

**A Personal Investigation into Strategies
for Healthy and Effective Musical Practice**

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Abstract

In today's world there is a high incidence of playing-related injury among musicians. A study conducted in 2012 found that over 80% of surveyed professional orchestral musicians in Australia had experienced a musculoskeletal injury that interfered with their work (Ackermann, Driscoll, & Kenny, 2012, p. 183). One of the potential causal factors in the development of a playing-related injury is an inefficient and unhealthy practice routine. Fortunately, healthy and effective practice habits can be learned. The inclusion of information about practice strategies in the curriculum of young musicians working towards a performance career could be very beneficial in reducing the risk of injury for those musicians throughout their careers. Although there has been an increase in the attention given to music health research over the last 40 years, many educational institutions still do not adequately teach their students skills for developing a healthy and effective practice routine, nor do they provide sufficient information about injury prevention and management techniques.

This research aims to add to the literature surrounding the development of a healthy and effective practice routine by investigating the author's own experience of injury and recovery as a young musician training for a career in music. It also aims to share evidence about the potential for effective practice techniques to reduce or resolve physical and psychological challenges for musicians. This study begins with an examination of the author's experience before and during her period of injury in order to determine the nature of the physical and psychological challenges that led to the breakdown of her general well-being. The main body of this research concerns the author's attempts to overcome these challenges through the use of techniques for effective practice, and documents the results of their implementation. Although professional medical advice played a role in determining recovery strategies, the major focus investigated is the significant improvements to the researcher's physical and psychological well-being resulting from self-guided changes to her practice approach. The last chapter of this research discusses recommendations for a sustainable career model, drawing together information from the literature and from the researcher's own experience of injury and recovery.

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Certification

I hereby certify that this research has not been submitted in whole or part by myself or any other person/s for a qualification or award. I further certify that to the best of my knowledge and belief, this dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

Signed

Date26/02/2018.....

Chapter 1 Introduction

Music is my passion and my life. For 20 years it has given my life meaning, significance, something to strive for, a way of connecting profoundly with other musicians, and a way of telling a story through sound that is richer than anything I can create with words. However in 2014, during my first year as a flute student at the Australian National Academy of Music (ANAM), I developed serious pain and tension problems as a result of a car accident four years earlier and the stress of a new performance environment, that forced me to contemplate a life without music. As a result of these circumstances I have undertaken an investigation into my experience of injury and recovery that explores the connection between healthy and effective musical practice. I have presented this research in such a way that it may have relevance for other musicians who may find themselves in a similar situation.

My initial intention was to research the effect of posture and breathing technique on resonance. However, as I began to transcribe my story onto the page I realised the true value of my research lay in the intersection between the resolution of my health challenges and subsequent changes to my practice routine.

In order to frame the investigation it is important to understand the definition of health. In 1948, the World Health Organisation (WHO) defined health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1948, p. 1). Because these three areas of well-being are interdependent, a breakdown of health in one of these areas can have a negative impact on well-being in the other areas (Herrman et al., 2005). Through writing about my own health I discovered this phenomenon first-hand. My health problems began with a physical trauma that led to psychological stress and a feeling of isolation from my colleagues.

Two parallel discoveries made during the research period inspired me to explore the connection between total well-being and effective musical practice. The first is that the breakdown of my well-being coincided with a period of low progress in my musical practice. The second is that as I began to improve my well-being by adopting healthy practice habits, I noticed that my practice productivity began to significantly increase. Together, these realisations strongly influenced the development of my research approach.

The study begins with an examination of my experience before and during the period of injury in order to determine the nature of the physical and psychological challenges that led to the breakdown of my general well-being. These challenges included physical trauma, imposter syndrome, tension accumulation, difficulty trusting my body, and loss of identity. The research also involves an analysis of

their likely causes and my responses alongside discussion of the difficulties I began to experience in my practice during this period.

The main body of this research concerns my attempts to overcome these challenges and includes the results of their implementation. Although professional medical advice played a role in my recovery, the major focus investigated is the significant improvements to my well-being resulting from self-guided changes to my practice approach. Detailed analysis of the changes provides further insight into the connection between the adoption of healthy practice techniques and increased practice effectiveness.

The last chapter of this work discusses the process of developing a sustainable career model using recommendations from the literature and my own experience of injury and recovery. This model will serve as a guide for injury prevention and management in my future practice and performance situations and aims to potentially assist other musicians who may find themselves in a similar situation.

Rationale

In today's world there is a high incidence of playing-related injury among professional musicians. A study conducted in 2012 found that over 80% of surveyed professional orchestral musicians in Australia had experienced a musculoskeletal injury that interfered with their work (Ackermann, Driscoll, & Kenny, 2012, p. 183). In 2013, a study of International Conference of Symphony and Opera Musicians found 93% had suffered from playing-related injury symptoms over the previous year (Chimenti et al., 2013, p. 54). These musculoskeletal problems can create anxiety and depression for the sufferer, and may have severe financial implications as musicians are forced to take leave from work to recover (Zaza, Charles, & Muszynski, 1998).

One of the potential causal factors in the development of a playing-related injury is an inefficient and unhealthy practice routine. Education about ways to structure practice provided during foundations for a music performance career could reduce the chance of developing a playing-related injury in later life. However, despite the recent attention given to music health research, many educational institutions still do not adequately teach their students skills for developing a healthy and effective practice routine, nor do they provide sufficient information about injury prevention and management techniques. This research aims to add to the literature surrounding the development of a healthy and effective practice routine and to share evidence about the potential for effective practice techniques to reduce or resolve physical and psychological challenges for musicians.

For this research an autoethnographic methodology has been selected due to the personal nature of the

investigation. Autoethnography is a relatively recent research approach that has perhaps more similarities to poetry than to traditional analytical methods of conducting research (Ellis & Bochner, 2006). It is one of many subjective research approaches that makes up the broad field of qualitative research.

Autoethnography consists of a triangulation between a study of the self, a systematic analysis and an investigation into cultural customs and practices (Ellis, Adams, & Bochner, 2010). It provides a medium within which to analyse my own experience of injury and subsequent recovery and a means of relating my story to the musical cultures in which I and others live and work.

The rationale for the autoethnographic approach for the study is founded on the writing of autoethnography pioneers Carolyn Ellis and Arthur Bochner. They write that autoethnography has the capacity:

to provoke readers to broaden their horizons, reflect critically on their own experience, enter empathetically into worlds of experience different from their own, and actively engage in dialogue regarding the social and moral implications of the different perspectives and standpoints encountered (Ellis & Bochner, 2000, p. 748).

Autoethnography engenders an important relationship between researcher and readers (Ellis & Bochner, 2000). This element of autoethnography has contributed significantly to my decision to employ this approach in my research. I feel my life has enhanced meaning when I am giving value to others. Through autoethnography, I hope to present my research in such a way that it may inspire other musicians who may have experienced health problems during their careers to explore concepts from the sustainable career model in their own musical lives.

Ellis and Bochner write that autoethnography is a “search for better conversation in the face of all the barriers and boundaries that make conversation difficult” (2000, p. 748). Although educational music institutions have made great strides towards creating an environment of acceptance around musicians’ health discussions, the subject is still perceived to be taboo in some pockets of the industry. It is common for professional musicians to keep physical problems to themselves for fear of being seen as weak, and of losing work that is already so scarce (Ortiz, 2009; Terauds, 2009). Autoethnography gives me an outlet to add my voice to the growing body of research that is working to break down these barriers in conversation.

Musicians have employed this approach effectively, notably in the book *Music Autoethnographies*, a collation of autoethnographies from 20 musicians edited by Bartleet and Ellis (2009). Of particular relevance to this study is the chapter entitled ‘Letting it Go: An Autoethnographic Account of a

Musician's Loss' in which Catherine Grant describes her experience of losing her ability to play the piano due to De Quervain's disease. Autoethnography gifted Grant with a medium through which to tell her story meaningfully, helping her to connect with other musicians struggling with health problems. Positioning my experience within the canon of such powerfully written music autoethnographies has provided me with the courage to voice my story.

Methodology

Autoethnography

I will use autoethnography to aid me in recording the events of a difficult and transformative period in my life, to reflect on my cognitive and emotional responses to events in this period, and to draw conclusions that may help to inform my future practice and that of other musicians who may find themselves in similar situations.

Below are several key aspects of a traditional research framework together with a discussion of how my research will use autoethnographic constructs to respond to this framework.

Researchers generally strive to maintain objectivity in their work because it limits the potential for researcher biases to influence scientific methods and results. However, Dharamsi and Charles (2011) and Kuhn (1962) speak of a quirk of human nature by which no researcher can be completely impartial due to implicit biases that result from growing up in a particular environment, being surrounded by specific viewpoints and having particular experiences. Ellis and Bochner (2000) claim that "language [cannot] be a neutral or transparent medium of communication" and that "no sharp distinctions [can] be made between facts and values" (p. 747). Thus, as qualitative researchers, the 'facts' we collect are inevitably intertwined with the way we interpret them. Instead of a flaw in the research design, researchers like Mukai (1989) and Crites (1971) view our implicit human bias as a potential subject of research in itself. As I write my story, I will give particular weight to my own interpretations of the facts, allowing me to investigate my experience of my injury and recovery.

Researchers value generalisability because it has the potential to increase the relevance and usefulness of the study. Ellis and Bochner (2000) see autoethnography as "a form that will allow readers to feel the moral dilemmas, think with our story instead of about it ... and consider how their own lives can be made a story worth telling" (Ellis & Bochner, 2000, p. 735). They aim to involve their readers as a "co-participant in dialogue" (p. 744). On the other hand Geertz (1973) writes on the theoretical formulations behind cultural interpretation studies explaining that it is difficult to pull theories from

different studies into some kind of universal ‘cultural theory’. He views every ethnographic investigation as a case study. My autoethnography will draw from both of these perspectives. It resembles a case study in that it is centered around one subject - myself - and the specific context of my situation: becoming injured and the process of recovery. However the presentation of a recovery process in its raw vulnerable state, and the trauma that has accompanied it has the potential to reach many people on an emotional level and inspire them to embark on their own journeys of self-discovery, whether musicians or not.

While scientific research relies on tangible results to determine its success, it is widely acknowledged within the community of qualitative researchers that the success of autoethnography is not contingent on measurable outcomes. The genre “refuses the impulse to abstract and explain, stressing the journey over the destination, and thus eclipses the scientific illusion of control and mastery” (Ellis & Bochner, 2000, p. 744). I have chosen to adopt an autoethnographic approach for this study to aid me to learn more about my practice and myself through the process of analysing my experience of injury and subsequent recovery. However, in order to clarify this process I will be making reference to a portfolio of my recitals, recorded between October 2014 and May 2016, that do represent tangible results, as measured by myself and others. Table 1 below displays the date, repertoire and position on the recovery timeline of each recital.

Table 1
Repertoire Timeline of ANAM Recitals

Date	Repertoire	Recovery Timeline
30 Oct 2014	G.P. Telemann Sonata in F major Gareth Farr Kembang Suling Robert Muczynski Sonata for Flute and Piano	During Injury Period; Portfolio Recital #1
28 Oct 2015	W. A. Mozart Flute Quartet in D major William Alwyn Concerto for Flute and 8 Wind Instruments Paul Dean Falling Ever Deeper	End of Physical Recovery Period; Portfolio Recital #2
27 May 2016	Gillian Whitehead Taurangi Robert Muczynski Duo for two flutes Robert Beaser Variations for flute and piano	Post Recovery; Portfolio Recital #3

It is important to respect the privacy and reputation of participants in research. Autoethnographers walk a

tightrope between maintaining a full and open honesty in the retelling of their stories and protecting the anonymity of characters in the story. Some strategies used to circumnavigate this difficult position are composite characters, altered identities, fictional characters and collapsed or condensed event timelines (Ellis & Bochner, 2000). I have dealt with this delicate issue by using generic names for people in the story, such as replacing the name of the chiropractor with the term 'chiropractor', and by focussing on the way I reacted to my environment, rather than on the people within the environmental context.

Qualitative researchers often discuss the difficulty of capturing experience accurately and suggest it may be helpful to use sources from different periods of time and different mediums, otherwise known as triangulation, in order to present as accurate a representation as possible (Ellis & Bochner, 2000, p. 750). My research approach has involved such triangulation from a range of sources over time. Some events can be more fully understood in retrospect, as it is possible to see a clearer overall picture of how they relate to the events that came before and after. Collecting data from a range of sources and adding layers of critical evaluation has provided me with an effective way to approach this research.

Data Collection

I began collecting data about my practice in early 2015, one year before my Masters candidature began. Using the ethnographic method of taking field notes to help inform interpretation of cultural routines and customs (Dharamsi & Charles, 2011), I began both a practice journal to record session content and length, and a pain journal in January 2015. I continued to write daily entries until May 2015, at which point my symptoms seemed to have formed a fairly predictable pattern. For the next three months, I continued with my practice journal only, documenting the length and practice content of each session, and the overall playing time per day. Although I was unaware of the ethnographic method in the initial phases of recording my experiences, I have subsequently drawn from this method in giving significant weight to this data in my investigation into past events. Analysis of these practice and pain journals from the beginning of my rehabilitation period reveal information about the location and extremity of pain, techniques I used to relieve pain and tension and their physical effects on my practice.

In February 2016 at the beginning of my Masters candidature, I realised the potential of these journals to inform my long-term future practice and started a new journal in which I recorded the effect of practice and other activities on the extent and location of my pain and tension. In this journal I also included new practice techniques as I discovered them through my Masters research. As I trialled these techniques in the practice room I documented how long it took for pain or tension to arise and any changes in the sound that occurred. In this way I worked towards optimizing my practice routine by exploring the relationship between healthy and effective practice.

Due to the fact that these journals were intended to serve only as private reflections, and because they make up an extensive body of work - there are a total of 46 entries from 2015 and 176 entries from February 2016 to March 2017 - they are not reproduced in full in this thesis. However, an excerpt taken just after my candidature began in 2016 will demonstrate the manner in which I recorded the impact of new techniques in the practice room on my health and practice effectiveness:

9/5/16

Back a bit sore at start of practice. Pec stretches. Left pec massage on ball. Lying in bridge helped [air] support a lot. Ball under arm and regular breaks helped a lot. Breathing a lot better [because I'm] not worrying about it. Back sore at end of practice when I started fighting to get the sounds I wanted. Letting go mentally gave better sound and finger results – Inner Game of Tennis theory.

This journal entry provides an insight into my tension management approach during practice. There is evidence of self-reflection about what might have caused pain and tension problems throughout the session. 'Breathing a lot better' refers to the sensation of freedom in the torso muscles, and the ease of finding a breathing rhythm. 'Better sound and finger results' refers to increased resonance in the sound and reduced tension in the fingers. This excerpt also shows I had begun to research practice techniques and record the results of trialling them in my practice.

Research Questions

I devised my initial central research question as a result of my desire to learn more about what happened during my recovery and to discover which actions had the most significantly positive or negative effects on my flute playing. It related to finding out to what extent changes in my posture and breathing technique while playing the flute affect the quality of resonance I am capable of producing.

I then came across an article by Ellis and Bochner called *Autoethnography, Personal Narrative, Reflexivity: Researcher as Subject* (2000) which discusses the benefits that arise from writing a personal narrative about one's own past experience. This interested me greatly and encouraged me to look further into autoethnographies written by Ellis and her colleagues.

As I began to write down my story I realised that researching specific techniques I used for improving posture and breathing had limited application outside my own practice. I discovered I had much more value to give to the music community by writing about my experience of injury and recovery and the way

my practice approach changed during this period. I began to acknowledge that I had learned a lot about practice during this time such as how to practice effectively and how to practice in a healthy way. I discovered that the techniques I had employed to make my practice more effective were instrumental in helping me to resolve my physical and psychological challenges. I realised this was where the crux of my research lay and therefore presenting my story from this angle could be the key to inspiring and helping other musicians to overcome their personal challenges. The ability to practice efficiently, effectively and sustainably is one of the most crucial skills needed to have a sustainable career as a musician and therefore lacking that skill could potentially be the source of many physical and psychological challenges for musicians.

In light of this, the central research question underpinning this study is: ‘How did I resolve physical and psychological challenges through the use of techniques for effective instrumental practice?’. Other questions that arose as a result of the central research question related to the nature of the physical and psychological challenges, their causes and effect on my well-being; and the techniques I developed to make my practice more effective and their impact on my physical and psychological challenges. My last question asks how I can use this experience to develop a sustainably healthy and effective practice and performance model for myself and encourage others to do the same.

This area of research is significant because it has the potential to improve the healthiness of one’s practice while simultaneously allowing the player to work more efficiently towards performance goals. These techniques have the potential to replace the cycle of tension, anxiety and inefficiency that might occur for a musician battling physical or psychological challenges during practice with a healthy-efficient self-perpetuating cycle. They promote a more effective way of using the body’s muscles, by allowing the muscles to work in the way they were designed to, reducing stress and fatigue. This increases ease and technical facility, which in turn reduces psychological stress. The final research questions above arose from the author’s belief that the music community would benefit from more research into the potential for an effective practice regime to reduce or resolve physical and psychological problems and prevent them from recurring.

Literature Review

Since the 1980s there has been an increase in attention to musicians’ health in the music research community and arts organisations worldwide have begun to invest resources in the health of their musicians. In particular, many researchers have begun to focus the majority of their investigation on playing-related musculoskeletal disorders (PRMDs), suggesting that this is one of the most prevalent medical problems amongst musicians (Ohlendorf, Wanke, Filmann, Groneberg, & Gerber, 2017;

Ackermann et al., 2012; Zaza et al., 1998). There is widespread acknowledgement of the prevalence of PRMDs amongst musicians and researchers worldwide, with similar evidence coming out of studies conducted in Germany (Scheffer, Esmer, Delank, & Peroz, 2015), South Africa (Ajidahun, Mudzi, Myezwa, & Wood, 2017), Hong Kong (Yeung, Chan, Pan, Sau, Tsui, Yu, 1999), and the United States (Fain, 2010).

Bronwen Ackermann, editor of clinical medical journal *Medical Problems of Performing Artists*, is a leading researcher and physiotherapist in the field of musicians' health in Australia. Ackermann has co-authored many articles and studies on topics such as injury management and prevention amongst musicians, psychological wellbeing of musicians, hearing conservation, and effective practice (Ackermann, Kenny, & Fortune, 2010; Ackermann, 2017; O'Brien, Driscoll, & Ackermann, 2015; Ackermann, 2017; Ackermann, Driscoll, & Kenny, 2012; Ackermann, 2010).

Flute players in particular have been the subjects of many musicians' health studies, due to the prevalence of injury in this population. This prevalence is attributed largely to the asymmetrical stance of a flute player and the negative effects of that stance on the body (Lonsdale et al., 2014; Fain, 2010; Ackermann, Kenny, & Fortune, 2010; Koppejan, Snijders, Kooiman, & Van Bommel, 2006).

In 2012, Ackermann, Driscoll and Kenny conducted a large-scale study of 377 Australian professional orchestral musicians and found that 84% had experienced a musculoskeletal injury during their career that had interfered with their work. The article highlights that less than half of these musicians had fully recovered from their injuries at the time of interviewing (p. 183). The following year, another study of the same population added that the most common sites for injuries are shoulder, neck, upper back and hand (Chan, Driscoll, & Ackermann, 2013, p. 1).

There is a significant body of research that discusses the holistic and psychological impacts of a physical injury on a musician's life. Zaza et al. (1998) state that "although a PRMD is not a medically serious or life-threatening illness, it is devastating to musicians physically, emotionally, socially, and financially" and threatens a musician's identity (p. 2013). Guptill, Price, and Watson (2011) discuss the potential for a musculoskeletal condition to cause a loss of confidence in one's abilities on and off stage. A number of researchers also bring to light the isolating effect of injury for a musician, highlighting that many choose not to reach out to their communities due to the historically taboo nature of the subject and the concern that injured musicians will cease to be offered work (Guptill et al., 2011; Ackermann et al., 2012; Chan, et al., 2013).

Popular texts for sportspeople and artists alike make a significant contribution to research on the

psychological aspects of elite performance. W. Timothy Gallwey's text *The Inner Game of Tennis* (1979) and collaborative work *The Inner Game of Music* (1986) explain the mental and emotional challenges of performing and their inevitable effect on the body and mind. He discusses the potential for a lack of trust in one's muscles during performance to cause tension and a loss of control. Gallwey's texts have proved very influential in my musical practice as they have taught me how to regain that trust. There is also a substantial body of work on the psychological impacts of injuries for musicians (Kenny, Driscoll, & Ackermann, 2014; Rickert, Barrett, & Ackermann, 2014; Buller, 2002; Zaza, 1995; Grant, 2009).

Research devoted to the causes of musicians' injuries is extensive and fairly unanimous in many of the conclusions they draw. Many studies identify a general lack of knowledge about injury prevention and management as a major cause for the rise in injury prevalence in the music community, and point to music institutions as the catalysts for change (Chan, et al., 2013; Lonsdale, Laakso, & Tomlinson, 2014; Fain, 2010). For example, Ackermann et al. (2012) found that poor posture, excess muscle tension and fatigue, long practice sessions, and insufficient rest were the most common causes of PRMDs in their study population of orchestral musicians. Lonsdale et al. (2014) and Guptill et al. (2011) published similar findings about flute players and trombone players respectively, adding that stress and performance anxiety are also significantly responsible for causing PRMDs. Ohlendorf et al. (2017) attribute one of the major causes of postural problems and PRMDs in orchestral musicians to long hours of sitting during rehearsals. Cossette, Monaco, Aliverti, and Macklem (2008) identify unnatural or forced breathing as a cause of bodily tension.

Today, *deliberate practice* is a popular phrase in the academic research world, in part due to the pioneering work of K. Anders Ericsson, Ralf Th. Krampe, and Clemens Tesch-Romer (1993) that promoted a new way of thinking about preparing and maintaining expert performance. Ericsson et al. explain why deliberate practice is crucial to achieving expert performance, quashing the myth that innate talent alone is a pathway to obtaining an expert level in a performance field. Ericsson et al. acknowledge the link between deliberate practice and injury prevention and management for musicians to some extent. They promote the construction of a physically healthy practice schedule that aims to push one's body to the limit, but not past it, and detail the resulting increase in concentration ability during practice. The literature on deliberate practice following the initial study by Ericsson et al. mainly focuses on the performance benefits of deliberate practice (Howe, Davidson, & Sloboda, 1998; Lehmann, 1997; Madsen & Geringer, 1981) and does not acknowledge sufficiently the potential for effective practice techniques to reduce physical and psychological challenges for musicians.

In recent years, research into injury management strategies for musicians has grown leading to the creation of a significant body of work that aims particularly to aid musicians who may be suffering from a

PRMD. Eckart Altenmuller, a German flute player and world-renowned physician specialising in performing arts medicine, has been involved with extensive research concerning the management of focal dystonia in musicians (Altenmuller, Boulet, Jabusch, & van Vugt, 2014; Altenmuller & Jabusch, 2010; Altenmüller, Candia, Elbert, Rau, Rockstroh, Schäfer, & Taub, 2002). Kenny and Ackermann (2015) discuss rehabilitation of soft tissue injuries through medical intervention and using concepts from sports medicine. Slade, Mahoney, Dailinger, and Baxamusa (1999) explain the importance of rest and evaluation of playing posture in the management of injury. This research will concentrate on the management of injuries through the application of techniques for effective practice that aim to minimise playing-related tension, and to reduce overall practice time by increasing practice productivity.

Many studies promote the importance of education about injury prevention as management is often time-consuming and full recovery is not always obtainable (Kenny & Ackermann, 2015; Slade et al., 1999). Altenmuller and Schneider (2008) claim that careful monitoring of practice schedules, an efficient technique, practice away from the instrument, and management of expectations are important strategies for injury prevention. The research presented aims to develop a sustainable career model that will guide me towards creating a healthy practice and performance routine, and may be of interest to other musicians who may find themselves in a similar situation.

Much of the existing research on the intersection between healthy and effective practice comes from Bronwen Ackermann and colleagues, who acknowledge the potential for injuries to be managed and prevented through the application of strategies for more effective practice and rehearsal (Ackermann, 2010; Chan & Ackermann, 2014; Ackermann, 2017). Other researchers mention techniques for healthy practice in passing, such as taking adequate practice breaks and warm-ups/cool-downs, but do not sufficiently acknowledge the potential for these techniques to improve practice efficacy (Lonsdale et al., 2014; Fain, 2010; Guptill et al., 2011). This research will build on that of Ackermann and colleagues, drawing together literature on effective practice and physical and psychological challenges for musicians to inform an investigation into the potential for effective practice techniques to aid in the resolution of these challenges.

Chapter 2 Physical and Psychological Issues

This chapter begins with an examination of my experience before and during my period of injury, and the nature of the physical and psychological challenges that led to the breakdown of my general well-being. These challenges included physical trauma, imposter syndrome, tension accumulation, difficulty trusting my body, and loss of identity. This chapter also involves an analysis of their likely causes and my responses alongside discussion of the difficulties I began to experience in my practice during this period.

2.1 Physical Trauma

Physical issues during playing can be partially caused and/or exacerbated by historic injury or physical trauma. In 2010 I was involved in a car accident that caused a whiplash injury to my neck. The following year I began to experience pain in my left arm when I practiced the flute or spent time typing at a computer. I was diagnosed with repetitive strain injury (RSI) by a sports physiotherapist who told me the only way to recover was to stop playing. This left me feeling powerless and at the whim of an injury I did not understand. I kept my struggle a secret from my music community because I feared I would be seen as weak and unhireable. Nonetheless, I continued to play and practice and worked through the pain to an extent that I was able to remain in full time tertiary studies and achieve a First Class Honours in performance flute in 2013.

In 2014 my playing workload increased exponentially when I began a course of study at the Australian National Academy of Music (ANAM). This was partially due to external demands, as I was rostered into a busy schedule of ensemble rehearsals and performances. I also substantially increased my practice time to ensure I met the high standard of performance expected of me as a representative of ANAM. I was very aware that my position at ANAM was highly contested and I was by no means guaranteed a place in the program for the following year, which added significantly to my stress level. I wished to appear competent so that I might be offered another year of study at the academy.

2.2 Imposter syndrome

Within that first year, I began to doubt myself and feel like I wasn't good enough to be at ANAM. After every woodwind class, particularly, I would feel like a fraud and a failure. I would chastise myself for playing wrong notes in an orchestral read-through or having a technical fumble in a solo piece I was performing. In retrospect, I realise my focus was always on having the fastest and cleanest fingers, the quickest tongue, and the most fluent sight-reading skills. In other words, I was aiming for mechanical perfection. These were the areas of my technique that I perceived to be weakest, but also perhaps the most

measurable aspects of technique for my perfectionist brain to focus on.

It is interesting how quickly I lost touch with the logical part of my brain during the first six months of my study at ANAM. The very skills I had always believed to be obtainable through hours of dedicated practice began to seem unattainable because I had become convinced that these were innate talents one had to be born with, and that I did not possess.

I discovered the only way to lessen my anxiety about performing in wind class or in a lesson was to know the work I was performing inside out. However, there were many days when I was expected to be in rehearsals for 5-7 hours. This left very little time for learning music and even less time for practising technique and as a result I became less and less confident over time.

On top of this, I was suddenly thrust into daily contact with some of the best young musicians from around Australia and New Zealand and yet expected myself to be competitive across every aspect of technique right from the first day. Because of the demands of the ANAM schedule, which were by many accounts greater for the wind department in 2014 than the years before and after, a very insular social scene developed. Limited contact with the outside world resulted in an inaccurate perception of the importance of what was going on within ANAM and a further loss of connection with the bigger picture. Years later I recognised striking parallels with the situation in Malcolm Gladwell's *David and Goliath: Underdogs, misfits, and the art of battling giants* (2013) when he described the Small Fish-Big Pond scenario, where someone with a particular skill set is thrown amongst many other people with the same skills. Gladwell explains the feelings of inadequacy this situation can incite, even for someone who is particularly good at their craft as they are comparing themselves with a small subset of the population who is also very good at that craft.

During my Masters candidature, I received an email about a workshop at Griffith University called "The Imposter Syndrome: Why successful people often feel like frauds". On reading the book of the same name by Hugh Kearns (2015) I was surprised to discover a syndrome that describes perfectly my prevailing state of mind during my first year at ANAM. I realised that the anxiety and self-doubt I developed during this year were symptoms of imposter syndrome. Kearns explains that imposter syndrome is a common psychological condition amongst high-achieving perfectionists who are promoted into a position of leadership. Clance and Imes, who first coined the term, find that it is particularly common among women, perhaps due to low societal expectations. They explain: "the clinical symptoms most frequently reported are generalized anxiety, lack of self-confidence, depression, and frustration related to inability to meet self-imposed standards of achievement" (Clance & Imes, 1978, p. 242).

In some facets of life, mistakes can be useful learning tools. However Kearns explains that for someone with imposter feelings, making a mistake is akin to being exposed as a fraud. This resonated with me strongly with respect to my experience of the ANAM wind class. I was very on edge during orchestral read-throughs and was mortified when I made mistakes, even though the point of these sessions was to get to know the repertoire in an informal setting. I could overlook any mistakes made by my peers because I respected them as highly talented musicians. But my perception of the magnitude and consequences of my own errors was blown out of proportion. I had lost perspective.

2.3 Tension Accumulation

Panic Practice

I responded to my feelings of stress by forcing myself to work harder in order to keep up with these 'others' whose talent I felt was so much greater than mine. I felt like I was years behind and believed it was almost impossible to catch up but knew I would never forgive myself if I did not try. This created an unhealthy practice environment. For months my practice was entirely carried out in a state of panic. What didn't help was that I had what seemed to be a mountain of new music to learn and was therefore very stressed about getting all the notes under my fingers in the time available. Music began to be even more about perfect mastery of the notes than it had been before as there was little time for exploring interpretations or expression. Physical tension began to accumulate as a result of the sudden increase in my playing workload, reduced time for rest and psychological stress.

See Appendix B for a table of the repertoire I was required to prepare and the limited time that was available to me between starting to learn the part and the first rehearsal.

Poor Goal Setting

Part of the problem with panic practice is that it can result in very poor goal setting. In my case this took the form of setting a goal that either did not challenge me, or provided an unrealistically difficult challenge. An example of the first type of goal was simply 'to play for a predetermined length of time' with no consideration for practice content. The second category refers to goals such as 'to be perfect after one attempt at a task' and 'to play without mistakes at all times'. In retrospect I realise I also set myself the goal 'to be better than everyone else in my cohort'. Amongst ANAM students there is a friendly competitive environment but in times of stress it is hard to ignore the fact that ultimately we will all be competing for the same very small pool of orchestral jobs in the country. This knowledge was often at the forefront of my mind at this time and heavily influenced my poor goal setting in practice.

Loss of Body Awareness

Buller (2002) discusses the culture within the musician community of taking one's body for granted (p. 20). As far as this equates to trusting one's body, it is a useful mindset that allows the mind to be free to focus on musical considerations. However, I found out through experience that if this mindset is not accompanied by techniques for maintaining awareness of the body, it can lead to a cycle of pain and tension that can significantly affect a musician's career.

For the first six months of 2014, panic kept me afloat. The adrenaline I received from panic during practice gave me a boost of energy, and prevented me from feeling pain. This can be explained by the fact that adrenaline acts to increase the body's pain threshold (Ahmad & Zakaria, 2015, p. 52). At the time, I assumed that an absence of pain meant my body was healthy and, as I began to focus increasingly on the stresses of my workload, I began to take my body for granted. As such my usual techniques for maintaining body awareness, such as checking for pain and tension before, during and directly after practice, fell out of my routine.

As a result, I failed to notice the damage being inflicted on my body by my constant state of panic. Whenever I felt stressed during practice, my survival instinct would send me into 'fight' mode. Here I refer to the 'fight-or-flight response' coined by physiologist Walter Bradford Cannon in 1929 to describe an organism's two instinctive physiological responses to stress: fight and flight. My muscles would be charged with adrenaline allowing fast contractions. My instinct to grip the flute in an attempt to gain more control triggered the pectoral and upper arm muscles to turn on in order to help me feel that I was winning the fight.

After six months of this stress, alongside a long history of pectoral tension, I had a large build-up of very tight pectoral muscle on the left side of my chest. This in itself was causing issues as it was pulling my left shoulder forwards and putting strain on my back muscles. Symptoms began to emerge outside of practice, at first in the form of pain between my shoulder blades and limited range of movement in my left arm, and developing to include a sore and tight neck, and delocalised aching at night, affecting my sleep patterns.

These symptoms heightened my feeling of panic, which in turn interfered with logical thought processes. By August, my condition had escalated to the extent that I felt so overwhelmed by stress about my playing and my condition that I felt unable to properly acknowledge or act on the signals from my body telling me to stop immediately. At the end of each practice session I felt as if I was emerging from a

vortex of pain and anxiety from which there was no escape until the session was over. Ainley and Tsakiris (2013) discuss the idea that stress can interfere with one's body awareness, a concept that sheds some light on my experience of practice at this time. I felt as if stress had broken the connection between my mind and my body.

Reaction vs Prevention

By September 2014, the pain signals during practice were of such high frequency and magnitude that they reached my brain despite the adrenaline. I now had sharp pains and tingling down both arms, numbness in my fingers, constant aching between my shoulder blades, a sore and stiff neck and difficulty taking in air. Symptoms that had once only flared up during practice were now present in every part of my daily life.

I threw myself into trying to reverse the damage I had done. I employed a number of tension release strategies that I had used when my condition had flared up in the past. I tried to release forearm tension by stretching before practice. My forearm muscles became more sore and tense. I later realised that this was likely due to overstretching of these muscles, which caused them to be strained. I experimented with applying *Deep Heat* ointment every night in every acute location that felt sore, including pectorals, gluteal muscles, biceps, triceps, adductors, forearms, hands. I purchased a well designed backpack with chest and waist straps with the aim of reducing strain on my back from carrying around instruments and music. I increased the amount and intensity of my cardiovascular exercise to two runs per week of five kilometres each and 30 minutes per day in the gym in an effort to improve my general health.

These strategies had been effective in the past during the early stages of an acute flaring-up of my condition and I expected them to work again. I did not realise that this time my muscle tension had accumulated to such an extent that these methods were not sufficient to reduce the tension below my pain threshold. This set of methods alone was predisposed to fail because it is reactive, not preventative. These strategies ignore what I now know to be at the heart of the problem - that my approach to practice was fundamentally harmful to my body and my mind.

2.4 Performance: Doubting Body Knowledge

In late October, my first ANAM recital approached. During the week beforehand I became worried that my body would fail me because I had not been able to practice as much as I usually would in the lead up to a recital. Kenny (2009) discusses the relationship between one's cognitive assessment of a task and their emotional response to that task. My cognitive assessment of performing my first ANAM recital was such that I believed my ability to perform the task was insufficient given the difficulty of the repertoire

and the standard of performance I expected of myself. This resulted in my usual pre-performance excitement being replaced by significant anxiety.

On the morning of the recital I resisted my urge to practice. I simply warmed up for 30 minutes and stepped on stage. In theory this was a good decision because it prevented me from exhausting myself, but because I was already struggling to trust my technique I missed the reassurance of having felt the notes under my fingers.

I made a finger slip on the first page of my Telemann sonata because I was trying to force my fingers to work instead of trusting my body. As a result of the slip I trusted my body even less, when what I should have done is trust it more. The less I trusted my body the more tense I became and the less accurate my muscles became at executing tasks. I started to hyperventilate, partly due to stress, and partly because my breathing muscles were so tense that I could not take in enough air. Symptoms of imposter syndrome took over and I started to worry that I had lost my ability to perform. Mihaly Csikszentmihalyi, a leading researcher in the field of optimal performance psychology, explains that being able to management one's attention is crucial to achieving optimal performance and a feeling of control during performance (2014). In allowing my attention to be diverted from my musical intention to my finger movements I prevented myself from achieving that feeling of control. I started to panic, which resulted in muscle tension and restricted breathing. After the performance I felt like I had failed myself and ANAM through not working hard enough and attempted to practice even harder. It didn't occur to me until months later that I was actually physically and psychologically unwell.

Two days later, when the adrenaline had worn off, and my pain threshold returned to normal, I started experiencing stabbing and shooting pains in my arms that didn't stop when I put down the flute. My body was screaming at me to stop and I finally took notice, pulling out of all ANAM projects for the rest of the year.

[Please view *Appendix A: 2014 Recital* to observe the footage of my first ANAM recital in 2014. Of particular interest here are my technical fumbles and lack of control of my air column]

2.5 Loss of Identity

After attempting for some time to continue practising I realised I had to stop doing everything because my pain was getting worse despite all the measures I was taking to keep it under control. I went on a course of anti-inflammatories and just waited for the pain to die down. I felt purposeless and like a social outcast because all of my colleagues were performing and I was not able to. I struggled to connect with

them because they had the life that I so desperately wanted. I worried that I would never get better and would never again have that life.

I took myself out of the environment that had caused me so much stress and returned home to New Zealand. I took two weeks off playing entirely to give my body a chance to heal, but struggled to allow my mind to rest. I became more worried than ever about all of the practice I was missing and how I would be even less competent when I returned to ANAM the following year.

Despite the distractions of family and holiday time I could not see the point in any of it without music. Life began to look very bleak, as if all the colours were washed out. I found little joy in the company of people – something that would usually revive me from any negative emotion. I felt like a shell of a person for those two weeks and found myself in a zombie-like state that only the hope of rejoining the musical community could penetrate. I myself could not fathom why I felt so lost.

When I started research for this thesis I was intrigued to find that my experience is very common amongst members of the music community who lose their ability to play. I discovered that some of the most debilitating psychological effects of musicians' injuries result from the loss of identity a musician feels when they can no longer pursue their craft. Zaza (1995) refers to the phenomenon by which "destruction of the musician signifies the destruction of the person" (p. 124). Grant (2009) discusses the loss of her self-esteem caused by her sudden inability to play music and asks "who [am] I, if not a pianist?" (p. 125). When an injury forced flautist Jennifer Buller to stop playing, she likened her emotional response to a broken heart. She writes: "My flute playing self is out in the world, but I am separated from it by a boundary my body cannot cross" (2002, p. 21). These words resonate strongly with me and have helped me to understand my condition in retrospect. If, in 2014, I had known more about the prevalence of injury amongst musicians worldwide and had read their stories, I believe this may have lessened my feeling of isolation and helped me to understand why I felt as if I had lost my identity.

Conclusion

This chapter detailed my experience of being an injured musician, and the nature of the physical and psychological challenges that led to the breakdown of my general well-being. These challenges included physical trauma, imposter syndrome, tension accumulation, difficulty trusting my body, and loss of identity. The next chapter discusses my attempts to overcome these challenges.

Chapter 3 Trials and Results: Techniques for Effective Practice

This chapter concerns my attempts to overcome the physical and psychological challenges I faced in the lead up to, and during, my period of injury, and includes the results of their implementation. Although the chapter begins with a summary of the professional medical advice I received during this time, the major focus investigated is the significant improvements to my well-being resulting from self-guided changes to my practice approach. Detailed analysis of these changes provides further insight into the connection between the adoption of healthy practice techniques and increased practice effectiveness.

3.1 Seeking Professional Medical Advice

Between August 2012, when I began to notice pain and tension while playing, and March 2015, I was given a lot of conflicting advice and diagnoses from fourteen medical practitioners - many of whom had no experience in treating musicians. The most significant impact on my recovery was made by those practitioners who helped me to reinvent my practice model. These were an Alexander Technique practitioner, a physiotherapist with knowledge of musicians' health and a Ridgway Method practitioner.

See Appendix C for table of practitioner advice and usefulness ratings.

3.2 Structured Practice Routine

On the last day of 2014 I decided I needed to do something to get into a better frame of mind. I had been out of the stressful and competitive ANAM environment for a month and was ready to take a step back and review my practice approach. I devised a new practice routine that consisted of short blocks of practice that would allow me to start working again, albeit at a snail's pace. This routine involved:

1. Beginning with sessions of one minute each, focussed entirely on finding a posture that minimised pain
2. Allowing time for tension release through self-massage and stretching after every one-minute session
3. Gradual increase in the length of sessions, ensuring that I was always in touch with pain and tension levels
4. Gradual increase in the number of sessions per day

Because I could only practice for a few minutes at a time for three months I gained a new appreciation for my practice time. In order to achieve any substantive progress at all, I knew I needed to make the most of

the time I had. I developed a highly structured practice routine that was based on a set of eight aspects of technique that I wanted to improve, chosen as a result of feedback from teachers, colleagues and my own assessment of my playing. These aspects were articulation, resonance, sound quality on soft high notes, richness of sound in the low register, intonation, vibrato, flexibility over intervals, and improvisation.

In retrospect it is difficult to pinpoint where this idea originated. This was a very stressful time of my life because I felt overloaded with conflicting information from different specialists and I didn't know which to trust. In fact I was hesitant to trust any of their advice because I felt that a step in the wrong direction could be dangerous when my body was already under so much stress. I dreamed of meeting someone who could analyse definitively what was wrong with me and lead me back to the right path, guiding my actions on a day-to-day basis. I asked myself questions such as "should I swim?", "do yoga?", "pilates?", "when should I take up practice again?", and the biggest question - "will I ever get better?". I felt there was a very strong chance I would never be healthy enough to have a career as a flutist or even to play regularly as an amateur. I spent the summer of 2014/2015 trying to reconcile myself with the idea of a life without music but was not successful. The following journal entry provides an insight into my mindset at this time.

4/1/15

Had a picnic dinner with mum at the beach. She is trying to remind me that I have other talents and interests that could lead to viable career options. I keep trying to imagine that scenario but I feel so lost and defeated without music.

My motivation to keep working towards recovery was the significant impact music has on my life: music gives my life meaning, something to strive for, and a way of connecting with fellow musicians and audiences. However there was no professional accessible to me to tell me how to get better, so I acted as my own recovery mentor, coaching myself step by step through the process. This structured practice approach came about because it seemed the only viable option available to me. I followed my instinct and what felt right – being able to practice and attempting to move forwards improved my mental state. This quote from my journal shows a typical day in the early stages of my journey towards recovery.

16/1/15

Swim in morning and then yoga. Sore in afternoon while sitting. Practice was hard today. Sore in back after 9 minutes of practice in 2-minute sessions. Pec[toral] stretches helped. Is swimming helping pec[toral]s or making them more tired? Neck stiff in evening. From [improper form in] yoga?

Over time I gained more awareness of my body and was able to steer my recovery using a physical compass as well as a mental/emotional one. The following journal entry describes the turning point in my recovery – the day that I began to recognise and trust my instincts about my recovery.

28/1/15

Got up the courage to research CRPS [Chronic Regional Pain Syndrome – the condition my GP had suggested might have been the cause of my problems] and found it is a lifelong condition that can cause loss of blood flow to the limbs and has no cure. This just doesn't feel right to me. Suddenly I now have a lot of motivation to practice and figure this thing out. Not as scared to push the boundaries [of practice session length and content]. Played music today for the first time in ages and it was such a great feeling [previous to this I had only done postural practice for a month].

Results of Implementing Structured Practice Routine

Once I had realised, in the first few days January, that I could pick up the flute for one minute at a time, each element of technique was allocated three or four one-minute sessions per day. Within a month I had built up stamina and was able to organise my practice into five-minute sessions. I was amazed at how much could be achieved in such a short time. What also surprised me was how much more I enjoyed practising. I realised this was because I was actually focussing for the entire session and able to make continuous improvement through the session. I acknowledged my previous practice had been mostly unfocused and unstructured. Because I was not learning in an intelligent or deliberate way I was actually making my technique worse by repeating a passage over and over. Neurologists Altenmuller and Schneider (2008) have discovered that muscle fatigue can actually lead to “blurring of central nervous sensory-motor representations” (p. 342). This research gives a very likely explanation for my experience – the more tired my muscles became the less efficient the signals from my brain and thus I had less control over my muscle movements. Preventing this cycle from occurring by stopping practice before I became tired also resulted in a significant reduction in tension during practice.

In April 2015 I performed in wind class for the first time in five months, playing two orchestral excerpts: ‘Voliere’ from Saint-Saens’ *Carnival of the Animals* and the solo from Ravel’s *Daphnis and Chloe*. I was told by many of my colleagues and teachers that I had improved significantly since they had last heard me play in October the previous year. I was very surprised because all I could see at that moment was that I had done a maximum of one hour per day in the last month and for the four months prior I had been lucky to be able to play for even two minutes at a time.

However, as time went on and I became able to see things more objectively I realised that my colleagues were right. I had made a significant amount of progress while I was recovering – not just in physical terms but also in musical terms. Through my attempts to reduce tension in my practice, I had actually discovered a more efficient way of practising. I realised that improvement is a factor of not just the *amount* of time spent, but also the *way* the time is spent. The methods I used in an attempt to overcome my physical and psychological challenges in practice became a set of techniques for effective practice, namely practice structuring, goal setting, varied practice, body awareness, and external focus. As I incorporated these techniques into my practice routine, my physical and psychological health improved and the inextricable link between a healthy and an effective practice became clear.

3.3 Goal Setting

While I was away from the instrument I had spent time reflecting on my practice and realised that my expectations of myself in the practice room were both vague and unrealistic, often causing me to resort to what I have called panic practice. My first instinct in the face of this realisation was to sit down on the first few days of January 2015 and set realistic and specific goals for my practice. The eight aspects of technique identified in my structured practice plan represent the areas in my playing I perceived to be the weakest. It became my major long-term goal to obtain the level in each of these areas that I had reached before taking time off. Every day before I began working on an aspect of technique I would break the goal down to a short-term goal that was achievable within that practice session. For example, my goal might be to develop more flexibility over large legato intervals. I might break this into a short-term goal of playing small ascending intervals smoothly i.e. intervals between a second and a fifth. Once achieved, I would set short-term goals with increasing difficulty, such as playing large ascending intervals smoothly, eventually moving on to the more challenging descending intervals.

Results of Implementing Goal Setting Techniques

As my initial practice sessions were only one minute long I learned very quickly the need to scale back my expectations. The process of improving was painstakingly slow. For the first three months of 2015 a single hour of practice would take all day because I had to have so many breaks. It was demoralising and very hard work. To keep myself going at a day-to-day level I learned early on the necessity of having measurable and achievable goals – for example being able to say to myself ‘today I will increase my double-tonguing speed from yesterday by two beats per minute’.

Working with such tangible and realistic goals was instrumental in helping me towards recovery. I designed each short-term goal to be achievable within a practice session of between one and five minutes

in length. This allowed me to complete tasks often, and created many natural opportunities to take a short break and assess my progress. This aspect of goal setting helped to reduce my tension during practice by impeding my cycle of panic and therefore was instrumental in the resolution of my physical challenges. Working towards and achieving these goals gave me a purpose and the strength to keep going on the tough days, so helped to lift my depression and other psychological challenges. Lastly, using these goal setting methods actually helped my practice to become more efficient, as it helped to significantly increase my focus during practice.

3.4 Blocked vs Varied Practice

During my practice reflections over the summer of 2014/2015 I discovered another potential cause for my practice tension during my first year at ANAM: I had been so single-minded in practice about completing each unrealistic practice goal that I would not allow myself to move on to another task until I had achieved that goal. I acknowledged that this approach was exhausting, frustrating and very inefficient. I recalled that during this time I had often found any progress I had made would be lost by the next practice session. I decided to try another approach, which involved interspersing different types of content throughout the day. Instead of repeating a difficult technique many times in a row, I would keep coming back to it throughout the day. I incorporated this approach into my structured practice routine of short sessions that I increased in length throughout the day. An example of a practice morning in early January 2015 with a focus on vibrato resembled the structure in Table 2 below.

Table 2

Example of a Typical Practice Period Using a Varied Practice Approach

Number and Length of Sessions	Aspect of Technique
3 x 1-minute sessions	Vibrato
3 x 1-minute sessions	Articulation
2 x 2-minute sessions	Vibrato
3 x 1-minute sessions	Intonation
3 x 2-minute sessions	Vibrato

Results of Implementing Blocked Practice Technique

By the time I returned to ANAM as a full-time student in July 2015 I had built strength and confidence. I began to allow the structure of my practice sessions to become freer and less regimented. I began to work

on multiple different aspects of technique in each session instead of focussing on just one aspect, and scheduled difficult content into multiple small sessions spread throughout the day. In doing this, I noticed that my practice became suddenly more efficient and more effective. I achieved my goals more quickly than ever before, and with much better retention of progress from one session to the next. This phenomenon is explained in the literature as a distinction between varied practice, where content is varied throughout the practice, and blocked practice, in which one task is completed before the next begins (Magill and Hall, 1990).

Researchers have found that varied practice is more effective than blocked practice for complex skill acquisition and retention (Magill and Hall, 1990). There are two reasons for this suggested in the literature:

- Elaboration Theory – Learning something in many different ways causes the differences between the different ways to be in short-term memory and easily comparable (Shea & Morgan, 1979). There is also opportunity between sessions on the same task to reflect on those differences while completing other tasks.
- Reconstruction Theory – The need to retrieve instructions for how to complete a task every time you begin it causes the brain to become a lot faster and more accurate at retrievals. This is very different to blocked practice where the task is always in short-term memory so you do not have to practice retrieving it except at the very start of practice (Lee & Magill, 1985).

Using a varied approach for structuring my practice resulted in significant physical and psychological benefits. It helped me to break the cycle of stress that caused me to repeat a passage until I was physically exhausted. Because my practice was now so much more efficient and effective, I would see results faster and the quality of those results was far beyond anything I had achieved before. Yet, paradoxically, it required much less physical input. This helped me to work through my imposter syndrome as well, because I realised that I was not innately flawed, but had been limiting my potential to improve by working in an inefficient way. Thus, varied practice aided me in the resolution of my physical and psychological challenges, while simultaneously improving my practice effectiveness.

3.5 Body Awareness

In January 2015, a friend lent me a book on Alexander Technique called *Free Yourself From Back Pain* by Noel Kingsley. I read it and applied the principles to my practice.

Results of Implementing Body Awareness Principles

Reading this book in January 2015 aided me in becoming much more aware of my tension. It taught me to use particular daily activities such as cleaning my teeth or getting on a tram as reminders to evaluate my posture for tension. I added an extra exercise to my practice routine that involved checking my body for pain or tension prior to warming up on my instrument, focussing my attention on each area of the body in turn. I then released any muscles I discovered to be tense using massage or stretches.

This book also taught me some strategies for re-aligning my posture to relieve stress from my muscles and joints and to prevent tension from recurring. I developed a set of posture-improvement reminders that I could recite to myself every time I checked my posture and discovered tension, both during practice and during other daily activities. These would mostly revolve around ensuring my neck was free and my spine had a natural curve. When sitting I made sure my spine was supported at the base to promote this, and during practice I regularly checked in to ensure my pelvis was rotated forwards and my chest open.

While using the techniques suggested in this book I felt taller and had more energy while exercising. My body felt freer during practice. By learning how to be aware of and how to alleviate tension I was able to relieve tension from bad postural habits and this allowed me to considerably extend the length of each practice session. Between January and March 2015 the amount of time I could hold the flute up without pain increased from two to six minutes. The amount of time I was able to practice per day increased from 15 to 90 minutes.

I discovered the necessity of setting aside time for developing good postural habits with my instrument: the practising of posture, Alexander Technique and tension awareness. I found it particularly important to differentiate postural practice from repertoire practice - that is, practice with a focus on a particular piece or excerpt. In fact, at the beginning of this process, in January 2015, I decided to eliminate repertoire practice altogether and slowly reintroduced this as I became stronger. This was necessary because my old practice routine had been riddled with bad habits and it was helpful to focus solely on making new good physical habits before reintroducing any kind of musical challenges or distractions. This was an important part of breaking the tension that I had become so used to and to becoming aware of pain or tension as soon as it began.

Over the first six months of 2015 I started to develop a sense of the large amount of good practice material – technical exercises and my own routines - that I had forgotten, due to being lost in bad habits for so long. There were days when I felt extremely frustrated because I could not remember how to do something I had previously had a method for. However, I had many epiphanies during this time.

Suddenly things I had heard teachers say many times but never understood began to make sense. For example, a past teacher had often suggested that I slightly bend my knees while playing a large legato ascending interval. On recalling and trying this technique, I discovered the action of bending my knees reminded me to engage my pelvic floor and resulted in a full, open sound and less tension in the abdominals and diaphragm. My body was in such a fragile state that I had no choice but to search for the most efficient method. And this was a blessing in disguise, as there wasn't much room for error and I could always feel in my body when I was finally on the right path.

It was only possible to reinvent my posture and practice technique in this way because I was out of the performing environment and didn't have a deadline for my return to full-time playing. I had leave from ANAM for the first six months of 2015, my second year of study, and this gave me the space to reinvent my practice and my understanding of my body within a much less stressful environment.

Being armed with a strategy for identifying and releasing tension helped me to feel stronger and in control of my body. This had a major impact on my psychological health, as it helped me to understand and trust my body again. As I learned to listen to my body more acutely, I developed a strong sense of what a natural movement felt like. I allowed my body to guide me towards naturally ergonomic postures and more efficient use of my muscles.

3.6 Internal vs External Focus

In early 2016 I discovered *The Inner Game of Tennis* (Gallwey, 1979). I had been back into a full-time playing load for six months and, although there had been dips in progress, my condition had been fairly stable for a couple of months at least. However I still felt very doubtful about my ability to perform under pressure. I trialled the advice in this book during practice in an attempt to learn how to trust my body and to limit the spiral of tension caused by negative thought patterns.

Results of Implementing External Focus Technique

As mentioned earlier, Gallwey's *The Inner Game of Tennis* taught me to trust my other self – the part of me that *knows* how to play the flute, and to release it from the judgement of the part of me that *thinks* about how to play the flute. Gallwey writes, "As long as [the thinking self] is ignorant of the true capacities of [the knowing self], he is likely to mistrust it" (p. 42). This is an interesting concept in the field of practice-based research – the idea that knowledge encompasses not just the brain-based knowledge of facts but also the muscle-based knowledge of what it *feels* like to complete an action. This is often referred to in the literature as tacit knowledge. Wulf and Mornell (2008) explain that the thinking

about how to execute an action can actually interfere with motor learning during practice and muscle response during performance. The brain-knowledge tricks the muscle-knowledge system into doubting itself. This is a state of mind I have battled with for some time and it peaked during my first year at ANAM, causing me to micromanage every finger movement, resulting in a loss of fluidity and reduced dexterity. Most significantly, it limited my potential to achieve an optimal performance state.

Wulf, Hob and Prinz (1998) refer to this micro-management of motor activities as resulting from an 'internal focus', where the subject focuses on the muscles required to create the movement. The more effective 'external focus' describes a focus shift from the movement itself to the effect of the movement on the external environment.

Many researchers have explored the distinction between internal and external focus with respect to the learning of motor skills within a sports context. Initially these studies focussed on simple tasks such as learning to balance on a stabilometer (Shea & Wulf, 1999; Wulf, Shea & Park, 2001). In 2002, Wulf, McConel, Gartner, and Schwarz expanded on earlier research to investigate the effect of internal and external focus for more complex sports skills; a 'tennis' serve in volleyball and kicking a lofted soccer pass at a target. In both experiments participants performed the task with more accuracy after being given instructions such as 'shift your weight towards the target' and 'create a pendulum-like motion [with your leg]' rather than 'shift your weight from the back leg to the front leg' and 'swing your leg towards the ball'. Furthermore, the external focus group outperformed the internal focus group at a retention test after a one-week interval. Wulf, G., McNevin, N., & Shea, C. (2001) suggest that perhaps the most significant advantage of externally focussed instruction is the high retention of the learned skills over time (p. 1144).

Karsten (2013) describes this distinction in musical terms as "sensory and emotional" motor learning (external focus), vs learning "without musical meaning" (internal focus) (p. 52). Learning to trust myself and to use an external focus taught me how to practice technique within a musical context - instead of repeating a passage thinking only of my finger movements, I learnt the technique while focussing primarily on the character of the passage. This was a constant reminder that by practising the technique I was serving the music, which immediately increased my enjoyment of my practice and reduced the incidence of panic practice. I found I had a higher retention of improvements from one practice session to the next, which resulted in a more efficient learning process. Experimenting with an external focus during practice helped me to break the cycle of frustration, micro-management and tension and was instrumental in resolving my physical and psychological challenges.

During my recovery, as my practice became more structured and less tense, I was able to recall advice from teachers about techniques for particular areas of practice. The types of techniques I favoured during

this time were those I perceived to be helpful for reducing tension and returning to thinking about the character of the music. In retrospect, I realise that many of the techniques I chose to return to inspired an external rather than an internal focus. This allowed me to discover that a healthy and effective practice are inextricably linked – I naturally gravitated towards instructions that inspired a more effective use of motor skills through an external focus because they appeared to reduce tension. Table 3 below describes the kinds of instructions my investigation divulged that enabled me to focus in a helpful way.

Table 3

Internally and Externally Focussed Instructions

External Focus Instruction	Internal Focus Instruction
Use key mood word such as ‘sparkling’ or ‘agitated’	Specific articulation, colour or dynamic instructions
Concentrate on the phrasing of a difficult passage	Play notes more evenly
Imagine having ‘a brick on a slow finger’	Move finger faster
Feel key under finger moving up and down	Reduce range of movement of finger
Use shimmer vibrato	Use narrow and fast vibrato
Relate instructions to effect of movement on airstream <ul style="list-style-type: none"> ● Cut airstream softly vs ● Change direction of airstream vs ● Increase speed of airstream vs 	Relate instructions to tongue, embouchure or pelvic floor movement <ul style="list-style-type: none"> ● Tongue makes ‘g’ sound ● Change embouchure ● Increase pelvic floor contraction

Note. Table by researcher.

I often find that an effective way to achieve an external focus during practice is to use metaphors when giving myself instructions. Wolfe (2014) discusses in detail the use of metaphor in music instruction, with particular emphasis on the opportunities metaphor provides for letting go of technical focus and letting your life experiences influence your music-making. Key mood words are an example of a metaphorical approach I use both in practice and performance to orient myself in a particular sound world and prevent my analytical brain from getting in the way of my musical interpretation.

I have discovered that focussing on my airstream, in particular, has helped me to complete tasks with more ease, use my muscles more effectively and produce a better sound. Imagining the point at which my airstream hits a wall or pulling it toward me as if a rope descending from the ceiling seemed to be a very useful strategy for solving a problem related to air flow or sound. This phenomenon can be contextualised by looking at the work of Wulf, McNevin and Shea (2003), who have found that the larger the distance between the subject and the object of focus, the more likely the subject is to employ an external focus. Researchers have hypothesised that this is due to the clearer distinction between the body and the external object when that object is more remote (Shea & Wulf, 1999). This appears to draw the focus away from the movements themselves and inspires more efficient learning through automatic motor processes.

Conclusion

The six methods mentioned in this chapter, namely seeking medical advice, developing a structured practice routine, goal setting, varied practice, body awareness, and external focus, have been instrumental in the resolution of my physical and psychological challenges. With the exception of seeking medical advice, these methods are all related to making changes to my practice approach. In fact, sections 3.2 to 3.6 all describe techniques that have helped me to increase the effectiveness of my practice. Thus, this chapter explains the ways in which I was able to resolve my physical and psychological challenges through the use of techniques for effective practice.

Chapter 4 Discussion: Developing a Sustainable Career Model

This chapter discusses the process of developing a sustainable career model using recommendations from the literature and my own experience of injury and recovery. This model will serve as a guide for injury prevention and management in my future practice and performance situations and aims to potentially assist other musicians who may find themselves in a similar situation.

Techniques for Maintaining a Healthy Mind

Through the process of resolving my physical and psychological challenges, I discovered some invaluable mechanisms for improving and maintaining my general psychological well-being. I have incorporated these ideas into my practice and performance preparation, as I believe they are crucial tools for creating a sustainable career for myself. I acknowledge that these techniques may not be relevant to other musicians, but hope that their inclusion here may inspire other musicians to explore techniques for themselves that may aid them to improve and/or maintain their own psychological well-being.

Cognitive Behavioural Therapy (CBT)

I discovered that behaving like a well person immediately helped me to feel well. I made a conscious decision to increase my positivity and spend more time with friends and family and, as a result, I felt both my anxiety and pain decrease. There is evidence for this in the literature as well: Young (2007) finds a relationship between high agreeableness, social interaction and mental and physical well-being. I also used CBT to help me to boost my confidence in a performance setting with a ‘fake it till you make it’ approach, such as that described by Bilanich (2016).

Positive Affirmations

In March 2015, a family friend introduced me to the work of John Kehoe, specifically his *Mindpower into the 21st Century* (2008), and his work on positive affirmations. This approach helped me to acknowledge my negative thoughts and turn them into positive messages, such as ‘I will recover’ and ‘I am well’. I pinned these messages on my wall so they were the first things I saw when I woke up and the last things I thought of before sleeping. I focussed on them when progress was not straightforward and have added it to the set of tools that make up my sustainable career model.

Positive Visualisation

Imagining myself in the space I was required to perform in and visualising myself making a free and open sound helped me to feel calm and in control before a performance. I also imagined myself fighting off negative thoughts about performing and my health, and visualised this as a white light obliterating darkness. Nixon (2012) explains that the process of imagining a situation can alter the way one thinks about that situation. Positive visualisation became a very helpful coping mechanism when I felt anxious thoughts beginning to spiral and is now a key component of my pre-performance routine.

Medication

In January 2015, my doctor suggested I might have low serotonin levels, which could be heightening my anxiety and exacerbating my pain. My neurologist agreed that anxiety can increase the severity of chronic pain. There is also evidence to support this correlation in medical research (Young, 2007).

I was prescribed a drug in the class SSRI (selective serotonin reuptake inhibitor) that would allow my chemical levels to re-balance. After about three weeks I started to feel that things were more manageable and was much more easily able to interrupt my spiralling negative thoughts with a positive affirmation or rebuttal. This in turn helped to keep the pain in check because it meant I was no longer searching for pain. There were fewer pain receptors being triggered in my brain, and like a domino effect, this helped me to convince myself that I was well. Three years later I still find the drug very effective at taking the edge off those negative thoughts and stopping compounding thoughts from spiralling out of control. Other means of increasing serotonin are self-induced mood changes, exposure to light, exercise, and diet (Young, 2007).

4.1 Developing a Sustainable Practice Model

Through analysis of journals from the recovery period and trialling different approaches during my candidature I have distilled a set of practice principles that both improve my practice effectiveness and reduce my tension and stress during practice, thereby helping to form a sustainable practice model for myself that may also be useful in whole or part for other musicians.

Practice Principles for Efficiency and Tension Reduction

Main aims for each practice session

- a. To eliminate mindless practice, ensuring that I never play a note or phrase without a

particular objective in mind, e.g. to achieve a smoother legato, or to find more resonance in the sound;

- b. To focus and be tension-free at all times and in all conditions. This involves regularly evaluating my posture for tension and releasing tense areas with massage and/or stretch;
- c. To carry out a suite of stretches, warm-ups, and cool-downs for use before, during, and after practice that have the potential to improve the capacity of my muscles from the beginning to the end of practice

Main methods for achieving these aims:

- a. **Remove distractions.** Put phone on flight mode and make sure I am in a quiet environment. Leave life at the door, mentally. Have a pen and paper handy to write down any urgent thoughts so I can remove them from my awareness. Put on a timer so I don't have to check the time.

Slow down. Allow three seconds break between repetitions of a difficult phrase: This allows me to reform my intention for the phrase, reset properly, and clear the last attempt from my head before repeating.

- b. **Trial different practice session lengths.** Start with suggestion from Chan & Ackermann (2014) of 45 minutes, trial different session lengths between 20 mins to one hour and record findings in practice journal. Listen to how my body feels during this period and stop if I notice tension or lack concentration.

Trial different break lengths. Start with suggestion from Chan & Ackermann (2014) of 10-15 minutes break between sessions, including getting the blood flowing by moving around and refuelling with food and water. Record how I feel mentally and physically. If I feel tense or stressed, increase length of break, leave the practice room for a few minutes.

- c. I have developed a **suite of warm-up and cool-down exercises** by compiling suggestions from a number of different practitioners I met during my recovery and my own trials during practice. I have incorporated these into my sustainable practice model, and they appear in Table 4 below.

Stretching

I have found stretching to be a valuable tool for releasing tension before, during and after practice.

However I have learnt through experience that it is important to employ this tool in an informed way so as to maximise the benefits of stretching and avoid further stress on muscles. Of particular value is my finding that stretching a muscle has the effect of reducing activation of that muscle. Because of this realisation, I now apply pre-practice stretching to overactive muscles whose engagement I wish to limit

during practice, for example, pectorals, gluteal muscles, leg muscles. The same principles apply during practice. Stretching can be beneficial at the end of a block of practice to release tension in muscles that have been working, meaning I might stretch the muscles mentioned above, and may gently stretch fingers, hands, arms if required. Applying stretch before or during practice to muscles that are required for accuracy during practice, such as fingers and forearms, can result in reduced accuracy of those muscles and physical strain. These principles can also be applied to performance settings.

Sustainable Practice Model

Table 4 represents my sustainable practice model, including a suite of stretches, warmups and cooldowns for before, during and after practice, and the effective practice techniques discussed in chapter 3. Using this routine gives me the best chance of maintaining a healthy and effective practice.

Table 4

Pre-, During and Post- Practice Routines

Pre	During	Post
Take a few minutes to breathe and check for tension (<i>Chapter 3.5</i>) and remove distractions (<i>see above</i>)	Allow time to discover any tension in the body. Use Alexander Technique principles to adjust posture. Prevent recurring tension through regular postural practice (<i>Chapter 3.5</i>)	Stretch working muscles: e.g. for me <ul style="list-style-type: none"> • Pecs – various angles on wall, front of chest • Glutes • Legs – calves, thighs, quads, hips • Gently stretch fingers, hands, arms if req
Stretch overactive non-playing muscles e.g. <ul style="list-style-type: none"> • Pecs – various angles on wall, front of chest • Glutes • Legs – calves, thighs, quads, hips 	Break practice into manageable sessions and set a timer. In times of stress, tension or low productivity, limit session lengths and clarify goals (<i>Chapter 3.2</i>)	Exercise <ul style="list-style-type: none"> • Walking • Low impact on muscles that have just been working hard
Warm up body: e.g. Star jumps x 20 Specific focus on: <ul style="list-style-type: none"> • Fingers • Arms 	Ridgway Method Tension Release Strategy: Use a spiky or tennis ball to relieve tension in tight muscles (<i>Appendix D</i>)	Refuel <ul style="list-style-type: none"> • Protein • Rehydrate • Within 30 minutes of practice
Tap muscles to get blood flowing <ul style="list-style-type: none"> • Pecs • Glutes • Legs 	Intersperse different types of practice content throughout the session (<i>Chapter 3.4</i>)	Use positive affirmations (<i>Chapter 4</i>)
Set long-term goals e.g. play recital in 2 months. Break this into specific, realistic short-term goals for the current practice session (<i>Chapter 3.3</i>)	Maintain an external focus (<i>Chapter 3.6</i>)	Review stress, tension and effectiveness of practice and adjust plan for next session

4.2 Developing a Sustainable Performance Model

Techniques for Developing Confidence in Performance Situations

Creating a Confident Stage Persona

In October 2015, three months after returning to full-time playing, I found my second year ANAM recital approaching. This was my first public solo performance in 12 months. I had improved dramatically as a player during my recovery, however I was apprehensive that the stress of performing in that very same hall would trigger a similar series of physical and psychological reactions. I decided to use an approach known as cognitive behavioural therapy that I had previously found helpful in performance situations. Acting in a confident manner on stage had helped me over time to look and feel more confident, and to replace negative thoughts with positive affirmations. Bordner writes about the importance of portraying a confident attitude in your work so as to convince others that what you have created is of high quality. He says it is important to exude confidence so that the people who are experiencing your work can believe in your work completely (Bordner, 2001). People who act in a confident manner will be treated by others as if they are confident, and this in turn inspires true self-confidence in the actor (Bud Bilanich, 2016).

This confident stage persona helped me to deliver what I believe was a solid performance. However my injury had served a devastating blow to my confidence and it took some time to refine the persona. Although I had made some progress in the practice room, while on stage and under pressure I still felt convinced that my body was flawed and that I needed to consciously direct every muscle to do its job. I felt that if I allowed myself to have an external musical focus then my technique would fail and I would be exposed for the imposter I was. My confident persona became a mask and a barrier between myself and my audience. I was so intent on delivering all of the performance directions that I didn't let the music breathe and lost some of the musical nuance and meaning. A close colleague referred to the recital as 'a very enforcer concert'. At the time I was so proud of myself for returning to the stage that I couldn't understand the comment or the fact that the performance was polarising for some of the audience.

[Please view Appendix A: *2015 Recital* to observe the footage of my second ANAM recital in 2015. Of particular interest here is my improved finger technique when compared to the previous recital, intense and forced stage persona, and sometimes hard/shrill sound in the high register]

As I continued to become more well in body and mind through the use of techniques for effective practice I began to apply relevant techniques from my sustainable practice model to my performance routine. I practiced performing often, tried using positive affirmation and visualisation techniques, and reviewed the

effect on my stage persona by analysing video footage of my performances. During my third ANAM recital in May 2016 I experienced the progress I had made in refining my stage persona. I felt comfortable and in command of my performance on stage. I felt much more free to connect with my audience and to involve them in my performance. Afterwards I watched the video footage and discovered the progress I had made towards creating a welcoming and engaging stage presence. I realised that through the process of learning to trust my body and mind during performance I had also learned to believe in my musical instincts. During this recital, rather than hiding behind my stage persona, I used it to highlight the confidence I had developed and to help me to share my musical insights with my audience in a meaningful way. Comparing this to the footage of my previous recital allowed me to see how far I had come with my stage persona. I had created a stage persona that helped me to create a warm stage presence, which in turn helped both myself and my audience to feel calm and comfortable.

Using the Inbreath

A few weeks prior to my May 2016 recital I was introduced by a teacher to the idea that the inbreath provides an opportunity to release tension in the body (Esplen and Hodnett, 1999; Lee, Carey, Dubey, & Matz, 2012). This idea relates to breathing concepts from Alexander Technique, which promotes a natural inbreath that is entirely without conscious effort (Langford, 1999). I made a commitment to exploring the power of the inbreath at my then upcoming recital. Every time I took in a breath during the performance I used it as a reminder to release tension in my body, allowing the air to enter my lungs naturally.

I felt immediate physiological benefits: my movements were free, my sound was resonant and I had more control of my airstream. However, the most surprising effect of using the inbreath in this way was that I felt my anxiety levels drop immediately after each inbreath, leaving me feeling calm and in control of my performance. I was able to trust my body and adopt an external focus, allowing me to focus more on sharing my musical vision with my audience. I experienced less negative self-talk during this performance than ever before. I have always enjoyed performing but this recital left me on a high for days afterward.

My findings about the relationship between breathing and anxiety are mirrored in the literature in research by Widmer, Conway, Cohen and Davies (1997) and Rothwell (1962). Snell (1997) goes as far as to claim that “the most effective control for anxiety is good breathing” (p. 275). Using the inbreath to release tension in my body helped to increase my confidence during performance, and has become an important element of my sustainable performance model.

[Please view Appendix A: *2016 Recital* to observe the footage of my third ANAM recital in 2016. Of particular interest here are my now warmer and more engaging stage presence, my further improved technical control compared to the previous recital, and improved sound quality due to breathing with less tension]

Sustainable Performance Model

Through analysis of journals from the recovery period and trialling different approaches during recital periods, I have distilled a set of performance routines that both improve my performance output and reduce my tension and stress during performance, thereby helping to form a sustainable performance model for myself that may also be useful in whole or part for other musicians. Table 5 represents my sustainable performance model, including concepts from the sustainable practice model, and ideas about stage presence and maintaining a healthy mind.

Table 5

Pre-, During and Post- Performance Routines

Pre	During	Post
<p>Take a few minutes to breathe and check for tension (<i>Chapter 3.5</i>).</p>	<p>Create a warm and engaging stage presence (<i>Chapter 4.2</i>)</p>	<p>Stretch working muscles: e.g. for me</p> <ul style="list-style-type: none"> ● Pecs – various angles on wall, front of chest ● Glutes ● Legs – calves, thighs, quads, hips ● Gently stretch fingers, hands, arms if req
<p>Stretch overactive non-playing muscles e.g.</p> <ul style="list-style-type: none"> ● Pecs – various angles on wall, front of chest ● Glutes ● Legs – calves, thighs, quads, hips 	<p>Use in-breaths as a reminder to let go of tension and anxiety during performance (<i>Chapter 4.2</i>)</p>	<p>Exercise</p> <ul style="list-style-type: none"> ● Walking ● Low impact on muscles that have just been working hard
<p>Warm up body: e.g. Star jumps x 20</p> <p>Specific focus on:</p> <ul style="list-style-type: none"> ● Fingers ● Arms 	<p>Maintain an external focus - focus on the music rather than the technique (<i>Chapter 3.6</i>)</p>	<p>Refuel</p> <ul style="list-style-type: none"> ● Protein ● Rehydrate ● Within 30 minutes of practice
<p>Tap muscles to get blood flowing</p> <ul style="list-style-type: none"> ● Pecs ● Glutes ● Legs 		<p>Use techniques for maintaining a healthy mind (<i>Chapter 4</i>)</p>
<p>Use positive visualisation and positive affirmations (<i>Chapter 4</i>)</p>		<p>Review stress, tension and effectiveness of performance and adjust plan for next session. Try to balance self-criticism with positive feedback</p>

Conclusion

This chapter discussed the process of developing a sustainable career model using recommendations from the literature and my own experience of injury and recovery. This model will serve as a guide for injury prevention and management in my future practice and performance situations and aims to potentially assist other musicians who may find themselves in a similar situation.

4.3 Conclusion

The central question I investigated through this research was: How did I resolve physical and psychological challenges through the use of techniques for effective instrumental practice? This involved examining my period of injury closely to determine what these challenges were, how they came about and how I responded. It also required me to recall and reflect on the process of returning to practice as an injured musician and in particular, the techniques I developed during this time to make my practice more effective. Finally I analysed the impact of these techniques on the resolution of my physical and psychological challenges.

The process of conducting this research has taught me that it is worth thorough reflection of one's practice approach in the bid to overcome playing-related physical and psychological challenges. The process has shown it is possible as a result of this reflection to develop a blueprint that may help other musicians who may find themselves in a similar situation. I believe the music community would benefit from further research into the potential for this model to aid other musicians to reduce or resolve physical and psychological problems and prevent them from recurring.

The desire to grow from my experience of injury prompted me to launch my own personal investigation to guide me towards recovery, which aided me to overcome playing-related physical and psychological challenges through the use of techniques for effective practice. The desire to better understand the nature of my injury and subsequent recovery led me to embark on this research project, through which I have discovered the inextricable link between healthy and effective practice.

I have developed an immense gratitude for the analytical research approach known as 'autoethnography' that I have used to aid me in telling my story. This approach has helped me to record the events of a difficult and transformative period in my life, but more significantly it has given me the freedom and the license to reflect on my cognitive and emotional responses to events in this period.

I have also learned, as so many others have, the importance of believing in myself. This is an invaluable mindset, as learning to acknowledge and have faith in my abilities earlier in my career could have saved me from a number of psychological and physical challenges. These realisations prompted me to draw on a set of pre-existing techniques for maintaining a healthy mind, namely cognitive behavioural therapy, positive visualisation and positive affirmations. These techniques will prove a vital skill in my future career and could potentially aid other musicians who may be suffering from similar psychological challenges.

The process of reflecting on my practice and performance routines has led to the development of a sustainable career model for myself that may also be of use to others who may be suffering from playing-related physical or psychological challenges. The model suggests strategies from the literature and from my own experience for developing healthy and effective practice and performance routines.

I have committed to evoking the essence of my experience and have presented it in such a way that it may be relevant and useful to other musicians. However once I had put the bare bones of my story down on paper it seemed to become the guide and I the ghostwriter. The story led me to the realisation that this never was a story about playing the flute, as I initially thought, and has in fact always been a story pertinent to the experiences of all musicians.

Because of the autoethnographic nature of this study, it is limited in terms of its generalisability. Although this research has the potential to assist other musicians in a number of ways, further research is needed to gauge the extent to which it may be relevant to others. This might take the form of inviting other musicians to trial the model, in whole or part, to determine whether it has the potential to aid musicians other than myself to reduce or resolve playing-related physical and psychological challenges and to prevent them from recurring. This model could be particularly useful in educational settings, and for young people studying towards a music performance career. The music community may also benefit from research into the potential for this model to reduce the risk of development of a physical or psychological problem.

Although my life would have been much easier without my experience of injury, I now acknowledge that it has led to the development of a much more sustainable practice, for which I am grateful. I hope that my story may inspire others to gain the courage to begin conversations about their own physical and psychological challenges, and the ways we can resolve these challenges through the development of strategies for healthier and more effective practice.

Appendices

Appendix A: Recitals in Digital Format

2014 Recital

https://www.youtube.com/watch?v=dhqm-Vi_6xc&list=PLapOpdEymcSTeOtjqxd64XtoT1G8vnlaH

2015 Recital

https://www.dropbox.com/sh/gc088abfuulsmbs/AACBWM42Rn3Pc6FelbAg0hy_a/151030%20Jennifer%20Timmins/video?dl=0

2016 Recital

<https://www.dropbox.com/sh/gc088abfuulsmbs/AAB6FTxxn8NOKspfiMdT3GA6a/160527%20Jennifer%20Timmins/vid?dl=0>

Appendix B: Table of New Repertoire Learnt in 2014 and Timeframes

The 'dates' column refers to the month in which I began learning each piece of repertoire and the 'time to learn' column represents the time I had to learn each piece from opening the music to the first rehearsal. In addition to learning all of the music below, I also spent a considerable amount of time every week of the year working on solo repertoire for my flute lessons.

Dates	Ensemble Repertoire	Solo Repertoire for Performance	Time to Learn
February			
	Luzuriaga: Tierra Tierra		2 weeks
	Tchaikovsky: Romeo and Juliet		1 week
	Vaughan Williams: The Lark Ascending		2 weeks
	Hindemith: Mathis der Maler		2 weeks
March			
	Damase: Wind Quintet		2 weeks
	Mendelssohn: Symphony No. 4		1 week
	Beethoven: Symphony No. 7		1 week
	Ravel: Bolero		1 week
April			
	Beethoven: Symphony No. 5		1 week
	Strauss: Serenade		1 week
	Hindemith: Kammermusik No. 4		3 weeks
	Rachmaninov: Symphony No. 2		1 week
May			
	Berlioz: Symphony Fantastique		1 week
	Hindemith: Kammermusik No. 1		2 weeks
	Beethoven: Symphony No. 8		2 weeks
	Reicha Wind Quintet op 99 no. 3		2 weeks
	Nielsen Wind Quintet		2 weeks
June			

	De Jager: Fugue, Forest, Chorale & Toccata		1 week
	Kerry: Music for Double Chamber Orchestra		1 week
		Rodrigo: Flute Concerto	6 months
	Brahms: Symphony No. 4		1 week
	Prokofiev: Peter and the Wolf		1 week
August			
	Schumann: Symphony No. 2		1 week
	Messiaen: L'Ascension		3 weeks
	Brett Dean: Viola Concerto		3 weeks
September			
	Bach: Brandenburg No. 5 (solo flute)		3 weeks
	Szervanszky: Wind Quintet		1 month
	Ginastera: Flute and oboe duo		2 months
	McMichaels: Salt of the Earth		1 month
	Hindemith: Kleine Kammermusik		2 weeks
	Lutoslawski: Symphony No. 3		1 week
October			
	Messiaen: Et Exspecto		2 weeks
	Varese: Octandre		1 week
	Ives: Three Places in New England		1 week
		Gareth Farr: Kembang Suling	6 months
		Tomasi: Sonatine	1 month
		Muczynski: Sonata	1 month
		Telemann: Sonata in F# minor	1 month
November			
	Shostakovich: Symphony No. 6		1 week
	Muczynski: Wind quintet		3 weeks
	Stravinsky: Jeu de Cartes		2 weeks

Appendix C: Table of Practitioner Advice

The table below lists each practitioner I visited in relation to my injury with an explanation of their advice and a subjective rating of my perception of the positive impact of that advice on my recovery. I have included practitioners I saw prior to 2014 for advice on how to deal with my accumulated tension in its early stages.

Date Visited	Practitioner Name/Type	Diagnosis/Prescription	Rating /10
August 2012	Alexander Technique Practitioner	<ul style="list-style-type: none"> · Taught me how to hold my head on my spine · How to dissociate arm movements from shoulder movements 	9
September 2012	Physio: Sports #1	<ul style="list-style-type: none"> · Diagnosed RSI from overuse · Advised me to reduce playing time 	1
February 2013 – May 2015 (approx. 20 sessions)	Physio (Ridgway method)	<ul style="list-style-type: none"> · Diagnosed accumulated tension · Full body trigger point analysis · Treatment of most severe points of tension · Self-monitoring and self-treatment strategies <p><i>For more details see Appendix D</i></p>	9
March 2014 - November 2016 (approx. 5 sessions)	Physio with Knowledge about Musicians' Health	<ul style="list-style-type: none"> · Breathing techniques and understanding of breathing apparatus · Individual examination of posture while playing · Advice as to how to improve posture and breathing technique · Advice on how to make practice more efficient 	9
August 2014	Audiologist	<ul style="list-style-type: none"> · Customised 9 dB earplugs · Wearing proper earplugs got rid of ringing and soreness in ears and helped me to feel healthier overall · This in turn reduced anxiety levels · Helped me to use my air properly and this reduced tension during practice 	7
August – November 2014	Yoga Practitioner	<ul style="list-style-type: none"> · Noted a very tight pectoral minor · Provided pectoral stretches · Highlighted neck tension 	2
October 2014	Massage Therapist	<ul style="list-style-type: none"> · Remedial massage · Tips on muscle recovery – when to use hot/cold · Stretches · Info about hyper-flexibility 	6

November 2014	Physio: Sports #2	<ul style="list-style-type: none"> · Showed me how to strap an injured muscle · Provided nerve glider exercises for arms 	2
December 2014	Physio: Sports #3	<ul style="list-style-type: none"> · Diagnosed a non-musculoskeletal condition 	3
December 2014 – January 2015 (3 visits)	General Practitioner	<ul style="list-style-type: none"> · Referral to neurologist · Diagnosed fibromyalgia or Chronic Regional Pain Syndrome · Prescribed nerve blockers Gabapentin and Amitriptyline · Advised how to increase and decrease dosage as required · Finally, diagnosed a serotonin deficiency and prescribed an SSRI 	7
January 2015	Musculoskeletal Specialist	<ul style="list-style-type: none"> · Released back of neck muscles · Explained about spine alignment · Explained pain receptor theory 	3
January 2015	Neurologist	<ul style="list-style-type: none"> · Provided full examination of nerve impulses · Diagnosed Complex Regional Pain Syndrome 	4
March 2015	Chiropractor	<ul style="list-style-type: none"> · Did some ‘adjustments’ based on heat mapping (absolutely no effect) 	0
March 2015	Physio: Physical Trauma Specialist	<ul style="list-style-type: none"> · Diagnosed a herniated disk in my neck from car accident in 2010 · Demonstrated that when my posture was good, I could resist downwards pressure with my wrist joint · Released some of the upper rib muscles on the left side that were being incorrectly employed as breathing muscles due to scar tissue from whiplash accident · Prescribed ice for the affected area straight after massage to reduce swelling and pain 	7

Appendix D: Ridgway Method Tension Release Strategy

The Ridgway method (RM) was developed by Brisbane physiotherapist Michael Ridgway in 1993 as an attempt to increase the effectiveness of physiotherapy in Australia and decrease the cost. There are currently 19 Ridgway Method Practitioners registered in Australian and one in the UK (Ridgway, 2017).

RM draws on the research that shows acute musculoskeletal pain is not necessarily an indication of a problem with the sore muscle itself, but simply a symptom of tension in the body. The method is made up of two steps:

1. Identify the primary contributing factors (PCFs) (tense muscles causing the pain)
2. Relieve tension in those areas by massage (Ridgway, 2017)

To identify the PCFs, a Ridgway practitioner completes a full body scan, applying pressure to each muscle in the body and asking the patient to rate pain levels in each muscle. This may take a number of sessions. Next, a subset of the patient's movements are tested and the range of each movement recorded as a baseline. The physio then treats each of the potential PCFs one by one for up to five minutes each and tests which treated area results in the biggest improvement in range and ease of movement.

As it becomes clear which areas are the PCFs, the practitioner can provide equipment and exercises that allow the patient to treat and ultimately strengthen those areas. This gives the patient much more control over their condition and a more steady improvement than a traditional physiotherapy approach can provide, especially for chronic tension sufferers.

In 2013, I was very fortunate to chance upon a clinic where all of the practitioners are trained in this method. At first my tension was so great that this method alone was not enough to make much of a difference to my condition. Every time my PCFs were treated I would feel freer for a few days but playing the flute would lay the tension back on. It was when my physiotherapists taught me how to treat myself that I began to see real long-term improvement. I procured a spiky massage ball and used it to treat my PCFs. I could do this as often as I liked during the day. If I felt sore during practice I could treat a few areas, allowing me to finish the session without pain.

Because there are times when I am under stress or high playing loads, there are likely to be times when my tension flares up. Being able to rely on concepts from the Ridgway Method to guide me through a process of alleviating that tension is invaluable is one of the major reasons I am able to continue a career as a flute player.

I developed a slightly modified version of the Ridgway method that suits my practice and my condition. I employ this method at least once a day. If I feel tense or sore during practice, I will use this method to release tension before returning to the instrument.

1. Full-body review of the tension levels in each of my usual PCFs, as identified by Ridgway practitioners in 2013 and again in 2015. These areas are jaw, neck, pectorals, left side of back, left adductor, inside of both elbows, biceps of both arms.
2. Relieve tension in any areas that feel sore or tense using massage or stretches.

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