

Aesthetic transformations of the piano linked to the evolution of manufacturing

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If we were not aware of the expressivity of ancient pianos, we would spontaneously consider the history of piano manufacturing as continuous progress. The contemporary instrument, with its technical bases established during the 19th century, is the result of these improvements. According to this point of view that I do not share, piano manufacturing has made a tremendous progress throughout the last three centuries. Trying to resolve different problems through the ages, the piano has gradually improved. The result is astonishing. The modern grand piano is the most powerful instrument that has ever existed. Its sound is seductive and imposing. It evokes grandiosity, monumentality. The contemporary piano seems to be the culmination of the organology evolution. This outcome embodies the supremacy of sound power on other musical aspects. Since the mid-20th century, and unlike the 18th and 19th centuries, there is a consensus about what makes a perfect instrument. No plurality of point of views exists any longer. The grand modern piano has become an absolute reference.

This is a commonly held idea among musical historians: “Since the first Cristofori instrument in 1709, writes Ernest Closson in 1947, the history of piano is a story of a continuous and accelerated progress”¹. People that agree with Closson are aware of the important patents, the repertoire, etc. Furthermore, the majority of pianists prefer the ancient repertoire. Few of them play contemporary music. Confronted with the historic pianos – like Mozart’s *Walter*, Chopin’s *Pleyel*, or Ravel’s *Erard* –, they become disoriented and troubled. Their conditioned reflex, their spontaneous reaction, is to reject those “new” instruments. This significant fact proves the existence of an important musical gap between ancient and modern pianos. We know that no progress exists in Art, but an evolution. The modern is not better than the ancient, but different. Nevertheless, pianists defend strongly the supremacy of the modern over the ancient.

Wind, string, and percussion instruments put the instrumentalist very close to the emitting source of sound. On the other hand, the pianist is not directly related to any vibrating part of his instrument. The keyboard and the action are the connection between the pianist and the sound. This is one of the reasons why the pianist does not know much about the piano mechanism. “The odd thing is that most of the pianists, even the most famous ones, have a very limited knowledge about how their instrument works”², says Badura Skoda. In fact, the pianist only knows the keyboard and the sound result. All other parts are hidden

¹ CLOSSON, Ernest, *History of the piano*, Londres, Elek, 1947, p. 83.

² Paul Badura-Skoda in MAGNE, Daniel, *Guide pratique du piano/pour l'amateur et le professionnel*, Paris, Francis Van de Velde, 1978, p. 6.

behind the furniture. The pianist is only concerned with his instrument's efficiency. The adjustments and the tuning of the piano are the responsibility of a specialist, mainly a technician. I use the word "technician" in a strict sense, isolated from the beauty, close to an objective control of the instrument.

An historical descriptivism of organological inventions avoids an aesthetic and historic reality. As an alternative to a narrowly defined organological focus, it would be more rewarding to analyze the musical aspects of organology, independently from the performer. Contrary to a widespread opinion, a single model cannot be adapted to the whole piano repertoire. One of the tragedies of aesthetic history is that the piano makers, every time that they make "progress", remove, against their will, a quality. Some musical changes are even independent from the creator's attention. In general, the musical implications of manufacturing transformations are quite neglected in musicology. These transformations constitute an unavoidable and continuous historic reality. Globally, this phenomenon is beyond major historical inventions, like the example of the double-escapement. In that sense, we can refute the argument, commonly admitted in musicology, that the piano has not basically changed since the late 19th century.

The evolution of manufacturing through history has always induced, inevitably, a stronger, more audible sound and transformations of range equilibrium. Understanding that reality requires historical knowledge and practical experience of period instruments from Bartolomeo Cristofori until the 21st century. Generally speaking, the power of sound has continuously increased, even from the last part of the 19th century, all the way to the beginning of the 21st century. As a historical rule, the gain in power has caused many drawbacks in other aspects of the piano. Indeed, to remove a defect from the instrument is also to cut off a quality. For example, it is impossible, on a contemporary piano, to obtain acoustically a forte-piano indication in the classical repertoire (like the beginning of the Beethoven's Pathetic Sonata), or to respect many romantic pedal indications. Eschewing any sweeping conclusions, I believe that, through its history, the piano has never been a stable instrument, which means that it is impossible for one "ideal" standardized instrument to exist for the whole piano repertoire. In a lecture at Columbia University in 1989, the Japanese composer Toru Takemitsu, a genius orchestrator who composed for modern occidental and ancient far-eastern instruments, evokes the standardization of occidental instruments:

"Even in European music there must have been subtle sounds or special regional sounds that the modern piano could not produce. But if one becomes preoccupied with such subtleties, instruments become less functional, so those considerations were dropped in favor of convenient standardization"³.

With the clavichord, one of the piano's ancestors, every sound requires a considerable control. During the sound propagation, the clavichordist is able to make the intensity and the accuracy of the sound fluctuate, and to produce a marked vibrato. He/she controls the already existing sound. Thus we can understand the importance of the clavichord for Carl Philipp Emmanuel Bach who refused to judge a musician on harpsichord before listening

³ TAKEMITSU, Toru, *Confronting Silence: Selected Writings*, Berkeley: Fallen Leaf Press, 1995, p. 61.

to him/her playing clavichord. Those clavichord characteristics have been lost with the invention of the piano by Cristofori in the early 18th century. With its new mechanism, the new instrument has erased those clavichords' distinctiveness. Thus, the birth of the piano was both a fortune and a misfortune.

If the ancient piano's specific sounds can be felt according to intuition and sensitivity, it is very hard to explain them in concrete terms. However, some problems related to the instrument's resonance reveal the aesthetical evolution of the piano from the beginning of the 19th century until nowadays. The resonance of the piano has been exploited in a visionary way with Beethoven. With Chopin, it became an integral part of the musical discourse. Unlike the clavichord, the harpsichord, and the classical pianoforte, the particularities of the romantic pianoforte are not fundamentally taken into account by musicologists. That's why the majority of them believe that the modern piano was precisely born in the second part of the 19th century. With a modest practical experience, a fact is obvious: to claim that the piano has not basically changed since 1850 is a simplistic analysis.

Studying the possibilities of the Parisian pianos of 1840-1850 (*Erard* and *Pleyel*, among others), I noticed at what point Chopin's compositions are closely related to their particularities. Chopin is a pioneer composer with his use of the growing resonance of the first romantic instruments. The extension of the piano virtuosity, and Chopin's instrumental thought, are both closely linked to the pedal, which depends on the piano resonance. In Chopin's music, the pedal indications are not suggestions, but more often a fundamental part of the composition.

The power of Chopin's piano is halfway between those of Mozart and Debussy. Compared to the classical pianoforte, the resonance is not so short. It lasts longer in the low register and decreases progressively in the upper register. The basses are not excessive. They sound like double-bass pizzicatos with a longer resonance. The medium is the most expressive register. It sings easily. In the *pianissimo*, it is like the clavichord. In the *mezzoforte*, it is like a cymbalum. The high-pitched notes are very soft and short. A *fortissimo* is impossible to obtain in the upper register. If we play Chopin's music on a *Pleyel* from Chopin's period, we very easily obtain specific range equilibrium impossible to realize on a later date piano. Even if we play *fortissimo*, no range will become too piercing. No lower range will blur an upper melody, as it is the case in the contemporary piano. For instance, the left hand requires to be played as strongly as the right hand. It enriches the right hand sonority.

I noticed a small power difference between an *Erard* from 1840 and another one from 1850, the same difference as between an *Erard* from 1865 and another one from 1880, etc. The same difference subsists all along the 20th century from a decade to another one. Logically, an important musical distance exists between an *Erard* from 1850 and an *Erard* from 1910, or between a *Steinway* from 1910 and a *Steinway* from 1980. For example, an *Erard* from 1885 is not the historic instrument of Liszt's Etudes.

If the piano structure is still the same since the end of the 19th century, its sonority has continuously been transformed. The change is visible in the action, more and more heavy, in the hammers, more and more voluminous and hard (with the use of chemical products), and in the strings, more tense and stiff. In the 21st century, the piano reached its maximal power. Even with the same size, the 21st century piano is a sound monster compared to the *Bechstein*, *Pleyel* or *Erard* played by Debussy and Ravel. Nowadays, there is apparently no possibility to change this situation. Those rigid circumstances do not allow us to escape from conventions.

Piano manufacturing embodies the dilemma between reason and the mystery of wood and natural materials. The size and shape of the component parts of the piano have continuously evolved towards power. Generally speaking, most of the 19th century disparate inventions aimed to a more sustained powerful sound. At the end of the 19th century, the piano took its present structure. But its internal content has considerably changed. The tendency of the second part of the 20th century was to produce a homogenous and more resonant sound from low to high registers. The use of chemical products (impregnation of hammer felt, artificial glue) during the last 50 years is a new event in piano history. For a more powerful sound, our time abandoned the traditional union between music manufacturing and natural product. Every purpose became strictly known and calculated in advance.

The 20th century manufacturing industry contributed to standardization. Compared to the 19th century, the differences between one instrument and another are not so obvious anymore. They have continuously decreased till today. Our era has no innovation in piano manufacturing. The piano industry is aiming at achieving a single novelty: the uniform sound that is becoming more brilliant and metallic. Unlike the 18th and 19th centuries, the piano does not contain the characteristics of a geographic region. Paradoxically, the illusion of the control of the piano material is not the control of the instrument music significance. The ideal contemporary piano, the neutral piano, is an unrealizable phantasm. It is the phantasm of the supremacy of the reason on the expressivity, the phantasm of a unique and definitive instrument.

The invention of the piano mechanism long after the Renaissance is the result of an abstract thought process, typical of western civilization. It is not an intuitive way of producing sound, like a bow-stroke, percussion, or blowing into a wind instrument, typical of all ancient civilizations. Three centuries after the first piano, we can affirm that a neutral piano is impossible to achieve. Future generation of musicologists might have other points of view. However, this standardization runs counter to piano history, made by aesthetical fortunes and misfortunes. At present, the general will of the piano world seems to deny its own aesthetical history.