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RELAXING REVOLUTION

BY ARI HEINONEN

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RELAXING REVOLUTION

BY ARI HEINONEN

We all know that a brass player should stay as relaxed as possible while playing. All excessive tension in arms, back, neck, and upper body reduces our ability to breathe freely and efficiently. If we look closely at a trumpet player with a good posture, we have to admit that holding the instrument with arms in constant static tension is obviously against the modern knowledge of ergonomics. Could this problem be solved with a simple playing support?

Generally, players might fail to see that there is the potential for a problem at all. However, if we are used to coping with tension, it doesn't mean that the tension has no disadvantages to our playing. If a trumpet player had always been playing with a support and someone suddenly removed it, how would the player react? For example, what would a cello player say if you removed the endpin from his instrument and suggested that the cello should be held between tensed knees (as was actually the case until the 1880s!)?

We are so thoroughly accustomed to the way we traditionally play that it is very difficult to change our routines and tradition even if we should every now and then re-evaluate them. Today we do know much more about ergonomics and therefore there is a great need to reconsider our established conceptions about the best way to play our instruments. Let's keep an open mind when contemplating this issue.

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Facts about trumpet playing

The trumpet itself is not a very heavy instrument, but it must be held fairly high. As the centre of gravity is approximately 30 cm (1 ft) on the front side of our body, the torsion increases significantly with the impact of the weight. At the same time, the arms of the player are much heavier than the instrument and they must be held up as well. If you try to hold just your arms in static playing position for five minutes, you'll

notice increasing tension not only in your arms but also in your back, neck, and shoulders.

To reduce this strain while playing (especially when the trumpeter is young) the player unconsciously lets the bell descend. When this happens, it leads to a situation where the instrument is supported by the elbows leaning toward the chest. This position gradually degenerates into a playing posture that, in the long run, isn't very healthy of us. The bell is pointing to the floor 3 meters (10 ft) in front of us, or into the music stand, instead of at the audience. At the same time the brightness of the sound is lost.

In the last few years several trumpets and mouthpieces, so called "heavy models," have been designed for trumpeters. Many players like them but sometimes complain about the instrument's extra weight. If the weight was not an issue anymore, just imagine how different, and hopefully better, the instruments could have been built?

Two kinds of muscles

If we look at our muscular system, we can see that there are two kinds of muscles in our body. Both sets are very important for playing brass instruments. First, we have muscles that hold our body up and sup-

port our skeletal structure automatically. They are situated in several areas of our body: back, pelvis, legs, chest, neck etc. When we stand empty handed and as relaxed as possible, we can feel a great relaxation even when we have many muscles in constant static tension. These supportive muscles are meant to always stay in tension.

The second set of muscles present in our body works in a different way. These muscles are normally relaxed but ready to engage when needed. We can grasp an object in our hand; we can start walking or running; we can turn our head or do anything else we require of this second tension/relaxation system. These muscles operate by tensing and relaxing continually. They can stay a while also in a static position, but if you keep them that way a long time, it acts somewhat against their normal purpose and they will get tired and need to rest. You can

"...there are two kinds of muscles in our body."



The trumpet support system transmits the whole weight of the arms and the instrument through the belt to the legs. The upper body can stay more relaxed as the player rests his hands on the trumpet, not the other way around.

work these “static” muscles to make them stronger. This sort of exercise will allow them to stay for longer periods of time in static tension, and this is essentially what we do when we force our arms and hands to hold the trumpet in playing position over a long practice session. The result is that when a player is getting physically tired, he or she automatically starts to compensate for this with slight changes in posture. This is a natural reaction when trying to cope in an excessive strain situation. These changes in posture often cause problems in breathing and result in a downward spiral for playing in general. This can be seen easily when young musicians are playing trumpet and at the same time fighting against the gravitational forces that are inherent in these situations.

If we look at a person standing relaxed and compare him to a standing trumpet player, we can see that the balances of their bodies are not equal. The player has a load of several kilograms (arms, hands, and the instrument) in the front of the body. That load must be held up with static tensed hands and arms. The player has to force his upper body to lean backwards to compensate the unbalance caused by the extra weight in front of their body. This balance is maintained by prolonged static tension. All of this is not a natural or healthy when prolonged, and reduces the body’s ability to breathe in a free and relaxed fashion.



When playing sitting, the weight is transmitted to the chair. As there is only one loose joint between the instrument and the support, it is very easy to move the trumpet in any direction while playing. The spring makes all movements smooth.

The science of ergonomics

Let’s look at the science of ergonomics. Human beings are using our bodies nowadays in a very different manner than that of our distant ancestors. Our body has developed into its present shape over the last 100,000 to 500,000 years. During that long period of time, changes to our skeletal or musculature structure took place very slowly. On top of that, humans typically made use of their bodies in ways that involved natural physical exertion that took advantage of that slow development occurring over thousands of years. So it’s only over the course of the last few generations that we haven’t worked physically hard. We just sit in front of a computer, or a music stand in an orchestra. This lack of stability causes us lots of physical problems and the science of ergonomics is trying to address these problems in a systematic and sensible fashion.

In last ten or twenty years there has been huge ergonomic progress in many fields of human life. The normal office chairs and concert hall chairs for musicians are not just chairs but are designed to be as comfortable as possible. New designs offer us a healthy and efficient way to sit and play. Ergonomics is taken very seriously when designing tools and working conditions in today’s workplace. The time has come to think more ergonomically with regard to how humans physically interact with the musical instruments they live with throughout so much of their daily lives. Many players

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When a nine-year-old girl holds the trumpet with the support system, the device naturally promotes good posture.

are suffering back, neck, or hand pain, or sometimes even physical injuries. So the main point of this article is to introduce trumpet players to devices that can assist us in playing more efficiently, comfortably, and in a more healthy fashion with an ergonomically designed support system.

There are many advantages when playing with a support system. The most important is that the weight of the instrument can be moved away from the upper body. When using the support for the first time, the sensation of being free from this weight can be felt immediately and can be quite dramatic. For young trumpeters, playing with this kind of support offers great help. There is no more need to start with a cornet or pocket trumpet because a normal sized instrument can be held easily in playing position without any physical strain. Modern playing supports are easy to use when playing sitting or standing (or even marching) and they are light and almost invisible.

“...breathing is easier when there is less tension in the upper body, hands, and throat.”

Avoiding a possible physical problem is not the only reason to use a playing support. It is also a simple physical fact that breathing is easier when there is less tension in the upper body, hands, and throat. Free and efficient breathing is essential for every brass player. Playing support creates a more comfortable way to hold the trumpet. In the long term this is a very enjoyable as the smooth cooperation between the player and the instrument will be achieved.

Luckily the science of ergonomics has recently been applied to trumpet playing by exploring ways to help us play our instruments in a more efficient, healthy and comfortable way. Finnish researcher, Jouko Antere, has been refining an ergonomically designed support system for all brass instruments in recent years. This system is illustrated through the images that accompany this article. For more information on Antere's work the reader can visit his web site (<http://www.ergobrass.com>).

About the author: Ari Heinonen joined Lahti Symphony Orchestra in Finland as principal trumpet in 1983. He is also editor of *Trumpet lessons with Olavi Koskela*, which was published in 2008.

