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A Critical Analysis of the Intensive Psychological and Physiological Preparation necessary for Successful Performance in an International Solo Percussion Competition

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By Elliott Gaston-Ross

Abstract

Successful performers in prestigious international music competitions are often very closely matched in skill and technical ability, but the distinction between those who play well and those who are able to employ maximum expression on stage, are generally those who combine physical practice with psychological training in order to perform optimally under high pressure situations. The requirement for percussionists in such competitions differs somewhat to other instruments, due to the vast amount of repertoire that must be played across various groups of instruments, each posing different technical difficulties and each to be practised every day to give equal importance to each instrument. This dissertation focusses on particular strategies conducive to enhancing the percussionist's psychological and physiological state in multiple aspects of general life, ultimately increasing the likelihood of successful performance. Areas of research into the fields of sports psychology, lifestyle medicine/livelihood, the Alexander Technique and time management theories, combined with general knowledge of percussion competitions, percussion technique and injury prevention, provides a means for the percussionist to practice and apply the suggested strategies.

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1 Introduction

The topic ‘mental and physical preparation strategies for successful performance in an international solo percussion competition’ came about after my own personal participation in two international competitions, from which I learned a great deal partly from my own research and self-analysis, and partly due to the close guidance from my percussion professors. It came to my attention that the topic only refers to a closely-knit niche of musicians, but the application of principles behind other differing fields of research closely relates to the chosen theme for this text. It aims to provide insight into how to use one’s time to maximum efficiency, how to practice thoroughly and thoughtfully and how to apply this to induce peak/optimal performance under pressure. Furthermore, it aims to explore how the knowledge and application of principles adhering to sports psychology, lifestyle medicine/livelihood, the Alexander Technique and time management theories can all produce extreme changes in confidence and eventual performance in such an event.

Chapter two provides an overview of the decisions that require careful thought and consideration before starting the general preparations, as well as determining some recommended strategies to aid psychological aspects of performance that commonly hinder musicians.

Chapter three discusses the importance of one’s physiological well-being necessary to successfully apply the aforementioned practice strategies in a means of achieving maximum efficiency whilst preventing injury through the over-use of the muscle groups required by playing. It also discusses the practice of technique work for percussionists and how this can be integrated into warm-up sessions before practice sessions and during the competition situation.

Chapter four aims to combine both mental and physical areas of musicianship, namely the principle ‘psychophysical awareness’ as part of a well-known theory called the Alexander Technique. The choice for this area of research came about after my own learning experience of the technique provided breakthroughs in technical ability and mental stability leading up to a competition. The chapter provides a brief overview of the principles and how their application is relevant to musicians.

Chapter five looks into some different ways of organising and managing the time available to put in work within the demands of the standard working musician. It will also include

strategies on how to deal with emotional fluctuations that, when handled inappropriately, can have detrimental affects on the outcome of the hours of work and time spent during the preparation process.

2 The Initial Decision-making Process, Practice Strategies and Psychological Aids for Successful Performance

2.1 The Initial Decision-making Process

In most cases, the deadlines for the application to international competitions are around six months before it takes place. This allows time for the application recordings to be assessed, leaving enough time to prepare the repertoire after receiving the results. That means that depending on when the applicant decides to participate, they have around 6 months to a year to prepare themselves in the most appropriate and efficient way.

The first big decision every musician must make is what to play. Upon application, there are lists of pieces in each round from which the participant must choose one. Sometimes these can be compulsory set works or completely free choice pieces left to the discretion of the performer. In the final round, it is normally required to play a concerto work alongside an orchestra. In multiple percussion competitions it is required that works for every main tuned instrument (marimba, vibraphone), and percussion instrument (snare drum, timpani, various multiple percussion set-ups) be played. It may seem daunting knowing that such a vast amount of repertoire must be chosen from an even bigger selection of lists of pieces but, with the right guidance and self-awareness, it can also be one of the most exciting moments of the preparation process.

The first thing one must ask themself is what exactly are the personal strengths and weaknesses unique to the performer? This could be extremely varied and oftentimes difficult to assess. As a multi-percussionist, one may feel stronger or safer on a specific instrument, or technically more capable with the mallets than the sticks or visa versa. It may be that the ability of the performer to grab audiences with great sensitivity and musicianship exceeds their technical ability to play the most physically demanding pieces with speed and accuracy. Whatever the case, the first step in deciding the repertoire is to become completely aware with oneself as a player and to put in as compelling a performance as possible.

The second step is to find out as much as possible about the musicians on the jury that will be judging throughout the competition – if possible for both the preliminary recording round and the live competition. It can be of great value to take advice from a professor or trusted colleague who may have judged in similar juries in the past and may know the people

for the specific competition or just have general knowledge on the whole process. With this knowledge, it is often easier to assess what they may personally be looking for or prefer to hear from the participants. However, this often means the performer's preferred choice of repertoire that may be the most enjoyable to play, may not always be the most sensible option.

Depending on how experienced the performer is, they may have already learned and played or even performed a lot of suitable repertoire for the competition in the past. In this case, a sensible option would be to choose as much old repertoire as possible to allow more time to concentrate on perfecting the details and practicing performance, and less time learning the pieces from scratch. However, one must be aware of when, how and at what stage of the performer's development the old repertoire was learned and played, as relearning old pieces triggers the same brain connections as when it was originally learned. One must then decide for themselves whether the time and effort taken to practice bringing the piece to their current ability is lesser or greater than that of just learning a new piece entirely.

It is also important that the participant research every optional piece on the repertoire lists, and does not just choose from pieces they already know. This means finding the scores and some recordings of the unknown pieces and taking the time to assess (if still a student then alongside the help of the professor) what the strongest options are in the current circumstances. With all this in mind, a well-balanced mixed of pieces all within the performer's capability, showing all facets of the performer's musical palette and ranging across all available genres should be sought out.

Once the repertoire is fixed, it is recommendable that a long and short term 'game plan' be made; i.e. creating goals and setting personal time-frames within which to achieve them (more information on time management and planning strategies is covered in chapter 5). Although a 'goal orientated' mindset is of extreme value in all aspects with regard to repertoire preparation, at this point of the process it mainly refers to the deadlines for when the performer feels comfortable having the different pieces learnt and memorised by (should the performer aim to perform the pieces from memory). It can then be decided at a later stage when and how to play them in lessons and pressured performance situations.

The decisions about which pieces to start practicing first, at this stage, depends on what the participant plans to play for the application recording. As this is arguably a separate round

six months before the main competition, it is clear that those pieces are of initial priority. However, the same process of learning and development applies to every piece.

Upon determining a clear long-term time plan, it is advisable not to just dive straight into the learning, but first to step back and analyse the pieces, mainly for interpretative purposes. This may involve researching the background and history behind the pieces or the composers themselves, or if it is a contemporary piece then possibly researching other pieces from the same composer in order to get an idea of the style and how other musicians interpret their works. It is also recommendable that a thorough analysis of the score be made before picking up the sticks and getting straight down to the physical graft of learning the notes. Essentially, this is a form of mental practice which is an extremely useful tool further down the line in the preparation process (mental practice strategies are covered in chapter 2.7). It is at this point that an idea of the performer's personal interpretation of the piece should be made. These initial ideas are subject to change and development throughout the learning process as a more in-depth understanding of the piece is acquired. However, it is a good idea to have an initial mental plan and idea of the piece before any physical practice takes place. In general, musicians learn much faster and develop more secure interpretations when they attempt to create sounds that they already hear in their minds, rather than listening to what they have just played and attempting to adjust from what they hear coming from their instrument. This is why it is often useful to vaguely visualise oneself performing the piece with the ideal personal interpretation, alongside reading the score. A complete, detailed mental performance is not yet entirely necessary as at this stage visualisation and mental imagery may not be completely accurate and should mostly be done at a point where the piece has already been physically learnt (visualisation/imagery techniques are covered in more detail in chapter 2.7).

2.2 Psychological Aids for Productive Practice and its Application in Performance

When beginning to learn the repertoire, it is advisable to only practice two to three pieces maximum per day until they start to become more fluent and in the muscle memory. Full intensity and focus just on these few pieces will ensure a solid basis upon which the details can be built. In most competitions, the biggest and generally most difficult repertoire usually comes in the later rounds which are more difficult to pass through and the stakes are generally

higher. Learning the repertoire for the later rounds first, ensures that the necessary time be given to preparing arguably the most important repertoire early on.

It is important that the individual find their own ways of practicing what works for them through self-analysis. Ideally most of this should be fixed very early on in the preparation process, preferably before touching the chosen repertoire, so that it is habitual during the later critical stages leading up to the competition (more on habit building is discussed in chapter 5). However, there are some specific practice strategies that may come in handy when learning and perfecting such a huge bank of repertoire, no matter how experienced the performer may be.

2.3 Uses of a Recording Device

The initial artistic interpretative elements of the pieces should be presented and played for a teacher (if necessary) relatively early on. It is a good idea to video record all lessons, as much information may be missed or not fully understood during the actual lesson. Looking back over the videos provides a third person perspective allowing an opportunity for self-analysis and for the digestion of the information divulged in the lesson.

At this stage, it is of more use recording only small passages and excerpts purely for analytical purposes (e.g. being unable to execute specific sections as intended, or not understanding something a teacher may have said about a specific part of the piece). Through the process of listening back to the passages with non-judgemental yet keen ears, one can determine the problem, e.g. the semi-quavers are being rushed, and then weigh-up the possible solutions and how to obtain them.

Although an adept ability to listen to oneself through analytical ears whilst practicing is essential for any musician, sometimes the aid of recording oneself (video or just audio depending on the requirement) helps the student to notice things they may previously have been unaware of. However, one must be wary in the initial stages, as self-recording may sometimes pose some drawbacks especially if the person is not used to hearing themselves play from a third-person perspective. Listening back to recordings can be demotivating if people only listen out for their mistakes, technical inaccuracies and ‘lack’ of sound quality. This can lead to reluctance to make the effort to record themselves. The solution is not to focus only on

the bad aspects but also the good, giving yourself credit every bit as much as criticism. For example, if three things are found to be negative, one should also review three positive aspects. The ability to step back, give constructive criticism and then focus on how to change to achieve the next goal will go a long way.

The notion of recording can also cause a (relatively minor) logistical inconvenience, i.e. getting out the recording device, headphones, microphone et cetera A good solution would be to make the process as simple as possible by using something that we usually have to hand for most of the time – a mobile phone. Smart phones usually have relatively good cameras and sound quality, but if this is not enough, investing in a decent yet simple recording device can make the experience more enjoyable.

When scrutinising a recording (especially when made with a phone or such like), one must also be wary of the fact that it may not represent the same (sound and/or audio) quality of playing in reality, as mentioned by Pedro de Alcantara:

> Unfortunately however, video and audio recordings distort the actuality of your playing: the sound you make isn't the exact sound that comes out of the recording equipment. The recording can make you sound stronger, or weaker, or more resonant, or less resonant. It doesn't matter in what direction the recording distorts your music making; the simple reality is that it inevitably distorts it in some way. You can use recordings to perceive aspects of your playing, but not the whole of it, and most likely not the essence of it (de Alcantara, 2013, p. 161).

During the later stages, recording should also be used for performance practice, i.e. to practice running the pieces and experiencing the 'flow' state of simply letting go whilst performing (more on performance practice is discussed later in the chapter). With a recording device present, one may simply function differently, and it's important to be aware of the feeling of playing whilst being recorded. Some may feel that the microphone is a real distraction, partly because it triggers their fear of being judged by listeners and music critics. Some might take the unhooked mike as an invitation to address an imaginary audience in a concert situation, resulting in them focusing themselves and playing better than they normally do (de Alcantara, 2013, p. 161).

2.4 Practice Strategies

The rest of this chapter discusses different memory techniques and practice strategies, some of which are suited predominantly to specifications required from percussionists. It also focusses on techniques for developing the mental toughness required for peak performance under pressure such as mental rehearsal, imagery, visualisation and self-talk, all of which pertain to the cognitive strategies researched by sports psychologists.

2.4.1 Goal Orientated/Deliberate Practice Strategies

'Goal orientated' or 'deliberate' practice methods are also extremely useful tools to employ in the early stages of practicing new repertoire. They refer to the idea of having a clear plan at the beginning of each practice session and knowing exactly what specific details must be changed and how. It activates the analytical thinking part of the brain called the 'Cerebral Cortex.' This assists the understanding as to why a certain passage sounds the way it does when played, what the problems are and the possible alternatives for developing it into the way it should be (i.e. how it's heard in the head). The general procedure involved in deliberate practice is to define the goal, play the passage, evaluate the result, identify the cause of the problem, identify possible solutions and finally test the possible solutions. This is opposed to the 'mindless repetition' practice that musicians often fall into the habit of doing. Often with the vague goal of memorisation, many people end up practicing sections of a set number of repetitions before moving onto the next section, employing no self-analysis or criticism and with no real purpose or goals in mind. This method can help improve and develop the muscle memory to a certain extent but mostly at the expense of emphasising bad habits and learned mistakes (*2EffectivePractice.Pdf*, n.d.).

It is also a good idea to invest in a practice notebook whereby any thoughts, observations or discoveries can be jotted down. Long and short-term practice goals or goals in general may also then be committed to paper, increasing the likelihood of sticking to them.

2.4.2 Memorisation Techniques

It is not necessarily obligatory that every piece be played by memory throughout the competition, but it is arguable that playing from memory can allow more freedom in performance (as there is one less thing to look at and worry about) and a closer connection to

the audience. However, many musicians suffer from serious anxiety from the fear of experiencing memory blackouts on the stage. This is normally due to the lack of time they devote to developing effective memorisation strategies, instead relying only on muscle memory through mindless repetition. Fortunately, a number of memorisation strategies have proven to be effective when used in combination with one another, ensuring that more brain pathways are made to retrieve the data quickly and precisely when under pressure. The five main memory pathways exercised by musicians are aural (memory of how the piece should sound), visual (memory of notes on the score), muscular (memory of the physical sequence of movements necessary to play the piece), verbal (memory of instructions e.g. what a teacher may have said) and analytical (understanding of the structure of the music through analysis and devising strategies to avoid confusion when passages are similar). There is evidence of considerable individual diversity in preferred strategies, learning being based on combinations of automated aural, kinaesthetic, or visual strategies (Hallam, 1997). Some of the following examples look at muscular or kinaesthetic, visual, aural and analytical memory strategies, all conducive to more reliable retrieval of data in a pressured situation.

The ‘analysis and organisation’ technique refers to the reconstruction of the score, looking at it from fresh eyes and noticing the main musical details that may have slipped the mind over time. The idea is to divide the piece into big chunks which can then be divided into smaller chunks, making notes on rhythm, melody, harmonic patterns et cetera on every part. When confident that it is secure in the memory, as much as possible should be written down onto paper capturing all technical analyses and insights as a recall test. A comparison can then made to the score and anything missed should be added to the notes. This is an example of strengthening the visual memory pathway.

The ‘inputs and outputs’ strategy involves expanding and varying the memory pathways used to retrieve the data, decreasing the risk of a memory blackout should any one of the pathways fail to be retrieved whilst playing. Some different examples of strategies include:

- Singing/humming the entire piece without referring to the score
- Miming the piece on the instrument without making a sound
- Mentally visualising the notes of the score

- Mentally ‘hearing’ one’s own run-through interpretation of the piece with or without the score
- A combination of everything - mentally rehearsing the entire piece whilst hearing, seeing and feeling oneself play everything

Some musicians have even been known to learn and memorise whole scores before playing a single note from it on the instrument.

The ‘method of loci’ technique refers to assigning a set of envisioned scenes, characters and actions to each section and phrase of the piece and drawing them onto a photocopy of the score. This creates a clearer idea about interpretative decisions as musical elements such as articulation, dynamics, tone, tempo and phrasing have to be linked to imaginary character, mood or plot ideas. This technique is an example of strengthening the analytical memory pathway.

The book ‘Make it Stick’ by P. Brown, H, Roediger and M. McDaniel offers different techniques to improve productivity in learning, drawing from recent discoveries in cognitive psychology. They claim that learning is “deeper and more durable when it’s effortful” (Brown et al., 2014, p. 3). Based on this, it may seem easy to dismiss the aforementioned memorisation techniques due to the extensive measure of extra time necessary for their application, however in the long run, results will include a more deeply ingrained absorption of the information in the brain, and a faster and more reliable retrieval of the information. Among other claims made in the book, they mention the use of ‘retrieval practice’:

> Retrieval practice – recalling facts or concepts or events from memory – is a more effective learning strategy than review by reading … Retrieval strengthens the memory and interrupts forgetting, a single, simple quiz after reading a text or hearing a lecture produces better learning and remembering than rereading the text or reviewing lecture notes. While the brain is not a muscle that gets stronger with exercise, the neural pathways that make up a body of learning do get stronger, when the memory is retrieved, and the learning is practiced. Periodic practice arrests forgetting, strengthens retrieval routes, and is essential for hanging onto the knowledge you want to gain (Brown et al., 2014, pp. 3–4).

For the purposes of this text, retrieval practice alludes to the combined application of mental and physical practice (more mental strategies are discussed in chapter 2.4.4) It also

refers to the practice of the pieces without the score as soon as possible, ‘retrieving’ the memory and strengthening the neural pathways.

2.4.3 Slow Practice

Once enough work has been done on the first set of pieces to ensure they are well learnt, the same procedure should be followed for the rest of the repertoire, whilst continuing to develop and improve the learnt repertoire. This is when the general practice regime should change from intensive, blocked practice on two or three pieces, to a ‘little and often’ approach. Practicing the learnt pieces half an hour or less per day/two days will ensure they stay warm and part of the muscle memory, and attention made to detail, whilst being able to fit more into the practice hours of the day. However, if time is still an issue, there is no harm in taking a break from the learnt repertoire and concentrating solely on learning the next set of pieces required, providing they too obtain the same level of attention and structured learning.

Slow practice may also be used to one’s advantage when practicing little and often. As many small mistakes or instabilities may have developed over time, practicing each section at a slow tempo may bring them to the musician’s awareness. Combining slow practice with playing through the pieces at a soft dynamic can also be beneficial, especially for the mallet instruments such as marimba and vibraphone, as it puts less strain on the body due to the smaller movements and reinforces the correct body positions necessary for good accuracy. However, it is important to keep in mind when practising slowly, that rhythm, tempo and musicality in keeping with the section, when played up to speed, all remain of priority. Pedro de Alcantara backs this up when he mentions about practicing rhythmically and slowly:

> Musicians often play through a passage slowly many times, hoping to conquer technical difficulties through repetition alone. But in the absence of prosodic energies [the study of rhythm in written and spoken language, in particular in poetry], slow practice is meaningless and perhaps even harmful. Musicians also ‘practice in rhythms’, breaking up a phrase into fragments of fixed length, overlying fixed rhythmic patterns upon the fragmented phrase, and performing the resulting combinations a few times each. Most of the results are musically awkward, but musicians persist in practicing this way in the hope of acquiring good mechanical reflexes. Practicing slowly and ‘in rhythms’ becomes useful only when the rhythms are prosodically plausible and the slow practice is musically charged (de Alcantara, 2013, p. 119).

Further writings from the cellist and Alexander Technique master Pedro de Alcantara is mentioned in chapter 4.2.

2.4.4 Mental Practice/Rehearsal, Imagery and Visualisation

The field of sports psychology, which studies characteristics of elite athletes and techniques for improving athletic performance, contains a great deal of research that is useful for musicians (Sisterhen Mcallister, 2013). Several of the main parallels linking sports psychology to musicians include the ability to:

- Perform under pressure and scrutiny
- Perform complex movements automatically
- Maintain concentration on the task in hand
- Follow practice routines on a consistent basis over an extended period of time
- Use efficient movement to avoid overuse injury or over-exertion
- Schedule practice to arrange for optimal performance on a specific day (game or recital day
- Excel in a highly competitive environment
- React swiftly to unexpected events
- Use repetition and drill to develop specific technical skills
- Gain expertise through demonstration and modelling (Sisterhen Mcallister, 2013)

The concept of mental practice (also referred to as mental rehearsal or visualisation) is taken from the field of sports psychology and can be extremely beneficial for musicians when used alongside standard physical practice. It essentially involves using the imagination to reinstate the brain connections necessary to carry out the movements involved in playing. Mental visualisation can also be used to help reduce performance anxiety by seeing, hearing and feeling success or in some cases failure in performance in the mind's eye. The idea is taken from sports psychology as it is predominantly used by athletes to overcome nervousness and strengthen the brain connections necessary to execute specific movements with extreme precision. Examples of great athletes who were associated with mental practice and imagery include the Olympic diving champion Greg Louganis who used to visualize dives to music, golfing great Jack Nicklaus said he never hit a shot, not even in practice, without seeing the

ball destination, path, and swing first. NBA Hall of Famer Larry Bird said that he used to look up into the rafters before games as the national anthem was being sung and look at all the titles the Celtics had won, imagining himself playing and having the kind of game he wanted. Tennis star Chris Evert used to painstakingly visualise opponents' specific style of play, also visualising her successful responses. For musicians, mental practice can be applied for two main reasons; overcoming technical issues and improving consistent accuracy without exerting more physical 'wear and tear' on the body, and to get used to the feeling of being in performance mode (mental rehearsal / visualisation). Great musicians including pianists Artur Rubinstein, Vladimir Horowitz and Glenn Gould are all known for their use of mental practice and imagery (*2EffectivePractice.Pdf*, n.d., pp. 28–29).

The psychoneuromuscular theory suggests that during movement, the brain sends impulses to the muscles causing movement. If the movement is imagined, a lower level of impulses is still sent to these same muscles. It is thought that mental practice therefore activates the same brain regions and may produce many of the same changes in the brain and brain/muscle connections as physical practice. If the imagery is vivid, the nervous system cannot differentiate between what is imagined and what is real.

There are a few ways in which musicians can practice imagery in order to make it as close as possible to the reality. The first exercise can be learnt through 6 steps:

1. Quiet the mind, close the eyes and centre.
2. Do one mental repetition of any line of music slowly, incorporating as many senses and details as possible.
3. Do one physical repetition of the same line on the instrument, paying close attention to exactly how the experience feels and sounds.
4. Do another mental repetition making it a more accurate and vivid representation of the physical version.
5. Repeat physical repetition and compare the closeness of resemblance to the mental version.
6. Repeat daily increasing the length and difficulty of the passages. (*2EffectivePractice.Pdf*, n.d., p. 36)

2.4.4.1 21's

Another structured way in which to develop the skill of mental practice is an exercise known as '21's'. The idea is to pick a section of a piece that causes difficulties and to repeat the passage 4 times physically playing the instrument, with 7 mental repetitions in between. After every physical attempt a moment should be taken to reflect and write down any observations such as what was good, bad, needed fixing and how they could be done differently. The 7 mental repetitions following can be slowed down if necessary, being sure not to repeat the mistake, but to find out solutions to what is causing it before speeding it up to the correct tempo. Upon repeating the process 4 times, a total of 21 repetitions will have been made, and another moment should be taken to review and reflect on how the passage has developed from the first physical repetition to the last (*2EffectivePractice.Pdf*, n.d., p. 37). This concept is mentioned as part of music psychologist Noa Kageyama's course 'The Bulletproof Musician', created to help and guide musicians of all calibres through audition/competition processes in order to help gain the mental stability necessary for optimal performance under pressure (Kageyama, 2016). Many more elements of the research carried out by Kageyama is mentioned throughout this document.

2.4.4.2 Visualisation with regard to Performance

Traditional visualisation methods involve the imagination of giving successful performances until the image is experienced so clearly in the mind's eye, that the likelihood of bringing about actual success is exponentially increased. One way to practice this method is to first place oneself in a position of strength and stability in order to associate the thought processes with this stability; e.g. lying on the back, sitting on a hard chair with both feet planted on the ground, standing up with both feet firmly grounded. When feeling stable and confident, a successful performance of any of the pieces should be imagined as clearly as possible, hearing and feeling every nuance of the best possible version of the individual player's interpretation. It may help to imagine a member of the audience watching the performance and taking pleasure in the concert being given.

A slightly different and seemingly counterintuitive approach may also be of benefit; that of visualising not successes but failures in performance. This may aid the prevention of performance anxiety. Again, it is recommendable to carry the procedure in a position of strength and stability. The idea is to imagine oneself in the competition situation, suffering

from the classic symptoms of stage fright: dry mouth, short and rapid breathing, sweaty palms, shakiness, insecurity and doubt et cetera. Due to the vivid nature of the imagination, this may bring about feelings of queasiness. It is important to retain the stability in the current position, and simultaneously think about the elasticity of the spine, the strength in the back and legs, the looseness of the jaw and tongue and the natural expansion of the rib cage whilst breathing. This will directly juxtapose the disconnecting thought processes associated with the effects of stage fright. This form of meditation should be timed well in advance of the competition and done every day for a while. Eventually, the thought processes compliant with strength, stability and relaxation will slowly become more powerful than the imagined performance anxiety, ultimately overcoming it. By the time the pressured situation of the competition situation is actualised, the capacity for fearing and worrying about performance anxiety will already be spent.

2.5 Psychological Aids for Optimal Performance under Pressure

'Performance anxiety' (otherwise referred to as 'stage fright') has been documented as a problem for many performers, with studies indicating that a large percentage of orchestral musicians are regularly affected by it and find it a severe limitation to their performance. Many great soloists have been known to suffer from stage fright including Vladimir Horowitz and Pablo Casals, to name but a few. The apprehension of performance anxiety manifests itself in three interrelated types of symptoms. According to Aaron Williamson, physiological symptoms include increased heart rate and palpitations, hyperventilation, dry mouth, sweating, nausea, diarrhoea and dizziness (Williamon, 2004, pp. 10–11). E. R. Valentine describes them so:

> This fight-flight response, which assisted our hunter-gatherer forebears in fleeing large animals, is highly detrimental to musicians requiring dexterity and fine muscular control over their instruments. Trembling limbs and slippery fingers are likely to hinder rather than help the performer. In addition, this autonomic arousal may have become associated with fear as a result of past experience. Increased arousal generally leads to a narrowing of the focus of attention, which may also be deleterious (Valentine, 2002, p. 168).

Behavioural symptoms include shaking, trembling, fidgeting, stiffness, and dead-pan expression, all of which is apparent to audiences and impairs the communicative elements of the performance conveyed by the musician. Cognitive symptoms include various types of

negative ‘mental chatter’ that is in no way relevant to the task in hand. They often consist of thoughts about what the people watching are thinking, or the likelihood of failing the next difficult passage coming up et cetera. This worry can further increase anxiety through the reduction of quality concentration and diversion of attention and focus. This section will put forward a few suggestions of different methods to enhance the mental stability or ‘toughness’ required to negate the likelihood of the aforementioned symptoms hindering performance.

It is recommendable that all the repertoire be learnt and brought to a high level of fluency and proficiency around one to two months prior to the beginning of the live competition. This will ensure enough time be given to the practice of performance in pressured situations and for any amendments to be made and digested before the competition. The importance of performance practice is often neglected and left until it is too late, resulting in insecurity and unnecessary shakiness before the real performance. Studies have shown that in order to achieve complete security and control in a performance, one must stimulate the pressured situation at least once and perform it as closely as possible to the real situation. An example may be to perform for trusted friends, colleagues and teachers in a ‘preparation concert’ in the weeks leading up to the competition. Doing a performance simulation in the intended concert dress for the real situation is sensible as one can judge how much movement and freedom the clothes allow and change anything beforehand if necessary. However, performing on stage requires a completely different mindset to that of thorough analytical practicing so it is advisable to create a habit of getting into the right state for optimal performance early on. This involves knowing how to get into ‘the zone’ by quieting any inner mental chatter that is in no way conducive to optimal performance. It is not something that necessarily requires hours of practice every day but 10 minutes taken out of one practice session daily will help to negate any shakiness or instability caused by nervousness during a pressured performance, should that be an issue worth targeting.

Some examples of ways to improve mental ‘toughness’ for pressured performance include:

- Pushing the limits of the comfort zone on a daily basis – this involves finding something during everyday situations no matter how big or small that may provoke the fear response and pushing oneself to go through with it. This can be anything from speaking and reaching out to new people, saying yes or no to things that you ordinarily would not, never being the first to break eye contact or even asking for numbers from

strangers. The point is to get used to facing fears on a smaller and arguably more insignificant level in order to expand one's general comfort zone and ultimately be able to do the things that would ordinarily be too intimidating. It is recommended to try this exercise during the course of 21 days and be sure to write down every scenario to be able to reflect and see the development over the time period (*4BecomingFearless.Pdf*, n.d., pp. 28–30).

- 'Centering' is the idea of getting into 'the zone' moments before a performance. Many musicians do it during the few seconds of silence they take on stage to gather their thoughts and put all focus on exactly what it is they want to hear and how to execute it. Practicing centering involves using diaphragmatic deep breathing to lower the blood pressure whilst focusing the eyes on a particular spot and feeling the first notes of the piece exactly as intended.
- Letting go exercise – the idea is to practice running through the pieces for a recording device or some friends with the goal of simply letting go, thinking solely on just letting the music flow and trusting in the preparation. Any mental chatter or irrelevant thoughts that may have occurred whilst playing can then be jotted down in a practice notebook. One must then attempt to change the perspective of the hindering thoughts and try to put the focus on what is wanted, not what is not wanted. E.g. if the thought that caused a particular tricky passage to go wrong was "be careful here", then on the next run through it should be changed to "nail it here." It has been proven that the chances of success are greatly increased when the focus is on the desired outcome, rather than worrying about messing it up. The same procedure can be made with regard to how to deal with mistakes i.e. after a run-through, an evaluation and record can be made as to how well mistakes were dealt with. The natural response to mistakes in most inexperienced performers is to tense up causing shakiness and lack of control, usually resulting in a rapid continuation of mistakes for the rest of the performance. To negate this, after a mistake happens a point should be made to immediately let it go and relax the key muscles. The focus should always remain on the present, not on what has already happened and cannot be changed.
- Another exercise involves simulating the experience of playing with raised blood pressure and heart rate to recreate the feeling of playing whilst nervous. Examples include doing some press ups or running around the building in order to raise the blood pressure then immediately attempting to play the opening of a piece.

- Emotional anchoring is the idea of practicing access to a particular emotional state that is conducive to performing better (e.g. excitement, resilience, determination) and pairing it with a physical cue so it can be accessed on demand. The ability to retrieve the emotions can be learned by quieting the mind, thinking back to a past memory of a confident moment and re-experiencing the emotional aspect of it. Upon feeling the emotions of the situation as clearly as possible, a physical cue/gesture (e.g. touching the thumb and index finger together) should be performed to associate it with the emotion. If this process is repeated around 7 times and this set of 7 is done 3 times a day (e.g. in the morning, afternoon and evening), then after a few days simply performing the cue should immediately induce the desired emotional state (*7MentalResilience.Pdf*, n.d., pp. 14–16).

2.5.1 Alternative Methods to 'Beta Blockers'

It is widely known that the use of the chemical drug beta blockers (originally prescribed for the treatment of angina, high blood pressure and cardiac arrhythmias) lead to suppression of stage fright and enhancement of performance for athletes but has since been declared illegal in some sports. In the short run, beta blockers can be of use to help performers to regain confidence and get back on their feet after a series of bad performances. However, in the long run, they may prove to be more of a problem than a solution. Some side effects include lethargy, constriction of the smaller air-passages, aggravation of asthma and spasm of arteries in the legs (Wingate & Wingate, 1988, p. 64). It is important to be aware of the possible solutions available, but be more aware of their side effects. What may give positive results for one person may be detrimental to the next i.e. for one player, eating a banana chock full of magnesium, vitamins, and minerals, might work against performance anxiety, but for another player the better solution may be to perform on an empty stomach. One must experiment will all possibilities in order to know what helps, if any at all.

2.5.2 Riding the Wave

Although these aforementioned techniques are all conducive to the manipulation and regulation of the emotional energy that potentially hinders optimal performance, some would argue that is it not always desirable to completely negate the idea of nervousness during high

level musical performance. The renowned Russian pianist Heinrich Neuhaus stated in his book ‘The Art of Piano Playing’:

> The main reason [for performance anxiety] is the great spiritual tension without which a man called upon ‘to come before the people’ is unthinkable: awareness that he must communicate to the people who have come to hear him something important, significant, deep, different from the daily humdrum experiences, thoughts and feelings. This type of nervousness is a good and necessary feeling and anyone incapable of it, who walks on to the platform as a good official walks into his office certain that today, too, he will perform the tasks required of him, such a person cannot be a true artist (Neuhaus, 1973, p. 211).

Neuhaus adheres to the concept of simply embracing the feelings of tension, fear or anticipation that arrive prior to performing and channelling them into confidence, increasing the spontaneity of live performance. This is often referred to as ‘riding the wave’. It can sometimes give performers an extra spark, or kick of focus, bringing about a different element that cannot otherwise be brought about during the mundane hours spent in the practice room. Many musicians claim that the thrill or ‘buzz’ of the performance situation fosters spontaneity and encourages new musical insight (Williamon, 2004, p. 12).

3 Physiological Aspects of Preparation and Injury Prevention

As a percussionist preparing such a vast and varied bank of repertoire, a high level of technical proficiency and fitness is required in order to play the most physically demanding pieces with ease and fluency. However, not everybody is built the same way. Some people need to depend more purely on their technical proficiency across the instruments in order to be able to build up the right muscle groups, and others have particular body structures that they can rely on for support to get them through strenuous practice hours culminating in long recitals without breaking down. This section will look at the physical aspects of playing necessary for optimal performance in a competition situation, alongside principles concerning injury prevention.

3.1 Influence of 'The Rudiment'

The foremost technical aspects of contemporary percussion repertoire are the fundamental rudiments. In every percussion competition, there are always pieces required for snare drum, timpani and multiple-percussion within which the drum rudiments play a vital role. It is the practice of these standard rudiments alongside the practice of the pieces themselves that helps to build up the power necessary for competent technical execution. It is recommendable always to integrate the rudiments as part of a short warm up routine before the beginning of every practice session, be that for set-up or mallet instruments. The idea is that 15 to 20 minutes of simple yet mindful practice with a pair of sticks and a practice pad of some sorts, executed a couple of times per day, can make an immense impact on the strength of technique further down the line.

However, how exactly the practice of rudiments is integrated into the daily routine is up to the discretion of the percussionists themselves. Some would argue that 'practice workouts' with technical rudimental sessions of up to an hour or an hour and half are the way forward. In this case, if the goal is purely to stretch the limits of the muscles by their continual application (the same principle as working out in the gym), then watching any film or television series simultaneously can be of benefit (a practice method mentioned by percussionist Rob Knopper, from whom further methods are discussed in chapter 5). However, a more concentrated approach with the focus on rhythmic accuracy utilising the correct movements is more advisable, even if that means playing for shorter time periods, or purely as warm-ups prior to

preparing the pieces. It is important that the focus on technique building be applied early on in the competition preparation and integrated during general percussion practice sessions.

Many percussionists will realise that the relevance of drum technique to that of mallet instruments such as marimba or vibraphone, is not as strong as to that of general percussion instruments, sometimes even causing the opposite effect on sound production. This is due to the fact that a stick will naturally rebound away from the skin of a drum or specific surface, whilst more concentration is required to make the bar of a marimba ring freely without the contact of the mallet to the bar being too long and therefore dampening the vibration of the sound. In that sense, the practice of drum technique does not compliment the development of sound across the mallet instruments due to the difference of input required to make the instruments vibrate correctly. Therefore, a balance must be met between the practice of drum and mallet technique, in order to avoid one hindering the other. Nevertheless, the practice of rudiments does compliment general mallet repertoire in the sense that the standard rudiments do often exist rhythmically within the music and can be incorporated to enhance general rhythmic stability.

3.2 Influence of Physical Health – Lifestyle and Sports Medicine Theories

Essentially, the idea of preparation for such an event can be likened to that of athletes preparing for a tournament. That is why the principles behind much of the research found on sports psychology can be of utmost benefit to musicians. Doctors are also becoming increasingly more familiarised with performing arts medicine within the realms of sports medicine. In a newspaper article for the New York Times, James Oestreich referred to musical performance in general as “in part, a physical test. It requires, in at least some parts of the body, good agility and coordination, finely honed skills, intense conditioning, brief warm-up and, especially for Wagnerites or Feldmanites, considerable stamina” (Oestreich, n.d.).

Physical fitness, stamina and general well-being play as important a role as anything else and could in fact be argued that it is the basis upon which everything else is built. This is especially relevant to percussionists due to the extreme physical nature of the instrument. Ninety percent of all the practice hours are spent standing up with some particular pieces requiring the use of the limbs in sometimes very peculiar and unnatural ways. This, when practiced for a number of hours can often result in aches and pains and in extreme cases lead to serious injuries if too little care is taken. Therefore, it is of extreme importance that the

physical well-being and use of the body whilst playing be of utmost priority. This boils down to the most basic of human needs such as sleep, hydration and food. It often happens during these intensive months of a musician's life, that the generally high stress levels take over and these necessities are neglected.

Although it may sound obvious, concentration is built upon some fundamental physical requirements. In his online course 'The Bulletproof Musician', Noa Kageyama explains the effect of diet and hydration on cognitive and motor performance through research into a study;

> Interestingly, performance on a variety of cognitive tasks and reaction time wasn't significantly different between the hydrated and dehydrated groups, BUT, subjects' ratings of perceived effort were greater in the dehydrated group. Meaning, everything felt more difficult and required more effort. Great performances and gruelling auditions and competitions take everything we have. Top performers look for every possible advantage, and know they can't afford to put themselves in a situation where everything feels even more effortful and difficult than it needs to. (*5MentalQuiet.Pdf*, n.d., pp. 5–6)

Research into lifestyle medicine has led to discoveries that not only aid the standard working person in today's western civilisation but provides a healthy basis on which optimal performance for musicians derives from. One pioneer in the emerging field of progressive medicine and a leading voice in the lifestyle medicine movement is Doctor Rangan Chatterjee. His relatively recent research in the field scientifically proves the necessity of basic human essentials for the enhancement of a wide array of cognitive and kinaesthetic functions. He distills his findings in his books 'The 4 Pillar Plan' and 'Feel Better in 5'. In his research, Chatterjee's findings compliment the results of the findings from Kageyama with regard to the effect of hydration on concentration and performance;

> … a host of different ailments clear up when people start drinking more water, including headaches, low energy levels, dry skin and tummy ache. It can even be helpful for constipation. If you're feeling tired and sluggish in the afternoon, it could simply be that you are slightly dehydrated (Chatterjee, 2018, p. 120) … [further] health benefits you may experience from drinking more water [include] longer periods of concentration and reduced cravings for sugar (Chatterjee, 2018, p. 122).

It is commonly known that good quality and sufficient amounts of sleep is required per night.[1] The potential benefits of a good night's sleep include increased energy, improved concentration, greater capacity to learn, better memory and reduced stress levels (Chatterjee, 2018, pp. 206–207), all of which are conducive to peak performance and consistently high levels of focus in and out of the practice room. According to Chatterjee;

> Getting sufficient high-quality sleep is essential for the proper functioning of our minds and bodies. It's a core physiological process that many of us inadvertently regard as optional … When you sleep well, it's much easier to make better choices the following day. You crave less sugary food and feel more energetic, which, in turn, means you're inclined to be more physically active on the one hand and to engage in relaxation practices such as meditation on the other. Such behaviour is self-reinforcing: when you're more physically active, eat healthy food and prioritise relaxation, you'll sleep even better. (Chatterjee, 2018, pp. 204–205)

As well as sleep and hydration, exercising also boosts problem solving, planning and attention, with some evidence showing that it improves general coordination of motor movements (*5MentalQuiet.Pdf*, n.d., p. 6). Each individual has a unique constitution and metabolism, thus will therefore function differently depending on how they treat their bodies. In general, people enjoy or benefit more from doing different sports, so as musicians it is highly recommendable to find a sport or sports that complement the person and their instrument and form a habit from it (more information about habit changing/building is touched upon in chapter 5). In particular for percussionists, special care must be taken in the application of activities such as working out, as the strain of weight lifting can often land on the wrists and indirectly work against the muscles necessary for speed and control in playing. If working out is a chosen sport, it is advisable to get sufficient training to support good weight lifting technique in order to avoid the development of bad habits resulting in unnecessary stiffness in the wrists, counterproductive to marimba playing.

Most of the importance lies in the practice of anaerobic exercise such as running, cycling or swimming, as it is these sports that build general stamina and endurance. None of these sports put unnecessary strain on the wrists and will ensure the obvious benefits of stress and

[1] There is a set of studies conducted at Stanford which found that getting 10 or more hours of sleep made a marked difference in the performance of their athletes. For instance, basketball players demonstrated significant improvement in free throw percentage, 3 point shooting accuracy, and sprint times when they began increasing their daily sleep totals from 6-9 hours to 10+ hours. (*5MentalQuiet.Pdf*, n.d., p. 5)

anxiety reduction, and improvements in endurance and energy, resulting in better performance during gruelling practice sessions or performance simulations. At what time of the day exercise is done depends again on the energy cycle of the individual. For some, the hours following a sporting session provides the mental quiet and focus necessary for good work. In this case it is probably best to schedule exercise for the mornings. However, others may claim that the after effects of exercise exhausts them, in which case it would be more sensible to schedule exercise for the evenings, once the day's work is behind them. The idea is to make the process sustainable so that the motivation and intensity of the work ethic will remain or even increase during the months leading up to the competition, avoiding burn-out or development of injury.

This document provides information on the prevention of injuries developing rather than solutions for ways to treat them. However, like any musician, countless hours of practice utilising the same muscles day in day out, can lead to unnatural tensions in areas across the body. Pain which occurs in the arm or hand whilst playing should never be ignored (Paull & Harrison, 1997, p. 82). If the onset of pain is starting to occur, then the body is being hurt and help should be sought immediately as chronic or long-standing pain is usually more difficult to relieve.

3.3 Stretching

It is vital for percussionists that the wrists and forearms stay flexible yet powerful. This section will present a few examples of some different stretches necessary to facilitate the prevention or relief of injuries such as carpal tunnel syndrome or tendonitis due to over/misuse of specific muscle groups. Each stretch should be utilised on a daily basis, before practice, in the middle of practice, or during periods of rest.

3.3.1 Wrists

Gentle wrist stretches lubricate the joints, helping to prevent injury (Sisterhen Mcallister, 2013, p. 267). The following exercises are intended to develop the range of motion in the wrists.

3.3.1.1 First Half Turns

With the arms extended and hands clenched into fists, slowly rotate the wrists clockwise five times and then anti-clockwise five times.

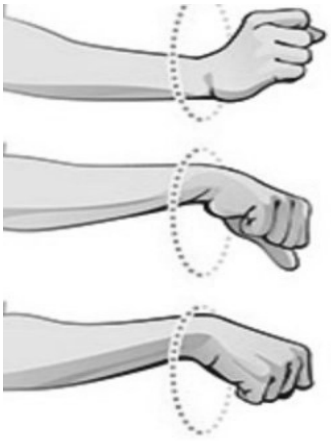

Figure 1 First Half-Turns

A gentle stretch should be felt through the wrists and arms, but the stretch should be stopped when extra tension is felt starting to develop in the lower arm.

3.3.1.2 Up and Down Finger Extensions

Flex the hands upwards so the fingers point up and the palms are facing away. If it feels comfortable, carefully use the palm of one hand against the palm and four fingers of the other to bend the straight hand slightly backwards, stretching the fingers and wrist as a unit. This exercise should be performed mindfully so that the fingers and wrists are never strained. Be sure that the fingers are not merely being stretched backwards but are being kept in line with the palm of the hand. After five seconds, reverse the movement and point the fingers down towards the floor. This sequence should be performed five times, repeating the procedure with the opposite hand.

Figure 2 Up and Down Finger Extensions

3.3.1.3 Finger Extensions Forward

This stretch helps maintain flexibility in the wrists, hands and fingers and improve circulation in the lower arms. Extend the arms out in front at shoulder height and spread the fingers wide apart. After a count of five, squeeze the hand and make a tight fist, bending both wrists down while keeping the fist, again holding for a count of five. After five repetitions, lightly shake off the hands and relax the wrists and fingers.

3.3.2 Upper and lower back, chest

Another useful stretch for musicians involves opening up the muscles surrounding the pectorals, chest and shoulders, and should be done frequently to allow more freedom in movement. It involves the use of a large foam roller or can also be done by simply using a door frame. When lying with the back on the foam roller, the arms should be stretched out and slowly moved above the head and down (a similar arm motion to making a snow angel).

Likewise, when using a door frame, one arm should be lifted above the head with the elbow bent and gently pressed against the frame until the stretch can be felt in the chest. The pressure can be increased by gently leaning forward and twisting the head away from the elbow.

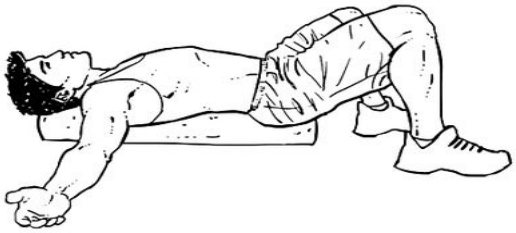

Figure 3 Foam roller chest opener stretch

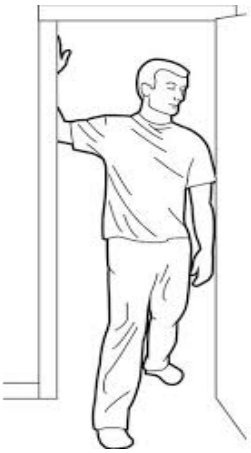

Figure 4 Door frame chest-opening stretch

3.4 Yoga Exercises for Musicians

A closely related activity to that of stretching is the practice of yoga. A famous example of a great musician who advocated the practice of Yoga was the violinist Yehudi Menuhin – he felt that it contributed greatly to his music-making and practicing. He quotes:

> It enables me to regulate my breathing, quieten my mind, and do certain exercises in stretching. Also I have been made aware of certain subconscious processes, of posture and balance, of the coordination of joints, and the use of the body to its fullest potential. (*Bonus: Yoga Essentials for Musicians – The Bulletproof Musician*, n.d.)

It is not necessarily imperative to attend frequent yoga classes - which can be difficult when faced with immense time pressures and busy schedules on the lead up to a competition - but the practice of similar movements and principles at home can prove to be beneficial. Therefore, the investment of a yoga mat will help to keep it as simple as possible, making it more likely to spend short time periods exercising yoga more frequently. However, if an existing injury exists or pain is being experienced, then it should be checked by a physician or qualified health practitioner before starting a new type of physical activity.

3.4.1 Back Exercises

Over time and through persistent engagement of back muscles through playing, stiffness may have manifested in the back which can develop and cause pain. Regularly employing a common yoga position known as the ‘cobra’ will counteract this stiffness and retain strength and mobility in the back. This is especially important for percussionists due to the nature of the instrument, as the movement required during the striking of any surface with a stick or mallet originates from the back muscles.

To employ the position: lie prone on the floor with the legs stretched back and tops of the feet on the floor. Spread the hands on the floor under the shoulders and hug the elbows back into the body. Pressing the tops of the feet, thighs and pubis firmly into the floor, begin to straighten the arms to lift the chest off the floor, going only to the height at which a connection through the pubis to the legs can be maintained. Firming the shoulder blades against the back, puff the side ribs forward and lift through the top of the sternum. Distribute the backbend evenly throughout the entire spine. The pose should be held for 15 to 30 seconds, whilst continuing to breathe easily, after which releasing back to the floor on an exhalation.

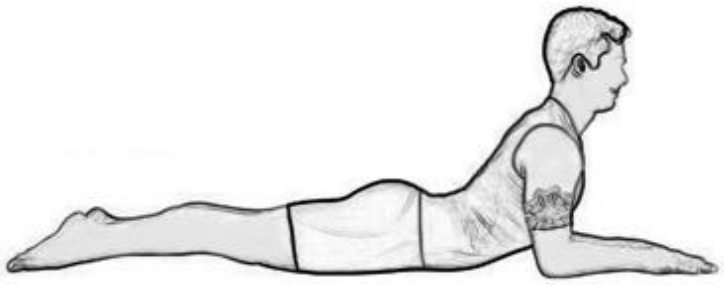

Figure 5 Cobra position

3.4.2 For the Neck

As is discussed in the following chapter on the Alexander Technique, all movement in the body is essentially controlled by the neck. Therefore, it is vital that the neck be especially looked after when spending the vast majority of the hours of a day playing. The following stretch will recover mobility in the neck, allowing more freedom of movement in playing:

Interlace the fingers completely, then place the hands behind the neck. The little fingers should be below the hairline under the occipital shelf (where the skull begins to bulge).

The head can then be rolled forward on the neck, the interlocking effect allowing the relaxation of the shoulders so that the weight of the arms stretches and lengthens the cervical spine. One may experiment bending forward at different angles to feel the stretch throughout the back as well.

Figure 6 Forward neck stretch

The reverse of this stretch (Figure 7) is very important in terms of musculoskeletal balance. To do this, slide the hands up to behind your head. Look upward as the head and hands press together equally. Be sure the elbows are stretched way back; it's important not to let them wrap forward around the head. (Smith, n.d.)

Figure 7 Backwards neck stretch

3.5 Sauna

For percussionists, a fast recovery and regeneration of tightened muscles after long hours behind the instrument is the key to keeping physically able. A useful way to increase the rate of regeneration is to visit the sauna. The circulation increase due to the heat of a sauna helps reduce soreness in the muscles and improve joint movement. It is advisable to spend some time in the sauna in the evening after practice sessions on a regular basis.

3.6 Summary Chapter 3

It is important to be aware of the sheer mass of relatively similar methods and techniques available to aid the physiological and therefore psychological health of a working musician. One must be active in realising and discovering which of the methods may prove beneficial for themselves, if any at all, and begin to integrate these methods intelligently to aid the competition preparation process. The methods listed above are merely suggestions of possible aids, but ultimately it is up to the discretion of the individual as to which one(s) are adopted and how they are woven into their schedules. They should be taken seriously but treated as additional tools to assist the prevention of injuries generated by continual use and repetition of the same muscle groups.

4 Psychophysical Awareness: Principles of the Alexander Technique and their Application to Competition Preparation

An extremely useful tool that combines both psychological and physiological areas of the use of the body through movement is a set of principles known as the Alexander Technique. Aaron Williamson describes it as:

> a popular method of kinaesthetic re-education, which is aimed at eliminating unnecessary tension and developing efficient use of the body. Since its development by F.M. Alexander in the first half of the twentieth century, an increasing number of studies have provided scientific evidence for both its anatomical and physiological benefits. They have shown positive effects of Alexander Technique training on breathing, heart rate and blood pressure, posture and bodily use, quality of musical performance, and mental attitude. (Williamon, 2004, p. 6)

Although the technique is utilised all over the world not only by musicians, it is in keeping with the preparations for a physically and mentally intense and exhausting event such as an international competition. It has been claimed by athletes including the Israeli swimmer Yohav Brook (one of the ten fastest swimmers in the world) that the technique "can help a swimmer do those little things that counts at the end of the race … when he wants to get those few hundredths of a second off and win that medal" (*Art of Swimming*, n.d.). Although the technique is usually practiced over the course of several years, for the purposes of this text a basic overview and some knowledge of the general principles which can then be integrated within the realms of the competition preparation, is enough to suffice. It is recommendable to receive hands-on lessons in the Alexander Technique during the course of the preparation and if necessary in further studies after the competition, in order to reinforce the understanding of the principles and how they are relevant to optimal performance.

4.1 Frederick Matthias Alexander

F. M. Alexander was an actor born in 1869 who made many revolutionary discoveries in what he called 'the use of the self' (the way in which one moves). This came about during a lifelong search for answers after, as a man in his early twenties, his prospects as an actor diminished when he developed a hoarseness in his voice. Upon realising that the condition continually reappeared even after

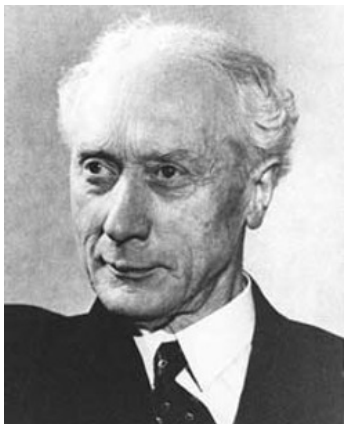

Figure 8 Frederick Matthias Alexander

taking the advice of his doctors, he took it upon himself to find the solutions and understand what he was doing to himself to cause the hoarseness in his voice. With the use of multiple mirrors, he analysed himself whilst he spoke and realised he was moving his head back and downward on his neck as his neck thrust forward, and he gulped awkwardly for air (Vineyard, 2008, p. 8). Over the course of his life, he developed a way of inhibiting his tendencies and bad habits of coordination, instead directing his thoughts differently to comply with 'good use' i.e. using the right amount of tension throughout his body so that everything he did was done with maximum efficiency. He went on to teach and pass on his discoveries, mostly to people who sought help with injuries and had no prior luck with the remedies prescribed by doctors. Today, there are several societies of the technique and a vast array of literature available, some of which focus in particular on the possible benefits for musicians.

4.2 Freedom and Confidence

Today, one of the leading advocators of the Alexander Technique particularly in the domain of music is the cellist, writer and teacher Pedro de Alcantara. His two books 'Indirect Procedures: A Musician's Guide to the Alexander Technique' and 'Integrated Practice: Coordination, Rhythm and Sound' provide primary insight into the cognitive processes involved in changing harmful habits that may be present in playing alongside a wealth of information concerning aspects of musical practice and performance that can be improved through the use of the Alexander Technique. As previously mentioned in chapter 2, performance anxiety is a common problem amongst many musicians. It has been proven amongst many musicians that deep understanding of the Alexander Technique can help to combat the issue of stage fright. De Alcantara states;

> Many musicians believe that stage fright is caused by too much tension, and that its solution is relaxation. Tension, however, is inevitable, necessary and desirable. What you need isn't to eliminate tension but to direct it towards your artistic purpose (de Alcantara, 2013, p. 222).

De Alcantara refers here to the tension created by performance anxiety, but according to the Alexander Technique the statement also applies to the general tension in the muscles when using the body for any activity, not just when playing. The technique focusses more on the lengthening and widening of the muscles in the body and the 'letting go' of unnecessary tension rather than simply 'relaxing'. With these slight changes in thinking, a more firm, stable and

grounded approach to playing can be developed, focussing more on how to use tension to benefit playing, technique and performance rather than to hinder it. A full and confident quality in playing subsequently develops as the indirect result of applying Alexander's principles.

The Alexander Technique is often referred to as a sort of 'postural re-education'. However, the technique distils a different outlook towards posture. The commonly understood idea of 'posture' is to stand or sit up straight. However, Alexandrians often disregard the term 'posture' due to its implication towards staticity and non-movement, rather the term 'poise' is preferred when referring to the alignment of the spine and the balancing of the head on the neck. This idea of the poise and balance of the head on the neck, and the relationship between the head and the neck to the spine is referred to as the 'Primary Control'. Judith Kleinman distils the principle of Primary Control into 4 points:

- The Primary Control influences the balance of the whole body
- The alignment of the whole body influences the Primary Control
- If we are calm and confident our Primary Control tends to be free
- If the Primary Control is free we tend to be calm and confident (Kleinman & Buckoke, 2013, p. 40)

These connections are the building blocks of the functioning of the whole body and are at the core of the technique i.e. if whilst playing, one were to think of directing the head 'forward and up' in space which will continuously rebalance the head, then the use of the limbs becomes instantly more free. This [poise] provides complete control over the instrument, but the condition is more likely to exist in us if we are feeling calm, confident and happy (Kleinman & Buckoke, 2013, p. 39). However, when the stress response is activated in a pressured situation, unwanted tensions tend to arise and the directing thoughts providing freedom in movement are lost. One must therefore train themselves to continue thinking about what they are doing as they are doing it and stay in the moment, being aware of oneself as a whole. Frank Perce Jones quotes:

> In teaching the principle to a musician the aim is to increase the awareness of himself (or herself) as a whole… In practice and performance, however, a musician's attention is given almost exclusively to what he is doing with his hands or his feet or his vocal organs, and to the sound they are producing. Of what he is doing with the rest of his body, he usually knows very little. In attacking a different problem of technique, the average performer uses two approaches: 'he tries hard' to master it, using all the skill at his command; and if his trying builds up too

> much tension and fatigues him, he ‘relaxes’. In both cases he is working on a trial-and- error basis. He has no way of knowing exactly how much tension is needed, or how to limit it to the time and place where it is wanted. (Pierce Jones, n.d.)

4.3 Integration within Practice

Alexander work has a lot to offer in the practice room. It looks at:

- The structure of the time spent there, including playing and not playing
- The use of semi-supine position as a practice tool, often combined with the use of imagination
- The exploration of development of efficient instrumental technique and preparation of pieces for performance
- The common use of repetition and what can be brought to it
- The influence of balance, breathing, seeing and hearing one’s own playing
- One’s attitude and how to deal with expectations of practice
- Developing a connection between the way the mind and body are used in relation to the instrument and developing musical responses
- Endeavouring to open the mind to enjoy and maintain comfort and health while engaging in practice

The semi-supine position refers to the idea of ‘constructive rest’ and may be adopted before or during practice for many reasons. It involves lying on the back on a relatively hard surface with the head raised on some books so as to keep the neck straight, the legs bent and knees up. Adopting this position helps physically to take pressure off the intervertebral discs and restore them to their supportive, shock-absorbing quality, and encourages the restoration of the appropriate curvature in the spine, meanwhile providing the opportunity to de-stress and practice mentally (visualisation, imagery - see chapter 1). Just ten to fifteen minutes of lying in

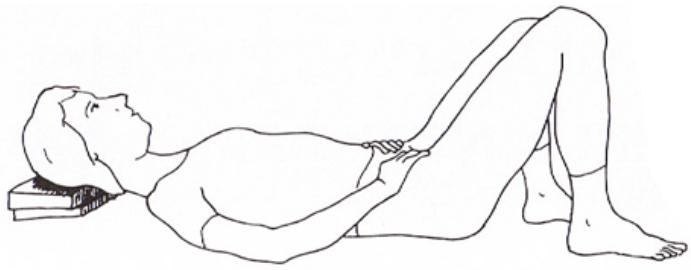

Figure 9 Lying in semi-supine

semi-supine integrated within practice sessions can prove beneficial in maintaining balance, coordination and control both physically and psychologically, and re-energise the body when tired, resulting in an improvement in productivity in the practice room.

4.4 Integration within Performance

Semi-supine can also be applied before performing, in order to gather one's thoughts and gain a stable sense of composure and mental control. In the situation of a competition, there should always be given at least 20 minutes of warm-up time, where it is advisable to keep the muscles warm and agile, but not 'over-play'. However, oftentimes, there is a certain amount of time after the allotted warm up time which is spent waiting back stage before walking on to give the performance. During this time when it is often not possible to continue playing the instrument, the application of principles from the Alexander Technique can be helpful.

One example of an 'Alexandrian' approach to gathering, organising and dispensing one's energies in the green room before a performance, is to find a surface to apply pressure to whilst standing in a firm and stable position. Feeling the surface resist this pressure will bring connection and opposition of forces within the neck, back and spine. This groundedness will result in a flow of release, including the discharge of some pleasure-giving endorphins flowing from the brain to the soul (de Alcantara, 2013, p. 224).

4.5 With regard to Injury Prevention and Technique

It is commonly believed that pain and tension built-up in any one particular area (e.g. the forearm) is caused by the misuse of that area only. However, the Alexander Technique states that pain is caused by the general misuse of the whole self i.e. pain caused in the forearm could be caused by excessive tension of the neck whilst playing, causing an imbalance of tension between the head and the neck, and the neck to the back et cetera, ultimately affecting other areas of the body. Therefore, special attention must be taken to ensure that one uses oneself in a healthy and coordinated way, in order to attack the cause of any injury before it develops. The technique points towards allowing awareness of how the person uses themself, ultimately providing insight to where otherwise unknown tensions could be being built-up. With regard to playing, this can not only help one to understand why certain passages may not yet be playable but can also help to provide the solution.

Oftentimes, musicians receive information either from books or advice from trusted teachers about the results of what should be looked for, although without the knowledge of a specific means of **how** to achieve the desired results. The use of the Alexander principles during the practice of technique can help to find the solutions more easily and efficiently. Reminding oneself of the head's re-balancing relationship to the spine and freedom and expansion in the body, time spent struggling working out how to achieve particular articulations or sound colours (for example) will diminish. It provides a 'healthier' outlook towards experimentation in the practice room as it becomes easier not to pass judgement every time a mistake is made or to worry about getting it wrong, opening up more possibility of stress-free progress.

5 Time Management

5.1 Judging Amounts of Practice

It is well known that it is as harmful to practice too much as it is not practice enough. Renowned musicians such as pianist Arthur Rubinstein were quoted to have never practiced more than 3 to 4 hours per day, using the rest of their time to enjoy other qualities of life such as love, theatre, art et cetera. Harold C. Schonberg wrote about Theodor Leschetizky – one of the great piano teachers of the late nineteenth and early twentieth centuries:

> Among his strictures was the falsity of the concept that long hours of practice were beneficial. He would not think of a student working six, seven, eight hours a day. “No one can do that without being mechanical, and that’s just what I’m not interested in. Two hours, or three at most, is all anyone should require if he will only listen to what he is playing and criticise every note” (Schonberg, 1974, p. 280)

Although it is undoubtable that the quality of good practice is of utmost priority where quantity is concerned, percussionists preparing such a bank of varied repertoire across a vast range of different instruments simply require more than three to four hours per day dedicated practice. One must maintain not just one technique but many different and varying kinaesthetic movements - all of which must be practiced on a day-to-day basis - in order to retain the level necessary for their successful application when forced to combine them into a series of three to four consecutive recital performances during the course of the two-week competition. Therefore, a different approach must be taken to that of the aforementioned great masters. This raises questions such as; how should one know what is enough and when to stop? Is the benefit of continuing to practice, even when fatigue is taking grip, less or more than that of simply stopping and continuing in the morning?

In a short video, the American percussionist Rob Knopper explains his theory on the matter. Knopper is the principal percussionist of the Metropolitan State Opera Orchestra and has released many invaluable strategies and tactics to help navigate the complexities of audition preparation, the core essentials of which are generally similar to that of the preparation necessary for a solo competition. He states that in order to compete in this Olympic level sport of professional orchestra auditions [as in solo competitions], you cannot just think about the simple decision of whether or not to practice. You need to find a way to be maximally productive all the time (Knopper, n.d.). The goal is not to practice the most, rather to raise the

productivity output; i.e. if the time spent practicing is increased and a way to use that time more productively can be found, then the productive output can be maximised. His equation to explain this is:

> TIME (spent practising) x PRODUCTIVITY (in the practice room) = OUTPUT (e.g. problems solved, notes learned, recordings listened to)

It is often difficult to assess whether or not to practice when feeling tired, e.g. in the few hours left of the evening after a long day of rehearsals and lessons. Any practice, be it productive or not will always have some output even if it is minimal. However, choosing to sleep or rest instead will mean that the productivity rating of the practice the next day will be higher, resulting in better output. A good way to approach this is not to think of 'tonight's practice' and 'tomorrow's practice' separately, but rather as a single unit. For example, across the two days, would it be better to practice two hours in the evening and 6 hours the next day with a lower productivity rating? Or would resting in the evening and 6 hours practice the next day with maximum productivity and better output be overall more beneficial? These questions should be asked regularly on a day-to-day basis. However, it is advisable during competition preparation that the extra time should be taken to practice, even when tired, the majority of the time.

5.1.1 Practicing when Tired

Just the thought of giving yourself a goal for the practice session can often be enough to diminish any existing motivation that may have been present, resulting in the decision not to practice at all. One way to change this thought process is to break it up into smaller, more manageable and less daunting chunks or steps. For example, in the process of self-recording, just thinking about walking to the locker, taking out the recording equipment, setting it up, playing through a passage once, listening to it back et cetera, is less overwhelming than the thought of simply doing a self-recording session. The simple act of completing a small step seems easier and more achievable, than diving into what seems like a big project.

Some people find that they need more incentive to practice when they do not feel like it, as just practicing alone for the competition, and the rewards that in itself may reap, may not be enough to get to the practice room. One incentive may be watching a television series or programme during the warm-up, as sometimes the thought of seeing the next episode may be

desired and enough to draw them in. Another incentive may be to treat oneself after certain things have been achieved e.g. eating a favourite piece of chocolate after the first 20 minutes of practice. The idea is to train oneself to believe that the practice room is a place where fun things happen.

It may be an idea to keep a written list of things that have to be done in the practice room that only require a low amount of brain power and can be done during a lower energy period e.g. technique work. This way, the productivity will be better, as the time is not being spent trying to battle with activities that require higher brain power e.g. memorisation and mock run-throughs. This is a similar approach to that of the energy log method for scheduling practice time that is mentioned later in this chapter.

5.1.2 Psychological Rest

Although many musicians recognise the importance of physical rest (maximising the recovery from long practice days, minimising the risk of injury, avoiding overtraining or burnout), the importance of psychological rest is often neglected. Based on a 2019 study by Eccles and Kazmier on the psychology of rest in athletes, Noa Kageyama distils three suggestions as to ways of reducing mental fatigue and achieving psychological rest. Kageyama claims that " 'the athletes' responses suggest that the pressure to perform at a high level in both practice and competition can be a major source of fatigue – both mentally and physically" (*Struggling with Practice Apathy?*, 2020) and the solution is to schedule rest-days during the week:

> Coaches did their best to schedule in rest days during the season. Days when athletes could catch up on schoolwork, or take a break from having to perform or train … I think the same thing makes perfectly good sense for musicians, and reminded me of something that violinist Donald Weilerstein has suggested to some students – taking 24 hours off from practicing each week (*Struggling with Practice Apathy?*, 2020).

Another result of the study showed that the athletes were constantly "switched on" and unable to think about anything other than training and ways to improve. Although this isn't necessarily always a bad thing as it shows discipline and dedication, it can eventually be draining, taking up a lot of energy and causing some anxiety, due to the constant worry about the competition. A possible solution is to deliberately reduce the amount of time spent thinking about the competition when not fully engaged in a practice-related activity.

> To “switch off” mentally, the athletes often engaged in “low-cognitive-demand activities” like watching TV or reading to get their minds off of hockey and training. They also made a point to get away from teammates, stay away from locations that were associated with training (like the gym), and even avoid looking at things that would remind them of hockey (like their hockey sticks). (*Struggling with Practice Apathy?*, 2020)

The rigid and full practice schedules of musicians leading up to competitions can be likened to that of athletes’ schedules, in that very little changes on a daily basis – the days are spent in the same place continuously throughout the week. This can often cause fatigue and a reduction in motivation. Although it may sound obvious, changing the schedule every now and again and doing something spontaneous that would not ordinarily be done can prove to be revitalising.

5.2 Strategies for Managing Time

A useful strategy for long-term time management is to continuously convince oneself that there is only half the time available to achieve the specific goals than there is in reality. For example, if there is a year to prepare fully for a competition, and within eight months all the repertoire must be learnt and memorised (to the discretion of the performer) then one should convince themselves that they only have four months. As the time grows ever nearer one should continue with this mindset – if there is six months left then they must tell themselves there is only three and truly commit to believing it. If these new, cut-down timeframes are truly believed, then the intensity and focus of the work necessary to complete the goals increases exponentially, resulting in an increase in efficiency and quality. It has been proven that for the most part, people will only complete tasks within the given timeframe right before the deadline, but when forced to complete the same thing in half the time, so it will be done. A simple analogy of this is if a school pupil is given a month to write an essay, it will usually take them a month to write it, and often left to the last minute. However, when given a week to write it, the same essay will be written.

If the feeling that there is too much to do in too little time becomes overwhelming, there are a few methods proven useful to help with time-management and efficiency during practice sessions, distilled by Noe Kageyama in his methods in the Bulletproof Musician:

- Parkinson’s law (a phenomenon … extracted from the first sentence of a humorous essay published back in the 50’s (*2EffectivePractice.Pdf*, n.d., p. 24)) refers to the idea

of work expanding so as to fill the time available for its completion i.e. intensity of effort and focus and therefore productivity decreases as the amount of time available for the completion of a task increases. If one were to set shorter time limits to their practice sessions, they'd be forced to consider different strategies and shortcuts to ensure the best use of the available time and make priorities to avoid getting bogged down in details that are not conducive to the most effective use of time and energy.

- Taking this a step further, reverse scheduling involves planning any desired leisure activities (e.g. movie or drink with friends) into the week before planning the important practice and study time. Limiting the time available in this way will boost the productivity during work sessions.
- 'Practice sprints' is another method of avoiding mindless practice. They involve breaking up a 45 to 50-minute practice session into chunks of 8 to 10 minutes with 1 to 2 minute breaks in between, clearly defining specific goals and aiming to accomplish them within the given time periods.
- Iterative practice is a method of prioritising to prevent losing track of time and fixating on minor details at the expense of major ones. The idea can be likened to that of child first tidying the most obvious things in their room that makes it instantly seem tidier, before moving onto the finer details should it not yet be acceptable for the parent. The same principle can be applied in the practice room by consciously deciding what the importance of scale of each issue is and working to find solutions to the most pressing matters first.

5.3 Integration of Preparation within the Demands of Livelihood

5.3.1 Finding the Balance

It may seem obvious, but during the months prior to such an event, a person's general work life (be it a job or studying in a university), and social life must go on. Although this may seem like an impossibility at times due to the all-consuming nature of sufficiently preparing a vast bank of repertoire, a balance must be met in order to ensure these important aspects of general well-being are not allowed to slip. Take, for example, the working orchestral musician. Normally, depending on the orchestra, the average orchestral musician plays around 30 rehearsals/concerts per month, roughly equating to one per day. As they are fixed and compulsory timeslots, they take priority and everything else must be scheduled around them.

Essentially, the rest of the work put in towards the competition and any time spent for rest, regeneration or social/family occasions are spent during the available ‘free time’. Therefore, a backwards planning strategy may prove useful to achieve maximum efficiency of one’s time. However, one must be wary when planning and timetabling schedules. It can often be very easy to plan each day for the next couple of weeks, making sure everything gets done and allowing free time etc, meanwhile taking no regard for anything that in reality may be subject to change for whatever circumstantial reasons. This decreases the likelihood of sticking to the schedule and making a habit of it. Charles Duhigg’s book ‘The Power of Habit’ distils the science on how we form habits, and states that it’s essentially a 3-part structure:

1. Cue – the trigger for the habit
2. Action - the habit itself
3. Reward – the reason why we repeat the habit over and over (Duhigg, 2013)

In order for a habit to be properly formed, it must first be induced in small amounts i.e. if it is decided that a particular morning routine is beneficial and must be habitual, the likelihood of doing it every morning in the long-term is not high if the person impatiently tries to make it part of their daily routine straight away. They are more likely to stick to it in the long-term if they start by changing the morning routine once every one to two weeks, then once every week, then twice per week, three times per week et cetera until the point where it becomes habitual and a necessity. It is commonly known for professional athletes to religiously continue with their training programs no matter what fluctuations in emotional state they may be faced with i.e. when they are lacking motivation to train.

However, it may still feel at times that the pressure is too high and too many demands must be met on a daily basis. If this happens, it is imperative that a step be taken back in order to gain some perspective. When things maybe feel like they are not necessarily going to plan, it may seem impossible to take a step back and remind oneself that the choices made every step of the way were entirely their own, and it is one’s individual perception of stimuli that determines their general levels of stress and anxiety. Mostly, determination and work ethic blossoms due to the passion of music making, and it is important to maintain perspective of the significance of the work being done on a daily basis.

Some may argue that a useful way of gaining this perspective is through the use of meditation. The practice of meditation has also been known to help many people gain headspace and clarity when dealing with high levels of stress and anxiety. It has proven to be beneficial in helping to clear the thoughts and allow stillness into hectic schedules, even when practiced as little as 10 minutes a day. The grey matter [darker tissue] in our brains increase when we have regular periods of mindfulness, whilst meditation stimulates neuronal activity, aids sleep quality, aids concentration and lowers blood pressure (Chatterjee, 2018, p. 49). Frequent walks during evenings or in-between practice sessions may also prove beneficial to help gain perspective and order one's thoughts. If within walking distance, it is a good idea to seize any opportunities to walk or cycle to the practice venue e.g. during good weather periods or on days when the schedule is not as intense, and more time is available.

However, it is not only the hardships that one should be wary of. Energy can also be gained from the positive emotions that may arise during the process and it should not be wasted. For example, one may feel particularly good after a lesson or run-through that went well, in turn causing an increase in energy, which can be used positively as motivation to immediately put the lesson's work into practice. This is a resourceful use of the energy gained and prevents the waste of time and energy.

5.4 Energy Regulation

It is common knowledge amongst musicians that there are days when everything works - the brain is active and engaged, the practice is flowing and playing the instrument feels free and liberating. However, everybody experiences the bad days from time-to-time, where everything is a struggle and feelings of frustration emerge from the grogginess that depletes any pre-existing motivation to work and reach set goals. The key to finding out how to deal with these fluctuations in energy and utilise them to their advantage lies in the ability of self-awareness and knowing the general pattern of one's personal energy cycle. A good way to develop this self-awareness is to write down and record an energy log. The idea is to spend around a week taking notice of which points during the day you feel the energy is high, and when it is lagging, and what the possible causes could be e.g. a heavy meal, sports, nap et cetera. For most, a pattern can usually be recognised, and the fluctuations in the energy cycle can therefore be worked with, as opposed to getting through the day with no regard for one's natural ups and downs. For example, good use of a period of high energy and therefore good

concentration and focus, would be to schedule in the hard work for the competition, be it any form of practice, score analysis or lessons. For some, this could be in the hours of the morning, or others, it could be late at night. It is better not to waste these precious time periods doing mundane low attention work, such as doing the washing or waiting in line at the bank. These things should be saved for the transitional energy phases, when ending an intense concentration period and heading into a low phase. A better use of the low-energy periods is to use the time to recharge the batteries, e.g. taking a guilt-free nap, visiting friends, reading a book, or checking Facebook. The likelihood is that any attempt to practice during these low energy periods will result in a waste of time, as fatigue will take over and concentration will suffer.

Although a big meal provides the energy and power needed for high level focus, it can often cause intense feelings of drowsiness during the hours following. A study shows that something called a 'coffee nap' can be a good remedy for this. As the caffeine in coffee usually takes around 15 to 20 minutes to properly kick in, drinking a cup of coffee after a big meal then taking a short 'power nap' of around 15 to 20 minutes maximum will ensure immediate revitalization upon waking up, shortening the transition period between the low and high energy periods.[2] When transferring from a rest period to the next high energy opportunity, a splash of water to the face or a couple of jumping jacks will help to get the blood circulating and the focus flowing again. This will allow the natural energy cycle of the body to be worked with and not against, like running with the wind behind you, not against it.

[2] Naps have been linked to a plethora of health benefits, including increased vigilance, improved ability to add numbers, alertness, reaction times and logical reasoning. The space agency NASA found that if co-pilots took a twenty-six-minute nap their alertness improved by 82 percent. A study carried out by Professor Richard Wiseman for the Edinburgh International Science Festival suggested tat short naps can even boost our happiness. (Chatterjee, 2018, p. 237)

6 Summary

Although this text was written essentially to provide a guideline for anybody who wishes to apply for and compete seriously in an international music competition (in particular for percussionists) it merely outlines suggestions for possible solutions to common problems musicians face when undertaking such a task. It may be, however, that during the process of one's personal means of preparation, many of the issues discussed were irrelevant and therefore prompted no cause for action. If anything, this is reassurance that the player is on the right path towards achieving their goals and successfully preparing their chosen repertoire to the upper limit of their ability. However, it may still be of use to have understood and acquired the knowledge of the aforementioned methods, all of which are proven to have increased success rate either through research into studies, or through the author's personal experiences. It is then down to the discretion of the performer themself as to what is taken on board and applied and what is not.

The main message that the author hopes to convey, is the importance of realising and knowing oneself psychologically and physiolologically through experimentation and self-observation in practice, performance and throughout daily life, to improve the chances of successful performance whilst simultaneously improving one's general quality of life.

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Linz, 28.5.2020 Elliott Leo Gaston-Ross