

IGINO VACCARI

THE NATURAL PIANO TECHNIQUE

IGINO VACCARI
PIANO TUITION

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Printed in Italy.
July 2010.

FOREWORD

Biomechanics applied to piano technique

Biomechanics applied to piano technique is a discipline that arises from the interaction between anatomy, physics and acoustics and has the objective of indicating the most suitable and natural means to overcome piano difficulties, both motor and timbral.

It allows you to acquire a natural piano technique, respectful of the anatomical and mechanical laws of the hand, wrist and arm, allowing the pianist to express both his virtuosistic and artistic potential.

In manual activity in general, and in instrumental activity in particular, muscle dissociation is an indispensable condition for a simple and natural movement of the fingers.

Without an adequate ability to activate only the really necessary muscle group, it is very difficult to exercise a muscle action which is totally under the control of the user, with the consequence of engaging many more muscles than are necessary for a certain action.

This generates a muscle imbalance, i.e. a lack of balanced action between agonist and antagonist muscles.

This imbalance can be the cause of limited rapidity of contraction, up to the point of causing tendon or muscle inflammation.

It is therefore necessary to develop a correct muscle action limited to only the group of muscles that must be activated, respecting the criteria of muscle dissociation, and stimulating the hand joints in a physiological and natural way.

The heart of the idea for the physiological development of the finger movements consists in exercising them without the participation of the palmar flexor, which often and involuntarily activates itself when the instrumentalist (pianist, violinist, cellist, etc.) attempt to provide the fingers with more muscle strength. The strength thus obtained is the cause of a lack of agility; this is due to the simultaneous action of muscles that provide for the fingers movement and muscles that "fix" the wrist: the muscular action must be limited to what is really needed to ensure the finger movement is totally under the control of the performer.

Playing the piano is not a matter of strength. If this were the case, it would be enough to do gymnastic exercises to strengthen the fingers to become great pianists!

Instead we can very well replace force with energies that nature makes available to us; they are the levers, the force of gravity and the correct use of the piano key.

These are elements that are present in all the great piano schools of the past.

Playing the piano from the motor point of view is an easy action. The piano is a system of levers just as the human body is a system of levers. Biomechanics has entered piano and instrumental teaching in general: it is the study of the human body movements, according to the instrument.

A piano technique based on physiological principles of biodynamics is at the same time comfortable.

Any muscular effort must be eliminated: playing the piano by applying muscle force instinctively activates the thrust of the arm and the thrust of the palmar flexor; these forces overload the fingers with a pressure that is not only not necessary to play but rather is counterproductive.

In fact, the increase in strength causes the decrease in agility: the arm pushes downwards while the finger and the wrist, having to bear this pressure in order not to collapse, put in place an upward counter-pressure which must cancel the first push.

The two forces elide: this elision causes the simultaneous contraction of the flexor and extensor muscles and this violates the law of antagonism, fundamental to the functioning of the human body.

According to this law every action of the human body must be counterbalanced by a reaction with relaxed muscle, that is, every muscle acts while its antagonist relaxes.

So how can you play without applying pressure?

By learning to use the lever: the lever is in fact a multiplier of force.

A lever is given by a fulcrum, by a point where to apply force, and by a resistance to be overcome (the "weight" of the key, about 50 grams of weight).

The metacarpal becomes the fulcrum of the lever and the weight of the arm must reach this fulcrum (about 1.5 kg in weight).

The prerequisite is the relaxation of the arm, which serves to bring into play a variable amount of weight based on the suspension (of the arm, forearm or hand) chosen for the expressive needs of the performer.

Weight is transmitted to the finger tip by flexing the metacarpal; this occurs by means of a traction that starts from the finger tips.

It is also necessary to check if the wrist is not positioned too high or too low, in order to find the "support point", a personal point where wrists and metacarpals work synergistically.

It is the sensation of having "one bone over another bone", as when standing: muscles do not support the weight, but support the bones.

It is therefore not necessary to lift fingers, which instead must act with a closing action to create the support point. By doing this, the fifth finger allows the metacarpal to act along a horizontal line and not along a descending line towards the keyboard, thus giving the possibility to create a good quality singing tone.

When the fifth finger acts in this way, it naturally occurs that the thumb abductor extends away from the hand gaining about half a centimeter in the opening of the hand.

Weight is transferred from one finger tip to the other just as it is transferred from one foot to the other while walking.

The so-called "passive articulation" that can be seen is not due to the fact that fingers are raised and lowered, but to the rapidity with which they exit the key: this is due to the elimination of the pressure that forced the finger to remain on the key bottom.

The impression of articulation is not determined by the action of the extensors, as it would seem, but by the rapidity with which fingers, after carrying out their support action, are placed in a state of relaxation (see muscle dissociation), causing a slight upturn.

In high speed passages, this is the action that can be visually confused with the articulation, intended as lifting the fingers from the key.

The arm therefore serves to bring the finger to the correct and most comfortable position.

If all the muscle mechanisms are used according to this concept of levers, agility develops easily because those antagonistic muscle contractions that brake agility are not put in place.

If we set the study on the development of strength, the left hand (for a righthanded person) will always be at a disadvantage, while if, on the contrary, we base the study on the criteria of the levers, the brain will transmit the concepts learned to the right hand to the left hand.

Later it becomes necessary to avoid fragmenting the fingers activity to reach the high speeds required by literature, i.e. producing multiple sounds with a single movement.

Forearm rotation, in the situation of correct movements, in fact allows the grouping of sounds in a single movement: this is the secret to reach speed.

The execution speed is not simply obtainable by increasing it progressively (perhaps by increasing the metronome notches), but by taking a small fragment and making it as quick as possible by trying to find the united movement that allows it.

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