Koninklijk Conservatorium
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Playing Harmonium Art Music on the Concert Accordion

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“I grew up, a rather quiet well-behaved child, in an area of great beauty, but the only thing I remember really clearly is the harmonium in that little chapel. Every time I could get away I ran there… I played atrociously … but I do remember that I was happy; and if that is what it means to have a vocation, then it is a very pleasant thing.”[1]

— Gabriel Fauré, 1924

[1] J. DUCHEN, *Gabriel Faure (20th Century Composers),* London, Phaidon Press, 2000, p.14.

Introduction

The harmonium and the accordion; two relatively similar instruments with a rather questionable reputation. The former, often considered a simplified organ for the sole purpose of accompanying — both ecclesiastical and domestic — liturgical services, the latter, still by many only seen as a folk instrument or an instrument for gipsies and beggars. The fact that those two instruments have played and still play a considerable role in the art music, is known by only a small number of people. Major composers of different eras e.g. *Rossini, Dvořák, Mahler, Berio, Gubaidulina, …*, who included a harmonium and/or an accordion in one or several of their works, demonstrate the universal urge to make use of the sonority of the 'free-reed[2]'.

There has already been done quite some research on the harmonium. *Joris Verdin* and *Michel Dieterlen*, both harmonium players, published major theses about the instrument in order to obtain the grade of Doctor in the musicology. These studies mainly contain technical and organological information about the instrument and, especially the one by Verdin, can also be considered as a very extensive manual. On the side of the accordion, much research still needs to be done. Since the concert-instrument[3] was only fully developed by the 1950s, thus being approximately one century younger than the harmonium, not a lot of noteworthy research has yet been carried out. Furthermore it is at least remarkable that the two instruments have never been compared to one another, especially taking into account the fact that they share the same way of producing sound (the free-reed) and that pieces including a harmonium are — for lack of decent harmoniums and the corresponding players — nowadays often performed by accordionists. This leads us to the following twofold research question: is it historically justified to translate the repertoire of the harmonium to the contemporary classical accordion and to what extend is this possible?

In order to carry out this important research we have to start by examining the major historical developments of both instruments up to the present day as well as examining their mutual way of producing sound, namely via floating air passing through a vibrating so-called

[2] The way of sound production of both instruments, further explained in 1.1

[3] Hereby is meant the instrument with the free-bass system (cf. 1.3.1.3)

‘free-reed’. In the first chapter we shall therefore take a closer look at some of the ancestral instruments using the free-reed and try to provide the reader with a succinct historical overview of both the harmonium and the accordion, mentioning the most relevant developments in their relatively short history and the place it takes or took within the world of classical music.

In the second chapter we will try to systematically list the most important compositions of leading composers, in which the focus will almost completely be on the classical repertoire. However, that does not implicate that there is neither other repertoire nor that the other repertoire would be of an inferior quality. Since the two instruments and correspondingly the creation of the repertoire differ so much in terms of age, they ask for a different approach. Besides, we will took a look at some of the most important compositions for the harmonium, supplemented by a brief analysis.

Finally, it is needed to closely observe and analyse the differences and similarities between the two instruments. In this last chapter, we will therefore place some of the key components of both instruments, described in the previous chapters right next to each other in order to directly compare them. furthermore an investigation and comparison in terms of sound, containing examples of scores and recordings, will be carried out,. Lastly, we will pay attention to the stops: mechanisms, also to be found in an organ, that allow the player to intensify, allay or — more generally — alter the timbre of a given passage, melody or accompaniment.

This study can eventually be helpful for other accordion players by providing them with a framework containing the requisite tools and information required to — properly and with respect for the tradition — interpret harmonium pieces on their instrument. On the other hand this study will attempt to demonstrate the exquisite and diverse repertoire of both the harmonium and the accordion.

1. Historical contextualization

1.1. Two mutual core principles: free-reeds & bellows

Together with e.g. the flute, the horn and the organ; the harmonium and the accordion belong to the category of the aerophones[4]. In the classification system of Sachs en von Hornbostel, this category is further subdivided into trumpet-instruments, flutes and reed-instruments. In this last group, containing among others the clarinet, oboe, organ, accordion and harmonium, the sound is generated by means of one or more elongated strips of any elastic material. In case of the clarinet, an actual piece of cane (two pieces in case of the oboe, which is a double-reed) is used. The accordion and harmonium both have for each note a so-called free-reed; a strip of brass[5], set in motion via a passing current of air.

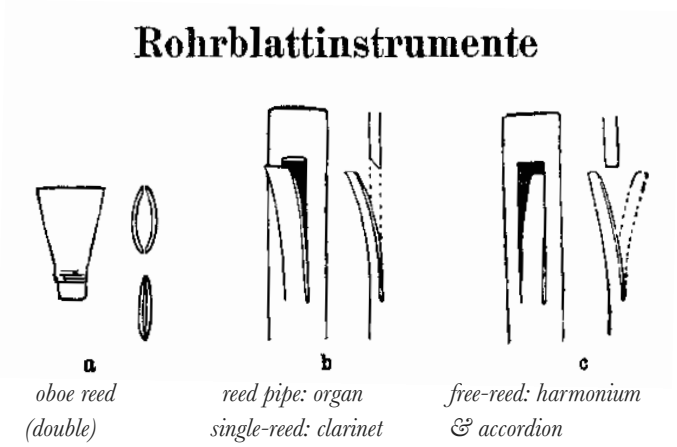

Fig I.I. **"Reed Instruments"**

One of the most unique features of the free-reed is the ability to keep the exact same pitch, regardless the air pressure to which it is exposed. This allows the player to manually alter the volume of a certain tone or chord in correspondence with her/his musical taste and this can be achieved by either blowing on a mouth piece, or by manually controlling one or more bellows (as is the case with the accordion - via the left arm and the harmonium - via the feet). Another great feature of the free-reed is that — unlike the beating reed of an organ[6] — it does not ask for a resonator such as wooden or metal pipes and therefore has a pleasant sound of itself. This characteristic, namely the usage of the free-reed, truly distinguishes the harmonium and the accordion from other musical instruments.

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[4] C. SACHS, *Handbuch der Musikinstrumentenkunde,* Wiesbaden, Breitkopf & Härtel, 1967, p. X-XI.

[5] A. J. HIPKINS, *History of the Harmonium,* in *The Tonic Sol-Fa Reporter* (July 1st, 1888), p. 145-46.

[6] Further reading: chapter 1.1.4.

Another important element that characterizes both instruments is the presence of bellows. This — in terms of usage and design — spectacularly simple device makes it possible to in- or decrease the air pressure. In case of the accordion, it means that one can swell on one or several notes by alternating between pulling (open) or pushing (close) the bellows.

It is very interesting to note that the core principles of both instruments, the free-reed and the air movement by bellows, function in a total different way. If we start to take a closer look at the free-reeds of an accordion, we can see that every note has two identical reeds (see figure I.II. below). This solution had to be invented due to the direction of the air, which works in both ways; by pulling on the strap connected to the left part of the instrument, one opens the bellows and, when a key is depressed, the air is pushed inside the reed-chamber resulting in a vibration of the reed. By closing the bellows, thus by pushing in the other direction, the air is being sucked out of the reed-chamber. (figure I.III.). Unfortunately, one reed that responds and sounds in both wind directions has not (yet) been invented[7].

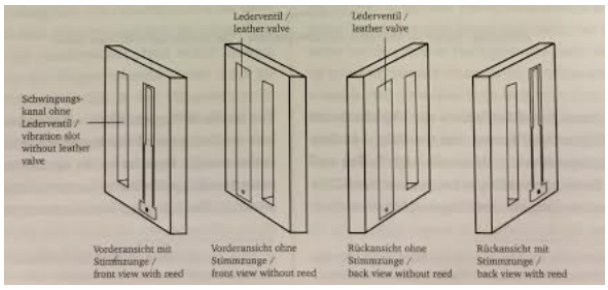

Fig. I.II.

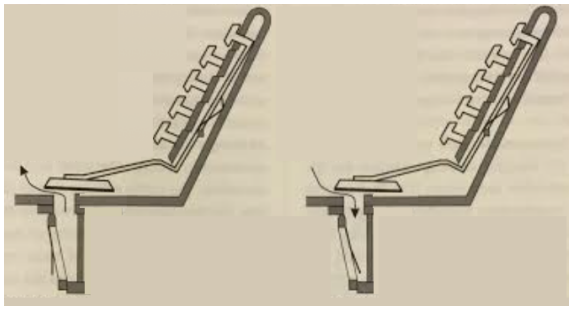

Fig. I.III.

Since the harmonium either works with the 'compression system' or(!) the 'suction system,' the problem of the direction of air does not arise and it is therefore not needed to build in two reeds for each note. This is not the only big difference between the two instruments; by closely observing the harmonium, we can notice that this instrument has three bellows whilst an accordion only has one[8], and this discrepancy — although at both instruments the bellows serves the same purpose, namely: being the expressive lung of the instrument — leads to a different way of controlling them. The biggest and at the same time most visible difference between a harmonium and an accordion is that harmonium players control the bellows with their feet, which allows them to use both hands to play on a piano-like keyboard.

However, one can say that the placing of the bellows right between the two manuals, as with the accordion, is in many ways a much better and more free & organic way of controlling the instruments dynamical capabilities. There are plenty examples to evidence this statement, to name just a few: a violinist controls her or his bow with the arm, a conductor

[7] B. BUCHMANN, *The Techniques of Accordion Playing,* Kassel, Bärenreiter-Verlag, 2010, p.25.

[8] W. RIEHM, *De Bouw en de Behandeling van het Harmonium,* trans. and ed. by Jacques Hartog, Amsterdam, 1887, p. 20.

uses arm movements to transmit his musical expression and to guide the orchestra through a piece (we cannot possibly imagine doing all this with the feet).

Nonetheless, there are also certain advantages concerning the air system of a harmonium. Because of the presence of two bellows[9], it is on the more advanced instruments ('Kunstharmonium[10]') possible to play a certain dynamic in the left hand (bass-side) and simultaneously play another dynamic in the right hand (treble-side). This technique is called the double-expression. Another advantage compared to the air system of an accordion is the continuous stream of air made possible by the two bellows because unlike the harmonium, the bellows (one) of the accordion has to be opened and closed after a certain fragment of music. The duration of this fragment (without needing to change the direction of the bellows) greatly depends on the dynamic and melodic area of that fragment; a piece of music consisting of only one voice and played piano will ask way less air than a highly polyphonic piece with a lot of bass notes, played fortissimo. While playing a note and changing the direction of the bellows at the same time, one unavoidably notices an audible gesture, generally perceived as unpleasant. Accordionists therefore have to train to open/close the bellows without making any side-noise; a challenge harmonium players do not come across with.

The two instruments have a lot in common and therefore sound quite similar, but despite these similarities, there are also some substantial differences, especially in terms of appearance and functioning, which evidently leads to a difference in sound. In the third chapter, we will further explore these audible differences but first, it is important to understand where these core principles come from.

1.1.1. Origin of the free-reed and historical antecedents[11]

The producing of sound and music via the free-reed existed for thousands of years and was first described around the 13th century B.C. in old Chinese writings on so-called oracle bones. These bones are the very first evidences of the first concept of written Chinese language, which suggests that the free-reed had a (much) longer history that almost certainly will never be able to be retraced. The first musical instruments according to the principle of

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[9] The third bellows ('reservoir') bring, when enabled, a constant air pressure to the reeds and functions in that way like an organ. The classical harmonium player will not often make use of this possibility since it cuts off the expressional possibilities of the instrument.

[10] Further reeding: chapter 1.1.2.

[11] Important sources:
A. R. THRASHER, art., *Sheng,* in *The New Grove Dictionary of Music and Musicians,* 23, S. Sadie (ed.), London, Macmillan Publishers Limited, 2001, p. 250-252.
J. DE WITH, *Het accordeon en zijn aanverwanten*, p. 17-21.
D. W. HUGHES, art., Shō, in *The New Grove Dictionary of Music and Musicians,* 23, S. Sadie (ed.), London, Macmillan Publishers Limited, 2001, p. 274.
N. FOURNEAUX, *Petit Traité sur l'orgue expressif contenant l'histoire de cet instrument,* Passy-lez-Paris, Fourneaux, 1854, p. 5-10.

the free-reed are the mouth organs *he* and *yu*, whom — due to the addition of an air chamber, and that is particular for an early wind instrument — have the possibility to play multiple tones at the same time. The 'Sheng[12]', a Chinese mouth organ still played today, was first mentioned in the 7th century B.C. This instrument contains of a wooden bowl-shaped bottom piece and on this, a mouth piece is affirmed by which the air is directly blown into the pipes, without any bellows. These pipes, who are affirmed in a circle onto the wooden bottom piece, differ in amount and length per instrument and contain reeds, made out of the same material as their frame. Also in other Asian countries, regional variants of this instrument came into existence, e.g. the *kledi* and *garode* in Borneo, the *mbuat* in Vietnam and the *shō* in Japan.[13]

1.1.2. Spreading of the free-reed: its arrival in Europe

How and when these instruments and this principle found their way to 19th century Europe remains a very vague history. Throughout the literature one can find multiple divergent answers to this question, yet rarely or never containing real evidence. One of these often stated possibilities would be that Marco Polo, the 14th century explorer, took a Sheng with him to Europe on one of his many trips[14]. According to other musicologists, the usage of the free-reed would not be originating from the Asian culture, but would be a pure European (re)discovery, although we believe that this is very unlikely since the first example of the free-reed in modern times can be found in the book *Harmonicorum Instrumentorum* by the French scientist Marin Mersenne and bears the name 'Indicum Instrumentum[15]' ('Indian Instrument).

The first practical example of this principle can be found in an instrument made by the Italian manufacturer Filippo Testa. Around the year 1700 he build a sort of regal with free-reeds in stead of normal organ reeds (beating reed), which he named 'Organino[16]'. Thus, although this principle was already known in 17th century Europe, the few experiments or descriptions were rather isolated and did not led to — let alone large scale — effects and new instruments. It would still take about a 100 years until such an instrument would re-emerge.

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[12] In a poem originating from the book 'Classic of odes,' this instrument was first mentioned. In this book, the *he* and *yu* are considered as a type of Sheng.

[13] J. de WITH, *Draagbaar, meerstemmig, expressief. Het accordeon en zijn verwanten,* Meppel, Drukkerij Krips, 2006, p. 20-21.

[14] K. BROCKSCHMIDT, *The Harmonium Handbook: Owning, Playing, and Maintaining the Indian Reed Organ,* Nevada City, Crystal Clarity Publishers, 2004, p. 11.

[15] M. MERSENNE, *Harmonicorum Instrumentorum, Liber II De Instrumentis Pneumaticis,* Paris, Guillaume Baudry, 1636, p. 112.

[16] R. F. GELLERMAN, *The American Reed Organ and the Harmonium,* New York, The Vestal Press, Ltd., 1996, p. 6.

1.1.3. Western precursors of the harmonium & accordion[17]

Concerning the Western precursors of the harmonium and the accordion, it is necessary to separate the two main principles of these instruments. On one hand, we are dealing with a wind instrument whereby the wind is not directly blown into the instrument via the mouth of a player, but via a sort of bellows, often also containing an air chamber. On the other hand there is the usage of the free-reed. Both of this principles have a long history.

The usage of bellows for (portable) musical instruments does exist since the Middle Ages and is described by Praetorius in his *Syntagma Musicum* (1620) in the shape of folksy instruments such as bagpipes:

> "In France a little bagpipe or Hümmelchen has been constructed into which air is pumped by means of a small bellows operated by one arm alone. An inventor […] thought and fashioned […] these bagpipes controlled with bellows, such that a piece for four or five voices could be played by them. But I do not find the sounds of such a combination very pleasing."[18]

Next to his description of these early bagpipes, he also describes more distinguished instruments with a bellows such as portatives and regales. These are organ-like instruments with beating reeds and one or two bellows, used during the Middle Ages and the Renaissance in churches, chapels and also in early opera[19]. Due to the fact that organs were very expensive and there was not always enough space to house them, those smaller instruments were often acquired to replace an organ. According to the famous harmonium manufacturer and player Alphonse Mustel, who was active in Paris around the turn of the 19th century, the regal can be considered as immediate precursor of the harmonium because of the fact that it — except for the usage of the beating reed and the operation of the bellows by an extra pair of hands — works in exactly the same way as a harmonium. The regal has thanks to its compactness, unlike its immediate relative, the organ, no pipes that are large enough to function as resonators that amplify the vibrations and overtones. This essential difference is, again according to Mustel, a requirement to be considered as a precursor for the harmonium. The reasons for the rather quickly disappearance of this instrument are obvious; when listening to the sound of a regal, one immediately notices the very sharp, penetrating and nasal timbre,

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[17] Important sources:
M. PRAETORIUS, *Syntagma Musicum: II. De Organographia,* trans. by Harold Blumenfeld, New York, Da Capo Press, 1980, 72.
A. MUSTEL, *l'Orgue-Expressif ou Harmonium, Tome I.,* Paris, Mustel Père & Fils, 1903, p. 31-32.
J. J. OHALA, *Christian Gottlieb Kratzenstein: Pioneer in Speech Synthesis,* Lecture: ICPhs XVII, Special Session, Hong Kong, September 17-21, 2011.
J. P. CATER, *Electronically Speaking: Computer Speech Generation,* Indianapolis, Howard M. Sams & Co., 1983, 72.
C. SACHS, *Handbuch*, p. 365.

[18] Source: M. PRAETORIUS, *Syntagma Musicum*, p. 43.

[19] In l'Orfeo (1607) for example, Claudio Monteverdi uses a regal.

because of the absence of a substantial resonator, either a pipe, or another sufficiently large acoustic resonator, the produced sound is very rudimentary and inadequate:

> "Malgré sa dénomination pompeuse de *Régale* (jeu royal) […] l'instrument ne rendait que des sons d'une âpreté et d'une pauvreté inouïes, maigres, grinçants, criards, affreux, et que nous trouverions aujourd'hui insupportables."[20]

The more recent history of the harmonium and the accordion, remarkably, does not begin with a musical instrument but with a machine. In the chapter about the spreading of the free-reed across Europe (1.1.2.), we already mentioned that the first and — until about 1780 — last practical example of a European free-reed instrument was the obscure 'organino' by Filippo Testa. After this curious organ, we stay completely in the dark concerning the history and further spreading of the free-reed up until the moment it re-emerges in Saint-Petersburg around 1780 in a machine, invented by the Danish philosopher and physicist Christian Gottlieb Kratzenstein. This machine using the free-reed would herald the definite beginning of an experimental phase that would last for about 70 years, leading towards the emergence of not only the harmonium and the accordion, but also the harmonica, concertina and other related instruments.

The machine[21], as mentioned above, was developed as a result of a competition organized by the Academy for Science in Saint-Petersburg. The aim of the competition was to do research on the physiological speech differences between the five vowels in western languages and to find a way to mechanically reproduce them. Kratzenstein came up with the idea to use a current of air, combined with five free-reeds in different geometrical shapes for the different vowels. The big question remains of course how Kratzenstein knew about the — up until that moment in Europe unknown — free-reed. A satisfying answer to that question will likely never be found, but it is known that by that time at least already one sheng-player, named Johann Wilde, was active in Saint-Petersburg:

> "Sonst hat dieser sinnreiche Künstler [Johann Wilde]auch durch eigenes Nachsinnen gelernt, die liebliche Chineser Orgel zu spielen, und sowohl Arien als Menuetten, und andere kleine Stücke in voller Harmonie darauf heraus gebracht. Dieses ganz Chinesische Instrument besteht auf 16 bis 18 auf der Fläche eines abgekürzten Kegels, wie Orgel-pfeifen, in die Runde gesteckten Schilfröhren […]. Durch dasselbe [Mundstück] bläßt man die Lufft [sic] ein, oder zieht sie an sich, nachdem man den Schall stärker oder schwächer, forte oder piano, haben will."[22]

Because of the fact that the Dane Kratzenstein was a professor in Saint-Petersburg from 1748 until 1753 and presumably never returned to this city later on in his life, it is highly possible

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[20] Source: A. MUSTEL, *l'Orgue-Expressif,* p. 31-32.

[21] Different sources refer to this machine as being a speech machine. However, this name is incorrect since the machine was only intended to mechanically reproduce the vowels and not — as this name suggests — words or conversations.

[22] Source: J. von STÄHLIN, *Nachrichten van der Musik in Rußland,* in *Wöchentliche Nachrichten und Anmerkungen die Musik betreffend* 4, no. 25 (18 juni 1770), p. 194.

that he got to know Wilde already in this period and that he possibly attended a concert of him; he might even have brought a Sheng with him to Denmark. From this moment on, it would not take long before the first European musical instruments with free-reeds would emerge.

1.1.4. Differences and similarities with pipe-organs

Because of the rather similar sound and the use of reeds in the harmonium, accordion and (in most cases) the organ, these three instruments are often interrelated. However, it would be incorrect to state that they work via the same principle. Most organs consist of two kind of pipes; the first kind are called flue or labial pipes, they are the oldest and can be found in any organ. Between the two lips (labia) of the pipe, a current of air is pressed to obtain a vibration of the air (thus, not of a reed!), resulting in a sounding tone, so it is more or less the same mechanism as a recorder[23]. The pitch and timbre of that note are fully depending on the length, material, thickness and elasticity of the pipe. The other kind of pipes frequently used in an organ are called lingual (referring to 'lingua,' the latin word for tongue) and contain a reed. This reed however works not in the same way as it does in a harmonium or accordion. In a lingual pipe, the reed is also set in motion via a current of air but instead of being able to swing in both ways (as is the case with a free-reed), it can only go up and when coming down — the moment the air current falls away — it lands on a shallot.[24]

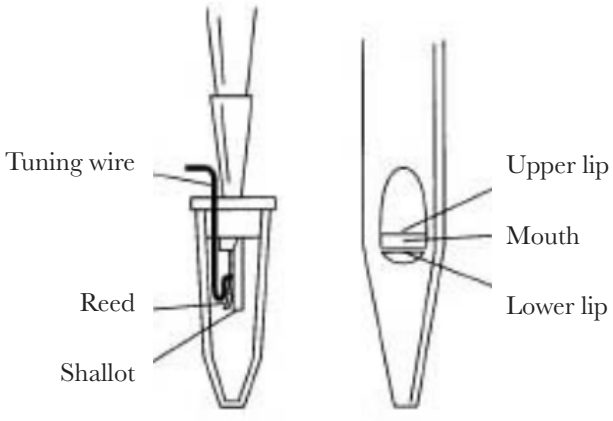

Fig. I.IV.

lingual 'reed' pipe **labial 'flue' pipe**

[23] *Een Ambachtelijk Orgel,* on *Een Orgel in Antwerpen,* accessed on 11th November 2018, http://www.orgel.wursten.be/watispijporgel.htm#Labiaalpijp.

[24] L. N. LEET, *Organ Pipes,* in *The Journal of the Acoustical Society of America* 3 (1931), p. 242-262.

Because the organ reed functions as described above, an important difference with the free-reed arises. The pitch of an organ reed is depended on the blast of air and for that reason it is very important to always have the same air pressure. Organ makers have always experimented with different types of air supply systems in order to hatch at the type which gives the most constant air pressure and this turned out to be the horizontal bellows, invented around 1800 in England and ever since used in almost every organ.[25] Already with the first organs, the air was blown into the instrument by means of physical force; 'kalkants' (german) or organ-trappers, who, with their feet or hands, controlled the bellows through which the air was set in motion[26]. Since the beginning of the 20th century however, the air has been blown in electrically, which of course produces a well-nigh constant pressure.

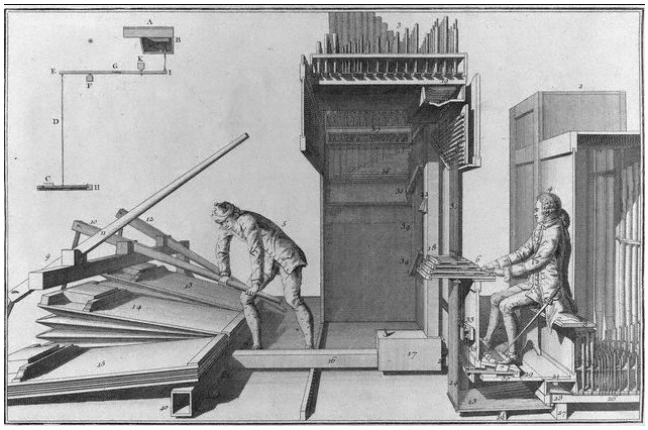

Fig. I.V.

The person on the left was needed to supply the air

Making the organ expressive, giving it the ability to play a gradual crescendo or decrescendo, was a common desire among many organ makers throughout many centuries. Already around 1790 the Belgian composer André Modeste Grétry would have said: "*Trouver l'expression de l'orgue serait la pierre philosophale en musique*[27]". There have been experiments, the first one as early as 1714 by the Englishman Abraham Jordan[28] and it is not incorrect to state that the first musical experiments with the free reed, which led to the invention of the accordion and harmonium, were done with the purpose of making the organ expressive. However, it turned out to be impossible to enlarge its dynamical capabilities by means of a changeable air pressure and another solution was found by embedding the pipes in a so-called swell-box, which could (gradually) be opened and closed. The results were acceptable and swell-boxes started to appear frequently in organs since the beginning of the 19th century.

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[25] S. BICKNELL, *Organ Construction,* in *The Cambridge Companion to the Organ*, uitgegeven door N. Thistlethwaite en G. Webber, Cambridge, Cambridge University Presss, 1998, p. 18-19.

[26] W. H. C. KNAPP, *Het orgel,* Amsterdam, G. J. A. Ruys Uitgeversmaatschappij N. V., 1952, p. 64-65.

[27] Source: A. Mustel, l'Orgue-Expressif, p.25.
translation: "Finding a way to make the organ expressive would be the philosopher's Stone in music"

[28] M. A. PRICK VAN WELY, *Het orgel en zijn meesters,* Den Haag, Kruseman's Uitgeversmaatschappij N.V., 1983, p. 136-137.

1.2. History of the harmonium

1.2.1. Context and place of origin[29]

The creation of the harmonium did not happen overnight. Yet it is remarkable that since the re-emerging of the free-reed in Europe around 1780 it took only about 60 years — up until the 'official' invention of the harmonium in 1842 by Debain — to fully develop such a technically complex instrument. This entire process, together with all the failures and the instruments that did not resist the test of time (and they were numerous!), proved that Europeans were very keen on exploring all the different applications of the free-reed and that they, in general, loved its sonority and possibilities.

The rise of European free-reed instruments takes place at the commencement of romanticism, an era in which the world and the position of music in society went through some radical changes. Before the French Revolution, music was mainly intended to be played in aristocratic salons, while after the fall of the ancien regime an emancipation of music took place, leading to a new public concert life and the creation of large concert halls. This revolution of course had an effect on the musical instruments of that time and two considerable trends can be perceived. On one hand we can notice the urge to increase the size and volume of orchestras and the expected greater musical force of every individual instrument, resulting in some constructional modifications; the sound of the flute, the softest of all orchestra instruments, was made louder and the bridge of the baroque violin became higher and more curved, giving it its current shape and sound. As a result of these new requirements, the extinction of rather softer instruments e.g. harpsichords and clavichords became inevitable. A good example of this increase in volume is the ideal orchestra according to Hector Berlioz, which consists of not less than 120 violins, 30 harps and 30 pianos.[30] Another major new requirement of that time was the extension of musical timbres with a focus on the expression of emotions. This ideal led to the invention of several new instruments. Both the harmonium and — later on — the accordion answer to this new ideals (increase of power and extension of timbres) by means of the bellows and the stops. It is therefore not surprisingly that since their invention, both instruments knew a steep grow.

The harmonium is often considered a French invention, created by Alexandre Debain in 1842 but this is, however, only partly true. After the (re)discovery of the free-reed in Europe (by means of Kratzenstein's machine around 1780[31]), organ makers in Russia and Scandinavia picked up this way of producing sound and implemented the free-reed in organ

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[29] Based on: C. SACHS, *The History of Musical Instruments,* New-York, W. W. Norton & company, inc., 1940, p. 357, 388-398, 405-407.

[30] H. MACDONALD, *Berlioz's Orchestration Treatise, A Translation and Commentary,* Cambridge, Cambridge University Press, 2002, p. 329-330.

[31] cf. chapter 1.1.3.

stops, the first one being successfully carried out in an organ in Rotterdam[32] by the instrument maker Georg Christoffer Rackwitz in 1790[33]. The orchestrion, a new found instrument invented by the rather controversial[34] figure of Abbé Georg Joseph Vogler and build by Rackwitz in Rotterdam while working on the organ, was among the first movable instruments containing free-reeds and was described by the New Grove as follows:

> "The organ, […] , had four manuals, pedals and 63 stops, all fitted into a case 9′ square. Some of the stops in this organ were free reeds, and these were under variable wind pressure. This, combined with the fact that the entire instrument was enclosed in a swell-box, gave the organ an unusually wide range of expression, possibly its most notable feature."[35]

After completion of this orchestrion, a public concert was held in Amsterdam to show the great possibilities of the new instrument, whereafter he went back to his hometown, Stockholm, where the new organ also caused a stir, which made him decide to travel through Europe in order to exhibit the peculiar instrument. One can assume that it was Abbé Vogler's merit that the free-reed became known in the rest of Europe since the trip brought him and his instrument consecutively to Berlin (1800), Prague (1801), Vienna (1804), Munich (1806) and Frankfurt (1807)[36].

Former instrument makers across Europe were greatly inspired by the sound of this new orchestrion and — because of their constant search for new ways of producing sound (cf. the two new requirements: the increase of volume and timbres) — largely adapted this new method by means of new experimental instruments with free-reeds. A lot of these instruments did not stand the test of time and remained in their experimental phase and existed for only one or a few decades before sinking into obscurity. The first exemplars can be found in modern day Germany and Austria and were very numerous. Instruments with names such as the mikropan, aeolodikon, aeoline, belloneon are nowadays totally forgotten but were once in fairly great demand by the German-Austrian music enthusiasts. Among the more successful ones were the panharmonicon (1804) by the Viennese musician and inventor of the

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[32] This organ was most likely located in the Laurenskerk in Rotterdam and was destroyed completely during the second world war.

[33] F. KAUFMANN, *Über Die Erfindung Der Rohrwerke Mit Durchschlagenden Zungen*, in *Allgemeine Musikalische Zeitung* 25, no. 10 (maart 1823), p. 149-54.

[34] Due to his radically new learning methods (he invented a new system for fingering, a new methodology for the harpsichord and an entirely new system for music theory), he caused a lot of rivalry during his lifetime, including W.A. Mozart who called Vogler a Charlatan.

[35] Source: A. W. J. G. ORD-HUME and B. OWEN, *Orchestrion*, art., on *Grove Music Online,* accessed on 6th January 2019, https://doi.org/10.1093/gmo/9781561592630.article.20409.

[36] [36] *Vogler, Georg Joseph*, art., in *The Encyclopaedia Britannica: A Dictionary Of Arts, Sciences, Literature And General Information,* New York, Encyclopaedia Britannica, 1911, p. 171-72.

metronome Johann Nepomuk Mälzel[37] and the physharmonika (1818) by Anton Häckl[38]. However, these instruments are still considered as prototypes of a harmonium since they lack one or several of the basic requirements (further explained in chapter 1.2.2.) needed to be called a 'real' harmonium.

The development of such instruments in France would surprisingly take place much later, proving Vienna — and by extension the whole German-speaking world — to be the absolute musical centre of that time. In 1811 we can witness the first instrument according to the principle of the free-reed by name of 'orgue-expressif,' invented by Gabriël-Joseph Grenié. Despite the usage of free-reeds and the control of the air by the feet, this Parisian instrument is still considered as an organ due to the presence of pipes. Other experiments by the hand of famous piano makers such as Girard and Erard did not yield a satisfying result.[39] We then have to wait until 1830 before finding an alike instrument and this time it was named 'poïkilorgue,' invented and build by the young and illuster organ maker Aristide Cavaillé-Coll, who was employed in his father's atelier in Toulouse.[40] It is remarkable though, that Cavaillé-Coll mentioned to have been inspired by Grenié's orgue-expressif and not by the popular and more recent Physharmonika by Häckl.[41] One day, Rossini was in Toulouse and attended a performance of Meyerbeer's opera *Robert le Diable* where a poïkilorgue was used to replace the organ. It is said that he was so impressed by the sonority of this new and curious instrument that he immediately encouraged Cavaillé-Coll to go to Paris, the leading capital of music in France, in order to pursue a highly rewarding organ maker career, whereafter he followed this advice.[42]

The arrival of the poïkilorgue in Paris was of great significance for the instrument making scene in that city; different instrument makers understood the great potential of such an instrument and numerous 'new' instruments according to the same principles appeared. Among the inventors/instrument makers, a struggle for being the first one to patent the instrument broke out, resulting in a quantity of patents whereof only a few are listed below[43]:

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[37] *Maelzl, John Nepomuk*, art., in *Appletons' Cyclopedia of American Biography* 4, New York, D. Appleton and Company, 1888, p. 171-72.

[38] C. WURZBACH, *Biographisches Lexicon des Kaisertums Österreich,* 7, Graz, Universitätsbibliothek Graz, 1861, p. 175-76.

[39] A. MUSTEL, *l'Orgue-Expressif*, p. 23.

[40] J. VERDIN, *Het Harmonium. Een muzikaal-esthetische en speeltechnische studie van de ontwikkeling en het belang van het harmonium in Frankrijk, Duitsland en België,* PhD dissertation, Katholieke Universiteit Leuven, 2001, p. 57.

[41] J. VERDIN, *Het Harmonium,* p. 58.

[42] ibid.

[43] B. Milanese, *L'instrument: Sources Historiques,* op *Harmonium et Anches Libres,* accessed on 11th August 2018, http://harmonium.forumactif.org/t928-brevets-en-ligne.

1836: Edme-Augustin Chameroy: *instrument avec système d'anches libres, nommé orgue expressif.*

1838: Jacob Alexandre: *nouvel instrument dit concertina, ou piano concertina.*

1839: Alexandre Legris: *nouvel instrument nommé organino et divers changements apportés à la confection des orgues expressives à anches libres.*

1840: Jean-Baptiste Napoléon Fourneaux: *nouveau système d'organisation de l'orgue expressif à anches libres.*

1841: François Dubus: *orgue expressif.*

1841: Louis Pierre Alexandre Martin: *instantanéité du son donné à l'anche libre et expression graduée du son de l'anche libre, obtenue à l'aide d'un système de soupapes.*

It is however none of the above mentioned instrument makers who is considered to be the inventor of the harmonium as we know it today. A Frenchman, called Alexandre Debain, who patented the 'harmonium' in 1842 is generally regarded as the true inventor, and although this merit might be a little overrated — it has after all become clear that numerous instrument makers were simultaneously working on similar instruments —, he still was of great significance for its development and spreading. A lot of other instrument makers followed in his slipstream but weren't allowed to use the name 'harmonium' since it was patented by Debain, they therefore had to come up with other names such as Orgue-Mustel, Orgue-expressif, Orgue-Mélodium, etc. all meaning more or less the same instrument. Pieces composed by pioniers such as Berlioz, Rossini and Franck helped to increase the already high sales figures and accelerated the popularizing of the harmonium.

1.2.2. Different types of harmoniums and their mechanics

Ever since the birth of the harmonium in 1842, different instrument makers in different countries did begin to adjust and refining the original instrument by adding new stops, technics, etc. resulting in a proliferation of new models and types, who were often very different from one another. Aware of the fact that composers always write their pieces with a certain type of harmonium in mind, it is — in order to correctly translate the repertoire to the accordion — important to look at the (most common) types of harmoniums that exist or have existed and to understand how they work. In order to do so, we first need to further define the concept 'harmonium'. According to the Belgian harmonium expert Joris Verdin (°1952), a harmonium needs to contain at least the following elements[44]:

1. Wind supply system with two treadles
2. Wind chamber (area where the wind arrives after being pumped in by the bellows) with a row of free reeds
3. A keyboard
4. The presence of stops, a device to control different sets of reeds with another timbre
5. The absence of resonators (pipes)

[44] J. VERDIN, *Harmonium Handboek,* Kessel-Lo, VZW 3-4, 2008, p. 10.

This rule is however not binding (there are exceptions) and applies mostly to western instruments. The widespread and still very popular Indian harmonium does not have treadles (the bellows are operated directly by the player's hand) and does in that way not meet the above definition.

1.2.2.1. Compression type harmoniums

The harmonium by Debain and all of its predecessors work according to the so-called compression system, meaning that the air, pumped in by the bellows (Dutch: 'Schepbalgen'), finally leaves the instrument by pushing the free-reeds upwards. In figure I.VII. it is possible to see the direction of the air within the instrument. The keyboard is divided into two halves; the first one, the 'bass-side', ends at the note e', and the second one, the 'treble-side', starts at the note f', allowing the player to use different stops, which can be combined, for each side. Debain's instrument contains the following stops:

1. Cor Anglais - Flûte 8'
2. Bourdon - Clarinette 16'
3. Clairon - Fifre 4'
4. Basson - Hautbois 8'

Furthermore some special mechanisms are added: two 'Forte-valves' (device used to produce a louder or softer tone and thus when closed acting as a sort of sourdine), 'Grand Jeu' (valve whereby all the stops; 1, 2, 3, 4 and F, are switched on at the same time) and 'Expression' are added.

The 'Expression-valve' might be the most interesting part of the entire harmonium, because through this it is possible to control the air (and correspondingly the treadles) in two different ways. In the first way, when the Expression-valve is closed, it is not possible to change dynamics with the feet because the air, pumped in by the bellows, is directed into a reservoir which provides a constant air pressure resulting in a continuous and regular volume; the only way to alter the volume or sound color is by using different stops. The harmoniums strong connotation to the organ is probably caused by this way of controlling the air. The second way of playing, when the Expression-valve is opened, really sets this instrument apart from the organ with labial pipes. This mechanism allows the player to control the pressure of the air and correspondingly the dynamic of the tone(s) directly with his feet, thus omitting the use of the reservoir which leads to a range of expressiveness unimaginable on an organ.

Another type of harmonium, working via the same compression system, is called the 'Kunstharmonium' or 'Harmonium d'Art' and is essentially an extended compression harmonium invented by the the Frenchman Victor Mustel, who was in search for more refinement and possibilities.[45] The added features are:

[45] ibid., p. 46.

1. Larger range: 5 octaves, C to c'''' (the division still being at e' - f')
2. Extra stops in the bass-side: Harp Eolienne 2'
3. Extra stops in the treble-side: Baryton 2', Musette 16', Voix Céleste 16'
4. Percussion
5. Double expression
6. Forte expressif

The last three points are totally new and need some further explanation. According to Mustel and Verdin, the 'percussion' device, always combined with the first stop: Cor Anglais (bass) and Flûte (treble), was absolutely indispensable for a Kunstharmonium and has — despite the name — nothing to do with a percussion instrument. The reeds of a harmonium can have a relatively slow reaction speed and that can be vexatious in fast tempi and can cause an unequal beginning point of each note of a chord. To overcome this shortcoming, a little hammer was installed on each individual reed and, when depressing a key, struck the reed in order to immediately initiate its tone. A reproduction showing the working of the mechanic can be found in figure I.VI. This percussion mechanism was, although very much appreciated and desired by composers and performers, not very often to be found in church harmoniums (mostly bought for accompanying a choir or to replace an organ) since the need for an accurate and precise touché of a tone was less important and the cost price of an instrument with such mechanics was significantly higher.

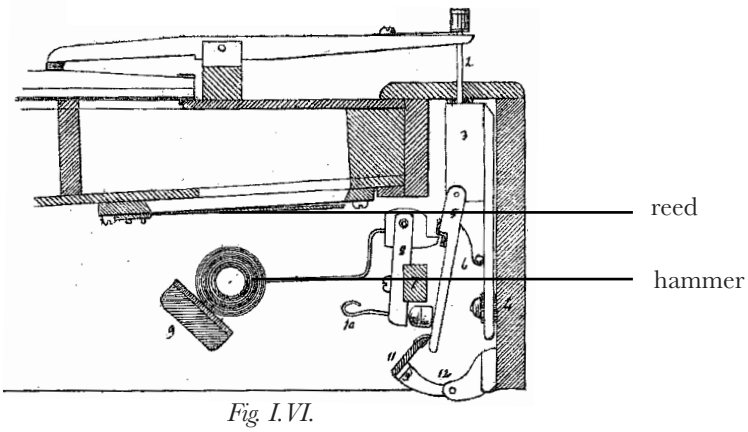


Fig. I.VI.
Mechanics of the percussion

Another new invention, the 'double expression', gives the player the ability to precisely adjust the dynamics of the bas- and treble side separately, compared to the single expression-valve in Debain's first harmonium, this is another great improvement. In this way it is even possible to play all the stops combined in one hand and only one stop in the other, whereby the former is still sounding softer than the latter(!). By means of a system of knee-flaps it is possible to balance the two sides.[46]

[46] ibid., p.197-98.

The last novelty is called 'forte expressif' and enables the player to open and close the forte-lid on top or on the back of the instrument by the feet in stead of having to manually pull the forte stop each time. This can now automatically be done because the lid is connected with the air pressure and it is in other words now possible to decide via the treadles (by maintaining a certain amount of air) whether the forte-lid is opened or closed.

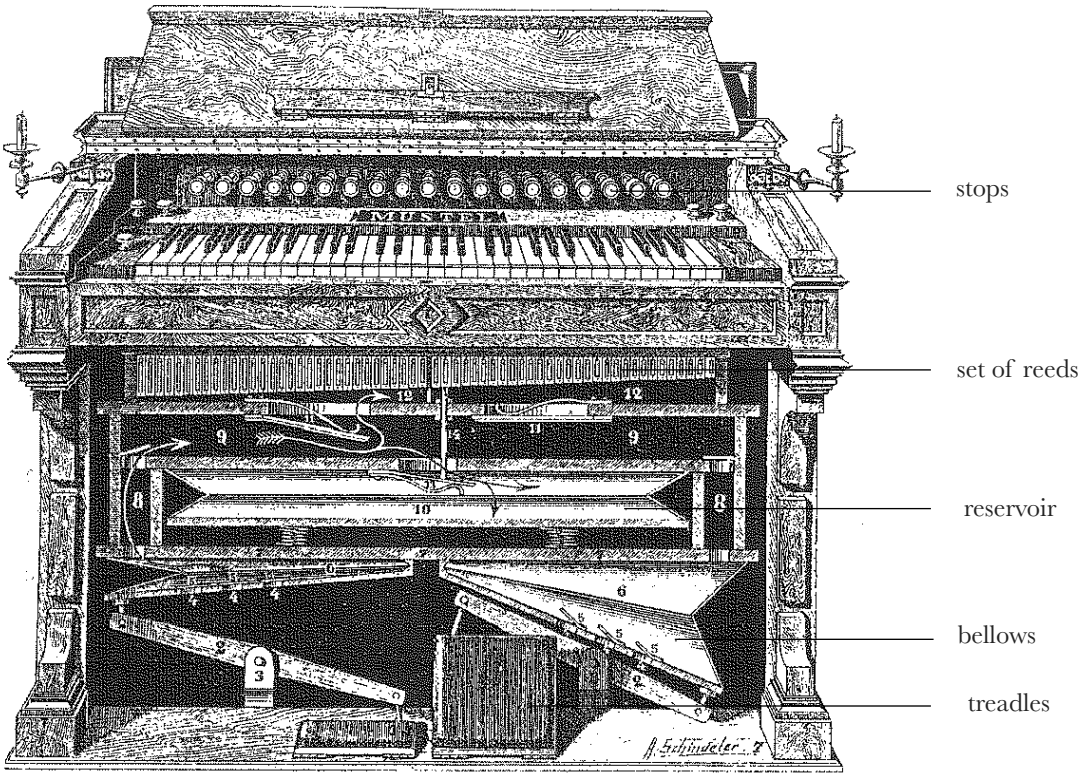


Fig. I.VII.
Interior of a Mustel Harmonium d'Art

1.2.2.2. Suction type harmoniums

After witnessing all the marvelous and ingeniously complex mechanics of the compression system, one could ask himself whether it is necessary to invent a whole new system. Yet, that is exactly what happened. Back in 1836, experiments with a reversed air system were carried out both in Germany and France by Friedrich Ludwig Buschmann and the famous harmonium maker Jacob Alexandre[47]. This system is said to have a more balanced tone and it was probably for that reason that it became almost immediately very popular in American churches (the compression type harmoniums had already conquered the French ones). It was long thought that both types had a (very) different sound, but according to more recent experiments, the difference in sound between a reed that is now blown, then again sucked in, is extremely minimal and differs only in higher overtones[48]. The adoption of

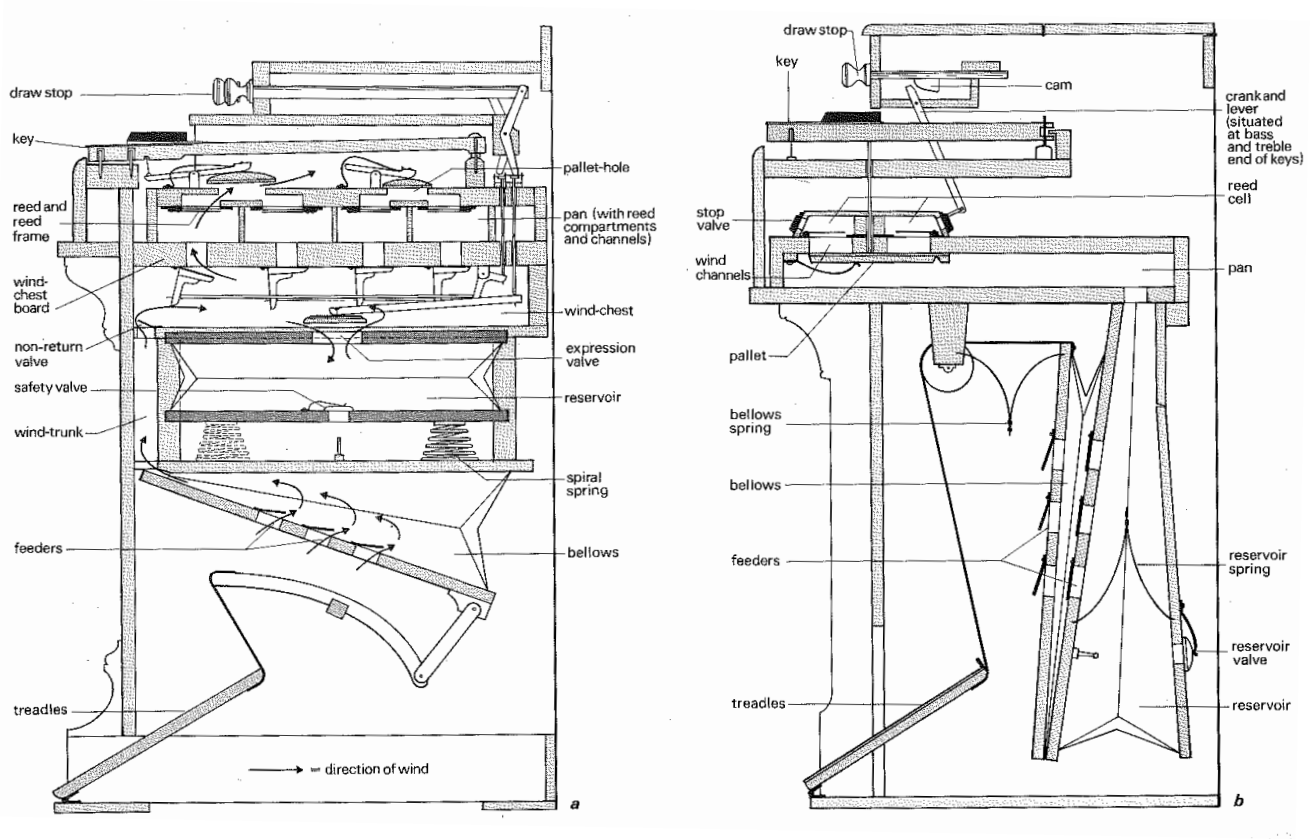
[47] A. BERNER, art., *Harmonium* in *The New Grove, Dictionary of Music and Musicians,* Vol. 8, S. Sadie (ed.), London, MacMillan Publishers Limited, 1980, p. 173-74.

[48] A. VISSER, *Brochure 4: Toon- en Klankvorming bij het Harmonium*, Oss, Harmonium Vereniging Nederland, p. 7.

the suction type harmonium by the Americans led to the emergence of several harmonium factories who together build hundreds of thousands of instruments, whereof many were exported to Europe. This type is therefore also known under many names such as the American Organ, Cottage Organ, Reed Organ, etc. Since the last two decades of the 19th century, the two types quite peacefully coexist and the suction type was, despite the fundamental constructional differences, regarded as tantamount to the compression type.

There are however a few reasons, the historical ones not taken into account, why this type of harmonium appeared less frequently in the art music. The sound of a harmonium is namely determined by not only the (direction of the) air, but also by the following factors: 1. the reed-cells, 2. the reed-frame, 3. the dimensions of the reed and 4. the shape of the reed (bending and rotation)[49]. It is striking to note that almost all of the above mentioned factors are constructed in a totally different way in both the harmonium types. We can hereby determine that the compression type will have the possibility to produce an overall louder tone and that the expression stop, after all maybe the most important feature of a harmonium, will be less powerful in the suction type[50]. This is probably the reason why most composers e.g. Widor, Karg-Elert etc. preferred the compression type. Underneath we reproduced the interior of a compression (left) and a suction (right) type harmonium.

Fig. I.VIII.
Interior of both harmonium types



[49] ibid.

[50] A. J. HIPKINS and K. SCHLESINGER, art., *Harmonium* in *The Encyclopedia Britannica: A Dictionary of Arts, Sciences, Literature And General Information,* Vol. 12.8, New York, Encyclopedia Britannica, 1911.

1.2.3. Heyday, decay and current situation

Up until the Great War, the harmonium played a vital role in the everyday life of (religious) people in both Europe and the USA. Often used at home to accompany psalms or in churches in addition to an organ (or to replace one), the instrument had sobriquets such as 'the organ of the poor' or 'the psalmpump.' In the year 1892 more harmoniums than pianos were sold in the USA[51] and that strongly evidences the striking popularity of the instrument in that era. Almost immediately after the unofficial birth of the instrument in 1842, leading composers of that time started to write solo- and chamber works for the harmonium, including Franco-Belgian pioniers such as César Franck and Jacques-Nicolas Lemmens. An extensive list of pieces written for the harmonium can be found in chapter 2.1.1.

In the late interbellum, the harmonium had almost completely fallen into oblivion and harmonium pieces were almost always performed on organs, which is — as described in the previous chapter — absolutely not so related to the harmonium as generally being assumed. Several factors contributed to the decay of the instrument. First of all, as a result of the arise of the electrically blown organ, whereby no extra men were needed to handel the bellows, the need for a smaller instrument, such as a harmonium, in churches and chapels fell away. Another major reason for the disappearance of the harmonium in art music was the changing musical taste of that time. During the course of the early 20th century, composers felt a strong urge to brake with the massive orchestras and ideas of the late romanticism and as a result, all kinds of (radical) new music appeared; atonality, neoclassicism, etc. wherein the harmonium — product of the 19th century par excellence — apparently had no place. Finally, synthesizers and such, who could easily imitate all kinds of instruments and timbres, further reduced the harmonium to a purely religious instrument, for the sole purpose of accompanying psalms and services.

Nowadays the harmonium is little by little being revalued. It is for a few reasons that this becomes clear. We can notice that in the second half of the last century everywhere across the world lovers of the harmonium started to unite themselves in all kinds of organizations, groupings or associations aiming to preserve, catalog and study the unique repertoire, techniques, construction methods, history etc. of this instrument. *De Nederlandse Harmonium Vereniging, Reed Organ Society* (USA), *Association pour la Sauvegarde de l'Harmonium* (France), *Arbeitskreis Harmonium* (Germany), *Japan Reed Organ Club* all organized conventions to share knowledge about all kinds of (regional variants of) harmoniums and they published magazines about the matter. The reasonable amount of academic studies on the instrument benefitted from and were only possible due to the growing scientific discipline of musicology, which provided the researchers with the tools required to work very systematically which, again, led to a considerable number of all-encompassing studies and reference works.

But despite all these efforts, the harmonium will probably always remain a niche instrument since there are no music schools nor conservatoires offering a separate field of

[51] J. GROSSBACH, art., *Harmonium* in *Die Musik in Geschichte und Gegenwart,* Sachteil 4, L. Finscher (ed.), Kassel, Bärenreiter-Verlag, 1996, p. 222.

study for the harmonium. The enthousiasts or performers nowadays are mostly introduced to the instrument through an organ study at a conservatory and this makes that only a few musicians worldwide can truly master the instrument's technique. Famous harmonium players in Belgium are Joris Verdin and Bart Rodyns, in The Netherlands it is Dirk Luijmes who sets the harmonium on the map by not only giving a great many of concerts, but also by making CDs with newly composed works for the harmonium: 'Dutch Airlines, A Century of Dutch Harmonium Music' and more recently the 'Harmonium Atlas'.[52]

1.3. History of the accordion

1.3.1. First instruments

Most of the early history of the accordion runs parallel to the one of the harmonium. The use of bellows for musical purposes, the (re)discovery of the free-reed, the fertile climate of both the romantic crave for unheard sounds and the newly found technical advancements, accelerated by the industrial revolution, all contributed to the invention of both instruments. A search in order to discover which of the two instruments was invented first is useless since the core principles are shared and developments took place at both fronts simultaneously[53]. We will however try to generally describe the early days of accordion making since it is important for accordion players who are willing to play harmonium music, to be aware of the most important overlaps and differences between the (history of the) two instruments.

The first person known to be experimenting with the construction of an early type accordion was Christian Friedrich Ludwig Buschmann, the son of Johann David Buschmann, a german maker of friction-instruments with exotic names such as *Uranion* and *Terpodion*[54]. In 1821, Christian invented a tuning device, consisting of a wooden block with 15 blowholes and chambers with free-reeds, aiming to ease the time-consuming tuning proces of his father's instruments. In the following year, he made an important improvement by adding a simple form of bellows onto the device. The idea to make a musical instrument out of these tuning devices would follow a few years later and would carry the names: *Mund-äoline* (for what would later become our harmonica) and *Hand-äoline*[55].

Yet, it is not Buschmann who is generally held responsible for the invention of the accordion. In 1829, a Viennese organ and piano maker, Cyrill Demian, was the first to patent the name 'Accordion'. He build a simple instrument with a bellows, 5 buttons and 50 free-reeds inside, which were able to produce ten different five-voiced chords (five when opening

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[52] This CD Box was presented in *Het Orgelpark, Amsterdam* on 23rd February 2019.

[53] Harmonium makers were often to be found experimenting with accordion-like instruments and vice versa.

[54] J. DE WITH, *Het accordeon en zijn aanverwanten*, p. 26.

[55] ibid., p. 27.

the bellows and five other ones when closing them)[56]. The ability of producing chords while depressing only one button is a revolutionary idea that remains the basis of the accordion's left hand bass-system up until today and also gives the 'akkordeon'[57] its name.

Soon other builders in Vienna and across Europe followed his example and the development of accordions, harmoniums and other similar free-reed instruments continued at a fast pace. Different types of instruments and local variants appeared and because of the price (instruments were not very expensive), the accordion quickly got very popular, especially among the lower social classes. The presence of prefixed chords, arranged via the circle of fifths, whereby the root, subdominant and dominant together with their corresponding major, minor and dominant & diminished seventh chords, are always right next to each other, made the extremely suitable for the playing of folk music.

A correct overview on the (early) history of the accordion can be found in the book *Accordion, Handbuch eines Instruments, seiner historischen Entwicklung und seiner Literatur* by Walter Maurer. However extremely interesting, this history would be digressing from our main point of concern.

1.3.2. Development of the free-bass system

On the accordion, the melody is usually played in the right hand and the basses are played in the left hand, as on the piano. Unlike the latter, it is due to the presence of so-called prefixed chords, not possible to play polyphonic music on an accordion. Its unique but at the same time limited bass-system has been designed to accompany the melody or melodies played by the right hand and nowadays mostly consists of 6 vertical rows, as indicated on the figure below. The two upper rows are single bass notes and the four other rows are the corresponding major, minor, dominant 7 and diminished 7 chords, all in close position.

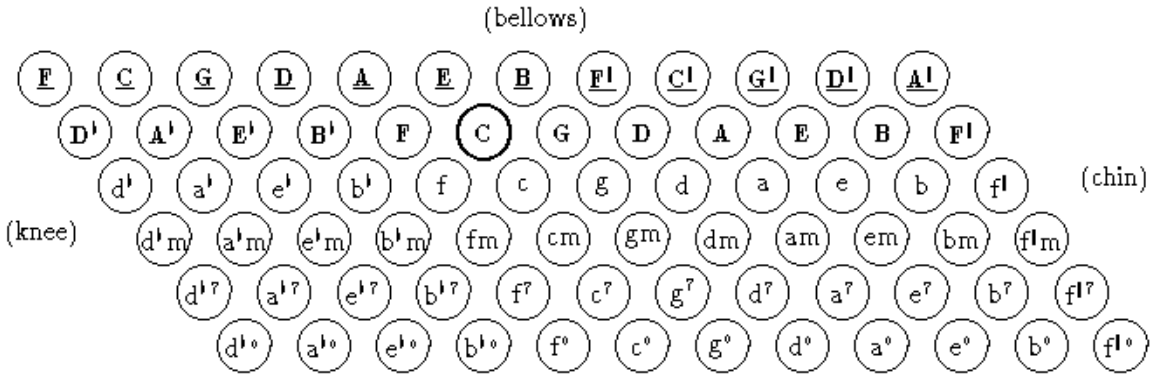

Fig. I.IX.
Layout of the left hand standard bass system

[56] ibid.

[57] 'Akkord' is the german word for chord and '-eon' was a popular suffix for new and experimental free-reed instruments.

Already since the end of the 19th century, manufacturers realized that an alternative system had to be worked out in order to overcome the shortcomings of the current system.[58] This resulted, in particular in Belgium, Italy, France, in numerous experiments and the proliferation of new bass systems. Most of them, however, did not got off the ground because for a long time, there was no uniformity and finally, during the 1920s, the Italian factories came up with a system that was a great addition to the bass keyboard and could be build on a large scale: the free-bass system[59]. Hereby two or three extra rows — often with the same layout as the righthand keyboard — were added (bringing the total to 8 or 9) which made it possible to play all the notes separately (thus, not in chords) and in different octaves. Around the 1950s, the influential accordion factory of Hohner in Germany started to implement this system aswel[60] and in Russia, the first instrument with the free-bass system was probably the one of famous accordionplayer Yuri Kazakov, made in 1951[61].

Despite the fact this new system enlarged the musical possibilities on a spectacular scale (in the end, the original so-called standard bass system was not abandoned) it proved, especially for people with small hands, not so convenient. In order to solve this unease, accordion builders used a convertor whereby it became possible to switch from standard-bass to free-bass, using the same buttons and bringing the total amount of rows back to 6, as to be seen on the illustration below.

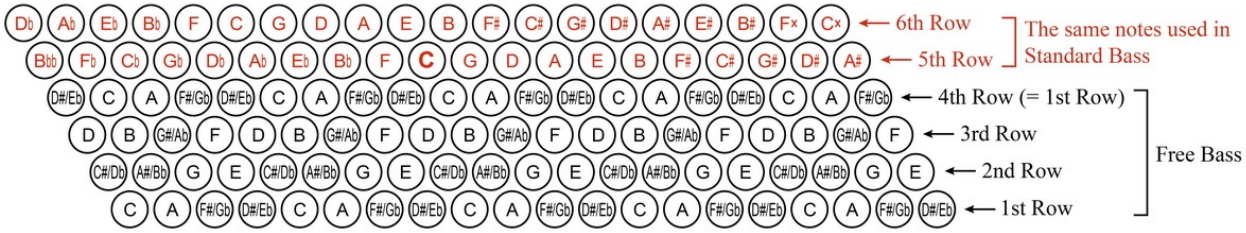

Fig. I.X.
Layout of the left hand free-bass system (C-griff)

This free-bass system is an essential part of the contemporary classical accordion playing and allowed the instrument to become recognized in the classical music world. Due to the high cost of small convertor instruments for kids, there are nowadays unfortunately still music schools where only standard-bass accordion is taught, giving the instrument an old fashioned image.

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[58] J. DE WITH, *Het accordeon en zijn aanverwanten*, p. 85.

[59] ibid., p. 86.

[60] ibid., p. 87.

[61] Unknown author, *Yuri Kazakov History (2),* accessed on 23rd February 2019, http://www.yurykazakov.com/kazakov_history.html.

1.3.3. Professionalization of the accordion: education at a high level in Europe and Russia

Despite the fast increasing popularity of the accordion in the 20th century, accordion players were doomed to learn to play the instrument from friends or family, or by a private teacher. Since the instrument was cheap and therefore widespread, many players were autodidact aswel. It is striking that in the first half of the last century, no momentous efforts to write an organological or historical study were made and it seemed that accordion players themselves were too busy playing in concerts, parades, cafés, … (the accordion was after all merely a folk instrument in that time) and musicologists were not interested in conducting a thorough searching process retracing the early days of this instrument. One of the first to finally do so was the Frenchman Pierre Monichon, who wrote his 'Little History of the Accordion' in 1958, wherein he expressed the following wish:

> "Slowly, [the accordion] will meet all the desired standards, and when the last obstacles will be conquered, the ultimate goal will be reached: to enter the official schools of music where its full potential will be revealed."[62]

This quotation perfectly illustrates the status of the accordion just before the general spreading of the free-bass system and some 20 years before its institutionalizing.

As already mentioned, the invention of the free-bass in the 1950s greatly revolutionized the landscape and gave the accordion in Europe another status: a new concert instrument was born. However, the folksy reputation more or less remained; one can not change that in few years time. Luckily, there were some pioniers who understood the qualities of this brand new instrument and fought hard for the case. One of the, if not the most important apostle of the concert accordion in Europe was Mogens Ellegaard, a Swedish accordionist who started collaborating with famous composers e.g. Ole Schmidt and Torbjörn Lundquist and this led to the creation of pieces which nowadays belong to the core of the classical accordion literature. Next to his activities as a performer of contemporary music, he also started teaching at a high level. Together with Lars Holm he set up the Malmö Accordion Studio in the mid 1960s and due to further efforts, the instrument got accepted to more and more music schools. In 1970, he was invited to form an accordion department at the Royal Danish Academy in Copenhagen and seven years later he became a full professor of accordion at the same institute, being — again — one of the first to posses such a position[63]. Until his death in 1995, Ellegaard remained an active champion of the accordion, conducting master class courses and seminars at Warsaw's Chopin Academy, Helsinki's Sibelius Academy, Trossingen, etc. and opening a new accordion department at the

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[62] Freely translated by the author of this research. Original text:
"Lentement, il gravit tous les degrés menant à la consécration, et quand il sera libéré des derniers liens qui l'entravent, il atteindra au but suprême, désir de tous: pénétrer dans les écoles officielles de musique où il vera briller ses qualités réelles."

P. MONICHON, *Petite Histoire de l'Accordéon*, Paris, E.G.F.P., 1958, p. 47-48.

[63] O. MURRAY, *Reflections on Mogen Ellegaard's Career and Achievements,* accessed on 15th February 2019, http://accordions.com/memorials/mem/ellegaard_mogens/index.shtml.

University of Music and Dramatic arts in Graz (Austria) in 1989, where he was later succeeded by Geir Draugsvoll and James Crabb[64]. Since 2003, the Fin Janne Rättyä is accordion professor at this institute.

Others followed Ellegaard's example: Matti Rantanen founded the accordion department at the Sibelius Academy in Helsinki in 1977, modeling the program to the one Ellegaard established in Copenhagen[65], and the Japanese musician Mie Miki started an accordion class at the Folkwang University of the Arts in Essen (Germany) in 1981[66]. Their work payed off and the accordion got accepted to more and more conservatoires all across Europe (HMTMH, *Hannover,* 1983; RAM, *London,* 1986, etc.) which again led to more collaborations between accordionists and composers, resulting in an ever increasing number of compositions for the instrument. Nowadays, the accordion is a part of the classical department of almost all of the major conservatoires in Europe, proving the instrument to be (one of) the most recent instrument(s) within the classical music field.

In Russia, the situation was somehow different. Due to the political differences between East and West, cf. the Cold War and the Iron Curtain, contact between the two sides was greatly limited and that, of course, also had an influence on the position of the accordion in society. In the Russian city of Tula, the bayan manufacturing[67] already began in the 1840s [68](!), the instrument quickly became popular in folk music all over the country and it was Pyotr Tchaikovsky who, after a visit to the factory in Tula, promptly decided to include four Bayans in his Orchestral Suite No. 2.[69]

Furthermore, it is important to mention that because of Russia's marxist visions and eternal respect for the proletariat, unlike in Western Europe, both classical and folk music were equally respected by all classes of society and thus the accordion was never regarded as inferior; rather the opposite was true. In order to help establish a national identity, the Soviet government decided to support their native folk music and specifically promoted the bayan as preferred instrument for peasant feasts in villages; other keyboard instruments were

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[64] Unknown author, *Souvenir program book for International Accordion Celebration*, Toronto (March 27-April 4, 1993), p. 36.

[65] L. KORHONEN, *Accordion class at the Sibelius Academy,* art., in *Finnish Music Quarterly* (1st June 2018), accessed on 18th February 2019, https://fmq.fi/articles/the-classical-accordion-class-at-the-sibelius-academy-attracts-international-interest.

[66] Unknown author, *Bahn Frei Für Das Akkordeon: Gespräch Mit Der Folkwang-Professorin Mie Miki Trägerin Des Neuen Opus Klassik Preises,* art., in *Revier Passagen* (29th November 2018), accessed on 18th February 2019, https://www.revierpassagen.de/tag/mie-miki.

[67] 'Bayan' is the Russian variant of the European accordion. An overview of the constructional and sounding differences can be found in the Master Dissertation of Elisa van Kesteren, available through the Research Catalogue: https://www.researchcatalogue.net/view/129864/251920#_ftnref2.

[68] M. DUNKEL & A. FETT, art., *Harmonikainstrumente* in *Die Musik in Geschichte und Gegenwart*, Sachteil 4, L. Finscher (ed.), Kassel, Bärenreiter-Verlag, 1996, p. 178.

[69] W. MAURER, *Accordion, Handbuch eines Instruments, seiner historischen Entwicklung und seiner Literatur*, Vienna, Edition Harmonia, 1983, p. 118.

considered to be too Western and bourgeois[70]. This vision also led to the establishment of what might be the first accordion department in a conservatoire worldwide, in Kiev in the year 1927[71]. Soon also in Russia many others followed; the most important one being the Gnesin State Musical College in Moscow, where a folk music department, led by Viktor Gorochov, opened in 1946.[72] Because of his early dead in 1960, he was succeeded by his former student, Sergey Kolobkov, who was single-handedly responsible for the flourish of the folk department at Gnesin up until the present day. The bayan professor namely became deputy rector of the institute and later even vice-minister of culture in the Soviet Union and in 1984, principal of the Gnesin State Musical College.[73] Student of Kolobkov and first-prize winner of the Klingenthal competition, Friedrich Lips, is now head of the folk department at this institute.

[70] H. DOKTORSKI, *The Classical Bayan,* on *The Classical Free-Reed, Inc,* published in 1998, accessed on 25th February 2019, http://www.ksanti.net/free-reed/history/bayan.html.

[71] ibid.

[72] F. LIPS & H. SCHEIBENREIF, *"Celebrity Interviews" Sergey Michailovitch Kolobkov,* on *American Accordionists' Association,* interview, Moscow, 14th and 15th December 2002, accessed on 25th February 2019, http://www.accordions.com/interviews/kolobkov.aspx.

[73] ibid.

2. The role of both instruments within the field of art music

2.1. Catalogue of the repertoire for harmonium

In this chapter we will try to chronologically list the existing compositions including a harmonium. It stands to reason that this catalogue is far from complete since it is for pragmatic causes not possible to mention all the available pieces; this list merely offers a broad overview on the matter. In order to compile the catalogue three criteria were used. First of all, we focused on the works composed in the heyday of the instrument, which means that the vast majority of the music was written in the small timescale between 1850 and 1920. Secondly, we examined the oeuvre of the well-established composers of that time, naturally we are aware of the fact that this decision is disputable since there is no general definition for which composer is established and which one is not — we therefore sticked to the general canon of western composers. Lastly, it is chamber music that forms the core of this catalogue. We believe that — for the purpose of this study — this genre offers the most interesting musical material and it will be mostly in this genre that the harmonium will be replaced by an accordion. The magnificent solo works by among others Sigfird Karg-Elert, Louis Lefébure-Wély, Théodore Dubois, Alexandre Guilmant, Jacques-Nicolas Lemmens and Charles-Victor Dubois, who even became the professor of harmonium at the Royal Conservatoire of Brussels in 1859[74], are unfortunately not included in this list.

Despite the fact that from the 1920s on, the harmonium started to appear less frequently in houses, churches and art music, composers continued to write for the instrument, even up until the present day (especially in countries were the harmonium was historically well represented e.g. France, Belgium and The Netherlands). Contemporary Dutch composers who adopted the harmonium into their regular instrumentarium are Chiel Meijering, Daan Manneke and Martijn Padding, who even wrote a concerto for the instrument.

Legend:

S = Soprano	harm/org = harmonium or organ	str = strings
A = Alto	harm/pf = harmonium or piano	str4 = string quartet
T = Tenor	hp = harp	tbn = trombone
B = Bass	orch = orchestra	timp = timpani
Bar = Bariton	perc = percussion	v = voice
harm = harmonium	pf = piano	vc = cello
		vn = violin

Unknown author, *Une brève histoire du temps au Conservatoire…,* accessed on 17th February 2019, http://www.conservatoire.be/le-conservatoire/histoire/.

Gioachino Rossini (1792-1868)	**Year**	**Instrumentation**
Péchés de Vieillesse:		
- vol ii.6: La Nuit de Noël	1857-1868	B (solo), 2S, 2A, 2T, 2Bar, pf, harm
- vol iii.6: Le chant des Titans	1857-1868	4B (unis.), pf, harm
- vol ix: Album for piano, cello, harmonium and horn (Despite the title, no pieces written for the harmonium(?))	1857-1868	?, harm (?)
- vol. viii.9: Tarantelle Pur Sang	1857-1868	Bar, choir, clochette (ad lib.), harm
Petite Messe Solenelle	1863	pf, choir, harm

Hector Berlioz (1803-1869)	**Year**	**Instrumentation**
Sérénade agreste à la madone sur le thème des pifferari romains, H.98	1844	harm (mélodium)
Toccata, H.99	1844	harm (mélodium)
Hymne pour l'élévation, H.100	1844	harm (mélodium)

Franz Liszt (1811-1886)	Year	Instrumentation
Hymne de l'enfant à son réveil (Lamartine)	1845	women's choir, hp, harm
An den heiligen Franziskus von Paula, Gebet	1860/1874	male voices (soli, choir), tbn, timp (ad lib.), harm/org
Ave Maris Stella	1868	v, harm/pf
Ave Maria II	1869	choir, harm/org
Pater Noster III, 2. Fassung	1869	men's choir, org/harm/pf
1e Elegie	1874	vc, pf, hp, harm
Sankt Christoph. Legende	+-1874	v, women's choir, pf, hp (ad lib.), harm
Angelus 1. Fassung (prière aux anges gardiens)	1877	harm
O Sacrum Convivium	+-1880	v, v (female)(ad lib.), harm
O Meer im Abendstrahl (Meissner)	+-1880	S, A, pf/harm
Ave Maria IV	1881	v (several), org/harm/pf
Le Crucifix (Hugo)	1884	v (female), pf/harm
Sancta Caecilia	+-1884	A, org/harm

Charles Gounod (1818-1893)	Year	Instrumentation
Où voulez-vous aller?	1852-1858	v, pf, vn/vc/flute/harm
Sérénade	1855	v, pf, org, harm (ad lib.)
Oh! That we two are maying	1871	v, harm, vla (ad lib.)
The sea hath its pearls	1871	v, harm, vn (ad lib.)
Motet pour la fête de l'exaltation de la Sainte Croix	1871	pf, org, harm (ad lib.)
Messe Brève en ut majeur	1872	3 male voices/choir, org/harm
Cantique pour la première communion	1872	pf/harm
Marche Solenelle	1877-1885	pf, harm
Messe du Sacré-Cœur de Jésus (arr. by Antony Choudens)	1877	v, v, org/harm
When the children pray	1894 (pub.)	v, harm, vn

César Franck (1822-1890)	Year	Instrumentation
Offertoire en mi bémol	1861	harm
Cinq Pièces pour harmonium	1864	harm
Prélude, Fugue et Variation, Op. 18	1865	pf, harm
Offertoire sur un Noël Breton	1867	harm
Quasi Marica, Op. 22 (FWV 34)	1868	harm
Petit Offertoire	1885	harm
L'Organiste (59/64 little pieces)	1890	harm
Offertoire en La majeur	1905 (post.)	harm

Anton Bruckner (1824-1896)	Year	Instrumentation
Ave Maria, WAB 7	1882	A, pf, org/harm
Perger Präludium, WAB 129	1884	org/harm

Bedřich Smetana (1824-1884)	Year	Instrumentation
The Fisherman, JB 1:97	1869	str, hp, harm

Richard (II) Strauss (1825-1899)	Year	Instrumentation
Hochzeitspraludium, op. 469	1869	hp, pf, harm/org

Camille Saint-Saëns (1835-1921)	Year	Instrumentation
Trois Morceaux, Op. 1	1852	harm
Six Duos, Op. 8	1858	pf, harm
Elévation ou Communion, Op. 13	1865	harm
Romance, Op. 27	1866	vn, pf/hp, harm
Vogue, Vogue, La Galère	1877(?)	v, pf, harm (ad lib.)
Barcarolle, Op. 108	1898	vn, vc, pf, harm

Georges Bizet (1838-1875)	Year	Instrumentation
Méditation Religieuse	1856	pf/harm/org
Trois Esquisses Musicales, Op. 33	1857	harm
Trois Duos (transcriptions)	1858	pf, harm
Seconde Méditation (trans. Gounod)	1872	vn, pf/harm
La Colombe, Entr'acte (trans. Gounod)	1872	vn/vc, fp, harm

Antonín Dvořák (1841-1904)	Year	Instrumentation
Bagatelles, Op. 47	1878	vn, vn, vc, harm

Charles-Marie Widor (1844-1937)	Year	Instrumentation
6 Duos pour Piano et Harmonium	1867	pf, harm
Sérénade, Op. 10	1870	flute, vln, vc, pf, harm

Gabriel Fauré (1845-1924)	Year	Instrumentation
Messe, p.290	1881/1882	orch + choir, harm
Noël, Op. 43/1 in A flat	1886	S/T, pf, harm (ad lib.)
Caligula, Op. 52, p. 298	1888	orch + harm
Shylock, Op. 57, p. 299	1889	orch + harm

Leoš Janáček (1854-1928)	Year	Instrumentation
Our Father (otce nas)	1901	T, choir, hp, pf, harm (unpublished)
On an Overgrown Path	1901-1902	harm (later arranged for piano)
5 Folk Songs (arr.)	1916-1917	v (male), choir, harm

Edward Elgar (1857-1934)	Year	Instrumentation
Sospiri, Op. 70	1914	str, hp/pf (ad lib.), harm/org (ad lib.)

Gustav Mahler (1860-1911)	Year	Instrumentation
Symphony No.8	1907	orch + harm

Richard Strauss (1864-1949)	Year	Instrumentation
Rosenkavalier, Op. 59 (Bühnenmusik)	1911	orch + harm
Ariadne auf Naxos, Op. 60	1916	orch + harm
Hochzeitspräludium, Trv247	1924	harm, harm (?)

Jean Sibelius (1865-1957)	Year	Instrumentation
Andante Cantabile in E flat major, JS. 30b	1887	pf, harm
Quartet in G minor, JS. 158	1887	vl, vc, pf, harm
Carminalia, JS. 51b	1925-1927	S, MS, T, B, choir, orch + harm
Musique Religieuse, Op. 113	1927	T, harm

Louis Vierne (1870-1937)	Year	Instrumentation
Messe Basse, Op. 30	1912	org/harm
Vingt-quatre Pièces en style libre, Op. 31	1913-1914	org/harm
Messe Basse pour les Défunts, Op. 62	1934	org/harm

Max Reger (1873-1916)	Year	Instrumentation
Romance in a-moll	1904 (?)	harm, harm (?)
Weihnachtslied “Ehre sei Gott in der Höhe” (Tekst: L. Hamman)	1905	v, pf, harm/org

Arnold Schönberg (1874-1951)	Year	Instrumentation
Herzgewächse, Op. 20	1911	S, celesta, hrp, harm
Weihnachtsmusik	1921	vn, vn, vc, pf, harm
Gerpa, theme with variations (unfinished)	1922	hn, vn, vn, harm
Arrangements:		
- M. Reger: Eine romantische Suite, Op. 125	1919/1920	chamber orch + harm (4 hands!)
- G. Mahler: Lieder eines fahrenden Gesellen	1920	chamber orch + harm
- F. Busoni: Berceuse élégiaque, Op. 42	1920	fl, cl, str4, pf, harm
- J. (II) Strauss: Rosen aus dem Süden	1921	str4, pf, harm
- J. (II) Strauss: Lagunenwalzer	1921	str4, pf, harm
- G. Mahler: Das lied von der Erde	1921	chamber orch + harm

Sigfrid Karg-Elert (1877-1933)*	Year	Instrumentation
2 Pieces, Op.48: Sanctus - Pastorale	1903	str4, harm
Angelus, W.5	1905	vn, harm.
Easy Duos, W.7	1906	pf, harm
7 Silhouettes, Op.29	1906	pf, harm
Poesien, Op.35	1906/1907	pf, harm
Trio, Op.15	1909	vn, pf, harm
Abendharmonien, W.15	1911	v, vn, pf, harm
2 Hymns, W.47	1919	v, choir, harm
Zwei Sinfonische Gesänge, W.81	1929	v, str4, pf, harm
Warum?, W.78	unknown	speaker, harm.

*only his chamber music pieces are included in this list

George Enescu (1881-1955)	Year	Instrumentation
Symphony No.2, Op. 17	1912-1914	orch + harm
Oedipe (Opera)	1921-1931	orch + harm

Igor Stravinsky (1882-1971)	Year	Instrumentation
Les Noces (first version)	1914-1923	Solo voices, pianola, 2 cimbaloms, perc, harm
Chorale à la mémoire de Debussy (sketches) (in its final shape: the Symphonys of Wind instruments)	1921-1931	harm

Anton Webern (1883-1945)	Year	Instrumentation
Fünf Stücke für Orchester, Op. 10	1913	orch + harm
Arrangements:		
Webern: Sechs Stücke, Op. 6	1920	chamber orch + harm
Webern: Fünf Stücke, Op. 10 (lost)	1920	str3, pf, harm

Alban Berg (1885-1935)	Year	Instrumentation
5 Orchesterlieder, Op. 4	1911-1912	orch + harm
Arrangements:		
- J. Strauss: Wein, Weib und Gesang	1921	str4, pf, harm

Dmitri Shostakovich (1906-1975)	Year	Instrumentation
The Golden Age, Op. 22 (ballet)	1929-1930	orch + bayan + harm
Suite ‘The Golden Mountains’, Op. 30(a) (film music)	1931	orch + org/harm
The Story of the Priest and His Helper Balda, Op. 36 (cartoon film music)	1933-1934	orch + harm
Arrangement:		
- B. Tischchenko: Concerto for Cello and Orchestra	1963(?)	orch + harm

It is estimated that between the year 1849 and 1949 some 2,260 pages of music for harmonium was composed[75] and it is important to understand why composers decided to include the instrument in their works. What were their motives? How did they got to know the harmonium? The reasons are of course different for each individual composer, yet we can determine some general conclusions.

First of all, it is remarkable that almost every famous composer of that time wrote one or more works for the instrument, proving its immense popularity. Some of the above mentioned composers e.g. Dvorák, Sibelius and Liszt were also known to be meritorious harmonium players.

After studying the list it becomes also apparent that the vast majority of the composers have only written a small number of pieces for the instrument, in the marge of their oeuvre; Mahler used the harmonium only in his 8th symphony and Dvorak wrote just one (yet magnificent!) work for harmonium. This is on one hand surprising: if they would have loved its sonority, why wouldn't they write more pieces for it? On the other hand one can find a few explanations for this oddity. The harmonium was a fairly new instrument in that day, César Franck and Hector Berlioz (who was an avid innovator of the orchestra and its different sound colors) can be considered as true pioniers and besides that, some of the composers didn't know the instrument enough to fully understand its full potential and therefore didn't use it too often.

Furthermore, we can note that most of the pieces were written in Paris (especially in the early days) or by composers who were (once) affiliated with Paris or France. Finally, a gradual transition in the usage of the harmonium throughout the 19th century becomes visible. When observing César Franck's and Franz Liszt's output for harmonium, one can notice the presence of many solo works and chamber music pieces. Later on, it becomes clear that more and more composers started to think of the harmonium as an instrument that was part of the orchestra, adding an extra color or dimension to its already broad spectrum. One of the best examples is Arnold Schönberg who erected the Society for Private Musical Performances in 1918, offering a chance for Viennese music lovers to discover newly composed music. For this occasion, Schönberg and his pupils arranged many compositions from different composers for his chamber orchestra[76], usually consisting of flute, oboe, clarinet, percussion, piano, string quartet and harmonium[77]. We will now highlight and analyse some of the most important works in the three major genres: solo works, chamber music and orchestral compositions.

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[75] M. DIETERLEN, *L'Harmonium, une aventure musicale et industrielle*, doctoral thesis, Reims, Université de Reims, 1982, p. 255.

[76] The erection of smaller chamber orchestras in the beginning of the 20th century fitted in a universal trend that had two big advantages. One one hand, it was more affordable than the (extremely) large orchestras who could only play very well-known and popular pieces in order to make enough profit. On the other hand, the musicians were more flexible, being very important, concerning the need to rehearse more often.

[77] H. GUITTART, *Anton Webern's Six Pieces for Orchestra, Op. 6 'Original' versus 'Reduction', and what to do with the arrangement?,* Unpublished Essay, 2014.

2.1.1. Case study of the solo work: L'Organiste by César Franck

Among the many fine works for harmonium solo — e.g. the beautiful and rich harmonium sonatas by Sigfrid Karg-Elert, the six compositions pour l'harmonium by Charles-Victor Dubois, etc. — the collection of 63 short pieces titled "l'Organiste" by César Franck might be the most well-known and features for that reason aswel as for its great structural clarity and melodic variety as a good example for this research. Before observing the score, two things must be mentioned.

César Franck wrote this series of short pieces at the end of his life and intended to write a total of 100 pieces but, as already said, was able to complete only 63 before his dead in 1890. The pieces were ordered as follows:

> "In terms of form, the following picture emerges: in each of nine chromatically ascending keys (from C to A flat) Franck has composed three versets in the major and three in the minor key, rounded off with an *Amen* lasting only for a few bars. Then, however, there follows a more substantial piece, usually entitled *Offertoire, Sortie* or *Communion*, which has to be considered as some kind of reminiscence of the preceding six pieces, as Franck draws upon these for his thematic material."[78]

Since the pieces should be played on the harmonium and since we have learned that an organ is in essence a totally different instrument, the title, l'Organiste, needs some clarification. The first edition of this collection was published postuum entitled "l'Organiste, 59 Pièces composées spécialement Pour L'ORGUE-HARMONIUM,"[79] a type of harmonium that could be found in many of the small churches in France[80]. Out of editorial and mercantile reasons, this title was later on changed to "[…] Pour Orgue ou Harmonium," a small but important difference, which falsely insinuates that the preferred instrument would be an organ. Prove for the fact that César Franck intended the harmonium as to be the instrument whereon l'organiste should be performed can be found in the words written on the first page by Franck himself '*Pièces pour Harmonium*' and the very precise indications as to the stops to be used on the harmonium, a numerical system further explained in chapter three[81].

A basic analysis of the first piece in this serie[82] is reproduced on the following pages.

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[78] Source: G. KAUNZINGER, *Preface,* in *L'Organiste. Pièces pour Orgue ou Harmonium. Nach Autographen und Erstausgabe Band 5 (Urtextausgabe)*, trans. by Peter Owens, Vienna, Wiener Urtext Edition, 1997, p.13.

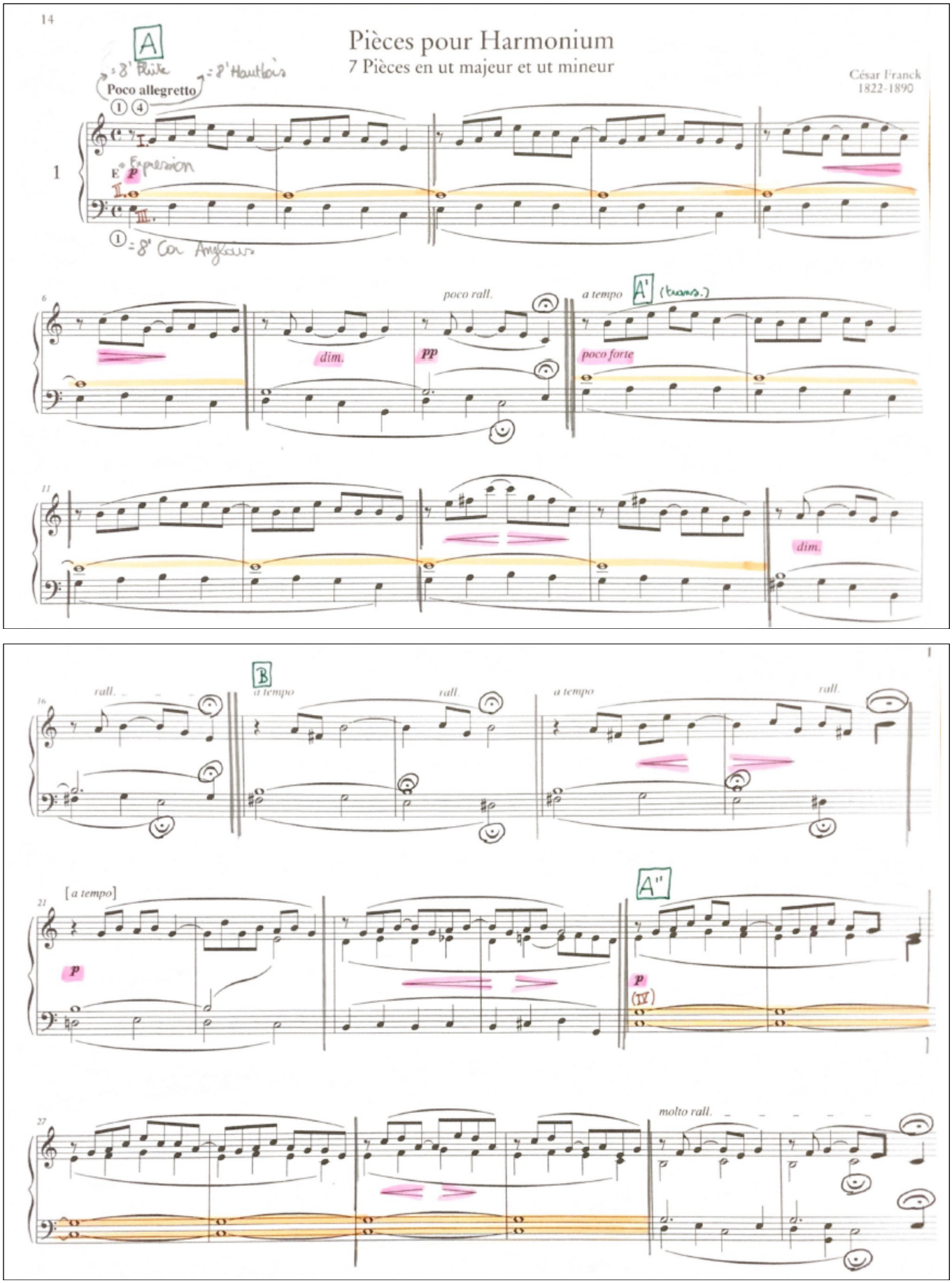
[79] ibid.

[80] The inventor of the harmonium, Alexandre Debain, took a patent on that name, making it impossible for other makers to call their instruments 'harmoniums,' thus forcing them to come up with other names for the often very similar instrument.

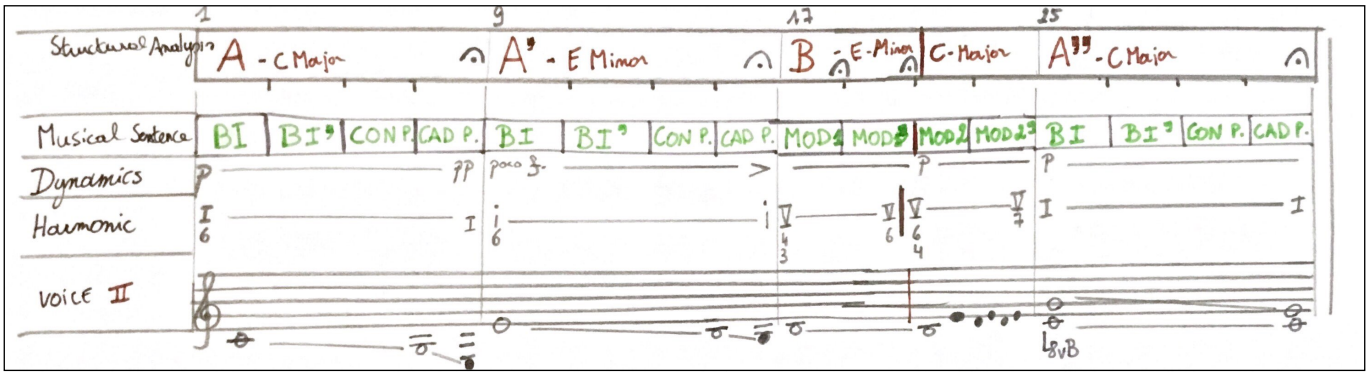
[81] G. KAUNZINGER, *Notes on Interpretation,* in *L'Organiste. Pièces pour Orgue ou Harmonium. Nach Autographen und Erstausgabe Band 5 (Urtextausgabe)*, trans. by Peter Owens, Vienna, Wiener Urtext Edition, 1997, p.11.

[82] Full title: L'Organiste, Vol. 1, FWV 41: Sept pièces in C Major and C Minor: I. Poco allegretto

Fig. II.I.
First piece of L'Organiste



This little piece consists of three voices and is written in a ternary form, whereby the A section is repeated twice in a slightly moderated version, as shown in the analysis below:



BI = Basic Idea / BI' = Repeated Basic Idea / CON P. = Continuation Phase / CAD P. = Cadential Phase / MOD = Model

Fig. II.II.
Structural and thematic analysis of *I. Poco Allegretto* of L'Organiste

Furthermore, it is important to note that the three voices all consistently have different rhythms throughout the whole piece. The lower voice (III) generally moves in crotchets, the middle voice (II) in semibreves and the upper voice (I) in quavers. In section A'' this is slightly different: voices II and III are now swapped, played in a different octave and an extra voice (IV) — also moving in semibreves — was added. This is interesting regarding the performance on the accordion: the three different rhythmical layers are clearly audible when playing on a harmonium but the opening/closing movements of the accordion's bellows can obstruct the continuity of each individual (rhythmical) line. Accordion players should be aware of this obstacle and pay attention to these kinds of phrasing. In chapter three we will provide possible solutions to this problem.

2.1.2. Case study of the chamber music: Bagatelles by Antonin Dvorák, Barcarolle by Camille Saint-Saëns

The amount of chamber music pieces involving a harmonium is somehow disappointing. It seems that composers used the harmonium primarily as a solo instrument, as a colorful addition to the orchestra or to accompany choirs. However, the chamber music pieces that do exist are of a high level and often have their origins in a domestic and amicale setting, the instrument was after all to be found in many living rooms and salons during its heyday. Besides, it is known that some composers played the instrument themselves. Dvorák for example, wrote his bagatelles for string trio and harmonium, *op. 47* for his good friend Josef Srb-Debrnov, with whom he frequently used to play chamber music. The composer clearly enjoyed the sound of this particular instrument, he omitted the usual viola, nota bene

his own instrument(!), and replaced it by a harmonium, which was played upon by himself on the premiere in 1879.[83]

Another rather similar but — wrongly — less famous chamber music work with harmonium, is the Barcarolle, *Op. 108* by Camille Saint-Saëns. This highly-romantic French gem, originally written for violin, cello, harmonium and piano has, as far as we know, not yet been recorded in this version. The organist Saint-Saëns greatly appreciated the harmonium's sonority and composed several pieces for the new instrument.

> "Years later when Saint-Saëns visited the French exhibit of musical instruments at the Brussels Exposition in 1897, he stopped at the exhibit of Mustel "organs,[84]" talked about them at length and played both the harmoniums and the célesta, which under the famous artist's fingers, produced marvelous effects."[85]

The barcarolle was premiered on 18th May 1898 by the chamber ensemble La Trompette, with the composer playing the harmonium.[86]

In both the Bagatelles and the Barcarolle, the harmonium is used in a similar way; the melodies are mostly played by the string instruments and the harmonium represents the harmonic fundament, moving in long held chords or notes, as the opening pages of both pieces illustrates.

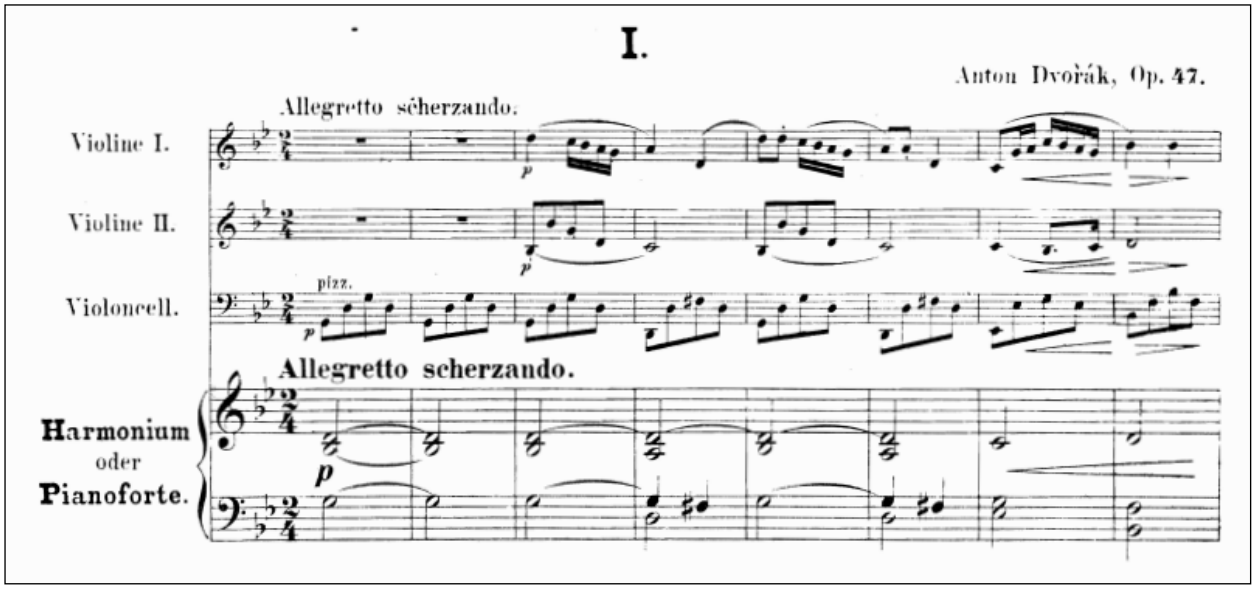


Fig. II.III.
Opening of the First Bagatelle from Dvorák's opus 47

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[83] E. STOOPS, *Description of the Bagatelles (5) for 2 violins, cello & harmonium, B. 79 (Op. 47),* accessed on 20th February 2019, https://www.allmusic.com/composition/bagatelles-5-for-2-violins-cello-harmonium-b-79-op-47-mc0002375506.

[84] Mustel was a famous maker of harmoniums. He called his instrument 'Mustel-Organ' because Alexandre Debain took a patent on the name 'Harmonium' so no one else could use that name.

[85] Source: R. SMITH, *Saint-Saëns and the Organ,* New York, Pendragon Press, 1992, p. 19.

[86] ibid., p. 144.

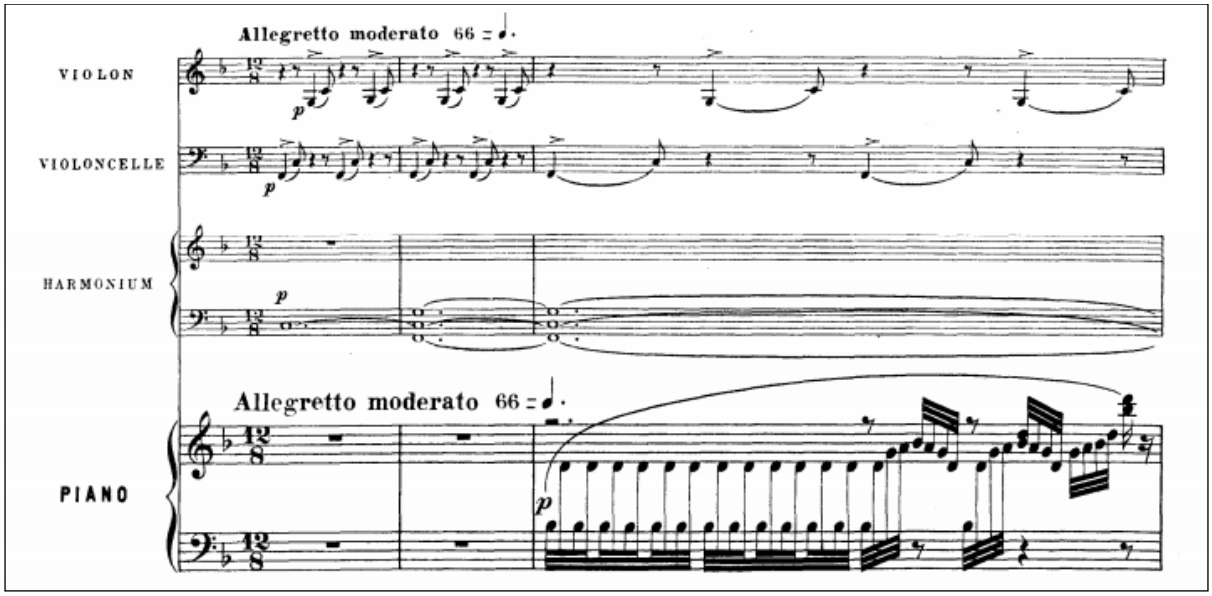

Fig. II.IV.
Opening of the Barcarolle, Op. 108 by Camille Saint-Saëns

This organ-like material is also present in the rest of the harmonium part, making the instrument blending very well with the others. Both pieces are thus composed really cleverly: the harmonium's role is to support the structure and harmony of the piece and to add an unconventional timbre to the rather traditional world of chamber music, dominated by string instruments and piano, without shocking the listener. After studying the harmonium part, it becomes clear that due to the specificity, it is highly unlikely that this part could be played by another (non free-reed) instrument. The long held chords and register indications reminds of an organ and such a sound can thus never be produced on a piano, even though this instrument is suggested as an alternative on the score of Dvorák's Bagatellen. On the other hand does the organ literally have no place in chamber music (in strict sense) and the nuanced dynamics are — even with a swell box — not feasible on this instrument. The accordion, although having a different sound, approaches in our opinion the sonority of the harmonium in a sufficient way to be used as replacement for the latter; the timbre of the accordion's registers does, when chosen wisely, not detract from the musical form, nor does it affect the carefully balanced proportions between the several instruments.

The harmonium was, especially since the last quarter of the 19th century also well represented in compositions for either the extremely large orchestras in the late romantic tradition, e.g. Symphony No. 4 by Alexander Skrjabin and Symphony No. 8 by Gustav Mahler, or in the more modest chamber orchestras of the second Viennese school. However, when performed today, orchestras rather invoke a harmonium player than looking for an accordionist to replace the original instrument. For that reason we will in this research not go deeper into this undoubtedly fascinating topic.

2.2. The usage of the accordion in art music

Since the classical accordion came into existence only by the 1950s, the repertoire for the instrument is still very young and the number of pieces is increasing daily. Therefore, we will not attempt to make a catalogue of the existing pieces like we did for the harmonium; a physical list would namely soon be outdated and an alike effort has already been done by the French accordionist Vincent Lhermet & musicologist Fanny Vicens. The catalogue they have created is called *Ricordi al Futuro* 'remember the future' and can be consulted via the website http://ricordoalfuturo.huma-num.fr/#/database. In order to point out the aims and methodology of this list, we reproduced the introductory text of the website, wherein the creators clarify their motives. It is important to keep in mind that this inventory is constantly changing by means of an annual update and for that reason it will remain useful in the future.

> "Welcome to the Ricordo al Futuro database, an inventory of art music for or with accordion from 1922 to now.
>
> This project, initiated in January 2013, aims to help spread this extremely rich repertoire, resulting from a growing enthusiasm for the accordion and an ever-increasing integration of the instrument in various aesthetics and musical langages.
>
> Despite the existence of past catalogues, most notably those made in 1980s-1990s, no such international inventory had been made since. Ricordo al futuro thus includes more than 9150 works, all of which comprising at least one accordion part in the instrumentation and written since 1922, the year of composition of Paul Hindemith's emblematic Kammermusik N.1. […]
>
> This project strives to provide the most information possible on each work, including its composer, its publisher as well as the details surrounding its premiere. […]
>
> All of the information gathered helps us to grasp the sheer breadth of musical creativity surrounding the accordion. However, as certain details remain incomplete and certain works unknown to us at the time of research and thus unarchived, a submission form is available for anyone who wishes to contribute, in order to update the database on an annual basis."[87]

Furthermore, it has become clear that since the development of the free-bass in the 1950s and the institutionalizing of the accordion in the 1970s, contemporary composers from all across Europe felt the ever growing urge to include the instrument into their common instrumentarium. Today, we really reap the benefits from the efforts of unwearying pioneers such as Mogens Ellegaard or Friedrich Lips, who — unlike their fellow instrumentalists — were in a unique position: on one hand they were convinced of the potential role this new instrument could play in art music, but on the other hand they were unable to play a lot of

[87] V. LHERMET & F. VICENS, *The Project*, on *Ricordo al Futuro*, accessed on 24th February 2019, http://ricordoalfuturo.huma-num.fr/#/.

this 'serious' music on their instrument, for the simple reason it didn't yet exist[88]. As a result of this situation, they encouraged composers such as Sofia Gubaidulina and Hans Abrahamsen to write for the instrument. The very successful integration of the accordion into the contemporary music scene is thus undoubtedly their merit. With a lot of accordion departments still being opened at conservatoires today[89] and a growing number of composers writing pieces for the instrument, the future of the accordion looks bright.

[88] This concerns the contemporary music. Accordion players however also play polyphonic baroque music on their instruments since most of the pieces of that era were written for an unspecified keyboard instrument (cf. Das Wohltemperierte Klavier by Bach) and tend to lend themselves very well to the accordion. Music for the piano written after the invention of the sustain pedal — mostly classical and romantic — is very hard to perform on the accordion since this device is absent and it is almost impossible to create a suchlike effect.

[89] The accordion department at the Conservatory of Amsterdam for example, reopened only in September 2015.

3. Interpreting harmonium works on the classical accordion

3.1. Specifics of a harmonium score

In this chapter we will take an even closer look at some of the scores including a harmonium. We will try to only select representative examples, meaning: certain types of rhythms, harmonies, musical gestures that frequently reoccur in harmonium scores; these characteristic elements often have to do with the typical physiognomy and/or the constructional limits of the instrument. By doing this we can at the same time witness the evolution of harmonium scores throughout the years.

In the early days of the harmonium, roughly from 1850 until 1885, the scores often did not contain many distinguishable elements, different instruments were often interchangeable and the music was often based on a choral, psalm or the text of a prayer. This proves that pieces were mostly performed in a religious context, already right from the start. Below, we reproduced the opening of two harmonium scores where we can clearly notice these and some other features. On the research catalogue, we added a recording of both fragments, played on the harmonium (S.I.1 & S.I.2) and on the accordion (S.II.1 & S.II. 2).

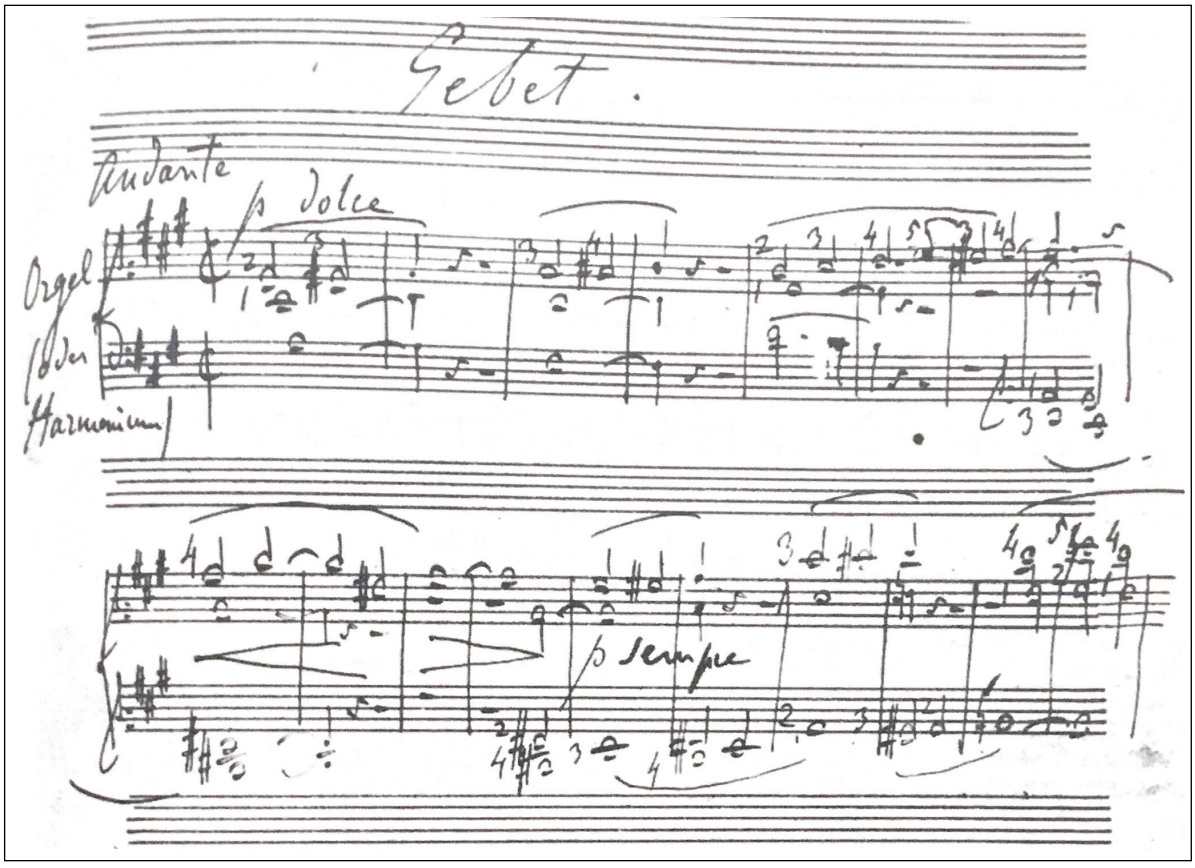

Fig. III.I.
First two staves of Franz Liszt's Gebet for Organ or Harmonium

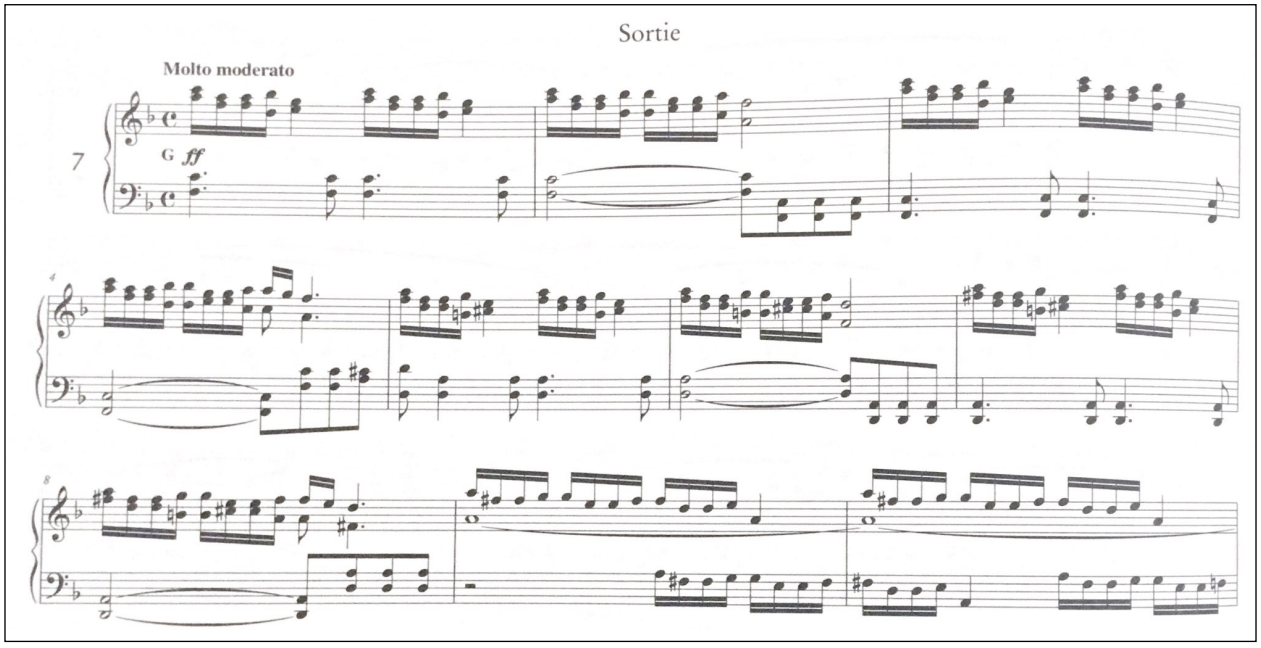

Fig. III.II.
Opening of the 'Sortie' of César Franck's 7 Pièces en fa majeur et fa mineur from l'Organiste

It is striking that a lot of the compositions for the harmonium are very short, miniature like. This is also the case for the ones above; Franck wrote his l'Organiste consisting of 63 small pieces and Liszt's *Gebet* has the length of only one A4 page. Compositions by other composers often have similar durations. This is especially true for the solo compositions, we will have to wait until the appearance of the works of Sigfrid Karg-Elert, Louis Vierne and Théodore Dubois to encounter solo works with a more considerable length. Chamber music pieces tend to have a greater duration, on average they last ten to fifteen minutes but of course there are exceptions.

Another important aspect of a harmonium score are the frequently returning long held notes and or chords. This is clearly taken over from the organ tradition (cf. pedal tones) and often serve the underlying harmonic plan of a piece. On an accordion, this can cause some problems, especially when a forte dynamic is prescribed. Accordion players are obliged to open and close the bellows every now and then and this movement (the changing direction of the air) is briefly hearable. As a result, accordionists should carefully handle those episodes and choose a clever moment to change the bellows. To illustrate this, we reproduced on the following page the beginning of Saint-Saëns' Op. 8, 6 duos for harmonium and piano. This first duo, a *fantasia e fuga* starts off with such a situation at which in the left hand of the harmonium an octave is sustained for the duration of more than one page (!) and in the right hand some chords move in crotchets, all to be played forte and the stop 'grand jeu' also means that all the stops are opened at once, producing the loudest and fullest tone possible.

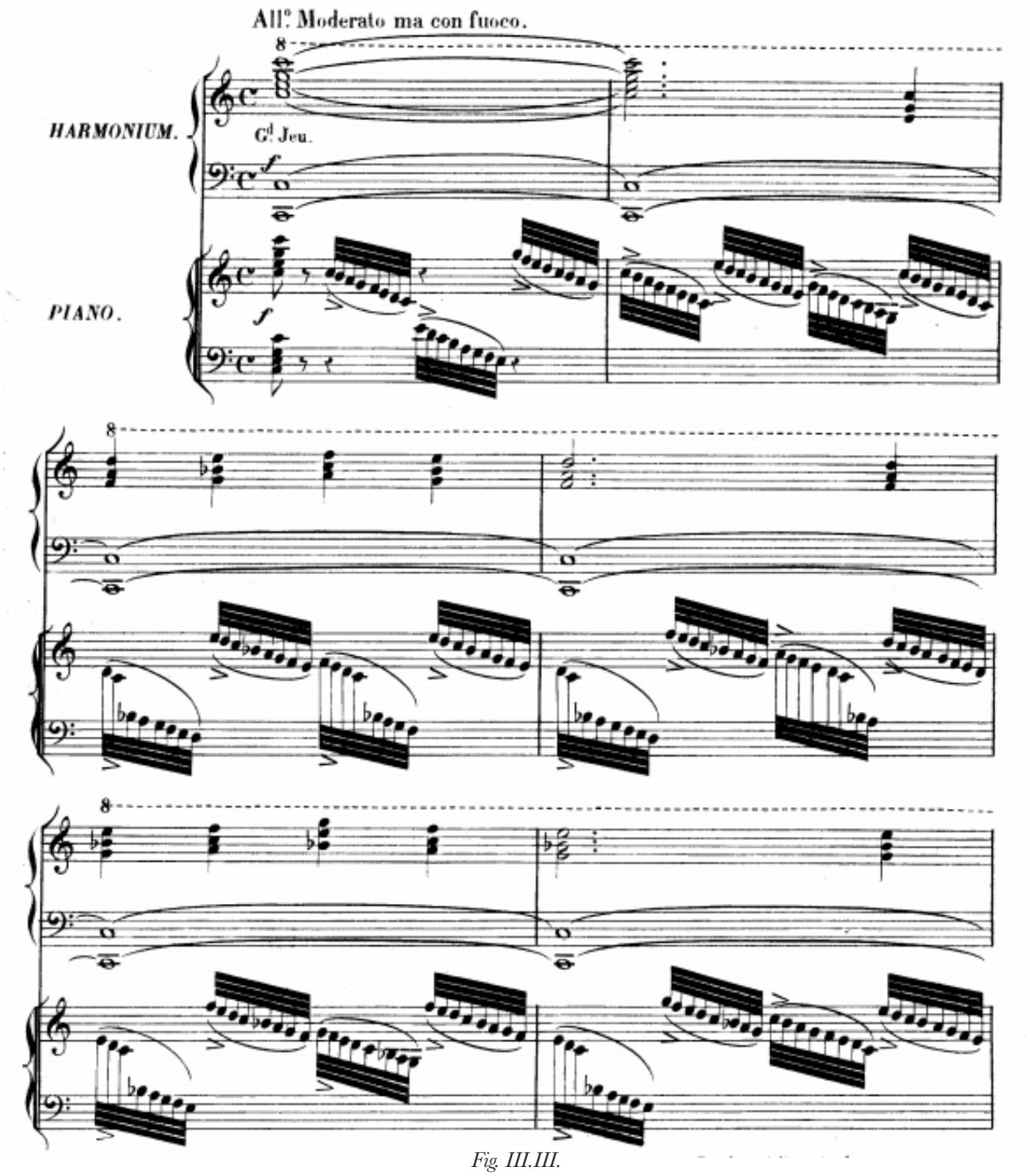

Fig. III.III.
6 Duos, Op. 8: I. Fantasia e Fuga
by Camille Saint-Saens

On the research catalogue we added three different recordings (S.II.3.1, S.II.3.2 & S.II.3.3) of this harmonium part, played on the accordion. In the first version, the bellows are changed in the middle of a chord in the right hand and this proves to be rather disturbing. In the second version, we tried to change the bellows every bar (except for the first and the second bar, at which a chord is sustained). In the last recording we changed the bellows according to the melodic line and this proved to be the most satisfying result. Singing the melody will help to find the best places for changing the bellows.

3.2. Comparison between both instruments in terms of construction and sound

In order to have a clear overview of the differences and similarities between a harmonium and an accordion, it is, like we did for the harmonium in the first chapter, needed to define a few criteria whereto the accordion should meet[90]:

1. The tones are generated (only) through the use of free-reeds
2. The instrument is portable
3. It is possible to play a few notes at the same time
4. A bellows, operated by the arm, controls the air

It now becomes apparent that the accordion and the harmonium indeed share the same core principles: bellows, free-reeds, stops, several notes can be played simultaneously etc.

However, there are two major differences which are crucial for the sound and the character of both instruments. The accordion is a portable instrument; at first sight, an obvious determination but because of this, the sound will reach the ear in a totally different way. The sound box of an accordion aswel as the thickness of the layer of wood is much smaller, resulting in a thinner and sharper sound; this is at the same time the reason why the sound of a harmonium is often perceived as to be warmer and more muffled.

Another important difference between the two instruments is the amount and controlling of the bellows. All together, the harmonium has three bellows whereas the accordion has only one. The reservoir bellows, absent with an accordion, are situated inside the harmonium and maintain — when enabled — a constant air pressure, thus disabling the possibility to play with expressiveness. This type of bellows is not frequently used in art music. The other two bellows regulate the pressure of the wind and correspondingly, the dynamics. They can be controlled by alternating between the two treadles of the harmonium and in a Kunstharmonium it is even possible to simultaneously apply different dynamics for the two manuals, the so-called 'double-expression'. Herein lies the other major difference with an accordion. When opening and closing an accordion's bellows, the left hand keyboard moves along which makes the playing less comfortable. Having only one bellow, also means that it is not possible to produce two different dynamics for both hands, a problem that can be solved by the physical projection of the left hand keyboard now towards the audience, then again away from the audience. This movement is very important in creating the illusion of playing two dynamics and leads the attention of the audience to the most important voice.

[90] J. DE WITH, *Het accordeon en zijn aanverwanten*, p. 29.

3.3. Registration

The last very important characteristic yet to be discussed are the stops or registers. As already mentioned before, they change the timbre of the notes by changing the set of reeds that sound[91]. All instruments (harmoniums and concert accordions) have at least eight of them, all carrying names mostly referring to a wind instrument (e.g. the flute, the bassoon, the oboe, etc.). They were in the first place used to imitate the orchestra or an orchestra group and for that reason, the harmonium in combination with a few string instruments was often used to perform entire symphonic pieces in a chamber music setting.[92] The whole art of registration, that means knowing were to use which (combination of) stop(s) is extremely fascinating but does not serve the purpose of this research and will therefore not further be explained. The *Harmonium Handboek* by Joris Verdin, Sigfrid Karg-Elert's *Die Kunst des Registrierens, Op. 91* can be considered as two important reference works on this matter. In this research we will mainly focus on the different registers of both instruments and correspondingly, their difference in sound. Below we reproduced the chart of all the stops of a Kunstharmonium.

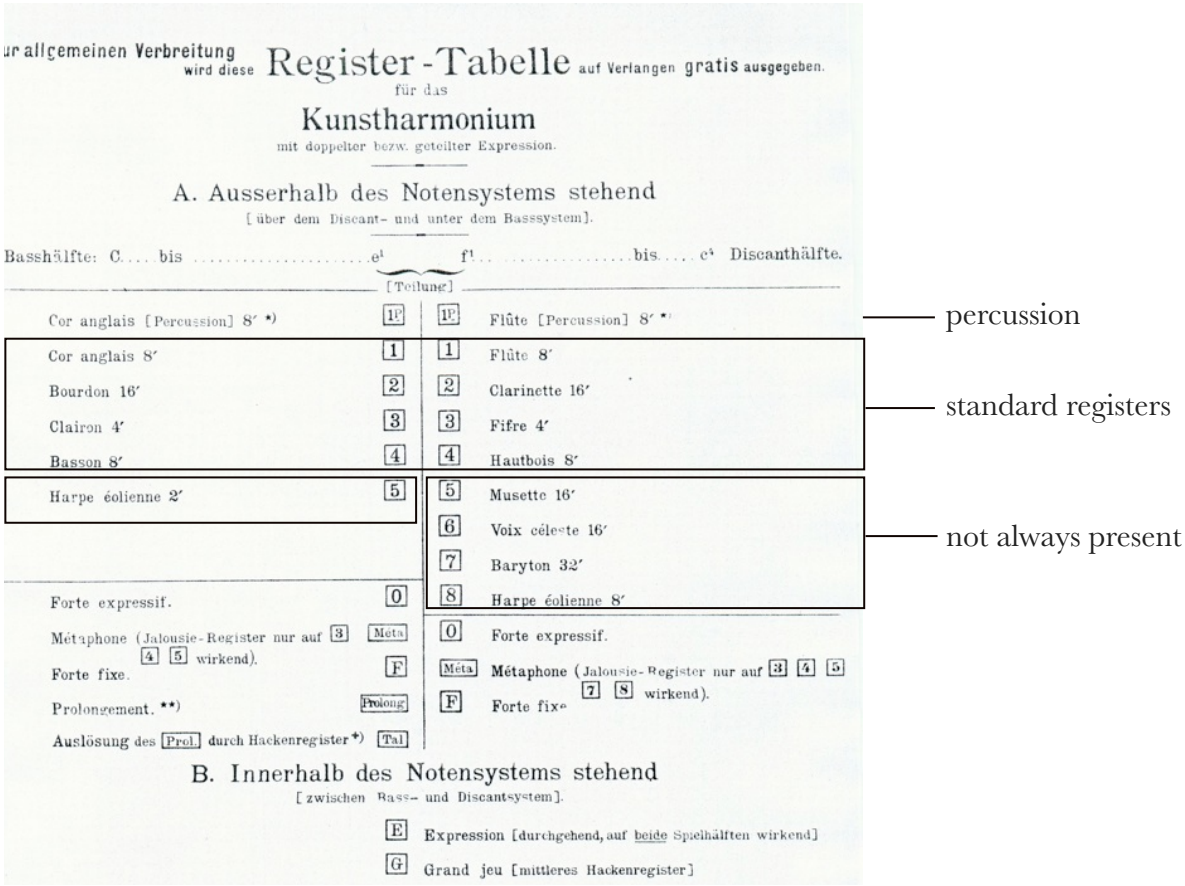

Fig. III.IV.

recommended stops for a Kunstharmonium: names and numbers

[91] In the harmonium several sets of different shaped reeds provide different timbres. The accordion has a so-called 'casotto' that softens the stridency of the accordion's sound and in the right hand 4 sets of reeds.

[92] J. VERDIN, *Harmonium Handboek*, p. 112.

The harmonium's register system consists of a combination of names and numbers that can be combined. The numbers 4', 8' and 16' stand for different octaves and are taken over from the organ literature at which these numbers represent the length of the pipe, expressed in foot. Pipes that are 4 foot long will thus sound one octave higher than pipes that are 8 foot long. The four basic registers (two 8', a 16' and a 4') are generally present in every compression type harmonium and are in a score usually announced by the number (and sometimes by the name of the register aswel) above the stave for the right hand and underneath the stave for the left hand as shown on the following example.

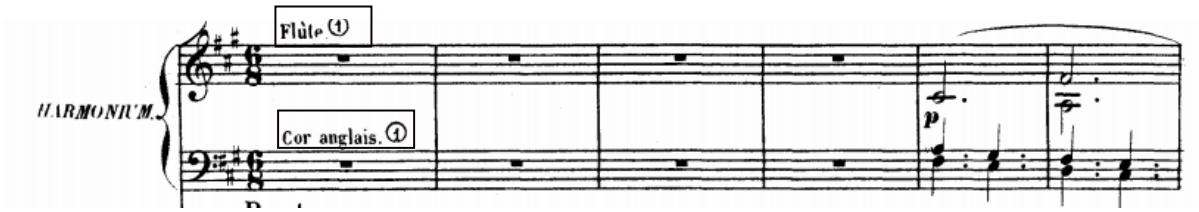

Fig. III.V.
6 Duos, Op. 8: V. Scherzo
by Camille Saint-Saens - registration is done by the composer

The registers or stops of an accordion are represented by dedicated symbols rather than a combination of numbers and names. At a standard classical accordion, the treble side has 15 registers, which are in fact all the possible combinations of the four same standard harmonium registers (two 8's, a 16' and a 4'). The bass side of an accordion, has only three registers for the free-bass[93] and can thus not be compared in a similar way. We therefore suggest that the register that comes closest to the one for the harmonium, is used. Underneath we reproduced the register symbols of the accordion's right hand.

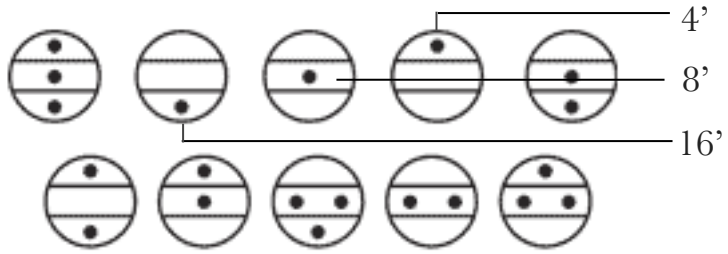

Fig. III.VI.
10 possible registers for the accordion. The standard classical accordion has 2 different 8's.

It is now important to compare the sound of the stops of the harmonium and the accordion. On the Research Catalogue, recordings of the registers of both instruments can be found (numbers: R.I.1-6 & R.II.1-6) and after a careful comparison, we were able to conclude that the standard registers: both the 8's, the 16' and the 4' of the harmonium do correspond rather well with the timbre of the accordion's equivalents. We therefore placed them right next to each other on the research catalogue.

[93] Bayans only have one register on the left hand side, functioning as a sourdine.

During the experimental fase of the recording project, we were also able to discover that the sound of the accordion approaches the harmonium even more, when we double a certain melody (in the same octave) with the left hand, so that is what we did on all of the recordings (R.II.1-6). Evidently, this can not be done when the left hand is supposed to play another melody, so, as soon as the harmonium part asks for the left hand to play, the accordion player can not double the melody in the left hand for the entire duration of that piece, even when he has bars of rests in the left hand for a longer time. Occasionally, in order to get even closer to the sound of a harmonium, accordion players could play an 8' harmonium piece with a 16' register but played an octave higher: the accordion's sound is now warmer and a bit more muffled, which is the harmonium's timbre.

The other registers that are displayed in the chart on the previous page are not present on the accordion. Accordion players have to be creative and find a possible solution by listening carefully to their instrument. Since even different brands of accordions differ so much in terms of sound, it is not possible to provide the reader with an exact rule to find the corresponding accordion register, many options are available. For the Voix Céleste 16' harmonium register we suggest the double 8' 16' on the accordion and for the 32' harmonium, a 16' on the accordion will almost always being suitable.

Finally, the percussion mechanism on a harmonium is needed to have a quicker response from the reeds in a fast passage (they tend to react slowly from time to time, resulting in a forced limitation of the tempo). On an accordion however, suchlike device is not necessary because the reeds don't have that tendency to react slowly, fast passages are never a problem.

Conclusion

After an extensive socio-historical study of both instruments, it is justified to state that the accordion and the harmonium are, despite a few differences in terms of size and external appearance, very similar instruments, sharing the same distinctive sonority of the free-reed. Despite the fact that the decline of the harmonium took place approximately at the same time with the rise of the accordion, it would yet be wrong to proclaim that the latter simply is a successor of the former. Both instruments are in fact a product of the experimental drive of the nineteenth century and have always coexisted; they were invented at almost the exact same moment and even in the exact same city[94]. However, they do not share the same historical and social development. Only after the invention of the accordion's free-bass system, which is a crucial moment in the instrument's evolution towards maturity, it became possible to play compositions for the harmonium (but also for the piano, organ, etc.) on the accordion and therefore this is — from a historical point of view — also justifiable.

As previously mentioned, the harmonium and the accordion are primarily known for the performance of respectively religious music and folk music. However, we have been able to ascertain that both instruments do play a considerable role within the classical music world as well, but, among the general public not much is known about this versatile repertoire and theretofore are a few reasons.

First of all, both instruments are not part of a standard orchestra or chamber music formation. Thus, all the classical compositions written for a combination of instruments containing at least one of these instruments are by definition a curiosity and in that way, both instruments can be considered as niche.

Secondly, the popularity of the harmonium was at its highest in the last quarter of the 19th and the first of the 20th century, particularly in Paris. That means that only composers alive in this period, active in Paris and (mostly) having some sort of connection with the organ scene or playing the instrument themselves, included a harmonium in their works. After this period, the usage of the instrument in the art music waned, meaning that the vast majority of the repertoire, especially the solo pieces, is (French) romantic music.

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[94] As we have learned, the name 'harmonium' first appeared in Paris in 1842, but one of the most important predecessors containing already all the key features of that instrument was the physharmonika (1818) who has, just like the accordion (1829), been invented in Vienna.

The classical accordion in its current shape on the contrary, does exist for just about 70 years and started to be used in compositions only since the 70s of the last century. This means of course that the classical repertoire of the accordion is limited to contemporary music on one hand and baroque music (the instrument lends itself very well to the baroque pieces written for an unspecified keyboard instrument) on the other hand. Nowadays however, we see that concerts whereby music from the classical and romantic era is performed, attracts far more audience than concerts with other kinds of music, putting also the accordion into a niche position. Fortunately, the catalogue of music for the harmonium learned us that there is no shortage of high-quality romantic compositions for this instrument and that it would and effectively can be a great addition to the repertoire of accordion players looking for new (romantic) music. Besides, the sonority of an accordion, although being just a little different, does not detract from the euphony of those compositions.

With the newly acquired knowledge concerning the repertoire and history of both instruments still fresh, we proceeded to try to play harmonium pieces on the accordion in order to hit upon any inconveniences that could occur when changing instruments. Much to our surprise, we discovered that especially the early pieces were very often written in an organ-like idiom, without of course an extra stave for the pedalboard but with the presence of dynamics, often added by the composers, who sometimes played the instrument themselves. Those characteristics make this music unsuitable for a piano, where long held notes fade away immediately but also for an organ, whereby it is well-nigh impossible to produce dynamics in a natural way. For the accordion with its free-reed sonority nota bene, this idiom is absolutely not a problem. Compositions that have been written much later and by composers who knew the harmonium very well, often make use of all the new technical advancements of the instrument, such as *double expression, voix céleste etc.* Accordion players have to come up with creative solutions for these affairs, but we have learned that it is possible.

We hope that this historical and practical guide encourages more accordion players to discover the rich and romantic harmonium repertoire. For others, we hope to have demonstrated the great expressional capabilities and the generous sonority of the free-reed.

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List of figures

Fig II.II.
Analysis by the author of this thesis

Fig II.III.

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Fig II. IV.

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Fig III.I.

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Fig III.II.

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Fig III.III.

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Fig III.IV.

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Fig III.V.

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Fig III.VI.

Accordion Register Notation Symbols, http://www.duckmandu.com/notation/.