

THE SUFFERING MUSICIAN A POSITION PAPER ON MUSIC-RELATED INJURIES AND THEIR RELATIONSHIP TO SPORTS INJURIES

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Abstract: *This paper is a modern vision of training both technical and physical way in musician work art. For the musician I think that this vision is the key to achieving a good technique and to being able to keep performing for long periods of time without complications. Between musical performing and sport performing it is a strong connexion because the psychological war with oneself is very similar. The elevation of adrenaline levels is common to both musicians and sports players. In order to understand injury in the music world, one needs to study the commonalities and the differences between the music world and the sports world.*

Key words: *technique, instrument, musician, holistic, sport.*

1. Introduction

Musicians get plenty of training in technique, the ability to deliver the best rendition on their instrument. We also get training in interpretation, music history, expressivity, large formal architecture, musicianship, teamwork, and a host of other qualities. Musicians often experience pain associated with making music. The pain often is emotional, due to the work performed, but often the pain is more physical, and quite real. In dealing with this pain one often encounters common and trendy diagnoses such as Tendonitis, RSI (Repetitive Strain Injury), Carpal Tunnel, etc. The problem is that the way in which these diagnoses are given often reflects the likening of musical activity with that of typing (hence the commonality of RSI in musicians and typists in the 1980's) and more recent, to computer work (hence the commonality of Carpal Tunnel

in both heavy computer users and musicians in the most recent decades).

This likening is useful, but limited in scope. Musicians do not repeat motions in the same way computer users do. We repeat actions in the service of a musical idiom – often some *ostinato* passage that repeats feverishly, and there is an emotional context in which our muscles are dependent on amounts of tension and release. Often the tension and release is part of the musical language, and cannot be dissociated through a simple “relax your muscles as you play” mantra, the way a computer user might.

As a performing pianist I have encountered injury often. In fact, being able to discern between a simple sprain and a more complicated inflammation of one's tendons is key to achieving a good technique, and to being able to keep performing for long periods of time without complications. In piano technique it is essential to understand the way in

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which muscles act. Although one could talk about sophisticated phrases –specific motions that shape a musical idea, there are two basic types of motion in piano technique. There is an upward motion and a downward motion. Every muscle reacts either pulling away from the key or pushing toward the key. Contrary to common perception, piano technique is more concerned with the upward motion of our muscles. This is the motion through which we lift our fingers giving amplitude to our downward motion that usually follows.

The downward motion is marked by a few elements. First, any amplitude from the surface of the key makes the downward motion easier, and less exhaustive physically.

This is due to the creation of momentum, and the inertia that occurs when the finger bumps the key. Secondly, we are helped by gravity, as well as the elasticity of our fingers on this downward movement.

The result is that with a good upward preparation, the downward movement is relatively easy. The injury occurs when pianists do not understand the basic physics of piano playing. On one hand, they are taught to keep fingers close to the keyboard. This unfortunately prevents the necessary amplitude from occurring. The fingers start moving together with the piano key, as opposed to already being in motion when the finger makes downward motion do double duty as both moving themselves from a resting point to full speed, as well as doing the same to the entire mechanism of the piano key.

The resulting injuries are common, and unfortunately the research has been insufficient in dealing with this type of injury. Most common, the injury becomes something of a stigma on the performer. Their technique is deemed inadequate when there are injuries prevalent. This leads many musicians to hide their injuries, so as not to prejudice presenters from hiring them, and even potential students from studying with them. This is unfortunate, because it assumes that there is a right way for all technique.

Technique in fact is individual for every person. The right way is the way in which the performer is in touch with their body. Every mechanical aspect hinges on our understanding of how our own physical systems work.

The Sports Analogy Now it is time to offer a new perspective on musicians and physical injury. Instead of looking at ways in which to make music analogous with other repetitive tasks, we should perhaps look at endeavors that stress our muscles to their limit in a similar way. Perhaps such an endeavor is the world of sports. There are many similarities, as well as differences. For starters, just like sports, music making is often competitive – most young performers start their careers through competitions. The music world often bestows instant fame for young and able performers, and the younger and more able, the better. Hence there is an implicit race towards the ability to deliver technical wizardry, often at the cost of musical individualism and stylistic relevance. Still, many schools push the notion of technique for technique's sake. The race is for better, faster, more bombastic, more accurate, and usually more “flashy.” In the race to do this, often young musicians reach an unrealistic potential with the added cost of long-term injury. The major differences between music and sports are obvious. Music does fulfill a more artistic ideal, and competition is incidental. Another not so obvious difference is that the music world is not as holistic as the sports world is when it comes to injury. We do not have trainers who coach us on our movements, we do not have designated doctors that stand by at our concerts and massage our arms or fingers. Our injuries are often kept from our audiences and often from other musicians.

However there are many reasons why the two fields – music and sports should be researched collectively when it comes to physical injury. First, the nature of injuries a pianist experiences would be very similar to the types of injury a tennis player would. We do a similar level of repetitive tasks in our training and in our

performances. What is different is that a tennis player is in a constant battle with him/herself for a faster serve, for an errorless point, and is in a constant psychological war with their own selfsabotaging mechanisms, not to mention with their opponent. A concert pianist is also in a battle with him/herself for a faster/better technical delivery of the music. The psychological war with oneself is very similar, and self-sabotaging elements occur just as vividly. On top of this, we contend with the act of interpreting a great work; our psychological attitude reflects also that of the composer, and whatever competitive “edge” we may want over other artists as we play a concert, we are in a constant fight to tame an instrument that is usually foreign to us (not many pianists travel with their own instruments as in the old days, Horowitz, Michelangeli and others did). Tennis players need the crowd on their side. One can safely assume their playing will be extra tense muscularly if the public roots for their opponent. By comparison, a performing pianist also needs the crowd on their side as well. But this is so that the music achieves a closed circuit between the performer and his/her audience, in which mutual inspiration occurs. Usually the better energy this abstract circuit generates, the less damaging tension occurs in a pianists’ body. **The Big Elephant in the Room**

When dealing with injury in the music field, as well as in the sports field, one has to contend with chemical modifiers that put immense pressure on our physical systems. As mentioned previously, injuries stemming from piano playing have been assigned historically as RSI and Carpal Tunnel – in the same way these conditions surfaced in typists and data entry computer operators. The problem is that when typing or doing computer work, one does not feel sorrow, or ecstasy or angst, in the same way one does within a musical composition. One also does not get the thrill or the pain from opening one’s soul in front of a live audience. Hence

classifying physical injuries as stemming from the same set of repetitive tasks invalidates the central tenet of a musical context.

When musicians tense up, they are tense for individual reasons. Perhaps their physique demands it – a small hand needs more tension to stretch for instance. Perhaps their performance anxiety manifests in a tensing of muscles that in turn triggers long or shortterm injury. Perhaps the way they react to passion present in the music they interpret, is to tense up physically. Simply assigning their injury as stemming from repetitive motion is short sighted. The big elephant in the room, the central modifier for our tension points in front of an audience is the secretion of adrenalin. Amongst its many functions, it has the physiological effect to contract our muscles faster and to heighten their tension, and disregard pain in the process. Perhaps this is one of our evolutionary holdovers – the “fight or flight” response. Our bodies evolved to secrete large quantities of this substance in our anthropological past when we faced predators. Even though we are never in physical danger when playing music or sports, we still experience the same chemical instinctual secretion, and this is not something we can shake off, though many use betablockers and other chemical/psychological devices (alcohol, affirmations, etc). In fact, in both music and sports, adrenalin is one of the key ingredients that gives us the upper edge. This exhilarating substance is one of the reasons ironically that we love both music and sports.

The elevation of adrenaline levels is common to both musicians and sports players. In order to understand injury in the music world, one needs to study the commonalities and the differences between the music world and the sports world. In many ways music is athletic. In order to deliver the amounts of notes to an audience, musicians need to have their muscles toned. Pianists, for instance, need a clear understanding of the hinges that act to create the sound on the piano. The common tendons, as well as the

flexing of the joints ranging from the smallest at the tip of the fingers, and moving back to the wrist, the elbow, the shoulder, as well as every vertebrae on our spinal column. Sounds on the piano can be created from flexing any one of these joints. Working in synergy, these joints create an effortless technique. Muscles need to be trained at every level for this to happen. Certain toning and conditioning is key for the prolonged tension that these muscles need to exert in the space of a concert. Without the proper toning, adrenalin stops being exhilarating, and rather becomes a poison. Even in the sports world, professional players often have to deal with the fact that in practicing a tennis serve for instance, one does not experience the adrenalin present in front of an audience in Wimbledon. Once muscles contract differently in that new “live” condition, often the element of precision changes dramatically, and the possibility for other adverse effects like cramping, trembling, etc., also becomes imminent. Further research is needed to form the basis for a cohesive understanding of the crosscurrents and benefits of treating musical injuries as a sport injury.

2. Conclusions

This research needs to emanate from the medical profession, and needs to take in consideration the adrenal gland's effect on muscle contracting and how this triggers such conditions as tendonitis. My conclusion from the perspective of a performing pianist is based on the empirical experience from my own performing career, of and from teaching students up to university level. What is needed from the performers is a serious attitude towards injuries. Our proneness to injury, minor and serious, should be a given, not the exception reserved for those with “poor technique”. In order to fully appreciate one's own physical aptitude, and to relate it to a betterment of the ability to deliver a musical composition to the

public, an artist needs to take a serious and long-term approach to physical injury. This approach needs to be exploratory, well guided by an expert in sports injuries, and monitored dynamically. At least some of the monitoring has to take place in the context of a live performance, as only then do some of the conditions leading to injury occur. Musicians need to be fully conversant in the injury advances and diagnoses in the sports fields. They also need to think of this as an ongoing holistic approach, rather than a crisis mode prompted by a condition that makes their continuation of “business as usual” impossible. Medical research and even rudimentary analysis of musicians by “trainers” will be unfortunately be hampered by commercial unfeasibility. Sports injury is a true industry because of the economics of professional sports. Music will never attain the critical mass when it will be commercially advantageous to study those injuries to be on par with sports. However one may hope that researchers into sports injury may also learn more about sports injuries by studying what happens to musicians, given the different types of stressors that are incumbent on musicians, as described above.

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