



Alexander Technique: Natural Movement Efficiency

Topic of this talk is an experiment that shows visible effects of an *Alexander technique* intervention on posture and motor coordination. The experiment is a private initiative of the thermograph Herbert Bäumer, a professional musician, and myself that took place in my practice in Bielefeld.

Firstly, I will give a short introduction to the *Alexander technique* view on natural movement and its basic coordination principle.

Secondly, I will outline the idea and the carrying out of the experiment.

Thirdly, some infra-red photographs may illustrate differences in posture and muscular activity before and after 30 minutes of classical *Alexander technique* table work.

I will finish my talk with with a concluding remark to this preliminary investigation.

I The observation

More than 100 years ago, the Australian Frederick Matthias Alexander (1869 – 1955) observed the effects of a very common misunderstanding and its fatal consequences: the erroneous idea that gravity pulls us down and that we have to keep us upright against the forces of gravity.

As a matter of fact, gravity itself keeps us up if we do not interfere with the natural reflex mechanism which developed during our evolution. Unfortunately, most western oriented people have very little knowledge of their excellent design.

The head has the natural tendency to falling forward. But there are combined neural impulses from the organs of balance and from the neck muscle receptors which immediately react to this. The righting reflex system prevents the head from falling and brings it back to its balance on the spine. The mechanism not only brings the head back to its normal place but also is of primary importance for efficient movement coordination. For this reason, Alexander called the dynamic relation of head, neck, and trunk the *primary control*.

The reflex system works if we do not try to help it. However, usually we try to keep us upright by using movement muscles. Also, instead of releasing the head forward and up we permanently fix it in an unconscious startle reflex pattern : (cf. ppt page 4 Fixing head and limbs) we pull our head back and downwards into our shoulders. The fixation of the head on the spine undermines the reflex activation, since there is no instability to activate it.

The sad reality is that our daily postures and movements often have become inappropriate. Instead of using our kinaesthetic sense we ignore it. The sense of movement has become suppressed. Signals from the body do not reach our consciousness.

Strongly contracted muscles make us less aware of what our limbs and muscles are doing. In familiar situations - such as professionally playing an instrument - subconscious movement patterns are used which do not require sensory feedback from within the body. We cannot feel what we are doing.

II The experiment

As *Alexander technique* teacher I am trained to help a person regain natural movement skills. For example, I can support the above mentioned *primary control* (the natural relationship between head, neck, and trunk) by inviting a person to relax on a massage table, a book underneath the head, and by giving muscle receptors impulses to release inappropriate tensions.

This is exactly what I offered a saxophonist without any *Alexander technique* experience.

We had never met before, but I was pretty sure that she would show movement patterns that are characteristic for saxophonists. I did not want to do anything about it. My intention was to stimulate the righting reflexes to set to work.

The experiment took about two hours. During this time, the fixed camera made a series of 32 infra-red photographs before the *Alexander technique* intervention and a series of 32 photographs afterwards. Pictures were taken of the total person standing as well as of head and trunk, actually in the front, rear and side views. In the first round, I asked the subject simply to stand without holding her instrument; in the second round, she simulated playing the saxophone; in the third round she articulated an easy tone; in the last round I asked her to play an ugly tone.

I made two assumptions : a) Associated with the the poise of the head on the cervical vertebra are a spontaneous lengthening of the spine and more freedom in the joints – a good preparation for playing an instrument.

b) stimulating the muscle receptors to release inappropriate tensions leads to a redistribution in muscular activity.

III Results and Discussion

I was lucky. The infra-red pictures clearly support the hypotheses.

After the intervention, the poise of the head on the cervical spine causes the whole spine to lengthen; the hollow back is reduced, the abdomen released. The right shoulder is more relaxed - what alleviates the perpendicular hanging of the arm. (cf. ppt page 6 Results and Discussion (1))

When playing an easy tone, not only the saxophonist, but also the instrument is more erect. Head and shoulders are less fixed, the abdomen is less contracted. There is more space in the chest.

More homogeneity in colour distribution as well as an obvious decrease in heat emission indicate improvements in muscle coordination. Standing naturally erect when playing an instrument saves muscle energy: the infra-red pictures show about one to two centigrates less heat emission in the shoulder girdle, in the arms, and in the pelvic girdle. (cf. ppt page 7 Results and Discussion (2))

A closer look at the left side reveals further details of the changes. The head clearly found a better place on the cervical spine – the nose moved backwards. A typical movement pattern of a saxophonist which consists in raising the left shoulder has remained. But it takes far less muscle effort in shoulders and upper arm. (cf. ppt page 8 Results and Discussion (3))

Obviously, muscle activity has a reflex in heat emission which can be registered by an infra-red camera. The fact that there is a remarkably reduced degree of heat emission after the Alexander technique intervention may serve as an argument for a muscle energy saving coordination process and thus for more efficiency in natural movement behaviour. (cf. ppt page 9 Results and Discussion (4))

IV Conclusion

Alexander technique aims at a general improvement in the use of the whole self. A demonstrable side effect is efficient movement coordination. The saxophonist reported a feeling of ease when playing after the intervention and showed great interest in learning the technique. Infra-red photography supplies an individual feedback for the reacquisition of the kinaesthetic sense. In my opinion, the matter is worth to be studied in more detail.