

# Violin playing: teaching freedom of movement

by

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## ABSTRACT

The dissertation aims to direct the violin teacher and/or performer towards self-analysis. The point of focus in teaching and performing should constantly be the question of whether "freedom of movement" will result. Posture, and how to correct incorrect posture, is discussed. Thereafter, the best ergonomical solutions as to how to hold the violin and bow free of tension are sought. Movement is then studied. Freedom, and spontaneity in movement to music, should have been established in a very young child, long before he/she takes up an instrument. This will minimize the later-developing movement tensions and concomitant problems.

Technique is researched in order to find positions where movement can occur freely and without any hindrance, and the possibilities of changing incorrect habits and habitual reactions are discussed. Teachers are encouraged to take note of physical differences in individuals; this has an impact on their playing techniques. Breathing is often neglected by violin teachers; inefficient breathing deprives a violinist from complete freedom of movement. Non-musical techniques that improve freedom, posture and balance are also discussed, e.g. the Alexander Technique. Violin playing and freedom of movement are ultimately influenced by a player's lifestyle habits. Physical body conditioning, relaxation activities, healthy practice and performance habits are explained with the aim of avoiding injuries caused by violin playing. The "Freedom of Movement" approach should, if assiduously applied, lead to violin playing in which higher achievements are reached, and with less effort.

## OPSOMMING

Die verhandeling poog om die violonderwyser en/of uitvoerder tot selfondersoek te lei. Die vertrekpunt van violonderrig on spel word telkens herlei na die vraag, of dit vryheid in beweging teweeg bring. Postuur, en hoe dit kan verbeter, word eerste ondersoek. Daarna word die houding en ergonomie met die viool en boog bekyk om telkens so gemaklik as moontlik en sonder oortollige spanning te wees. Dan word beweging bestudeer. Vryheid in beweging moet reeds as jong kindjie spontaan en natuurlik saam met musiek plaasvind, lank voor daar met die speel van 'n instrument begin word. Dit sal latere bewegingsspannings en -probleme voorkom.

Tegniek word ook bekyk deurdat gepoog word om die beste posisies te vind, vanwaar beweging dan sonder belemmering kan plaasvind. Moontlikhede om swak gewoontes en gewoonte-reaksies wat beweging beïnvloed te verander, word bespreek. Daar moet ag geslaan word op fisiese verskille van individue wat noodwendig verskille in violotegniek en ander aspekte daarvan teweeg bring. Asemhaling word dikwels afgeskeep en kan dan 'n violis van vryheid in beweging ontnem. Ander hulpmiddels en metodes kan ook gebruik word om postuur, balans en vryheid in beweging te ontwikkel, waarvan o.a. die Alexander Tegniek bespreek word. 'n Persoon se vioolspel en vryheid in beweging word uiteindelik ook deur die persoon se leefwyse beïnvloed. Liggaamsoefeninge, ontspanningsaktiwiteite, gesonde oefen- en optreegewoontes kan help om beserings as gevolg van vioolspel te voorkom. Die benadering van "Vryheid in Beweging" sal hopelik tot vioolspel lei wat minder inspanning verg, maar beter resultate en meer bevrediging bring.

- **KEYWORDS**

Music teaching

Strings

Violin

Violin technique

Violin accessories

Posture

Playing comfort

Ease of movement

Avoiding injuries

Practice

- **SLEUTELTERME**

Musiekonderrig

Strykinstrumente

Viool

Viooltegniek

Viooltoebehore

Postuur

Speelgemak

Gemak van beweging

Voorkoming van beserings

Oefening

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## CHAPTER 1

### INTRODUCTION

#### 1.1 Personal background

I was, for some time, under the tutelage of Natalia Boyarsky, during post-gradual studies (PGDip Performance) at the Royal College of Music in London. I was repeatedly encouraged to relax while playing the violin. The problem of how to play in the most relaxed way, without collapsing, has intrigued me ever since. Boyarsky has the approach that there is only one rule when it comes to playing violin: "freedom of movement". She recognises the individual differences in people and believes that for each unique body and person there is a unique technique that suits them. This unique technique is found when all movements can be done as freely as possible, without any obstructions. Students should investigate and study technique books, but only as an aid to finding ways and techniques that suit their body best. Thus, there is not a single set of rules that apply to technique – only one principle: to accomplish freedom of movement.

While beginning to pursue my own teaching career, I discovered that I needed to learn more about the body and its functioning in order to convincingly explain, both to myself and to my pupils, the newly found truth about violin playing and posture principles. Discovering freedom of movement involves the development of bodily awareness; this awareness provides access to a relaxed technique where only the necessary muscles are tensed in order to accomplish a movement. Knowing and appreciating what this change in self-observation had done for my own violin playing, it became increasingly important for me to search and investigate ways in which to further develop bodily awareness and to understand the processes, in order to make them more concrete for myself, and also to facilitate the communication thereof to my pupils. The research into this has led to this dissertation.

#### 1.2 General background

Only in quite recent publications is it possible to find more holistic approaches to violin playing, where physical differences and posture are taken into account. As Fanelli states (1997:87): "One's posture effects every physical action in playing [...]. I believe that the basic teaching profession in the last 30 years has moved on to the broader concept of developing a natural playing posture, free of excessive tension." One of the first important

publications is Galamian's *Principles of Violin Playing and Teaching* of 1962, where he refers to the physical differences in students; he encourages students to find, within their own physical limitations, the most comfortable and "natural" way to play violin. During the last decade the emphasis in specialist publications has increasingly fallen on tension-free playing and individualism.

It is only in the last thirty years that violin and other musical instruments' studies have been looked at from a bio-mechanical point of view. Techniques and theories are not applied as rigidly as previously. It is now generally accepted that all human beings differ tremendously physically and that no rule can be strictly applied to everybody. The modern approach is to find the technique that suits each person best.

Although external circumstances may cause tension in a player, this dissertation focuses on physical aspects of relaxation, rather than on treating psychological aspects of tension.

### **1.3 Motivation for this study**

This dissertation is intended to be of practical help to teachers and advanced students, where tension whilst playing stands in the way of students reaching their utmost potential. The approach will also prevent the manifestation of tension in beginner students. It is also targeted at older, more advanced students, where certain manifestations of tension are so habitual and sunken in over years of incorrect playing, that it becomes nearly impossible for those students to realise their potential. It furthermore aims to change the frame of mind of both teachers and students, help them critically re-evaluate the way they play and refine how they observe violin playing. When the principle of freedom of movement is grasped and practised, higher levels of musical achievement and fulfilment can be reached.

If the principles of freedom of movement and the methods necessary for achieving this, as laid out in this dissertation, are practically applied, then a change will be effected in the minds of both students – to rethink the way they play – and teachers – to observe violin playing in a more refined and holistic way.

Former leader of the Tokyo string quartet, Peter Oundjian once said: "To teach, one should know how a good hand should make a sound, how it should feel and move, and balance, how weight should be used." (Eisler 2000:30). It is impossible to teach freedom of movement without knowing how it feels to play in the most relaxed way and without being able to spot incorrect technique creeping in. Every violin teacher therefore has the

enormous responsibility of being aware of the many specific areas of danger that go together with violin studies and performance. Thus, knowledge about body functioning should be obtained.

#### **1.4 The research question**

The principal research question of this dissertation is best summed up as follows:

- **How can the violinist best be taught to achieve freedom of movement?**

#### **1.5 The aims of the research**

The principal aim of this research into methods of teaching freedom of movement can be broken down into two components. These involve providing guidance to violin teachers on how to teach freedom of movement 1) in order to remove existing problems through rectifying postural and technical faults - remedial teaching - and 2) for ensuring that long-term problems do not accrue and that injuries do not occur.

##### **1.5.1 Remedial teaching**

The ideal situation is that a violinist's first teacher will start the beginner correctly, focussing on posture and maximum relaxation. It is obvious that good habits should be formed right from the beginning. Birkedahl (Brown 1997:17) states that "Seeds [for misuse] are set the first time a student picks up an instrument." Unfortunately, most of the time something goes wrong; e.g. a bad habit creeps in through long orchestra rehearsals, or a child grows rapidly during teenage years and develops a sloppy posture. This dissertation aims to help students and teachers to self-observe and self-analyse, and to adjust continuously in order to keep their playing as free from tension as possible.

##### **1.5.2 Avoiding injuries**

The dissertation further aims to provide students and teachers with guidelines both for recognising the injury dangers associated with violin studies, and for how to avoid injuries by developing both good lifestyle habits and good practice habits. If the principles, as laid out, in this document are adhered to, injuries caused by playing the violin will be almost completely avoided.

An additional aim is to provide evidence for the need for an occupational therapist, physiotherapist and/or Alexander teacher to be employed at tertiary institutions, in order to professionally solve non-musical physical problems, working in collaboration with the instrumental teachers.

## **1.6 Delimitations of this study**

Although external circumstances may cause tension in a player (see Chapter 1.2), this dissertation focuses on physical aspects of relaxation, rather than on psychological aspects. Thus, "stage fright" and associated problems will only be referred to in passing.

The study does not compare different violin teaching methods or approaches. The ideas that are set out in the dissertation can be incorporated into any basic method, regardless of the music played or programme followed.

There is also no reference made to style, period, intonation or interpretation of music, but only to the physical movements made by the violinist. The approach, as described and discussed, will help students gain more control in all other areas of performance, once the playing is not hampered by physical interference.

## **1.7 Research methods**

As a violin teacher, the author has obtained considerable experience over the past few years. During this time copious notes were kept on the basic problems associated with the lack of freedom of movement while playing the violin – principally the problem of incorrect posture. Also, this aspect has been investigated more fully on an ongoing basis with current pupils even whilst writing this dissertation, continually cross-checking with the already accumulated material. Notes were ordered (see *Contents* pages) and reworked. The writings of authoritative writers were scoured for extant information and recommendations which back up the arguments and findings of this dissertation. These were inserted into appropriate places in the text.

## **1.8 Sources**

Most of the sources quoted in this dissertation were published after 1990. Thus, whilst this dissertation is intended to contribute to that research, the scarcity of printed material to back-up the arguments and comments sometimes proved a limitation. The study of body

mechanics is still a new field and intensive research still needs to be done. In the near future there will almost certainly be an enlarged body of literature that will shed more light on the mechanics of the body when playing an instrument.

### **1.9 The organisation of this dissertation**

Posture is first looked at as a separate issue, *without* the interference of the violin. Thereafter, incorrect posture is addressed and solutions to correct it are provided. Awareness of the body is linked to the whole concept of correct posture and freedom of movement. Thereafter the players' posture holding the violin, both in standing and sitting positions, is investigated. Where the violin interferes with the free movement of the body, ergonomic solutions and visualisation are suggested in order to solve associated problems.

Major teachers of movement (Kodály, Orff, Dalcroze and Laban) and their approach to movement and music is briefly discussed. Subsequently, movement teaching and violin playing are linked, in order to describe accurately how a student can play violin without interference. Violin technique is then discussed in detail, according to the principle that movements should always be done with the greatest ease.

In order to re-train movements, visualisation methods are suggested and described, and methods for stopping habitual reactions discussed. Physical and age differentiations are listed and breathing is discussed as a subject that can enhance freedom of movement. Non-musical approaches or techniques that could enhance free movement and better posture are briefly discussed.

The final chapter discusses the general and specific benefits of both playing with and teaching freedom of movement.

## CHAPTER 2

### AWARENESS OF POSTURE

#### 2.1 Proper posture

The dissertation starts with posture, because as Havas (1995:20) stated: "Every artist knows that only out of order can there be true freedom". And according to Polnauer (1952:303), faulty posture may interfere with body mobility.

Turisi (Fanelli 1997:87) emphatically states that good posture should be stressed immediately in teaching beginners, for posture is an element that could be corrected in older students only with great difficulty. Cello teacher Anna Shuttleworth emphasises this point: "A teacher has to understand the development of good or bad habits, especially concerning body usage which tends to get fixed at a very early stage and so needs constant attention to free movement" (Talbot 1997:982).

Sweigard considers posture in terms of the design of the skeletal framework and its ability to conform to the mechanical principles of balance in order to maintain an upright equilibrium (Medoff 1999:212). The posture should not be thought of as being static, but as a dynamic and comfortable way of being. The correct standing posture according to Paull & Harrison (1997:44, 51) is as follows:

- i) Stand as tall as possible.
- ii) Relax the shoulder girdle.
- iii) Breathe normally.
- iv) The head should be balanced on the neck, and not jutting forward.
- v) Lifting the chest bone (sternum) helps to stand erect with less effort.
- vi) The stomach should be tucked in.
- vii) The knees should be straight, but not locked back.
- viii) Weight distribution: slightly more to the front of the feet than back.
- ix) Two curves (lordosis) should be present in the spine: one in the neck area and one in the lower back.

When sitting with proper posture, the back should have the same position as when standing. A suitable chair should be chosen that ensures that the knees are lower than the hips. The player should balance equally on both buttocks and place the feet firmly on the ground. Paull & Harrison (1997:60) believe that a kneeling chair is still the best design for a working chair, for it combines the forward tilted seat with a shin rest, which takes weight from the spine and improves circulation to the legs.

## **2.2 The value of proper posture**

“Whether beginner or professional: one’s posture effects every physical action in playing” (Fanelli 1997:87).

### **2.2.1 Breathing**

Turisi once said: “Because posture is fundamental, we should begin with it [...]. If posture is poor, breathing, which is so critically important to performance, is certain to be poor also” (Fanelli 1997:87). When one’s posture is correct, breathing comes naturally. (See also Chapter 4.6.)

Due to faulty posture many violinists’ right side rib cage contracts more than the left when they are playing. Poor breathing limits string players’ technical and musical freedom, tone production and ability to listen. A closed-in standing position, with the shoulders close together, will result in a very tight and small sound projection as well as poor breathing. However, if the violinist stands upright, with shoulders back, the posture will be conducive to a good and full sound, as well as to proper breathing. (McGovern 1999:725; Weinstein 1995:126.)

Man is structured so that the maximal use of air comes about in the standing posture, as when running or fighting for life. Standing offers the greatest ability to move large volumes of air in and out of the lungs. The sternum is actively involved in taking a full breath. When playing with the upper body leaning backwards and the head stretched forwards, then the sternum cannot be moved properly, and a full breath cannot be taken. When one is leaning forwards, the diaphragm has difficulty in functioning properly. A player should thus be in the upright position, with proper posture, to be able to breathe as freely as possible (Kelly 1997:19).

### **2.2.2 Comfort and endurance**

The holistic approach to posture is inseparable from the manner in which we correct playing problems (Fanelli 1997:87). Good, relaxed posture results in a freedom in the use of the player as a whole, adding a quite unusual degree of flexibility and ease in the use of the arms, hands and fingers (Ben-Or 1995:94). There is a relationship between good posture, the proper use of the hands and arms, technical facility, and efficiency in playing. Good posture further avoids the various pains and discomforts that players often suffer in their backs, shoulders, arms and hands (Weinstein 1995:126). Cole (1998:56) also encourages balance, where knees and feet are not locked, for, according to him, they are the roots of good technique.

Standing correctly with proper balance is also less tiring and one can endure longer performances (Weinstein 1995:127). Paull & Harrison (1997:50) also mention that the correct curves in the spine will protect the discs of the spine in the overworked areas. Good posture also takes the strain off the rotator cuff muscles, sometimes an overworked muscle in the shoulder of violinists (Paull & Harrison 1997:79).

### **2.2.3 A sense of presence**

A person with proper posture comes across more convincingly and with more self-confidence than someone with poor posture. For a musician during rehearsals with other musicians, it is important to come across as being self-assured. During performances a sense of presence is also important in order to create communication with the co-musicians and audience.

### **2.2.4 Balance**

The advantage of proper posture is that minimum effort, in the form of muscular work, is needed to maintain balance (Medoff 1999:212). When the body is well balanced, the spine closely approximates the centre axis of the body through which weight falls. The weight of the head, shoulder girdle and rib cage is transferred to the spinal column and carried downward to the pelvis and then to the legs. Weight transfer through the body is cumulative: therefore it is essential to properly position the pelvis, which is at the base of the spinal column. When the trunk is well balanced, weight flows easily downwards, through the long balanced curves of the spinal column. (Medoff 1999:213.)



Violin pedagogue Paul Rolland emphasises that the body must be lightly balanced at all times so that all of its parts are free to move. He warns of "static tensions" which create excessive and unnecessary strain. Such tensions adversely affect natural movement and co-ordination and interfere with proper breathing mechanics. (Medoff 1999:212.)

According to Medoff (1999:214) when the player's body is properly aligned, it is centred and balanced. This allows movement to be realised without overexertion and stress; therefore the movement is free.

### 2.3 Incorrect posture

When the violin seems heavy, it is a result of bad posture and distorted balance (Havas 1995:22). Alf Nachemson proved scientifically that, in both sitting and standing, when bent forward approximately 50% more stress is put on the lower back than when the body is straight (Paull & Harrison 1997:56). Tilting the violin downwards to the left when holding it causes a sideways curving of the neck and a twisting of the torso downwards and round to the left. This causes a compression of the left side of the rib cage and of the lower back. Too much pressure on the left hip and knee causes the pelvis to tilt downwards to the right - a condition known as *scoliosis*. This faulty posture results in a restriction of movement in the neck, ribs, hip joint and knee joint. This in turn interferes with the free movement of the left arm and reduces the capacity of the left lung. (McGovern 1999:724-725.) (Also see Chapter 2.2.2 and 4.6 about Breathing.) Many violin teachers ignore the lower body while focussing on correcting the upper body posture and mechanics. However, biomechanical faults of the upper body often are due to improper alignment of the lower body, particularly the pelvis.

Shoulder lifting is a common problem that usually occurs in combination with a poor use of the head and neck in relation to holding the violin. This habit severely limits the freedom of the left arm and shoulder and could potentially lead to injury. It also has an undesirable effect on the tone produced.

Polnauer (1952:303) also mentions that the bending forward of the trunk causes lifting of the right upper arm which in turn decreases the natural arm weight bearing down upon the bow. This usually leads to an increased muscle tension in the right hand in order to maintain sufficient bow pressure. This is particularly undesirable as it inhibits freedom of movement.

## 2.4 Correcting posture and changing habits

In most sports disciplines, correct posture is attended to before any further steps are taken. In studying music, attention to poor posture is usually only given when things are going wrong. Often, by that time it is nearly impossible to change the ingrained misconceptions and eliminate the bad habits. As Benham et al (1996:126) put it: "When people misuse themselves, they are confirming themselves in that misuse." In order to change habits and correct posture we need to re-educate ourselves. Weinstein (1995:126) argues that violin teachers do not pay much attention to posture as such, as they are seldom trained in physiology. The other reason for not correcting posture, is that the improvement in playing is not always as immediate as in sports disciplines. It usually takes longer to overcome bad habits in violin playing than in sports activities, for the relationship between poor posture and playing problems is not as readily apparent.

It is very difficult to deal with an adolescent student, where posture has been neglected; it takes an enormous amount of courage from both the teacher and the student. The teacher should encourage the student to become aware of posture in all activities. When correcting posture it is important to keep in mind that the misuse of a particular part, like a finger, wrist or shoulder, cannot be corrected independently of the structure as a whole. The parts of the structure are invisibly interrelated and react as an indivisible whole. Awareness of the holistic nature of the body is necessary in developing a natural body posture when playing (Fanelli 1997:87).

Each player needs to find and develop ways to check the bodily position. Players will often be convinced that they are not lifting their shoulder, for instance, when they actually are. As McGovern (1999:725) states: "Unreliable sensory appreciation is one of the side effects of poor bodily use." A player who is watching the left hand while playing, might be pulling the instrument in front of him/her. Lieberman (2000:40) advises that a player should rather practise with eyes closed, in order to finely tune the sense of kinaesthetic awareness. She further points out that the violin is a tactile instrument, not a visual one. Kendall uses cues such as "lift the sternum" to address posture. He also uses exercises to lengthen the spine, avoid the forward chin and unlock the joints. (Medoff 1999:212.)

Developing a natural, balanced body posture when playing is a long process, demanding careful observation from the teacher. But most importantly, self-observation and experimentation by the student are necessary in order to gradually overcome wrong habits and correct newly developing incorrect habits, before they are deeply ingrained.

## **2.5 Activities that correct posture**

As will be seen in Chapter 4.7.2, a non-musical activity like archery, could help violinists understand the way their bodies work in playing the violin. It will become clear that by using the skill of archery, or other activities, their posture could be more readily improved.

When a student's upper body bends backward from the waist and the head leans forward, Paul & Harrison (1997:52) recommend the following procedure: Place one foot on a stool or block; both feet should be flat. This should straighten the back. A student can practise standing like this in order to become aware of the correct position of the back.

The very act of violin playing could interfere with a student's posture. A pleasurable way to develop the student's awareness of balance and a more relaxed back and shoulders is as follows:

- i) In a group class, students should take the shoulder rests off their violins.
- ii) Then they should lie down, their backs flatly on the ground, with knees pulled up.
- iii) The teacher then places the violin vertically on each student's collarbone, the students holding the violin's neck vertically in the air, and keeping the shoulders and back on the ground. (Visualise the shoulders sinking into the floor.)
- iv) The teacher places the bow in the bow hand.
- v) The students play a few notes and passages for a few minutes concentrating on the feeling of the arms and back, and becoming aware of the violin's weight, and the weight of the arms supported by the back. It should be imagined that the arms are planted in the back and they should be continuously conscious of the weight of the arms in the upper back.
- vi) When the students play in the normal way afterwards, they will have the feeling that the violin is weightless and that the arms' weight fall into the back. No extra tensions, pulling up of shoulders etc. should then interfere with the relaxed, balanced posture.

Another activity, namely the "Ragdoll Exercise", could be done after short intervals of practising:

- i) First, put the violin down.
- ii) Stand firmly on both feet, but do not lock the knees.
- iii) Relax the upper body and fall forward from the hips, letting the arms hang loosely. Try to feel the weight of the shoulders, arms and hands.
- iv) Slowly move to an upright position, using the muscles of the upper legs and pelvis, not the back.
- v) When playing the violin again, one should be more aware of the weight of the arms, hands and shoulders. If done continually this exercise should help to get rid of unnecessary tensions interfering with posture and balance.

## **2.6 Body and spatial awareness**

Different people use different ways in which to obtain bio-feedback or self-observation. (See Chapter 4.7.1 and 4.7.5.) A kind of body awareness and a consciousness of gravity and weight, as well as a spatial orientation and an awareness of sensation should be developed. The body should be poised and working as a whole from head to toe. Ben-Or (1995:94) prescribes becoming aware of undue tension and distorting interference in the head, neck and torso alignment, thus bringing about an improvement in the entire co-ordination. Mennen (2000:69) affirms that sensory education and development has never been stressed by teachers when training musicians. He uses the term Proprioception (placing the hand and fingers in space). Therapists should concentrate on proprioceptive acuity after an injury - also see Chapter 5.8.

Muscles are recognised as being sense-organs, apart from their other functions. When relaxed, muscle is soft, when activated it grows tense and tough (Szende & Nemessuri 1971:22). The sensation of muscular tension, or muscle sense, is communicated by nerve endings within the muscle and tendon fibres. It is due to them that we are informed of the position of a part of the body, and about the conditions established by, and characteristic of, a particular motion. Thus muscles become a sense organ which, by making us aware of position and motion, allows certain spatial orientation. The sense of touch or palpation is not restricted to the sensory endings: the impression gained is also coloured by the muscular tension.

There should always be a degree of muscular tonus, because over-relaxation might produce a flabby condition. One's body must be in an active state of tone and readiness for movement. The degree of tonus should, however, only serve to maintain body position and posture, and excessive tension should be avoided. (Szende & Nemessuri 1971:25.)

## **2.7 Summary**

Posture is the starting point from which freedom of movement is obtained. Balance can be maintained with minimum effort if the posture is correct. Other advantages are the ease of breathing, comfort, endurance and a sense of presence. Postural faults should be recognised and attended to before they are deeply ingrained. Every violinist should develop a kinaesthetic awareness in order to constantly maintain and/or improve posture.

## CHAPTER 3

### HOLDING THE VIOLIN AND BOW WITHOUT TENSION

#### 3.1 Holding the violin

Most string method books include diagrams and pictures of the position of the instrument and the bow grip. Rolland and Suzuki emphasise the importance of the position of the instrument and its relationship with the body. For them a relaxed upper body is top priority (Brown 1997:17).

The very act of holding the violin engenders an unnatural position, which could cause tension (Weinstein 1995:125). Physical tension could in turn result in the inability to communicate musically (Havas 1995:15). The teacher and student therefore have to find the most comfortable position for the violin, so that it does not interfere with the body's correct posture. The violin should never be clenched, for as McGovern (1999:725) suggests: "The violin is held in place by the controlled use of weight and not by muscle tension."

When positioning the violin it is important to notice that the violin balances on the shoulder and is held by the head. The head is heavy (7-8 kg in adults and proportionally more in a child) and is supported by the spine. The spine, which is a long thin column of bones, has two curves that balance one another and make the whole flexible and strong. It only functions properly if the curves are not exaggerated or flattened out excessively (McGovern 1999:724). This brings a great and vital challenge to violinists: to avoid exaggerating and flattening the curves of the spine, while holding the violin.

##### 3.1.1 Standing posture

According to William Starr (Grilli 1998:30), Suzuki was very particular about the stance of the children as they begin to play the violin. He arranged their feet in, what he felt, is the best natural position for violin playing. The optimum, most relaxed way of standing when playing - according to Masin & Kelemen (1982:29), McGovern (1999:724) and Medoff (1999:214) - is as follows:

- i) The feet are slightly apart, with the toes facing straight ahead.
- ii) The balls of the feet are carrying the body's weight (placed directly under the thigh sockets) - as also suggested by Menuhin (1991:24).
- iii) The knees are relaxed, slightly bent and in line with the thigh and ankle joints.
- iv) The pelvis rests on top of the thighs, neither pushed forward, nor tilted back. It is stabilised by a lengthened contraction of the abdominal muscles to prevent swaying the hips forward.
- v) The buttocks are pulled in.
- vi) The chest, upper back and rib cage are open and broad, not sunken and rounded forward.
- vii) The scapulae relax downwards on the back.
- viii) The shoulders should both be on the same level and not elevated – muscles above and underneath the shoulder blades pull the shoulders down and back. It is beneficial to lift the sternum and front of the chest, so that the shoulders cannot drop forward (Paull & Harrison 1997:79). There should be width between the shoulders, which are relaxed to allow weight to drop into the elbows. Weight falls easily from the shoulder girdle to the arms.
- ix) The neck should not collapse, but the head should be freely balanced on a fully lengthened neck and back. This will cause the body to continue to lengthen despite the burden of holding up both arms and the weight of the violin. (See The Alexander Technique, Chapter 4.7.1.)
- x) The neck should be relaxed, for the weight of the head on the chin rest is enough to hold the violin. No extra weight through the use of neck muscle contraction is necessary.
- xi) Teeth should not be clenched and the chin should be able to move slightly, so that the neck does not tense into a single static position.

When standing whilst practising, it is wise to sometimes walk around in the room, because it is healthier to move than to be in one static position.

### **3.1.2 Sitting posture**

A violinist's upper-body posture should be the same whether sitting or standing. As will be seen in Chapter 3.3, on ergonomics, the chair one uses is of vital importance in order to sit

correctly. A better chair should be requested when playing in an orchestra, for instance. If a chair is too high, books can be put on the ground for a footrest. A chair should be adjusted to suit a player's needs, not the player to the chair. If a chair is too low, Paull & Harrison (1997:103) recommend the use of wooden blocks under the legs of the chair, or a few cushions can be placed on the chair, or two chairs can be stacked on top of each other. When sitting, it is vitally important that the bow does not hit the right leg, when playing on the upper strings.

A balanced sitting posture according to Sweigard (Medoff 1999:213-214) is when the pelvis is vertical and balanced on the centre of the two rounded bones at its bottom. It is neither tilted forward, causing the lower back to sway, nor tilted back, causing the buttocks to tuck under.

Medoff (1999:213-215) describes a balanced alignment when sitting as follows:

- i) The feet are placed firmly on the ground.
- ii) The weight should be distributed evenly on both pelvic bones.
- iii) The lumbar curve assumes a forward curve.
- iv) The rib cage hangs down toward the pelvis.
- v) The *thoracic* curve is long and supple, not stiffened.
- vi) The shoulder girdle rests on top of the rib cage and the shoulders are relaxed. The chest floats up and the upper body widens.
- vii) To position the head, the spinal column lengthens upwards through the centre of the neck, as the head floats up to balance on top of it.

From the viewpoint of full body mobility, standing is preferable to sitting (Polnauer 1952:303).

### **3.2 Holding the bow**

"A dynamic grip is a flexible grip" (Polnauer 1852:303).

When holding the bow the player should feel connected to the bow and aware of the senses - there should be kinaesthetic awareness. Visualise a soft and sticky hand holding the bow. Find the natural position for the thumb by shaking the hand out and then turning the palm up. See at which finger the thumb naturally falls. The thumb should be opposite that finger when on the



bow. Curl the fingers in and stretch them out; if the thumb is at the correct spot, this flexible movement should be fairly easily executed. Keep experimenting with the placement of the thumb, until you find the place where you have the most mobility of the hand and fingers. Place the thumb on the leather for maximum mobility and then fit the other fingers, according to the principles just mentioned. Think of the fourth finger as falling deeply into the bow and curl the third finger around the bow. The second finger should lie on the bow at about the first joint and the pinky should be rounded on its tip and placed on top of the bow for best control.

Lieberman (1995) suggests putting the bow on the D-string and finger-creeping halfway up and down with the right hand along the bow. The bow should not be pinched between the thumb and fingers. There should be no "dent" in the thumb. See the thumb as a type of shelf on which the bow is leaning (Lieberman 2000:40).

### **3.3 Ergonomics – the importance of set-up**

Ergonomics is the relationship between people and their working environment, as it effects efficiency, safety and ease of action. For musicians it encompasses how they interact with their instruments. Whiting & Zernicke (1998:119) describe ergonomics as seeking to improve both the things that people use and the environment in which they work and live. Musicians need to arrive at ergonomic solutions that neither compromise the instruments, the playing thereof or the musicians' health. (Paull & Harrison 1997:97.) Heimberg (2000:30) states that: "The source of true comfort is a good body awareness and a well-practised technique, supplemented to one's instrument and surroundings". Thus one should maximise the controllable factors and thereby limit the undesirable ergonomic situations in performances, whenever possible.

Lewis (1998:26) rightly says that: "Rich as classical music is, a sensitivity to body mechanics or ergonomics isn't one of its strengths." Even as a wrong set-up can be disadvantageous to one's posture, the right set-up can help you develop and improve your posture. Our instruments are not holy - they should be adjusted to suit us, not us to them. Polnauer (1952:303) advises that the instrument must be so devised that the instrument will become a physiological extension of the body. Dawson (1999:100) states that there are many anatomically, physiologically, ergonomically and artistically correct ways to hold an instrument and each player must determine his/her own "right way". Rigidity of thought and adherence to

traditionalism must take a back seat to the pragmatism of comfort and efficiency. Unfortunately a certain amount of trial and error may be necessary in order to achieve comfortable and effortless playing, but the results certainly are worth the effort. Although it is common knowledge that we are all constructed differently, the violin's accessories, i.e. shoulder rest and chin rests, are designed as if we are all similar.

Lieberman (2000:40) states that an optimum set-up will not cause a mark in your neck and that a player should be able to move the chin and shoulders freely while still feeling secure. The set-up should be adjusted until the player feels extremely comfortable. There will then be a significant improvement of tone, because the optimum positioning for both hands to work and for the instrument to sing out has been created (Lieberman 2000:42). In severe cases where children have difficulty in holding the instrument or feeling comfortable with it, the help of an occupational therapist is advisable. The principle that the work must fit the worker, not the other way around, should be adhered to.

### **3.3.1 Shoulder rests**

People differ physically, especially in neck length and thickness. Masin and Kelemen (1982:31) state that a person with a neck longer than 5,5 cm (the height of the violin and chin rest together) is in need of a shoulder rest. The rest should allow the violinist's head and shoulder to support the instrument without the shoulder coming upwards and the head falling more than a few millimetres. "Adjusting a shoulder rest to suit the body of the player is an important part of the search for comfort" (Heimberg 2000:31).

When it comes to the old argument that any kind of support will reduce sound, Lieberman (2000:40) argues that today's equipment has been designed to make contact only with the edges of the instrument and should effect the sound less than a thick neck. If there is any truth in the argument of sound loss, some sound should rather be lost than the mobility of the body, which eventually will cause greater loss of sound.

Proper placement of the shoulder rest is of utmost importance to every player. One should not see it as a waste of time to carefully experiment until the perfect position is founded. Ideally the neck should not be straining to hold the instrument - the instrument should be as close to

the neck as possible. Whilst playing, the jaw should be relaxed, without the teeth being clamped.

A few guidelines for proper placement and manipulation of shoulder rests (Lieberman 2000:41) follow:

- i) The frame must favour ease of rotation of the left forearm, as well as the perpendicular placement of the bow to the bridge.
- ii) The angle of the rest should swivel the fingerboard towards your fingering hand, but not too far, so as to maintain a relaxed right shoulder.
- iii) It can be adjusted higher and lower on both sides.
- iv) Experiment with different positions at the back of the violin.
- v) *Kun* or *Bon Musica* rests are suggested for broad shoulders and *Wolf Forte Secondo* and other curved shoulder rests for small shoulders.
- vi) For extra height, a piece of foam can be wrapped around the shoulder pad.

Unfortunately, the backs of only a few shoulder rests are able to bend. A good example is the *Wolf Forte Secondo*, which has been most helpful in suiting most of my pupils' individual shoulders. The bean shaped frame of this shoulder rest is made of a pliable metal, to enable the player to shape it to suit the individual shoulder. The height is adjustable on both sides.

### 3.3.2 Chin rests

In the mid-17<sup>th</sup> Century, chin rests, introduced by Louis Spohr, caused real controversy (Paull & Harrison 1997:98). Today, a chin rest should be user-friendly, otherwise it needs to be moulded until it suits the individual. The best, but not always possible, solution is to have one uniquely designed for the individual anatomy. Also, careful consideration needs to be given to where the chin rest is placed on the violin. McGovern (1999:725) advises that the head should be placed in contact with the chin rest without losing the full length of the neck and back; i.e. a person should maintain his/her full height. The full width in the shoulders and the free movement of the ribs in relation to the spine should also be kept.

Individuals with small shoulders may require a chin rest to be centred over the tailpiece. Chin rests can be further adjusted by adding either foam pads on the top for more support or a few

layers of cork under the rest's feet. It is most unlikely that these adjustments will have any effect on the violin's sound. Sandpaper should be used to tailor chin rests to a player's jaw size and shape.

### **3.3.3 Music stands**

A music stand should be placed, so that the centre of the page is at eye level. If a student is tall, place the stand on a box for extra height. In an orchestra or chamber music situation, where the stand must be lower, the eyes should be used to look down, rather than bending the neck. The music should be placed so that it can be watched without necessitating the neck being twisted from its position on the violin, and without having to peep over the violin. The music should be viewed through the space where both arms are out of the way.

### **3.3.4 Practical ergonomic solutions**

Ergonomic adaptations should be made to obtain a posture that is as close to anatomically correct as possible, allowing joints to function in as neutral a position as possible. Changes might take time to get used to, but should ultimately result in greater ease and comfort, for if something is good for the body it will be good for the playing. (Paull & Harrison 1997:98-99.)

In order to ease the bow grip, something can be slid over the bow stick to make it a little larger and easier to hold, i.e. latex clerks' thimbles (Heimberg 200:31).

There are many practical solutions for problematic chairs, i.e. the *Tush-Cush Cushion* used in wheel chairs, manufactured by *Kinetic Diversified Industries, Inc*, considerably improves any chair's comfort and is good for the back. Another cushion is the *Ergo Cush* by *Allimed*, which is ideal for sitting on different chairs, as it aligns the back and improves balance. (Q&A 1999:31).

### **3.4 Visualisation**

#### **3.4.1 Visualising concepts correctly**

Fischer (Dorner 1997:251) suggests that one should be able to watch oneself as if in an internal video, making the correct physical gestures and playing with ease and communication. Kelly (1997:17) suggests looking for easy answers all the time, finding simple ways to solve problems.

The energy required to play the violin originates from the back muscles. Visualise how the energy flows from there into the arms. This will prevent the shoulders being lifted from their sockets or being pushed forwards. Imagine that the shoulders are leaning against the muscles of the back, as someone would lean against the back of a chair. (Masin & Kelemen 1982: 26.)

To hold the bow, visualise holding a ripe, soft strawberry between the fingers - this will stop the fingers from holding the bow too tightly, thus interfering with mobility. For bowing, Suzuki (Grilli 1998:31) visualises the bow as an integral part of the violin itself. A danger is that a player could have the wrong mental picture of something and act accordingly. For example, if the concept that violin playing is difficult is held, then it will definitely effect the playing. If a student has the wrong mental picture about a movement, the correct movement is impossible.

#### **3.4.2 Visualising weightlessness**

Neither the violin nor its bow is made of lead; instead, one should be able to visualise that the instrument and bow have no weight at all. In this idea lies a big secret: If the violin is thought of as being heavy, there will be more strain in the way it is held. If it is thought of as being weightless, the movements will be less strained and free. Havas (1995:22) uses the imagery that the violin has wings out of the F-holes, so one does not have to hold the violin.

The pedagogues Masin & Kelemen (1982:32-34,41) use much imagery in their method book, which is a psychological help to the reader in understanding their statements. For example:

- i) Imagine the left arm is hanging on a string attached to the roof and to the left hand.
- ii) Imagine the bow is running on a railway.

Teaching can be more effective through the use of visualisation or imagery. By creating a tension free or weightless image, a movement can be done with the correct mental image, creating a movement, free of tension.

### 3.5 Summary

After proper posture has been established, holding the violin should not cause new tensions and postural faults, whether in a standing or a sitting position. People's bodies differ and the violin and other factors should be adapted to suit the person. The holding and positioning of the violin and body can only be corrected if a person has the correct mental image thereof.

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## CHAPTER 4

### MOVING WITH FREEDOM AND BALANCE

“Art depends on movement and flow” (Havas 1995:15).

#### 4.1 Consciousness of movement

Children enjoy free movement sessions, in which they are able to move in a relaxed uninhibited way. It develops their ability to move confidently and gain control over their body's movements and in due time they will respond accurately to musical rhythms and changes in music. (Dachs 1989:146.)

A child should not commence with violin lessons if he/she cannot move to music in an uninhibited way. During the past century, Dalcroze, Orff, Kodaly and Laban developed methods of nurturing musical aptitude in children in which they all incorporated, amongst other elements, movement. These methods form a solid music educational basis, before serious musical training begins.

##### 4.1.1 The principles of Dalcroze, Kodaly, Laban and Orff

Movement is fun. It is the ideal way to learn in a natural spontaneous way. Musical training is sometimes too intellectual and fails to teach students how to experience basic musical elements. For a child, movement holds advantages in physical development; these include co-ordination improvement, physical control, balance and grace, and promote a feeling of well-being. (Dachs 1989:134.)

It is for this reason that Emile Jaques Dalcroze (1865-1950) invented Eurhythmic exercises, which include: spontaneous body movements, exercises appealing to the powers of concentration that strengthen the balance between the nervous and muscular systems, harmonisation of bodily movements with those of the mind through free play, and expansion of imagination and feeling. Bachman (Medoff 1999:211) describes Eurythmics as the mobilisation of the mind and body. It transmits through the body, by means of movement, concepts that were acquired only intellectually and technically in the past. Dalcroze further stresses mind

control over movements. The mind is kept in an alert state through these exercises. The student's body becomes an instrument as he/she hears, analyses, internalises and becomes one with the music. The approach calls for a high degree of co-ordination. (Dachs 1989:20-22.)

Movement forms an integral part of Zoltan Kodaly's (1882-1967) approach to music education. Singing, movement and folk dancing provide activities for children to experience rhythmic and melodic patterns before staff notation is introduced. Dalcroze's Eurythmics are incorporated, but children move to their own singing, instead of moving to music played by the teacher. (Dachs 1989:34-35.)

The Hungarian dancer, choreographer, Rudolf von Laban (1879-1958) invented a system of dance notation, called Labanotation. The three components of Labanotation are body, space and effort (Medoff 1999:212). Laban published a book *Schifftanz* (1928), presenting the system, which crystallised many years of thought on the anatomy of movement. Laban's large goals are (Nash 1974:81):

- i) To guide children's natural urge to dance-like movement into a linear flow of movement and to understand the principles governing movement.
- ii) To preserve spontaneity into adult life.
- iii) To encourage creative expression and combine it with intellectual knowledge.

According to Medoff (1999:211-212), Laban gave to dance a structural foundation analogous to music: the spatial theory of movement and with it a point of departure. The so-called Labananalysis is part of several performing arts programmes around the world. It effectively teaches body and movement awareness in a manner that musicians can relate to and develop from.

The correlation of music and movement started to interest Carl Orff (1895-1982) through working with Mary Wigham, a pupil of Laban and Dalcroze. Therefore, in his elemental educational music, movement forms the basis. Through movement, basic rhythms are first experienced. He wished to give even more reality to his conviction that music should not be taught in isolation, but should be thoroughly integrated with movement, dance and theatre as



well as with speech, song and instrumental sound. (Dachs 1989:29,31; Krellman & Horton 1980:708-709.)

The world-renowned teachings of Dalcrose, Kodaly, Laban and Orff, always incorporate movement when introducing children to music. This forms the basis for their later musical development. Unfortunately most music programs do not include movement programs, therefore the violin teacher is forced to correct posture and movement mechanics.

#### **4.1.2 Incorporating movement in teaching and playing**

"Students must learn to move freely and economically" (Talbot 1997:982). But this is easier said than done, since violin playing is a "delicately differentiated high-grade muscular movement" (Szende & Nemessuri 1971:22). Nevertheless, at the Royal Northern College of Music's Junior String Project, the first year of training is devoted to foundation work, which builds the body and gives the children the basis of pitch and rhythms (Denton 1997:927).

Suzuki (Grilli 1998:31) made children march while they play, while not skipping a beat. In this way he gets the wonderful freedom of movement and sound which are his hallmark. Lieberman (1995) suggests creating a dance with the instrument. Therefore there must be freedom in the set-up when holding the violin, in order to allow the head to move sympathetically with the violin's movements. Phyllis Young advocates always starting the learning process by using the big muscles first and then proceeding to the smaller movements and muscles. By this learning process tension is avoided and control and freedom of movement are gained (Young 2001).

Master violin teachers John Kendall and Paul Rolland emphasise balanced posture and relaxed, efficient movement. Kendall advocated training the big muscles first, for it is more efficient to use the larger proximal muscles as opposed to the smaller distal muscles of the wrist, whenever possible. Rolland continuously emphasises balanced, relaxed posture and position, which allows movement to be free. Children and students are encouraged to move freely and balance dynamically through rhythmic and movement activities done to music. Similar to Dalcrose, Rolland believed that responding to the pulse and rhythm of music is essential in developing good movement ability. (Medoff 1999:210-212.)

### 4.1.3 Continuation of movement in the whole body

Fischer (Fanelli 1997:87) has interpreted the body as a cinematic chain consisting of 6 different parts: the foot, shank, thigh, trunk, upper arm, and forearm with hand. Self-generating inside-outward drive is essential to music making and is achieved when every joint is in motion (Havas 1995:19). Lieberman (1995) mentions the same idea: "When we initiate movement from the correct link in the cinematic chain, all resulting motion will flow in an accurate, effortless fashion."

Isaac Stern compares ping-pong playing to violin playing in the film *From Mao to Mozart*. One cannot stop the arm movement abruptly after hitting the ball: the movement has to be followed through. Injuries may result if movements are stopped when they should continue. The same applies to playing the violin where there is a continuation of movement - the one leading into the next. Havas (1995:22) calls the follow-through movement a horizontally directed rhythmic impulse. With regard to bowing, Masin and Kelemen (1982:47) suggest: "We should imagine we are still playing an up bow long after we have passed the critical moment of change."

The whole body should be part of this continuation of movement. If any part of the body is immobile, it will restrict the free movement of the other parts. Havas (1995:16) even mentions that tension resulting from static hands could effect the whole body. When all parts of the body are free to move, the player acquires smoother bowing and shifting skills, gains endurance, and experiences a feeling of ease and comfort. Paul Rolland (Fanelli 1997:87) relates that the importance of considering the whole body in the performance of musical or physical skills cannot be overemphasised. He further states that sustained immobility in any part of the body results in static tensions, which hamper natural movements and co-ordination, and cause a feeling of discomfort. "Total body action" is a concept used by Rolland to emphasise that the whole player is involved in the act of playing the violin (Medoff 1999:212). This includes the fine, almost undetectable movements of the body, which occur when the player is well balanced and relaxed.

Carl Flesch mentioned static tension in his book of 1923, *Kunst des Violinspiels*. He mentions habitual cramping contractions of the base of the thumb in the left hand, but gives no solution as to how to overcome it. Today we know that the involuntary movements are only a symptom

of an already global problem, originating in the development of a movement which deviated from the natural way that the body moves.

The principles of sport can be applied to violin teaching. Sports research can, for instance, help to establish the origins of cramping contractions. Nevertheless the phenomenon is not always scientifically explainable, for sometimes tension has a psychological origin, or lies in the personality of the person (Dannemann 1997:21-22). This aspect though, falls beyond the scope of this dissertation.

## **4.2 Movement education**

Movement education should begin before children begin to play an instrument. Then should continue throughout their musical training. (Medoff 1999:218.)

### **4.2.1 The importance of movement education**

The advantages of providing young children with movement experience are (Medoff 1999:210):

- i) Children are kinaesthetic learners.
- ii) Important musical concepts, rhythm, dynamics and phrasing can be learned through specially designed movement exercises.
- iii) Children who learn to enjoy movement are less likely to become locked into static playing postures.

According to Blattert & Kraemer (1997:19), the science of movement education is of essential importance to any professional musician and should be included in the syllabus of music courses. Lieberman (1995) adds that self-knowledge is the key to effortless technique. For the musician, it means being versed in basic anatomy and the physics of motion. If musicians are educated in movement skills, their tendency to become injured will decrease significantly (Spire 1989:162). In humans all voluntary movements need a process of apprenticeship, where the learning process consists of repetitions leading, by way of successive approximations, towards the desired goal (Spire 1989:160).

Individualism and expressiveness are encouraged through movement to music. By moving to the music as it is heard, children realise the inter-relationship between time, space and energy. Since established movement habits are difficult to change, it is optimal to recognise and correct postural and movement faults before they lead to poor playing habits and injury. (Medoff 1999:211,213.) Ideally, teachers should work with the students/children in collaboration with a movement educator, through all stages of development.

#### 4.2.2 Bio-mechanical concepts

Bio-mechanics are concerned with the mechanics of the body, namely (Polnauer 1952:299):

- i) Statics: considering posture,
- ii) Kinematics: considering geometry and time (e.g. arm motions), and
- iii) Dynamics: dealing with the effect of unbalanced external forces or muscle forces.

All concepts of general mechanics are included, such as inertia, momentum and Newton's law of action equal to reaction, with all being applied to the living body.

Movement is essential to life. In mechanical terms there are two forms of movement (Whiting & Zernicke 1998:41):

- i) Linear motion – the body moves along either a straight line or curved line.
- ii) Angular/ rotational motion – the body rotates about a fixed line (axis of rotation).

Human movement can be viewed from differing perspectives (Whiting & Zernicke 1998:42):

- i) Internal – mechanical factors that produce and control movement work inside the body, e.g. stability is provided by ligaments surrounding the joints.
- ii) External – mechanical factors that effect the body from without.

In the motor system the main structural elements are the following (Szende & Nemessuri 1971:22):

- i) the solid framework divided into sections by the joints,

- ii) the muscle system, generator of motions,
- iii) the nervous system also governing muscular function, and
- iv) circulation, the system also satisfying the metabolic needs of the motor system.

These work together as a whole in the generation and maintenance of motion.

For any body there exists a point, known as the centre of mass (Whiting & Zernicke 1998:41). As Medoff (1999:214) points out, the body's anatomical centre of gravity is located in the pelvis. The legs are attached directly to the pelvis at the thigh sockets and the arms are attached indirectly to the pelvis through muscle and fascial connective sheaths. Movement takes on form when it is initiated from this centre, and its shape is maintained if the central point of reference remains strong.

Therefore, when playing the violin, the whole body is involved in adjusting to maintain this central point of reference. As mentioned in Chapter 4.1.3, Fischer calls it "a cinematic chain". Every part should be free to move in order that movement in other parts is not restricted. In total, harmonious body motion there exists an optimum of body mobility. (Polnauer 1952:302.)

### **4.3 Teaching technique that does not restrict movement**

As can be seen on Lieberman's video *The Violin in Motion* (1995), she is convinced that: "The key to creating release is motion. The key to creating motion is through dispelling the unfortunate notion that you are on a quest for the correct (static) position. Try searching for a place at which anything can happen." She further mentions that one's standard of movement is based on individuality, and that each individual has to find ways, where movement can happen freely.

Avoidance of strain and unnecessary tension must be a constant consideration when teaching or learning technique. Rabbath (Fanelli 1997:88) said: "In order to get the best out of one's instrument, the player must become aware of the natural position of his body in order to encourage the use of his inertia." Dannemann (1997:22) recommends that teachers should identify with their pupils to give them the best advice on playing in the most tension-free way.

Dorothy Taubman's approach to piano playing can be applied to violin playing (Feeney 1998:47). She began to uncover the language of the apparatus - the hands, forearms, and fingers - and showed students how to use them in the most natural way. Through this study of motion Taubman developed a pedagogy that allows pianists to move freely without struggle or tension because each part of the playing apparatus moves naturally. Instead of something to struggle with or to conquer, the instrument starts playing the player. Guiding a student to find his/her own individualised, tension-free technique, becomes an exciting exploration.

#### 4.3.1 Bow movement - string crossing

(Also see Chapter 3.2 about holding the bow so that it does not interfere with free movement.) In order to find the most natural movement for a student's arm when crossing strings: place the bow near its middle on the A-string, so that three sides of a square are formed by the bow, forearm and upper-arm. (The exact placement of the bow, will differ depending on the length of the student's arms.) Lift the whole square (the wrist should not bend but remain straight in a line with the forearm and wrist) to the G-string (move the square as a unit), then drop the square to the E string.

Diagram 4-1



When playing a passage that alternates between two adjacent strings, as in Example 4-1, it is advisable to hold the elbow at the height of an imaginary string in the middle of the two actual strings. In this example the elbow is held at the height of an imaginary string, between the A string and E string. A full legato sound is achieved by a subtle up-and-down movement of the wrist and fingers, rather than that of the elbow and upper arm. Without the violin, the right hand can be waved - the way a person would wave "bye-bye". Thereafter, the same movement should be used when playing on the violin, alternating between two strings. At the heel of the bow the movement would be smaller than at the tip of the bow.

Example 4.3.1 J.S.Bach: Sonate in e minor, BWV 1023, mm. 6-11

When playing broken chords, over three strings, the elbow should be at the height of the middle string. A chord on all four strings, when broken into two chords, will require the elbow to be in the middle of the two lower strings and then fluently move down to the middle of the two higher strings. The disturbing jerking sometimes heard when violinists play chords should be limited to certain modern composers' music.

Here are a few guidelines to develop smooth string crossing:

The right hand and bow:

- 1) Start angling the bow to the next string, while still on the previous string. This could be practised with the "fist-grip" method, described in Chapter 4.3.5.

- 2) When crossing to a lower string on a slurred down-bow, the wrist remains straight or bends slightly downwards.
- 3) When crossing to a higher string on a slurred down-bow, the wrist remains straight or bends slightly upwards.
- 4) When crossing to a lower string on a slurred up-bow, the wrist will bend upwards slightly.
- 5) When crossing to a higher string the wrist becomes straighter or bends slightly downwards.
- 6) When crossing from an up-bow to a down-bow, the fingers become extended and the wrist bends upwards on the up-bow. On the down-bow the wrist becomes straight or bends slightly downward and the fingers curl in.
- 7) When crossing from a down-bow on a lower string to an up-bow on a higher string, the wrist is straight and fingers curled in on the down-bow. On the up-bow the fingers are extended and the wrist is bent upwards.
- 8) When crossing from a down-bow on a higher string to an up-bow on a lower string, the wrist bends upwards very subtly and the fingers extend slightly.

The left hand:

- 1) Keep the left hand finger last used on the previous string down, until the following note on the next string sounds.
- 2) Put the left hand finger down, on the forthcoming note, while still playing the previous note.
- 3) If the same finger is consecutively used on both strings, the finger should crawl/slip over to the next string, without being lifted. If possible the finger could press down both strings, from the start of the first note.

#### **4.3.2 Bow change**

Finger elasticity and sensitivity is of the utmost importance, to ensure smooth bow changes as well as string crossings. All the fingers of the right hand should be able to bend when needed and be supple. To accomplish this and to keep the fingers in supple condition, see the recommended exercises in Chapter 5.3.3.

At the heel, the thumb, fingers and wrist will bend slightly to make the change smooth. The wrist should be turned to the nose, without over-flexing; so the placing of the elbow will be approximately on the height of the string. Keep the shoulder relaxed and experiment with the placing of the elbow; find the most comfortable position. Fischer (2000:1120) says that the



bow hand is commonly likened to a system of springs: the fingers and thumb act as shock absorbers to different types of contact on the strings. For more flexibility the fingers can be curved. This is also achieved by placing the tips of the thumb and fourth finger on the bow in order to have more curved fingers.

At the tip, the wrist, thumb and fingers have to make such minute movements that one needs only feel slight flexing. Visualise the skin of the wrist being pulled forward by a string in the direction of the violin, with the shoulder relaxed and the elbow following. Again, experiment with the height of the elbow, finding the most comfortable position and place where there is the most control. Students with long arms, and with arms hanging further away from the body than those of most other students, usually hold the elbow naturally lower than students with shorter arms.

#### **4.3.3 Up-bow movement**

Starting at the tip of the bow: the pinky of a person with short arms, will be hanging and only coming down onto the bow during the course of the movement (Masin & Kelemen 1982:39). The arm will start bending at the elbow. Around the middle of the bow the fourth finger will start counter-balancing the weight of the bow while the upper-arm moves the bow to the nut. The bow should be kept parallel to the bridge at all times. Mental tricks suggested by Masin and Kelemen (1982:44) are: Imagine the bow being pulled on rails, and, feel how the arm is always gravitating towards the body. The knuckles could be slightly straightened during the up-bow movement (Fischer 2000:1120).

#### **4.3.4 Down-bow movement**

The sequence of the downward motion is: First move the upper arm down (unbend the shoulder), then open the elbow as the balancing point of the bow is approached, and extend the forearm until the bow reaches the tip. Fischer (2000:1120) suggests lowering the knuckles with the down-bow movement.

To obtain tension-free bow movement Phyllis Young (2001) prescribes that one should draw the bow in the air above the strings, as if playing. While doing so, shake the bow slightly.

Playing in the air has no resistance and the arm moves freely. By shaking the bow one minimises any tendency for the movement to become rigid and tense.

#### **4.3.5 Bow contact with strings**

In order to get the right feeling of playing into the strings, with natural weight, the author recommends the use of the “fist-grip” method as taught by Boyarsky (1997-1998):

Fold the fist around the bow and keep the hand, wrist and forearm in a straight line. Manoeuvre the bow within the hand so that it lies on the strings without changing the position of the hand. Start playing with this “fist-grip”, without changing the position of the hand. Only the lower two thirds of the bow can be used when playing this way. Use the natural arm weight only, by leaning through the fist onto the bow and through the bow onto the strings. This will give the right feeling of gravity that the arm should have when bowing; normal bowing will feel easier and improve if the “fist-grip” exercise is done regularly. No extra weight or muscle force should be used. The student should become aware of the weightlessness of the arm itself. Passages in which the student struggles to keep bow contact should be practised in this fashion until a clear sound is achieved on each note. Thereafter the passage should be played with the normal bow-grip.

To avoid fatigue during the normal bow-grip, the fingers, including the thumb, should be slightly curved – for curved fingers help in holding objects more easily (Paull & Harrison 1997:84).

#### **4.3.6 Left hand movement**

In single note and double stop playing, finger action should be stop-release, not stop-press. This is accomplished by practising with exaggeration. A phrase should be played slowly; pause after every note, where the string as well as the bow pressure is released (Fisher 1998a:1240-1241.) A whole passage could be practised playing harmonics, where the strings are only touched by the left hand's fingers instead of being pressed down. This will help to develop an almost tension-free left hand technique. Galamian (1962:24) mentions that the banging and pressing of fingers are apt to build tensions that are dangerous. Young (2001) prescribes a visualising concept to increase relaxation while playing: Imagine walking with the

fingers on the strings. The weight is transferred from one finger to the next. This way of thinking helps to relax the fingers not involved in the playing at the specific moment and the weight transfer enables a student to do vibrato, contributing to the freedom of movement in the left hand.

The ideal position for the thumb is the place where the fingers are on the fingerboard when they are relaxed (Lieberman 1995). In other words, the height of the thumb above the fingerboard, is the place where the other fingers, when slightly curved and moved from above, make contact with the fingerboard. A student should practise playing without the thumb and use only the natural weight of the arm, "hanging" the arm from the fingers, keeping the feeling of non-gripping when putting the thumb back on the neck. When practising with rhythms, one note should be played longer in the phrase, relaxing the finger during the long note, by easing its grip and barely touching the string. (Fisher 1998a:1114.) Galamian (1962:24) also stresses the flexibility of the thumb, for it is important for all facets of left hand technique, especially when shifting.

To practise chord playing where the pinky is involved, the pinky must be placed first, so that the hand position would favour the ease and placement of the pinky (Fischer 1996:1208). As a result, the hand will be rounded and relaxed, and the other fingers can subsequently be placed effortlessly. The left hand should never clutch, for it only stiffens the hand.

#### **4.3.7 Left wrist and arm movement**

To establish a free arm, elbow and wrist movement, put the left hand in first position and swing the arm from side to side. As the hand reaches the G-string, the elbow would be out to the right of the violin and, when it reaches the E-string, the elbow would be underneath the violin. The exact position once again depends on individual arm length and build. Galamian (1962:17) advocates that by means of two variables, namely the position of the elbow and the vertical adjustment of the hand, any hand can be positioned so that it is comfortable and can function efficiently. Once the student has established these positions for his/her own comfort, it should be applied to playing. It is much easier to play the fourth finger on the G-string with the elbow in the right position. Lieberman (1995) suggests a fluid and active elbow position and hand placement, to create the least tension and strain in the finger placements. Therefore, the

elbow should not be static, but smoothly and sympathetically follow the movements of the hand as it moves between strings.

It not necessary to twist the left elbow inwards to help hold the violin. The elbow is used to ensure comfort for the fingers on the fingerboard. If the left hand is on the G string, the elbow moves like a pendulum more to the right of the violin, and when it is on the E-string it moves in underneath the violin. How big this motion is, depends on the arm length of each individual person.

To minimise vertical finger action (the attack of the finger on the string from above) on the fingerboard, the wrist should be allowed to fall into its natural position, with the palm facing upwards. This in turn allows a lateral slantwise action of the fingers motivated from the base joints below the neck (Havas 1995:24). The following guidelines can be used to establish the individual form or angle of the wrist in the first three positions (Boyarsky 1997-1998):

- i) Sit at a table or other flat surface.
- ii) Rest the left hand, wrist and forearm up to the elbow flatly on the table.
- iii) Form a fist with the thumb outside and at the right side of the fist.
- iv) Take note of the angle formed at the wrist between the hand and forearm – that is the natural angle for the specific individual's left hand.

If the wrist is in this "natural angle" intonation will be more solid and finger movement more comfortable. In the higher positions the wrist should always be curved outwards, and the elbow should pull to the right.

#### **4.3.8 Harmony between the left and right sides**

If one experiences problems in moving hands simultaneously, make sure that the chest is open and not closed, in order to give maximum movement to both arms. (Also refer to Chapter 2.1.) Tension in one hand could effect the other hand. Polnauer (1952:503) believes that excessive tension in one hand stiffens the other hand simultaneously. Therefore only the necessary amount of tension should be used.

The left and right sides can sometimes work together by doing the opposite. The performance of double stops is an example where the left and right hand's functions are opposite and yet complement each other: The left hand must be as relaxed as possible, whilst the right hand leans with natural weight on the bow and on the strings (Fischer 1996:1208). Leaning into the strings implies using only natural weight, without extra muscle force. The result is being as relaxed as possible, but making the fullest sound possible.

There should also be a non-rigid frame existing between the left and right arm; when the upper-body turns slightly, both arms should move with it at the same pace. This also applies when the violin is moved up a little; both arms will move up to the same extent. The shape of the main frame may vary according to the string that is being played, but the basic outline of the frame will remain intact.

#### **4.4 Changing habits**

For Ivan Galamian technical proficiency is mental control over physical movement (Sand 1997:953).

##### **4.4.1 Changing physical habits**

Good habits should be formed from the beginning. How students are taught in their beginning years sets the standard for their future musical lives (Brown 1997:17). Unfortunately, many wrong habits are embedded from the beginning, due to faulty practice, wrong technique and posture overlooked by the teacher, and many other causes. One faulty habit causes the next, cumulatively inhibiting the development of freedom of movement.

When wrong movements have become habitual, and feel right and almost natural to a person, it is a major, nearly impossible task to change them. As Szende and Nemessuri (1971:136) state: "The development of conditioned reflexes begins instantly at birth, and contributes to the prerequisite of survival by the flexible adaptation of the organism to environmental changes". Repoche once said (Lieberman 1995): "We may idealise freedom, but when it comes to our habits we are completely enslaved. Still, reflection can slowly bring us wisdom. We can come to see we are falling again and again into fixed repetitive patterns and... slowly we can emerge from them and change." Many changes have to be made in the mind, before they can manifest

in the playing. Reflection, visualisation and self-observation are tools that help one identify these movement problems and to change them mentally, and thence physically.

#### **4.4.2 Stopping habitual reaction**

Fundamentally wrong habits of reaction and behaviour should be changed by first stopping one's habitual reacting (Ben-Or 1995:88). For instance, when a student jerks the head forward and backward to the rhythm of the music, let it instead be turned to the left and then to the right, while playing, to undo the wrong movement. If done regularly during practice sessions, the wrong habitual movement would most probably be eliminated within a few days.

#### **4.4.3 Changing incorrect bow hand habits**

##### **i) The right hand and fingers**

Many students cling to their bow as if it would fall when they start moving it. This tense bow hold could be solved by visualising the right hand holding the bow, as if it were living and flexible. The bow could also be visualised as thin and vulnerable. Fingers should be spread on the bow, not gripped or tightened on the bow. Try to release the hand so that the fingers are soft. Menuhin (Bath 1999:19) suggests holding the bow so lightly that it will fall if held any more lightly.

If the pinky struggles to be rounded on the top of the bow, try to exaggerate the movement, by locking it behind the bow. In this way the message sent to the motor-cortex of the brain is changed. Lieberman (1995) mentions creating new neuro-muscular patterns as a way to change a habit.

##### **ii) The right arm, elbow and wrist**

Wrist flexion is fine as a pre- and post-playing stretch, but prolonged playing in this position could cause pain and ultimately injury in the back of the forearm, elbow and hand (Paull & Harrison 1997:82). To eliminate such obscure and unnecessary movements, the arm movements should be broken up into two main movements: upper arm and lower arm movements. By practising in front of a mirror and keeping the bow parallel to the bridge, the

right feeling of bowing at the right place in the right direction should be inculcated. A face can be drawn on the back of the hand and then kept continually "watching the player" during practising:

Diagram 4-2:



One could further imagine that the arm is hanging on threads from the ceiling and that strings are pulling the bow arm at the back of the wrist for up-bows and on the palm side for down-bows.

#### 4.4.4 Changing incorrect habitual left hand techniques

The most common tension point in violinists is in the left thumb, and subsequently in the left hand and fingers. Whilst recovering from an injury, Peter Oundjian, the principal violinist from the Tokyo String Quartet, was forced to rethink and relearn violin technique (Eisler 2000:30). He used the image of spreading the fingers out, like the petals of a flower. It gives a feeling of

counter balance, the more they are spread out, and prevents the hand from tightening. Oundjian does not cramp all the fingers together when concentrating on the finger he is using, but spreads the fingers over the strings to distribute weight and balance between the fingers. While playing, the hands should be imagined as being as soft as those of a baby.

The finger muscles should be trained to release whilst playing. It is unnecessary to hold the fingers down forcefully, so they should be relaxed as much as possible without losing sound quality. Havas (1995:23) uses the image of not strangling the violin's neck, in order to get the hand tender. She further suggests stroking the violin, resulting in a fluid and mobile thumb. Lieberman (1995) suggests letting gravity pull the fingers onto the strings and then relaxing; or even practising a small part of a piece using only harmonics, in order to retrain the hand to use less strenuous finger placements. She advises thinking of the fingers as being floppy when playing.

Tense or tight "shifting" should be executed by imagining that the thumb is gliding along imaginary hair on the neck of the violin. An effective exercise for students to obtain relaxed "shifting" can be done as follows:

Play a harmonic in first position on the D-string with the fourth finger. Change to the third finger on the same note. Then alternate also the third and second, second and first fingers. Lastly alternate from fourth to first finger. Consciously relax the thumb at all times. (Lieberman 1995.)

#### **4.5 Physical and age differences**

Certain physical builds complement violin playing (Solomon 1995:4-5). Mennen (2000:67) suggests that teachers should be sensitive to anatomical variations. There are many different aspects to these variants.

##### **4.5.1 Skin types**

Some skin types can be described as "irritable". Irritable and soft finger tips can be hardened by applying Methylated spirits before and after playing, to harden the skin. Heimberg (2000:32) suggests the use of *NuSkin* to replace injured skin on the fingers. The wood of certain violins can cause a bruise in a violinist's neck. In order to circumvent this, the set-up should first be



checked (See Chapter 3.3), and a soft silk cloth or chamois can be put over the chin rest as an easy solution to protect the neck. If the condition continues, professional help should be sought.

Oily skin presents other problems. Hands with oily skin might be more healthy, but also more slippery. After a hand wash, apply a non-oily moisturising cream, which would, hopefully, in time condition the hand not to produce excessive oil. In severe cases of both oily and sensitive skin, a dermatologist should be consulted.

#### **4.5.2 Hand temperatures**

Some people are lucky to nearly always have warm hands, due to general good blood circulation and other factors. They are nearly always ready to play immediately. Even nervousness does not influence the temperature of their hands.

Other people have cold hands, most of the time. Cold hands' sensitivity is also lower than warmer hands. According to Markinson (Lewis 1998:28) it is very difficult to heal and maintain hands that are cold: "A warm handed person will heal twice as fast." Before cold hands and fingers obtain good mobility, a warm-up session for at least half an hour is necessary with the instrument. There are other solutions: The violist Don Erlich developed a warm-up routine that took him only five minutes, without the instrument. He could walk on stage immediately thereafter and play with maximum efficiency, whereas he previously had to warm-up for at least thirty minutes with his instrument. (Lewis 1998:32.) (See Chapter 5.4 for Warm-up suggestions.)

Violinists with cold hands need to wear gloves and dress warmly before, and sometimes during a performance in order not to become cold again. They should adopt the habit of self-massaging the fingers and hands, before and after practising and performing. (See Chapter 5.4). Circulation can also be improved by correct breathing: "While circulatory and cardiac functions are independent of will-power, respiration may be influenced by volition. This fact stresses the importance of respiration for the efficient function of our whole circulatory system" (Szende and Nemessuri 1971:97). Circulation can further be improved by exercising, and when taking a shower, alternate between hot and cold water.

### 4.5.3 Sweat

When the skin is moister, it is more adhesive and one has a more delicate sensation as opposed to dry hands. On the negative side, sweaty hands are stickier and problems might be experienced with shifting and changing position. Due to the fact that the violin is a tactile instrument, sweaty hands could also interfere with what the students feel. Applying baby powder on the hands could be a temporarily solution on very hot days. In severe cases where a student's hands are always dripping wet, a highly specialised nerve-cutting operation could be done. For some students, the operation has brought great relief, although the author is, in principle, against such a radical intervention.

The sweat gland's function is subject to autonomous nervous control and, according to Szende and Nemessuri (1971:137), all of the above depend to a significant extent on the momentary state of the central nervous system. This state is, to a large extent, under our conscious control.

### 4.5.4 The joints

Each joint in the body has a range of motion (ROM). This determines a joint's mobility. The magnitude of allowable ROM is both joint and person specific. (Whiting & Zemicke 1998:62.)

The condition of joint laxity (double-jointedness or hypermobility) stems from the increased elasticity of the ligaments, giving more play and less stability to the involved joints. The condition is essentially a genetic one. Mennen (2000:69) regards it as being a handicap for musicians and mentions two forms: a) Generalised - involving joints or tendons and ligaments - and b) Localised - involving a set of joints, ligaments or tendons or one joint, ligament or tendon. Brandfonbrener (1997:49) has consistently found a high incidence of musicians with hand and arm pain in the presence of a significant degree of laxity. Therefore, a violinist should be educated about healthy joint use, in order to prevent injury. A strong set of controlling muscles should be developed to strengthen the muscles around the joint and to correct muscular imbalances. Sometimes excessive effort may be needed to compensate for the tendency of the joints to collapse. Brandfonbrener (1990:372) advocates the practise of joint preservation techniques, to prevent ligament damage by strengthening the *thenar* muscles of the hand. These are the main gripping muscles of the hand. The *thenar* muscles

are at the base of the thumb and the *hipo-thenar* muscle is situated in the fleshy part of the hand beneath the pinky.

The author is regularly confronted in the studio by students who have the problem of a rigid straight thumb and pinky. They fail to keep these fingers curved, flexible and round, mostly because of double-jointedness. Sometimes the thumb and pinky nearly bend the wrong way. This adversely affects flexibility and technique in the bow hand. If the pinky is not kept rounded, balancing the bow remains a constant problem and *spiccato* could be out of the question. An exercise to strengthen both pinky and thumb is to practise picking up a pencil with all the fingers rounded. Tap with the rounded pinky on the pencil, without letting a finger collapse. Then turn the hand through 180 degrees and tap with the thumb on the pencil. Continue the process, tapping with pinky and thumb in turn. Over a few days, the strength of the ligaments can be built up by picking up heavier and heavier objects.

On the other hand, some observers consider laxity to be a protective as well as a facilitative feature for musicians. A number of famous musicians have had their virtuosity attributed to their joint laxity, a famous example being the violin virtuoso Nicolai Paganini.

Yet another condition, namely stiff ligaments or extra-tight ligaments, could result in a subnormal range of joint motion and this condition can also effect performances - especially of violinists. These latter individuals require a period of joint-stretching routines to gain and maintain a fuller range of motion (Dawson 1998:52). It seems that people with stiff ligaments usually have agile fingers, but have to exercise and frequently massage the right hand to gain more mobility in the joints and to obtain a more flexible bow hand. (Also see Chapters 5.4.2 and 5.4.3)

#### **4.5.5 Physical size and length of body parts**

Physical size is not considered a problem for the young beginner, for violins are made in many different sizes to fit the player. The author believes that a child or teenager should rather play for a longer period on an undersized instrument (if the tone is acceptable), than on one that is too large. If the instrument is too large, it could cause extra tension in the joints, neck, arms, fingers and hands of the student, having to stretch and strain to reach notes and to carry the heavy weight.

The student should learn to adjust to the positions where the arms, hands and fingers have the most mobility. If great difficulty is found doing finger stretches, it is advisable to play on a slightly undersized instrument. Students with long arms, who find violin playing uncomfortable and "squashed up", could consider changing to the viola.

#### **4.5.6 Muscular tonus**

Some students are tense and ready for action. If there is too much tension it will interfere with their ability. They need to re-educate their body and discover how to relax to a level where they are capable of excellence.

Over-relaxed students should consider participating in sports or an activity that enhances their alertness, agility and co-ordination, and increases their muscular tonus in general.

#### **4.5.7 Eye dominance**

If a student is struggling with posture problems, it is well-worth studying the use of his/her eyes. The teacher should inquire about eye defects or previous eye problems. Squint eyes are frequently operated on to solve the problem. If a child started to study the violin before this problem has been cured, it is quite possible that it would be difficult to solve posture problems that have resulted from it.

Cole (1998:56) suggests that students should not look at their fingers at all, but somewhere else, or play with closed eyes. The author had a pupil who locked his head to the right and forward, because of favouring the right eye, destroying his balance. He could look straight at the music only after an eye operation, but the bad posture, as a result of tilting the head far to the right side, did not remedy itself as quickly. We used visualisation to cure the problem: He had to imagine that a string hanging from the ceiling was pulling up his head, neck and spine. We also did an eye exercise: he had to look up and down, using only his eyes, not his head. He had to carefully place his music stand so that it engendered the correct posture and ensured that he looked correctly at the music.

#### **4.5.8 Connections between tendons**

Some students have problems because of the connections between their tendons, which make individual finger playing difficult or impossible (Mennen 2000:67). Massaging the hands and daily stretching can have effective results.

#### **4.5.9 Handedness**

The violin is designed for right-handed people, for more power is necessary in the right hand than in the left. But left-handedness has proved not to be a disadvantage, because of the skill, complexity and agility needed in the left hand. As a rule left-handed people will not play the violin the other way round, by bowing with the left hand and the right hand on the fingerboard. There are a few exceptions, where someone has injured a hand and has had to play the other way round.

In an interesting study among musicians by Aggleton et al. (1994:148), there was evidence of more left-handers and mixed-handers among musicians, when compared to the normal population. In a later study though, Aggleton et al. (1994:148) concluded that this pattern of results suggests that any left-handed musical advantage found in adults, only emerge in later years. One possibility is that left-handers and mixed-handers have, on average, a higher level of bi-manual co-ordination. This may lead to such people being more likely to persevere and take further musical training.

#### **4.5.10 Age differences**

As will be seen in Chapter 5.6 it is important to note that during adolescence children grow very rapidly, with the occurrence of misuse of the body peaking at age 15. These problems are sometimes also due to musculo-skeletal problems. Attention should continually be given to their violin's set-up, to adjust to their rapid growth.

The teenage years are also the time to enhance flexibility and acquire a relaxed technique, before stiffness, typical of late-adolescence, sets in. Massage and finger stretching should be part of the daily practice rituals.

Amongst others of the older, performing generation, Israeli violinist Pinchas Zukerman (born in 1948) always says that he practices constantly, because a player's hand as well as energy level changes from year to year (Eisler 2000:30).

#### **4.6 Breathing as part of violin teaching**

As seen in Chapter 2.2.1, breathing is critically important for correct posture, and technical and musical freedom. Even when teaching beginners, the importance of taking a breath before starting a piece and between phrases should be stressed.

The student should always concentrate on proper breathing during practice sessions, between phrases and when learning a difficult passage. There should always be an awareness of where one breathes and exhales, when practising. Under performance and stress situations, the breathing should be enhanced and controlled, this will provide better control over the nerves and the playing.

Some students stop breathing or only breathe shallowly when playing a difficult passage, causing them to become tense, as well as depriving the brain of sufficient oxygen. To breathe deeply with the phrases of music, gives a sense of control and calmness.

#### **4.7 Non-musical techniques to improve freedom, posture and balance**

Techniques of body relaxation and awareness play an increasingly visible role in the lives of musicians (Brandfonbrener 1990:376).

##### **4.7.1 The Alexander Technique**

The Alexander Technique has been described as being a psycho-physical principle, where the individual is seen as a psycho-physical unity (Barlow 1973:ix). It needs to be tailor-made for each individual, and involves working one-to-one with a qualified teacher (Comins 1999:24.) It is a new way of ordering oneself, involving keeping an open and alert mind; continually watching and wondering. By teaching the body musculature to function differently, many types of under-performance can be alleviated (Barlow 1973:xiii, xv). What the technique really comprises can only be perceived by direct experience.

The Technique directs one's attention to the person as a psycho-physical whole, with the proper alignment of the head, neck and spine. This is of central importance to human balance, co-ordination, movement and quality functioning as a whole. F.M. Alexander (1869-1955) described the alignment of the head, neck and spine as the "primary control", since it precedes and determines the co-ordination and use of all the other parts of the body. Movement becomes easier if one does not interfere with the "primary control". It frees the body to work more easily. Violinists are faced with particular problems in relation to the primary control, since the head, neck and shoulders are directly involved in supporting the instrument. (Gregg 1996:47; McGovern 1999:724; Ben-Or 1995:87.)

The Alexander Technique process is based on three stages (Ben-Or 1995:90):

- i) Inhibition of habitual reactions.
- ii) Instead, giving mental directions: e.g. "letting the neck be free, to let the head be released forward and up, to let the back lengthen and widen."
- iii) Proceeding with the chosen activity, e.g. violin playing, while continuing the "directions" without interfering with them.

"Relaxation" in Alexander Technique means getting the natural supporting postural mechanics working. It is aimed at releasing muscle tension. Unless the back is working well, breathing cannot happen in a relaxed way. Violinist Bill Benham has an exceptionally long neck and thus it took him ten years to apply the technique. He states that the usage of the eyes is crucial to Alexander Technique, something neglected by musicians, because we are so involved in what we hear. Musicians develop their hearing, but the vision is often neglected. (Benham et al. 1996:122-125.) Barlow (1973:xiii) mentions yet another sense that is involved: the technique relies to a surprising extent on the sense of touch. By developing the senses not usually associated with violin playing, one develops a new kind of body awareness and control.

"For any artist the self-knowledge which one can arrive at through the Alexander Technique would seem to be of inestimable value. And the freedom from disruptive tensions which the Technique affords can bring great relief and technical help." (Ben-Or 1995:95.) Anna Shuttleworth uses the Alexander Technique to help her students to use their bodies in a free, conscious way. Players should be able to give their bodies precise instructions as to how to

move. The focus point of her teaching style is: “freedom of movement combined with mental alertness - the idea is to maximise everyone’s potential.” (Talbot 1997:982.)

#### 4.7.2 Archery

A sporting activity such as archery, is highly acclaimed by many professional violinists. There are many similarities between the two disciplines, holding great advantages for the violinist (Kenneth 1997:413; Weinstein 1995:125-129):

- i) Both disciplines develop a higher level of concentration.
- ii) Both encourage relaxation.
- iii) Both improve co-ordination.
- iv) In both disciplines the arms are in the air and the arms have to be strong.
- v) In both, the holding of the bow should be firm but without tension.
- vi) Archery especially encourages the use of the back muscles rather than the hand and arm muscles, which is the way that the muscles should be used for violin playing.
- vii) Both encourage freedom from tension in both hands.
- viii) The follow-through motion is a central element of violin playing and archery, as it allows fullness of movement.
- ix) Stance and body balance are exactly the same for both disciplines, including standing upright and proud. A round-shouldered archer will not shoot as well as one with a strong back who stands upright.

Archery also holds the following additional advantages for violinists (Kenneth 1997:413; Weinstein 1995:125-129):

- i) It broadens the shoulders.
- ii) It is a stress relieving activity.
- iii) The method of preparing for a concert or an archery competition is similar.

Although there is a great deal of similarity between archery and violin playing, there is a difference in the size of the movement – although the much bigger movements in archery are able to positively influence the smaller ones used in playing violin (Weinstein 1995:125). Violinists who practise archery are able to make quick adjustments to their postures when



playing and are more able to avoid lapsing into old habits. Violinist Erez Offer (Weinstein 1995:126-127) stated that archery helped him in his violin playing and also helped him to understand himself in his playing.

Archery could benefit youngsters who are still developing their bodies. It will help them to develop an upright posture, which will not only help their violin playing, but also benefit them in later life (Weinstein 1995:129).

#### **4.7.3 Tai Chi**

Tai Chi is a form of exercise involving small continuous, flowing movements. When playing violin using Tai-Chi principles, a system is obtained where the body is flexible and the emphasis is on breathing. Small adjustments in position should be made continuously, instead of having a single static and rigid position. The weight of the instrument should be shared in turns between the left thumb, inner wall of the index finger, shoulder, collarbone, and chin. (Lieberman 2000:40.)

Menuhin (1991:18) describes his view of Tai Chi principles as having full control over small movements and of becoming conscious of each small body part. Only then is it possible to relax completely. Through this technique, movements and breathing will be smoother. A Tai Chi concept is the visualisation of physical movements being like the flowing movement of water; thus the body should imitate the movement of water.

#### **4.7.4 Yoga**

The type of Yoga under discussion here consists primarily of stretching and breathing exercises. It strengthens joints and improves balance and breathing. During violin playing Masin and Kelemen (1982:27) suggest breathing in before a phrase and out whilst playing the phrase. By using Yoga-breathing techniques, a person gains control over the breathing, and subsequently more control over the body. Yoga breathing was also highly regarded by Yehudi Menuhin.

#### 4.7.5 The Feldenkreis method

Feldenkreis was a physicist, engineer, mathematician, and an accomplished martial artist; therefore his teaching is strictly scientific both in content and in methodology. The method requires an openness of mind and the exercise of unbiased observation of self and of others, and is judged by the consistency and pertinence of results achieved through its practice. (Spire 1989:162.)

The Feldenkreis method is a learning process, from the student's point of view, which is not goal orientated but exploratory. The attention and energy are directed to increase the student's self-awareness and to experiment with different kinds of physical doing. It further addresses the movement aspect of doing and stresses that playing an instrument demands a highly complex use of the neuromuscular apparatus. (Spire 1989:160.)

The method gives students an opportunity to refine their sensory-motor appreciation for use in their musical life. It reintroduces many variations of movement and action into the learning process, where each variation includes an important element for the desired outcome of the movement. The more that gentle movements are done in the learning process, the more the student's ability to discern fine changes increases. Thus, a person learns to direct him/herself towards acquiring the optimal neuromuscular configuration to fulfil the desired outcome of movement. The speed of learning is also increased and the learning process is without physical or emotional trauma. (Spire 1989:162.)

Violin teachers can easily adopt and apply the general principles of the method; for example, force reduction when playing, in order to avoid fatigue. The systematic, gentle and global approach provides a person with both sensory and motor training, which will serve as important ingredients in high-quality performance. The method has been developed to enhance a person's ability to feel how he/she moves - the proprioceptive mechanism.

Paull and Harrison (1997:68) mention that one should learn to use the eyes in order to look down, thus necessitating less neck movement; Feldenkreis instructors also teach this concept.

#### **4.7.6 Medoff's Neuromuscular retraining of posture and movement**

If body mechanics are faulty, they must be corrected. According to Medoff (1999:210), this can only be accomplished by addressing the central nervous system, since it controls postural and movement mechanics. Medoff's method to retrain posture and movements is as follows (Medoff 1999:210):

- i) Relaxation (constructive rest) and diaphragm breathing.
- ii) Skeletal balance and movement co-ordination - it releases tension, corrects alignment and improves movement mechanics.
- iii) Centering (emphasising proximal control) and stabilisation (stabilises posture).
- iv) Lengthening - to maintain lengthened tension-free alignment.
- iv) Strengthening (building physical condition).

Strengthening is most effectively implemented once the violinist has internalised the four other concepts. Medoff's method is an effective strengthening program which is sensitive to the violinist's needs. It addresses posture and movement mechanics and helps the violinist develop the type of strength needed for extended violin playing.

#### **4.8 Summary**

Moving with freedom and balance to music has been the key element of many music educational methods and schools of thought. Violin teachers should include movement education in their teaching programs to enhance the free and balanced movement upon hearing music and also when playing the violin. Technique should always be considered from the point of view of where and how it can be done without restricting movement. Every person is unique and physical differences should be considered when teaching a person technique, for it should fit the player and establish freedom of movement when playing. Breathing should be taught as a vehicle to help a person relax during performance. If incorrect habits have set in over time, they should be altered. Sometimes non-musical techniques can be used to stop habitual reaction. As Medoff (1999:218) emphasised, training young musicians to have correct body mechanics via supplemental movement education and training, integrated into violin technique lessons can prevent many injuries among musicians.

## CHAPTER 5

### ACQUIRING A LIFESTYLE TO MAINTAIN FREEDOM OF MOVEMENT

#### 5.1 Acquiring a balanced lifestyle

Musicians should think beyond their musical life and acquire a balanced and healthy lifestyle (Blatter & Kraemer 1997:21).

Violin playing demands strenuous action from some parts of the body, like the hands, arms, shoulders and upper-body. Therefore the violinist's body should be in good condition to cope with these demands. String teachers can help prevent problems occurring in students through modelling healthy lifestyle habits (Meyer 1998:98). As Menuhin (1991:16) advocates, there should be a balance between sleep, rest, exercise and playing. Personal habits should be evaluated: for example smoking constricts the blood vessels, and caffeine and alcohol dehydrate the system. The teacher should also set healthy eating habits, by eating regular balanced meals, and by drinking enough water for circulation. (Lewis 1998:28; Meyer 1998:98.)

##### 5.1.1 Body condition

Good conditioning promotes better overall health, better response to stress and more energy (Meyer 1998:98). Dannemann (1986:8) states that a healthy condition is as important as a good technique. He describes teachers who only give attention to technique, without the necessary attention to the physical condition, as unsuccessful in the long run. To reach success and to maintain that level of playing, Dannemann (1986:8) insists that a method is necessary whereby a good physical condition is also built. Solomon (1995:76-80) prescribed exercises to build physical strength and ultimately inner-strength.

The physical state of the body influences musical success and is supported by four pillars/aspects, according to Blatter & Kraemer (1997:19-20):

- i) Endurance - physical and psychological

In order to increase endurance, exercises that are aerobic (with oxygen, when your heart beats faster) or anaerobic (without oxygen, when lifting very heavy weights) can be done. Aerobic exercises are more advantageous as they create longer endurance for musicians.

ii) Power - dynamic and static

Dynamic power is visible movement; while static power is sustained power. Violinists use both: for quick passages dynamic power is used in both hands and for long, legato notes, static power is used in the right hand. The pressing-down action in the left hand should be released during long notes.

iii) Agility - action and reaction

Agility is quickness and swift action in fast passages; and reaction is reacting to an outside stimulus, like a conductor or a co-player suddenly changing timbre or speed.

iv) Co-ordination

Co-ordination influences all the above-mentioned aspects and also includes: reaction ability, changing ability, rhythmic ability, differentiating ability, orientation ability, balancing ability and connecting ability between movements. Thus the physical state of the body should be regarded as equally as important as a solid technique for a violinist. Teachers should therefore emphasise that endurance, strength, agility and co-ordination should be developed, as well as violin technique.

### 5.1.2 Building condition

A violinist's condition should be purposefully built - something that is neglected by most musicians. The conditioning of the musculoskeletal system is an important key to injury prevention. The presence of good muscular tone, flexibility and endurance depend on appropriate exercise, warming up before playing, cooling down, stretching after playing, and attention to maintaining mechanically sound posture. (Brandfonbrener 1990:376.)

A violinist needs to become conscious of the demands the instrument makes on the body in order to obtain an individual-specific training program. Endurance and power can be achieved by resistance training, exercises and sports activities. (See Chapters 5.2.1 and 5.3 for examples of how the body's condition can be built.) Agility is maintained through stretching so that muscles maintain their flexibility. Co-ordination can be perfected on the instrument, as well as through other co-ordination activities.

Probably the most important joint for violin playing is the shoulder joint, which is also the most mobile and vulnerable joint. It has movement around three axes:

- i) Anti-version (forward) and retro-version (backwards),
- ii) Abduction and adduction, and
- iii) In and out rotation.

Thus the shoulders should be exercised and conditioned daily to maintain mobility around all three axes. A good exercise for violinists is to pull the shoulders backwards and downwards and to sustain the position for a few seconds. The *thenar* muscles in the base of the thumb and *hypo-thenar* muscles on the pinky side of the hand should also be strengthened to preserve joint-mobility of the fingers. This can be done simply by pressing with the pinky and thumb on the tip of each other, or pressing with these two fingertips on a sponge to increase their strength. It is important that the fingers do not collapse, while executing this exercise.

The whole of the body should be conditioned, for it functions as a whole, and all the muscles should be kept in balance.

## 5.2 Relaxation

The Hungarian violinist and world renowned teacher, Leopold Auer (1845-1930), had the following insight decades ago: "The muscles and the joints of the wrist and forearm stand in need of relaxation after an effort which, however slight, has been continuous" (Auer 1921:20). As for how to relax, he gave no practical solutions in his book; but many other writers have done so in recent publications.

### **5.2.1 Active relaxation**

Active relaxation activities increase heartbeat and breathing. It also invigorates the higher nervous functions and activates stimulus reception (Szende & Nemessuri 1971:189). It further reduces muscle spasms and fatigue, and improves blood flow; therefore conditioning the body maintains and improves movement ability. Only a few examples will be discussed.

#### **5.2.1.1 Relaxation exercises**

Solomon (1995:81-84) prescribes an exercise; tensing the muscles and then relaxing them in order to gain a feeling of tension versus relaxation. By using imaginary weights one could tense the biceps, for instance. As "the weight" is picked up, the muscle will tense and then will relax when "the weight" is put down. This stems from his believe that one cannot relax a muscle if one does not know how the muscle feels when it is tense.

Warm-up exercises as well as stretching exercises could be used as relaxation exercises. (Also see Chapter 4.7.1 to 4.7.4 for other activities which could be used for active relaxation.)

#### **5.2.1.2 Sports activities**

According to Pinchas Zukerman, violinists and violin teachers have much to learn from sports and sports coaches, especially about concentration and the way the brain transmits orders to various parts of the body. A sport like Archery is a medium through which a higher level of concentration could be reached. Shlomo Mintz introduced archery as a basic sport requirement for violin players. In stressful situations archery could play a significant role in helping to lower the level of nervous tension. (Weinstein 1995:112, 126, 136.) (Also see Chapter 4.7.2.)

Each individual player should find an enjoyable sport activity that complements both his/her violin playing and lifestyle. Walking and jogging are very healthy, relaxing and active ways to recuperate. A few quick indoor exercises as a break between practising will enhance concentration and effectiveness of practising. In South Africa swimming is the ideal sport for a musician. This exercise involves weightless resistance training in the water and is refreshing

and invigorating in our hot climate. It is, though, advisable not to train too intensely too quickly, but to build physical condition gradually in order to minimise muscle imbalances.

### **5.2.2 Passive relaxation**

Relaxation lowers rising blood pressure and the body releases endorphins, enhancing the feeling of well-being (Paull and Harrision 1997:136). During the intervals of a concert, the artists should relax and be idle (Szende and Nemessuri 1971:187). One can relax in a passive way by becoming conscious of the body's weight and the feeling of gravity. Using imagination one can melt into the ground.

Sleep is an indispensable period during which the body recuperates its strength. There exist different ideas on how much sleep is necessary, but 7-8 hours are generally thought of as being sufficient, depending on age. According to Szende and Nemessuri (1971:187) it should be kept to regular times. Sleeping habits for musicians are also vitally important. One can easily fall into a habit of drinking and eating and staying awake all night after an exciting performance, which could, in the long run, ruin a performer's health. If necessary, take a walk for half an hour or so, to get rid of any excess of adrenaline, or do a few relaxing indoor exercises.

Getting the mind away from the violin and its stresses by reading a book or a similar activity is an effective way to relax the mind. When one is mentally relaxed, physical relaxation automatically ensues (Masin & Kelemen 1982:27).

## **5.3 Exercise**

Anne-Sophie Mutter once said: "Geigenspielen ist wie Leistungssport". (Dannemann 1997:22.)

### **5.3.1 Exercise Physiology**

The principles of exercise physiology have been developed and intensively researched in the last few decades, in order to help athletes perform maximally. It has become a true science, involving factors like oxygen consumption, energy production and metabolic requirements. Training programmes have been developed involving the increase of muscle strength,



endurance and range of motion as well as giving attention to conditioning the muscles, rest and diet. Exercise physiology is based on the fact that all skeletal muscles, although physiologically different, respond to exercise in a similar way. (Gregg 1996:47.)

Everybody should be encouraged to participate in exercise. Aerobic exercise is used to increase cardio-vascular health, by increasing the heart rate and the respiratory function. Paull & Harrison (1997:133) encourage musicians to take part in such an activity rather than strenuous upper body work. Musicians should find physical activities that are tailored to fit their needs and should concentrate on developing good general strength, above-average conditioning and remarkable endurance.

Anaerobic training can be isometric (maximum muscle contraction is performed) or isotonic (training is done with movement involving resistance). The frequency of exercise is important. In order to avoid injury, strength and fitness should be built up gradually and therefore the frequency of exercising is important. Violinists should be very careful not to overload the joints involved with arm movement.

### **5.3.2 Physical activities**

Sports activities stimulate blood circulation and therefore function, for movement encourages blood flow. Function refers not only to muscle power, but also to various sensory isometric muscle contractions (stabilising the joint) or isotonic muscle contractions (responsible for the active movement). Contractions shorten and lengthen the muscle with resultant movement. (Mennen 2000:67.) Musicians therefore need to participate in physical activities to maintain a healthy body and freedom of movement.

Menuhin (1991:17) suggests sports activities such as tennis, ping-pong and weight training. But for some people with joint problems or weak elbows these types of sport can be very dangerous and should be completely avoided. Contact sports are also high-risk sports and should rather be avoided. The author recommends swimming, walking, jogging and moderate, controlled weight training. Menuhin (1991:14-15) also prescribes a set of stretching exercises, targeting the arms, legs, neck, stomach, chin and jaw, as well as yoga exercises.

Musicians should get into the habit of regular, moderate exercise. After doing exercises one should always end with doing compensation exercises, e.g. after weight training, stretch the same muscles. (Menuhin 1991:17.) Weight training should be attempted very carefully and gradually, as weight lifting can adversely affect small muscle control (Weirich 1996:47). Each violinist should find the sports activities best suited to his/her body and having the lowest incidence of injury. For violinists isometric exercises are highly beneficial. The muscles are contracted, but the resistance prevents them from shortening and thus the muscles remain isometric.

### 5.3.3 Preparatory exercises

Children that are frail can do strengthening exercises to prepare them to for violin playing. Children should be encouraged to develop their whole bodies and have a general body strength - then most movements can be effected with less effort. The same applies to older students, who should aim to have a strong body. Mennen (2000:67) states that peak performance and endurance can only be achieved if the supporting foundations also have the necessary strength and endurance: these include elbow, shoulder, neck, back and the whole torso. Athletes strengthen the muscles in the whole body, regardless of the type of performance. This could be just as beneficial for musicians and their over-all well being.

To exercise finger elasticity of the right hand, pick a pen or pencil up with the fingers. Use only the fingers and no wrist movement. Practise it over and over, until the finger movement is well controlled and separate in the mind from the wrist movement. Thereafter, hold the pencil with the fingers, curl the fingers in - flattening the knuckles - and then straighten the fingers. Repeat the exercise, always keeping the wrist straight. It is easy to do these efficient and productive exercises every day, because they can be done almost anywhere and at any time. Menuhin advises eating with chopsticks, because it exercises the fingers (Bath 1999:19).

In order for there be freedom of movement, the left hand fingers should be "floppy" when playing, and this can be encouraged by flapping the fingers from the knuckles into the hand. The action must be quick, but the fingers must remain "floppy" or relaxed. This simple exercise is excellent preparation for violin playing and should frequently be executed by violinists of all levels and abilities.

### **5.3.4 Exercises using visualisation**

Solomon suggests (1995:76-80) exercises to build strength, by using visualisation in the form of imaginary weights. The weight gradually "becomes heavier" as you gain strength. He believes the main benefit of this kind of exercise is that a person is less likely to get injured, than when training with proper weights, because the body is training against its own resistance. The muscles are less likely to be taken beyond their upper biological tolerance, for no external force is made use of. A person should still evaluate these exercises and stop if pain occurs.

## **5.4 Sensible practice habits**

As the amount and intensity of practice is directly related to the development of injuries in musicians (Brandfonbrener 1997:45), the violinist has to go about practising very carefully and with due consideration. Good and sensible practice habits need to be formed starting on the first day of instruction (Brown 1997:17).

### **5.4.1 Warm-ups**

"Every musician, injured or not, should do appropriate upper-body warm-up exercises before playing" (Lewis 1998:30). Warm-up exercises prevent micro and macro injuries to muscle fibres, tendons, ligaments, sliding tissue planes, all the various receptors and nerve endings responsible for sensory input. By using a muscle gently and smoothly, the blood flow will increase.

Both warming-up and keeping warm before an event and everyday practise, is of paramount importance (Mennen 2000:66). This is especially true in South Africa where central heating in many buildings does not exist, and where temperatures can suddenly drop at nightfall, just before a concert is about to start. Also, drinking a hot cup of health tea, to raise the body temperature, can be beneficial. Wearing warm clothes and gloves helps the body to keep warm.

#### **5.4.1.1 Warm-ups without the instrument**

Warm-ups should first take place away from the instrument and are beneficial for the musician's entire body. Joints should be moved slowly through a full range of motion in order to maintain their flexibility and to minimise tightness, which may lead to strain while playing. (Dawson 1998:52.) A mild walk, jog or dance can energise the whole body. Paull and Harrison (1997:110) suggest warming up the arms by swinging them and by hugging oneself and releasing. Washing them with real soap and water, or even miming to wash them, can warm up the hands and wrists.

#### **5.4.1.2 Warm-ups with the instrument**

Never start by playing fast passages/exercises, when the hands, fingers and arms are still cold. Start by playing slowly, making big yet slow movements. The vibrato should be slow and wide. One could also start by working slowly on intonation, without vibrato. Also, avoid staying in high positions during warm-ups, for it could be dangerous to bend the wrist for a long period when still cold. (Paull & Harrison 1997:137, 141.)

The main aims during the warm-up should be (Paull & Harrison 1997:141):

- i) Gentle movements,
- ii) Variety,
- iii) Moderate speed, and
- iv) Neutral body positions.

#### **5.4.2 Stretching**

The two main reasons for stretching according to Paull and Harrison (1997:11) are:

- i) To maintain flexibility or full movement of the joints, and
- ii) To maintain the muscles' full extensibility.

At the end of the warm-up routine, one should work the necessary holding and playing muscles into shape, by gradually stretching them to their full flexibility or contracting them to

increase strength (Dawson 1998:520). Never stretch cold muscles, for it could cause an injury. Joints tend to stiffen with age, unless they are regularly stretched in all directions, as muscles become less elastic. The stretching of muscles is essential for adolescents' growth spurts and becomes more and more important over the age of thirty. (Paull & Harrison 1997:111.)

After practising, it is often good to do the opposite motion with one's fingers to prevent the complementing muscles from shortening and stiffening. Stretching after a rehearsal or practise session should become habitual. For most of the playing time violinists have the fingers of both hands in a curled shape, so each finger should frequently be lifted and straightened. Mennen (2000:66) explains the necessity to stretch as follows: "Best performance can be achieved from the mid-position of a muscle, i.e. the resting or balanced position of the muscle. This will allow excursion of the muscle, either side of this resting position, and also enhances the amount of muscle power generated. Athletes are well aware of this important physiological principle. Improving the excursion either side of the mid-line can be achieved by stretching, which is also the most important preparation for an athlete."

The stretching of muscles and nerves is an integral part of exercising which "resets" the full excursion of muscle movement and nerve length. All soft tissue structures need to glide (move along smoothly and continuously) in order to prevent stiffness, particularly in the nerves. Nerves need to glide and be stretched, but prolonged continuous stretching could cause compression around joints - therefore relaxing in between rehearsals and performances is of vital importance. (Mennen 2000:67.) To maintain flexibility, strength and freedom of movement, stretching is vitally important.

Two good stretches for violinists are:

- i) Extend the arms in front of the body, with the palms facing down. Pull the fingers of the one hand back with the other hand so that it bends backwards at the wrist and the fingers show upwards. Sustain the position for 10 seconds. Then do the same with the other hand.
- ii) Drop the arms to the sides. Bend the wrists to form 90° angles to the arms away from the body. Then bring the palms upwards to the ears, keeping the elbows in line with the body. The stretching of the nerves in the pinkys should be felt.

### 5.4.3 Massage

The author's teacher, Natalia Boyarsky recommended a daily self-massage of the hands, starting from the tip of each finger to the base of the finger; then massaging between the fingers and then the palm of the hand. This should keep the hand more supple and increases blood flow. It is also advisable for violinists with limited movement in between fingers and with extra-tight finger-ligaments, to massage in between the fingers. Massaging can also take place before and after a practice session.

Davies (1998:23) prescribes "Trigger Point Self-Massage" to increase self-awareness. People ignore chronically contracted muscles afflicting them as a result of unexamined work habits. One should constantly question whether one is working in a tight, tense way or ignoring posture and body mechanics. Improved circulation and self-awareness through massage will complement freedom of movement. (Also refer to Chapter 3.3 on Ergonomics.)

### 5.4.4 Safe and effective practice

Nelly Ben-Or (1995:93) suggests two main starting points when practising:

- i) Thorough and clear learning from the text, preferably away from the instrument.
- ii) Bringing an awareness of the total use of oneself into practising and an extra awareness of one's overall co-ordination.

Underlining i), Brandfonbrener (Lewis 1998:30) recommends that musicians should do more "no-hands" practising, where they look at the music until it is heard and felt, learning new sections over several sessions through visualising the music. Havas (1995:21) suggests singing away from the instrument for it releases tension. Paull and Harrison (1997:137) also mention that study after study shows that athletes who practise mentally as well as physically outperform competitors who only practise physically. And the famous pianist Theodor Leschetizkiy (1830-1915) advised his pupils to spend as much time thinking about the music away from the instrument as in actual playing (Benham et al 1996:126).

The author recommends that the violinist goes for a walk, during which every note, finger, bow-stroke, interpretation and dynamic of a piece is recalled. This is an effective way to test

the memory and to find weak spots in the piece – for if a single note or finger is in doubt, one knows that the piece has not yet been fully mastered. It also is an excellent way of relieving stress and building self-confidence before a performance.

The guitarist John Williams maintains that for every half an hour of practise, he would rest for half an hour doing stretch and movement exercises (Mennen 2000:67). Fry (1986:49) and Dawson (1998:53) suggest practising in segments no longer than twenty to thirty minutes, followed by a five minute break. During the break, physical and mental tension subsides and muscles and joint ligaments have a chance to rest. Fry further states that it is still possible to build endurance when practising for shorter periods. Variety in a practise session should be incorporated. Dawson states that frequent changes in practise emphasis and material can minimise the “grind” of working out troublesome passages and the frequently resulting tendency towards muscle strain.

Adding to ii), musicians should continually keep in touch with how the body is feeling and be aware of the intensity and risks of the practice session. After a practice session the impact thereof on the body should be assessed (Lieberman 1995). Talbot (1997:982) also emphasises the importance of knowing how the body works: “If you overstrain certain joints and muscles, you’ll tend to produce lactic acid which causes pain.”

The most important principle when practising is to stop playing when the mind stops concentrating (Paull & Harrison 1997:143).

## **5.5 Sensible performance habits**

Performance takes a huge amount of energy, mentally and physically and therefore violinist’s schedules should be planned long in advance to avoid having too many obligations at once. Most of the principles discussed in Chapter 5.4 about sensible practice habits should also be applied to performance habits. Teachers should set the right professional lifestyle image and not rush to a function to play immediately. They should arrive early at rehearsals and concerts and do exercises and careful warm-ups. It will then be regarded as the norm, to be imitated by their students. (Meyer 1998:98.)

Mennen (2000:66) suggests rehydrating before a performance, like an athlete would do before competing: It keeps the tissues soft, pliable and promotes lubrications between tissue planes and structures. He further suggests relaxing between performances by stretching soft tissues, relaxing and doing some kind of exercise to stimulate blood flow (Mennen 2000:67). Paull & Harrison (1997:147) suggest on-stage stretches during rehearsal and concerts. This can be done during breaks, while checking the posture. If a violinist warms up, stretches, strengthens the body, rehydrates before performances and establishes a good posture, it is unlikely that tissue damage will occur, for under normal circumstances tissue can handle extensive exposure to repetitive movements over long periods (Mennen 2000:69).

It is vitally important to ensure before a performance starts that the music stand is at the optimally correct placement and height. The player should be able to have contact with the co-players as well as the audience, without the stand interfering with the player's movements. Also check the lighting before the concert, so that there is no need to adopt an awkward position, interfering with freedom of movement. The teacher should cultivate awareness in a pupil to check these aspects and should, if possible, assist the pupil at his/her first few performances. During normal lessons all these factors should be attended to, so that on stage they will feel natural and give the student a sense of freedom.

A performer whose use of his body is well-balanced, with his posture, balance, violin hold and movements not interfering, will not be disturbed by undue tension of the kind which results from effort and strain (Ben-Or 1995:94). It is important for the performer to learn to control physical actions during performances. By avoiding excessive and unnecessary muscle tightness, the added benefit of "playing relaxed" should be obtained. Here, a music teacher should guide the student in mastering techniques that achieve this state of decreased muscle tension, through using only those muscles that are necessary to get the job done successfully. (Dawson 1998:53.) The end goal is to achieve control, freedom of movement and expression, even whilst in stressful situations on stage.

## **5.6 Pacing and planning**

Students and parents need to see professionals striking balances in their lives. Teachers should therefore carefully consider the number of commitments they take on.



As musicians we are all responsible for maintaining our physical and musical health (Lewis 1998:28). Mennen (2000:65) argues that there are many similarities between athletes and musicians, but also differences: Musicians start their careers earlier and end at an older age, they train for even more hours, performing many more repetitive movements, their musculo-skeletal system is required to endure long periods of sustained contraction, and they are expected to always perform maximally. Therefore the pacing and planning of practising, rehearsing and performing is essential. Lewis (1998:30) wisely suggests that one should rise above the minutiae of the day-to-day and look at the big picture of rehearsals and performances over a span of time.

### 5.6.1 Avoiding muscle imbalances

Paull and Harrison (1997:74,79,111) state that muscle imbalance in musicians is caused by excessive playing, not by faulty technique or tense playing. The author disagrees, for if a violinist is playing with technique which is free from tension, much longer periods of practice and performance can be endured. A violinist's musical life should nevertheless be planned and paced, with the player continuously "listening" to his/her body for signs of fatigue, for if continuing to play whilst tired, muscle imbalances could occur. Muscle imbalance around the shoulder can drastically change posture: The strong chest muscles become tighter and shorter and tend to pull the arms forward and turned inward. This can be prevented by strengthening the small shoulder muscles, namely the *infra spinarius* and *teres minor*. This strengthening can be done by constantly correcting the shoulder position, by pulling the *humerus* downwards and backwards and by lifting the *sternum*.

Paull and Harrison (1997:79) further warn that upper body gym equipment is going to hasten the onset of an impingement syndrome in any string instrumentalist, and suggest that these should be avoided. The author is of the opinion that use *can* be made of this equipment, although great care should be taken in pacing oneself. It should be used only as a way of conditioning the body, not for body building. Although the upper body is exercised through the violin playing activity, the author still believes it is necessary to develop all the muscles, especially the big muscles, in order to support the smaller muscles.

### **5.6.2 Avoiding overworked muscles and tendons**

It is necessary to realise that during adolescence, injury can often develop if the practising schedule is not well planned and paced. During a study of children who play musical instruments (average age 14.4 years), the violin had the greatest injury rate. Peak growth velocity usually happens for girls at 12 and boys at 14. The growing in itself can cause a variety of musculo-skeletal problems. Thus a balanced life style including physical exercise is crucial to normal muscle growth in a growing child/adolescent. (Ralph: 1997:72-73.)

Habitual overplaying can cause serious damage to tendons and nerves in the hands and wrists, frequently spreading into the forearms. Tendons glide through well-lubricated tendon sheaths which provide nourishment and protect tendons where they pass over the wrist and finger bones. There is sufficient lubrication in these sheaths for normal hand use and the lubricant is replenished during breaks in activity. Overplaying, can cause irritation, inflammation, swelling and pain. Continuing overwork could lead to career threatening chronic tendonitis. (Paull & Harrison 1997:88.)

### **5.7 Avoiding overuse and misuse**

The incidences of overuse injuries are more than one would expect, therefore this is an important part of the dissertation. Mennen (2000:65) states that up to 90% of musicians, may suffer some ailment during their career. Overuse refers to too much indulgence in a normal activity; abuse is wilfully causing damage; and misuse is an incorrect activity or position, due to poor posture, imbalances and over-training. All the above-mentioned are both preventable and treatable (Fry 1986:46). Most of the commonly reported injuries are due to overuse or repetitive stress – with violinists being among the most frequently injured (Medoff 1999:210). Brandfonbrener (1990:369) describes the risk factors as follows:

- The number of repetitive movements executed.
- The required playing posture.
- The support of the instrument while being played and while transporting it.
- The resistance against force which must be applied.

### **5.7.1 Avoiding overuse**

An overuse injury is tissue damage resulting from its overuse: that is, from taking tissue beyond its upper biological tolerance. According to Fry (1986:47), muscles convert stored chemical energy into mechanical energy. Muscles are also able to damage themselves by their own contractions. This can happen if the process of practising is going well beyond the stage of mere muscular fatigue, so that damage results. Most of the muscles of the upper limbs are involved during music-making that is hand-use intensive; particularly the muscles causing spreading and flexing of the fingers. It is these muscles that ache after an overlong practice session. The other structures that are damaged in overuse injury are the joint ligaments. Although joint ligaments are admirably adapted for their function, if their upper biological tolerance is exceeded, they will be damaged. Damaged muscles and ligaments remain persistently and abnormally tender long after an injury. The second factor is genetic: some individuals naturally have more strength than others, thus equal playing or practice time affects individuals differently (Fry 1986:48).

Overuse can occur as often in the right hand as in the left hand, for the finger work of the left hand is repetitive, and the bowing hand is involved in sustained muscular contraction (Fry 1986:47). Finger joints do not object to movement, but dislike being stressed and strained to their extremes (Paull & Harrision 1997:84).

The most sensible thing to do when the body sends warning signals through pain, is to stop playing. Oundjian confirms this from his own experience: "By overusing the hand, I got into the wrong mode of using my muscles, and now I have to retrain them" (Eisler 2000:28). If a player continues playing after recognising an injury, it is abuse.

### **5.7.2 Overuse due to violin playing**

A violinist should always consider where, when, how and what he/she is playing. Brandfonbrener (1997:48) claims that "All musical instruments should carry a warning: Use may be injurious to your health". Therefore it is of utmost importance that misuse be prevented from the very first experience with the violin (Brown 1997:17). According to Ralph (1997:73) the early years may well be the origin of many problems, since this is the time when many

musicians start to get "serious" about improving their skills. Thus, this may be the crucial time to institute effective injury prevention programs.

The most important cause of injury is a sudden increase in the time and intensity of practice, thus overuse. A student who is less well co-ordinated, and therefore more tense, uses more muscle power, although in a less-effective way and is more likely to misuse him/herself. Another cause of misuse could be the student's faulty technique and the energy efficiency thereof. (Fry 1986:48.) Thus, incorrect technique can be interfering with movement ability and freedom of movement.

Dankwerth (1996:14,17) says that if an extreme unphysiological position is sustained constantly, it might result in spinal overload. The position of holding the violin puts an unnatural strain on the spine. It has been proved scientifically that permanent damage can be caused to the spine by the wrong position. Paull & Harrison (1997:84) suggest that one should try to move as frequently as possible and not sustain unnatural positions and stretches for too long, e.g. roll the shoulders and turn the upper body to the left and right. The body and its joints thrive on movement and therefore through optimal movement, freedom of movement is maintained.

Left hand risk factors are hyperflexion of the left wrist accompanied by increasing degrees of *ulnar* deviation, especially when the hand comes to the bridge. Faulty set-up can cause muscle tension and co-contraction of opposing arm muscles. Risk factors for left hand fingers are unnatural stretches, pressure on the string and vibrato. (Brandfonbrener 1990:371.)

Changing teachers, with the introduction of different techniques, new repertoire, and changes in practise and playing requirements are all risk factors for injury. The older a person is, the more gradually technique should be changed, because the body loses flexibility as it grows older. An abrupt return to playing after a prolonged vacation or illness could also cause problems. It is wise to have a slow reintroduction to playing with a gradual return to previous levels (Brandfonbrener 1997:46). After a previous study, Brandfonbrener (1990:371) also stated that the most minute alteration in playing technique can throw off the delicate balance and cause problems for a performing artist.

### 5.7.3 Other factors

Misuse of the body could occur due to other lifestyle factors such as unnatural posturing over prolonged periods and hand intensive activities, such as pruning in the garden. This type of sudden, powerful repetitive movement could cause a troublesome injury. Misuse can also occur when movements are done in a poorly organised fashion.

The elbow joint could be strained by carrying anything that is too heavy, causing an overuse injury. This joint should never be pulled straight, but needs to stay slightly bent. (Paull & Harrison 1997:82.) They (1997:91) also recommend that one should carefully consider the position of the hands and arms while sleeping to avoid injury. Paull & Harrison (1997:37) also mention the occurrence of back and neck pain caused by the lifestyle of young people, for the head may be held in an awkward position for long periods of time, placing unnatural stress on the spine and discs. This is usually caused by sitting slouched or bending over slightly to play their instrument.

If practising, using sheet music, a musician must ensure that the lighting is sufficient and that a shadow is not cast over the music. Stand close enough to see the music clearly, without straining the eyes, but still being able to move freely. If a teacher realises that a student is standing too close, it should be recommended that the student has his/her eyes tested, for it could also interfere with posture.

Another factor to take into account is the carrying of the violin case. If travelling by car, carrying the case is no problem, but if making use of public transport and having to walk long distances, consider adding straps to the case in order to carry it as a back pack. Also, unnecessary books and papers, which make it heavier to carry, should be discarded, or if possible a lighter case should be bought. It is especially important not to tire the arms and hands before a concert. The more tired the arms become, the more likely they are to be injured.

Physical and mental fatigue increase the likelihood of injury, because of compromised muscle strength, co-ordination, mental attentiveness and concentration (Whiting & Zernicke 1998:119). When the mind and body are alert and fresh, everything is much more productive. Therefore there is no point in practising when physical and mental tiredness sets in. (Also see

Chapter 5.4.4 about safe and effective practice.) A person should be well rested before a concert or intense rehearsal.

Finally, musicians should enjoy their music making. If not, Mennen (2000:65) forecasts that psychosomatic symptoms may develop, because of stress, pressures and demands.

## 5.8 Treating injuries

The violin teacher should provide a climate in which students feel safe to report problems early. The younger, and the sooner, an injury or discomfort is reported, the easier it is to correct technique or practice habits. Meyer (1998:99) advises teachers who are rehabilitating from injuries to be open about the recovery with their students. Valuable lessons in dealing with problems are taught by example, for students will recall the teacher's example in dealing with an injury.

Many musicians who should seek medical assistance, don't. This is unfortunate, because problems should be dealt with early on, before serious conditions evolve. The first step in handling a performance-related difficulty is recognising it: Pain is the most common symptom in most cases. Secondly one should make sure that music-making is indeed the cause of the problem. An initial rest period is also advisable. If one's own efforts are unsuccessful, special medical care should be sought - preferably from someone who understands both upper-body anatomy and music.

Sometimes, with mild injuries, modification of technique and practice is all that is necessary, but in severe cases it is not advisable to continue playing or attempting to change technique. The wisest option is to rest until the pain and tenderness have gone. Soft tissue injuries recover within six to eight weeks, as the body has amazing recuperative and healing abilities when it is not repeatedly abused (Paull & Harrison 1997:22). Once a certain amount of damage has occurred, further damage will occur from any uses of the hand that are painful. (Fry 1986:49.)

The mucous lining is that part of the anatomy that enhances the gliding of tissues, but sometimes the gliding is severely curtailed by swelling. Once this gliding layer is inflicted with disease and swelling, movement will be severely affected. An anti-inflammatory drug can

usually treat stiff joints. (Mennen 2000:69.) Paull and Harrison (1997:78) warn, though, that excessive use of such drugs could cause severe stomach reactions. Swelling that continues even after a period of rest, needs serious attention; so does a hand or limb that appears bigger than the other (Lewis 1998:28). Prather (Lewis 1998:30) argues that even though rest is important, it alone won't solve problems. She generally has her patients increase their playing time by ten to twenty percent each week, while keeping a watchful eye for complications, and increasing the time as their health improves.

When a person is injured, therapy must address the cause or the origin of the problem, otherwise, as Paull and Harrison (1997:37) point out, the therapies will have to be repeated endlessly. Aches, pains and spasms are sometimes the result of an unbalanced posture, which distorts the whole body. These kinds of injuries need to be addressed by restoring balance, prescribing appropriate exercises and attending to the musician whilst playing the instrument. (Mennen 2000:69; Dawson 1998:52.) Medoff (1999:218) underlines this even further: "Since the central nervous system controls and co-ordinates postural and movement mechanics, treatment protocol (of injured musicians) must include neuro-muscular retraining to be effective." Treatment should therefore restore the freedom of movement of a player in order to avoid future injuries.

## **5.9 Summary**

In order to maintain freedom of movement of the whole body, violinists should invest in a balanced lifestyle where condition is built and time is set aside for relaxation. This should be regarded as equally important as developing a sound technique, for if these lifestyle factors are ignored or neglected it will adversely affect a student's playing in the long run. Exercise benefits both mind and body. Warm-ups, stretching and massage are just as applicable to a musician's practice routine as in sport, and sports principles and discipline can be adapted to violin practice. Performance as part of a lifestyle takes careful planning. A warm-up, stretch and rehydrate routine should precede it. A musician's schedule should be paced and planned to avoid overuse of the body which ultimately deprives it from moving freely. Sensitivity for the body's needs should be developed to avoid misuse, overuse and even abuse, leading to injury. Injuries should be treated immediately, addressing the origin of the problem, so that freedom of movement can be restored.

## CHAPTER 6

### THE BENEFITS OF FREEDOM OF MOVEMENT

“The ease is there for all of us to find.” (Havas 1995:26.)

#### 6.1 Answering the research question

The research question underlying this dissertation is:

**How can the violinist best be taught to achieve freedom of movement?**

The answers to this research question lie in the creativity of the teacher, with the co-operation of the student, to find the unique technique that suits that student best, and with which all movements are performed as freely as possible and without obstruction.

The process involves, firstly, inculcating correct and relaxed posture without the interference of the violin; thereafter this posture should be carefully reformulated, maintaining the principles, whilst holding the violin. Physical and age differences require that individual ergonomic solutions be sought, and then continuously adjusted, in order to ensure the most propitious circumstances for the achievement of relaxation and freedom of movement. Movement without strain should, in general, be developed from an early age. Movement stimulated by the listening is especially beneficial, for then the student is trained in a relaxing way to move to the rhythm and flow of music. Movement disability - even in its mildest form - can only be corrected in older students with great difficulty. Only once the student is able to move his/her body in a controlled, free of tension fashion, is it possible to move with freedom whilst playing the violin. This freedom of movement should be applied to all aspects of technique. Physical difference plays a crucial role in technique, and the unique position in which a movement is done with the greatest possible ease, and which suits the student's physique, should be sought. If movement problems are severe, certain non-musical techniques could be greatly beneficial to help a musician discover how to move and play with less tension.

A lifestyle to complement freedom of movement should be acquired so that the body is in good condition and health and able to move without effort or unnecessary strain. The teacher should be a living example of the principles as laid out in this dissertation and provide an inspiration to pupils to follow suit. Physical exercises, stretches, warm-ups and



the avoidance of muscle overuse when practising are factors that will contribute to a healthy lifestyle.

The teacher should teach the student to ultimately take responsibility in finding and continuously critically examining his/her technique, in order to always instil freedom of movement.

## **6.2 Benefits of playing without the interference of physical tension**

There are several important benefits to be obtained from playing violin without the interference of physical tension.

### **6.2.1 Improved tone**

Heimberg (2000:30) states boldly that bodily comfort improves the tone. Havas (1995:25) similarly believes that when body tensions are released, sweetness, warmth, purity and aliveness of tone allow the violin to sing. Physical tension and tightness restrict control over movement, and this interferes with the quality of the sound.

Tonal quality is determined by the presence of, and a proper relation between, fundamental and partial tones, as well as the strength of both. A full tone only develops if the fundamental tone is distinct. Numerous researchers have established that the full, large tone of a bowed instrument depends on a relatively high bow velocity and a relatively low bow pressure (Polnauer 1952:299). It is therefore essential that the arm movement should be as smooth and controlled as possible, thus free of excessive tension.

The body must be ready to make quick subtle adjustments to the playing mechanism at the moment of hearing the sound. The right arm must always be free so as to be able to adjust to optimal bow pressure and bow velocity, in order to produce a smooth continuous sound. All aspects of sound quality thus become dependent upon the player's speedy reaction to the feedback received regarding his/her physical movements. The more tension-free the movement becomes, the better the sound becomes.

### **6.2.2 Freedom of expression**

When a performer is not struggling with physical tensions, it is easy to react to impulses from co-players; thus communication on stage can be more fluent between performers,

and hence with the audience. Once the body is free to express what the player really intends, then full attention can be given to the music and freedom of expression results.

Once a player has found a way to play that complements his/her body, there will be an individualistic quality to the playing. This is true of the famous violin teacher Dorothy DeLay's students (Sand 2000:18-19): "A striking quality of the products of DeLay's studio is the absence of uniformity in the way her students play – each speaks in his or her own voice."

### **6.2.3 Strength through flexibility**

Young (2001) emphasises the concept "Strength through flexibility". When all parts of the body are free, flexible and able to move, a player has more strength and control over the instrument. If a bow hand is tight, the bow could drop more easily, because the hand loses strength by being tight and rigid. If the hand is flexible, it will become like a spring or shock absorber and will be more adjustable and therefore stronger. This can also be applied to the holding of the violin – if the player's neck is tension-free and able to move freely, he/she has more control over the instrument.

### **6.2.4 Diminution of stress**

The sensation of being in control of the body, without extra tension gives the player more self-confidence during stressful situations on stage or during rehearsals. The ability to be able to consciously relax and manipulate the body through a kind of bio-feedback or self-awareness, gives the player the advantage of not letting the situation take control of him/her. The player can stay in control.

## **6.3 Observance of tension in violin playing**

When observing oneself or other violinists playing, the question "Is the player maximally relaxed?" should come immediately to mind. Often, one can come to the conclusion that a player is tensing the body merely by watching the whole body for posture faults, for muscles that are obviously tense - e.g. in the neck or face - or for rigidity in movements. Sometimes, though, physical tension is well hidden and can only be discerned through listening to the musical product.

#### **6.4 Aims accomplished**

The principles and descriptions laid out in this dissertation represent an aid to help and encourage teachers and players to change their frame of mind. It is intended to be of practical guidance to teachers and advanced students when striving to realise their utmost potential. It also encourages teachers to have ease and freedom of movement in mind as starting points, both when teaching beginners and during remedial teaching.

This dissertation points the way for players to learn how to stop habitual reactions, thus providing a window for fundamentally wrong habits of technique to be changed. Though time-consuming and a test for patience, it can help a student to rediscover the most comfortable and tension free way of executing the techniques of violin playing.

This dissertation can set the stage for more openness of mind amongst teachers to teach creatively, instead of using a rigid or tunnel-vision approach. The teacher is encouraged throughout to be a living proof and example, by playing with freedom of movement, and by fostering a healthy balanced lifestyle, as far as is possible.

As has continually been pointed out, each individual student is special and problems should be solved in a unique way. By so doing, injury due to playing is unlikely to occur.

#### **6.5 Success and longevity**

Although it is unnatural to support an off-centred weight upon the shoulder, while co-ordinating independent, specialised fine movements of the two upper extremities, it is essential to a violinist's success and longevity to be at ease with the violin (Medoff 1999:210). If the technique that a violinist uses is natural to his/her body, overuse and misuse are unlikely to occur and the violinist can expect to have a longer career. If a violinist works with his/her body rather than against it, new repertoire can more easily be mastered and new techniques more easily adopted. This ensures higher work satisfaction with less effort, and will contribute towards a more balanced lifestyle.

It should become each violinist's life quest to continuously ask him/herself if he/she is playing in the most relaxed way possible; hence to be able to teach others to play in the same efficient manner – with freedom of movement.

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