilience, Vulnerability, and the Course of Posttraumatic Reactions. Pp. 155-181, in: Van der Kolk, B.A., McFarlane, A. C. & Weisaeth, L. (eds.). *Traumatic Stress: The Effects of Overwhelming Experience on Mind, Body, and Society*. New York, NY: Guilford Press.

Miell, D., MacDonald, R. & Hargreaves, D.J. (eds.). 2005. *Musical Communication*. New York, NY: Oxford University Press.

Miller, A. 1997. *The Drama of the Gifted Child: The Search for the True Self*. New York, NY: Basic Books.

Mithen, S. 2005. *The Singing Neanderthals: The Origins of Music, Language, Mind and Body*. London: Phoenix.

Montello, L. 2002. *Essential musical intelligence: Using music as your path to healing, creativity, and radiant wellness*. Wheaton, IL: Quest Books.

Montello, L. n.d. The Performance Wellness Seminar. *Performance Wellness, Inc*. Available at <http://www.performancewellness.org/docs/pw_seminar.pdf>. Accessed 16 June 2009.

Mouton, J. 2001. *How to succeed in your Master's & Doctoral Studies: A South African Guide and Resource Book*. Pretoria: Van Schaik.

Mulhauser, G. n.d. An Introduction to Cognitive Therapy and Cognitive Behavioural Approaches. Available at <<http://counsellingresource.com/types/cognitive-therapy/>>. Accessed 25 August 2009.

Murray, M. 2003. Chapter 6: Narrative psychology. Pp. 111-131, in: Smith, J.A. (ed.). *Qualitative Psychology: A Practical Guide to Research Methods*. London: SAGE.

Nelson, W.C. 1996. *An Advanced Treatise in Subspace and Quantum Aspects of Biology*. Budapest: Academy Press.

- Neuhaus, H. 1993. (translated by K.A. Leibovitch). *The Art of Piano Playing*. London: Kahn & Averill.
- Neurogenesis*. n.d. Neurotransmitters Overview. Available at <<http://www.neurogenesis.com/Neurotransmitters/neurotransmitters-overview.php>>. Accessed 23 April 2009.
- Nijenhuis, E.R.S., Van der Hart, O. & Steele, K. 2004. Trauma-related structural dissociation of the personality. *David Baldwin's Trauma Information Pages*. Available at <<http://www.trauma-pages.com/a/nijenhuis-2004.php>>. Accessed 9 August 2008.
- O'Brien, D. 2004. History of Ericksonian Hypnosis. Frequently Asked Questions. Available at <<http://www.ericksonian.com/milton-erickson.html>>. Accessed 7 June 2009.
- Ogilvie, B.A. 2004. *Mother-Daughter Incest: A Guide for Helping Professionals*. Binghamton, NY: Haworth Maltreatment and Trauma Press.
- Oschman, J.L. 2000. *Energy Medicine: The Scientific Basis*. London: Harcourt.
- Otterman, R. & Smit, M. (Chief eds.). Assisted by Grové, I, Lüdemann, W, Van der Mescht, H & Van Niekerk, C. 2000. *Suid-Afrikaanse Musiekwoordeboek/South African Music Dictionary*. Compiled by a Revision Commission of the Suid-Afrikaanse Akademie vir Wetenskap en Kuns in Collaboration with the National Terminology Services. Second revised and enlarged edition. Cape Town: Pharos.
- Patterson, D.L. 1999. *One handed: A guide to piano music for on hand / compiled and annotated by Donald L. Patterson*. London: Greenwood Press.
- Paul, A.M. 1997. Predisposed to PTSD: Why are some people able to bounce back after a traumatic experience? *Psychology Today Magazine*. Nov/Dec. Available at <<http://www.psychologytoday.com/articles/pto-19971101-000005.html>>. Accessed 17 November 2008.
- Peck, M.S. 1983. *People of the Lie: The Hope for Healing Human Evil*. New York, NY: Touchstone.
- Peck, M.S. 1978. *The Road Less Travelled: A New Psychology of Love, Traditional Values and Spiritual Growth*. New York, NY: Simon & Schuster.
- Peichl, J. 2007a. *Die inneren Trauma-Landschaften. Borderline, Ego-State, Täter-Introjekt*. Stuttgart: Schattauer.
- Peichl, J. 2007b. *Innere Kinder, Täter, Helfer & Co: Ego-State-Therapie des traumatisierten Selbst*. Stuttgart: Klett-Cotta.
- Peretz, I. 2001. Chapter 5. Listen to the Brain: A Biological Perspective on Musical Emotions, Pp. 105-134 in: Juslin, P.N. & Sloboda, J.A. (eds.). *Music and Emotion: Theory and Research*. New York, NY: Oxford University Press.

- Peretz, I. & Hebert, S. 1995. Music processing after brain damage: The case of rhythm without melody. In *Music and the mind machine: The psychophysiology and psychopathology of the sense of music*. In Steinberg, R. (Ed.), *Music and the Mind Machine*, pp. 127-137. Berlin: Springer.
- Perry, B. D. 1999. Memories of Fear: How the Brain Stores and Retrieves Physiologic States, Feelings, Behaviours and Thoughts from Traumatic Events. Available at <<http://www.childtrauma.org>>. Accessed 20 June 2008. Originally published in *Splintered Reflections: Images of the Body in Trauma* (Edited by J. Goodwin & R. Attias). New York, NY: Basic Books.
- Peters, J.S. 1987. *Music Therapy: An Introduction*. Springfield, IL: Charles C Thomas.
- Phillips, M. & Frederick, C. 1995. *Healing the Divided Self: Clinical and Ericksonian Hypnotherapy for Post-Traumatic and Dissociative Conditions*. New York, NY: W.W. Norton.
- Potgieter, J.R. 1997. *Sport Psychology: Theory and Practice*. Stellenbosch: Institute for Sport and Movement Studies.
- Potter, T. 2009. Perlman, Itzhak. *Grove Music Online*. Available at <http://0-www.oxfordmusiconline.com.innopac.up.ac.za/subscriber/article/grove/music/21349?q=Perlman&search=quick&pos=1&_start=1#firsthit> Accessed 9 September 2009.
- Psychology Today*. 2007. Acute Stress Disorder. Available at <<http://psychologytoday.com/conditions/acutestress.html>>. Accessed 20 August 2008.
- Psychology Today*. 2006. Post-Traumatic Stress Disorder. Available at <<http://www.psychologytoday.com/conditions/ptsd.html>>. Accessed 20 October 2008.
- Quantum Energy Wellness*. 2008. *How does the SCIO work?* Available at <<http://www.quantumenergywellness.com/index-7.htm>>. Accessed 20 August 2009.
- Radford, C. 1989. Emotions and music: A reply to the cognitivists. *Journal of Aesthetics and Art Criticism*, Vol. 47(1): 69-76.
- Resnicow, J.E., Salovey, P. & Repp, B.H. 2004. Is recognition of emotion in music performance an aspect of emotional intelligence? *Music Perception* Vol. 22(1) Fall: 145-158.
- Robertson, I. 1999. *Mind Sculpture: Your Brain's Untapped Potential*. London: Bantam Books.
- Rolf Institute of Structural Integration*. 2009. Available at <<http://www.rolf.org/>>. Accessed 22 September 2009.
- Ronge, B. 2008. On the couch: Charlize Theron. *Psychologies*. June/July: 16-21.
- Rose, G.J. 1993. Affect: A Biological Basis of Art. *Journal of American Academy of Psychoanalysis*. Vol. 21:501-512.

Rosen, P. 2004. *Rubinstein Remembered*. Legendary Visions. BMG Classics [DVD Video Documentary]

Roth, S. & Friedman, M.J. 1998. *Childhood Trauma Remembered: A Report on the Current Scientific Knowledge Base and its Applications*. The International Society for Traumatic Stress Studies.

Royal College of Psychiatrists. 2007. A Five Areas Assessment. Available at <<http://www.rcpsych.ac.uk/mentalhealthinfoforall/treatments/cbt/5areas.aspx>>. Accessed 2 September 2009.

Sacks, O. 2007. *Musicophilia: Tales of Music and the Brain*. London: Picador.

Sadie, S. & Tyrrell, J. (eds.). 2001. *The New Grove Dictionary of Music and Musicians: 29 Volumes with index*. New York, NY: Macmillan.

Sadock, B.J. & Sadock, V.A. 2003. *Synopsis of Psychiatry: Behavioural Sciences/Clinical Psychiatry*. Ninth Edition. Philadelphia: Lippincott Williams & Wilkins.

Sahley, B.J. 2009. Current Practice and Research. *National Center for Crisis Management in collaboration with the American Academy of Experts in Traumatic Stress*. Available at <<http://www.nc-cm.org/fbiobilliesahley.htm>>. Accessed 23 April 2009.

Sand, B.L. 2000. *Teaching Genius: Dorothy de Lay and the Making of a Musician*. Portland, Oregon: Amadeus Press.

Sándor, G. 1981. *On Piano Playing: Motion, Sound and Expression*. New York, NY: Schirmer.

Sapsford, R.J. & Abbott, P. 1996. Ethics, politics and research. In Sapsford R. & Jupp, V. *Data Collection and Analysis*. London: SAGE.

Savage, D. 2002. *Spirit, Ego, and Music*, Pp. 108-113 in: Kropff, K. (ed.). *A Symposium for Pianists: Strategies to Develop the Mind and Body for Optimal Performance*. Ohio: Heritage Music Press.

Scaer, R.C. 2005. *The Trauma Spectrum: Hidden Wounds and Human Resiliency*. London: W.W. Norton.

Scaer, R.C. 2001. The Neurophysiology of Dissociation and Chronic Disease. Published in: *Applied Psychophysiology and Biofeedback*, 26(1), 73-91. Available at <<http://www.uib.no/insuhc/files/scaer.pdf>>. Accessed 20 October 2008.

Schwartz, J.M. & Begley, S. 2002. *The Mind and the Brain: Neuroplasticity and the Power of Mental Force*. New York, NY: Regan Books.

Sheets-Johnstone, M. 1992. The Materialization of the Body: A History of Western Medicine, A History in Process. Pp. 132-158, in: Sheets-Johnstone, M. (ed.). *Giving the Body Its Due*. Albany, N.Y.: State University of New York Press.

Sikorski, J.B. n.d. Trauma and Psychic Development: Perspectives from Risk Studies and Developmental Psychopathology. Available at <<http://www.med.yale.edu/chldstdy/IACAPAP/997/997-3.htm>>. Accessed 15 June 2008.

Skar, P. 2002. The goal as process: Music and the search for the Self. *The Journal of Analytical Psychology*, Vol. 47(4) Oct: 629-638.

Smith, J.A. 2003a. Chapter 1: Introduction. Pp. 1-3, in: Smith, J.A. (ed.). *Qualitative Psychology: A Practical Guide to Research Methods*. London: SAGE.

Smith, J.A. 2003b. Chapter 11: Validity and qualitative psychology. Pp. 232-5, in: Smith, J.A. (ed.). *Qualitative Psychology: A Practical Guide to Research Methods*. London: SAGE.

Smith, K. 2008. *Awakening the Energy Body: From Shamanism to Bioenergetics*. Rochester, Vermont: Bear & Company.

Smithey, D.B. 2006. The Scars of Yggdrasill: A Comparative Study of the Conflict Between Selected Familial Relationships and the Will to Power in Richard Wagner's *Der Ring des Nibelungen*. Doctoral Thesis. The Florida State University College of Music. Available at <<http://etd.lib.fsu.edu/theses/available/etd-04062006-000228/unrestricted/treatise.pdf>>. Accessed 9 May 2009.

Smuts, J.C. 1926. *Holism and Evolution: The Original Source of the Holistic Approach to Life*. Cape Town: Citadel.

Society for Neuroscience. 2008. Very Young Found To Process Fear Memories In Unique Way. *ScienceDaily*. Available at <<http://www.sciencedaily.com/releases/2008/02/080206162301.htm>>. Accessed 10 July 2008.

Southcott, J.E. & Simmons, J.G. 2008. Performance anxiety and the inner critic: A case study. *Australian Journal of Music Education No. 1*. Pp. 32-37.

South African Government Services. 2008. Reporting Child Abuse or Ill-Treatment. Available at <<http://www.services.gov.za/servicesforpeople/Parenting/Childabuse/reportingchildabuseorilltreatment.aspx?Language=en-ZA>>. Accessed 20 January 2009.

Spencer, P. 2009. Dalcroze Method. *Grove Music Online*. Available at <http://0-www.oxfordmusiconline.com.innopac.up.ac.za/subscriber/article/opr/t114/e1784?q=Dalcroze&source=omo_t237&source=omo_gmo&source=omo_t114&search=quick&hbutton_search.x=23&hbutton_search.y=7&pos=5&_start=1#firsthit>. Accessed 8 September 2009.

Spiegel, D. 2008. Coming Apart: Trauma and the fragmentation of the self. *The Dana Foundation*. Available at <<http://www.dana.org/news/cerebrum/detail.aspx?id=11122>>. Accessed 6 April 2008.

Spintge, R. 1991. Chapter Five. The Neurophysiology of Emotion and its Therapeutic Applications in Music Therapy and Music Medicine. Pp. 59-72 in: Maranto, C.D. (ed.). *Applications of Music in Medicine*. Washington, DC: The National Association for Music Therapy.

- Stein, A. 2007. Music and trauma in Polanski's *The pianist* (2002). *Psychoanalytic Inquiry*, Vol. 27(4) Sept-Oct: 440-454.
- Sternberg, R.J. 1998. *In Search of the Human Mind*. Second Edition. Orlando, FL: Harcourt Brace.
- Strauch, I. 2003. Examining the Nature of Holism Within Lifestyle. *Journal of Individual Psychology*, Vol. 59(4), Winter.
- Struwig, E. 2008. An Exploratory Study on the Usefulness of Eye Movement Integration Therapy in Overcoming Childhood Trauma. Unpublished MA dissertation. University of Johannesburg, Johannesburg.
- Sutton, J.P. (ed.). 2002. *Music, Music, Therapy and Trauma: International Perspectives*. London: Jessica Kingsley.
- Swanepoel, A. 2008. Personal communication on 29 September.
- Szpilman, W. 1999. *The Pianist: The extraordinary true story of one man's survival in Warsaw, 1939-1945*. New York, NY: Picador.
- Tedeschi, R.G., Park, C.L. & Calhoun, L.G. 1998. *Posttraumatic Growth: Positive Changes in the Aftermath of Crisis*. Mahwah, NJ: Lawrence Erlbaum.
- Thompson, W.F. & Robitaille, B. 1992. Can composers express emotions through music? *Empirical Studies of the Arts*, Vol. 10(1): 79-89.
- Tilly, M. 1977. The therapy of music. *C.G. Jung Speaking*: 273-5. Eds. W. McGuire & R.F.C. Hull. Princeton, NJ: Princeton University Press.
- Tiwari, M. 1995. *Ayurveda Secrets of Healing: The complete Ayurvedic guide to healing through Pancha Karma therapies, diet, herbal remedies and memory*. Wisconsin: Lotus Press.
- Tolle, E. 1999. *The Power of Now: A Guide to Spiritual Enlightenment*. London: Hodder & Stoughton.
- Tooley, A.C. 2007. Vibrational Medicine. Available at <<http://www.luminanti.com/vibration.html>>. Accessed 1 May 2009.
- Tubiana, R. & Amadio, P.C. (eds.). 2000. *Medical Problems of the Instrumentalist Musician*. London: Martin Dunitz.
- Ungerleider, S. 2004. Post-Traumatic Growth: Understanding a New Field of Research: An Interview with Dr Mark Chesler by Steven Ungerleider, Ph.D (editor of The Prevention Researcher). *International Confederation of Childhood Cancer Parent Organizations*: Vol. 11 no. 1.
- Van der Hart, O., Nijenhuis, E.R.S. & Steele, K. 2006. *The Haunted Self: Structural Dissociation and the Treatment of Chronic Traumatization*. New York, NY: W.W. Norton.

- Van der Hart, O., Nijenhuis, E.R.S., Steele, K. & Browne, D. 2004. Trauma-related dissociation: Conceptual clarity lost and found. *Australian and New Zealand Journal of Psychiatry*, Vol. 38:906–914.
- Van der Hart, O. & Spiegel, D. 1993. Hypnotic Assessment and Treatment of Trauma-induced Psychoses: The Early Psychotherapy of H. Breulink and Modern Views. *International Journal of Clinical Experimental Hypnosis*, Vol. XLI(3) July: 191-209.
- Van der Kolk, B.A. 1996a. Chapter 9. The Complexity of Adaptation to Trauma: Self-Regulation, Stimulus Discrimination, and Characterological Development. Pp. 184-213, in: Van der Kolk, B.A., McFarlane, A. C. & Weisaeth, L. (eds.). *Traumatic Stress: The Effects of Overwhelming Experience on Mind, Body, and Society*. New York, NY: Guilford Press.
- Van der Kolk, B.A. 1996b. Chapter 12. Memory: Mechanisms and Processes. Pp. 279-302, in: Van der Kolk, B.A., McFarlane, A. C. & Weisaeth, L. (eds.). *Traumatic Stress: The Effects of Overwhelming Experience on Mind, Body, and Society*. New York, NY: Guilford Press.
- Van der Kolk, B.A. 1994. The body keeps the score: Memory and the evolving psychobiology of post traumatic stress. Available at < <http://www.trauma-pages.com/vanderk4.htm>>. Accessed 14 April 2008.
- Van der Kolk, B.A. & McFarlane, A. 1996. Chapter 1. The black hole of trauma. Pp. 3-23, in: Van der Kolk, B.A., McFarlane, A. C. & Weisaeth, L. (eds.). *Traumatic Stress: The Effects of Overwhelming Experience on Mind, Body, and Society*. New York, NY: Guilford Press.
- Van der Kolk, B.A. & Saporta, J. 1991. The biological response to psychic trauma: mechanisms and treatment of intrusion and numbing. *Anxiety Research (U.K.)*, Vol. 4:199-212.
- Van der Kolk, B.A., Van der Hart, O. & Marmar, C.R. 1996. Chapter 13. Dissociation and Information Processing in Posttraumatic Stress Disorder. Pp. 303-327, in: Van der Kolk, B.A., McFarlane, A. C. & Weisaeth, L. (eds.). *Traumatic Stress: The Effects of Overwhelming Experience on Mind, Body, and Society*. New York, NY: Guilford Press.
- Van Heerden, E.M. 2007. Influences of music education on the forming of musical identities in South Africa. Unpublished MMus dissertation. University of Pretoria, Pretoria.
- Watkins, J.G. 2005. Over-Resonance, the Emaciation and Destruction of Judy's Self: Modifications to Ego State Theory. *Journal of Trauma & Dissociation*, Vol. 6(2): 1-9.
- Watkins, J.G. & Watkins, H.H. 1997. *Ego states: Theory and therapy*. New York, NY: W.W. Norton.
- Weber, D.L., Clark, C.R., McFarlane, A.C., Moores, K.A., Morris, P. & Egan, G.F. 2005. Abnormal frontal and parietal activity during working memory updating in post-traumatic stress disorder. *Psychiatry Research: Neuroimaging* 140:27-44.
- Weeks, D. 2000. Emotional Health and the Musician. *Piano pedagogy Forum*, Vol. 4(2) May.
- Weinberger, N.M. 1999. Music and the Auditory System. Pp. 47-88 in: Deutsch, D. (ed.). *The Psychology of Music*. Second Edition. San Diego, CA: Academic Press.

Weingarten, K. 2003. *Common Shock: Witnessing Violence Every Day: How We Are Harmed, How We Can Heal*. New York, NY: Penguin Group.

Weizmann Institute of Science. 1998. Quantum Theory Demonstrated: Observation Affects Reality. *ScienceDaily*. Accessed 30 August 2009. Available at <<http://www.sciencedaily.com/releases/1998/02/980227055013.htm>>.

Welbel, J. 2009. Personal communication on 10 September.

Wilson, B.G. n.d. The Postmodern Paradigm. Available at <<http://www.cudenver.edu/bwilson/postmodern.html>>. Accessed 15 April 2008.

Wilson, J.L. 2001. *Adrenal Fatigue: The 21st Century Stress Syndrome*. Petaluma, CA: Smart Publications.

Winkel, F.W. 2007. *Post Traumatic anger: Missing Link in the Wheel of Misfortune*. Nijmegen, NL: Wolf.

Wooldridge, W.J. 2007. Shakespeare and the Significance of Sound in Creation. Unpublished class notes: School of Practical Philosophy, Pretoria.

World Health Organization. 2007. *ICD-10: International Statistical Classification of Diseases and Related Health Problems. 10th Revision*. Available at <<http://www.who.int/classifications/apps/icd/icd10online/>>. Accessed 4 April 2009.

Yardley, L. 2000. Dilemmas in qualitative health research. *Psychology and Health*, 15(2): 215-28.

Yehuda, R., Schmeidler, J., Elkin, A., Houshmand, E., Siever, L., Binder-Brynes, K., Wainberg, M., Aferiot, D., Lehman, A., Guo, L.S. & Yang, R.K. 1997. Phenomenology & Psychobiology of the Intergenerational Response to trauma. Available at <<http://www.trauma-pages.com/a/yehuda97.php>>. Accessed 14 November 2008.

Yehuda, R., Southwick, S.M., Nussbaum, G., Wahby, V., Giller, E.L. & Mason, J.W. 1990. Low urinary cortisol excretion in patients with PTSD. *The Journal of Nervous and Mental Disease*. Vol. 178(6):366-9.

Yin, R. 1994. *Case study research: Design and methods*. Second Edition. Thousand Oaks, CA: Sage Publishing.

Yu, P.R. 2009. Personal communication on 20 April.

Zukav, G. 1990. *The Seat of the Soul: An Inspiring Vision of Humanity's Spiritual Destiny*. London: Rider Books.