

THE NEED FOR AN EXPRESSIVE INSTRUMENT

The harmonium is one of the very few musical instruments to have a precise birthday: its history begins in 1842, the year when Alexandre Debain took out a patent on an instrument by that name. However, understanding this relatively new instrument and its aesthetic significance requires knowledge of the period preceding its invention. It is important to realize that the harmonium was not invented by chance, nor was it an unexpected success arising from the fantasy of an isolated instrument maker. The harmonium was the product of a long process, starting in the Baroque and Classic eras and brought to completion in those years that marked the breakthrough of the new Romantic style.

As early as around 1700, some musicians clearly describe the nature of the harmonium sound. François Couperin writes in *Pièces de Clavecin Premier Livre* of 1713:

The harpsichord is perfect as regards compass and splendid in itself, but since one cannot increase nor diminish its sounds, I would be grateful to those who, through consummate knowledge supported by taste, might succeed in making this instrument capable of expression.¹

A few years later, he writes:

If the harpsichord cannot increase its sounds,...it has other advantages, which are precision, clarity, brilliance, and compass.²

The connection of sound and style is stated as follows:

To conclude with some general remarks on playing the harpsichord: my feeling is that one should not forsake the style which is suited to it. Quick passages or runs, arpeggios within the compass of the hand, *choses lutées* [pieces in which the chords are played arpeggio or rhythmically broken, as on the lute] and syncopated pieces are to be preferred to those which are full of sustained notes or those too deep in pitch.³

These last are precisely those features which are especially appreciated in harmonium music.

1 François Couperin, *Pièces de Clavecin, Premier Livre* (1713; facsimile edition (New York: Broude, 1973), Preface. See Appendix for the original French of this and all further quotations.

2 François Couperin, *L'Art de toucher le Clavecin* (1717; ed. Anna Linde, Wiesbaden: Breitkopf & Härtel, 1990), 22.

3 Couperin, *L'Art de toucher*, 33.

German sources of this period, on the other hand, give the impression of a more static idea of piano and forte. Dynamic variation is not connected with expression, as in Couperin's description. Playing piano or forte is almost seen as an embellishment. Nevertheless, from the second half of the 18th century, there is a gradual change in thinking about dynamics. The crescendo of the *Mannheim-Schule* is the best-known example of the new style. Leopold Mozart is one of the first writers in the German-speaking area to connect *Ausdruck*, [*Expression*] with forte and piano:

Man muss ...sorgfältig nachsehen ob nicht eine Passage darinnen steckt, die oft beym ersten Ansehen nicht viel zu bedeuten hat, wegen der besondern Art des Vortrags und des Ausdrucks aber eben nicht leicht abzuspielen ist....Man muss alles so spielen, dass man selbst davon gerührt wird. Aus diesem fliesset: dass man die vorgeschriebene Piano und Forte aufs genauesten beachten, und nicht immer in einem Tone fortleyren muss. Ja man muss das Schwache mit dem Starken, ohne Vorschrift, auch meistens selbst abwechseln und jedes am rechten Orte anzubringen wissen.⁴

In this idiom, dynamic changes play an expressive role: the mood of both the player and the listener is expressed, or at least influenced by, the loudness of the sound. In the same chapter, Mozart gives a very clear definition of the notion, "Accent, Ausdruck oder die Stärke des Tones." Accent is not the French *port de voix* or Italian *Appoggiatura*; it coincides rather with *Ausdruck* or *Nachdruck* [Emphasis].⁵ The evolution of expression concerning changes in volume deserves a special study, but in the context of our short introduction, the quoted examples should be enough to demonstrate the changing ideas.

In the same period, there is a similar evolution in France, as we can read in the works of Jean-Jacques Rousseau. He associates expression with dynamics:

The instruments also have different manners of expression, depending on whether the sound is loud or soft; the timbre shrill or sweet; the pitch low or high; and whether the sounds can be produced in greater or less quantity.⁶

The influence of timbre on expression is a rather new, modern idea. Of course, in the preceding centuries, certain sounds were used to express a specific atmosphere, such as the regal in Monteverdi's work, but always in a decorative way. In Rousseau's thinking, the emphasis is more on personal feeling and the expression of this feeling. In order to communicate this emotion to the listener, Rousseau says:

Do what you would do if you were at the same time a poet, a composer, an actor, and a singer, and you will possess all the expression possible to give to the work that you are to render. In this fashion, you will naturally arrive at adding delicacy

4 Leopold Mozart, *Gründliche Violinschule* (Augsburg, 1789; facsimile ed. H.R. Jung, Leipzig: VEB Deutscher Verlag für Musik, 1968), 260.

5 Mozart, *Violinschule*, 261, footnote d.

6 Jean-Jacques Rousseau, *Œuvres Complètes*, vol. 5, *Dictionnaire de Musique* (Paris, 1864), 53.

and ornaments ... sharpness and fire... groaning and lamentation ... and all of the agitation of the forte-piano in the heat of violent passions.⁷

The last words are the most important for our subject: extreme passions are to be expressed with extreme dynamic changes. The need for dynamic modulation is further discussed and explained in the entry “Forte-piano”:

...The forte-piano is the art of softening and strengthening the sounds in the imitative melody, just as one does in the words that it imitates. It is not only that, when speaking with agitation, one does not express oneself constantly at the same pitch, but also that one does not always speak with the same degree of force. Thus, music, in imitating a variety of accents and tones, should also imitate all the degrees of intensity and relaxation in speech, speaking now softly, now strongly, now moderately.⁸

The idea of timbre is also developed. The greatest power of expression comes from the combination of sounds, but the quality of timbre is very important for the effect to be obtained.⁹

Finally, when describing and defining *son*, Rousseau mentions three parameters:

There are three principal matters to consider in sound: pitch, loudness, and timbre: within each of these, the sound may be modified: first, from low to high; second, from loud to soft; third, from shrill to sweet, or from dull to bright, and conversely.¹⁰

Sound has three elements; namely, pitch, loudness, and timbre. These three elements also form the basis of the harmonium. Each element can be modified or modulated: from bass to treble (through the keyboard), from loud to soft (through control of volume), from harsh to mellow (through registers or swell shutters). Those three elements are the basis of the harmonium. With some *Hineininterpretierung*, one can suppose that Rousseau is dreaming of the harmonium. His statement should be enough to demonstrate that there was a general need for keyboard instruments able to produce dynamic sound. This naturally includes sustained sound: hence, the search for new types of keyboard instruments.

TOWARDS A SOLUTION

During the second half of the 18th century, in all musical centers of Europe, instrument makers tried to create a modern keyboard instrument. After many trials with as many different materials, only one was found capable of dynamic change over a wide range, without the disadvantage of going out of tune when modifying the sound. The sound-producing element able to achieve those goals is the free

7 Rousseau, *Dictionnaire*, 53.

8 Rousseau, *Dictionnaire*, 58.

9 “Quoique la plus grande force de l’expression se tire de la combinaison des sons, la qualité de leur timbre n’est pas indifférente pour le même effet.” Rousseau, *Dictionnaire*, 52.

10 Rousseau, *Dictionnaire*, 209.

reed: following the principle of the pendulum, the frequency is independent of the amplitude. In musical terms, changing the volume (amplitude) does not affect the tuning (frequency). Moreover, the size of the free reed makes it possible to house it in a small case. The case, the resonator itself, makes it possible to change the timbre. The principle of the free reed was known in very early times, but one had to wait until the early 19th century for its general practical application in the making of keyboard instruments.

In France, it was the organ which led to the development of the harmonium. Gabriel Joseph Grenié (1756–1837) started from an organ windchest. The organ pipes were replaced by free reeds with large wooden resonators, comparable to the resonators of organ reed pipes. The wind was supplied by two feeders connected to the treadles. Those feeders filled a reservoir able to provide variable wind pressure, according to the speed of the pedalling. Although Grenié's example was followed by other builders, such as Achille Müller, his invention did not last long. Certainly, the musical result was not convincing. Examination of two remaining instruments shows that the dynamic range is rather limited.¹¹ The possibilities of changing timbre are also limited: there is indeed only one row of reeds (pipes), so timbre can only be changed by a kind of swell shutter. Moreover, the speech is not very prompt; one could compare it to the well-known laziness of most free reed organ stops. The reason for this is probably the position of the reed relative to the pallet. As with organ reed stops, the reed is located behind the pallet. This means that the reed can only speak when there is sufficient air pressure; in other words, the reed can not sound before the boot has been filled with compressed air. This impression of laziness is reinforced by the rather resistant pedalling. Despite its faults, Grenié's was the first serious, commercial attempt to create a new kind of musical instrument.

In Austria, Anton Haeckl developed the so-called physharmonica (or *Physharmonika*). This reed organ, small enough to place under the usual pianoforte keyboard, could be played either solo or together with a pianoforte. This instrument was built in the 1820s and had some commercial success, reflected in the publication of physharmonica methods by Georg Lickl (1834) and Johann Promberger (1835). The physharmonica was taken seriously, and highly esteemed pianoforte builders, such as Graf and Stein, introduced it in their keyboards. The difference from the *orgue expressif* lies not only in size. The sound is produced by free reeds, but there are no resonators. The compass of the physharmonica seems to be influenced by the pianoforte also, ranging from F_1 in the bass to f''' or even c'''' in the treble. The whole system needs less wind pressure than the Grenié instrument, and the treadles are small, almost like pianoforte pedals. But still, this instrument was not able to launch an important development. Expression was possible, but the sound resources were limited. There was, in most cases, only one row of reeds,

¹¹ In the Musikinstrumenten-Museum, Universität Leipzig (Catalog no. 323), and in the Brussels Instrumenten Museum (Catalog no. 4348).

sometimes two or three, and one could change the timbre only slightly by inserting shutters of various shapes and materials.

Other attempts to develop a reed organ were made by organ builders such as Cavaillé-Coll, Schlimbach, Erard, and Walcker, among others. The predecessors of the harmonium still need to be more completely investigated and would be worth a special study.

THE SOLUTION

The history of the harmonium starts around 1840 with Alexandre François Debain's experiments leading to a patent for what he called the *Harmonium* (1842). The model of 1842 has all the typical features of the harmonium as it continued to be built during the following century. Those features can be summarized as follows:

- the sound is produced by free reeds, with no resonators;
- the compass is 5 octaves, from *C* to *c'''* (the compass starting at *C* comes from the roots of the French harmonium in the pipe organ)
- compressed air is supplied by depressing treadles, and the pedalling is done by the player who has direct control of the loudness of the sound;
- there are four rows of reeds, each divided into bass and treble, the split being at *e'-f'*; the standard pitch of the stops is 8', 8', 4' and 16'.

From the technical point of view, there is a significant difference from the organ, the *orgue expressif* of Grenié, and most of those by their predecessors: harmonium pallets are located above the reeds. Thus, the reeds are always in the chamber filled with compressed air, *dans le vent*.

To achieve control of air pressure, it is important to manage the air directly by a device which is under total control of the player. The solution is the alternation of two treadles, or pedals, which are rather large compared to the older Viennese types. This alternation is very important and the only practical possible system. Another system, also used by Cavaillé-Coll in his *Poikilorgue* of the 1830s, uses left and right treadles. One treadle operates a feeder, letting air into a reservoir; the second treadle, connected to the moving top of this reservoir, provides the pressure. This system is very hard to use (almost like a bicycle with one pedall), and it takes a long time to master the technical problems of the air pressure. So the principle of alternating treadles is not merely coincidental.

Control of timbre by stops is only totally possible in the design proposed by Debain: the drawknobs are located immediately above the keyboard, so that the player seldom or never has to leave the keys to make a change. The action must be very light and noiseless, which is the case with the Debain system.

These features compose the very essence of the harmonium:

- controlling the dynamics by the treadles;
- controlling the pitch by pressing the keys;
- controlling the timbre by drawing the stops.

The Debain harmonium continued to be copied and imitated, and its principles remained the same as long as harmoniums were produced, despite a few additions or so-called improvements. The name *Harmonium* was protected by patent. Consequently, other builders had to invent other names for what was actually the same instrument. The most common names to be found are: *Orgue-Mélodium*, *Mélodium*, *Orgue Expressif*, *Orgue-Alexandre*, and *Orgue-Mustel*. Thus far, almost one hundred names have been used to designate the same thing! (See a musical encyclopedia for a description of the harmonium.)

THE *ORGUE EXPRESSIF*

From the point of view of musical interpretation, it is still worth investigating why the harmonium had such success in the mid-19th century. As we have seen, there was a general need for a keyboard instrument capable of achieving important changes in loudness, as well as changes in timbre, in order to express the musician's emotions and to communicate them to the listener.

The importance of expression and how it is achieved are clearly summarized in the 1913 French edition of Hugo Riemann's *Musik-Lexikon*. The article reviews, of course, the preceding period, and it can be seen as representative of both German and French thinking.

Musical expression is the totality of the delicate nuances that the interpretation of a musical work requires, nuances that the notation cannot indicate exactly and that include all the small changes of tempo, all the dynamic variations, accentuations, and diverse timbres.¹²

This is to say that expression depends on the combination of delicate changes of movement, dynamics, emphasis, and timbre, in other words, all elements that the player has under control at the harmonium. The connection between loudness and intensity of emotion is also made: "An increase in intensity of sound also corresponds to an exaltation, a decrease to a relaxation;..."¹³ In particular, the normal dynamic curve is described as follows:

...the normal dynamic formula of a musical phrase is, consequently, the crescendo (up to the culmination of the phrase) followed by a diminuendo (until the end). We may add that generally the melodic curve follows the ascending, then descending movement of the musical phrase.¹⁴

As this is the normal way of creating expression, it is not usually indicated. Creating a crescendo-diminuendo along the musical phrase happens by itself – exactly as *rubato* does. Consequently, only the deviation from the normal way is written down:

12 H. Riemann, *Dictionnaire de Musique, 2ème édition française, entièrement remaniée et augmentée par Georges Humbert* (Lausanne, 1913), 307.

13 Riemann, *Dictionnaire*, 307.

14 Riemann, *Dictionnaire*, 307.

The composer most often indicates the exceptions to the general rules, for example, a *diminuendo* when the melody rises or when there is a *stringendo*.¹⁵

The importance of dynamics goes even beyond the phrasing; it is a part of the structure. The form of the piece is expressed by dynamic changes:

Modulation normally occurs in a *crescendo*, and the chords or sounds that introduce it have stronger accents than their metrical or rhythmic value would require.¹⁶

Thus, expression, dynamics, and structure are interrelated.

Some forty years earlier, in 1877, similar observations were made by Mathis Lussy. Every musical phrase should have its own dynamic range in relation to the structure:

One must, moreover, give every composition, every phrase, the intensity of sound, the sonority that suits its structure. Nuances thus include not only rhythms, from their first to last note, but also the musical composition, from its first to last phrase. This is the cement, the link that unites the diverse dynamic elements, bringing them closer to each other and making them interdependent.¹⁷

One must understand the meaning of Lussy's *rythme*: it is a part of the musical structure, the whole complex of the tones, along with their time values, in the musical phrase.¹⁸ Lussy tries to analyze the phenomenon, which was not often treated in other theoretical publications. He absolutely rejects the unpredictable or subjective character of nuance.

Of all aspects of expression, this is the one which seems to depend most on the arbitrary. But that is not at all the case. Nuances have such an intimate relationship to the structure of the phrase that it is impossible to separate them from it: every phrase is suited to a particular degree of intensity of sound and to no other. Here, as everywhere, there are rules that a man of good taste observes instinctively and from which the artist should not deviate.¹⁹

This is a typical Lussy statement: the writer is trying to sum up the rules which lie behind good taste in a performance.

Lussy sees the whole in a historical context:

"One must recognize, by the way, that of all manifestations of expression, it is this one on which one generally bestows most care."²⁰

15 Riemann, *Dictionnaire*, 308.

16 Riemann, *Dictionnaire*, 308.

17 Mathis Lussy, *Traité de l'Expression Musicale* (Paris, 1877), 138.

18 Mathis Lussy, *Le Rythme Musical, Son origine, Sa fonction et Son Accentuation* (Paris, 1884), 39. This edition reproduces large sections of the earlier publication.

19 Lussy, *Traité*, 138.

20 Lussy, *Traité*, 138.

This is more or less what we have seen earlier; namely, that expression and dynamics are one and the same thing.

The old composers gave indications relating to nuances only; the old editions contain no other indications. Even today, the greatest teachers are silent on metrical, rhythmical, and emotive accents, limiting themselves to teaching their pupils the mechanical methods as well as the manner of expressing nuances well, of delicately observing crescendos and decrescendos.²¹

In formulating the rules for good dynamics, Lussy agrees with the simple rule of the Riemann *Lexikon*:

One should use the crescendo, that is, gradually increase the degree of force, of sound, in rising passages.²²

The reason for the natural crescendo is to be found in the law of gravity.

We repeat: to rise is to move against the tendencies, the attractions of the human soul; it is to struggle; it is to conquer the obstacles. To say "struggle" is to say "the expense of energy," having as its consequence exhaustion, fatigue.

This idea of the immediate influence of energy on sound may be applied to many instruments, of course, as well as to the harmonium, although less so to the organ.

In the literature specific to the harmonium, expression is treated by Alphonse Mustel in his standard work on the French harmonium. Expression is the supreme quality which the organ does not have and for which organists and builders have searched in vain:

Expression, o supreme quality! The expression, which the large organ lacks and which, until now, organists and organ builders have dreamt of in vain for its own sake, is now in the possession of its unpretentious younger brother, and this is its revenge.²³

Expression, achieved by dynamic changes, is preeminent in the interpretation of music:

Expression in music, it is the soul, it is the life. This property of an instrument, to be able to sing the melody, surpasses all others in importance, including polyphony and timbre...

These words imply that singing is still the model for a good performance and that singing goes along with dynamic changes, corresponding to intensity of emotion. In Mustel's work, polyphony, or structure, and timbre are secondary. In this context, it is worth mentioning that there is a difference in French and German literature regarding the predominance of expression above the other elements, at least

21 Lussy, *Traité*, 138.

22 This and the following quotation in Lussy, *Traité*, 139.

23 This and the following quotation in A. Mustel, *L'Orgue expressif ou harmonium*, vol. I (Paris, 1903), 7.

in the early 20th century. In German writings of that period, dynamic expression is just one of the parameters contributing to the whole of a performance.

Like many other writers about the harmonium, Mustel likes to compare it to the violin, where bowing creates expression. One must say that Mustel goes a little far when stating that the sound of the violin is actually not the most beautiful sound but is compensated for by the dynamic change created by bowing.

Why is the violin, without contest, the king of the orchestra and, at the same time, the most admired of instruments? Its sound is not as pure as that of the flute, its timbre even has by nature a squeaking quality that all the art of the virtuoso, developed during long studies, endeavors to modify, to soften. But how expressive it is! To a supreme degree under the bow, it sings, it weeps, it laughs, it almost speaks ... and the marvellous emotional power that it possesses makes one forget its shortcomings, if there are any, and causes it to be admired by everyone and beloved by the artist who devotes himself to this the most laborious of apprenticeships.²⁴

The study of expression is also the most important chapter of his method. Until the invention of the tone-wheel organ, the harmonium was the only keyboard instrument capable of changing the dynamics of sustained tones.

Expressive power is thus highly appreciated by the musician. Like the violin, the harmonium possesses it, and, alone among keyboard instruments, combines it with absolute polyphony and the prolongation of sound: from this comes the name "expressive organ" which it was originally given. This is, in fact, its distinctive characteristic.²⁵

In describing the phenomenon of expression connected to emotion, Mustel makes a distinction between expression and nuance. The latter can be created at the organ where a swell box can achieve a gradual crescendo or diminuendo. But the effect is limited, and the transmission of emotion is indirect. Nuance is not real expression. Expression is directly connected to the sound-producing reed: indeed, strong expression means more air pressure, which increases the amplitude of the vibrations of the reed and, of course, changes the entire complex of the sound's loudness and overtones. The organ is not able to change the sound by itself. As regards the harmonium, the sound is created and modified by the air produced by the pedalling of the player.

[True expression is] intimately connected to sound and is produced together with it when the resonating medium is itself expressive. The harmonium has this true, powerful, communicative expression: its pedal transmits it directly to the board as the bow does to the string.²⁶

24 Mustel, *L'Orgue expressif*, 8.

25 Mustel, *L'Orgue expressif*, 8.

26 Mustel, *L'Orgue expressif*, 8.

The very essence of harmonium technique is therefore mastering expression by pedalling, also called *Expression-pédale*.

The Art Harmonium, an artist's instrument, thanks to the progress made in instrument making and to ingenious improvements which have increased immensely the sensitivity of the reed and extended the limits of fortissimo and pianissimo, is possessed of expression developed to the highest degree, making possible at the same time nuances and accents, increasing in an extremely wide progression from the softest breath of sound to the most intense outburst of energy, moreover, bringing in the fine points, in the attack of the note, delicacies and intentions that one would have thought reserved for the bow-stroke.²⁷

As for the sound itself, it is important to realize that our 20th-century conception of sound is different from that of the 19th century. The most striking element is the so-called "attack." Attack should not be confused with prompt speech or control. These last two were as important in the 19th century as they are today, but attack, by itself, has become more and more important, although it has always been one of the basic parameters of the sound envelope. Generally speaking, 19th-century ears were not very much concerned with attack, although prompt speaking of the reed, string, or organ pipe was indeed important. But a more important factor in the sound was undoubtedly the sustained tone. Dynamic change of sustained tones was, of course, possible in the human voice, on stringed instruments, and, among keyboard instruments, on the harmonium.

In order to demonstrate how much the modern ear is influenced by attack, more than by the held tone, an interesting experiment can be done. It consists in cutting off the attack of, for instance, a piano tone. The result is astounding: the sustained tone, without attack, sounds like that of a harmonium. This effect is even clearer when the sound wave of the piano tone is inverted and heard backwards. One hears a crescendo exactly like that which the harmonium can produce.²⁸ While we are aware of the great importance applied to the attack today, we must rethink sound and at least try to understand the different hearing and listening of the 19th century. Moreover, the changing of what was heard by the ear (and of the music!) can be considered one of the factors responsible for the decline of the harmonium in the 1920s. Economic and industrial factors are worth discussion in another study.

THE INFLUENCE ON THE ORGAN

Let us look at the direct influence of the harmonium on organ aesthetics. First, there is a development evident in the compositions of those interested in the harmonium. A good example is César Franck. Without considering his expression marks and other indications of the use of expression, we see a change in his writing as soon as he discovers the harmonium. His early style, in the 1850s, is very

²⁷ Mustel, *L'Orgue expressif*, 8.

²⁸ Institute for Perception Research, *Auditory Demonstrations*, Philips 1126-061, CD (1987), tracks 54–56.

much related to the contemporary style, following Lefébure-Wély as the leading organist. An overview of his early works, edited as *Pièces Posthumes* by Franck's son Georges in two recent editions,²⁹ shows Franck as almost a pure Lefébure-Wély follower. This means, among other things, harmony written in open positions; many octave doublings; a melody accompanied by a jumping bass and a high chord, often with the melody in the tenor (*en taille*); and a clear distinction between the different voices. In Franck's late, posthumous works, such as the Three Chorales, the most important musical material, the chorale, is written in typical harmonium style. In harmonium writing, a close harmony sounds better than an open one and a legato harmony better than a disjunct voicing of the chords.

An even more specific influence is seen in the voicing of the accompaniment: a kind of overlapping of melody and harmony, which sounds very good on the harmonium. This is made possible by the division of the keyboard in the center, which allows playing in 4' and 16' register on either side of the split. Moreover, a different registration on each side leads to a very clear separation of the parts which, in fact, overlap. This overlapping is not only seen in the Three Chorales, but also in the *Grande Pièce Symphonique*, whose opening bars reproduce exactly the concluding bars of the harmonium piece *Quasi Marcia*, composed around 1860. The theme is exactly the same and is in the same key. What one can achieve at the harmonium by drawing stops at different pitch levels may be done at the organ on two manuals. The typical harmonium-style overlaying of sounds and parts becomes in the *Grande Pièce Symphonique* an innovation in writing for the organ.

The connection between *Quasi Marcia* and the *Grande Pièce Symphonique* shows another influence of the harmonium, especially in Franck's writing, perhaps less in other composers, specifically, a change in the use of keys. Franck more and more tends to use sharps in his later compositions, whereas his early works have many flats, exactly like those of Lefébure-Wély. The harmonium probably played a role in this preference for sharps. When we consider the split of the keyboard again we can understand. Let us look, first, at the Flemish/Spanish organ of the 17th and 18th century. The split is between *c'* and *c-sharp'*, meaning that the leading tone to D is available for pieces in the first church mode. The majority of the pieces of this period are indeed in the first mode, so the split at C-sharp is the most useful. Let us return to Franck improvising at the harmonium. The division is between *e'* and *f'* (*f'*, in this case, is to be considered as *e-sharp'*, the leading tone of F-sharp minor, the key of *Quasi Marcia* and the *Grande Pièce Symphonique*). Camille Saint-Saëns also prefers sharps when writing for the harmonium (opus 1 and opus 8).

In the interpretation of organ music, one can see an influence of legato harmonium technique on those organ pieces which are written in harmonium style. Legato is the basic touch for the harmonium. This means that one should not hear

29 César Franck, *Pièces Posthumes* (Paris: Enoch et Cie, 1905); César Franck, *Pièces Posthumes*, Fantaisie en la majeur, ed. Joël-Marie Fauquet, (Paris: Editions du Marais, 1989); César Franck, *Pièces Posthumes*, Offertoires pour Orgue, ed. Joël-Marie Fauquet and Joris Verdin (Paris: Editions du Marais, 1992).

any articulation between the tones, unless especially indicated. Even the end of a phrase or the end of a slur is not to be regarded as an articulation. This is very clearly expressed by Léon Boëllmann:

As regards the slurs that one sees in the pieces in these volumes, they serve no other purpose than indicating the melodic line, since the style of the organ requires, in principle, constant legato playing.

In various passages, where the composer has not wished to use rests and where he nevertheless desires the hand to be lifted in the manner of a phrasing, one will encounter commas placed outside the staves, of the kind that singers generally use to mark breaths. The performer should therefore comply with these signs.³⁰

The interpretation of musical phrases is modified, not by articulation but by dynamic changes, together with the other general parameters of interpretation in that period, e.g., change of tempo. However, legato was not invented by the harmonium pedagogues; in the early years, it was simply borrowed from the organ. The oldest German and French tutors for the physharmonica or the *orgue expressif* from the 1830s agree totally on this point.

Another influence of the harmonium on the organ is to be found in the production of expression itself. The very quick response of the harmonium to changes in air pressure, which correlate to foot pressure, can be recognized in the early swell pedal, the so-called *cuillère*. This pedal has the same sort of reaction as the treadle of the harmonium; namely, a short impulse produces an immediate accent. Moreover, the player has a feeling of resistance under the foot, exactly like that of the harmonium treadle. Devices for creating expression on both the organ and the harmonium tend to return to their original positions. So we can understand the rather short sforzandi found in the middle of the nineteenth century. One may ask whether these were realized in a subtle way or not, but this does not alter the fact that their realization was technically possible. One can assume that our contemporary appreciation of sforzando is substantially different from that of the mid-19th century.

To summarize, the harmonium has special fields of influence on the organ: the idea and technique of expression, the voicing of harmony, and the touch.

CONCLUSION

This general introduction to the basics of the harmonium will be worked out in further research. We have not dealt with the most interesting facet of the whole story – the music! The repertoire is very large and specific. Harmonium music cannot be transferred to the organ without losing some of its effect. It is impossible to play harmonium music on the organ straight off. One of the best examples of harmonium music misplayed on the organ is *L'organiste* by Franck. The misleading, posthumous title is the reason for a widespread abuse of this music. Franck inten-

30 Léon Boëllmann, *Heures Mystiques*, "Note pour l'exécution de ces pièces," (Paris: Enoch et Cie, 1896).

tionally wrote *Pièces pour harmonium* on the score and not without reason. The balance between the voices is absolutely natural on the harmonium, with fewer problems of registration than at the organ.

The largest amount of music for the harmonium is not to be found in the sacred repertoire, but in chamber music. (The term “chamber music” is to be preferred to “salon music,” because of the current understanding of “salon.” In the 19th century, the salon was simply a meeting place for those involved with art, independent from the church or an official concert organization.)

We have not dealt with the social status of the harmonium nor with its impact on church music, its economic value, and so on. Neither have we discussed the German harmonium and the different approach of the later German composers to expression and timbre.³¹ We have not considered the differences of quality found in different builders or their prices. Another field of research is the area of improved or hybrid instruments, such as the *harmonium d’art* (*Kunsthharmonium*), the *harmonium-celesta*, and the *harmonicorde*.

Still another field is the importance of surviving harmoniums for tuning and voicing 19th-century instruments. For this purpose, the harmonium is extremely helpful, as it is not affected by changes in temperature and humidity. All these fields need to be investigated for a better understanding of the music itself. In other words, the renaissance of the harmonium is to be realized by putting pieces of knowledge together.

31 For recent research in this field, see Christian Ahrens and Gregor Klinke, eds., *Das Harmonium in Deutschland: Bau, wirtschaftliche Bedeutung und musikalische Nutzung eines “historischen” Musikinstrumentes* (Frankfurt: Bochinsky, 1996).

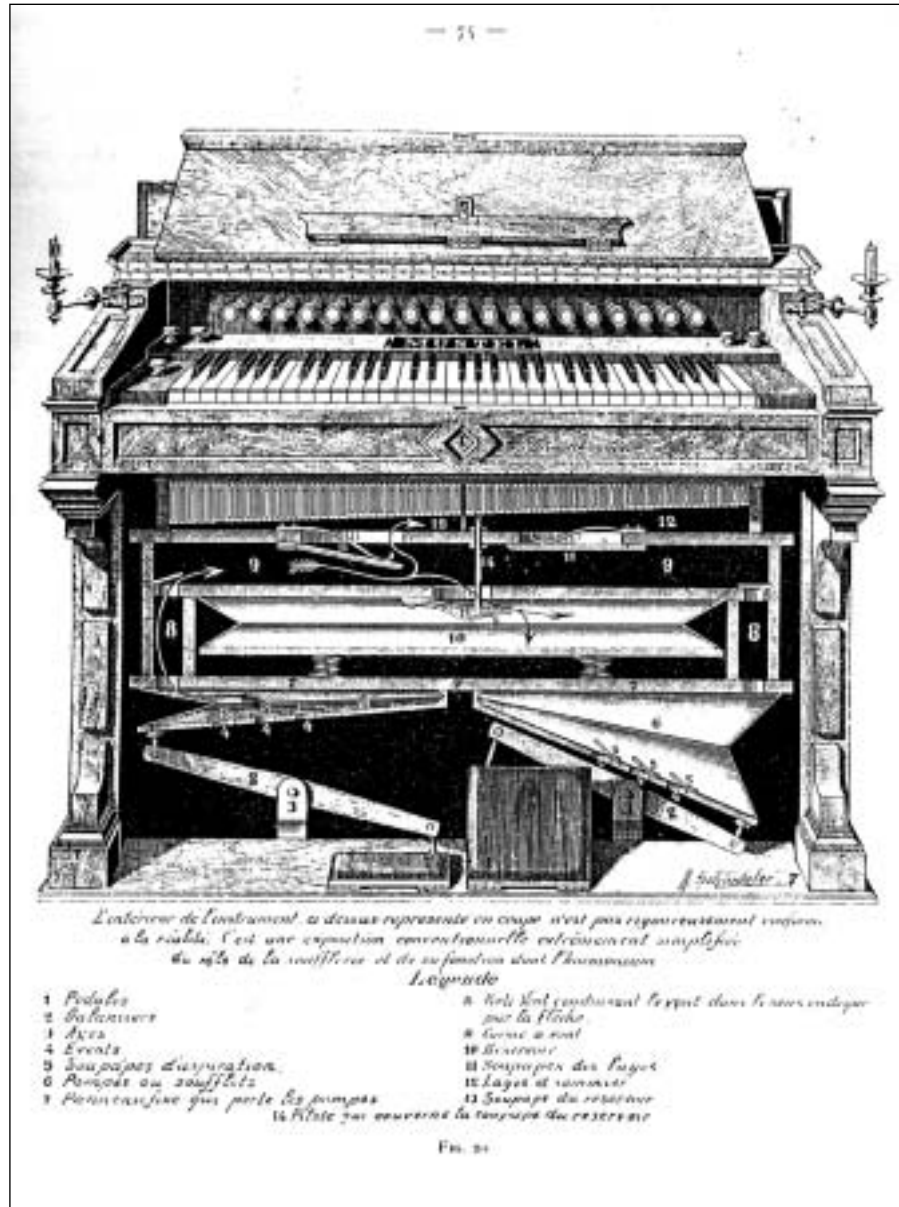


Figure: Cross section of harmonium. In A. Mustel, *L'Orgue expressif ou harmonium* (Paris, 1903),

APPENDIX

Quotations Translated from the Original French

The number of each quotation indicates the footnote where the source of the quotation is given.

1. Le Clavecin est parfait quant à son étendue, et brillant par luy même; mais comme on ne peut enfler, ni diminuer ses sons, je scaurais toujours gré à ceux qui par un art infini, soutenu par le goût, pourront ariver à rendre cet instrument susceptible d'expression.
2. Si le clavecin n'enfle point ses sons,... il a d'autres avantages, qui sont, La précision, La nètété, Le brillant, et L'étenduë.
3. Pour conclure sur le toucher du clavecin, en général; Mon sentiment est, de ne point s'éloigner du caractère qui y convient. Les passages, les bateries, à portée de la main; les choses lutées, et sincopées, doivent être préférées à celles qui sont pleines de tenus; ou de notes trop graves.
6. Les Instrumens ont aussi des expressions très-différentes selon que le son est fort ou foible, que le timbre en est aigre ou doux, que le diapason en est grave ou aigu, et qu'on en peut tirer des sons en plus grande ou moindre quantité.
7. Faites ce que vous feriez si vous étiez à la fois le poète, le compositeur, l'acteur et le chanteur, et vous aurez toute l'expression qu'il vous est possible de donner à l'ouvrage que vous avez à rendre. De cette manière il arrivera naturellement que vous mettrez de la délicatesse et des ornemens.... du piquant et du feu des gémissemens et des plaintes... et toute l'agitation du forte-piano dans l'emportement des passions violentes.
8. ...Le forte-piano est l'art d'adoucir et de renforcer les sons dans la mélodie imitative, comme on fait dans la parole qu'elle doit imiter. Non-seulement quand on parle avec chaleur on ne s'exprime point toujours sur le même ton, mais on ne parle pas toujours avec le même degré de force. La musique, en imitant la variété des accens et des tons, doit donc imiter aussi les degrés intenses ou remises de la parole, et parler tantôt doux, tantôt fort, tantôt à demi-voix.
10. Il y a trois objets principaux à considérer dans le son: le ton, la force et le timbre: sous chacun de ces rapports le son se conçoit comme modifiable: 1° du grave à l'aigu; 2° du fort au foible; 3° de l'aigre au doux, ou du sourd à l'éclatant, et réciproquement.

12. L'Expression musicale est l'ensemble des nuances délicates qu'exige l'interprétation d'une oeuvre musicale, nuances que ne peut indiquer exactement la notation et qui comprennent tous les légers changements de mouvement, toutes les variantes dynamiques, accentuations et diversités de timbres.
13. L'Augmentation d'Intensité Sonore correspond également à une exaltation, la diminution à un relâchement;...
14. ...la formule dynamique normale d'une phrase musicale sera par conséquent le crescendo (jusqu'au point culminant de la phrase) suivi d'un diminuendo (jusqu'à la fin). Ajoutons que généralement la flexion mélodique suit le mouvement, ascendant puis descendant, de la phrase musicale.
15. Le compositeur indique le plus souvent les exceptions que subissent ces règles générales, par exemple: le diminuendo lorsque la mélodie est ascendante ou lorsqu'il y a stringendo
16. La modulation se fait normalement en crescendo, et les accords ou les sons qui l'introduisent reçoivent des accents plus forts que n'exigerait leur valeur métrique ou rythmique.
17. Il faut, en outre, donner à chaque composition, à chaque phrase, l'intensité de son, la sonorité qui convient à sa texture. Les nuances embrassent donc, non-seulement les rythmes, depuis leur première jusqu'à leur dernière note, mais encore une composition musicale depuis sa première jusqu'à sa dernière période. C'est le ciment, le lien qui unit, rapproche et solidarise ses divers éléments dynamiques.
19. De tous les phénomènes de l'expression, c'est celui qui semble dépendre le plus de l'arbitraire. Il n'en est de rien. Les nuances sont en si intime rapport avec la texture de la phrase qu'il est impossible de les en séparer: à chaque phrase convient telle intensité de son et non telle autre. Ici, comme partout, il y a des règles que l'homme de goût observe instinctivement et dont l'artiste ne doit pas se départir.
20. Il faut reconnaître, d'ailleurs, que de toutes manifestations de l'expression c'est à celle-là qu'on apporte généralement le plus de soin.
21. Les anciens compositeurs ne donnaient que les indications se rapportant aux nuances; les vieilles éditions n'en contiennent pas d'autres. Aujourd'hui même, les plus grands professeurs passent sous silence les accents métriques, rythmiques et pathétiques, et se bornent à apprendre à leurs élèves les procédés de mécanisme et la manière de bien nuancer, d'observer délicatement les crescendo et les decrescendo.

22. Il faut employer les crescendo, c'est à dire dépenser graduellement plus de force, plus de sonorité, dans les passages ascendants.

Nous le répétons: monter c'est aller contre les tendances, les attractions de l'être; c'est lutter, c'est vaincre les obstacles. Qui dit lutte, dit déploiement d'énergie ayant pour suite épuisement, fatigue.

23. L'Expression, qualité suprême! L'expression, que le Grand-Orgue n'a pas et qu'en vain jusqu'ici les organistes et les facteurs ont rêvé pour lui; son modeste puîné la possède et c'est sa revanche.

L'Expression, en musique, c'est l'âme, c'est la vie. Cette qualité, dans un instrument, de pouvoir chanter la mélodie, prime en importance sur toutes les autres, y compris même la polyphonie et le timbre...

24. Pourquoi le violon est-il, sans conteste, le roi de l'orchestre, et à la fois, l'instrument le plus admiré? Il n'a pas le son aussi pur que la flûte; son timbre a même naturellement quelque chose de grinçant que tout l'art du virtuose développé par de longues études, s'applique à modifier, à adoucir. Mais il est expressif! il l'est au degré suprême sous l'archet, il chante, il pleure, il rit, il parle presque ... et ce merveilleux pouvoir d'émotion qu'il possède fait oublier ses défauts, s'il en a, lui vaut l'admiration de tous et l'amour de l'artiste qui se dévouera au plus laborieux des apprentissages.

25. La faculté expressive est donc hautement appréciée du musicien. Eh bien! comme le violon l'Harmonium la possède, et seul parmi les instruments à clavier, il la réunit à la polyphonie absolue et à la prolongation du son: de là sa dénomination d'Orgue expressif, donnée à l'origine. C'est bien là, en effet, son caractère distinctif.

26. [L'expression véritable est] intimement liée au son et se produisant avec lui quand l'organe sonore est par lui-même expressif... L'Harmonium l'a cette expression vraie, puissante, communicative: sa pédale la transmet directement à la lame, comme l'archet à la corde.

27. L'Harmonium d'Art, l'instrument d'artiste, grâce aux progrès de la facture, à d'ingénieux perfectionnements qui ont accru énormément la sensibilité de la lame et reculé les limites du fortissimo et du pianissimo, possède l'Expression développée au plus haut degré, nuancée à la fois et accentuée, graduée dans une progression très étendue, depuis le plus léger souffle sonore jusqu'à la plus intense énergie, ou bien apportant dans le détail, dans l'attaque de la note, des finesses, des intentions qu'on eût crû réservées au coup d'archet.

30. Quant aux liaisons que l'on verra dans les pièces de ce recueil, elles n'ont d'autre but que d'indiquer la ligne mélodique, puisque le style de l'orgue veut, en principe, un jeu toujours lié.

En différents passages, où l'auteur n'a pas voulu se servir de silences et où il désire néanmoins que la main soit soulevée en manière de phrasé, l'on rencontrera ces virgules placées en dehors des portées, dont se servent généralement les chanteurs pour marquer les respirations. L'exécutant voudra donc bien se conformer à ces signes.