The 'harpe organisée', 1720-1840 : rediscovering the lost pedal techniques on harps with a single-action pedal mechanism

Cleary, M.C.; Cleary M.C.

The '*harpe organisée',* 1720-1840

Rediscovering the lost pedal techniques on harps with a single-action pedal mechanism

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"Wollen wir so fürs Leben miteinander musizieren?" (Louis Spohr)

Abbreviations

Table 1: List of abbreviations used in the text.

Abbrev	Explanation
A-Wgm	Vienna, Gesellschaft der Musikfreunde, Bibliothek
AMZ	*Allgemeine musikalische Zeitung*
b.	Bar or bars.
BSB	Bayerische Staatsbibliothek, Munich.
C↑	Fold C pedal up, or C pedal is folded away.
C↓	Unfold C pedal, or C pedal is folded down.
c.	Century.
ca.	Circa, around.
D-B	Berlin, Staatsbibliothek zu Berlin Preußischer Kulturbesitz, Musikabteilung
D-Ksp	Cassel, Louis Spohr-Archiv
D-LEmh	Leipzig, Hochschule für Musik, Bibliothek
DK-Kk	Copenhagen, Det Kongelige Bibliotek Slotsholmen
D.P.	Double-pedalling. See Glossary for explanation.
Ed.	Edition
E-Mn	Madrid, Biblioteca Nacional
EWV.	*Louis Spohr, Eigenhändiges Werkverzeichnis*, or *Verzeichniß sämlicher Compositionen von Louis Spohr* (after 1822) by Wulfhorst.
Ex.	Example
Fig.	Figure, figures
F-Pn	Paris, Bibliothèque nationale de France, Département de la Musique
G↑	Fold G pedal up, or G pedal is folded away.
G↓	Unfold G pedal, or G pedal is folded down.
GB-Lbl	London, The British Library
GMO	Grove Music Online
I-Mc	Milan, Conservatorio di Musica Giuseppe Verdi, Biblioteca
indep.	independently
l.h.	left hand
LFoot	Left foot on E pedal. See Glossary for explanation.
maj.	major
min.	minor

Abbrev	Explanation
movt.	movement
Ms	manuscript
Op.	opus
Opp.	opuses
opt.	optional
ped.	pedal, pedals
Pl.	Plate number(s)
r.h.	right hand
RCM	Royal College of Music
RISM	Répertoire International des Sources Musicales. www.rism.info
SAM	*Sammlung Alter Musikinstrumente*, Kunsthistorisches Museum Vienna
sep.	separately
sig.	signa, signature
Tab.	Table
trans.	translated, translation
T.P.	Triple-pedalling. See Glossary for explanation.
Var.	variation
WoO.	Werk ohne Opusnummer (Work without opus number by Louis Spohr).
Wq.	Wotquenne number for the works of C. P. E. Bach

System of pitch notation

Helmholtz pitch notation system is used throughout: capital and small letters, super- and subscript-numbers, in place of dashes (middle c = c1): C2, C1, C, c, c1, c2, c3.

Translations

Quoted passages in German and French are included in the main text and translated into English in the footnotes. All translations are mine, unless otherwise stated.

Harp

The word “harp” is used throughout this thesis to refer exclusively to a harp with a single-action pedal mechanism.

Glossary

Accroché: To fix a pedal.

"Base" key: This is the key in which a harp is tuned, before playing a piece, where all the pedals are in the upper position. The strings are then said to be in an "open" position. The most usual key is E-flat major, giving the harpist the possibility of playing in keys with three flats and four sharps. However, B-flat, A-flat and D-flat are also sometimes required. The "base" key determines what fourteen semitones per octave are available to the harpist for an entire piece, or a movement of a piece.

Béquilles: A mechanism to shorten the vibrating length of a string. They are a pair "of small metal levers, one on each side of the string, which pinched the string from opposite sides when the pedal was depressed."[1] This mechanism was mostly used by the Cousineau luthiers.

Contrebasse ou Clavicorde à marteau: A pedal board (range F1-G) that was placed under the harp and played with the feet. It was one of the inventions that Krumpholtz presented to the *l'Academie Royale de Sciences* in November 1787. Krumpholtz's *Amante abandonnée, Air Parodié sur l'Adagio de Œuvre XIV* for violin, voice, harp or piano and contrebasse could have been the written for this instrument.

Crochets: A mechanism to shorten the vibrating length of a string. Small hooks are screwed on to a spindle which juts out from the neck through the front-action plate. When the pedal is pressed, the *crochet* pushes the string against the semitone nut which results in the shortening of the vibrating length of the string by a semitone.

Decroché: To unfix a pedal.

Double-pedal technique/Double-pedalling (D.P.): is the act of moving two adjacent pedals or two non-adjacent pedals on one side of the harp using one foot. This is achieved by placing the foot perpendicular to the harp, across the pedals. The pedals can be pressed down together or separately by pivoting the foot. The heel moves an inner pedal and the toe moves an outer pedal. When the pedals are not adjacent to each other, double-pedalling is achieved by folding away a pedal, usually the C pedal on the left side or the F or G pedal on the right side of

[1] Robert Adelson, Alain Roudier, and Francis Duvernay, "Rediscovering Cousineau's Fourteen-Pedal Harp," *The Galpin Society Journal* 63 (2010): 159–231: 160.

the base of the harp. The remaining D and B pedals on the left-hand side of the harp and the F and A pedals on the right can be then operated with one foot.

Double-action pedal harp: See *Harpe à double mouvement*

Fixé: To fix a pedal in the lower notch.

Fourchettes: A mechanism to shorten the vibrating length of a string. They are forked discs, with two small pins and when the disc rotates, the pins pinch the strings. This mechanism was patented in 1794. This mechanism became the standard mechanism and is still used in modern pedal harps.

Harpe à crochets: A system to shorten the vibrating length of each string. A *crochet* or crutch presses against the string to alter the pitch. It was first made by Hochbrucker.

Harpe à double mouvement: Harp with one row of strings and seven pedals which can alter each string by two semitones. Sebastien Erard patented this mechanism between 1800-1810. This pedal mechanism is still used and is used in the standard pedal harp today.

Harpe à simple mouvement: A harp with a single-action pedal mechanism.

Harpe ordinaire: A harp with a single-action pedal mechanism.

Harpe organisée: harp with one row of strings and seven pedals which can alter the pitch of each string by one semitone. This term was used by Diderot to describe the pedal harp of the eighteenth century.

Harpe simple: term used in the eighteenth century to describe any harp without a pedal mechanism to alter the pitch of the strings.

Jeu des pédales: This refers is the historical term which encompasses any sort of pedal move.

Left foot on E pedal (LFoot): This is a technique of using the left foot to move the E pedal, which is the first pedal on the right-hand side of the harp. This is first raised by Backofen in 1827.

Krumpholtz rule: Krumpholtz writes on the frontispiece of his *Deux Simphonies*, Op. 11, Naderman edition:

> “Pour faciliter l’éxécution dans le maniement des Pédalles pour toute Musique quelconque composée pour la Harpe: l’Auteur indique quelque fois dans son Œuvre XI^{e} le Sol♯ en place du La♭ pour ne pas décrochez le La qui se trouve naturel à la Clef, ou bien Ut♯ en place de Re♭ ainsi que le Re♯ au-lieu de Mi♭…En observant généralement cette méthode, on trouvera bien moins de difficultés dans cet instrument.”
>
> “To facilitate the execution in moving the pedals for all music composed for the harp: the author indicates sometimes in his Op. XI that the G♯ replaces the A♭ in order not to release the A which is found in the key signature, or the C♯ replaces the D♭ and the D♯ replaces the E♭…

> Observing this method in general, one will find fewer problems on this instrument."

Multi-pedalling: refers to either double- or triple-pedalling without specifying one in particular.

Open strings: The pitches of the strings of the harp when the pedals are in the upper position and not in use.

Pedal notch: This is the place where a pedal can be fixed, when a pedal is depressed. It is shown in fig. 2.2.

Pédale à renforcement: The *pédale à renforcement* is an eighth pedal located on the left-hand side of the base of harp. When the pedal is pressed down, the mechanism of the pedal opens five shutters which are found at the back of the resonance box of a pedal harp. While playing, the movements of this pedal, pressing down, fixing and releasing (opening, fixing the shutters open and closing the shutters), alter the dynamics and quality of the sound produced. It is operated by the left foot. It was invented by Krumpholtz and Naderman in 1785 and subsequently imitated by most harp makers in France and England.

Pedal *glissando*: If a string is plucked and then the pedal is pressed down or released, the pedal movement produces another sounding note, either a semitone higher or lower, where no intermediary pitches between one semitone and another are audible.

Pedal rod: Pedal rods usually run inside the column of the harp and link the pedal mechanism on the bottom of the harp to the mechanism in the neck of the harp. Each harp has seven pedal rods.

Single-action pedal harp: See *Harpe à simple mouvement*

***Sourdine* pedal**: This produces an echo effect from the vibrations of resonating strings. Krumpholtz and Cousineau invented two different types.

***Soupape* pedal**: See *Pédale à renforcement*

Spring of support: Bochsa's invention to fix the harp at a certain angle when playing. Erat claimed it as his invention.

Swell pedal: See *Pédale à renforcement*

Triple-pedal technique/triple-pedalling (T.P.): three pedals are pressed down together with one foot. This is usually carried out on the right-hand side of the harp, involving the F, G and A pedals, but can also be performed with the D, C, and B pedals on the left-hand side of the harp.

Introduction

Prologue

The aim of this thesis is to explore how to move the pedals on harps with a single-action pedal mechanism from 1720 to 1840, taking into consideration the repertoire of the same time-period.[2] It is problematic to define a topic with a beginning and end date. For the purposes of this study, the date 1720 has been chosen as it refers to the earliest surviving harp with pedals, which is housed at the Kunsthistorisches Museum in Vienna.[3] The last harp with a single-action pedal mechanism was built by the Erard firm in Paris in 1839.[4] Other models of pedal harps, which have a single-action pedal mechanism but were invented after 1840, will not be studied here. This includes Tyrolean "Bradl" harps, late nineteenth-century American single-action pedal harps and the twentieth-century "Dilling Model" harps. Each of these pedal harps have their own instrument-specific repertoire which surpasses the time-frame of this thesis.

[2] This it the first comprehensive study on harp pedalling technique. http://www.ams-net.org/ddm.

[3] "Kunsthistorisches Museum Wien-Bilddatenbank," accessed February 6, 2016, http://bilddatenbank.khm.at/. This harp is not part of the online databank of instruments of the museum. It is also not part of the online database: "International Directory of Musical Instrument Collections," accessed February 6, 2016, http://network.icom.museum/cimcim/resources/international-directory-of-musical-instrument-collections/. A detailed description can be found in Dagmar Droysen-Reber, *Harfen des Berliner Musikinstrumenten-Museums: Bestandskatalog* (Berlin, 1999), 51-52. The harp is identified as SAM 565. See Abbreviations. A handwritten label marked "Hochbrucker/Donauwörth 1720" accompanies this harp, attributing it to Jacob Hochbrucker. Ludwig Wolf, "Johann Baptist Hochbrucker (1732-1812) und die Harfenmode in Paris," *Musik in Bayern* 31, no. 2 (1985): 95-114. Jacob Hochbrucker (1673-1763), harp maker from Donauwörth, Germany.

[4] Erard firm, piano and harp manufactures, Sébastien Erard (1752-1831). Robert Adelson et al., eds., *The History of the Erard Piano and Harp in Letters and Documents, 1785-1959*, vol. 2 (Cambridge: Cambridge University Press, 2015), 1. Harp no. 1379, listed in Erard's harp ledgers as a harp with a "simple mouvement" was manufactured in January 1839 and later sold on October 11, 1839, to Mr Maingoël of Rennes. *Erard: Registre de fabrication*, 1835–1886, http://archivesmusee.citedelamusique.fr/exploitation/Infodoc/digitalcollections/viewerpopup.aspx?seid=E_2009_5_46_P0001, Harpes: n°de série 1246 à 2069-N°inv. E.2009.5.46, élément 14. All harps listed in Erard's Parisian ledger books which are built after 1839 are double-action pedal harps, as the description "simple movement" is never used again.

Terminology

This thesis discusses a harp with a single row of strings with seven pedals which correspond to the seven notes of the diatonic scale and sometimes one or two additional effect pedals. Today this type of harp is commonly called a single-action pedal harp as each pedal, when moved, alters the vibrating length of one string in every octave by one semitone. The pedals are found at the base of the harp and are operated by the feet producing seven additional pitches to the seven pitches of the "open" strings.[5] Therefore, each string can produce up to two pitches.

The invention of the first harp with pedals is usually attributed to Jacob Hochbrucker in Germany in 1697, as stated by his son Johann Baptist Hochbrucker[6] in the preface to his *Recueil d'Ariettes*:

> "Ayant souvent entendu à Paris quelqu'un se flatter d'être l'inventeur de la harpe pédale, je crois devoir ici, pour un peu humilier son amour propore, avan-cer, qu'ayant été inconnue, jusqu'en 1697. elle fut dans ce tems là inventée par mon pere né en 1662. et mort en 1763."[7]

The famous *Encyclopédie* of Denis Diderot entitles a technical drawing of a harp with a single-action pedal mechanism as an *harpe organisée* in his *Recueil de Planches* of 1767.[8] This drawing, and another three technical drawings of the pedal mechanism, complement the article "Harpe" written by Prince Casimir Michael Oginski[9] in Diderot's *Encyclopédie*, volume eight of 1765.[10] Dagmar Droysen-Reber suggests that the article and drawings could already have been prepared by 1763. The author has identified that the text in Oginski's article and the introduction to Philippe-Jacques Meyer's *Méthode* of 1763 is in places identical.[11] It is the author's opinion that both texts could date from as early as 1760, when Diderot first heard a pedal harp.[12] The harp article states that the harp is "organisée" when a harp

[5] See Glossary.

[6] Johann Baptist Hochbrucker (1732-1812), harpist and composer.

[7] Johann Baptist Hochbrucker, *Recueil d'Ariettes choisies avec des accompagnements de harpe doigtés et une petite gamme*, op. 2 (Paris, [1761]): "Having often heard in Paris of someone boasting of being the inventor of the pedal harp, I feel I must here, to subdue a little his ego, that it had been unknown until 1697. It was, in that time, invented by my father born in 1662 and died in 1763."

[8] Denis Diderot and Jean Le Rond d'Alembert, *Recueil de planches, sur les sciences, les arts liberaux, et les arts méchaniques, avec leur explication, Tome 22, Quatrième livraison, 248 Planches* (Paris: Briasson, 1767), LUTHERIE, Seconde suite, Planche XIX.

[9] Prince Casimir Michael Oginski (1728-1800 or 1731–1803), nobleman and harpist.

[10] "HARPE," *Encyclopédie ou Dictionnaire raisonné des Sciences, des Arts et des Métiers* (Paris: Briasson, 1765), 45–46. See Appendix I, section I.4 for article and translation, Plates and text.

[11] Philippe-Jacques Meyer, *Essai sur la vraie manière de jouer de La Harpe avec une Méthode de L'accorder* (Paris, 1763), 2–4. Philippe-Jacques Meyer (1737-1819), harpist and composer.

[12] Droysen-Reber, *Harfen*, 59; Denis Diderot, *Lettres à Sophie Volland* (Paris: Garnier, 1875), 438–39. Letter of August 2, 1760. "…j'avais été invité, la semaine passée, par le comte Oginski à l'entendre jouer de la harpe; ce qui se fit hier en secret; nous n'étions que Mme d'Épinay, le comte et moi. Je ne connaissais point cet instrument. C'est un des premiers que les hommes ont dû inventer. Rien n'est plus simple que des cordes tendues entre trois morceaux de bois. Le comte enjoué d'une légèreté étonnante. Il ne laisse pas imaginer, par l'extrême facilité qu'il a, qu'il exécute les morceaux les plus difficiles. La harpe me plaît; elle est harmonieuse, forte, gaie dans les dessus, triste et mélancolique dans le bas,

has pedals and when the column of the harp is hollow. A hollow column contains seven pedal rods[13] which connect the pedals to the mechanism that shortens the vibrating length of each string.

> "Cet instrument (Pl. de Luth) est composé de trois parties principales: 1°. d'une caisse A, faite de bois leger et sonore; 2°. d'un montant B, solide quand la harpe est simple, mais creux quand la harpe est organisée... On a remédié à cette imperfection, en ajoutant des pédales à cet instrument; et on dit alors qu'il est organisé."[14]

Diderot defines the word *Organiser* in volume eleven of the *Encyclopédie*, also published in 1765, as:

> "ORGANISER, v. act. terme d'Organiste, c'est unir une petite orgue à un clavecin, ou à quelque autre instrument semblable, à une épinette, par exemple, en sorte qu'en abaissant les touches de cet instrument, on fasse jouer l'orgue en même-temps."[15]

The instrument described in the "Organiser" article is the *clavecin organisé* or claviorgan, a keyboard instrument which combines a harpsichord and an organ: an instrument, with both strings and pipes, which has pedals at the base of the instrument to operate the bellows of the organ.[16] *Organiser* was used as a musical term as early as 1694, as in the first edition of *Le Dictionnaire de l'Académie Françoise*:[17]

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noble partout, du moins sous les doigts du comte, mais moins pathétique que la mandore; c'est peut-être que le comte Oginski, jeune, badin, folâtre, n'a pas encore le goût des chants tendres et touchants, et malheureusement ce sont les seuls qui m'émeuvent, m'agitent et m'enlèvent à moi-même. Le comte vint à sept heures. Il joua pour nous trois jusqu'à dix." "...I was invited the week before by the Count Oginski to hear him play the harp; what was done yesterday in secret; we were only Madame d'Épinay, the Count and me. I did not know this instrument. It must have been the first [instrument] that men have invented. Nothing is simpler than strings stretched between three pieces of wood. The Count played with astonishing facility. One cannot imagine, by the extreme ease he demonstrates, that he executes the most difficult pieces. The harp pleases me; it is harmonious, strong, cheerful in top range, sad and melancholy at the bottom, noble everywhere, at least under the fingers of the Count, but less poignant than the mandolin; it may be that the count Oginski, young, playful, high-spirited, does not have the taste of tender and touching songs, and unfortunately they are the only that move me, excite and rouse me. The Count came at seven. He played for us three until ten."

[13] See Glossary.

[14] "HARPE," 45–46: "This instrument (Pl. de Lute) is composed of three main parts: 1. a box A, made of light and sonorous wood; 2°. a pillar B, solid when the harp is simple but hollow when the harp is like an organ...We remedied this shortcoming by adding pedals to the instrument; and then said that it is mechanised." The word "simple" in this context refers to any harp without pedals.

[15] "ORGANISER," *Encyclopédie ou Dictionnaire raisonné des Sciences, des Arts et des Métiers* (Paris: Briasson, 1765), 629: "A term used by organists, it unites a little organ to a harpsichord, or to some other similar instrument, to a spinet, for example, so that when the keys of this instrument are lowered, one can play the organ at the same time."

[16] For a musical history of the term see Donald Howard Boalch and Peter Williams, "Claviorgan," *Grove Music Online* (Oxford University Press), accessed September 17, 2015, http://www.oxfordmusiconline.com/subscriber/article/grove/music/05920.

[17] *Le Dictionnaire de l'Académie Françoise* (Paris: Coignard, 1694), 159: "ORGANISE, v. at. Join a small organ to another musical instrument, harpsichord, so that when lowering the keys of this instrument on can play the organ at the same time. *Organise a harpsichord, a spinet.*"

> "ORGANISER, v. a. Joindre une petite orgue à un autre instrument de musique, clavecin, en sorte qu'en abaissant les touches de cet instrument on fasse jouer l'orgue en même-temps. *Organiser un clavessin, une espinette*."

The word *organisée*, when used to describe a harp with pedals, probably originates from this earlier existing keyboard instrument, the *clavecin organisé*. Other eighteenth-century instruments that include the word *organisé* in their name are the *Vielle à roue organisée*, a hurdy-gurdy combined with one or two ranks of organ pipes,[18] and the *fortepiano organisé*, a piano combined with an organ.[19] The *harpe organisée* was naturally not a combination instrument, like the above-mentioned instruments. However, seeing the pedals on the new type of harp reminded Diderot and his contemporaries of an organ.

Encyclopaedias, harp treatises and journals across Europe in the eighteenth century described the new harps in several ways. These included *Bret-Harffe*,[20] *Tret-Harffe*[21] and *Pedal-Harfe* in German, *harpe organisée*[22] and *harpe à pédales*[23] in French and "pedal harp" in English. These terms highlighted the new features, namely, the pedals and the use of the feet while playing. In England, the first pedal harps was also referred to as "German-" or "French Pedal Harps"[24] as it was considered an imported and exotic foreign instrument and was therefore different from the locally-known Welsh triple-harps and Irish or Scottish medieval wire-strung harps.[25]

Between 1800 and 1810, Erard patented the double-action pedal harp in Paris and in London.[26] This harp has seven pedals with a double-action pedal mechanism which alters the vibrating length of each string by **two** semitones.[27] Harps with

[18] "Vielle à roue organisée," accessed March 19, 2016, http://collectionsdumusee.philharmoniedeparis.fr/doc/MUSEE/0161775/vielle-a-roue-organisee; Howard Mayer Brown, "Lira Organizzata," *Grove Music Online*, accessed September 27, 2015, http://www.oxfordmusiconline.com/subscriber/article/grove/music/16746.

[19] Claude Balbastre (1724-1799), French organist and composer is accredited with the invention of the *fortepiano organisé*. Alan Curtis, Mary Cyr, and Bruce Gustafson, "Balbastre, Claude," *Grove Music Online*, n.d., http://www.oxfordmusiconline.com/subscriber/article/grove/music/01843; "Piano organisé," accessed March 19, 2016, http://collectionsdumusee.philharmoniedeparis.fr/doc/MUSEE/0158183/piano-organise; Johann Sebastian Bach et al., "Recueil de pièces de clavecin et de forte piano organisé par différens autheurs," accessed June 17, 2016, http://catalogue.bnf.fr/ark:/12148/cb433602513.

[20] Johann Gottfried Walther, *Musikalisches Lexikon*, 1732, 316.

[21] "Wien," *Neue Zeitungen von gelehrten Sachen*, December 8, 1729, 892. *Tret-Harffe*, as found in this newspaper article is misspelt as *Tret-harpfe* in Wolf, "Hochbrucker": 95, and continues to be misquoted today. See "Konferenz," *Tage Alter Musik Am Bodensee*, accessed March 22, 2016, http://alte-musik-am-bodensee.com/konferenz-2/.

[22] "HARPE," 45–46.

[23] Philippe-Jacques Meyer, *Nouvelle méthode pour aprendre a jouer de la Harpe avec la manière de l'accorder*, op. 9 (Paris: Bouin, 1774), 2.

[24] "The European Magazine and London Review," 1784, 364; Giacomo Gotifredo Ferrari, *Three Grand Sonatas for the French Pedal Harpe, with an Accompaniment of a Violin & Violoncello*, op. 18 (London: Birchall, 1795).

[25] See Chapter 1 for survey of historical harps.

[26] For an in-depth review of Erard's inventions, patents and harp manufacturing see Adelson et al., *History of the Erard Piano and Harp*, 2:22–32.

[27] See Chapter 8.

single-action pedal mechanisms continued to be manufactured in the 1840s, so the two types of pedals harps co-existed.[28] The new type of harp was referred to as *Erard's pedal harp*, *harpe à double mouvement* or double-action pedal harp while the older pedal harp was referred to as *harpe à simple mouvement*, *harpe ordinaire*, *harpe simple*,[29] "single action harp,"[30] or "common harp."[31] As the double-action pedal harp became the standardised pedal harp, the older terms fell out of use.

After the invention of the double-action pedal harp by Erard, the older pedal harps were criticised due to the "imperfection of the instrument as to modulation":[32]

> "The double action harp has very great advantages over the single,...instead of thirteen scales (eight major and five minor,) practicable upon the single action harp, the double action possesses *twenty-seven complete, (fifteen major and twelve minor,)*... The double action harp ... possesses *twenty one sounds* in the octave, instead of *twelve* as keyed instruments.[33]

In this statement the double-action pedal harp, which can play in twenty-seven keys and has twenty-one available pitches in an octave, is compared to the thirteen keys possible on the earlier pedal harp and the twelve pitches on the piano. The fourteen possible pitches on the older pedal harp are not even mentioned. However, where a keyboard instrument can theoretically play all twelve notes together, both pedals harps still have only seven strings to the octave, so no more than seven notes can be plucked at the same time.[34] Even with all of Erard's mechanical modifications and inventions, the new instrument was not fully exploited in compositions for during the successive decades. The harp repertoire did not advance with the invention of

[28]The last main makers of harps with a single-action pedal mechanism in Paris include the Naderman family: Jean-Henri (1734-1799), (Jean)-François-Joseph (1781-1835), Henri-Pascal (1782-1846) and the Chaillot family: Antoine (d. circa 1816), Pierre (d.1839), Etienne/Stephan. The *Annuaire général du commerce, de l'industrie, de la magistrature et de l'administration* (Paris: Didot, 1847), 471, lists Etienne Chaillot as a harp builder. Other builders listed are Pierre Erard (1794-1855), who was making solely double-action pedal harps by this time. The Pleyel company is listed but they only constructed double-action pedal harps. Louis Joseph Domeny, Gambaro and Poirot are also listed. Domeny made both types of pedal harps. See Constant Pierre, *Les facteurs d'instruments de musique: les luthiers et la facture instrumentale* (E. Sagot, 1893), 214.

[29]The term *harpe simple* has been used in several different situations to mean different types of harps. It was used in the eighteenth century to refer to any sort of harp without a pedal mechanism. In the seventeenth century the term "Gemeine Einfacheharff" (fig. 1.2) referred to the Renaissance single-rowed harp, while "Grossdoppel Harffe" referred to some sort of chromatic multi-rowed Baroque harp. See Michael Praetorius, *Syntagma Musicum, tomus secundus: De organographia*, 2nd ed. (Wolfenbüttel, 1619), 56. Michael Praetorius (1571-1621), German composer, theorist and organist. *Harpe simple* is an example of a term that has changed its meaning throughout the course of history but invariably refers to an older outmoded type of harp.

[30]Pierre Erard, *The Harp in Its Present Improved State Compared with the Original Pedal Harp* (London, 1821), 5.

[31]Nicolas-Charles Bochsa, *A New and Improved Method of Instruction for the Harp* (London: Chappell & Co., 1819), iii.

[32]Erard, *The Harp*, 7.

[33]Ibid., 15.

[34]The only harp that can theoretically play twelve notes together is the Spanish Baroque *arpa de dos ordenes*, if we had twelve fingers at our disposition.

a new type of harp and most harp pieces written up to 1840 are still playable on a harp with a single-action pedal mechanism.[35] By 1840, double-action pedal harps are clearly the benchmark pedal harps.[36]

Re-introducing the term *harpe organisée*

Today a harp with a single-action pedal mechanism is referred to as a *harpe à simple mouvement* in French, *Einfachpedalharfe* in German, single-action pedal harp[37] in English, "arpa a movimento semplice" in Italian and "arpa de pedal de movimiento simple" in Spanish. These terms post-date the invention of the *harpe organisée* and define it in terms of the later double-action pedal harp.

The author proposes to re-introduce Diderot's term, *harpe organisée*, when referring to eighteenth- and nineteenth-century harps with a single-action pedal mechanism, as an artistic term when the author performs.[38] Before introducing the reasons for using this term, a short timeline of the history of the first types of pedal harps is given below.

Timeline of the pedal harp with a single-action pedal mechanism

- 1697: Jacob Hochbrucker is accredited with the invention of the pedal harp. This is documented by one single source written by his son.[39] No instrument or pedal harp music has been identified from this date.
- 1720: Earliest known pedal harp with a handwritten label.[40]
- 1729: Earliest mention of a pedal harp in a concert review.[41]
- 1749: First harp performance at the "Concert Spirituel" season in Paris.[42]
- 1760: March 30: Second harp performance at the "Concert Spirituel" season in

[35] Further study is necessary to identify when the first work, originally written for harp, was composed that is unplayable on a harp with a single-action pedal mechanism, but this is beyond the scope of this thesis.

[36] See section 1.4.3 for further information.

[37] Droysen-Reber, *Harfen*, 291: "single action (pedal-)harp".

[38] The word "harp"is used throughout this thesis to refer exclusively to a harp with a single-action pedal mechanism.

[39] Hochbrucker, *Recueil d'Ariettes*. See this "Introduction", footnote 8.

[40] Kunsthistorisches Museum Vienna, SAM 565, pedal harp by Hochbrucker. No detailed study of this harp exists to verify the 1720 date. However, another Hochbrucker harp has been dated 1728. See section 2.2.1.1.

[41] "Wien," 892.

[42] "Mercure de France," June 1749, 178: Le concert Spirituel, executéau Louvre le jour de la Fete de la Pentecote, 25mai, acommencé par un Concerto…M. Geopffe, Allemand, a joué de la Harpe, &a été fort applaudi. "The 'Concert Spirituel', executed at the Louvre on the day of the Feast of Pentecost, May 25, began with a Concerto…Mr Geopffe, German, played the harp, and was loudly applauded." Georg Adam Goepfert (c. 1727-c. 1809), German harpist. "Mercure de France." 178; Dagmar Droysen-Reber, "Der Prototyp 'Harfe' in Paris der 1750er und 1760er Jahre. Zu Texten und Kupferstichen in Diderots Encyclopédie," in *Musikwissenschaft zwischen Kunst, Ästhetik und Experiment: Festschrift Helga de la Motte-Haber zum 60. Geburtstag*, by Reinhard Kopiez (Würzburg: Königshausen & Neumann, 1998): 136. It is usually assumed that he performed on a pedal harp, as reported by his pupil Madame de Genlis. Stéphanie Félicité de Genlis, *Nouvelle méthode pour apprendre à jouer de la harpe en moins de six mois de leçons* (Paris: Duhan, 1802), 2.

Paris. Hochbrucker played in March, May, and a July performance was cancelled. There is no evidence of other harp performances between 1749-1760.[43]
- 1760: First publications for pedal harp in Paris.[44]
- 1760: Private concert by Prince Casimir Michael Oginski.[45]
- 1760: First pedal harps advertised for sale by Salomon.[46]
- 1811: Erard patented the double-action pedal mechanism.[47]

This timeline shows the important dates around the first productions of single-action pedal harps, performances, players and repertoire. If pedals harps were invented from 1697,[48] sadly no instrument nor pedal harp repertoire exists from this time. The earliest dated pedal harp (dated 1720) has still not been researched in detail and no repertoire specifically written for a pedal harp even from this time has been identified. Likewise, no original harp music exists from the same time as the first pedal harp performances of the first half of the eighteenth century (1729-1749).[49] These areas of research, which could link the invention and manufacture of early pedal harps with performances, players and repertoire are still open to research.[50]

Until further research is carried out, the *harpe organisée*, with respect to its production, performances, players and repertoire appears to have flourished in Paris from around 1760.[51] This date coincides with the above-mentioned primary sources including the first luthiers, players and performances, and most importantly, the first published musical sources. The harp explodes onto the musical scene as

[43] "Mercure de France," July 1760, 207, http://reader.digitale-sammlungen.de/de/fs1/object/display/bsb10407227_00196.html?contextType=scan&contextSort=score%2Cdescending&contextRows=10&context=harpe; "Mercure de France," June 1760, 236–37, http://reader.digitale-sammlungen.de/de/fs1/object/display/bsb10407226_00086.html?contextType=scan&contextSort=score%2Cdescending&contextRows=10&context=harpe; "Mercure de France," May 1760, 190.

[44] Petilliot, *Recueil d'airs choisis avec accompagnement de guitarre et de harpe* (Paris, 1760); "Mercure de France," April 1760, second volume edition, 176–77, http://reader.digitale-sammlungen.de/de/fs1/object/display/bsb10407224_00211.html?contextType=scan&contextSort=score%2Cdescending&contextRows=10&context=harpe: referring to Petilliot: "qu'il n'y a point encore de Musique imprimée pour la harpe", there have not been up to this time any "music published for the harp"; M. Le chevalier d'Herbain, *Recueil d'Ariettes & Chansons avec acc guittare, clavecin, harpe & violon* (Paris, 1760); Simon, *Second Recueil, avec accompagnemens de Guittare & de Harpe* (Paris, 1760).

[45] Diderot, *Lettres à Sophie Volland*, 438–39. Letter of August 2, 1760.

[46] "Mercure de France," 82: "Cette excellente harpe, est faire par le sieur *Salomon*", "this excellent harp was made by Mr Salomon"; 1763 is quoted as the earliest evidence of harp manufacture in Sylvette Milliot, *Documents inédits sur les luthiers parisiens du XVIIIe siècle* (Société française de musicologie, 1970).

[47] "Instruments-Centre Erard Inventaire," accessed March 19, 2016, http://www.sebastienerard.org/docs/CentreErardInventaireGEP2014.pdf, D.2009.1.95-96.

[48] Hochbrucker, *Recueil d'Ariettes*. See Introduction, footnote 8.

[49] Stéphanie-Félicité de Genlis, *Nouvelle méthode pour apprendre à jouer de la harpe en moins de 6 mois*, 2nd éd. (Paris: Duhan, n.d.), 2. De Genlis writes that due to the lack of specific harp music, harpists played harpsichord music.

[50] A new research project, led by Dr. Panagiotis Poulopoulos from March 2016-August 2019, entitled "A Creative Triangle of Mechanics, Acoustics and Aesthetics: The Early Pedal Harp (1780-1830) as a Symbol of Innovative Transformation" is taking place at the Deutsches Museum, Munich. This research will not "investigate so much the performance aspects of the pedal harp, but mostly focus on the organology and history of the instrument between 1780 and 1830". Private email correspondence, June 1, 2016.

[51] Droysen-Reber, "Prototyp 'Harfe"': 136. She places the production of harps in Paris as early as 1750 and the present author would hope that, with further research, this earlier date could be justified with primary source material.

stated in the often quoted letter from Charles-Simon Favart to the Count Durazzo on May 1, 1761:

> "la harpe est aujourd'hui l'instrument à la mode; toutes nos dames ont la fureur d'en jouer."[52]

Diderot's term, *harpe organisée* is from the exact time as the beginning of the pedal harp's success in Paris. The term *harpe organisée* was used in two concert reviews of Jean-Baptist Krumpholtz.[53] On October 4, 1772, Krumpholtz played in Vienna on a "verfertigen Harfe" and then on a "harpe organisée" in Leipzig in 1776.[54]

Prior to 1760, a harp with pedals was considered a novelty, as earlier harps did not have pedals and the feet had no role in music-making for a harpist. I have also experienced this newness, while re-evaluating how I play the harp. I have played single- and multi-rowed harps of the medieval to the Baroque epochs for over twenty years. From this experience, two fundamental aspects come to the fore when I play. The first is that the pedal action creates more than half of the notes on the harp, making the work of the harpist's feet highly important. My second observation is how I approach a harp where each string results in two pitches.[55] I feel that I am using a machine, albeit a fragile machine, where not only my hands but also my feet move harmoniously with a common musical gesture.

The single-action harp is an invention of the Enlightenment, a time of new religious and philosophical liberties, but also musical ones. The advantage of harps with pedals is the fact that both hands are free[56] to play all the time, rather than the playing practices on earlier single-rowed harps where chromatics were achieved either by re-tuning, stopping the strings at the neck with one hand, or by manually moving hooks.[57] The new solution was to employ the feet in making the additional notes that are not part of the open strings on the harp. However, my experience is that the pedals have not liberated my hands but rather engaged my feet to make music too. Then, moving pedals becomes like a dance.

The word *organisée* helps me to remember this dance. It assists me as a performer today, to put myself in a historical context when I play music of the late eighteenth century and beginning of the nineteenth century. I am not merely playing a pedal harp, but one with its own technique, repertoire and sound-world.

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[52] Charles-Simon Favart, *Mémoires et correspondance littéraires: dramatiques et anecdotiques, de C. S. Favart*, ed. Henri François Dumolard, vol. 1 (L. Collin, 1808), 147. Charles-Simon Favart (1710-1792), French librettist, playwright, composer and impresario.

[53] Jean-Baptist Krumpholtz (1747-1790), Bohemian harpist, composer, teacher and instrument innovator.

[54] Blumauer Alois and Johann Christian Herchenhahn, "K.K. allerg. privil. Realzeitung der Wissenschaften und Künste," 1772, No. 44, 660: "Hr Krumbholz aus Böheim auf einer auf besondere Art in Paris verfertigen Harfe" hören liess "in einem Sonate mit Violin, Bass, und Horn begleitet". Marie-Françoise Thiernesse, "La Harpe à Paris au XVIIIe siècle: Jean Baptiste Krumpholtz, sa personnalité, sa vie, son oeuvre" (Thèse du doctorat, Université du Liège, 1975), Krumpholtz concert in 1776 in Leipzig.

[55] Baroque multi-rowed harps have at least one string and sometimes two strings for several notes in the octave. The Italian Baroque *arpa doppia* actually has twenty-one strings in every octave. See section 1.2.2.

[56] Droysen-Reber, *Harfen*, 11.

[57] See section 1.3.1.

Research question

I purchased a harp built by Jacob Erat of London (no. 345, built around 1795) in 1996.[58] My pedal technique was one of a modern pedal harpist, based on two underlying principles:

- The heels always remain on the floor while the remaining part of the feet flex to move the pedals up and down.
- A maximum of two pedals can be moved at a time, one pedal by each foot. If the heel remains on the floor, this means the foot is parallel to the harp and pedals. The toe is used to move a pedal. This can only mean moving one pedal at a time with each foot.[59]

When playing virtuosic pieces, I found pedal solutions to perform the repertoire, even though I occasionally found my solutions cumbersome and inorganic. They felt unmusical and involved physical gestures that did not suit the style of the music. Pedal noises were common in my playing, which I thought were due to the fact that a more than 200 year-old harp mechanism was old and worn.

I began to learn *Sonate Concertante* Op. 115 for violin and harp by Louis Spohr[60] in January 2014, but found that I could not technically play the piece, pedalling as I had up to then. This work appeared impossible to play on the only pedal harp that Spohr's wife Dorette Spohr played, namely the single-action harp.[61] I found the following bars impossible to play:

- *Allegro* bars 6-7, 74-90, 217-31, 238-42.
- *Larghetto* bars 5-12.
- *Rondo* bars 294-304.[62]

The only workable pedal solutions I could find required moving two pedals simultaneously on one side of the harp. The final bars of the first movement *Allegro*, bars 238-43, require moving two pedals on each side of the harp at the same time. Moving two pedals with one foot on one side of the harp means placing the foot across the pedals. The whole foot, both heel and toe, is involved in moving the

[58] Jacob Erat (1768-1821), English harp maker and composer.

[59] Yolanda Kondonassis, *On Playing the Harp* (New York: Carl Fischer, 2006), 22–23, Chapter on "Pedal Technique": "Your heels should always rest on the ground."

[60] Louis Spohr, *Sonate Concertante*, op. 115 (Hamburg: Schuberth, 1841). Louis Spohr (1784-1859), German violinist, composer and conductor. An autograph copy of the violin part is in D-Ksp, the harp part (Ms 42) at D-LEmh.

[61] Dorette Scheidler (1787-1834), German harpist. Dorette and Louis Spohr married on February 2, 1806. She played a harp built in Strasbourg, which could have been built by the eighteenth-century Storck family of instrument builders. See Pierre, *Les facteurs d'instruments de musique*, 373–74; René Vannes, "Storck," *Dictionnaire universel des luthiers* (Bruxelles: Les Amis de la Musique, 1972), 346–47; Adelson et al., *History of the Erard Piano and Harp*, 2:166. Between June 1806 and October 1807 she bought a Naderman harp from Paris. See Louis Spohr, *Lebenserinnerungen*, ed. Folker Göthel, 2 vols. (Tutzing: H. Schneider, 1968), 97, 102. This was also noted in a concert review in AMZ, July 3, 1816: 458. While on tour in England in 1820, she was offered a double-action pedal harp for her use by Erard. See Chapter 6.

[62] See section 5.4.2 for the musical examples and full analysis of these extracts.

pedals, implying that the foot off the ground. This goes against the two principles of modern pedal technique as described above.

My questions included: How did Dorette Spohr pedal? How did I manage up to 2014 without a seemingly fundamental part of her technique? How had anyone else played Op. 115 from Dorette Spohr's time to the present day? Did this way of pedalling have anything to do with the fact that pedal markings are extremely rare in harp scores? If my feet are off the floor, what consequences does this have to my sitting and playing position?

At that point, I realised that I needed to completely re-evaluate my way of pedalling. I began looking for any literature on the subject and after much research, I found only three twentieth-century sources that discuss the practice of moving more than one pedal with one foot at a time since 1833:[63] two PhD theses and one book.[64]

Reviewing modern literature

Rebollo Pratt, (1976)

Rosalie Rebollo Pratt's thesis on Krumpholtz is a forward-looking thesis, with research questions that have still not been challenged after forty years.[65] She states that:

> "Since the older construction [of harp] provided for a much closer spacing of pedals, it was possible and quite useful for the performer to move two pedals simultaneously with one foot."[66]

She gives examples of pedal *glissandi*[67] in works by Krumpholtz[68] and in Mozart, enharmonic writing and double-pedalling with the F and G pedals.[69] She includes an in-depth structural and harmonic analysis of Krumpholtz's *Préludes*, Op. 2, nos. 1, 3, 6 and 10, but identifies no double-pedalling or pedal *glissandi* in these pieces.[70]

Barthel, (1994)

[63] François-Joseph Naderman, *École de la harpe, dictionnaire de transitions pour s'exercer dans l'art de préluder et d'improviser tant sur la harpe que sur le piano et à l'usage des jeunes compositeurs de tout genre adopté par le conservatoire de musique*, op. 95 (Paris: Naderman, 1833), 92.

[64] Rosalie Rebollo Pratt, "Johann Baptist Krumpholtz: His Harp Compositions and Pedagogy, Implication for the Twentieth-Century Harpist" (Doctor in Education, Columbia University Teachers College, 1976), 56–57; Laure Barthel, "La harpe de Rousseau à Boieldieu" (Thèse de doctorat, Université de Lyon 2, 1994); Mike Parker, *Child of Pure Harmony: A Source Book for the Single-Action Harp* (London: Lulu, 2005).

[65] Rebollo Pratt, "Krumpholtz." Rebollo Pratt identifies numerous passages from Krumpholtz's compositions that are similar to passages in Mozart's *Concertante a La Harpe, e Flauto*, K.299. Wolfgang Amadeus Mozart (1756-1791), Austrian composer and pianist.

[66] Ibid., 47.

[67] See Glossary.

[68] See section 4.4.

[69] See section 5.1.

[70] See sections 5.1 and 5.2 for pedal solutions for Op. 2.

Barthel's thesis on the harp from the time of Rousseau to Boieldieu of over one thousand pages, touches on most aspects of the history of the harp in the eighteenth century including instruments, luthiers, players, playing techniques and an extended catalogue of over five hundred works for solo harp, harp duo and concertos for harp with orchestra.[71] It is the most detailed contemporary source of information on the harp in the eighteenth century, which was later published in a truncated form.[72] The catalogue of works for harp contains biographical details on composers, general information about each score, short incipits for many works and annotations regarding any special features or rare harp techniques found in the scores. These include indications in the score of cross-hand technique, harmonics, enharmonic solutions, the use of the *pédale à renforcement* and *sourdine* pedals, pedal *glissandi* and any instructions about how to move pedals. Among these five hundred works, Barthel describes and comments on three works for solo harp where the composer-performer gives directions to move more than one pedal with one foot.

The first piece that appears in Barthel's catalogue with some unusual pedalling descriptions is Pierre d'Alvimare's *Sonate III*, Op. 18, in F minor.[73] After a four-bar incipit of the first sonata of Op. 18, Barthel transcribes one of the three pedal instructions written in the score.[74]

Barthel then comments on d'Alvimare's instructions:

> "le fait d'actionner 3 pédales d'un coup permet en effet de passer de 4 bémols à 4 diéses très rapidement mais c'est une manoeuvre délicate qui nécessite des chaussures adaptées et de l'entrainement car elle risque d'être bruyante et d'endommager la mécanique si le pied glisse."[75]

Barthel refers the reader to a photograph at the end of her Glossary. This photograph shows a left foot across the C and B pedals on a modern double-action pedal harp. Underneath the photograph Barthel writes:

> "2 pédales à la fois: Cette manoeuvre est périlleuse pour la mécanique. Demander au harpiste d'enclencher trois pédales d'un coup me semble exagère et inadapté a notres instruments modernes. Sur les harpes à simple mouvement du XVIIIème siècle cela était peut-être réalisable."[76]

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[71] Barthel, "La harpe," Catalogue des Auteurs et des Œuvres: 1760-1828. This catalogue lists about 515 works for harp.

[72] Laure Barthel, *Au cœur de la harpe au XVIIIème siècle* (France: Garnier-François, 2005).

[73] (Martin)-Pierre d'Alvimare (1772-1839), harpist and composer. Pierre D'Alvimare, *Trois Grandes Sonates pour la harpe*, op. 18 (Paris: Erard, c. 1802), 40. Barthel spells this composer's surname as Alvimare. On many of his musical scores his name is written as Dalvimare.

[74] See section 4.3.1.5.

[75] Barthel, "La harpe," 224: Her commentary states that "the fact of moving 3 pedals at once makes it possible to go from 4 to 4 sharps flats very quickly but it is a difficult manoeuvre requiring suitable footwear and training as it might make noise and damage the mechanism if the foot slips".

[76] Ibid., Annex A: Glossaire, 3bis photographies annoncées dans le Catalogue des auteurs et des Œuvres. Pages after 193 unnumbered. Photographie no. 26 is found one page after 193: "2 pedals at a time: This manoeuvre is perilous for the mechanism. To ask any harpist to press three pedals in one go seems exaggerated to me and inappropriate for our modern instruments. On harps with *à simple mouvement* of the eighteenth century it was perhaps feasible."

The second work which requires double-pedalling and is contained in Barthel's catalogue is Naderman's *Thêmes favoris de l'Opera des Bardes*. Naderman asks the harpist to press the F and G pedal together with the right foot:

> "mettez le sol et le fa du meme pied."[77]

Barthel adds a brief comment to this pedal action, describing it as "une indication surprenante" and adding that "cette difficulté technique n'est donc pas une invention des compositeurs du XXème siècle!"[78]

The final piece included in the catalogue where some special way of pedalling is described is François Petrini's *Folies d'Espagne* Op. 28.[79] Petrini writes in the score:

> "Pour prendre les Pédales du Fa et du La ensembles on baisse en même temps la pédale du Sol".[80]

Following Petrini's instructions, Barthel then comments upon them:

> "une indication surprenante de la part d'un harpiste pour la variation 8…Cette manoeuvre est en effet très acrobatique et comporte deux risques: faire du bruit pendant l'exécution et abimer la mécanique si le pied glisse et lâché brutalement les 3 pédales sans les avoir accrochées! Les mécaniques des harpes XVIIIème plus légères, plus souples permettaient peut-être de telles prouesses mais cela devait nécessiter des harpistes aux mollets musclés pour ne pas déstabiliser le jeu."[81]

Historical research and the state of knowledge has advanced considerably since Barthel carried out her research. Her critiques of multi-pedalling confuse the reader as she does not specify the type of harp that she is discussing. It can be assumed that her comments pertain to a modern double-action pedal harp, as she illustrates double-pedalling on a modern harp.

In her discussion of d'Alvimare's instructions in his Op. 18, she claims that multi-pedalling on a modern double-action pedal harp is:
- difficult.
- requires suitable footwear. Multi-pedalling indeed requires footwear that existed at the same time of the harp.

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[77] François Joseph Naderman, *Thêmes favoris de l'Opéra des Bardes* (Paris: Imbault, 1805), 11: "Press the G and F with the same foot."

[78] Barthel, "La harpe," 618: "A startling indication". "This difficult technique is therefore not an invention of twentieth-century composers!"

[79] François Petrini (1744-1819), harpist and composer.

[80] François Petrini, *Les Folies d'Espagne, avec 12 variations pour la harpe*, op. 28, no. 11 (Paris: Naderman, n.d.): To take the F and A pedals together, lower the G pedal at the same time".

[81] Barthel, "La harpe," 663: "A startling indication for the harpist in the variation eight…This manoeuvre is actually very acrobatic and includes two risks: making noise while doing this manoeuvre and damaging the mechanism if the foot slips and three pedals are suddenly released without being fixed. The mechanism of the eighteenth-century harps is lighter, more flexible perhaps to allow such feats but it would have required the harpists to have muscles of calves in order not to de-stabilise the foot action."

- requires training.
- possibly might make noise.
- may damage the mechanism.

Further, to this, she criticises multi-pedalling in general on any pedal harp as:

- Damaging the pedal mechanism, especially if a foot slips when the pedals are not fixed in the lower notches.[82]
- Moving more than one pedal at a time with one foot will make noise.
- These techniques are physically challenging and one would need to acquire great muscle strength to carry them out.[83]

The author proposes to show that if more than one pedal is moved at a time on any pedal harp this results in fewer pedal moves in general. A consequence of moving more than one pedal at a time means that the movements are slow and gentle, and there is less noise audible from the mechanism due to this slowness in feet movements. When learned, moving two or more pedals together with one foot is effortless for the feet and legs. There is never a risk of feet slipping off pedals, because the whole weight of the foot is on the pedals.

Parker (2005)

Child of Pure Harmony by Mike Parker is the only book since the early decades of the nineteenth century which dedicates sections to pedalling on the harp.[84] Parker's book is described as a source-book and he deals with every aspect of playing the harp in a concise and easy-to-read way. Each subject that he touches on could be a full research topic and indeed my own topic is inspired by a few pages of his book. On pages 52-54, Parker lays out the essential aspects of pedalling. He commences by saying that no harp method "offers information as how the pedal is actually moved". I have however found several descriptions that are quite detailed.[85] Parker explains that the pedals need to be operated with the heel off the floor and points out the advantages of low-heeled shoes that were fashionable at the time. He supports his pedal theory with an example of a portrait which shows a harpist in the act of pedalling.[86]

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[82] See Glossary for "pedal notches".

[83] Harp scholar Robert Adelson interprets Barthel's comments on multi-pedalling differently. According to him, Barthel clearly states that the potential problems with double pedalling on a modern harp (noise, damaging the mechanism, difficulty, etc.) would likely have been absent on a single-action harp of the eighteenth-century. As a result, he sees her text as forward looking, as it was published in 1994 when few harpists had experimented with playing single-action instruments. Email correspondence Prof. Adelson, September 2, 2016.

[84] Parker, *Child of Pure Harmony*, 52-54, 56-59, 62-63. Naderman, *École*, 92 is the last publication of the nineteenth century to discuss single-action harp pedal technique in detail. Mike Parker, English harpist, instrument maker and researcher. I would like to thank Mike for all his time that he has graciously shared with me to discuss harp matters over the years.

[85] Methodes that discuss how to place the feet and move the pedals include: Genlis, *Nouvelle méthode*, 1802, 18; Jacques-Georges Cousineau, *Méthode de Harpe contenant les leçons graduées pour les deux mains avec 15 préludes, dont six composés par M. Ragué et un recueil d'airs nouveaux arrangés pour la harpe*, op. 14, 2nd ed. (Paris: Cousineau, 1803), 14; Theresia Demar, *Méthode de harpe divisée en 3 parties*, op. 21, 1ere suite (Paris, c. 1800), 12; Bochsa, *New and Improved Method*, 35.

[86] See Chapter 7 for shoes and pedalling.

Parker defines what he calls “double pedalling” as:

> “..to engage two pedals simultaneously with the same foot”.[87]

He then illustrates it with some musical examples. Jean-Baptist Krumpholtz’s sonata, Op. 13 no. 1 is used to illustrate double-pedalling with the left foot where the C and B pedals are moved together.[88]

Parker writes:

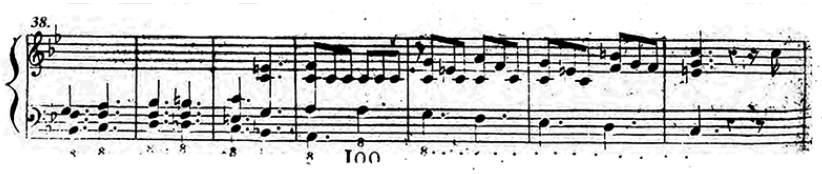

Figure 1: Krumpholtz, Sonata no. 1, Op. 13, bars

> “As the single-action harp was most generally tuned in E flat, there is no D flat available and the right foot is occupied making the B flat (*sic*). The modulation can be made easily if one places the foot on the blades of the C and B pedals and moves them simultaneously, to create the B flat-to-natural shift and an enharmonic D flat with the C sharp.”[89]

I agree with Parker’s solution, but not with his rationale for bars 39-40. His first claim that the harp was usually tuned in the “base” set-up key[90] of E-flat major is not completely correct. I will show later in section 4.1 that even if the majority of published works for harp, which include *Ariettes* and simple sonatas, were conceived for a harp set-up in the “base” key of E-flat major, many virtuosic pieces were written for a harp tuned in the “base” set-up key of A-flat major. This includes works by Krumpholtz. For this musical example, whether the harp is set-up in the key of E-flat or A-flat major, it does not affect the most plausible pedal solution.

This two movement sonata, *Allegretto* and *Romance*, is in the key of B-flat major. The only accidentals required in the entire piece are B♭, E♭ and D♭ (once in bar 39), B♮, E♮ and C♯. In bar 39, the first half of the bar is the first inversion of a B-flat major chord, the second dotted crochet is an augmented sixth on D♭ going to C, the dominant of the next key, F major. This chord requires the B♭ to be raised by a semitone and the D to be lowered by a semitone. Glancing at the piece initially, it would appear that one requires a D♭, implying a harp tuned in four flats as a “base” set-up key.

An alternative situation is when the harp is set-up in the “base” key of A-flat major, so the A and D pedals are pressed down and fixed before commencing the piece.

[87] Parker, *Child of Pure Harmony*, 53. Double-pedalling cannot be found in the book’s index, but “pedalling” and “multiple-pedalling” are part of the index.

[88] Jean-Baptiste Krumpholtz, *Principes pour la harpe*, ed. J. M. Plane (Paris, 1809), 50, bar 39.

[89] Parker, *Child of Pure Harmony*, 53.

[90] See Glossary.

By the beginning of the line shown in fig. 1, the E pedal is lowered and fixed, as the movement has moved into the dominant key of F major. Bar 39 appears to indicate that the harpist must press down the B pedal from the upper position to the lower position: B♭ to B♮, while the D pedal must be unfixed and released upwards: D♮ to D♭. However, the D and B pedals are on the same side of the harp, namely the left-hand side of the pedal box. One pedal cannot be lowered, while another is released at the same time, with one foot. Lowering one pedal and releasing the other pedal is feasible if neither are fixed initially. In a situation like that, a pivoting motion between the toe and heel could be used.[91] However, the situation here would entail releasing the D pedal before bar 39, lowering it, and then holding it down with the foot without fixing it. This is certainly a solution, but it involves an extra pedal movement that includes planning and preparing a pedal movement that is not part of the harmony or the musical phrase. It is my personal experience that most pedal movements can be done with ease and are most often an inherent part of the musical gesture. This solution is cumbersome and unmusical.

When the pedal motion implies the releasing of one pedal that has been fixed, while lowering another non-adjacent pedal is not a viable solution, it only remains to perform bar 39 using an enharmonic note (C♯) for the D♭. Playing enharmonic solutions was and is still today an integral part of harp playing. Krumpholtz includes a list of enharmonic solutions in his *Principes*.[92]

Further, to this Krumpholtz example, Parker names both Neville Butler Challoner[93] and Johann Georg Heinrich Backofen[94] as those who proposed to fold away the G pedal against the resonance box of the harp in order to operate the F and A pedals on the right side of the harp with one foot. Where Parker writes about "lifting" a pedal, he intends folding the pedal away to the position when the harp is transported so that the pedals are not jutting out. He finally cites Robert Nicholas Charles Bochsa's advice to engage the F, G and A pedals together and to simply ignore any G resonance that results from the pressing down of the G pedal with the two neighbouring pedals.[95]

In his succinct style, Parker also discusses additional pedals on the harp including Krumpholtz's *pédale à renforcement* and *sourdine* pedal, pedal *glissandi*. The mechanical features of these inventions will be discussed in section 2.3.

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[91] See section 5.3.4.8.

[92] Krumpholtz, *Principes*, 14.

[93] Neville Butler Challoner, *A New Preceptor for the Harp*, op. 16 (London: Skillern, 1816), 22–23. Neville Butler Challoner (1784-after 1835), English harpist, composer, tenor, conductor and music seller.

[94] Johann Georg Heinrich Backofen, *Anleitung zum Harfenspiel* (Leipzig: Breitkopf und Härtel, 1801), 49–51. Johann Georg Heinrich Backofen (1768-1839), German harpist, clarinettist and basset-horn player and composer.

[95] Nicolas-Charles Bochsa, *Nouvelle méthode de harpe en deux parties*, op. 60 (Paris: Duhan, 1813), 21. Robert Nicholas Charles Bochsa (1789-1856), French harpist and composer.

Definitions

My definition of the double-pedal technique or double-pedalling is the act of moving two adjacent pedals or two non-adjacent pedals on one side of the harp using one foot. This is achieved by placing the foot perpendicular to the harp, across the pedals. The pedals can be pressed down together or separately by pivoting the foot. The heel moves an inner pedal and the toe moves an outer pedal. When the pedals are not adjacent to each other, double-pedalling is achieved by folding away a pedal, usually the C pedal on the left side or the F or G pedal on the right side of the base of the harp. The remaining D and B pedals on the left-hand side of the harp and the F and A pedals on the right can be then operated with one foot. See fig. 2, 3, 5.15, 5.16.

Alternatively, triple-pedal technique or triple-pedalling occurs when three pedals are pressed down together with one foot. This is usually carried out on the right-hand side of the harp, using the F, G and A pedals, but can also be performed with the D, C, and B pedals on the left-hand side of the harp. The term multi-pedalling refers to all the above ways of pedalling, without specifying one in particular.[96]

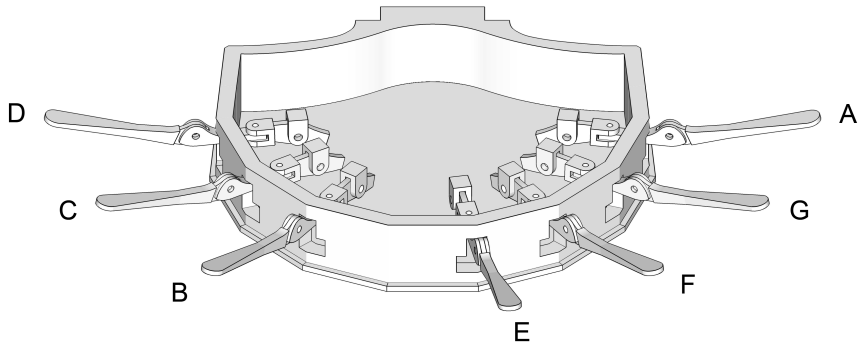

Figure 2: The positions of the pedals in the upper position.

Research methodology

After consulting the modern literature, my research into all aspects of pedalling on the harp extended across five historical areas of research: treatises and methods, musical sources where a special solution is included in the score. The most exciting part entailed discovering double- and triple-pedalling where is not specified in words but is implied by the music itself, like in Spohr's Op. 115.

[96] See Glossary.

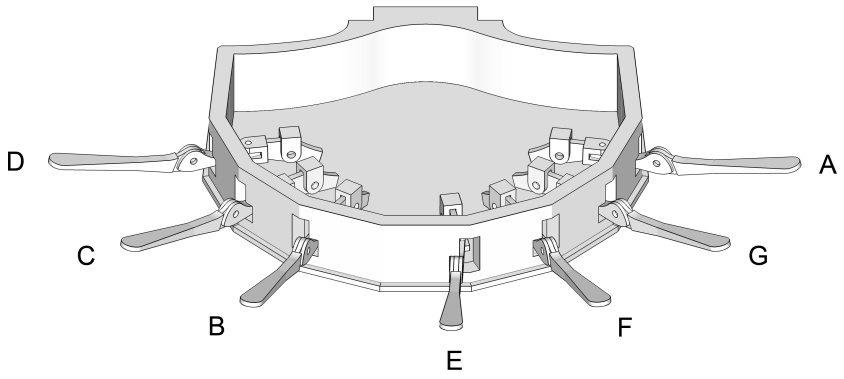

Figure 3: The positions of the pedals in the lower position.

Further, to this, I explored the relationship between shoes and pedalling, using historical sources and images (portraits and illustrations) of harpists. Finally, I sought out any other possible historical sources that may point to any intricate pedalling techniques. I used newspaper accounts of concerts, journals and literary descriptions.

The aim of my research was to identify if multi-pedalling had been a normal way to pedal for a virtuoso harpist in the eighteenth century. If so, I wished to incorporate this technique into my playing and to disseminate this to other harpists.

I was also curious about its eventual demise, which I initially placed at the time of the introduction of Erard's double-action pedal harp in 1811 and the gradual disuse of the single-action harp. However, to my own surprise, I found that quite the opposite was true. Double-pedalling continued to be part of playing the harp and can be found in written sources as late as 1946.[97] Multi-pedalling is an integral part of many performing harpists today, notably jazz harpists.[98]

Overview of Chapters

Chapter 1 gives a general overview of the types of European harps that existed before, during and just after the single-action harp. The history of harps is a complicated one, as harps come in many sizes and systems.

The single-action harp had a long developmental period of nearly sixty years from its apparent invention in 1697 until the 1760's when the first instruments were built in Paris. Chapter 2 is dedicated to the history of the instruments and

[97] Henriette Renié, *Méthode complète de harpe* (Paris: Leduc, 1946), 81.
[98] See Chapter 8.

the various mechanical systems of the single-action harp. When seven pedals became the standard number of pedals, Krumpholtz worked with Naderman adding two additional pedals, the *pédale à renforcement* and the *sourdine* pedal, and collaborated with Erard to construct the *Contrebasse ou Clavicorde à marteau*. Cousineau invented a unique fourteen-pedal harp which has been recently re-discovered and studied.[99] This instrument and any other additional pedals shall also be described.

The historical sources are reviewed in the following four chapters. Many of these primary sources are discussed for the first time in modern times, so each type of pedal move and technique is analysed separately, according to the type of historical source. Chapter 3 identifies all known harp treatises and discusses the information found in these sources with regard to pedalling. I have identified nearly over one hundred treatises, methods and study books of the eighteenth century and early nineteenth century. These equip us with a terminology for pedalling and include valuable musical examples. The principal techniques are pressing a pedal down and releasing it, fixing a pedal, double- and triple-pedalling, pedal *glissandi* and the use of the *pédale à renforcement* and the *sourdine* pedal. Pedal markings shall also be discussed.

In 1996, I began to compile a database of works for harps. This consists of scores that I have consulted in libraries and private collections worldwide. I have examined over two thousand works for harps with respect to over thirty criteria which include paper, watermarks, publishers, prices of scores, dedications, tonalities of works and any technical aspects found in the score. From this catalogue and Barthel's catalogue,[100] I have extracted the information which concerns any facet of pedalling found in harp scores. Chapter 4 contains my findings up to now.[101]

Chapter 5 looks at the second group of musical scores, where no multi-pedalling is written in the score, but special pedalling techniques are implied when a harpist plays the harp literature. Since I began to completely re-learn my pedal technique in 2014, I now use multi-pedalling and pedal *glissandi* incessantly. I see the possibilities of using it throughout the whole harp repertoire. I have taken music by Krumpholtz and Spohr as case-studies for this thesis, showing that multi-pedalling and pedal *glissandi* are an integral part of their music. The pedal solutions and moves for Krumpholtz's Op. 2 are found at the end of Chapter 5.

I was confronted with my initial pedal dilemma with Spohr's music, so I wished to re-evaluate all his music for harp. Even after two years of research, I still have found no other harp pieces that require as much double-pedalling as Spohr's Op. 115. Chapter 6 reviews what is known about Dorette Spohr's musical life and pedal techniques. This chapter also includes a complete pedal analysis of all of Spohr's works for harp, with a special emphasis on Opp. 115 and 35. The *Fantaisie pour harpe*, Op. 35, is one of the few single-action harp pieces that is still part of the

[99] See Chapter 2.
[100] Barthel, "La harpe."
[101] This is an ongoing area of research, because such indications can only be found by consulting every extent harp score.

modern harp repertoire. This analysis shows the pedalling possibilities and how they are such a vital part of the musical gesture and possible intentions of the composer. Most of the historical pedal techniques found in Op. 35 can still be used on a modern pedal harp.

When a harpist plays two or more pedals together on one side of the harp, the first question is what shoes to wear. In the first few months of re-learning my pedal technique, I performed without shoes. I began to research shoes, what a professional harpist might have worn to enable them to pedal in this virtuoso fashion. As often happens, the harps and the shoes of the same epoch go hand in hand. I have analysed nearly 250 representations (portraits, drawings and illustrations) of harpists and their harps during the last decades of the eighteenth century and first few decades of the nineteenth century. Chapter 7 is a result of this research, where I have singled out six images that may display a harpist in the act of pedalling.

Chapter 8 looks at the implications of multi-pedalling on other types of pedal harps. I will show how the single-action harp and Erard's double-action pedal harp have two separate ways to pedal, but where actually double-pedalling continued as a living technique.

Appendix I contains the primary sources for the single-action harp. This includes harp methods, treatises on *basso continuo*, accompanying, composing and improvising preludes, study and exercise books and finally tuning methods, in Tables I.1-I.4. Sections I.2 and I.3 give the musical sources for multi-pedalling. The "harp" article in Diderot's *Encyclopédie* is found in Appendix I.4 and is translated into English for the first time.

As this is a thesis based upon research in and through musical practice, I propose my own modern method on how to pedal which is included in Appendix III. I use this when teaching historical pedal techniques to my students. Appendix II gives a complete list of the pedal moves available to a harpist on the single-action harp, inspired by historical sources and my own experiences.

This dissertation is accompanied by a CD of Opp. 113, 114, 35, 36 and WoO 27 by Louis Spohr. I also include a DVD of a live performance of Krumpholtz's Concerto no. 6, Op. 9 and Bochsa's *Fantaisie Brilliante avec introduction et finale sur la dernière Walse de C. M. de Weber*, Op. 302.

Chapter 1

European harps since 1500

The history of harps is complex due to several factors. Harps have always been fragile instruments due to the total perpendicular tension of the strings on the soundboard. Harps often have a short life span. Few harps have survived from before the dawn of the *harpe organisée* and to the author's knowledge there is no existing harp built before 1760 that is in regular use today.[1]

Harps have always been expensive to build. Size is so often the first consideration when building or commissioning a new harp. Transport is also an important factor, no more so than today when flying with a harp is practically impossible.[2]

The harp is an instrument that can give immediate satisfaction to a player. The strains of a harp are some of the most pleasurable sounds that we know. This attraction to the sound of a harp, by listeners and players alike, has inspired each culture to devise a harp or a series of harps that are suitable for their own music, resulting in numerous models of harps that are specific to one period of history or musical culture.

No one type of harp can play all European art music that was specifically written for "harp", whatever type of harp that meant within a certain musical genre.[3]

Harp making and repertoire go invariably hand-in-hand. Harps are used as much in art music as in traditional music and there has always been a fine line between

[1] The Hochbrucker harp from 1728 in the collection of the Musée de la Musique in Paris (no. E.2009.1.1) was restored to playing condition by Beat Wolf in 2007. The Dutch harpist Nanja Breedijk recorded an excerpt from the anonymous collection *Musikalische Rüstkammer auf der Harfe* (MS, Stadtbibliothek Leipzig, no III.5.26, c. 1715) on this instrument.

[2] Modern reproductions of historical harps do not respect any historical models with respect to size, but rather are made to fit in an extra-seat on an airplane. This creates a situation where attempts to copy or reproduce the past are actually prevented by the restraints of modern travel limitations.

[3] Examples include seventeenth-century harp pieces written for the *arpa doppia* which cannot be played a pedal harp, due to the rapid chromatic changes in the music. Similarly, Spohr's Op. 115 was written for the single-action harp and is technically impossible to play, as written by Spohr, on the later double-action pedal harp. See Chapter 6. These two examples run contrary to the accepted idea that each new type of harp throughout history is an improvement on the earlier types of harps.

traditional music and art music, and likewise, formally and informally trained players. Certain models of harp have often been modified or simplified for different genres of music. For example, the late eighteenth-century single-action harp was simplified into a diatonic instrument in the nineteenth century in Viggiano, Italy.[4]

Before the invention of the *harpe organisée*, many harps would appear to have been once-off models, with individual structures and tuning systems. The few harps that have survived from before this time are rarely identical to each other. European iconography up to the eighteenth century tells a similar tale: depictions of harps in art are seldom similar to each another. The harp is more often depicted as a symbol rather than as a reproduction of an actual instrument that the artist knew or had actually seen. In religious art the sacred symbolism of the harp, played by King David, was more important than an accurate representation.[5]

Giovanni Lanfranco's[6] depiction of the extent "Barberini" harp is an exception, as the instrument in the painting survives and is part of the collection of instruments at the Museo Strumenti Musicali, Rome, and shown in fig. 1.1. [Giovanni Lanfranco *Venere suona l'arpa* (1634), Gallerie Nazionali di Arte Antica, Rome] There are several paintings of Iberian *arpas de dos ordenes* where the instrument is accurately depicted and is very similar to known surviving instruments.[7]

There are some types of harps that became standardised, implying that the basic form, height and number of strings did not change significantly over time. Examples of standardised harps are the Iberian *arpa de dos ordenes*, a cross-strung instrument used from 1550-1800 in Spain and Portugal and the late seventeenth-century Welsh Triple harp.[8] Other examples of standardised harps include eighteenth-century single-action harps, nineteenth-century double-action pedal harps and twentieth-century neo-Irish harps. It may seem that the latter two types of harps dominate today's harp-building market, but there are constant requests from players and proposals from luthiers, for harps that are smaller and cheaper than the modern double-action pedal harp and with alternative tuning systems to the diatonic tuning of the neo-Irish harp.

To further complicate the history of harps, even when a type of harp is linked to a certain epoch and geographical area, there are several examples where different types of harps co-existed in one geographical area, each type of harp serving a different musical repertoire. In the fourteenth-century Burgundian court of Philip

[4] Roberto Leydi and Febo Guzzi, "Alcune schede su strumenti popolari italiani: Arpa di Viaggiano (Basilicata)," *Culture musicali: quaderni di etnomusicologia; semestrale della Società Italiana di Etnomusicologia* II, no. 4 (1983): 100–153.

[5] See Chapter 7.

[6] Giovanni Lanfranco, *Venere Suona L'arpa (Allegoria Della Musica)*, 1634, http://galleriabarberini.beniculturali.it/. Giovanni Lanfranco (1582-1647), Italian Baroque painter.

[7] School of Madrid, *A Vanitas Still Life with a Skull, a Violin, a Pewter Plate, a Vase of Flowers, a Book and a Small Tortoiseshell Inlaid Cabinet with Silver Gilt Wine Cups and Terracotta Vases on Top, Arranged Upon a Table Top Draped with a Carpet, Together with a Harp Leaning Against a Chair, Set Before a Draped Curtain*, circa 1650, http://www.sothebys.com/content/dam/stb/lots/L08/L08036/L08036-48-lr-1.jpg.

[8] Joan Rimmer, *The Irish Harp* (Mercier Press, 1977). Joan Rimmer (1919-2015), ethnomusicologist.

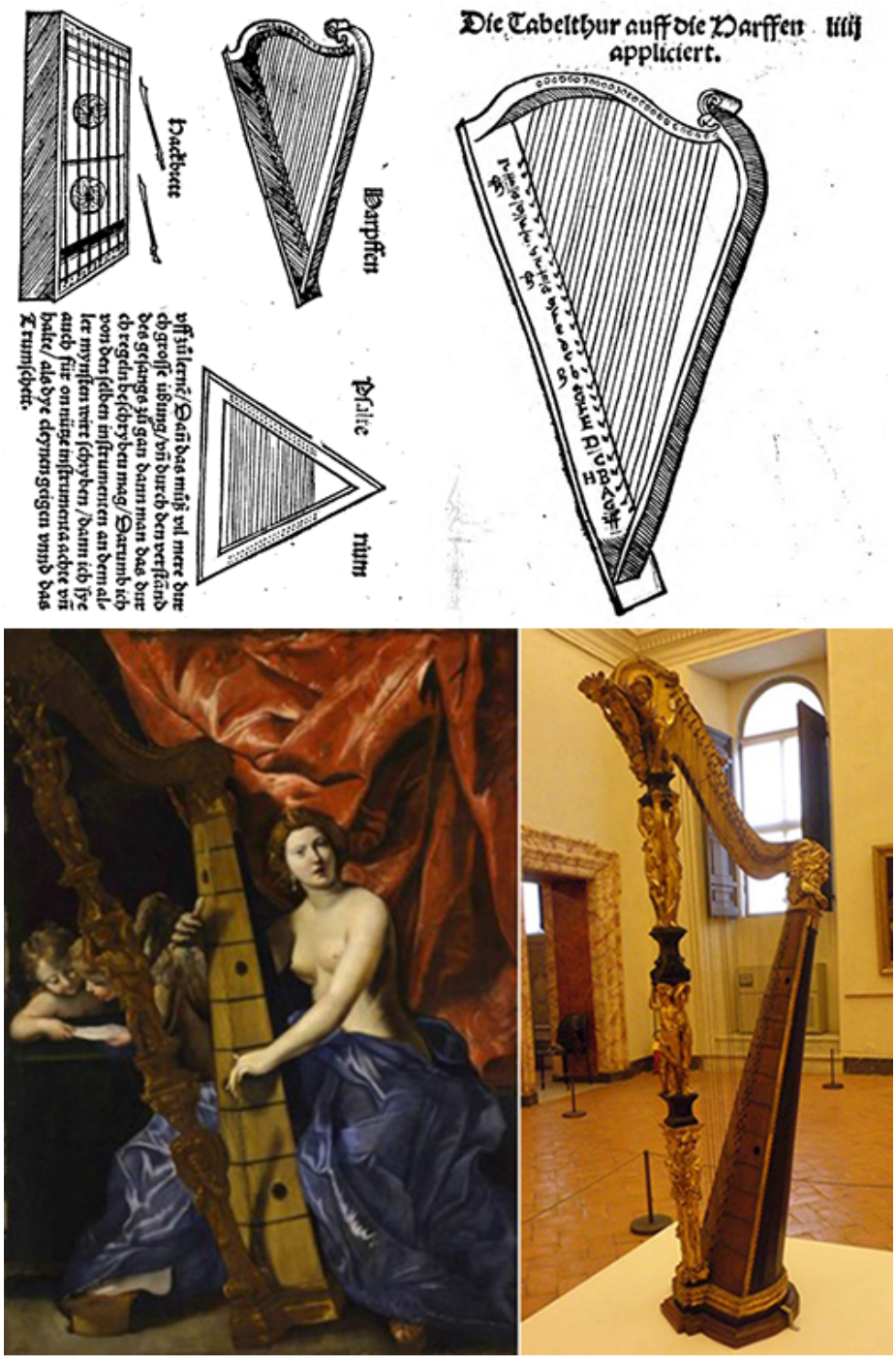

Figure 1.1: (clockwise from top left): Virdung (1511); Agricola (1529); “Barberini” harp, Museo Strumenti Musicali, Rome; Lanfranco *Venere suona l’arpa* (1634), Gallerie Nazionali di Arte Antica, Rome.

the Bold, both single- and double-rowed harps co-existed.[9] Another example is the musical circle in Dublin around 1820 where at least six different types of harps co-existed.[10]

For these reasons, it is the author's opinion that it is impossible to write a history of the **harp**, but rather of **harps**.[11]

Harps may be described as instruments, triangular in shape with "three basic structural components: resonator, neck and strings", where the strings are taut between the resonator and the neck, and the plane of the strings is right-angled to the plane of the soundboard. All European harps are frame harps meaning that a column or fore-pillar connects the neck to the resonator.[12] According to the Hornbostel-Sachs classification system of musical instruments, in its most recent revision by MIMO (Musical Instrument Museums Online), frame harps (322.2) are classified into frame harps without tuning action (322.21) and with tuning action (322.22).[13]

1.1 Single-rowed harps

The further sub-category, "Diatonic frame harps (322.211)", is cumbersome for the scope of this overview for two reasons. A sub-category described as "diatonic" is limiting and may be misleading because many harps before the eighteenth century used modal tuning systems, rather than tuning systems based on major or minor keys. The second issue is that this sub-category mixes harps of different sizes and cultures in the same category. For this brief overview, the author aims to describe harps within their historical context.

If this sub-category "Diatonic frame harps (322.211)" is applied, a twenty-six-strung single-rowed harp from the sixteenth century with a modal tuning and a nineteenth-century Viggianese diatonic harp, modelled after the late eighteenth-century single-action harp are grouped together, as shown in fig. 1.2. These two types of harps

[9] Craig M. Wright, *Music at the Court of Burgundy, 1364-1419: A Documentary History* (Institute of Medieval Music, 1979), 125. Baude Fresnel, harpist and probable composer Baude Cordier, worked at the Burgundian court of Philip II, Duke of Burgundy (1342-1404). At least seven different harps (single-rowed and triple harps) were purchased for the court from 1389-1394 costing between twenty to sixty francs.

[10] Siobhán Armstrong, "Exploring Irish Harp Traditions," *Journal of Music*, 2015, http://journalofmusic.com/focus/exploring-irish-harp-traditions.

[11] Recent studies which continue to perpetuate the idea of a history of a harp, as if describing one single instrument in the title of their publications include: Anna Pasetti, *L'Arpa* (Palermo: L'Epos, 2008); Mary Louise O'Donnell, *Ireland's Harp: The Shaping of Irish Identity c.1770 to 1880* (Dublin: UCD Press, 2014). The classic book on a general history of harps, Roslyn Rensch, *The Harp; Its History, Technique and Repertoire* (New York: Praeger Publishers, 1969) changed its title when revised in 1989 to Roslyn Rensch, *Harps and Harpists* (Bloomington: Indiana University Press, 1989).

[12] Sue Carole DeVale et al., "Harp," *Grove Music Online* (Oxford University Press), accessed September 27, 2015, http://www.oxfordmusiconline.com/subscriber/article/grove/music/45738pg5#S45738.5.

[13] "Classification of Musical Instruments 1961," July 8, 2011, http://network.icom.museum/cimcim/resources/classification-of-musical-instruments/.

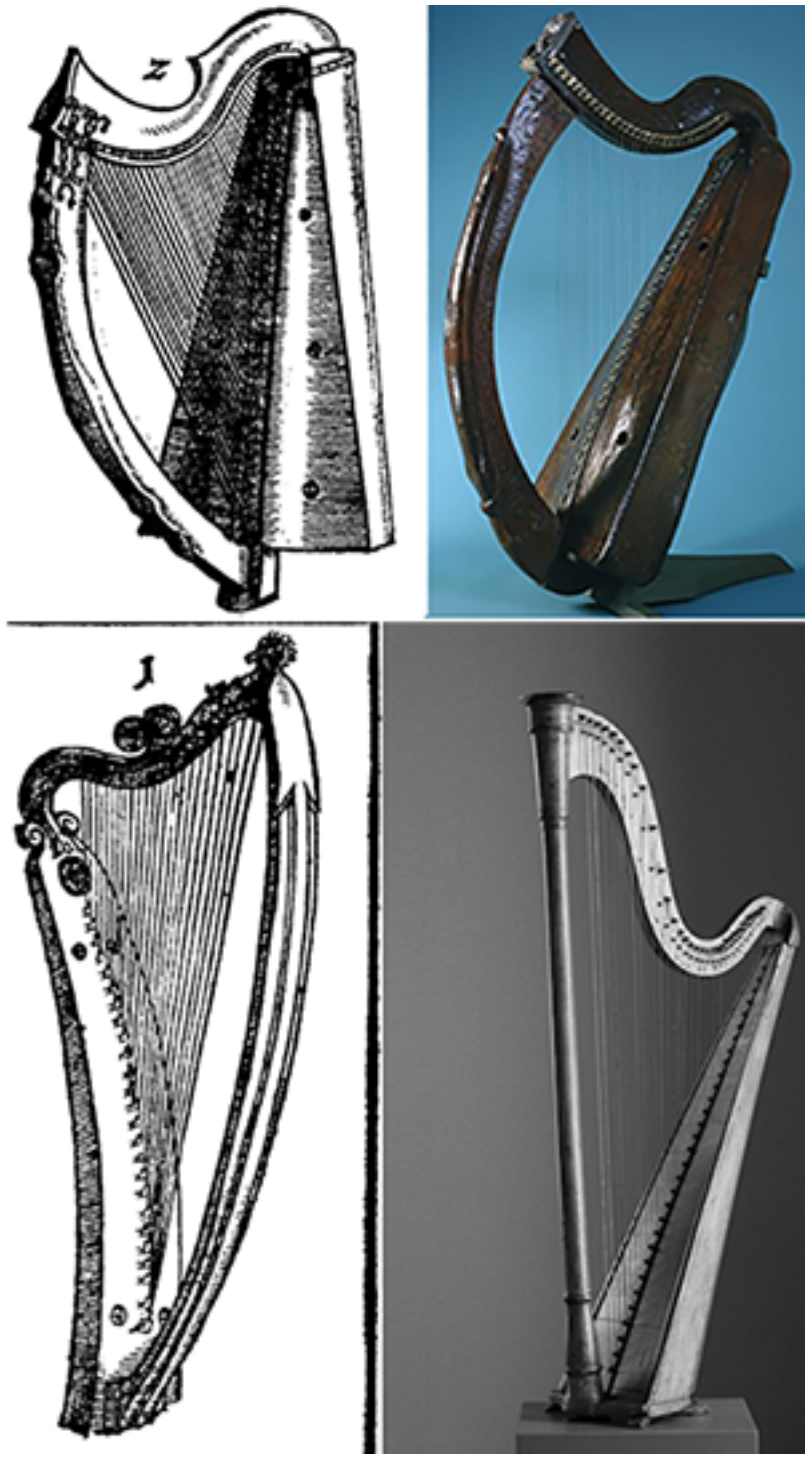

Figure 1.2: (clockwise from top left): Praetorius (1618) “Irlandisch harff”; “Trinity College” harp, (c. 15th c), Trinity College Dublin; “Arpa Viggianese” late 19th c., Museo dell’arpa Victor Salvi, Piasco; Praetorius, “Gemeine Einfacheharff”.

have very little in common with respect to their size, range, geographical origins, repertoire and playing techniques.

This review traces the types of harp that were used in Europe from 1500 up to the current day, according to the geographical origins, string system and repertoire.[14]

1.1.1 Single-rowed Renaissance harps

The first category covers harps that were used across Europe from medieval times, with a single row of strings. This includes different models which are often referred to as gothic harps. These harps have gut strings and can be played with or without brays. Brays are wooden pins that hold the string taut at the soundboard which are right-angled. When a string is plucked, the string resonates against the bray, creating a nasal sound. The earliest drawing of a harp with the actual notes written above the strings show an instrument that is not diatonic, but rather a twenty-six-stringed harp (range: F-c3), where one string in each octave can be tuned as the pitch B natural or B-flat.

Martin Agricola's *Musica Instrumentalis Deudsch* of 1529 is the first printed source with a detailed string list, and shown in fig. 1.1. This drawing is similar to an earlier drawing from Virdung's *Musica Getutscht* of 1511, also shown in 1.1. Heinrich Glarean's *Dodekachordon* shows a harp with a differently-curved neck and twenty-four strings (range: F-a2) with brays.[15] Mersenne illustrates a single-rowed harp with twenty-one strings (range: G-g2) with no bray pins.[16]

Single-rowed Renaissance harps come in various sizes, with as few as twelve strings up to thirty gut strings. According to the Groves "harp" article, the earliest extent Renaissance single-rowed harp is the "Wartburg harp", made in Tyrol, possibly in the fifteenth century. It has twenty-six strings, is 104 cm high and has a "delicate inlaid geometrical decoration of a kind found on other 15th-century instruments."[17] A harp with one row of strings on one plane can be tuned in a variety of ways: based on hexachords or modes, diatonic or chromatic, or a mixture of diatonic and chromatic. This is evident from the volumes of iconography where the harp key is included in the image, and also from written testimonies describing a harpist picking up the harp key, putting the harp in tune, in mode, and then playing it.

No specific music of the sixteenth-century has been identified for these harps. They are used today to perform sixteenth-century repertoire based on iconographical and

[14] Droysen-Reber, *Harfen*. The nearly eighty-page introduction of this book remains the most detailed history of European harps as of current research. There is no similar study in English. Hans Joachim Zingel, *Harfenspiel im Barockzeitalter*, Kölner Beiträge zur Musikforschung, Band LXXVII (Regensburg: Bosse, 1974) is a detailed source book regarding instruments and harp repertoire. Hans Joachim Zingel (1904-1978), German harpist and musicologist. Rajka Dobronić-Mazzoni, *Harfa* (Grafički Zavod Hratske, 1989) contains many images of harps throughout European history.

[15] Heinrich Glarean, *Dodecachordon* (Basel: Petri, 1547). Heinrich Glarean (1488-1563), Swiss music theorist, geographer and humanist. Drawing of harp in Droysen-Reber, *Harfen*, 13.

[16] Marin Mersenne, *Harmonie universelle, contenant la théorie et la pratique de la musique*, vol. 3 (Paris, 1636), 171; Droysen-Reber, *Harfen*, 15.

[17] DeVale et al., "Harp."

descriptive evidence. The author plays several single-rowed medieval and gothic harps, using hexachord and modal tunings which result in twelve pitches in the octave.[18]

The renaissance single-rowed harp was played in Wales up to 1700.[19] This harp usually had either thirty-one or thirty-four horsehair strings and bray pins. The *Robert Ap Huw* manuscript (GB-Lbl Add.14905), dated 1613, is a collection of Welsh harp music in tablature and five tuning systems.[20]

1.1.2 Single-rowed Baroque harps

Harps with a single row of strings continued to be built and played in the seventeenth century, co-existing with chromatic or multi-rank harps. These harps were taller than the Renaissance instruments and were strung with gut strings. A fine example is the harp by Antonio Stradivarius,[21] shown in fig. 1.3.

Single-rowed harps were also in use on the Iberian peninsula, Germany and Wales. These instruments are structurally similar to the chromatic harps of these geographical areas, and therefore shall be discussed under the fellow chromatic instruments below.

1.1.3 Irish and Scottish medieval harps

The early Irish and Highland Scottish harps (sometimes referred to as Gaelic harps) were instruments of the courts, existing from at least the eleventh century up into the early nineteenth century. The resonating chamber is usually carved from a single log and strung with strings of brass, silver or perhaps even gold.[22] These harps are tuned modally, often with a double g tuning.[23] From the existing two Irish and Scottish medieval harps, it can said that the harps were around 65 cm in height with twenty-nine or thirty strings.

There are eighteen extent Gaelic harps, classified as either “small low-headed”, “large low-headed” or “high-headed” design.[24] The Trinity College Irish harp (fig. 1.2),[25] the Queen Mary and the Lamont harps of Scotland are examples of extent

[18] This sort of harp can be heard on two CDs with Tetraktys 2004, Maria Christina Cleary, harp. “Olive Music,” accessed October 7, 2015, http://www.o-livemusic.com/olive_cd/index.htm.

[19] Christopher Macklin, “Approaches to the Use of Iconography in Historical Reconstruction, and the Curious Case of Renaissance Welsh Harp Technique,” *Early Music* 35, no. 2 (2007): 213–23.

[20] Claire C. J Polin, *The Ap Huw Manuscript* (Henryville, Pa.: Institute of Mediaeval Music, 1982).

[21] Gianpaolo Gregori, “La harpe et les guitares d’Antonio Stradivari,” in *Nouveaux timbres, nouvelle sensibilité au XVIIIe siècle. Première partie*, ed. Florence Gétreau, vol. 3 (Klincksieck, 1998). Antonio Stradivarius (1644-1737), Cremonese instrument maker. The instrument is found in the Conservatorio di Musica San Pietro a Majella, Naples.

[22] The principal player of these instruments today is Siobhán Armstrong, Ireland.

[23] See “System of pitch notation”, under “Abbreviations”, page x.

[24] Simon Chadwick, “The Early Irish Harp,” *Early Music* 36, no. 4 (2008): 521–31; Rimmer, *The Irish Harp*.

[25] Paul Dooley, “Reconstructing the Medieval Irish Harp,” *The Galpin Society Journal* 67 (2014): 107–42.

fifteenth-century "small Low-headed" instruments. The "high-headed" designed harps which date from the seventeenth century are around 110 cm in height with approximately thirty-five strings. At least one Irish harp, the Cloyne/Dalway harp, would appear to have had a second parallel row of strings in the middle range of the harp.[26] The Gaelic harps were historically played up the late seventeenth century with finger nails.

There are many seventeenth-century Scottish lute manuscripts and English sources which contain Gaelic tunes.[27] Edward Bunting collected hundreds of tunes at the Belfast harp Festival in 1792.[28] Music specifically written for the Irish harp includes William Lawes[29] consorts[30] and Martin Peerson's *Mottects*.[31]

Irish and Scottish harps were known also outside the British Isles. Michael Praetorius describes three harps, a "Gemeine Einfacheharff" (fig. 1.2.), an "Irlandisch harff mit messinges saiten" (fig. 1.2) and a "Groß Doppel-harff."[32] Irish harpists also worked in the English, Danish, Polish and German courts.[33]

1.2 Chromatic harps

If a Renaissance single-rowed harp with twenty-six strings is tuned diatonically, the harp then has a range of over three octaves. When the harp is tuned chromatically,

[26] Michael Billinge and Bonnie Shaljean, "The Dalway or Fitzgerald Harp (1621)," *Early Music* 15, no. 2 (1987): 175–87.

[27] The Straloch manuscript was written by or for Robert Straloch between 1627 and 1629. The original manuscript is lost, but a handwritten partial copy by George Farquhar Graham in 1847 survives in the National Library of Scotland (Ms adv.5.2.18).

[28] Edward Bunting, *A General Collection of the Ancient Irish Music*, vol. 1, 3 vols. (London: Preston, 1797).

[29] William Lawes (1602-1645), English composer. John Cunningham, "A Tale of Two Harps: Issues Arising from Recordings of William Lawes's Harp Consorts." *Early Music Performer*, no. 21 (2007); John Cunningham, "'Some Consorts of Instruments Are Sweeter Than Others': Further Light on the Harp of William Lawes's Harp Consorts," *The Galpin Society Journal* 61 (2008): 147–76.

[30] The author performed some of Lawes Consorts in April 2016, using a wire-strung metal harp with a modal tuning system. It is the author's opinion that Lawes' Harp consorts were not written for one specific harp, but for at least two, if not three: an Irish wire-strung harp (Harp Consorts 1-6) and either an Italian or Spanish chromatic Baroque harp (Harp Consorts 7-12). The reasons for this are manyfold and are beyond the scope of this thesis. The Harp Consorts can not be researched as one entity, as there are several manuscript sources over more than twenty years, the range and accidentals, and compositional styles are different between the Consorts.

[31] Martin Peerson, *Mottects or Graue Chamber Musique: Containing Songs of Fiue Parts of Seuerall Sorts, Some Ful, and Some Verse and Chorus. But All Fit for Voyces and Vials, with an Organ Part Which for Want of May Be Performed on Virginals, Base-Lute, Bandora, or Irish Harpe* (London: William Stansby, 1630). Martin Peerson (c. 1571-1651), English composer and instrumentalist.

[32] Praetorius, *Syntagma Musicum, tomus secundus: De organographia*, 5: "a common harp", an Irish harp with metal strings" which is a "small low-headed" design of harp, "a big Double-harp". The term "common harp" here applies to a single-rowed harp, but the term was again used in the early nineteenth century to describe a single-action harp. See Bochsa, *New and Improved Method*, Preface. See Chapter 3, footnote 4 of this thesis.

[33] Cunningham, "'Some Consorts of Instruments Are Sweeter Than Others"': 149. The harpist Cormac Mc Dermott worked in the English court from 1603-1612, Diarmait Albanach was employed by the Danish court from 1621 to 1634.

it would have a range of two octaves. This latter range suffices for playing one- or two-part music. The harp functioned as a melody instrument or as one voice in a consort setting. When chromatics are added to a single-rowed harp, the physical sensation of an interval changes.

On a diatonic harp, an interval of a fifth implies five strings and this interval becomes a defined stretch for the player's hand. If the harp is chromatically tuned, the interval of a fifth could mean eight strings and therefore a larger stretch for the hand.[34]

Several solutions were devised to include more strings. Chromatic harps, all with gut strings, exist with two parallel rows of strings and are found in Italy and Germanic countries[35] Harps with three parallel rows of strings are found in Italy and later in Wales. The two-rowed cross-strung harp, *arpa de dos ordenes*, is an Iberian instrument, found in Spain and Portugal.

1.2.1 Iberian harps

The Iberian harps were usually made from walnut with a pine soundboard and a wide resonating box. This structure remained unchanged from the mid-sixteenth century until the eighteenth century and this model was used as either a single-rowed instrument or a two-rowed cross-strung harp. The single-rowed Iberian *arpa* had from twenty to thirty gut strings. The length of a string was shortened to achieve chromatic pitches by blocking the string at the neck or at the base of the string, using the finger of one hand, usually the left hand. Juan Bermudo describes a single-rowed harp with twenty-nine strings (range C-a2).[36] Re-tuning and putting a harp in mode was another way to achieve certain chromatic notes and is described by Bermudo, Luis de Venegas de Henestrosa[37] and Diego Fernández de Huete.[38] The earliest piece specifically written for harp is Alonso Mudarra's *Tiento IX, Cifras para harpa y organo*, published in 1546.[39] This collection also includes

[34]The author plays several single-rowed harps, from eight to twelve strings in the octave. Hexachord and modal tunings are more suitable for any music up to 1600 on a single-rowed harp.

[35]Pasetti, *L'Arpa*, 47–49. There are two known images of small two-rank parallel European medieval harps. The first is part of a triptych located in the Monastery di Pietra, Spain, dated c. 1390. The second is on the cover of *Clarissima plane at[que] choralis musice interpretatio D[omi]ni Balthasser Praspergij Merspurgen[sis]. cu[m] certissimis regulis at[que] Exe[m]plo[rum] Anotacionib[us] et figuris multu[m] sple[n]didis Jn Alma Basileorum vniuersitate exercltata* (Basel: Furter, 1501).

[36]Juan Bermudo, *El libro llamado Declaración de instrumentos musicales* (Osuna, 1555). Juan Bermudo (c. 1510-after 1559), Spanish music theorist.

[37]Luis Venegas de Henestrosa, *Libro de cifra nueva para tecla, harpa, y vihuela* (Alcalá de Henares, 1557). Luis de Venegas de Henestrosa (c. 1510-1570), Spanish composer and compiler.

[38]Diego Fernández de Huete, *Compendio numeroso de zifras armónicas, con theórica, y pràctica para arpa de una orden y arpa de dos órdenes, y de órgano* (Madrid, 1702). Diego Fernández de Huete (c. 1633- before 1713), Spanish harpists, theorist, composer and teacher.

[39]Alonso Mudarra, *Tres libros de musica en cifras para vihuela: en el primero ay musica facil y dificil en fantasias y composturas y pauana y gallardas y algunas fantasias para guitarra: el segũdo trata de los ocho tonos (o modos) ...: el tercero es de musica para cantada y tañida* (Seville: Leon, 1546). Alonso Mudarra (c. 1510-1580), Spanish vihuelist and composer.

Figure 1.3: (clockwise from top left): Rainer Thurau (2000) *Arpa de dos ordenes*; Stradivari (1681) single-rowed harp, Conservatorio di Musica San Pietro a Majella, Naples; *Davidsharffe* (17^{th} c.), Koninklijke Musea voor Kunst en Geschiedenis, Brussels; J. Richards, Welsh Triple (c. 1740), Victoria & Albert Museum London.

the *Fantasia contrahaze la harpa en la maniera de Ludovico*, which imitates the playing techniques of a harpist, but is not necessarily a piece for harp.[40]

The two-rowed cross-strung harp, called *arpa de dos ordenes* (fig. 1.3), has from twenty-seven to twenty-nine diatonic strings and from fifteen to nineteen chromatic strings, with an approximate height of 150 cm. There are five chromatic strings in each octave. The *arpa de dos ordenes* has been researched in depth, as so many historical sources have survived including the playing techniques[41] and fingerings. The sources include descriptions of the instrument and a long tradition of harp-making guilds,[42] and the many extent harps which are all similar in construction and size. Frescos, sculptures and paintings also depict the same instrument, that changed very little over two hundred years. There is a wealth of repertoire for this instrument, as the *arpa de dos ordenes* was an essential part of both sacred and secular music in Spain and Portugal. The solo repertoire is often in tablature and fingering solutions are found in de Huete's music. In sacred music, the *arpa de dos ordenes* had its own *basso continuo* line, which was different from the organ part.

The diatonic single-rowed Iberian harp was brought to the New World by the Jesuits and is still widely played, amongst others, in Paraguay, Colombia, and in Vera Cruz, Mexico.

1.2.2 Italian harps

Chromatic harps with two or three rows of parallel strings are found in Italy from the sixteenth century. Vincenzo Galilei describes a two-rowed parallel harp,[43] an *arpa doppia*, with fifty-eight strings (range C1-d2) in 1581.[44] In the same year, a highly decorated *arpa doppia* is built in Rome for Laura Peverara[45] who was employed in Alfonso II d'Este, Duke of Ferrara's court.[46]

Two treatises contain detailed information on large triple-rowed parallel Italian

[40] John Griffiths, "La 'Fantasía que contrahaze la Harpa' de Alsono Mudarra: Estudio Histórico-Analítico," *Revista de Musicología* 9, no. 1 (January 1, 1986): 29–40.

[41] Nelly van Ree Bernard, "Ornamentation in Sixtennth-Century Iberian Music for 'Tecla, Harps Y Vihuela': Quiebros, Redobles and Glosas," in *Aspects of the Historical Harp: Proceedings of the International Historical Harp Symposium, Utrecht, 1992*, ed. Martin van Schaik (Utrecht: STIMU, 1994), 53–72.

[42] Cristina Bordas, "Harp Builders in Madrid (1578-1800)," in *Aspects of the Historical Harp: Proceedings of the International Historical Harp Symposium, Utrecht, 1992*, ed. Martin van Schaik (Utrecht: STIMU, 1994), 89–98.

[43] Hannelore Devaere, "The Baroque Double Harp in the Kingdom of Naples," in *Aspects of the Historical Harp: Proceedings of the International Historical Harp Symposium*, ed. Martin van Schaik (Utrecht: STIMU, 1994), 13–30.

[44] Vincenzo Galilei, *Dialogo della mvsica antica et della moderna* (Florence: G. Marescotti, 1581). Vincenzo Galilei (c. 1530-1591), Italian theorist, composer, lutenist, singer and teacher.

[45] Laura Peverara (c. 1550–1601), Italian singer and harpist.

[46] Elio Durante and Anna Martellotti, *L'arpa di Laura: indagine organologica, artistica e archivistica sull'arpa estense*, Archivum musicum, Collana di studi, C (Florence: SPES, 1982).

harps of up to 180 cm in height. These are Mersenne[47] and Bartolomé Jovernardi.[48] Harps with three parallel rows, have two outer rows which have the same pitches. Each row can be played by one hand. The third inner row has either five or seven strings for the chromatic pitches (C♯, E♭, D♯, F♯, G♯, B♭, A♯). These chromatic harps were conceived for unequal temperaments, as there are two separate strings for E♭ and D♯, and B♭ and A♯.[49]

There are two extent large Baroque triple-rowed harps. The "Barberini" has seventy-four strings (range C-e3), and shown in fig. 1.1. The "Bologna" harp has eighty-six strings (C-c3).[50] A third harp, similar to the Bologna harp, used to be part of the collection of instruments of Comtesse Chambure, but has disappeared since the Second World War.[51]

The repertoire for the Italian chromatic harps includes a solo for harp in Claudio Monteverdi's *Orfeo*.[52] The last solo works published for the *arpa doppia* in Italy are found in Gregorio Strozzi's *Capriccio* in 1687.[53]

1.2.3 Welsh triple harps

Single-rowed harps existed in Wales since the medieval times, but the origin of the Welsh triple harp (fig. 1.3) has still not been fully researched.[54] Charles Evans is the first documented triple harp player at the English court in 1660 to 1684. He is described as playing the "Italian harp."[55] James Talbot, the English writer on musical instruments, describes three triple harps as "Italian" or "English".[56]

The first instruments survive from 1736. These two harps have eighty-eight strings (range G-e3). The instrument is high-headed with a steep harmonic curve which is

[47] Marin Mersenne, *Harmonie universelle, contenant la théorie et la pratique de la musique*, vol. 1, 3 vols. (Paris, 1636).

[48] Bartolomé Jovernardi, *Tratado de la música*, (E-Mn, Ms 1634). Bartolomé Jovernardi (ca. 1600-1668), harpist and theorist. Maria Sanhuesa Fonseca, *El doctor Bartolomeo Giovenardi (ca. 1600-1668). Teórico musical entre Italia y España*, Monumentos de la música española (Barcelona: Consejo Superior de Investigaciones Científicas, 2009).

[49] Dinko Fabris, "The harp in Naples 1500-1700," in *Historische Harfen: Beiträge zur Theorie und Praxis historischer Harfen* (Basel: Schola Cantorum Basiliensis, 1991), 43–59; Mara Galassi, "The 'arpa a tre registri' in Seventeenth-Century Rome," in *Historische Harfen: Beiträge zur Theorie und Praxis historischer Harfen* (Basel: Schola Cantorum Basiliensis, 1991), 76–79.

[50] The author plays a modern copy of the "Bologna" harp (2005), made by Rainer Thurau of Wiesbaden.

[51] Joan Rimmer, "The Morphology of the Triple Harp," *Galpin Society Journal* XVIII (66 1965): 91.

[52] Claudio Monteverdi, *L'Orfeo. Favola in musica* (Venice, 1609). Claudio Monteverdi (1567-1643), Italian composer.

[53] Gregorio Strozzi, *Capricci da sonare cembali et organi*, vol. Op. 4 (Napoli: Marescotti, 1687).

[54] Peter Holman, "The Harp in Stuart England: New Light on William Lawes's Harp Consorts," *Early Music* 15, no. 2 (May 1, 1987): 188–203. There are several theories that are lacking substantial historical evidence.

[55] John Cunningham, "Review: William Lawes, The Harp Consorts (PRB Viol Consort Series, No. 62)," *The Viola Da Gamba Society Journal* 2 (2008): 93: "His Majesty's harper for the Italian harp".

[56] Joan Rimmer, "James Talbot's Manuscript (Christ Church Library Music MS 1187): VI. Harps," *The Galpin Society Journal* 16 (1963): 63–64, doi:10.2307/841095[57]. James Talbot (1664-1708), English writer on music.

nearly 200 cm in height. This instrument remains structurally unchanged since the Baroque period up to today and is the national instrument of Wales.

The repertoire includes the works by George Fredric Handel[58] which include the *Concerto* Op. 6, No. 4, HWV 294 and harp parts in three Oratorios and one Opera. John Parry published pieces in 1741, 1761 and 1781.[59]

Welsh single-rowed harp existed, which were modelled after the Welsh triple harp.

1.2.4 *Davidsharffe*

The *Davidsharffe* (fig. 1.3) is a Baroque harp with two parallel rows of strings, with fifty-three to fifty-eight strings with bray pins (range G-e3); the height is approximately 170 cm. It has a low trapezoid-shaped body and usually a decorated head. The instrument is illustrated and described in Johann Philip Eisel's *Musicus autodidactus*.[60] Instruments that are similar to Eisel's diagram include the double harp built by the German harp maker, Johann Volckmann Rabe of Nordhausen.[61] Several other *Davidsharffen* have survived and are listed in the Droysen-Reber's Catalogue.[62] The *Davidsharffe* model of harp was also used to build single-rowed harp.

Johann Mattheson mentions the *Davids-harffe* twice in his 1713 publication.[63] If he is referring to this specific type of instrument, it places the *Davidsharffe* at the beginning of the eighteenth-century. It could also be possible that the term is simply referring to a harp, that was invariably the harp of King David. Anton Gottlieb Heyse's harp method is partially directed towards players of the *Davidsharffe*.[64]

The author has identified no music that specifically asks for the use of the *Davidsharffe*.

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[58] George Fredric Handel (1685-1759), German composer.

[59] John Parry 'of Rhuabon' (c. 1710–82), Welsh harpist and composer.

[60] Johann Philipp Eisel, *Musicus autodidactus oder Der sich selbst informirende Musicus: bestehend sowohl in Vocal- als üblicher Instrumental-Musique, welcher über 24 Sorten sowohl mit Saiten bezogener als blasender und schlagender Instrumente beschreibet, die ein jeder, nach Beschaffenheit seines Naturells, sonder grosse Mühe, in kurtzer Zeit, nach denen Principiis fundamentalibus erlernen kan* (Leipzig, 1738). Johann Philip Eisel (1698-1763), German composer and theorist. It is also called "Doppel oder Davids-harffe" in Walther, *Musikalisches Lexikon*.

[61] Mette Müller, ed., *The Power of the Harp: Exhibition Catalogue* (Copenhagen: Musikhistorik Museum og Carl Claudius' Samling, 1993), 20–25. A *Davideharffe* is located in the Musikhistorisk Museum, Copenhagen, Denmark, dated 1740.

[62] Droysen-Reber, *Harfen*, 36–40.

[63] Johann Mattheson, *Das neu-eröffnete orchestre, oder Universelle und grundliche anleitung wie ein galant homme einen vollkommenen begriff von der hoheit und wurde der edlen music erlangen seinen gout darnach* (Hamburg, 1713), 280. Johann Mattheson (1681-1764), German composer, critic, music journalist, lexicographer and theorist.

[64] Anton Gottlieb Heyse, *Anweisung die Harfe zu spielen* (Leipzig, 1803); *Anweisung die Harfe zu spielen* (Halle: Handel, 1822). Anton Gottlieb Heyse (flourished early 19th century), German harpist and composer from Halle.

1.3 Harps with manual actions

If a single-rowed harp is tuned diatonically, there are several ways to create the chromatic pitches that are not available on the harp. A vibrating length of a string can be shortened by a semitone by three main methods. A string can be stopped or pinched near the neck with the thumb[65] or close to the soundboard, using the second finger. A third way to shorten a string is to stop a string with the tuning key. No historical written source document this practice, but it is an essential part of playing the diatonic harps of Central and South America today.

Alternative systems exist, where this operation is done by manually moving hooks, buttons or levers to shorten the vibrating length of a string by one semitone instead of the hand or object.

1.3.1 *Hakenharfe*

The German *Hakenharfe* (fig. 1.4)[66] has a series of J-shaped hooks that are attached to the neck below the tuning-pins.[67] These hooks can be turned by ninety degrees, either clockwise or anti-clockwise, hence shortening the vibrating length of a string by one semitone. The earlier *Hakenharfen* had four hooks, five, and then seven hooks in every octave. The hooks are manually turned by the left hand, meaning that the left hand stops playing for that instant.

Five harpist wrote methods for the *Hakenharfen*.[68] Backofen wrote a significant amount of repertoire for the instrument[69] and Johan Henrik Lorentz (1763-1818), harpist in the court of Copenhagen played and composed sonatas, suites and a concerto for the *Hakenharfe*.[70] It is possible that the concertos and cantatas of the collection of Pius Hanke could be for this harp.[71]

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[65] See section 1.2.1.

[66] Nancy Thym-Hochrein, "Die Hakenharfe: Bauweise, Spieltechnik, Geschichte," in *Zur Baugeschichte der Harfe: vom Mittelalter bis zum 19. Jahrhundert: 13. Musikinstrumentenbau-Symposium in Michaelstein am 6. und 7. November 1992*, ed. Monika Lustig (Michaelstein: Das Institut, 1995), 86–103. This is principal study on the *Hakenharfe* to date.

[67] "Haken" means hooks in English.

[68] Johann Wernich, *Versuch einer richtigen Lehrart die Harfe zu spielen: wobey die Grundsätze nach welchen dieses Instrument erlernet werden muss, mit der grössten Deutlichkeit, und solcher-gestalt vorgetragen* (Berlin: Winter, 1772); Johann Herbst, *Ueber die Harfe, nebst einer Anleitung, sie richtig zu spielen* (Berlin: Rellstabschen, 1792); Joseph Schwanneburg, *Vollständiges theoretisch-praktisches Lehrbuch zur Davids-und Pedalharfe, mit vielen in Kupfer gestochen Figuren, Notenbeispielen und einem Anhange von Tonstücken, mit bezeichung des Fingersatzes*, 1797; Backofen, *Anleitung*, 1801; Heyse, *Anweisung*.

[69] Heidi Rosenzweig, "Johann Georg Heinrich Backofen: die deutsche Harfe um 1800," in *Historische Harfen: Beiträge zur Theorie und Praxis historischer Harfen* (Basel: Schola Cantorum Basiliensis, 1991), 80–97.

[70] The harpist Helen Davis of Copenhagen, is currently researching and publishing the works of Lorentz.

[71] I thank Ludmiła Sawicka of the Library of the University of Warsaw, Poland for sharing this material with me.

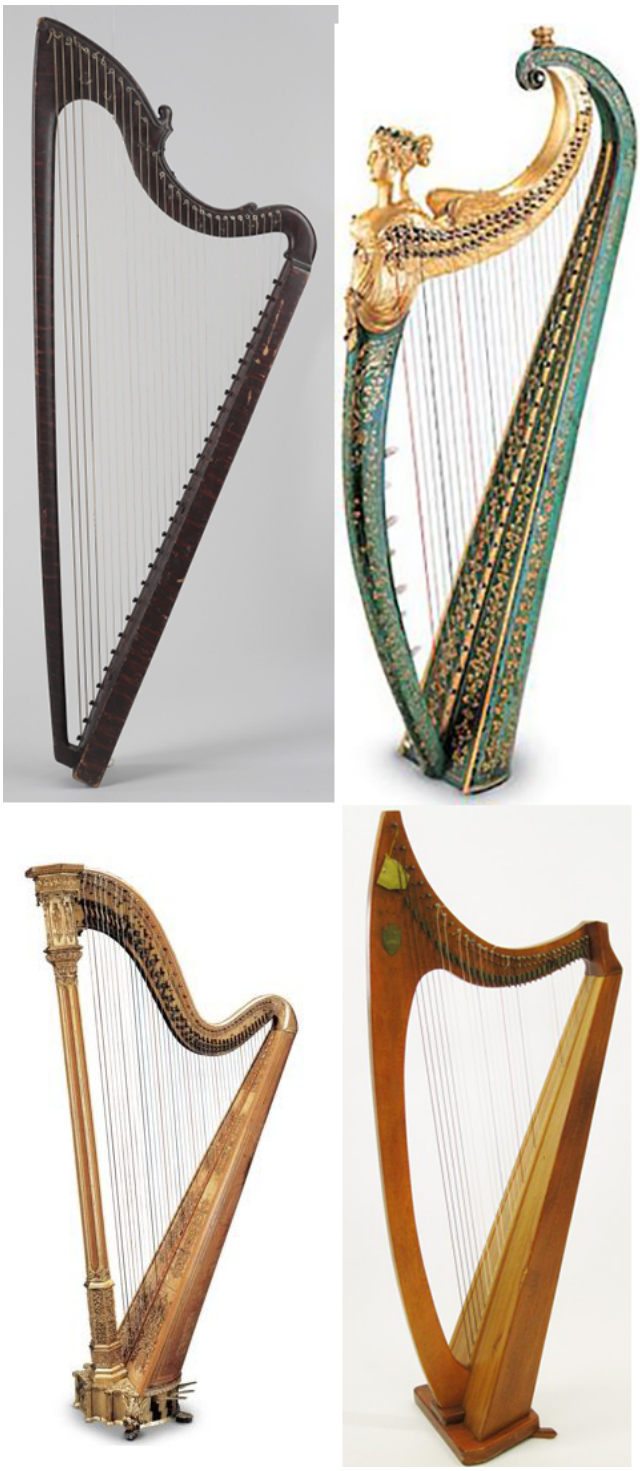

Figure 1.4: (clockwise from top left): Hochbrucker, *Hakenharfe* (1738), Germanisches Nationalmuseum, Nürnberg; Egan, *Dital* harp (c. 1820), Museo dell'arpa Victor Salvi, Piasco; Lyon & Healy, Troubador II lever harp (c. 1962), private collection; Erard double-action pedal harp (1816).

1.3.2 *Dital* harp/[Royal] Portable Irish harp

This "dital" harp (fig. 1.4) is a post-single-action harp. From 1809, John Egan,[72] a pedal harp builder based in Dublin, attempted to re-construct harps following the ancient tradition of Irish harps, for the newly founded Irish Harp Society of Dublin.[73] Egan designed various types of harps, including large wire-strung harps with thirty-seven strings. His final design was a small harp, about 100 cm in height, with a shape that reflected the medieval Irish harp but the construction and mechanism of the harp was similar to Erard pedal harps.[74] He designed seven 'ditals' buttons the fore-pillar which were attached to the *fourchettes*[75] mechanism. This altered the vibrating length of one string in each octave, like a pedal on a pedal harp. This harp was set-up in E-flat major and its "design and technique of performance" is one of the "European pedal harps and had little to do with the Medieval Irish wire-strung harp".[76]

This harp is not to be confused with Edward Light's *dital harp*, which is a harp-lute or similar hybrid instrument.[77]

1.3.3 Neo-Irish harp

This is a harp, based on the Portable Irish harp, where the strings are shortened by a series of levers or blades attached to the neck of the harp. The levers were first patented in 1962 by Lyon and Healy harps in Chicago (fig. 1.4). The system is similar to the German *Hakenharfe*. These harps range from 80-110 cm in height with strings ranging from twenty-seven to thirty-four strings. The strings are gut (but now nylon) with some metal-wound strings in the bass, like a modern pedal harp. These harps are always set-up in E-flat major, reflecting the concept of the single-action harp.

1.4 Harps with pedal actions

This category includes single-rowed harps with a single-action pedal mechanism and a double-action pedal mechanism. Pedal harps can have from five to fourteen pedals, found at the base of the instrument. The pedals operate with reciprocal arms or a spring mechanism and are linked to seven rods that pass through the column or the soundbox of the harp. These rods are then attached to the mechanism in the neck that alters the length of the strings. The result is that each string produces two or three pitches on the harp.

[72] John Egan (d.1829), harp maker from Ireland.
[73] O'Donnell, *Ireland's Harp*, 87–99.
[74] Nancy Hurrell, "The Royal Portable Harp by John Egan," *Journal of the Historical Harp Society*, 2003.
[75] After Erard's invention. See Glossary.
[76] O'Donnell, *Ireland's Harp*, 7.
[77] Droysen-Reber, *Harfen*, 76.

1.4.1 Single-action pedal mechanism

Harps with a single-action pedal mechanism are the first type of harps with a mechanism system to alter the length of the strings. The earliest harp with pedals dates from 1720. This harp has from thirty-three to forty-three strings and pedals at the base of the instrument. These can be five or seven pedals, corresponding to the diatonic notes of the scale. Each pedal alters the vibrating length of a string in every octave by one semitone. A further eighth and ninth effect pedals were added in the 1780's.[78]

Using the feet, the pedals are pressed down and released to alter the required pitch. There are two positions for the pedals: either up or down. The upper position is the initial position: the mechanism is not in use and the strings are in an open position and the seven strings in the octave are tuned to a diatonic major scale, usually E-flat major.[79] When a pedal is pressed into the lower position, the vibrating length of the string is shortened producing a note a semitone higher than when a pedal was in the initial upper position. An example would be when the C pedal is in the upper position all the C strings sound as C. When a pedal is pressed down the resulting sounding pitch of every C string is C♯. A pedal can be held with the foot in the lower position without effort, as the pedals are light and easy to move. Alternatively a pedal can be fixed by sliding the pedal into a side notch to hold it in position. Fixing the pedal into the side notch leaves the foot free to rest on the floor or to move other adjacent pedals.

Chapter 2 is dedicated to harps with a single-action pedal mechanism.

1.4.2 Double-action pedal mechanism

Harps with a double-action pedal mechanism were invented by Erard using a "fourchette" mechanism (fig. 1.4).[80] Erard began to make from harps with a single-action pedal mechanism from 1785 and to sell harps in 1790.[81] The first sales of his own harps with a "fourchette" mechanism were in 1797. He began to experiment and design harps with a double-action pedal mechanism from 1801-1810. These harps have seven pedals which can alter the vibrating length of each string in the octave twice, therefore producing three pitches from each string. A further eighth was an effect pedal, the *pédale à renforcement*.[82]

Erard also manufactured hybrid-harps with five single-action pedals and two pedals (D and A) with a double-action mechanism.

Like Cousineau's fourteen-pedal harp, no specific repertoire of the same time as the invention of the double-action pedal mechanism has been identified. The author

[78] See sections 2.3, 3.6, and 4.5.
[79] See sections 3.1, 4.1, and 5.1 for discussions on set-up keys on the harp.
[80] "Fourchette" mean forked disks.
[81] Adelson et al., *History of the Erard Piano and Harp*, 2:26–32.
[82] See Glossary.

has found the first works that fully exploit the new possibilities around twenty years after Erard's invention.[83]

This harp has thirty-seven to forty-three strings. The basic structure and *fourchette* mechanism has remained unaltered to day.

1.5 Other harps

This overview of harps is not a complete list of every type of harp that was built in Europe from 1500. Many harps were, and still are, once-off models. Other harps that have not been discussed include the *Arpa Viggianese* (fig. 1.2). This harp from Basilicata, Italy, was developed in the nineteenth century and played on the street. It is modelled after the nineteenth-century pedal harps, but is a diatonic instrument. The *Arpa Viggianese* culture continued into the 20th century in the United States and Australia through emigrant Viggianese musical families.[84]

Other nineteenth-century harps include the Bohemian diatonic harp,[85] *Bradl* Tyrolean harps with a single-action pedal mechanism, Dizi's pedal harp and Pleyel's *cross-strung harp* of 1894.[86]

[83] F. C. Meyer's *Adagio Patetico and Waltz of the Black Forest*, Op. 26. See section 8.2.

[84] Linda Barwick and Marcello Keller Sorce, eds., "Italian Immigrant Harpists from Viggiano in the Early Twentieth Century: Re-Discovering a Little Known Aspect of the Musical History of Melbourne," in *Italy in Australia's Musical Landscape* (Melbourne: Lyrebird Press, 2013).

[85] Jiří Kleňha, *Harfenictví V Čechách: Historie Vandrovních Muzikantu Z Nechanic* (Prague: Granit, 1998).

[86] Droysen-Reber, *Harfen*, 76.

Chapter 2

Single-action harps

The famous *Encyclopédie* of Denis Diderot[1] uses the term *harpe organisée*[2] as the title of one of the technical drawings of a harp with a single-action pedal mechanism.[3] This drawing, and another three plates with detailed explanations of the mechanical parts of the harp, complement the article "Harpe" in volume eight (1765) and written by Prince Casimir Michael Oginski.[4] Diderot first heard Oginski play the pedal harp in August 1760, so this meeting may have been the birth of this detailed article and technical drawings.[5] The complete article is found as Appendix I and is translated into English for the first time.[6]

The harp described is a single-rowed harp with seven pedals at the base of the instrument. The idea of constructing a harp with a pedal mechanism was influenced by the *Hakenharfe* which has manual hooks. Each pedal corresponds to one note in the diatonic scale. The pedal consists of three separate parts, which are joined together with a vertical coupling pin and then a lateral swivel coupling pin. When the pedal is pressed upon, the lateral swivel coupling segment rises and sets in motion two further reciprocal load levers that are fixed to the base of the harp with two fulcrum screws. When the end point of the second load lever descends, it presses against the pedal rod coupling. The rod consists of a long piece of thin wire that is placed inside the column of the harp. There are seven pedals rods, corresponding to the seven diatonic notes of the scale. Each pedal rod ends with

[1] See Appendix 1.7.

[2] The word "harp" is used throughout this thesis to refer exclusively to a harp with a single-action pedal mechanism.

[3] Diderot and Le Rond d'Alembert, *Recueil de Planches*, LUTHERIE, Seconde suite, Planche XIX. Diderot also shows a single-rowed harp with twenty-one strings. Planche III. See Appendix I.7.3.

[4] "HARPE," 45–46; Droysen-Reber, "Prototyp 'Harfe"': 139-48, is a comprehensive study on Diderot and the harp. See Appendix I.7.

[5] See this "Introduction" for discussion.

[6] This translation has been submitted to the "Encyclopedia of Diderot & d'Alembert-Collaborative Translation Project". http://quod.lib.umich.edu. Barthel, *Au cœur de la harpe*, 24-35 explains the technical drawings in both French and English, but it is not a complete translation.

a cast V-shaped hinge. A series of linking rods, which run inside the neck of the harp are attached to this hinge. There is a total of seven linking rods hidden inside the neck. Each one has a series of links and rivets that attach to the final part of the mechanism that comes in contact with the strings. Each linking rod moves one note in each octave across the whole harp.

The final mechanism that is described by Diderot is called a *crochets* mechanism, where small hooks are screwed on to a spindle which juts out from the neck through the front-action plate. When the pedal is pressed, a *crochet* pushes a string against the semitone nut which results in the shortening of the vibrating length of the string by a semitone. The mechanical action of pressing down pedals may appear counter-intuitive to non-harpists, as this action results in a pitch that is a semitone higher. Before the pedal action is operated, the vibrating length of any string runs from the soundboard, which acts like a bridge, to a nut which is fixed to the neck. When the pedal is put in use, the *crochet* becomes the new nut and the pitch is consequently altered.

The seven pedals that alter the vibrating length of the strings are distributed at the base of the harp, three on the left-hand side, from left to right D, C, B, and on the right E, F, G, and A.

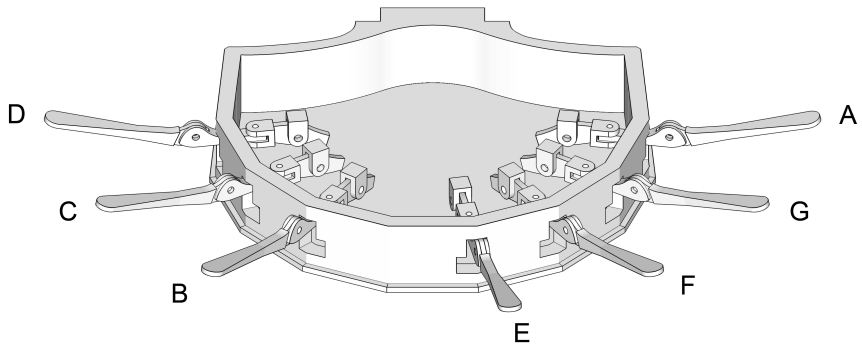

Figure 2.1: The positions of the pedals in the upper position.

2.1 Tuning the harp

The word tuning is commonly used to mean three different procedures on a harp. It can mean:
- putting a harp in a certain pitch like tuning at 405Hz, 415Hz or 430Hz. This is discussed below in 2.1.2.
- setting the harp up in a certain key before playing and where all the pedals are

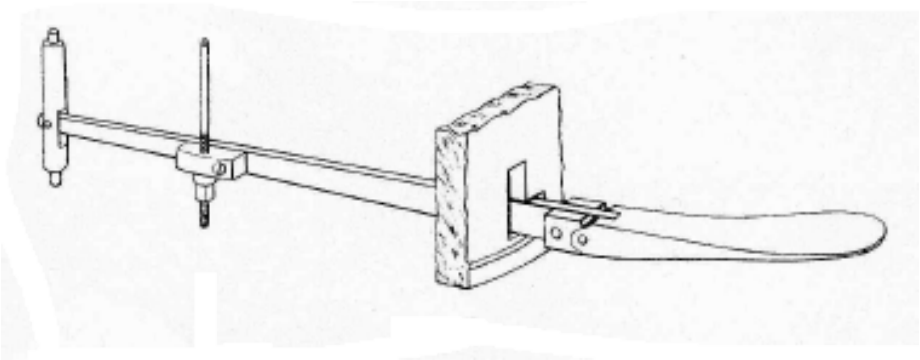

Figure 2.2: An example of a pedal in the lower position, held in the side notch. Erard, *The Harp*, Plate V.

in the upper position. The strings are then said to be in an open position. The author calls this key the "base" set-up key of the harp.[7] The "base" set-up key determines what fourteen semitones are available to the harpist for an entire piece, or a movement of a piece in each octave.

- The final use of the term "tuning" means the adjustment made regarding the relationship between one pitch and another pitch, how a certain interval sounds. This depends on how the twelve notes of the chromatic scale are divided. This is referred to as temperament. Equal temperament means that the interval between each semitone is equal to 100 cents. It would appear to have been the most used temperament on the harp in the eighteenth- and early nineteenth-centuries.[8] Other temperaments including 1/6 comma mean-tone and 1/8 comma mean-tone temperament are possible. It depends if the harp has fixed or a movable semitone nuts.[9]

2.1.1 The "base" key

The harp can theoretically be set-up in any "base" key but is usually tuned in E-flat major giving the possibility to play in some keys with flats and some keys with sharps. The action of the seven pedals on the harp result in an extra seven notes in addition to the seven open strings in the octave. A total of fourteen notes are therefore possible in each octave; two notes are doubled in each octave. When a harp is tuned in E-flat major as the "base" set-up key, the two notes that are doubled in the octave are A-flat/G-sharp and E-flat/D-sharp. This gives the harpist the possibility to use alternative strings for two notes per octave.

[7] See Glossary.

[8] No comprehensive research on temperament, pitch and strings exists for the single-action harp.

[9] Beat Wolf, "Timeline-Pedalharps," accessed May 2, 2016, http://www.beatwolf.ch/Portals/14/pdf/Timeline_pedalharps_2012.pdf?ver=2014-09-12-140457-193.

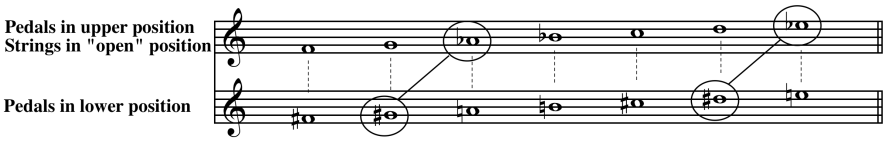

Figure 2.3: Harp set-up in E-flat major as “base” key.

2.1.2 Pitch and temperament

There is no comprehensive study on pitch[10] or temperaments and the harp.[11] Most eighteenth- and nineteenth-century treatises and methods explain and give instructions on how to tune the harp in a specified “base” set-up key. The instructions are practical and not theoretical, and most often do not point to any specific pitch or temperament. In the earliest method for harp of 1763, P. J. Meyer writes:

> “Prenez la seiziéme corde….qu’on appelle *fa*, cette corde sera un *mi*; mettez cette corde à l’union avec le *mib* de quelqu’autre Instrument. Accordez la corde di *si*, qui est au-dessus, à la quinte parfaitement juste en montant.”[12]

P. J. Meyer continues to instruct the harpist to tune through the cycle of fifths and octaves: e♭-b♭-B♭-f-c-C-G-g-d-d-a-b♭.[13] There are problematic features regarding this text. Before this paragraph on how to tune the harp in B-flat major, Meyer writes that the harp has thirty-two strings with a range B♭-f3. The sixteenth string from the top of the harp is eb, which is called *fa* in modal terms, as it is the fourth note in the key of B-flat major. The cycle of fifths ends with “a”, which Meyer conveniently states that it is the “sensible de si♭, qui sera le son principal de la gamme du si♭, & toute la gamme sera accordée.”[14] Just and perfect fifths and octaves result in a Pythagorean tuning, which does not function with major and minor keys or harmonies, or for eighteenth-century music. It is the author’s opinion that Meyer and the writers of other later methods use the word “juste” and “parfait” in a different way.[15]

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[10] Ibid. Beat Wolf’s timeline includes probable pitches of harps during the eighteenth- and nineteenth-centuries.

[11] Jaap Keppel, “The Pedal Harp in Its Historical Perspective: Stringing and Temperament,” in *Aspects of the Historical Harp: Proceedings of the International Historical Harp Symposium, Utrecht, 1992*, ed. Martin van Schaik (Utrecht: STIMU, 1994), 105–12.

[12] Meyer, *Essai*, 4–5. “Take the sixteenth strings…called F, this strings will be an E; put this string in unison with the E-flat of whatever other instrument. Tune the string of B, which is above, as a perfect just rising fifth.”

[13] See “System of pitch notation”, under “Abbreviations”, page x.

[14] It is “the sensible, the leading note of B♭, which is the main note in the scale of B-flat, and all the scale will be tuned.”

[15] Pitch and temperament as beyond the scope of this study.

These first directions on how to tune the harp is for the "base" key of B-flat major. Meyer later explains how to tune the harp for the "base" key of E-flat major, so the A strings will be lowered by one semitone. It might seem logical when tuning the A string as A♭, to take the E♭ string and tune the A♭ as the interval of a fourth or fifth. However, Meyer writes that the harpist should press down the G pedal, making the G string sound as G♯ and then tune the A string in unison with the G♯. It implies that Meyer's intention is not to instruct the harpist to tune in Pythagorean tuning, as G♯ and A♭ are two different pitches in that temperament.

Corbelin and Cousineau's instructions are similar to Meyer's, except they also instruct the harpist to check the triad of the tonic and dominant keys.[16] Cousineau also specifies that after tuning the first octave "juste", the first fifth should be:

> "à baisser—un tant soit peu, parceque sans dela les tierces deviendroient trop fortes et seroient dures à l'oreille."[17]

This points to a temperament that is equal or close to equal temperament, where the fifths are tempered. Backofen clearly instructs the harpist that "die Pedalharfe wird nach Quinten und Oktaven in schwebender Temperatur…gestimmt".[18]

The temperament of the single-action harp can be actually measured in cents, as the semitone is a physical distance from the semitone nut on the neck of the harp to the pedal mechanism that alters the vibrating length of the string. Jaap Keppel, Dutch harp restorer, has identified two temperaments,[19] where harps with single-action pedal mechanisms were either built for equal temperament-the semitone is equal to 100 cents, or for a smaller semitone of approximately 85 cents. This would point to a 1/6 comma mean-tone temperament. The temperaments of several harps have also been measured by Beat Wolf. According to him, the harps by Cousineau and Naderman were built for equal temperaments.[20]

Pitch

The pitch of harps could also be measured. From the few historical string lists that remain, and the known total tension on eighteenth- and nineteenth-century harps, some conclusions on historical pitches could be drawn. The current research is that of Beat Wolf, where he places the pitch between 392Hz and 430Hz for eighteenth-century harps built before 1829.[21]

In P. J. Meyer's harp method quoted above, the actual pitch of the harp is undefined, as the harpist is instructed to simply take a note, the E♭, of any near-by instrument and tune the harp on the basis of that pitch.[22] Cousineau writes that the harpist

[16] François-Vincent Corbelin, *Méthode de harpe: pour apprendre seul et en peu de temps à jouer de cet instrument; avec un principe très simple pour l'accorder* (Paris, 1779), 8–9; Jacques-Georges Cousineau, *Méthode de Harpe Suivie d'un Recueil de Petits Airs de differens Auteurs*, op. 4 (Paris: Cousineau, 1784), 16–17.

[17] "…lower [the fifth] a little, because otherwise the thirds will become to loud and harsh to the ears".

[18] Backofen, *Anleitung*, 1801, 11. "The pedal harp is tuned with equal fifths and octaves."

[19] Keppel, "The Pedal Harp in Its Historical Perspective," 105–12.

[20] See footnote 9.

[21] Wolf, "Timeline-Pedalharps."

[22] Corbelin, *Méthode*, 8–9.

needs to acquire a tuning-fork and take the pitch of the Opera de Paris, which is the lowest pitch of all the orchestras.[23] There is evidence from harp concertos, that the harp was used as a transposing instrument and therefore was tuned one semitone lower with respect to other instruments. This is discussed in section 4.1, and with regards to Spohr's harp music in section 6.1.4.

A comprehensive study is needed, using the primary sources like the harp methods and treatises to reach any conclusions on pitch and temperament on the harp.

2.2 Harp building 1760-1840

The first harps are described as having four or five pedals and two of these instruments have been re-discovered and studied by Beat Wolf (See section 2.2.1.2: "AR/RA" harps). Harps up to the 1780's had seven pedals. From 1785, Krumpholtz, in collaboration with Naderman, invented two effect pedals: the *pédale à renforcement* and the *sourdine* pedal. Krumpholtz also invented a *Contrebasse ou Clavicorde à marteau*, which was built by Erard. Cousineau's eighth pedal was a *sourdine* pedal. These are discussed in section 2.3.

A Naderman with twelve pedals is part of a private collection in the UK. The first seven pedals are for altering the vibrating length of the strings, the eighth is a *pédale à renforcement*, the ninth is a *sourdine* pedal, and the other three are for a "Bassoon (a buzzing sound made by a parchment strip touching the strings), Drum and Turkish Bells."[24] Cousineau's unique harp with fourteen-pedals is briefly discussed section 1.4.2.

Droyen-Reber lists over forty luthiers that built single-action harps.[25] The mechanism for shortening the vibrating length of the strings was different from maker to maker. The early pedal harps had a crutch-and-nut system.

2.2.1 Crutch mechanism

2.2.1.1 Hochbrucker harps

The invention of the *harpe organisée* is usually attributed to Hochbrucker, from Mindelheim who moved to Donauwörth, Germany in 1699.[26] He was a son of the violin maker and he was described as not only the inventor of the *Bret-harffe* but also that he was a "good harpist."[27] At least three of his sons, Simon (1699-

[23] Cousineau, *Méthode*, 1784, 16–17.
[24] Parker, *Child of Pure Harmony*, 59.
[25] Droysen-Reber, *Harfen*, "Register der Instrumentenbauer und 'Erfinder"'.
[26] His surname is sometimes spelt Hochprugger.
[27] Walther, *Musikalisches Lexikon*, 316: Hochbrucker "erfundenen grossen Bret=Harffe, auf welcher er ohne Verstimmung, alle Semitonia spielen und mitnehmen kann…ist gleichfalls ein starcker Harffenist." Hochbrucker "invented the big pedal harp, on which, without tuning, all semitones can be played and made… is also a good harpist."

1750), Johann Christoph (b.1715) and Jean [Johann] -Baptist (1732-1812) travelled across Europe, performing in Vienna, Brussels, Paris and St. Petersburg, while their cousin Christian (1733-1805), a monk (Coelestin), and was also a composer and harpist. Jean-Baptist Hochbrucker writes in the Preface to his *Recueil d'Ariettes choisies*, Op. 2, that the *harpe pédale* was not known before 1697 and that it was invented by his father.[28] The *Neue Zeitungen von gelehrten Sachen* on December 8, 1729, announced the new type of harp as the *Pedal- oder Tret-Harffe* attributing the invention to Simon Hochprugger, who had recently performed for the Holy Roman Emperor Charles VI (1685-1740) in Vienna.[29] François-Joseph Fetis wrote that Hochbrucker first made harps with five pedals and then seven.[30] No Hochbrucker harp with five pedals has been identified yet.[31] Three early Hochbrucker harps, one from 1720, one from 1728[32] and one undated, have survived and have been studied by the world early pedal harp expert, Beat Wolf of Schaffhausen, Switzerland. The Hochbrucker harp dated 1728 is the earliest dated harp that has been comprehensively researched and analysed and is now part of the Musée de la musique, Paris.

These three harps have seven pedals with pedal rods that run through the resonance box, as the column of all three harps is very slim and the rods would not fit inside such a column.[33] For each string, four metal linkages are fixed to the neck. The tuning pin is at the highest point and this is where the string is finally held in place and can be tuned to pitch. Underneath the tuning pin is the bridge pin, which defines the vibrating length of the string. The two parts of the mechanism to alter the pitch are found below the nut. The first part is a simple crutch that moves from a vertical downwards position to a side position. When the pedal is pressed down, the crutch is pushed to one side and with this action, the string shifts out of alignment and touches the second pin below the crutch. This pin shortens the vibrating length of the string and pitch is altered by one semitone.

The author has identified two portraits, where a Hochbrucker harp has been painted. Angelica Kaufmann's *Woman Playing a Harp* clearly shows a harp with short metal pedal stumps like those of the three existing Hochbrucker harps.[34]

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[28] Hochbrucker, *Recueil d'Ariettes*.

[29] "Wien," 892; Hochbrucker, *Recueil d'Ariettes* writes that this performance was in 1728.

[30] François-Joseph Fétis, *Biographie universelle des musiciens et bibliographie générale de la musique*, vol. 5 (Bruxelles: Meline, 1839). François-Joseph Fetis (1784-1871), Belgian musicologist, composer and teacher.

[31] Hochbrucker made *Hakenharfen* with five hooks.

[32] "HARP RESTORATION - Harp by Hochbrucker," 2007, http://beatwolf.ch/Restoration/Hochbrucker/tabid/823/language/en-US/Default.aspx. Close-up photographs of the restoration of this instrument are on Wolf's website.

[33] Ibid.

[34] Angelica Kaufmann, *Woman Playing a Harp*, [1778], oil on canvas, 88.58 x 69.22 cm, Seattle Art Museum, Accession No.:66.63. A second portrait, also attributed to Kaufmann is *Portrait of Elizabeth Ewer, full-length, seated in a White Dress with a Yellow Shawl, Playing a Harp, in an Interior*, c. 1768-73, oil on canvas, 76.2 x 63.5 cm, Private collection. Kauffman, Angelica (1741-1807), Swiss painter.

Figure 2.4: Kauffman, Angelica, *Portrait of Elizabeth Ewer, full-length, seated in a White Dress with a Yellow Shawl, Playing a Harp, in an Interior*, c. 1768-73.

2.2.1.2 "AR/RA" harps

Beat Wolf has studied two early eighteenth-century harps with four and five pedals respectively.[35] The harps are both signed "AR" which Wolf thinks could be a monogram and could also therefore be read as "RA". The harps have thirty-three strings but with different ranges (C1-g3 and B1-f3), and have a system of crutches that turn clockwise to shorten the vibrating length of the strings. A system of linkages run through the harp's neck and join to the rods inside the resonance box. The rods then link to the pedals at the base of the harp. The harp with four pedals has crutches for the strings C, B, E and F, which are conveniently written on the inside of the mechanism, while the harp with five pedals has five crutches for the strings B, C, E, F, G. The pedals for the C and B string are found on the left-hand side of the base of the harp; the remaining are on the right-hand side. Both of these harps would have been tuned in Bb major. When the vibrating length of the strings are shortened the C, B, E, F and G strings would sound as C♯, B♮, E♮, F♯ and G♯. The pedals are approximately 8-10 cm from the ground, which, compared to other harps, is rather high from the ground.

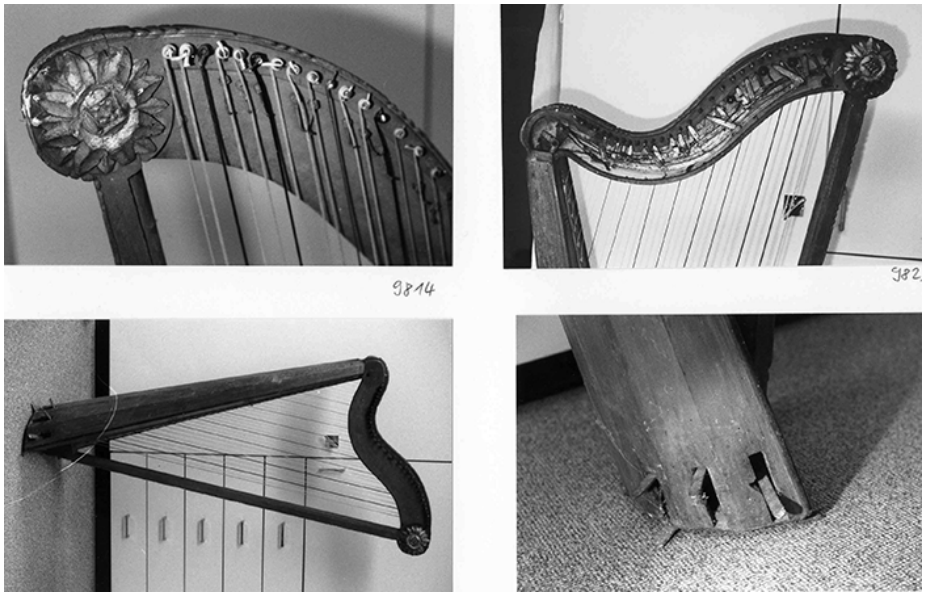

Figure 2.5: "AR" harp with five pedals (early 18th c.), Private collection.

[35] BW 21/001/400 is housed in the Historisches Museum St. Gallen Inv. Nr. 9606. The present location of BW 21/001/500 is unknown. I kindly thank Beat Wolf for sharing this information from his personal archives and catalogue.

2.2.2 *Crochets* mechanism

The system described so meticulously in Diderot's *Encyclopédie* is a *crochets* system. As noted by Barthel, the technical drawings in the *Encyclopédie* are very similar to the harps built by Jean-Henri Naderman[36] who built harps with this mechanism. Luthiers that use the *crochets* mechanism include:

Jean-Henri Naderman (1734-1799)
Henri Naderman (1782-1846)
Godefroy Holtzman (?1736-?1799)
Jean-Baptiste Deshayes (1713-1767)
Edmond Saunier (c. 1730-c. 1783)
Jean Louvet (c. 1728-1793)
Wolters (active c. 1822)
Sébastien Renault (active c. 1811)
Storck, Strasbourg (active 18th century)
Philippe-Jacques Meyer (1737-1819), London

2.2.3 *Béquilles* mechanism

Cousineau invented a system with *béquilles* around 1780, which are "pairs of small metal levers, one on each side of the string," which pinch "the string from opposite sides when the pedal was depressed."[37] This mechanism was also referred to as *à sabots* or "Hämmerchen."[38] This mechanism was mostly used by the Cousineau luthiers, Georges Cousineau and his son Jacques-Georges. Cousineau also experimented with another mechanism called the *chevilles tournantes* mechanism, where the tuning pins are directly linked to the pedals, meaning that there is no mechanism in the neck of harp. When a pedal is depressed, the tuning pin rotates and hence the pitch is altered.

2.2.4 *Fourchettes* mechanism

Sébastien Erard devised another mechanism which is called the *fourchettes* mechanism around 1786.[39] This mechanism uses forked discs, with two small pins. The pins pinch the strings when the disc rotates and was patented in 1794. This mechanism became the standard mechanism and is still used in modern pedal harps. The principles have changed very little since Erard's time.

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[36] Barthel, *Au cœur de la harpe*, 36.
[37] Adelson, Roudier, and Duvernay, "Rediscovering Cousineau's Fourteen-Pedal Harp": 160.
[38] Johann Georg Heinrich Backofen, *Backofen's Harfen-Schule mit Bemerkungen über den Bau der Harfe und deren neuere Verbesserungen*, 3rd ed. (Leipzig: Breitkopf und Härtel, 1827), 2.
[39] Adelson et al., *History of the Erard Piano and Harp*, 2:28.

2.2.5 "Ring" mechanism

Jacob Erat invented a system which is an enclosed version of the *fourchette*. This is a disk with an attached ring, which the strings pass through. When the pedal is depressed, the disk and ring rotate and pinch the strings.[40]

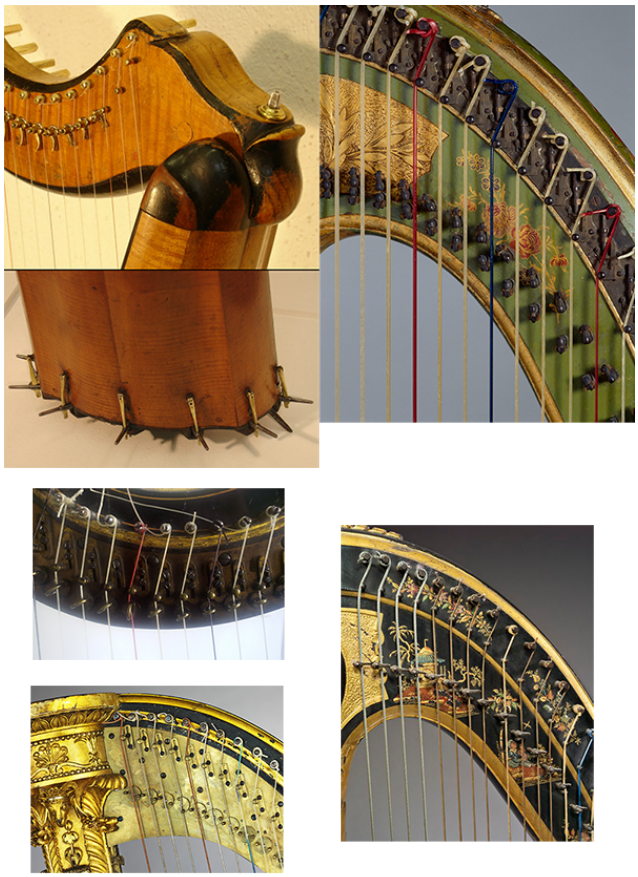

Figure 2.6: (clockwise from top left): Harp mechanisms: Hochbrucker "crutches", *béquilles*, *crochets*, *fourchettes*, "ring", Hochbrucker pedals.

2.3 Additional pedals

There are two extra pedals found on several harps which do not alter the vibrating length of a string. These are the *pédale à renforcement* and the *sourdine pedal*. These pedals alter the dynamics and quality of the sound produced. The main feature

[40] Harp no. 345 has this mechanism and this is the property of the author.

of the *pédale à renforcement* was to produce an undulating sound, a quasi-vibrato effect, whereas the *sourdine* pedal produced an echo effect from the vibrations of resonating strings.

2.3.1 Krumpholtz's *Pédale à renforcement*

The *pédale à renforcement* is an eighth pedal located on the left-hand side of the base of the harp and operated by the left foot.[41] When the pedal is pressed down, the mechanism opens five shutters which are located at the back of the resonance box of the harp. While playing, the movements of this pedal alter the dynamics and quality of the sound produced by pressing down, fixing and releasing (opening, fixing the shutters open and closing the shutters). It was invented by Krumpholtz and Naderman in 1785, and subsequently added to many harps built in both Paris and London. The invention was first described in Krumpholtz's *Principes* and the symbols are shown in fig. 3.34 and 3.35.[42] Krumpholtz names the eighth pedal a pedal "*à renforcement, à Sons prolongès, à Sons ondés*". It was referred to by several names, including *pédal de la soupape*,[43] "swell pedal" in English,[44] "Verstärkung" and "Tritt für die Klappe an dem Resonanzboden" in German.[45]

In Krumpholtz's *Principes*, there is a piece entitled *Étude pour le renforcement* where the symbols for the *pédale à renforcement* are notated in the score. This piece is actually the first movement, *Adagio*, of Krumpholtz's 6^{me} Sonate, Op. 14. Krumpholtz published other works with indications to show how and when to use this eighth pedal. These are Op. 14, *Amante Abandonée* and Op. 15. Works by other composers are discussed in section 4.5.1.

Both Madame de Genlis[46] and Bochsa discuss the *pédale à renforcement* at some length.[47] Madame Merelle transcribes Krumpholtz's symbols (fig. 3.36) and then applied the *pédale à renforcement* to nearly every piece in the second half of her method.[48]

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[41] Joël Dugot, "Sonorités inouïes: la nouvelle harpe de Messieurs Krumpholtz et Naderman," *Musique, Images, Instruments* 7 (2005): 86–109.

[42] See sections 3.6.1 and 4.5.1.

[43] Demar, *Méthode*, 12; Benoît Pollet, *Méthode de harpe* (Paris, c. 1817), 12; Xavier Desargus, *Nouvelle Méthode de Harpe* (Paris, 1803), 2; Comte St. Pierre de Newbourg, *La Nouvelle méthode françoise pour la harpe* (London, 1808), 3; Xavier Desargus, *Traité général sur l'art de jouer de la harpe* (Paris, 1821), 61. All of these above treatises illustrate the position of the *pédale a renforcement*, except for Nicolas-Charles Bochsa, *Petite méthode pour la harpe: particulièrement à l'usage des jeunes élèves renfermant les règles du doigté, des exercices en tous genres, et terminée par des leçons d'une difficulté progressive*, op. 61 (Paris: Dufaut & Dubois, 1822), 28.

[44] Henry Horn, *Rudiments for the Single and Double Movement Harp* (London: Goulding, D'Almaine, Potter & Co, 1816), 10; François-Joseph Dizi, *Ecole de Harpe* (London: Chappell, 1827), 5.

[45] Herbst, *Ueber die Harfe*, 14: "amplification"; Benoît Pollet, *Méthode de harpe*, Français avec la traduction allemande (Offenbach, n.d.), 12: "pedal for the shutters of the resonance box."

[46] Genlis, *Nouvelle méthode*, 1802, 12.

[47] Bochsa, *Nouvelle méthode*, 69.

[48] Madamoiselle Merelle, *New and Complete Instructions for the Pedal Harp in Two Books*, 1800, 22, 23–48.

Beat Wolf points out that the movement of opening and closing the shutters results in a change in the sound quality of the harp. The closed shutters give a warm timbre with more bass; the open shutters produce a clearer and lighter timbre. For an audience, the alteration, with respect to a change in volume, is probably inaudible, however a change in the sound quality can be heard.[49]

2.3.2 *Sourdine* and echo pedals

Two types of *sourdine* pedals were invented for the harp, one by Krumpholtz and the other by Cousineau, both with a different mechanism. The Krumpholtz *sourdine* pedal was operated by the left foot, located at the furthest extreme of the pedal box, while Cousineau's *sourdine* pedal was at the centre of the pedal box. It could have been operated by either foot. The *sourdine* pedals create an echo effect, by pressing down the *sourdine* pedal before playing, then releasing it after playing a chord. It creates a second muted sound, merely by the pedal action.

Krumpholtz's *Principes* includes no information on this ninth pedal. However, instructions on how to operate this pedal, a list of symbols and its notation are part of Krumpholtz's Opp. 14 and 15.[50] The description and diagrams of Krumpholtz's *sourdine* pedal, or "Dämpfer" is explained in length in the German method by Herbst.[51]

The second type of *sourdine* pedal was patented by Cousineau before 1802.[52] Musical examples are discussed in sections 3.6.2, 4.5.1, and 4.5.2.

2.3.3 Krumpholtz's *Contrebasse ou Clavicorde à marteau*

Another invention by Krumpholtz was his *Contrebasse ou Clavicorde à marteau*, which was built by Erard. It was first described in an open letter written by Beaumarchais in the *Journal de Paris* in February 1786 and Krumpholtz had already played it in public.[53] Beaumarchais states that it is commonly called a "Krumpholtz".

[49] Email correspondence with Beat Wolf, April 30, 2016. See also Jean-Loïc le Carrou, "Vibro-acoustique de la harpe de concert" (Doctorat, Académie de Nantes, École Doctorale de L'Université du Maine, 2006); J-L. Le Carrou et al., "Vibratory Study of Harp's Soundboxes," in *Proceedings of 20th International Symposium on Music Acoustics* (Sydney and Katoomba, Australia, 2010), 5. This article tested the soundboxes of harps with a *pédale à renforcement*, but the differences between a closed soundbox and an open one are not included in their paper.

[50] See section 4.5.1.

[51] Herbst, *Ueber die Harfe*, 13.

[52] Cousineau, *Méthode*, 1803, 62.

[53] Pierre Augustin Caron de Beaumarchais, "Arts," *Journal de Paris*, February 8, 1786. Pierre-Augustin Caron de Beaumarchais (1732-1799), French polymath. Donald Spinelli, "Beaumarchais, Krumpholtz, and the Harp: An Unidentified Letter," in *In Pluralism and Criticism*, ed. P. A. Giordano and A. J. Tamburri (West Layfayette, Indiana: Bordighera Press, 1999), 302-8. The letter is transcribed and translated into English in this article.

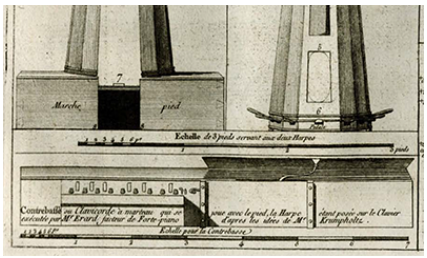

Figure 2.7: Krumpholtz's *Contrebasse ou Clavicorde à marteau*, Op. 14, 1788.

Thomas Jefferson and, Richard and Maria Cosway[54] visited Krumpholtz on August 2, 1786, in Paris.[55]

Correspondence from Jefferson to Francis Hopkinson discuss Krumpholtz's "Foot-bass". In a letter from December 23, 1786,[56] Hopkinson writes:

> I have lately examined a Foot-bass newly invented here, by the celebrated Krumfoltz [*sic*]. It is precisely a Piano forte about 10 feet long, 18 inches broad and 9 inches deep. It is of one octave only, from Fa to Fa. The part where the keys are, projects at the side in order to lengthen the levers of the keys, thus It is placed on the floor, and the harpsichord or other piano forte is set over it, the foot acting in concert on that while the fingers play on this. There are three unison chords to every note, of strong brass wire, and the lowest have wire wrapped on them as the lowest in the piano-forte. The chords give a fine, clear, deep tone, almost like the pipe of an organ."

Hopkinson replies on April 14, 1787:[57]

> "The Pedal to the Forte Piano is a good Thought. The Idea is taken from the Pedal Stop of a Church Organ."

The three inventions were presented to the *l'Academie Royale de Sciences* on November 17, 1787, the report was written on November 20 and accepted on November 21 of the same year.[58] On that occasion, Madame Krumpholtz[59] played

[54] Thomas Jefferson (1743-1826) 3rd president of the United States, Minister to France for the Congress of the Confederation 1784-89. Richard Cosway (1742–1821), English portrait painter. Maria Hadfield Cosway (1760-1838), English-Italian painter and educator.

[55] Thomas Jefferson, "Founders Online: From Thomas Jefferson to Maria Cosway, 12 October 1786," Letter, (October 12, 1786), http://founders.archives.gov/documents/Jefferson/01-10-02-0309.

[56] Thomas Jefferson, "Founders Online: From Thomas Jefferson to Francis Hopkinson," Letter, (December 23, 1786), http://founders.archives.gov/documents/Jefferson/01-10-02-0479.

[57] Francis Hopkinson, "Founders Online: To Thomas Jefferson from Francis Hopkinson," Letter, (April 14, 1787), http://founders.archives.gov/documents/Jefferson/01-11-02-0277.

[58] A-Wgm, Ms. The pages include the proposal of Vandermonde et Hauy for the *Academie* to hear Krumpholtz's new inventions, Krumpholtz's letter of presentation and an undated report of the presentation, which differs from the extract that is published in Op. 14. I thank Prof. Robert Adelson for re-discovering these pages.

[59] Anna Margarita/Anne/Julie Steckler-Krumpholtz (1766/68-1813), harpist and composer, second wife

the harp and the new "piano-forte contre basse"[60] and Krumpholtz played the violin.[61]

Sometime after November 1787, Naderman published Krumpholtz's Op. 14, which includes three folios, providing the technical and practical information regarding Krumpholtz's inventions.[62] The first folio *Planche 40 ou 10* describes the *sourdine* pedal, the second folio contains technical drawings of how to construct this ninth pedal and the final folio includes drawings of the shutters, the soundbox for the harp, the *Contrebasse ou Clavicorde à marteau*, a list of signs and symbols for the *pédale à renforcement* and an extract from the public presentation of all of these inventions at the *l'Academie Royale de Sciences*.

This drawing of the pedal board gives a range from F1 to G. It was placed under the harp and played low bass notes with the feet. A *pédalier* made by Erard and dated 1805 is preserved in the collection of the Musée de la Musique in Paris. The range of this instrument however is F1-c and Joel Dugot states that it would not be possible to place a harp above it.[63]

From the *Academie des Sciences'* report, Madame Krumpholtz performed Op. 14. It is not clear whether she performed both sonatas, or only Op. 14, *6^{me} Sonate*. Krumpholtz's *6^{me} Sonate* is the work with the most *pédale à renforcement* and *sourdine* pedal indications in any published score. But there are no indications for the *Contrebasse ou Clavicorde à marteau*. It is also not known what the Krumpholtz couple would have played together. There is no extent violin part for Op. 14. The *Amante abandonnée, Air Parodié sur l'Adagio de Œuvre XIV* for violin, voice, harp or piano and "contrebasse", on the other hand, does have a violin part and the "contrebasse" is not written on a separate staff, but shares the bass staff of the harpist's left hand. There are much fewer *pédale à renforcement* indications[64] in the *Amante abandonée* compared to the *6^{me} Sonate*. This could indicate that the harpist played the *Contrebasse ou Clavicorde à marteau* in this piece with the left foot. However, no singer is mentioned in any historical reference of the Krumpholtz' presentation.

Herbst dedicates a paragraph in his method to the "Contrabasse" or "Krumholz."[65] He writes that it is eight to nine feet long and one places the harp on top of it and plays both instruments upon a high stool.

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of Jean-Baptist Krumpholtz, mother of harpists Victor and Melanie Krumpholtz.

[60] "Registres de l'Academie Royale des Science", November 21, 1787, transcribed by Krumpholtz in Op. 14, 42.

[61] Dugot, "Sonorités inouïes," 87–109.

[62] Ibid., 108–9. Dugot transcribes the two folios.

[63] Ibid., 97. The author has not seen this *pédalier* in person.

[64] See section 4.5.1.

[65] Herbst, *Ueber die Harfe*, 14.

2.3.4 Cousineau's fourteen-pedal harp

Jacques-Georges Cousineau[66] invented a harp with fourteen pedals in 1782.[67] This harp has thirty-seven strings (range F-g3) and a *béquilles* mechanism.[68] It has two layers of pedals, the upper layer consists of seven short pedals and the lower layer has seven longer pedals. Each pedal alters a string by one semitone. The harp is tuned in C-flat major. The upper short pedals alter the seven strings of the octave from the flat to natural position and the lower longer pedals alter the seven strings from the natural to sharp position.[69]

Figure 5 *a. Hochbrucker single action*
b. Cousineau double-pedal single action
c. Erard single pedal double action

Figure 2.8: Cousineau fourteen-pedal harp, compared to other pedal mechanisms (After Maydwell, 1980).

The author has identified no music that specifically requires the use of the fourteen pedals. It is an example of an instrument building that precedes the musical developments of its time.

[66] Jacques-Georges Cousineau (1760-1836), harpist, composer and publisher, son of Georges Cousineau.

[67] Adelson, Roudier, and Duvernay, "Rediscovering Cousineau's Fourteen-Pedal Harp"; Antony Maydwell, "Georges and Jacques-Georges Cousineau and the Harp in the Latter Half of the Eighteenth Century," *Studies in Music (University of Western Australia)* 14 (1980): 67.

[68] See section 2.2.3.

[69] I had the privilege to string this harp and understand the pedals in 2011 with Prof. Robert Adelson. Robert Adelson, historical clarinetist, musicologist and organologist, and Professor of Music History and Organology at the Conservatoire à Rayonnement Régional de Nice, France. Between 2005 and 2016, he was Curator of France's second largest collection of historical musical instruments, housed in the Musée du Palais Lascaris in Nice.

Chapter 3

Treatises, Methods and Studies

This chapter is the first of five that review historical sources from the eighteenth and nineteenth centuries with respect to pedalling on a harp with a single-action pedal mechanism.[1] Harp treatises, methods and study books are the subject of this chapter. *Essai sur la vraie manière de jouer de La Harpe avec une Méthode de L'accorder* by Philippe-Jacques Meyer was published in 1763 and is the earliest dated pedal harp method.[2] All known eighteenth- and nineteenth-century harp treatises up to 1840 are discussed, even if they were written for other types of harps, but included the single-action harp in the title[3] or within the text.[4] Over one hundred harp treatises, methods and study books were written up to 1840.[5] The

[1] The word "harp" is used throughout this thesis to refer exclusively to a harp with a single-action pedal mechanism.

[2] Meyer, *Essai*.

[3] Horn, *Rudiments*; Charles Egan, *The Royal Harp Director, Being a New and Improved Treatise on the Single Double & Triple Movement Harps. Comprising the Essentials for Attaining a Perfect Knowledge of These Instruments & a Finished Execution on Each* (London: Power, 1827).

[4] Bochsa, *New and Improved Method*, Preface: "THE plan of this Method is entirely new: the Author having brought the Common Harp and the Harp with the Double Movement into a comparative point of view, and united all their relations—constantly treating the latter as a sequel to the former; and clearly proves, that whoever understands the one, will in a very short time be perfectly acquainted with the other." Bochsa's harp method in French was published in 1813 and his English method in 1819. The two methods complement each other; some of the content is the same and some is different. In general the English method has fewer descriptive passages on technique. The French method contains more pieces at the end of the method.

[5] Parker, *Child of Pure Harmony*, 67–69, includes twenty-nine harp treatises in his bibliography; Anthony Maydwell, "A Translation and Comparative Study of Two Methods for Harp by Philippe-Jacques Meyer from 1763 and 1773" (Master's Thesis, University of Western Australia, 1982) is a study of two of Phillip-Jacques Meyer's methods; Ursula M. Rempel, "Méthodes de Harpe: An Introduction to Eighteeth-Century Tutors," *The American Harp Journal* 8, no. 4 (1982): 15–28, discusses ten methods; Constance Luzzati, "Du clavecin à la harpe, transcription du répertoire français du XVIIIe siècle" (Doctorat, Paris 4, 2014) lists eighteen methods; Philippe Lescat, "Catalogue des ouvrages théoriques, manuscrits et imprimés en France entre 1660 et 1800," accessed March 28, 2016, http:

Bibliography and Tables 3.1-3.4. list all known treatises, methods and study books identified by the author.[6]

Most of the treatises and methods of the eighteenth century are written in French as Paris was the centre for teaching, performing and composition for the harp up to the French Revolution. The remaining treatises and methods are in English or German, while no original pedal harp treatises were written in Italian or Spanish before 1840.[7] Treatises and methods in German of this time are usually written for both the German *Hakenharfe* and pedal harps.[8] The treatises were written by well-known harpists who composed, taught and played, while some are the work of amateurs who played the harp.[9]

The content of the musical treatise or method book varies from one author to another and changes over time. Eighteenth century treatises usually include an introduction, a brief history of the instrument and famous performers. This is followed by practical issues such as how to change a string or repair the harp mechanism. Then there is an explanation of the lay-out of the pedals, how to tune the harp and how to put the harp into different keys using the pedals. Basic rudiments of music, hand positions, fingering, ornaments are often the subjects of further chapters. This is followed by exercises, simple pieces or *ariettes* with a harp accompaniment and examples of preludes in every key.

The harp is mentioned in some tuning manuals[10] and in general treatises on accompaniment or harmony.[11] Ragué's *L'Art de Préluder* is an important *basso continuo* and preluding treatise for the harp.[12]

The later nineteenth-century treatises usually focus on technique and fingering rather than general music theory, ornamentation or any sort of compositional techniques like *basso continuo* or preluding. These treatises include pages of technical exercises, scales, *arpeggi* and sample pieces or extracts from works by

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//www.philippe-lescat-asso.fr lists twenty-two; Barthel, "La harpe" lists thirty-three; *Harpe Méthodes-Traités-Dictionnaires et encyclopédies-Ouvrages généraux*, 3 vols. (Courlay, France: J.M. Fuzeau, 2002) contains twenty-four methods and treatises in facsimile editions.

[6]The author does not consider this a complete list, but this topic is beyond the scope of this thesis and the most current research cites no more than a third of the author's list. These tables are also found in Appendix I.

[7]Two treatises by Bochsa were translated, the first into Italian and the second into Spanish: Nicolas-Charles Bochsa, *Breve metodo per l'arpa: contenente le regole del digitare, alcuni analoghi esercizj e lezionj di progressiva difficoltà*, trans. D.N.E. Cattaneo, op. 61 (Milano: Ricordi, 1844); *Método de arpa conteniendo los principios de música, ejercicios, escalas, lecciones, seguidos de 40 estudios progresivos* (Paris: Schonenberger, 1840).

[8]These treatises and methods are written for both harps: Wernich, *Versuch*; Herbst, *Ueber die Harfe*; Schwanneburg, *Vollständiges theoretisch-praktisches Lehrbuch zur Davids-und Pedalharfe, mit vielen in Kupfer gestochen Figuren, Notenbeispielen und einem Anhange von Tonstücken, mit bezeichung des Fingersatzes*; Backofen, *Anleitung*, 1801; Heyse, *Anweisung* is written for the chromatic *Davidsharffe* and *Hakenharfe*.

[9]Newbourg, *La Nouvelle méthode*.

[10]*Mélopée moderne; ou, L'art du chant, réduit en principes* (Paris: Boyer, 1792).

[11]Honoré Garnier, *Nouvelle méthode pour l'accompagnement du clavecin: et bon pour les personnes qui pincent de la harpe* (Paris: Girard, 1767).

[12]Louis-Charles Ragué, *L' Art de Préluder sur la Harpe* (Paris: Le Duc, 1786).

other composers. By 1820, the principal treatises on how to play the harp are those by Bochsa[13] and Desargus.[14] Fewer and fewer treatises are published and study books become much more popular. These books include very little commentary, apart from short remarks before a study that highlight the object of the exercise.[15]

Appendix I.1, Tables I.1-I.4 lists, in chronological order, harp methods, treatises on *basso continuo*, accompanying, composing and improvising preludes, study and exercise books and finally tuning methods.

Even with this apparent wealth of material, few harp treatises and methods impart detailed information about how to pedal, or reveal any special way of pedalling. It would appear from this dearth of detailed information that pedalling was not considered very difficult or important when learning the harp in the eighteenth century. The principal reason for this is that most harp treatises, methods and the contemporary published repertoire were written for amateur harpists.[16] Complex modulations or chromatic melodic passages were rarely part of the repertoire of published airs with harp accompaniment so no detailed explanations regarding pedal moves were necessary to include in the treatises and methods. As Cousineau writes in his second treatise with regards to pedalling:

> "…je ne puis donner ici des regles certaines car en détaillant les différentes difficultés que l'on pourroit trouver, je pourrois devenir diffus et inintelligible pour une grande partie des commençants pour qui cet ouvrage est principalement fait. Je me propose donc de reserver une leçon pour cet article dans laquelle je serai enforte de prévoir les passages les plus difficiles que l'on peut rencontrer sur la Harpe…"[17]

Bochsa also writes:

> "Lorsque la harpe commença à être connue en France, il y a environ cinquante ans,…du mérite des compositions; de sorte que les modulations étant extrêmement simples, le jeu des pédale ne présentait aucune difficulté. Il n'en est plus de même aujourd'hui: quelques artistes plus ambitieux ont multiplié les modulations, et le jeu des pédales est devenu la plus grande difficulté de l'instrument."[18]

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[13] Bochsa, *Nouvelle méthode*.

[14] Xavier Desargus, *Cours complet de harpe...ouvrage divisé en 3 parties*, op. 18 (Paris, 1810).

[15] Nicolas-Charles Bochsa, *The Pupil's Companion for the Harp: Consisting of Forty Entirely New Progressive Studios, Vol. 1* (London: Goulding & D'Almaine, 1826), *8 Studio*, 7, *Andante* "all the chords to be well arpeggioed [*sic*]".

[16] See Chapter 4 for a discussion on harp repertoire.

[17] Cousineau, *Méthode*, 1784, 15: "I cannot give here certain rules because in detailing the various difficulties one might come across, I might become scattered and unintelligible for the greater part of the beginners for whom this work is written. I propose therefore to reserve a lesson on this subject in which I will vigorously predict the most difficult sections that can be encountered on the Harp…".

[18] Bochsa, *Nouvelle méthode*, 21: "When the harp began to be known in France, it was about fifty years ago,… with respect to compositions; the modulations were extremely simple, and moving pedals presented no difficulty. It is no longer true today: those more ambitious artists have multiplied the modulations, and moving pedals have become the greatest difficulty of the instrument."

For the purpose of this study, only aspects which pertain to pedalling on the harp shall be reviewed from treatises, methods and study books. These aspects include the "base" set-up key of the harp, any indications on how to place the feet or move the feet, historical terminology for moving pedals, musical examples, enharmonics, examples of how to move one, two and three pedals at a time, pedal *glissandi* and finally how to use the *pédale à renforcement* and *sourdine* pedals.

3.1 The "base" key

The first time pedals are usually mentioned in harp treatises is when the writer explains that the single-action harp has seven pedals to alter the pitch, three on the left side of the resonance box and four on the right. The pedals are named, or numbered and are illustrated. The earliest illustration of the pedals with their names is found in P. J. Meyer's method from 1774, shown in fig. 3.1.[19]

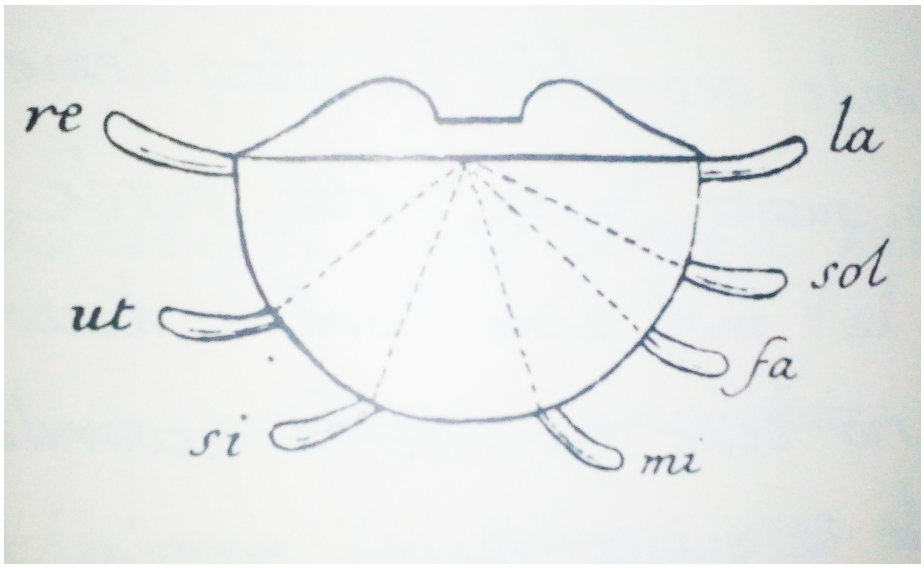

Figure 3.1: P. J. Meyer, *Nouvelle Méthode*, 3: position of the pedals.

Figure 3.2 shows Ragué's drawing of the position of the pedals. The open strings of the harp with the pedals in their natural upper position are written on each pedal as are the resulting notes when the pedals are "décrochées" or pressed down.[20]

The detailed drawing in fig. 3.3 shows the pedals and the resulting notes on a musical stave found in Horn's *Rudiments*.[21]

[19] Meyer, *Nouvelle méthode*, 3.
[20] Louis-Charles Ragué, *Principes de la harpe*, op. 8 (Paris: Le Duc, 1786), 7.
[21] Horn, *Rudiments*, 10.

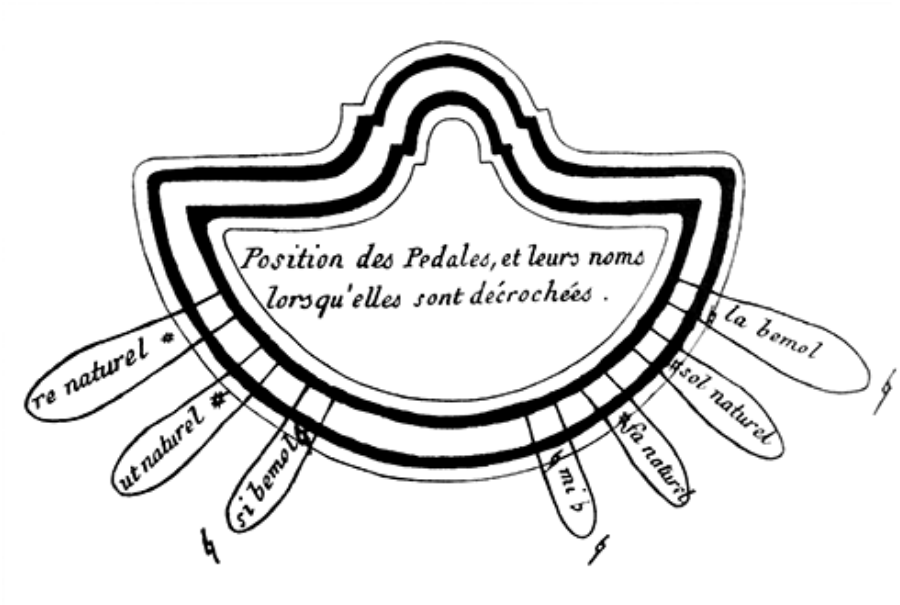

Figure 3.2: Ragué, *Principes*, 7: position of the pedals.

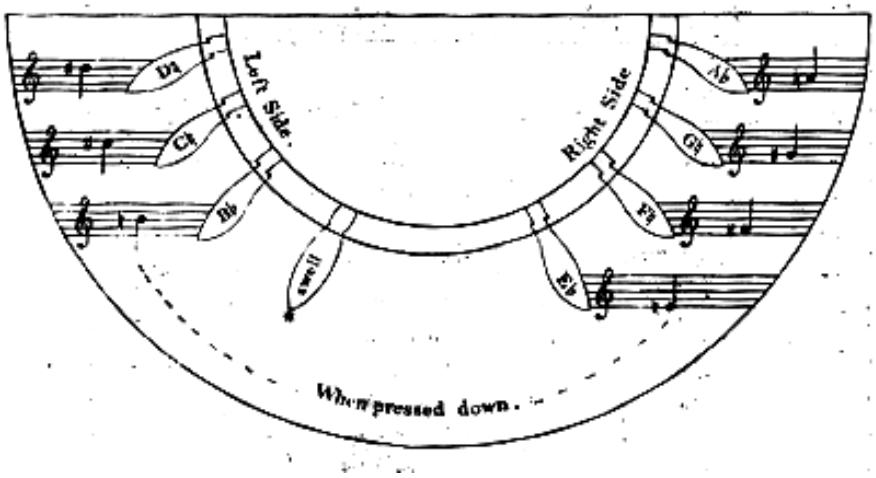

Figure 3.3: Horn, *Rudiments*, 10: position of the pedals.

John Erhardt Weippert's *Rotula* in fig. 3.4 is a unique tool to show the harpist what pedals to put up or down in order to produce a certain key. He explains:

> "By this ROTULA, you can immediately know what Pedals to put down, to Produce the different Keys, for Example if you wish to Put the Harp in one Sharp (which is the Key of G_) look on the Circular Staves, and bring the Moveable Index. R, to one Sharp it will Inform you that the Pedal No 1 4 5 3 must be put down, and then the Key is G_ in like manner for any other Key."[22]

Figure 3.4: Weippert's harp *Rotula*.

[22]John Erhardt Weippert (1739-1820), harpist and composer. John Erhardt Weippert, *Weippert's Instructions for the Pedal Harp: With a Rotula* (London: Bland & Weller, 1800). This *Rotula* was originally conceived for the single-action harp but was later modified John Thomas Craven for the double-action harp. John Thomas Craven (1788-1860), harpist, composer, teacher. John Thomas Craven, *Scale of the New Patent Harp and Explanation of the Double Action or Movement of the Pedals* (London, post 1811), 2-4.

This basic information is often followed by a section explaining how to set-up the harp with all seven pedals in the upper "open" position before playing a piece.[23] It is usually set-up in the "base" key of E-flat major. With this set-up, the harp can play in keys with three flats and four sharps, a total of thirteen keys are possible:

> Major keys: E♭, B♭, F, C, G, D, A, E
> Minor keys: C, G, D, A, E[24]

The following pitches are available to the harpist, when the harp is set-up in the "base" key of E-flat major:

> C♮, C♯, D♮, D♯, E♭, E♮, F♮, F♯, G♮, G♯, A♭, A♮, B♭, B♮.

This covers the complete 12 semitones of the chromatic scale, with two notes doubled, namely E♭/D♯ and A♭/G♯. There are two ways to achieve the missing enharmonic notes like C♭, D♭, E♯, F♭, G♭, A♯, B♯ and the remaining eleven keys of D♭, A♭, B, F♯, C♯ major and B, F♯, C♯, F, B♭, E♭ minor. One way is to tune the harp in an alternative "base" key to E-flat major and the second way is to replace a note which is not part of the "base" key spectrum with an enharmonic note.[25]

The harp can be set-up theoretically in any key as a "base" key, but the most common alternative set-up keys to E-flat major are B-flat or A-flat major.[26] B-flat major is usually given as an alternative "base" key in eighteenth-century harp treatises and methods as stated in P. J. Meyer, Corbelin and Cousineau.[27] Meyer's 1763 treatise is actually written for a harp set-up in the "base" key of B-flat major. He explains:

> "Le premier *allegretto* & *Adagio* sont dans le mode de *mib*, & il faudra pour cet effet accorder le *la* naturel en *lab*, pour toutes ces autres pieces, on peut laisser le *la* dans le ton naturel."[28]

In treatises published after 1800, B-flat major is no longer mentioned as an alternative "base" key to E-flat major.[29] It is replaced by A-flat major as a possible alternative key as found in treatises by Merelle, Demar and Desargus.[30] Already in 1786 Ragué stated:

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[23] See section 2.1 for tuning, temperament and pitch.

[24] Corbelin, *Méthode*, 32–33; Bochsa, *Nouvelle méthode*, 16–17.

[25] See section 3.3 on enharmonics.

[26] For other possible alternative "base" keys besides the three mentioned above, see Corbelin, *Méthode*, 30-31: F and C; Cousineau, *Méthode*, 1784, 14: B, F-sharp and C-sharp minor; Ragué, *Principes*, 11: D-flat, G-flat; *Méthode de harpe avec laquelle on peut accompagner à livre ouvert toutes sortes d'ariettes et de chansons* (Paris: Boüin, 1787), 11, 26: C-flat. This last solution may be referring to Cousineau's fourteen-pedal harp. See section 1.4.2 on the fourteen-pedal harp.

[27] Meyer, *Essai*, 4; Corbelin, *Méthode*, 31; Cousineau, *Méthode*, 1784, 14.

[28] Meyer, *Essai*, 5: "The first *allegretto* and *Adagio* are in the mode of E♭, and one ought to tune for this result, the A natural as A♭; for all the other pieces, one can leave the A as A natural."

[29] Krumpholtz, *Principes*, 14. This treatise includes B-flat as an alternative "base" key. It was published in 1809 by Jean-Marie Plane (1774-post-1827), harpist and composer, but if the treatise was actually written by Krumpholtz, then it pre-dates 1790 and hence can be considered an eighteenth-century treatise.

[30] Merelle, *New and Complete Instructions*, 22; Demar, *Méthode*, 12; Desargus, *Cours complet*, 1810, 28.

> "La Harpe est ordinairement accordée en mi [*sic*] Majeur, mais depuis qu'il éxiste des morceaux en la [*sic*] Majeur et en fa mineur, je crois qu'il vaut mieux l'accorder en la [*sic*] Majeur."[31]

Challoner writes:

> "Sometimes Sonatas &c: for the Harp are written in the Key of A-flat it then of course becomes necessary to tune all the D.s on the Instrument half a Note lower than usual by making each a perfect 5th to the A♭ above. The compositions in the key of A-flat have generally a beautiful and a superior effect, yet as it is troublesome to tune the Harp purposely for executing in this key, there are but few works published in A-flat, and they are chiefly Sonatas by Cardon."[32]

Backofen is the only writer in the nineteenth-century that still includes B-flat major as an alternative set-up key. He also proposes F major to perform a *Prélude* by Krumpholtz.[33] The first edition of his method is not exclusively written for the single-action harp, but also for the German *Hakenharfen*, which is usually set-up in the keys of F or B-flat major.[34]

3.2 Position of the feet

Harp methods provide few detailed descriptions on how to place the feet. Cousineau simply writes that the foot is "posé sur une pédale"[35] in his first method. In his second method he adds, in the context of students of the harp and especially children who have their feet underneath the chair or resting on the stretcher:

> "il est très essentiel que les deux pieds soyent toujours posés en face des pédales et à une distance peu eloignée, afin qu'il n'y ait qu'un très petit mouvement à faire pour les attendre; il faut avoir le soin d'en retirer le pied du moment où l'on a obtenu l'effet desiré et le poser de suite à terre comme auparavant; faute de prendre cette précaution, on arrive trop tard sur la pédale".[36]

Positioning the feet in front of the pedals indeed works well for pieces written by Cousineau, considering that his works entail only single pedal moves: one pedal with one foot at a time.

[31] Ragué, *Principes*, 3: "The Harp is usually tuned in E♭ Major, but since there are pieces in A♭ Major and in F minor, I think it is better to tune in A♭ Major." The flat sign is not printed in the publication, but there is a space where it should be. The flat signs were eventually not inserted before going to print.

[32] Challoner, *A New Preceptor*, 22.

[33] Backofen, *Anleitung*, 1801, 48.

[34] See section 1.3.1.

[35] Cousineau, *Méthode*, 1784, 14: "the foot placed on the pedal".

[36] Cousineau, *Méthode*, 1803, 14: "It is very important that both feet are always placed in front of the pedals and at a distance not far away, so there is a very small movement to do for the [the feet] to reach; one must be able to remove the foot at any moment in order to achieve the desired effect and to place it quickly on the ground as before; if one does not take this precaution, one arrives too late on the pedal".

Bochsa, however, writes a long section in his 1813 *Méthode* discussing the correlation between the sitting position at the harp, the position of the feet and moving pedals.

> "il faut autant, et peut-être plus encore de prestesse et d'agilité dans les pieds que dans les mains: on est souvent forcé, dans les allegro très-vifs, de baisser et lever immédiatement plusieurs pédales de suite, avec la même vitesse employée par les doigts,…il est impossible que les pieds exécutent des mouvements si vifs, et qui se suivent de is près, se l'exécutant n'acquiert leur libre disposition en se tenant dans une situation constante et invariable, sans être forcé concourir l'usage des pieds et des jambes au maintien de l'équilibre du corps.
>
> "je suppose d'abord que la harpe soit fixée dans sa situation naturelle,…en serrant les pieds pour les porter sur les pédales; il n'a que la moitié des cuisses hors du siége…s'il est obligé de lever les deux pieds à la fois, et qu'il s'est placé assez près de la harpe pour en toucher de l'épaule la table d'harmonie; si, dans cette position, ses jambes sont verticales, ses pieds déborderont nécessairement la colonne de la harpe: il faudra donc, pour les porter sur les pédales, qu'il commence par les retirer en arrière, en faisant faire è ses jambes au angle très-aigu du côté du corps."[37]

Bochsa published his first English method in 1819. The Erard double-action pedal harp was patented in 1810 and this method is clearly written for the new type of pedal harp. The exercises are now in C major, whereas exercises in single-action harp methods are usually in E-flat major. However, Bochsa dedicates some parts of the book specifically to the single-action harp. His feet and pedal instructions in this method are a truncated version of his *Méthode* in French:

> "The Legs must be placed so that the Feet may be on each side of the Pedestal: they must rest on the ground in a vertical position, rather inclining forwards than backwards, that they may be lifted easily, to be placed on the Pedals."
>
> "the pedals are moved by pressing on any of them the extremity of the foot (either right or left)."

[37] Bochsa, *Nouvelle méthode*, 20–21: "…it takes as much, and perhaps more quickness and agility in the feet than in the hands: one is often forced, in the fast *allegros*, to rapidly lower and raise several pedals at a time, with the same speed employed by the fingers…it is impossible that the feet make movements so fast, and in so quick a sequel, and it follows that, if the performer does not acquire their freedom by staying in a constant and fixed position, without being forced to use the feet and legs to maintain the balance of the body. I assume firstly that the harp is fixed in its natural position…one closes the legs to use them for the pedals; only half the thighs are off the chair…if one is obliged to raise both feet at once, then one places oneself close enough to touch the soundboard of the harp with the shoulder. In this position, the legs are vertical, the feet hence reach out beyond the column of the harp: one therefore, brings the feet towards the pedals, by reclining backwards, the legs making an acute angle on one side of the body."

> "** In pressing the Pedal only the extremity of the foot must be used, the heels must be kept elevated."[38]

In Bochsa's *Tasteful Exercises* he once again iterates:

> "For using the Pedals with both feet to facilitate the action of the feet, which are both engaged at the same time, the knees must press the body of the instrument."[39]

Bochsa describes a sitting position, where the harpist sits half-off the seat of a chair. The whole foot is lifted when the toe ("the extremity") is placed on the pedal in order to move it. To balance the instrument the knees grip the harp in order to stabilise it. If both feet are required to move pedals together, then the harp can also be additionally balanced on the right shoulder. To move a pedal then, the whole leg is lifted.

3.3 Enharmonics

There is hardly a treatise for the harp that does not discuss at length the fact that each note of the scale has two names, usually referred to as a note's enharmonic name.[40] No method or treatise confronts the dilemma that in unequal temperaments, a note and its enharmonic are two different sounding pitches. It would appear from this group of historical sources, that the single-action harp was tuned in equal pitch, so a note and its enharmonic would have the same Hertz measurement.[41] As Meyer states:

> "Ces mêmes dièses deviennent aussi des ♭ sur la Harpe, selon la modulation laquelle on joue: sçavoir, fa♯ devient sol♭, sol♯ devient la♭, la♯ devient si♭, ut♯ devient ré♭, ré♯ devient mi♭".[42]

Krumpholtz shows the enharmonic options with a musical example as shown in fig. 3.5:

Enharmonics are part of harp playing for two separate but related issues. The first issue is simply the theoretical fact that each note can be called by at least

[38] Bochsa, *New and Improved Method*, 12, 35. Bochsa discusses the single-action harp on pages 8, 9, 11, 20, 35, 38-43. This is repeated in the French edition: Bochsa, *Petite méthode*, 14.

[39] Nicolas-Charles Bochsa, *Tasteful Exercises for the Harp on a Favorite Melody by H.R. Bishop: Being the First Class of the Appendix to the General Course of Instructions for the Harp* (London: Goulding and D'Almaine, 1826), 10. This book does not specify any particular type of pedal harp, but all the musical examples are playable on the single-action harp.

[40] Julian Rushton, "Enharmonic," *Grove Music Online* (Oxford University Press), accessed April 7, 2016, http://www.oxfordmusiconline.com/subscriber/article/grove/music/08837. Theoretically every note of the scale can be "spelled" in three ways: B♯ = C = D♭♭, but double flats or sharps are generally not part of the music for the harp.

[41] See section 2.1 for further discussion on pitch, temperament and tuning.

[42] Meyer, *Essai*, 4: "The same sharp can also become a flat on the harp, according to the modulation that we play: meaning, F♯ becomes G♭, G♯ becomes A♭, A♯ becomes B♭, C♯ becomes D♭, D♯ becomes E♭."

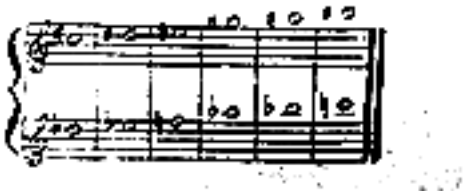

Figure 3.5: Krumpholtz, *Principes*, 14.

two names in equal temperament, for example C♯ and D♭. The second issue is that two pitches like C♯ and D♭ can be played with two different strings and are also interchangeable in equal temperament. If a harp is set-up in the base key of A-flat major, the D string is then tuned for the two pitches D♭ and D♮. Therefore, if a C♯ or a D♭ is notated in the score, the harpist can choose between two strings to play one note. On the other hand, in this same set-up key, the A string is tuned to play A♭ and A♮. If an A♯ is written in the score, the harpist has only one possibility to play A♯: reading it as B♭, using the B string and moving the B pedal.

Enharmonics are explained in great detail in most methods and treatises showing that it was very important to aid the harpists to understand that the notes written on the eighteenth- and nineteenth-century musical scores may have to be played with a different string and using a different pedal. This is due to the fact that the music on the score was invariably notated correctly according to the rules of harmony, rather than to assist the harpist by writing the enharmonic note in the score for ease of reading.[43]

The two examples in fig. 3.6 by Cardon show the harpist how to play a passage using C♯ when D♭ is written in the music (upper line of Fig. 3.6.), and using F♯ when G♭ is notated (lower line of Fig. 3.6.). It can be assumed from the first example that Cardon is showing an enharmonic solution for a harp set-up in the key of E-flat major.[44] If the harp was tuned in A-flat major, the exercise showing the use of enharmonics would be redundant. The examples to the left on both lines, show how the music is notated, the examples to the right on both lines show how the harpist should play the music, replacing D♭ with C♯. The lower line shows how to play G♭, as it is rarely part of the "open" strings on the harp.[45] The two G♭'s in this example are substituted by the enharmonic F♯.[46]

This *Air* in fig. 3.7 is part of Desargus' *Nouvelle Méthode* and provides the harpist with a practical example of how to play A♯. A♯ is rarely part of the set-up key of the

[43]The practice of writing the actual string that a harpist will pluck in the music is common practice today. This assists the harpist when playing but does not respect the implied rules of harmony in a piece.

[44]*L' Art de jouer de la harpe*, op. 12 (Paris: Cousineau, 1784), 34. Cardon includes one short *Prélude* for a harp set-up in A-flat major, while the remainder of the method is for a harp tuned in E-flat major.

[45]Spohr's WoO 27/28 is written for a harp with a set-up key of D-flat major.

[46]Similar musical examples are found in Naderman, *École*, 93.

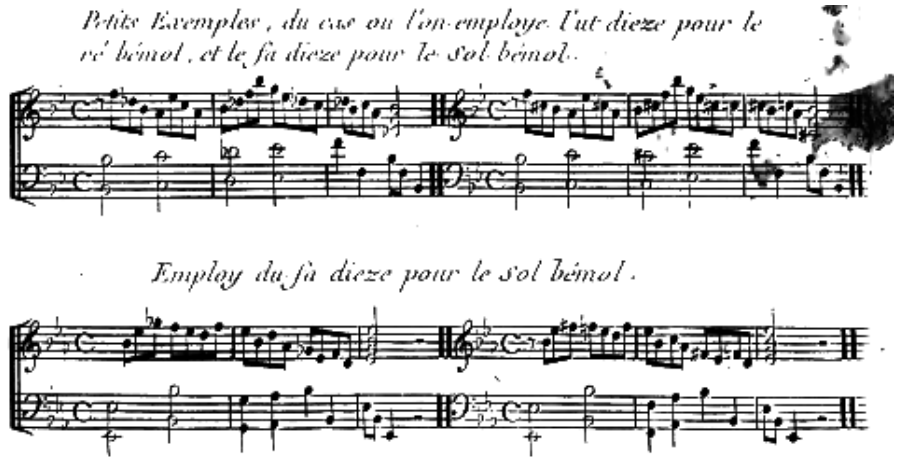

Figure 3.6: Cardon, *l'Art de jouer*, 11.

harp in the nineteenth century.[47] Desargus writes between the staves of the final bars of the second line of music "la♯ se fait avec si♭".[48]

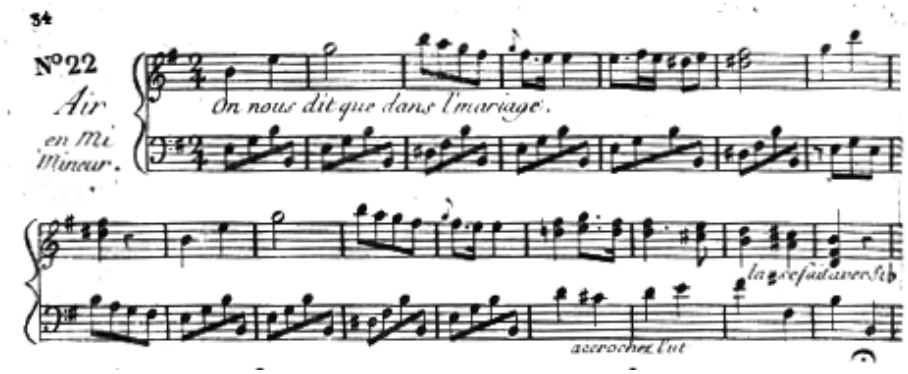

Figure 3.7: Desargus, *Nouvelle Méthode*, 34.

The *Simphonie* no. 1, Op. 11 in fig. 3.8 by Krumpholtz is included in Pollet's *Méthode*[49] and shows many examples of a shorthand that became popular when indicating the enharmonic solution to the harpist in the context of a piece. This work is written for the set-up key of E-flat major, as is the case for most of Krumpholtz's

[47] It was however more usual up to the 1780's and is the set-up key when playing Mozart's *Concertante a La Harpe, e Flauto*, K.299.

[48] Desargus, *Nouvelle méthode*, 34: "A♯ is done with B♭". Similar examples can be found on p. 43; Desargus, *Traité général*, 62, 74, 108; Nicolas-Charles Bochsa, *Introductory Exercises or Studies for the Harp* (London: Chappell, 1825), 16.

[49] Pollet, *Méthode*, c. 1817, 108.

music.[50] In the second half of bar 210 "ut♯" is written underneath the notated D♭. There is another example in bar 215 where "sol♯" is written underneath the notated A♭. This indicates to the harpist to use the enharmonic alternatives to play the written pitches. This example also shows that the composer, Krumpholtz, wrote the music according to the rules of harmony, notating D♭'s in bars 210-11 and 213 whereas bar 214 has a notated C♯. In practice, all these D♭'s are played as C♯, but if the harp does not include all of the written pitches on the score, which depends on the "base" set-up key of the instrument, the harpist must find the enharmonic alternatives for themselves.

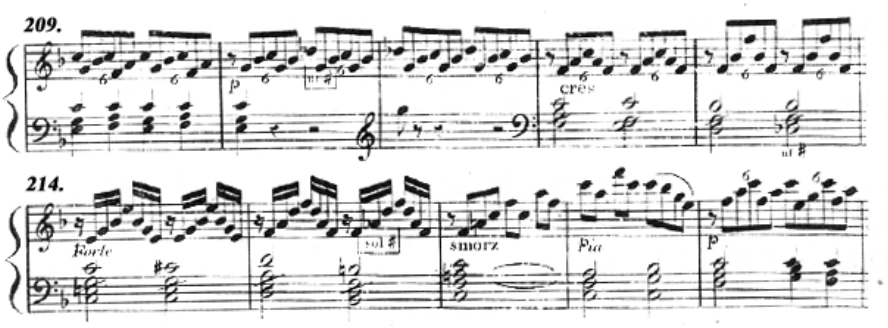

Figure 3.8: Pollet, *Méthode*, 79.

It is interesting that Backofen discusses enharmonics, but from the perspective of how to name chords. He writes:

> "Es giebt in den Kompositionen für die Pedalharfe (besonders in den Krumpholtzischen) Sätze, welche wohl für denjenigen Harfenspieler leicht sind, der sehr fertig im Notenlesen, in den Pedalen, und (welches schon viele theoretische Kenntnisse des Generalbasses voraussetzt) im Voraussehen der Ausweichungen ist; demjenigen aber, der diese Eigenschaften nicht in so hohem Grade besitzt, unausführbar scheinen. Hierunter gehören vorzüglich rasche Uebergänge…Vorher muss ich aber noch bemerken, dass die Franzosen meistens die ♯6 statt der ♭7 setzen, welches sie wahrscheinlich blos in der Absicht thun, um die zu tretenden Pedale deutlicher anzuzeigen."[51]

The first example in fig. 3.9 would appear to show, according to Backofen, the typical "French" way of writing for the harp, notating the score with augmented

[50] See section 4.1 for Krumpholtz's remarks on the "base" set-up key for his repertoire.

[51] Backofen, *Anleitung*, 1801, 49: "There are in the works for harp (particularly movements by Krumpholtz), which for those harp players are easy, when very skilled in reading music, [in using the] pedals, and (those who already have sufficient theoretical knowledge of *basso continuo*) in anticipating the harmonic digressions (enharmonics), but for the players who do not have these skills to a high degree, they might seem impossible to play. Here under are [some] excellent fast modulations…Before I have to remark, that the French usually replace the ♭7 with the ♯6, which they probably do, with the intention to show the pedal movements clearly."

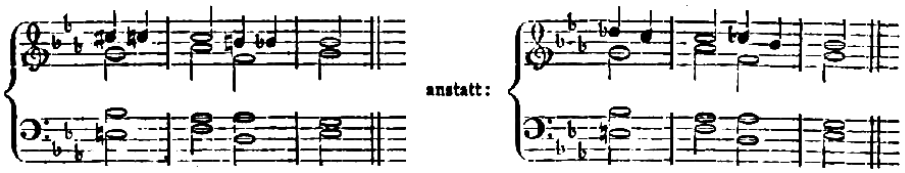

Figure 3.9: Backofen, *Anleitung*, 49.

sixth chords which instantly show the pedal solutions for the harpist. Alternatively, the second example is the same music, but this time it is notated with diminished seventh chords. As seen from Fig. 3.8, it was not always the case that the "French" (Pollet) or music published in France (Krumpholtz), used ♯6 chords rather than ♭7 in their scores in order to make reading a score easier.[52]

Naderman uses the term *Synonymes* when writing about the six most common enharmonic alternatives used on the harp.[53] Four are displayed in the short piece in fig. 3.10, with this explanation preceding the piece:

> "le nom des Pédales qui se trouvent entre les petite Parenthèses, () signifie celui du Synonyme avec lequel on produit le son emprunteé".[54]

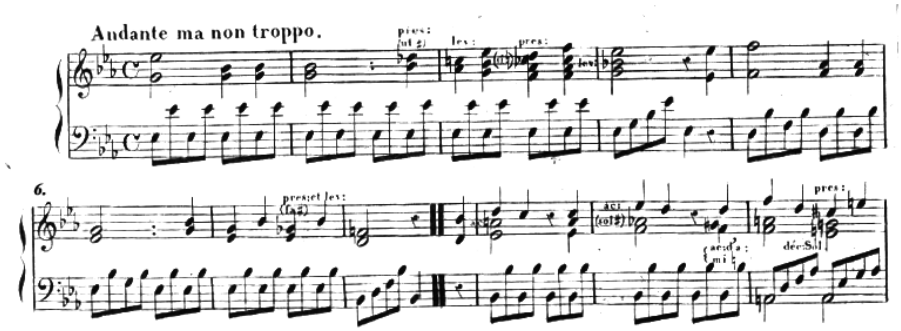

Figure 3.10: Naderman, *École*, 95.

The four enharmonic solutions can be found in bar 2, where the notated D♭ is played as a C♯, in bar 3 the C♭ is played as a B♮, in bar 7 the G♭ is played as F♯ and in bar 10 the A♭ is played as a G♯.

Enharmonics are also referred to by Bochsa as "borrowed notes", "note substituée" or "Note d'emprunt" and finally as "Enharmonic transitions".[55]

[52] The author has found no example yet of what Backofen describes. The relationship between harmony and the choice of pedals is beyond the scope of this thesis.

[53] These are not the same six as in fig. 3.5.

[54] Naderman, *École*, 94: "the name of the pedals that are located here between the small brackets, () means that it is with this enharmonic one produces a borrowed sound."

[55] Bochsa, *New and Improved Method*, 43; Bochsa, *Nouvelle méthode*, 47; Nicolas-Charles Bochsa,

It is my opinion that these early examples of writing the enharmonic note above or below the music stave-which are also the pedal solutions-are the first examples of pedal markings. As such, they are a precursor to the pedal markings that modern harpists write in their scores today.

3.4 *Jeu des pédales*

Harp treatises and methods often include a chapter on the various ways to move those pedals that change the vibrating length of a string, which is referred to as the *jeu des pédales*.[56] This entails pressing down the pedal, releasing the pedal, fixing and unfixing the pedal.

The first warning about fixing and unfixing pedals is given by Cousineau in his first *Méthode*:

> "que l'on ne doit accrocher une pédale que dans deux cas, le premier lorsqu'elle est à la clef, et qu'elle regne dans une partie du morçeau: et le second, lorsqu'ayant le pied posé sur une pédale, on apperçoit dans la mesure suivant le besoin d'en accrocher une autre, et de conserver en même tems celle sur laquelle on a déjà le pied posé, alors il faut accrocher celle ci, poser ensuite le pied sur celle dont on a besoin et revenir après s'en être servi sur celle que l'on avoit d'abord accrochée."[57]

The advice of Madame de Genlis is very similar:

> "Quand on ne veut faire qu'une note de passage on se contente d'appuyer le pied, quand le changement de ton est plus durable on arrête la pédale ce qui se fait par deux mouvemens au lieu d'un, d'abord on appui ensuite on tire le pied en dedans, vers I'autre pied, c'est ce dernier mouvement qui arrête la pédale. Quand on veut ôter la pédale il faut faire un mouvement contraire. On reviendra sur cet article et l'on donnera une leçon entière sur les pédales, ce qu'on vient de dire suffit pour la première leçon."[58]

Preparation à l'étude, two hundred short miscellaneous & independent passages for the harp, no. 4, vol. 4 (London: D'Almaine & Co., n.d.), 8.

[56] Krumpholtz, *Principes*, 60; Bochsa, *Nouvelle méthode*, 12.

[57] Cousineau, *Méthode*, 1803, 14: "one should fix a pedal in two situations only, the first when it [the pedal] is in the key, and it is a principal key of a section of a piece: and the second, when the foot is already placed on a pedal, but we perceive the need for another accidental in the following bar, and to retain this initial pedal which the foot is placed already on, then we must fix this one, then place the foot on the one that one needs and return afterwards to make use of that one we first had fixed."

[58] Genlis, *Nouvelle méthode*, 1802, 18: "When one plays a passing note, one can simply press down the foot, when the key change is for a longer time the pedal is fixed which is done by two movements instead of one, first pressed down then the foot is pulled inwards, towards the other foot, it is this last movement that fixes the pedal. When one wants to remove the pedal, the opposite movement is done. We will return to this article and an entire lesson will be given on the pedals, enough has been said for the first lesson."

Desargus defines the pedals movements concisely:

> "Quand on se sert d'une pédale accidentellement, il faut mettre seulement le piéd dessus, et quand il faut que la note reste dièze ou bécarre, alors on l'accroche."[59]

The action is described in Bochsa's method in English:

> "when a sharp or natural is accidentally introduced, the pedal need not be fixed into the notch, but kept down with the foot during the length of the note: but when the sharp or natural is after the clef, or when the modulation lasts for sometime, the pedal must be fixed, after having been pressed, by drawing it into the notch cut on purpose in the pedestal of the harp this gives the performer the free use of his foot for another pedal if wanted."[60]

From these descriptions, it can be concluded that a pedal is pressed down and fixed in the lower notch only when it is required for the key of the piece, when a piece modulates, or when the same foot needs to move one pedal and then another pedal. In this latter case, the first pedal is fixed. In all other cases a pedal is simply pressed down just before it is required and then released as soon as possible. This implies that the harpist reacts when they see any accidental written in the score. A pedal movement is not planned and occurs in "real-time" while the harpist is playing a piece.[61]

Krumpholtz cautions the harpist with regard to moving pedals:

> "Il ne faut jamais attendre le dernier moment pour mettre une pédale, ou la décrocher, et le passage ne permet pas de la disposer d'avance, il faut avoir le pied posé dessus, pour appuyer, ou lacher au moment convenable, àfin de ne point gêner la précision de la mesure.
> 2. Lorsque la pédale a produit son effet, il ne faut point se hâter de la quitter, quel qu'on n'en âit plus besoin; car les dernieres vibration de la note se continuent quelque fois, et sont entendre un son faux, ou un ferraillement désagréable; il faut donc la retenir jusqu'à ce qu'on âit fait sonner une note ou deux.
> 3. On doit aussi éviter les mouvemens brusques, dont l'effet est de fatiguer la mécanique, et de faire entendre un cliquetis qui n'est rien moins qu'harmonieux.
> 4. Les pieds doivent agir sans que le corps partagé leurs mouvemens;

[59] Desargus, *Nouvelle méthode*, 2: "When one uses a pedal in passing, the foot is simply put on it, and when a note continues to be sharpened or flattened, then one fixes it." The same quote can be found in Demar, *Méthode*, 12.

[60] Bochsa, *New and Improved Method*, 35.

[61] Similar statements can be found in Merelle, *New and Complete Instructions*, 21. Mademoiselle Mérelle (active 1800), harpist and teacher. See Neil Jefferas, "Pastels & Pastellists: The Dictionary of Pastellists Before 1800," accessed March 26, 2016, http://www.pastellists.com/ for possible family genealogy. Naderman, *École*, 23; F. C. Meyer, *A New Treatise on the Art of Playing Upon the Double Movement Harp* (London, 1825), 82.

> et les harpistes qui mettent à cela un certain charlatanisme, pour faire voir la difficulté des morceaux qu'ils exécutent, devroient bien songer que les tourmens apparens qu'ils se donnent, ne vont ni è l'oreille ni su cœur, et ne sont pour les yeux qu'un spectacle pénible, plus propre à déceler l'impuissance, que la supériorité du talent.[62]

These are cautionary recommendations to harpists to react quickly to the accidental written in the score and not to be too late when moving a pedal, and also to listen for the vibrations of the strings so a pedal is not released too soon. He emphasises the fact that pedalling is a gentle art and that pedalling can disturb the performance.[63]

3.4.1 Historical terminology

Pedal actions are described in harp treatises and methods in many ways:

Fixing a pedal: "fix,"[64] "fixing,"[65] "accrocher,"[66] "fixed,"[67] "arrête la pédale,"[68] "fixant,"[69] "gesteckt".[70]

Unfixing a pedal: "unfix,"[71] "not fixing,"[72] "decrocher,"[73] "ôter la pédale"[74] "aufgemacht."[75]

Press pedal down (and hold without fixing): "il faut mettre seulement le piéd

[62] Krumpholtz, *Principes*, 14-15: "None should never wait until the last moment to put in a pedal, or to release it, and when the passage does not contain the pedal, one must have the foot on it for pressing down, or letting go at a convenient moment, when it does not to interfere with the accuracy of the bar. 2. When the pedal has produced its effect, we must not hurry to leave, that [pedal] which we no longer need; as the last vibrations of the note can continue sometimes, and an error could be heard, or disagreeable noises; so it must be retained until one or two notes are played. 3. Sudden movements ought to be avoided, whose effect can wear down the mechanism, and rattling can be heard that has nothing to do with harmonious things. 4. The feet should react without the body sharing their movements; and harpists who pertain to this charlatan behaviour, to show off the difficulty of the pieces they perform, ought to consider well the visual pain they give, they will neither know nor hear nor feel, and not see the painful sight, that merely declares impotence, and not superiority of talent."

[63] See Chapter 7 for social consequences of pedalling.

[64] Merelle, *New and Complete Instructions*, 21.

[65] Nicolas-Charles Bochsa, *The First Six Weeks or, Daily Precepts and Examples for the Harp, on a Plan Entirely New, and Particularly Adapted for Beginners on That Instrument. The Whole Illustrated by Progressive and Useful* (London, D'Almaine, 1826), 25; Bochsa, *Tasteful Exercises*, 9.

[66] Demar, *Méthode*, 12; Desargus, *Nouvelle méthode*; Cousineau, *Méthode*, 1803, 14; Bochsa, *Nouvelle méthode*, 19; Naderman, *École*, 94.

[67] Bochsa, *New and Improved Method*, 35.

[68] Genlis, *Nouvelle méthode*, 1802, 18.

[69] Krumpholtz, *Principes*, 14.

[70] Backofen, *Anleitung*, 1801, 49.

[71] Merelle, *New and Complete Instructions*, 21.

[72] Bochsa, *The First Six Weeks*, 25.

[73] Krumpholtz, *Principes*, 14; Bochsa, *Nouvelle méthode*, 19; Naderman, *École*, 94.

[74] Genlis, *Nouvelle méthode*, 1802, 18.

[75] Backofen, *Anleitung*, 1801, 49.

dessus,"[76] "posé,"[77] "baissez,"[78] "pressing down,"[79] "appuyer,"[80] "presser,"[81] "Pédale accidentelle,"[82] "nicht gesteckt".[83]

Release a pedal: "lachez la pédale,"[84] "lacher,"[85] "lever".[86]

3.4.2 Symbols, abbreviations

Many methods include musical examples, sometimes short phrases or pieces. The pedal movements are written either before the musical example, in order for the harpist to fix the correct pedals according to the key of the piece, or during the piece. Backofen proposes a unique system of showing which pedals to move in a piece, by placing the pedal movements on an inner musical stave.

> "Im folgenden Beyspiel werden diejenigen Pedale, die ich in der mittlern Linie anführe, und die mit einem Querstrich bezeichnet sind, nicht gesteckt, sondern nur die mit einem + bezeichneten. Die mit einem o, werden aufgemacht."[87]

Figure 3.11 is an example of this three-staved music notation. In bar 1, the A pedal is unfixed to begin the piece. In bar 3 the left foot presses the B pedal down and holds it until bar 6, which is actually an empty bar in the inner stave. This is more likely a publishing error, as the B should be marked here with an "o" above it to release the pedal on the first crochet of the bar. In bar 5, the right foot fixes the A pedal. In bar 7, the right foot presses the F pedal down and holds it until the first crochet of bar 10, where an F marked with an "o" above it should be notated on the middle stave. On the second crochet of bar 10, the right foot presses the E pedal down and holds it until bar 14, as written. In bar 11, the left foot presses the C pedal down and holds, also until bar 14, where it should be released with the E. In bar 15, the left foot presses the B pedal down and the right foot presses the G pedal down and both are held until the first crochet of bar 18.[88]

Figures 3.11 and 3.18 are fascinating examples that show that pedals can be simply pressed down and held over several bars, and that this was normal practice, rather

[76] Demar, *Méthode*, 12; Desargus, *Nouvelle méthode*, 2.
[77] Cousineau, *Méthode*, 1803, 14.
[78] Pollet, *Méthode*, c. 1817, 14.
[79] Bochsa, *New and Improved Method*, 35.
[80] Genlis, *Nouvelle méthode*, 1802, 18.
[81] Naderman, *École*, 94.
[82] Ibid., 23, 94.
[83] Backofen, *Anleitung*, 1801, 49.
[84] Pollet, *Méthode*, c. 1817, 14.
[85] Krumpholtz, *Principes*, 14.
[86] Naderman, *École*, 94.
[87] Johann Georg Heinrich Backofen, *Anleitung zum Harfenspiel*, Neue Ausgabe (Leipzig: Breitkopf und Härtel, 1807), 49: "In the following example, those pedals that I show in the middle line, and those denoted with a line are not fixed, only those marked with a +. Those with an o, are to be unfixed."
[88] Another section of this same piece is found in fig. 3.18.

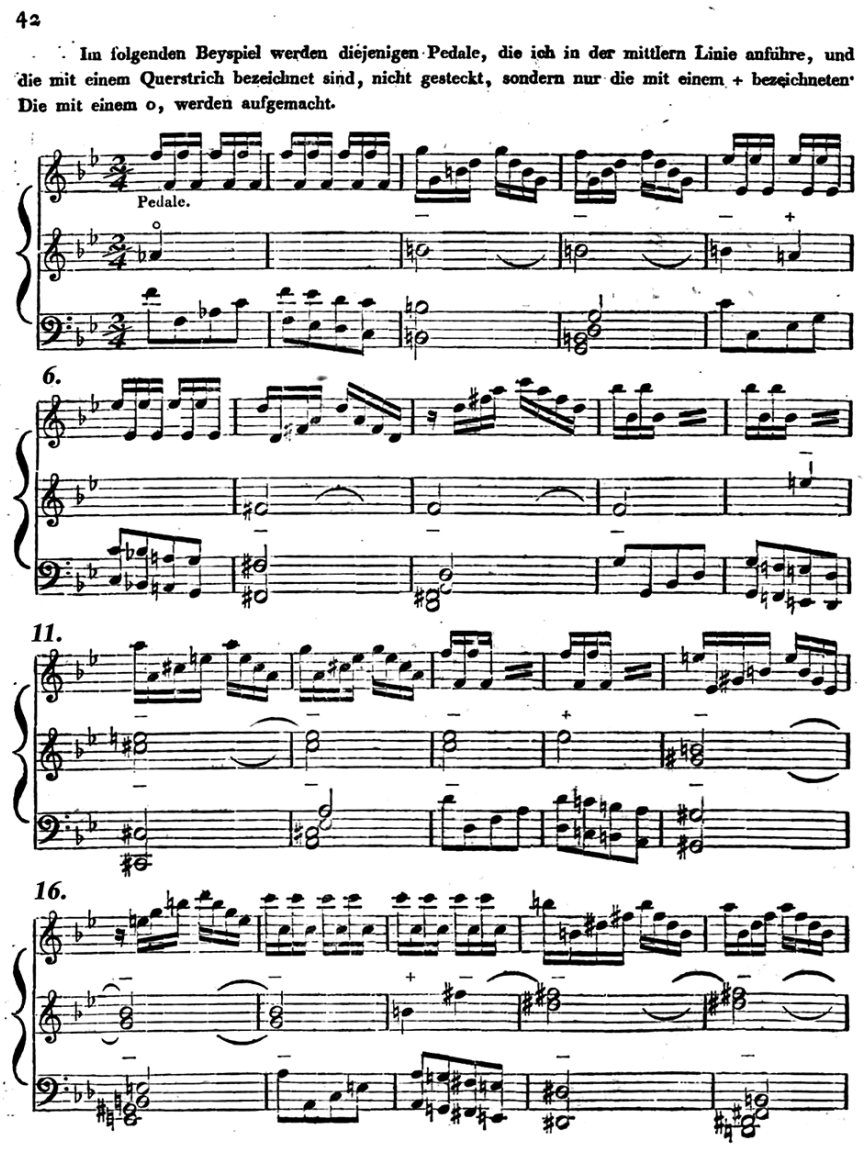

Figure 3.11: Backofen, *Anleitung*, Neue Ausgabe, 42.

than fixing pedals. This notation is cumbersome and occupies much space. Backofen does not use this system again in his methods.

In bar 4 of fig. 3.12, the pedal A is marked in the score. It is the only pedal marked because all the chromatic alternations are in the music and these double up as the pedal solutions. The A is marked in bar 8 because it is a pedal move that is not related to a note in the score, so as it is removed from the musical gesture, it is a mechanical operation. What is also intriguing to note is that bar 5 is a perfect example where double- or triple-pedalling could occur and yet Backofen does not notate it. It is my opinion that the theory of double- and triple-pedalling are included in the treatise, but as these techniques were considered "extended" techniques for the virtuoso players, users of the treatise could play the pieces with a simple and uncomplicated pedal technique, moving one pedal with one foot at a time.[89]

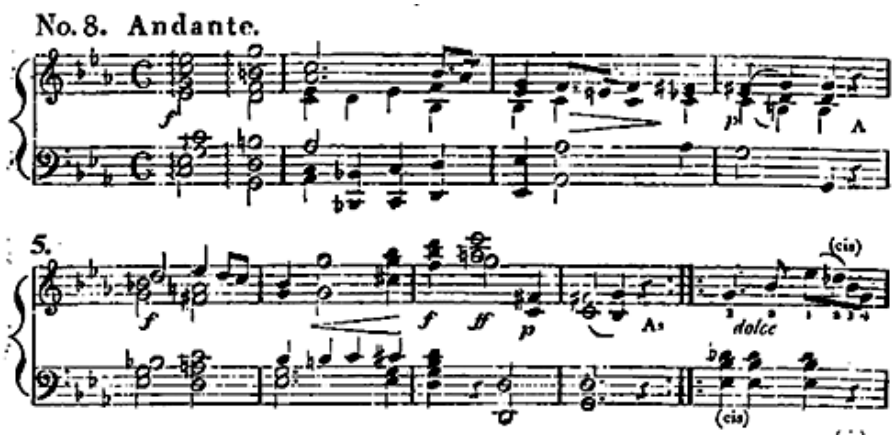

Figure 3.12: Backofen, *Anleitung*, Neue Ausgabe, 51.

Naderman lists a series of abbreviations to show the pedal movements that he employs in his music. These include "ac:" for "accrochez" (fixing), "dé:" for "décrochez" (unfixing), "pres:" for "pressez" (press down), "lev:" for "lever" (release), "acci:" for "pèdale accidentelle" (press down and hold), "ac:d'a" for "accrochez d'avance" (fix in advance) and "dé:d'a" for "décrochez d'avance" (unfix in advance).[90]

Six of these abbreviations are found in the *Andante non troppo* on p. 95, shown in fig. 3.13. The abbreviation "acci:" for "pèdale accidentelle", which means to press down and hold, is not used here as this term does not clearly show the harpist where to release the pedal in the bar. Naderman uses the equivalent terms "pres:" for "pressez" and "lev:" for "lever" each time a pedal is pressed down for a short time and then released.[91]

[89] See fig. 3.13 for Backofen's written out example of double- and triple-pedalling.
[90] Naderman, *École*, 94.
[91] Cousineau, *Méthode*, 1803, 14.Cousineau also uses the abbreviations "Ac" and "Dé" for *accrocher* and *décrocher*.

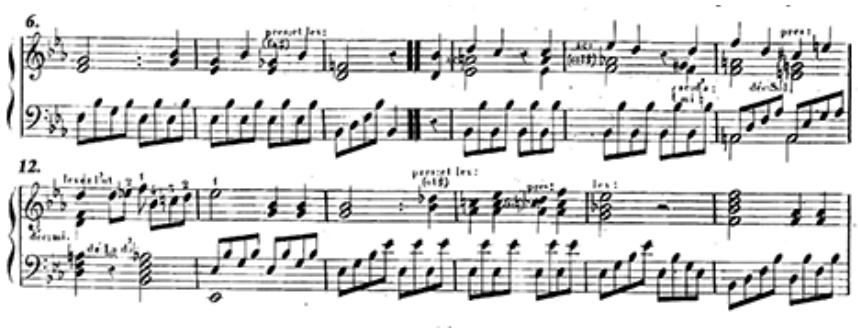

Figure 3.13: Naderman, *École*, 95.

Another source which may use symbols for pedal movements is currently lost. *Exercise de modulation* by Josef Gelineck[92] includes a:

> "sténographie de la harpe…ce petit vocabulaire, qui renferme toute la langue des pieds de l'artiste, il ne reste point d'incertitude sur les opérations à faire: six signes de forme très-simple suffisent pour tout cela."[93]

3.4.3 Pedal markings in musical examples in treatises

This section shows a variety of ways that pedal movements were written in the musical examples and pieces which are found in harp treatises and methods.

One of the most examples of fixing and unfixing pedals on both sides of the harp is found in Pollet's *Méthode*, where *accrochez* and *décrochez* are written between the staves.[94] Figure 3.14 is the second page of *29 Leçon* and the study is for a harp set-up in the key of E-flat major. In bar 43, the C pedal is fixed in preparation for bar 36 which contains C♯'s with the left foot. This pedal needs to be fixed because the left foot is required to unfix the B pedal in bar 37 for the B♭'s in bar 39. The E pedal which has been already fixed before bar 32 is released with the right foot at the same time as the C pedal is unfixed with the left foot.

Figure 3.15 is one of the few examples where pedals are not fixed, but rather pressed down and released shortly afterwards. Demar writes between the staves: "Lachez desuite la 1^{ere} pedales pour prendre la 2^{d}."[95]

[92] Josef Gelineck, *Exercise de modulation* (Paris, 1829), Josef Gelineck (1758-1825), Czech composer and pianist.

[93] "Variétés: Sur de nouveaux signe proposés pour la notation de la harpe," *Revue musicale*, 1829, 127–29: "…this brief vocabulary, that contains all the terminology of the feet of the artist. No uncertainty of the operations to be carried out will remain: six simple signs are sufficient for all."

[94] Pollet, *Méthode*, c. 1817, 51.

[95] Demar, *Méthode*, 29: "Release the first pedal immediately to operate the second".

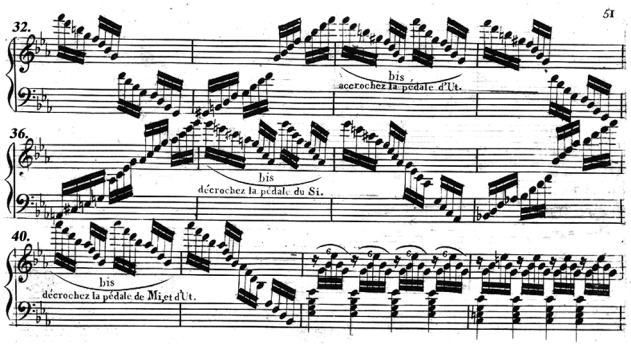

Figure 3.14: Pollet, *Méthode*, 51.

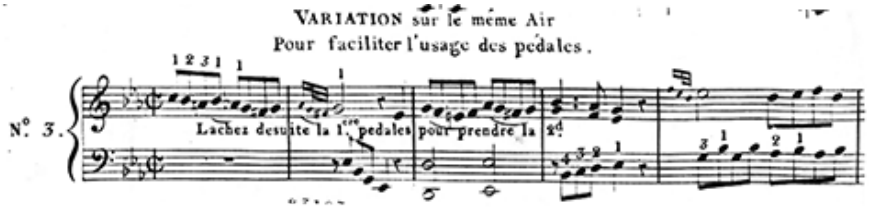

Figure 3.15: Demar, *Méthode*, 29

This statement between the staves may seem redundant, as the harpist could actually just read the score and move the pedals according to the accidentals written. It is probably underlined here to show the harpist that it is normal practice to move a pedal for every accidental in a piece, which is not part of the key of the piece. In fact, this is one of the few explicit examples of pressing and releasing motions found in all known harp treatises and methods. Usually the examples show where to fix and unfix pedals, because these actions may need to occur in a bar that is a bar or two before or after the notated accidental in the score. Fixing and unfixing are planned actions and are not part of the musical gesture.

The following example, fig. 3.16, shows this sort of planning already written in the score for the learner of the harp. Bar 9 of *Air de la Molinara, Prélude*, no. 8 has an E♭ and an F♯, which both need to be moved in the same bar and with the same foot.[96] Demar suggests to unfix the E pedal in advance in bar 8, so that the foot is free to press down and release the F pedal in bar 9. Once again, Demar marks that the E pedal needs to be re-fixed in bar to continue the piece in F major.

This example in fig. 3.17 from the *Air des deux Jaloux* combines reading an accidental to move one pedal and planning another pedal, where neither pedal is fixed. Desargus writes in bar 16 to press the F and B pedals down, one with each foot for nearly five bars (“Le pied sur le Fa et sur le Si”). The F♯ is written in the score in bar 16 and the harpist could wait until the end of bar 17 to press the B

[96] Ibid., 32.

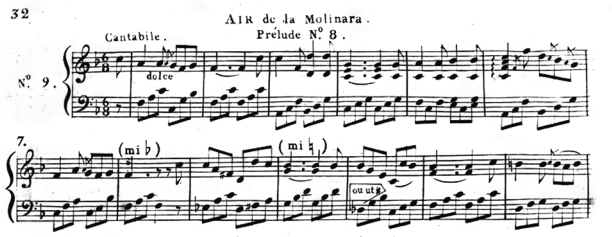

Figure 3.16: Demar, *Méthode*, 32

pedal down on its own. However, it is often more convenient and musical to move two pedals at once, especially as the piece modulates to D major in bar 17 and both these accidentals are part of the new key. When the piece returns to D minor, both pedals are released in bar 21 ("lachez les Pédales").[97]

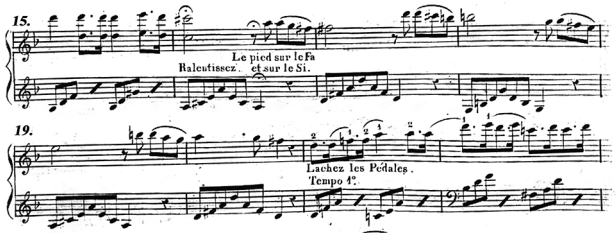

Figure 3.17: Desargus, *Traité*, 1.er Recueil, 32

The act of moving two pedals together with two feet is rarely discussed as a special technique. Bochsa suggests to "…serrer les deux genoux contre la harpe" when two pedals are operated, one by each foot. He includes exercises for pressing and releasing two pedal together with two feet, but also for pressing one pedal down with one foot while another pedal is released with another foot.[98] Another musical example of specifically using two feet to operate two pedals, the F and B pedals, is found in Desargus' *Traité*.[99]

[97] Desargus, *Traité général*, Première Recueil, 36.

[98] Bochsa, *Nouvelle méthode*, 51–54: "…close the two knees against the harp". Also in Bochsa, *Tasteful Exercises*, 10.

[99] Desargus, *Traité général*, 36.

Conclusion

The first pedal markings in the history were written to show the enharmonic solutions for the notated music, when certain written notes were not available on the harp, when set-up in a chosen "base" key.

The second stage of pedal markings are those markings found before or after an accidental in the score. Sometimes the harpists must operate two pedals on the same side of the harp separately (one after another) and one of these may have to fixed and then later unfixed. The movement does not occur exactly at the moment that the accidental is written in the score, so, therefore, needs to be written.

These markings show the use of one pedal at a time, and two pedals operated by two feet in the following situations:

- putting the harp in the key of the piece that will be played.
- fixing/unfixing a pedal which is required for several bars or for a long time.
- fixing a pedal in order to leave the same foot free to move to another pedal on the same side of the harp.

3.4.4 Double- and triple-pedalling

This section deals with some of the most important historical sources for operating pedals in a way that may seem impossible to most harpists. Bochsa stated that pedalling in the eighteenth and nineteenth centuries had become the "greatest difficulty of the instrument" and multi-pedalling may have been that which divided the amateur harpist from "those more ambitious artists", the *virtuosi* of the harp.[100] Every known treatise and method that discusses multi-pedalling is reviewed here, some sources for the first time. There are only five harpist-authors who mention multi-pedalling, indicating the rarity of the practice among the average harpist of the period.[101] The scarcity of sources may be due to the fact that treatises were aimed at amateur harpists, whose repertoire contained few modulations so no special technique was a requisite to enjoy playing the harp. It is more likely that the professional harpists who used these techniques guarded them like "secrets of the trade".

3.4.4.1 Backofen's *Anleitung*

Backofen is the earliest published treatise that discusses multi-pedalling.[102] When he first mentions pressing down two pedals, namely the F and A with the right foot, he gives a solution to avoid double-pedalling:

[100] Bochsa, *Nouvelle méthode*, 21.

[101] Backofen, *Anleitung*, 1801, 51; Backofen, *Anleitung*, 1807, 43; Xavier Desargus, *Cours complet de harpe ou dictionnaire de leçons arrangées pour la harpe*, 2e éd. (Paris: Frey, 1812), 37; Desargus, *Traité général*, 74; Bochsa, *Nouvelle méthode*, 51; Bochsa, *New and Improved Method*, 43; Challoner, *A New Preceptor*, 22; Naderman, *École*, 92.

[102] Backofen, *Anleitung*, 1801, 51; Backofen, *Anleitung*, 1807, 43.

> "Diejenigen, für die es zu schwer fallen möchte, diese 2 Pedale, nehmlich das F und As beynahe zugleich aufzumachen, können sich dadurch helfen, dass sie das Fis vorher nur drey Achtel lang singen lassen, und bey dem vierten die Saiten dämpfen, indessen können sie das Pedal aufmachen, und also um desto bequemer das As auflösen."[103]

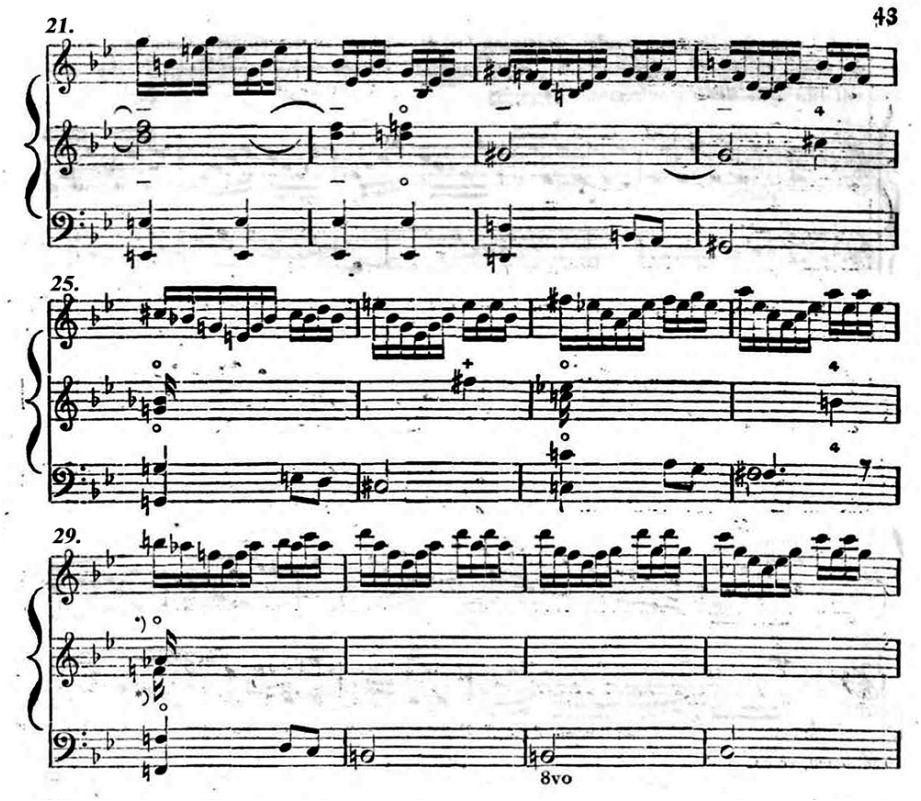

Figure 3.18: Backofen, *Anleitung*, 43

Backofen uses three musical staves, the upper one for the right hand and the lower one for the left hand. The middle stave shows the pedals that are to be moved in each bar. These symbols have been discussed in section 3.4.2.

Figure 3.18 is composed for a harp set-up in the "base" key of E-flat major.[104] The A pedal is already fixed from bar 5 found in Fig. 3.11. The F pedal is fixed in bar 26, in order to leave the right foot free to release the E pedal in bar 27. Backofen

[103] Backofen, *Anleitung*, 1801, 51: "For those, for whom it would be too difficult to move these two pedals, namely the F and A♭ together, they can thereby be helped, when you let the F♯ vibrate only for three crochets and in the fourth beat dampen the strings, thereby you can open [release] the pedal, and therefore make it easier to release the A♭."

[104] See Fig. 3.11 for the first page of this piece.

suggests to first release the F pedal after damping the F string in the bass on the fourth quaver of bar 28. This leaves the right foot free to move quickly to the A pedal to release it in time to play A♭ in bar 29. Backofen provides the harpist with an easy solution to avoid double-pedalling and shows an amateur harpist how to approach the difficult situation of reading two changes of accidentals that occur at the same time plus the added difficulty that the pedals for those two notes are on the same side of the harp. This harmonic progression, two consecutive diminished 7^{th} chords, is the most used progression in the harp repertoire, where double- or triple-pedalling is the most obvious and easiest solution.

Double-pedalling technique could be used in bar 29, which would usually entail releasing the F and A pedals together from a fixed state. However, this movement is possible, if the G pedal is folded away. In this example by Backofen, the G pedal cannot be folded away for the entire piece, as he clearly indicates to use the G pedal in bars 23-24.

It is the author's opinion that this example in fig. 3.18 is a harmonic sequence, where double-pedalling would usually occur, but actually in this case, it is not possible. A solution would be to either fold away the G pedal in bar 25, or play the G♯s in bars 23-24 with the enharmonic A♭, not respecting Backofen's pedal indications.

Another example of double-pedalling in found Backofen's *Anleitung*. This example is introduced stating:

> "Es gibt auch Fälle, wo 2 neben einander stehende Pedale zugleich getreten werden müssen."[105]

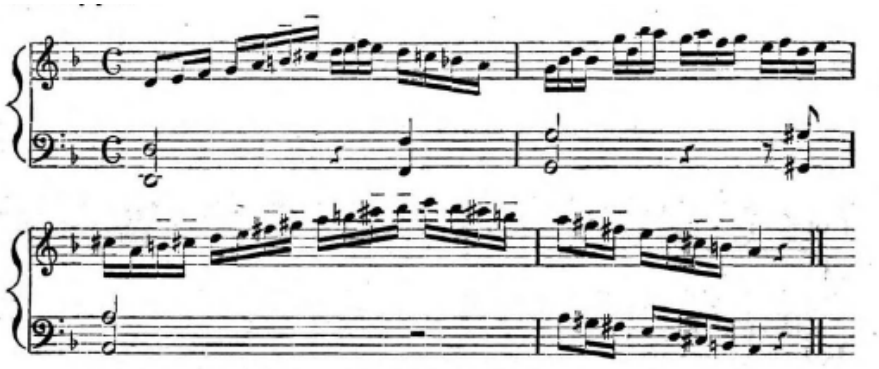

Figure 3.19: Backofen, *Anleitung*, 44

This musical example in fig. 3.19 has no further written explanation. The left foot presses down the B and C pedals together at the beginning of bar 1, holding them down and then releasing them on the fourth crochet of the bar. The two notes B♮

[105] Ibid., 52; Backofen, *Anleitung*, 1807, 44: "There are also occasions, where two adjacent pedal must be pressed down together."

and C♯, are marked with a line above them to indicate which pedals to move. The same double-pedal movement is required in bar 3 and then the pedals are held until the end of the example.[106] An alternative solution for bar 3 would be to fix the B and C pedal one after another during bar 2, as there is time to do so.

Bars 3-4 show double-pedalling with the right foot. The right foot presses the G pedal down at the end of bar 2, releases it at the beginning of bar 3 and then the F and G pedal are pressed down together during the second crochet of bar 3 and held until the end of the piece. Another possible solution would be to press the F and G pedals down together on the last quaver of bar 2, avoiding the F♮ that proceeds the ultimate quaver. In this example double-pedalling with the right foot is not absolutely necessary. The G pedal could be fixed during bar 2 and then the F pedal fixed in bar 3, both fixed until the end of the piece.

In fig. 3.19, double-pedalling is only essential for the last crochet of bar 1, where the C and B pedals have to be lowered in rapid succession for the downward melodic minor scale.

Backofen then gives an example of triple-pedalling with the right foot as shown in fig. 3.20. The harmonic progression of the diminished chord is very common in classical music, where the chord of F minor progressing to G minor or E-flat major uses the diminished chord on F♯ as a pivoting chord. In this example the notated G♭ in the music is played by the enharmonic F♯. Backofen writes:

> "Zuweilen muss man mit einem Fuss 3 Pedale zugleich treten".[107]

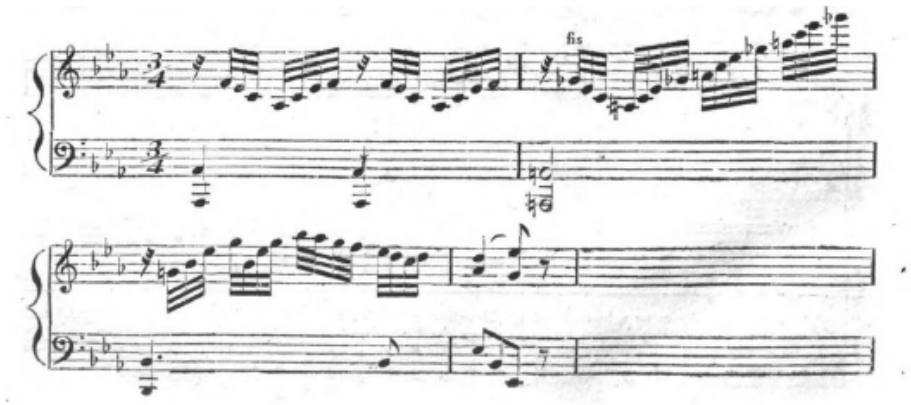

Figure 3.20: Backofen, *Anleitung*, 44

This example follows with this explanation:

> "Für Frauenzimmer ist dies allerdings sehr beschwerlich, denn da sie kürzere Füsse haben, als wir, so können sie die 3 Pedale F, G und As,

[106] The slashes are positioned incorrectly in the third crochet of bar 3: the two slashes should be placed over the b♮3 and c♯3. See "System of pitch notation", under "Abbreviations", page x.

[107] Backofen, *Anleitung*, 1801, 44: "Now and then one must press down three pedals with one foot".

> wenn sie selbige auch zugleich erreichen, dennoch des mittlern Pedals wegen, nicht gleich stark treten. Ich wollte daher den Frauenzimmern unmassgeblich anrathen, wenn solche Stellen, wie die erst angeführte, vorkommen sollten, das zwischen inne liegende Pedal, nehmlich das G, welches ohnehin umsonst getreten wird, vorher mit der Fussspitze aufzuheben, und an den Körper der Harfe anzulehnen, es aber sogleich nachher wieder herunter zu treten."[108]

It is the author's experience, that double-pedalling with the G (or C) pedal folded up works in most cases found in the harp repertoire. Two further examples of double- or triple-pedalling with the right foot is found in the final piece of the second edition of the *Anleitung*.[109]

Left foot on E pedal, right foot on B pedal

Backofen's third edition of his method is considerably different from his earlier publications. It was first advertised in the *Allgemeine musikalische Zeitung* in May 1827 and takes into account the double-action pedal harp, yet the section regarding the German *Hakenharfe* is still included. He includes new exercises and examples and gives the first musical example of a situation where each foot operates the innermost pedal on the other side of the harp, as shown in fig. 3.21.[110]

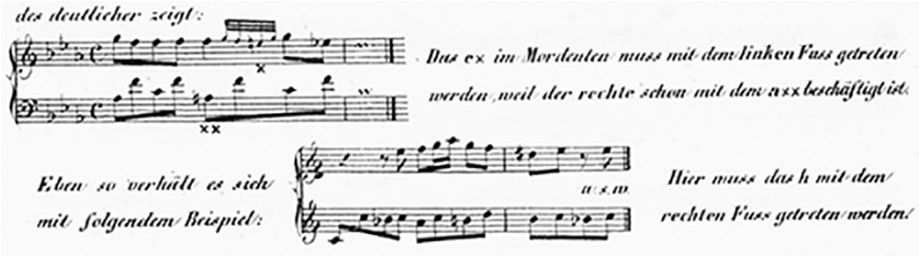

Figure 3.21: Backofen, *Harfen-Schule*, 35

3.4.4.2 Desargus' Methods

Xavier Desargus wrote about triple-pedalling in the revised edition of his *Cours Complet*, but gives no musical examples:

[108] Ibid., 45; Backofen, *Anleitung*, 1807, 52: "For women this is however very difficult, because they have shorter feet, than we, as they cannot press with equal strength the three pedals F, G and A, due to the middle pedal, even if they were able to reach the [three]. I therefore wanted to strongly advise the ladies, that at such places, as earlier described, should it happen, that the inner pedal, namely the G, which has no purpose to be pressed down, can be lifted up with the toe and leaned against the body of the harp, but immediately afterwards it should be folded down."

[109] Backofen, *Anleitung*, 1807, 68, 71. This *Fantaisie* is not part of the first edition of the *Anleitung* and was performed by Dorette Spohr in Leipzig in 1805. AMZ, no. 15, January 8, 1806: 230.

[110] Backofen, *Anleitung*, 1827, 35: "The E [with an] 'x' in the mordent must be pressed down with the left foot, because the right foot is already busy with the A 'xx'. It plays out similarly in the next example: Here the B must be pressed down with the right foot."

> "Il arrive qu'on est quelquefois obligé de mettre deux pédales à la fois sans avoir le tems d'accrocher l'une, pour mettre le pied sur l'autre; alors, on met le pied sur les deux pédales ensemble si elles sont près l'une de l'autre, si elles sont séparées par un intermédiaire, tel que Mi Sol, ou Fa La, alors on met le pied sur les trois pédales à la fois, our obtenir l'effet de celles dont on a besoin, mais on n'use de ce moyen, que quand on ne peut par faire mieux, et les autres doivent éviter cet embaras, qui nuit presque toujours à l'exécution."[111]

Even if Desargus appears to provide no concrete examples of double- or triple-pedalling, this method includes a concealed example of double-pedalling using the C and B pedals in a pivoting motion. The *Simphonie, Extraite des Œuvres de KRUMPHOLTZ En Sol Majeur* appears from page 146, which is actually Krumpholtz's Op. 11, no. 2. Figure 3.22 shows bars 95-100. In bar 96 the heel of the right foot is placed on the B pedal and held down. At the beginning of bar 98, the B pedal is released while the C pedal is pressed down and fixed.

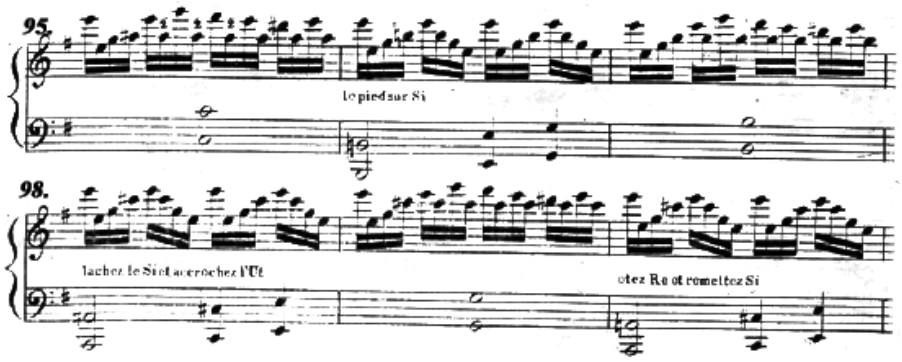

Figure 3.22: Desargus, *Cours*, 149

In Desargus' later treatise of 1821, he again describes double- and triple-pedalling, this time including musical examples.

> "Il est facile de concevoir qu'il y a bien moins d'embarras à mettre le pied sur une pédale, pour la lâcher ensuite, que de la décrocher pour être obligé de la racrocher après. Il faut donc saisir les occasions les plus favorables pour savoir s'en servir à propos. Il arrive aussi quelquefois que l'on est tellement pressé par la rencontre de deux signe accidentels, qu'on est obligé de mettre le pied sur deux pédales à la fois, surtout quand on n'a par le tems d'accrocher l'une pour mettre

[111] Desargus, *Cours complet*, 1812, 37: "It happens sometimes that one is obliged to put two pedals at once without having the time to fix one to put the foot on the other; therefore, one puts the foot on two pedals at a time if they are close to each other, if they are separated by an intermediary, such as E G, or F A, then one puts the foot on the three pedals at a time, both achieving the required effect, but one does not use this way, only when there is no better way, and it is even to be avoided as it nearly always alters the performance". Xavier Desargus (c. 1768-1832), French harpist, composer and teacher.

> le pied sir l'autre. Si les deux pédales sont contigües, comme mi, fa, ou si, ut, alors on appuye fortement le pied sure les deux pédales à la fois pour obtenir les deux demi-tons dont on a besoin, et on les lâche ensuite; mais si les deux pédales dont on a besoin sont séparées par une troisieme, comme dans l'exemple suivant, alors on met le pied sur les trois pédales à la fois, c'est-à-dire sur fa, sol, la, pour produire les deux demi-tons de fa, la et les lâche de suite pour continuer un autre passage si les pédales ne sont plus nécessaires."[112]

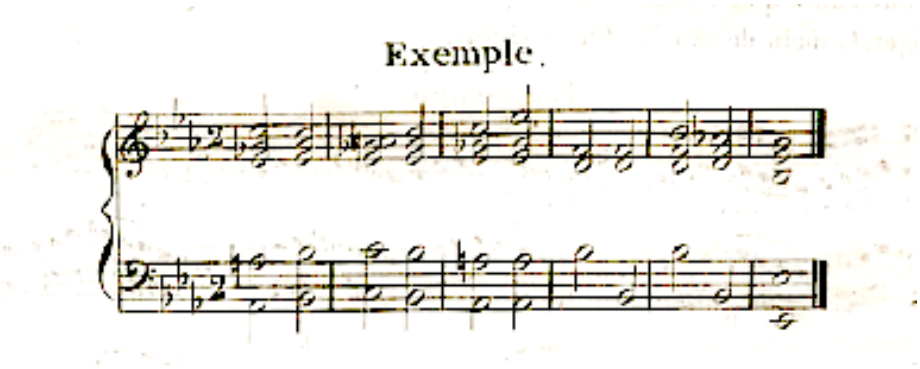

Figure 3.23: Desargus, *Traité*, 74

In this example, shown in fig. 3.23, the A♮ and F♯ are required from bar 1. The exercise shows that the right foot presses down the F, G, and A together and holds them down until bar 4, when they are released to produce A♭ and F♮.
This example however could be done without double-pedalling. The harp could be set-up before playing the example with the F and A pedals fixed in the lower position. The F pedal could be released at the beginning of bar 4 and the A pedal in bar 5. Another solution would be to fold away the G pedal as it is not required for the entire example.

3.4.4.3 Bochsa's Methods

Bochsa writes about double-pedalling in both his French and English methods. In his *Nouvelle Méthode* he gives a short example and explanation, as shown in fig. 3.24:

[112] Desargus, *Traité général*, 74: "It is easy to conceive that it is much less trouble to put a foot on one pedal, then release it, as like when it is obligatory to unfix in order to fix afterwards...It happens sometimes that one is so rushed finding two accidental signs, that one is obliged to put the foot on two pedals at one time, especially when there is no time to fix so the foot can be placed on the other. If the two pedals are adjacent, like E F, or B C, then one presses down strongly on the two pedals at once in order to obtain the two semi-tones that are required, and then they are immediately released; but if the two pedals are separated by a third, like the following example, then the foot is placed on the three pedals at once time, meaning on the F, G, A, in order to achieve the two semitones of F, A and these are released immediately to continue with another passage if these pedals are not needed anymore."

> "Il arrive quelquefois qu'on rencontre des passages tels que celui ci-dessous."[113]

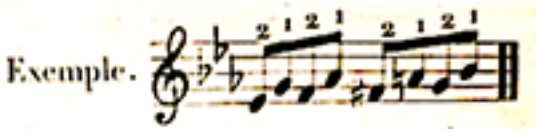

Figure 3.24: Bochsa, *Nouvelle Méthode*, 51

> "Alors on met le pied entier sur les trois pédales à la fois, du Fa dieze, du Sol dieze, et du La bécarre, pour la raison que voici:
> Le mouvement étant supposé vif, on n'a pas le tems d'accrocher la pédale, ni du Fa, ni du La, il y'a donc aucun inconvénient è appuyer le pied sur toutes les trois à la fois, puisque le La naturel suit immédiatement le Fa dieze, et d'un autre côté il n'y a non plus aucun inconvénient à appuyer momentanément le pied sur la pédale du Sol, puisque le Sol ne doit point être entendu pendant le tems très court que le pied sera appuyé sur les deux pédales du Fa et du La à la fois."[114]

This is same passage is found in the English version of Bochsa's *New and Improved Method*:

> "Observe, When a passage, as the following occurs, the three pedals of F♯, G♯ & A natural must be pressed at once with the same foot, for besides that it can be done without any inconvenience, since A natural follows immediately F♯, and G is not heard during the short time that the foot is on the other pedals, the performer could not in a quick movement find time enough to fix the pedals of F and A."[115]

In his *Nouvelle Méthode*, Bochsa describes a mechanism that he has invented that fixes the harp at the correct inclination for playing. While describing this "Spring of Support"[116] he states:

> "…les deux pieds qui doivent toujours être placés à droit ou à gauche, sans être jamais dans le cas de se croiser."[117]

This statement means that neither foot should operate pedals on the opposite side of the harp. The technique of using the left foot for the E pedal (on the right-hand side of the harp) is a natural consequence of double-pedalling even if there is

[113] Bochsa, *Nouvelle méthode*, 51: "There are times that we encounter passages such as the one below."
[114] Ibid., 51.
[115] Bochsa, *New and Improved Method*, 43.
[116] Bochsa, *Nouvelle méthode*, 23; Parker, *Child of Pure Harmony*, 25; Luke Hebert, ed., *The Register of Arts, and Journal of Patent Inventions*, 1830, 305–6. Erat claimed that he invented it.
[117] Bochsa, *Nouvelle méthode*, 22: "…both feet should always be placed to the right or left, without ever being in the situation of crossing."

no evidence in any harp treatises of its use until 1827.[118] Situations where this technique is necessary have been found in works by Krumpholtz and Spohr.[119]

3.4.4.4 Challoner *A New Preceptor*

Challoner is the first harp method in English that describes double-pedalling and the folding away of a pedal that is not required, namely the G pedal.[120]

> "Two Pedals are not unfrequently [*sic.*] to be put down together, and on the same side of the Harp. In the following movement * as explanatory of the immediate precept, put up the G♯ Pedal near to the side of the Harp, ® this action will enable you to press at once A♮ and F♯ and the pressure is to be made with equal and sufficient force.
> ® Be attentive not to turn up the G♯ Pedal so closely as to touch the Harp, as it some times occasions a jar. And it is better to keep it up in general and also the D♯ Pedal, (as they are not frequently wanted) unless upon inspectien [*sic.*] you find such Notes will occur in the Music you are going to perform."

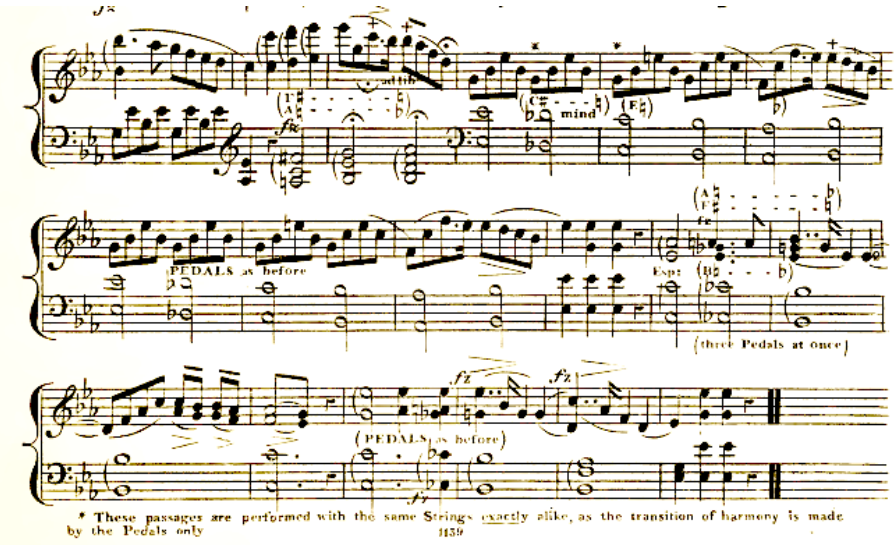

Figure 3.25: Challoner, *New Preceptor*, 22-23

Lesson 25 shown in fig. 3.25 uses double-pedalling with the right foot five times. There is no G♯ required in the piece, so the G pedal can be folded away for the

[118] Backofen, *Anleitung*, 1827, 35 is the first written description of using the left foot for the E pedal on the opposite side of the harp.
[119] See Chapter 5 for evidence of musical examples that employ the left foot to operate the E pedal and Chapter 8 for its use on the double-action pedal harp.
[120] Challoner, *A New Preceptor*, 22.

entire *Lesson*. The right foot is then placed across the F and A pedals and presses down and releases each time, as indicated in the score. Near the end of the *Lesson*, there are two examples of three pedals moved together: the F and A with the right foot and the B pedal with the left foot.

3.4.4.5 Naderman's *École*

Naderman's *École* is the last single-action harp method to discuss double- and triple-pedalling. The five volumes were published around 1833, but the style of his music is from an earlier period. The first situation is one where two adjacent pedals are moved with one foot, the second is an example where three pedals are moved together with one foot:

> "L'art d'employer les pédales est d'un simplifier les mouvements de telle sorte, qu'in cas se présentant où peut les faire jouer de deux manières, on choisira toujours la plus simple.
> Souvent, une pédale n'étant qu'accidentelle, on se croit obligé de la fixer afin d'avoir le pied libre, pour se faire jouer une autre, et, si la musique a un mouvement rapide, il en résulte des accrochements et des désacrochements trip précipités."[121]

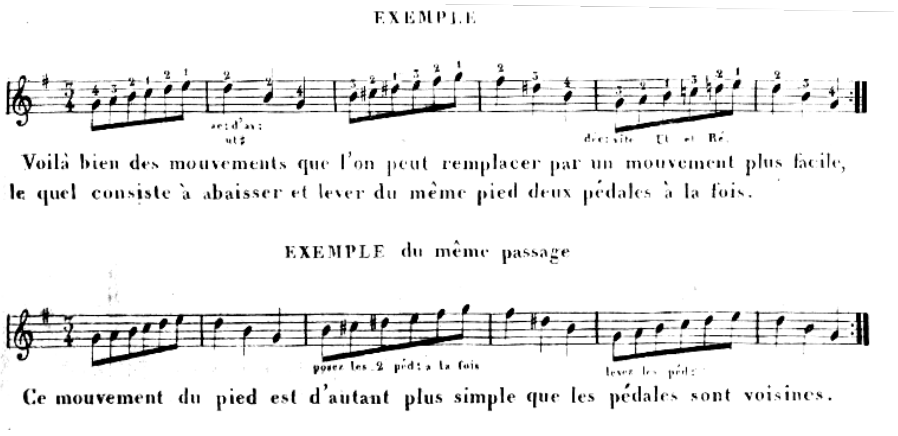

Figure 3.26: Naderman, *École*, 92

The first *Exemple* shown in fig. 3.26,[122] instructs the harpist to prepare the C pedal in bar 2 for bar 3 ("press down C♯", "ac: d'av ut♯" = "accrochez d'avant") and then

[121] Naderman, *École*, 92: "The art of using the pedals is in simplifying those movements, in such cases arising where one can play them [pedal] in two ways, we always choose the simplest. Often, a pedal is not just for a passing accidental, it seems necessary to fix in order to have the foot free, to play another, and if the music has a fast movement, this results of fixing and unfixing that are rushed."

[122] "Here are the moves that can be replaced by an easier movement, which is to lower and raise with the same foot two pedals at once." "This movement of the foot is even simpler as the pedals are neighbours."

the D♯ is pressed down where it is notated in the music in bar 3. One after another, they are released ("déc" = "decrochez") in bar 5. The second *Exemple* instructs the harpist to place the foot over the two pedals, D and C and hold the two pedals down in bar 2 and then release them in bar 5. The *Étude sur un sujet a 12 notes diatoniques* on page 120, bar 43 is a musical example of moving the E and F pedals together with the right foot.

Triple-pedalling is then explained on page 93:

> "Autre cas, où deux pédales à mouvoir du même pied n'étant pas contigues mais séparées par une troisieme, et ou ces trois pédales étant dans le même plan, on presse les trois pédales à la fois du même pied, pourvu qu'on ait soin de ne pas toucher la corde sur la quelle agit la pédale intermédiaire. Ici la difficulté consiste à n'exercer sur les trois pedales qu'une pression parfaitement égale, soit pour les abaisser, soit pour les ramener à leur situation naturelle."[123]

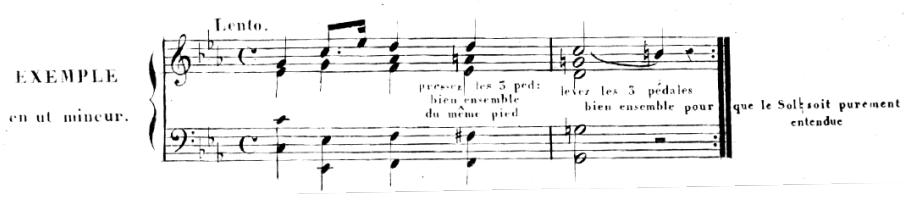

Figure 3.27: Naderman, *École*, 93

Figure 3.27 instructs the harpist to "press the 3 pedals well together with the same foot" and then "release the 3 pedals well together as the G♮ is heard".

These four harp methods are the only published sources where double- and triple-pedalling are discussed. Some of these techniques remained in use on the double-action pedal harp and will be discussed in Chapter 8.

3.5 Pedal *glissandi*

The pedals that alter the resonating length of the string can be used to actually create notes on their own in a very musical gesture. If a string is plucked and then the pedal is pressed down or released, the pedal movement produces another sounding note, either a semitone higher or lower, where no intermediary pitches

[123] Ibid., 92: "In other cases, where two pedals are moved with the same foot where [the pedals] are not adjacent but separated by a third, and where the three pedals are on the same plane, the three pedals are pressed at the same time with the same foot, provided that is the string of the middle pedal is not played. Here the challenge is to press perfectly with equal pressure on the three pedals when either lowering or returning them to their natural situation."

between one semitone and another are audible. This is commonly called a pedal slide and shall be referred to here as a pedal *glissando*.[124]

Pedal *glissandi* are only audible if the string is still resonating. The second note, when "played" by the pedal, is invariably softer as it is only produced from the vibrations of the string. The articulation produced is like a slur, where the first note is strong and the second note is weak. This effect can be used for either a raising or a falling semitone figure. The effect is pronounced in the treble part of the harp when the notes are fast but can be used in a slow-moving bass line, because the vibrations from the bass strong last longer.

The first source of a pedal *glissando* is found in the earliest dated harp treatise.[125] Meyer's treatise contains six Tables with musical examples and a short explanation of each musical example up to the fifth Table. The sixth and seventh Tables contain fingerings for "plusieurs passages qui se trouvent dans les Œuvres."[126] Meyer's fig. 95 and 96 shown here in fig. 3.28 are examples of the same musical phrase, but with alternative fingerings.

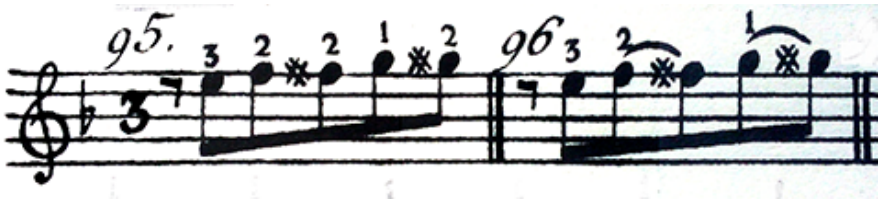

Figure 3.28: P. J. Meyer, *Essai*, Tab. VI, Fig. 96

Meyer's fig. 95 shows a fingering solution that would result in an articulation of two plus two notes, with an accent on the second-half of each crochet. However, fig. 96 marks each beat with slur, so the accent falls on the beats of the bar. There are no fingerings above the weak beats: F♯ and G♯ in Meyer's fig. 96. The slur indicates a pedal *glissando*, where the F string is plucked and the F pedal is pressed down to produce the F♯, then the G string is plucked and the G pedal is pressed down to produce G♯.

Even though Meyer states that the examples in Tables VI and VII are found in his music, Meyer does not include any example of a chromatic passage in the pieces that are part of his *Essai*.[127]

The first description and accompanying musical example of a pedal *glissando* is found in Corbelin's final *Leçon* of his *Méthode*, shown here in fig. 3.29. He explains

[124] Parker, *Child of Pure Harmony*, 62. See Glossary.
[125] Meyer, *Essai*, Tab. VI, Fig. 96; Maydwell, "A Translation and Comparative Study of Meyer," 163–65. Maydwell identified P. J. Meyer as the earliest example of a pedal *glissando* and provides an interesting discussion regarding its execution.
[126] "many passages that can be found in the pieces".
[127] These examples are perhaps part of one of his several collections of sonatas and *Recueils de chansons*, but this is beyond the scope of this present research.

what to do where "I" is indicated on the piece. The pedal *glissando* is marked with a normal slur marking.

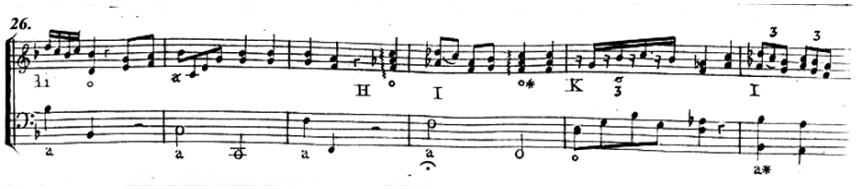

Figure 3.29: Corbelin, *Méthode*, 81.

> "I. Le *re*♭ se fait ici sur la corde *ut*, en abaissant sa pédale: pour faire l'*ut* qui fait suit le *re*♭, on ne fait que lâcher la pédale qui avoit fait cette note *re*♭. C'est la seule maniere dont on puisse faire sur la Harpe des notes *coulées*."[128]

Krumpholtz also indicates pedal *glissandi* with a slur marking and these are notated in his *Morceau détaché, pour s'exercer au jeu des pédals, Tempo di Minuetto*.[129] This piece was published at the end of Krumpholtz's Opp. 14 and 15 with a written explanation on how to play the slurred notes.[130]

Further explanations and musical examples of pedal *glissandi* are found in Pollet's *Méthode*, where *Leçon* no. 26 shown here in fig. 3.30 has a descending pedal *glissando* in octaves for the left hand. Pedal *glissandi* with the C pedal are found in bars 74, 75 and 76, across a range of four octaves. He explains:

> "No. 2, le RE♭ se pince et 'UT se fait entendre san pincer en lachant simplement la pédale."[131]

Madame de Genlis also writes about pedal *glissandi* in the *Onzieme Leçon* of her *Méthode*:

> "Notes Coulées et la Roulade Coulée demandent un grand accord entre les pieds et les doigts. Les notes non chiffrées ne sont pas touchees avec les doigts, la pédale seule les fait entendre. Cette roulade qu'on peut faire de la plus grande vitesse demande beaucoup d'habitude."[132]

This is accompanied by two exercises, a short ascending and descending chromatic phrase and a long chromatic scale for the right hand as shown here in fig. 3.31.

[128] Corbelin, *Méthode*, 80–81: "I. The D♭ is done here on the C string, by lowering the foot: for the C which follows the D♭, one simply releases the pedal which had made this note D♭. This is the only way in which we can make slurred notes on the harp."

[129] Krumpholtz, *Principes*, 60. This is also cited and analysed in Parker, *Child of Pure Harmony*, 62.

[130] See section 4.4 for this description.

[131] Pollet, *Méthode*, c. 1817, 41: "The D♭ is plucked and the C is heard without plucking, simply by releasing the pedal." It is not clear from the example that the D♭ should be played by its enharmonic C♯. The same text and musical example is found in the Pollet, *Méthode*, n.d, 45.

[132] Genlis, *Nouvelle méthode*, 1802, 23: "Notes *coulées* and the *roulade coulée* require a great agreement between the feet and fingers. The notes not fingered are not touched with the fingers, only the pedal makes the sound. This roulade used in the fastest *tempi*, requires a lot of practice."

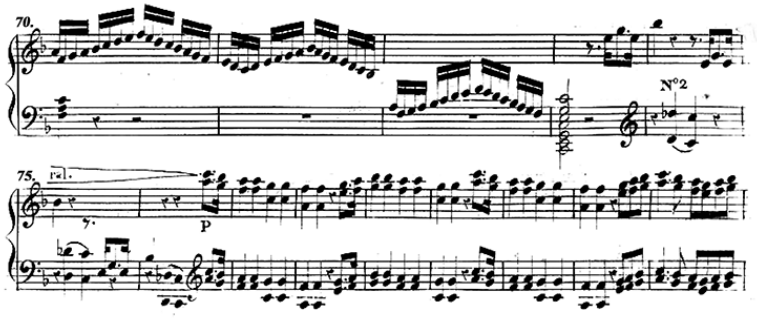

Figure 3.30: Pollet, *Méthode*, 41.

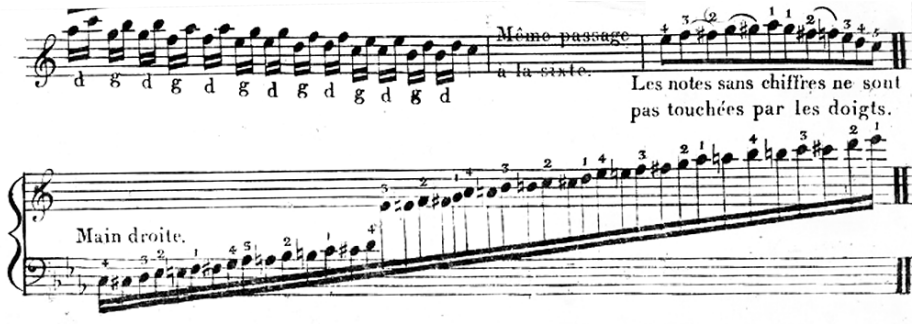

Figure 3.31: De Genlis, *Nouvelle Méthode*, 33

Again she explains how to implement the slurs:

> "Les notes san chiffres ne sont pas touchées par les doigts, les pédales bien appuyées forment le son. Casimir est le premier qui ait fait sur la Harpe ces gammes en demis tons et de la plus grande vitesse."[133]

Similar chromatic scales are included in the *18 et 19^{me} Leçon, 3^{me} Prélude* and *25^{me} Leçon, Prélude*. These chromatic scales passages work well, when the feet are placed over several pedals at once, using double- and triple-pedalling techniques.[134]

Bochsa also writes about pedal *glissandi* but in a slightly negative way. He begins by introducing the effect with a short example shown here in fig. 3.32:

> "Cas où la seconde note se fait par la seule vibration de la corde. Pour produire cet effet, dans l'exemple ci-dessous, on met le pied sur la pédale du SI pour le faire naturel, et on le lève tout de suite après, en laissant le tems nécessaire pour que la vibration de la corde fasse entendre le Si bémol sans pincer de nouveau la corde, de mème pour le La naturel suivi du La bémol, et du Fa dieze suivi du Fa naturel."

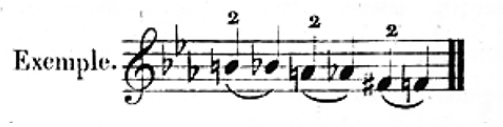

Figure 3.32: Bochsa, *Nouvelle Méthode*, 55

He then proceeds to point out that it may be useful in slow movements, but the uneven character of every second note is not suitable for fast movements.

> "Cette manière d'exécuter une suite de demi-tons peut produire quelquefois un bon effet dans les mouvements très lents, mais il faut bien se garder de l'employer dans les mouvements vifs, parce qu'il ne s'agit alors que de briller par l'exécution, que la première condition de l'exécution est la netteté et l'égalité du son, et qu'il n'y a de cette manière, ni netteté, ni égalité de son; il n'y a point de netteté, parce le son se dégradant ne se fixe point au dégré précis où il devroit arriver immédiatement, il n'y a point égalité de son parce qu'il est évidement plus foible lorsqu'il est le seul résultat des vibrations de la corde, il faut donc, dans toutes les suites de demi tons exécutés d'un mouvement vif, que la corde soit pincée à chaque demi-ton, ainsi que le montre l'exemple ci dessous."[135]

[133] Genlis, *Nouvelle méthode*, n.d., 38: "The notes which are not fingered are not touched by the fingers, the pedals pressed down well make the sound. Casimir is the first who made on the Harp these scales in semitones and with the most greatest speed." The older edition does not include the sentence mentioning Casimir: Genlis, *Nouvelle méthode*, 1802, 33. This is also cited by Parker, *Child of Pure Harmony*, 63.
[134] Genlis, *Nouvelle méthode*, 1802, 40, 48.
[135] Bochsa, *Nouvelle méthode*, 55: "Situation where the second note is struck by the single vibration of

Bochsa follows this paragraph with two musical examples of chromatic scales, ascending and descending, for both hands together. A third and final example is of a chromatic scale, ascending and descending in octaves for both hands. These three examples are shown in fig. 3.33. These examples are quite different from de Genlis' chromatic ascending scale for the right hand, where the left hand is free to progressively damp the strings while the right hand plays.

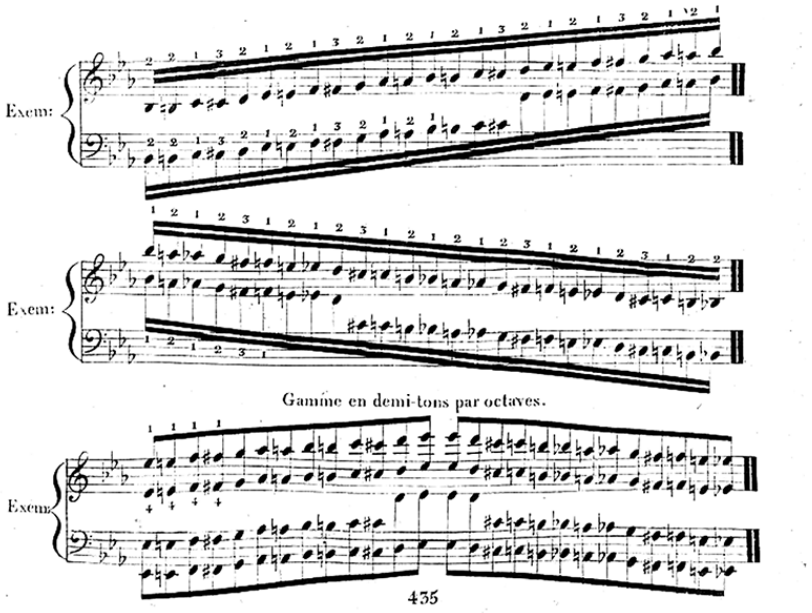

Figure 3.33: Bochsa, *Nouvelle Méthode*, 55

A comparable explanation is found in Bochsa's English method, but with different fingerings as he also suggests different pedal solutions in this example.

> "Some performers play a succession of semitones in ascending by playing only the natural notes, leaving to the vibration of the string suddenly pressed by the pedal, to form the sound of the sharp, without striking the string a second time. In a descending series they play the

the string. To produce this effect, in the example below, the foot is put on the B pedal to make it natural, and it released immediately afterwards, leaving enough time for the vibration of the string for the Bb to be heard without plucking the string again, the same for the A♮ which follows the Ab, and the F♯ that follows the F♮. This way of performing a series of semitones can sometimes produce a good effect in slow movements, but must be avoided in fast movements, because it is then that the performance must show-off, and the first condition of the performance is the cleanness and equality of sound, and this way is not so, neither clear nor equal in sound. There is no clarity, because as the sound decreases, it does not produce the specific degree that it is supposed to reach immediately, there is no equality in sound because [the sound] is obviously weaker when it is the result of one sole vibration of the string, therefore, in all series of semitones in a fast movement, the string is to be plucked for each semitone, as shown in the example below."

> chromatic in the following manner. This mode of playing produces a wretched effect, as it destroys the two principal requisites for a good execution, viz: Equality and distinctness in the sounds. In the first place the sound is not distinct, and does not reach precisely the degree and pitch which it should have; and secondly the sound is not equally strong in both notes, for it becomes weaker as the vibration of the string becomes so."[136]

This comment by Bochsa on the equality of sound production and articulation certainly points to the issue of extraneous noises, either pedal noises or the string resonance. However, it could also point to a change in performing practice in the equality of sound production.

There are some examples of pedal *glissandi* in the pieces found in the second volume of Bochsa's *Nouvelle Méthode*. The first example is in the *Sonate de Clementi*, shown in fig. 3.34, where there are short two note chromatic phrases. All other chromatic passages are all fingered in this piece.[137]

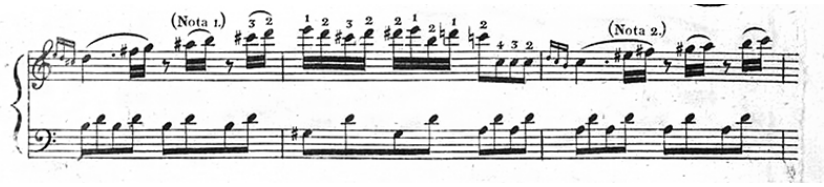

Figure 3.34: Bochsa, *Nouvelle Méthode*, 236

3.6 Additional pedals

There are two extra pedals found on several harps which do not alter the vibrating length of a string. These are the *pédale à renforcement* and the *sourdine* pedal. These pedals alter the dynamics and quality of the sound produced. The main feature of the *pédale à renforcement* was to produce an undulating sound, a quasi-*vibrato* effect, whereas the *sourdine* pedal produced an echo effect from the vibrations of resonating strings.

3.6.1 Krumpholtz's *Pédale à renforcement*

The *pédale à renforcement* is an eighth pedal located on the left-hand side of the base of the harp, and operated by the left foot. When the pedal is pressed down, the mechanism of the pedal opens five shutters which are found at the back of the resonance box of a pedal harp. While playing, the movements of this pedal,

[136] Bochsa, *New and Improved Method*, 43.
[137] Bochsa, *Nouvelle méthode*, 187. See fingered chromatic passages on 187, 190, 192, 194 and 236.

pressing down, fixing and releasing (opening, fixing the shutters open and closing the shutters), alter the dynamics and quality of the sound produced. It was invented by Krumpholtz and Naderman in 1785, and subsequently added to many harps built in both Paris and London. The invention was first described in Krumpholtz's *Principes*, and shown in fig. 3.35.[138]

> "…il y a une huitième pédale qui est placée derriere la cuvette; elle sert à renforcer les sons en faisant ouvrir des soupapes pratiquées dans le corps de la harpe. Lorsqu'on a fait sonner un accord, et que lés vibrations conservent encore leur force, si on agite à plusieurs reprises cette pédale, le son se prolonge avec des ondulation qui sont d'un grand effet, surtout dans les adagios; mais se on veut tirer parti de ce moyen, il faut l'employer à propose, et ne point le prodiguer sans discernement; car alors, l'effet en est perdu, et le mouvement continuel qu'on donne à cette pédale n'est plus qu'un jeu d'enfant qui ne signifie rien."[139]

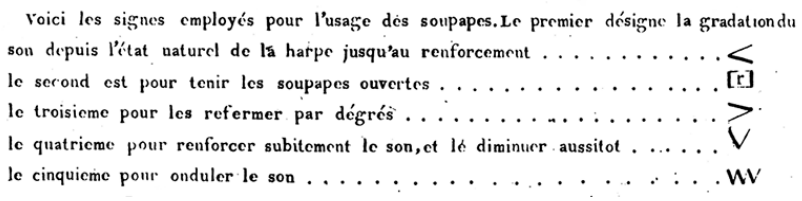

Figure 3.35: Krumpholtz, *Principes*, 15

The symbols, as shown in fig. 3.34, are transcribed in Madame Merelle's treatise (fig. 3.35) and then applied in nearly every piece in the second half of her method.[140]

The *pédale à renforcement* was referred to by several names, including *pédal de la soupape*,[141] "swell pedal" in English,[142] "Verstärkung" and "Tritt für die Klappe an dem Resonanzboden" in German.[143]

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[138] See section 2.3.1.

[139] Krumpholtz, *Principes*, 15: "Besides the seven pedals which I have just mentioned, which are used to alter by one semitone the corresponding notes, there is an eighth pedal that is placed behind the base; it serves to reinforce the sound by opening the shutters in the soundbox of the harp. When a chord is played, the vibrations maintain their force. If one moves this pedal several times, the sound continues in waves that are of great effect, especially in the Adagios; but if we want to take advantage of this effect, it must be used, to not use indiscriminately; because the effect is lost, when the continual movement of this pedal is only a child's game with no meaning. Here are the signs used for the use of the shutters: The first refers to the gradation of the sound from the natural state of the harp to the reinforcing, the second is to keep the shutters open, the third to close them by degrees, the fourth for reinforcing the sound suddenly, and decrease just as suddenly, the fifth is for wave-like sound."

[140] Merelle, *New and Complete Instructions*, 22, 23–48.

[141] Demar, *Méthode*, 12; Pollet, *Méthode*, c. 1817, 12; Desargus, *Nouvelle méthode*, 2; Newbourg, *La Nouvelle méthode*, 3; Desargus, *Traité général*, 61. All of these above treatises illustrate the position of the *pédale a renforcement*, except for Bochsa, *Petite méthode*, 28.

[142] Horn, *Rudiments*, 10; Dizi, *Ecole*, 5.

[143] Herbst, *Ueber die Harfe*, 14: "amplification"; Pollet, *Méthode*, n.d., 12: "pedal for the shutters of the resonance box."

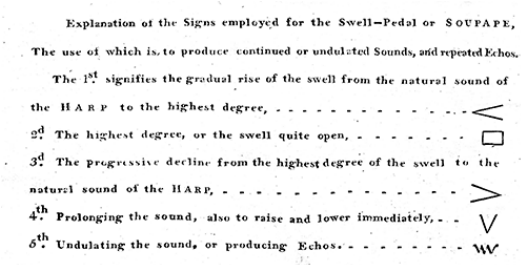
Explanation of the Signs employed for the Swell-Pedal or SOUPAPE,
The use of which is, to produce continued or undulated Sounds, and repeated Echos.
The 1st signifies the gradual rise of the swell from the natural sound of
the HARP to the highest degree, - - - - - - - - - - - - - - <
2d The highest degree, or the swell quite open, - - - - - - - □
3d The progressive decline from the highest degree of the swell to the
natural sound of the HARP, - - - - - - - - - - - - - - - >
4th Prolonging the sound, also to raise and lower immediately, - - V
5th Undulating the sound, or producing Echos. - - - - - - - - WV

Figure 3.36: Merelle, *Instructions*, 22

Krumpholtz includes a piece entitled *Étude pour le renforcement*[144] in his *Principes*, where the symbols for the *pédale à renforcement* are notated in the score. This piece is actually the first movement, *Adagio*, of Krumpholtz's *6me Sonate*, Op. 14.

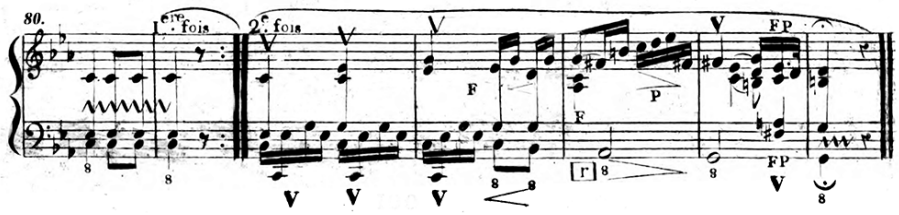

Figure 3.37: Krumpholtz, *Principes*, 65

Figure 3.37 shows the final line of the first section of the first movement, *Adagio*, which includes an example of each of the five pedal moves possible when operating the *pédale à renforcement* according to Krumpholtz. The wave-like/*vibrato* sound is notated in bar 80 which continues into the bar 81 of the second-time bar. Bar 81 begins with the *pédale à renforcement* in the upper natural position where the shutters are closed, but the pedal is pressed down immediately after the first semi-quaver and then released quickly (V). This occurs twice in this bar and again on the first crochet of bar 82. On the second crochet of bar 82, the pedal is gradually pressed down and this is indicated by the *crescendo* sign underneath the bass stave. On the first beat of bar 83 the pedal is still fully pressed down and fixed (r), then gradually released (*diminuendo* sign). In bar 84 the pedal is opened immediately after the first chord is struck and then closed again (V). In this *Étude*, there are no examples of the first and third signs (< and >), so in my opinion any *crescendo* and *diminuendo* markings written in the score indicate the opening and closing of the shutters, which entails pressing down and gradually releasing the *pédale à renforcement*.[145]

[144]This *Étude* has been recorded by Masumi Nagasawa, *L'arome de l'Est*, ETC 1362 (2007) on an Erard single-action harp [ca. 1820], with an 8th pedal, pitch a'=430.

[145]The complete range of symbols are actually written in the published edition of this work. See section 4.5.1 for further discussions.

Both Madame de Genlis and Bochsa discuss the *pédale à renforcement* at some length. They are both critical of this eighth pedal and neither provide musical examples. Firstly de Genlis writes in Chapter 4:

> "Les renforcemens alourdissent aussi l'instrument, mais ils produisent un fort bel effet. C'est Krumpholtz qui en est l'inventeur, (a) mais il faut remarquer que les renforcemens sont presque sans effet quand la harpe est jouée par une femme, parce que ses vêtements bouchent l'ouverture du renforcement ouvert tandis que l'habillement des hommes laisse à cette mécanique tout son jeu."[146]

In de Genlis' second edition of her *Nouvelle Méthode*, she includes a new paragraph entitled *Seizieme Leçon sur le renforcement*. However, the musical example entitled *Seizieme Leçon*, which is also found in the first edition of the *Nouvelle Méthode*, does not correspond to this descriptive paragraph. The *Leçon* consists of fast scales and *arpeggi* which are not suitable for a *vibrato* effect. It is the author's opinion that Madame de Genlis intended to add a new *Seizieme Leçon* to the second edition of her *Nouvelle Méthode*, but this was not carried out.

> "J'ai déjà dit que les femmes à cause de leurs vêtemens ne peuvent que très difficilement faire usage heureux des renforcemens. Mais les hommes peuvent en tirer un très grand parti. Jusqu'ici on ne s'en étoit servi que pour produire plus de son, Casimir est le premier qui ait joint à cet effet celui de produire des sons vibrés, non seulement dans les Adagios, mais dans les basses des morceaux d'un grand mouvement. Pour faire ces sons vibrés il faut appuyer le bout de pied sur la pédale et produire ainsi un tremblement rapide et cependant moëlleux et mesuré. Il ne faut pas dans ce mouvement ouvrir entierement le renforcement. On ne l'ouvre tout à faire que pour donner plus de son. Il faut que le mouvement du tremblement du pied soit plus rapide dans les Allegro que dans les Adagio, mais qu'il soit toujours exact et mesuré dans tous les mouvemens. On doit éviter avec soin de faire du bruit dans le jeu de cette pédale ainsi qu'en se servant de toutes les autres pédales."[147]

A final example of a method which discusses the *pédale à renforcement* at some length is Bochsa's *Nouvelle Méthode*.

[146] Genlis, *Nouvelle méthode*, 1802, 12: "The reinforcements [the system of shutters] make the instrument very heavy, but they produce a very nice effect. It is Krumpholtz who invented it, but one should note that the reinforcements have almost no effect when the harp is played by a woman, because her clothes block the opening of the shutters, whereas men's clothes allow this mechanism to function properly."

[147] Genlis, *Nouvelle méthode*, n.d., 28: "I already said that women, because of their clothes, cannot, without much difficulty, make use of the swell [pedal]. But men can use it with great success. Until it serves to produce more sound, Casimir is the first who combined the effect of producing *vibrato* sounds not only in Adagios, but in the bass parts of large movements. To make these *vibrato* sounds the pedal is pressed with the toe of the foot and produces a rapid shake which can also be mellow and measured. The swell pedal should not be fully opened in this case. One opens it fully only to give more sound. The movement of the shaking of the foot should be faster in the *Allegri* as in the *Adagi*, but it is always exact and measured in all its movements. One should avoid making noise when moving this pedal as when using all other pedals."

> "Puisque je viens de parler de la pédale de renforcement, je dois observer ici que c'est un prétendu perfectionnement de la harpe que je ne puis approuver; puisqu'on joue aussi piano que l'on veut sur la harpe, à quoi peut servir derrière la table d'harmonie des cases qui fermées diminuent le son et ouvertes l'augmentent? ne vaut – il pas mieux que ces cases soient toujours ouvertes, en laissant aux doigt seuls la fonction de modifier autant que l'on voudra l'intensité de son. Quelques joueurs de harpe font encore un autre usage de la pédale de renforcement en l'agitant continuellement dans les adagio; mais il en résulte un effet qu'ils croyent susceptible d'expression, et qui doit être réprouvé comme contraire à la première régle du chant. En effet, le mouvement alternatif de la pédale produit dans la force du son une ondulation continuelle, qui, si elle étoit imitée par la voix ou par tous les instruments filant les sons, seroit, à coup sur, jugée très désagréable. La première régle du chant est de soutenir un son dans une intensité de force parfaitement égale…Je pense donc qu'on ne doit regarder la pédale de renforcement que comme un complication de l'instrument plutôt nuisible qu'utile; son usage nous a appris que le son de la harpe est augmenté par des ouvertures derrière sa table d'harmonie, que ces ouvertures y soient donc pratiquées, mais qu'on supprime les soupapes destinées a les ferme, en laissant aux doigt seuls, comme he l'ai dit, la fonction de diminuer le son à volonté."[148]

None of Bochsa's treatises, methods or exercise books contain the use of the *pédale à renforcement*.[149]

3.6.2 Krumpholtz's and Cousineau's *sourdine*/echo pedals

Two types of *sourdine* pedals were invented for the harp by Krumpholtz and Cousineau, both with a different mechanism. The Krumpholtz *sourdine* pedal was operated by the left foot, located at the furthest extreme of the pedal box, while Cousineau's *sourdine* pedal was at the centre of the pedal box so could have been

[148] Bochsa, *Nouvelle méthode*, 69: "Since I have mentioned the swell pedal I have to note here that this alleged development of the harp I cannot approve of; since one can also play piano when we want on the harp, what good are shutters behind the resonating box that diminish the sound and augment it? Would it not be worth it-if these shutters are always open, leaving the function only to the fingers to change the intensity of sound as much as we like. Some harpists have another way of using the swell pedal, they continuously move it in the *Adagi*; but the result is an effect they believe is full of expression, and here must be condemned as opposite to the first rule of singing. Indeed, the continuous movement of the pedal produced in the strength of his continual ripple, which, if it were imitated by the voice or instruments, would be, for sure, considered very rude. The first rule of the song is to support its [sound] intensity in a perfectly equal strength… So I think we should look at the swell pedal rather as a complication of the instrument, more harmful than useful; its use has shown that the sound of the harp is increased by openings behind the soundboard, these openings are so much used, but if one suppresses the shutters closed, this leaves only the fingers, as already said, the function of reducing the sound at will." I would like to thank Mike Parker for having pointed out this paragraph to me.

[149] See Table 4.4 for works by Bochsa which include instructions to use the swell pedal.

operated by either foot.[150]

The *sourdine* pedals create an echo effect, by pressing down the *sourdine* pedal before playing, then releasing it after playing a chord. It creates a second muted sound, merely by the pedal action.[151] Krumpholtz's *Principes* contains no information on this ninth pedal. However, instructions on how to operate this pedal, a list of symbols and its notation in pieces are found in Krumpholtz's Opp. 14 and 15.[152] The description and diagrams of Krumpholtz's *sourdine* pedal, or "Dämpfer" is explained in length in the German method by Herbst.[153]

The second type of *sourdine* pedal was described in 1785[154] and patented by Cousineau before 1803[155] and a description of this pedal and how to use it is found in his second *Méthode* of 1803.

> "En mettant le pied sur la pédale, on fait poser les pilotes sur la table, de sorte que la pression des pilotes intercepte le son, et produit l'effet de la sourdine. Lorsque l'on voudra obtenir l'écho, on fera partir d'une ou deux mains un accord et lorsque l'accord sera sonné, on lâchera la pédale de la sourdine qui produira l'écho (…). Ainsi on voit que, pour avoir l'écho, il faut sonner la corde avec la sourdine, et lâcher la pédale avec précipitation sans cette précaution l'effet serait manqué."[156]

No musical examples are included in the *Méthode*, but its use has been identified in some works by Cousineau.[157]

Conclusions

The eighteenth- and early nineteenth-century treatises and methods are valuable sources for discovering how and where to use all the pedals found on the harp. The descriptive information in the treatises is often supported by musical examples. There is, however, one aspect of pedalling that is not discussed in any historical method or treatise of the eighteenth century.

This is the use of the left foot to operate the E pedal, the first pedal on the right-hand side of the harp. This move is a natural corollary of double- and triple-pedalling and is first discussed by Backofen in 1827.[158] It shall be discussed in Chapter 5, as several musical passages cannot be played without using the left foot in this way.

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[150] See section 2.3.

[151] Mike Parker has played a harp with a *sourdine* pedal and says that it is "very effective". (Email correspondence, April 26, 2016).

[152] See section 4.5.1.

[153] Herbst, *Ueber die Harfe*, 13.

[154] "Arts," *Journal de Paris*, September 8, 1785, 1037.

[155] Cousineau, *Méthode*, 1803, 62.

[156] Ibid., 62: "By putting the foot on the pedal, the pilots are placed on the table, so that the pressure of the pilots intercept the sound, and has the effect of muting. When we would want to achieve an echo, we will play a chord with one or two hands and when the chord will sound, the *sourdine* pedal is released in order to produce the echo… Thus we see that, for making an echo, you have to pluck a string with the *sourdine* pedal, and release the pedal beforehand. Without this promptness the effect would be missed."

[157] See section 4.5.2.

[158] Backofen, *Anleitung*, 1827, 35. See section 3.4.4.1, 3.4.4.3, and Chapter 8.

There are also no musical examples, in the historical methods or treatises, to show how to operate the extra eighth and ninth effect pedals. The *pédale à renforcement* and Krumpholtz's *sourdine* pedal are operated by the left foot as they are on the left-hand side of the pedal box. This means that the left foot then cannot operate any of the other pedals on the left side of the harp, namely the B, C or D pedals. This situation will be analysed in section 4.5. Cousineau's *sourdine* pedal is located in the centre of the pedal box and can be operated by either foot. However, when operated, that foot is then unable to operate any other pedals.

Chapter 4

Works with pedal indications

This chapter identifies and discusses the different ways of pedalling that are found in eighteenth- and nineteenth-century pieces for harps with a single-action pedal mechanism, where instructions or symbols are written in the score either by the composer or publisher.[1]

The repertoire

The first pieces for the harp were published in Paris in 1760. They are three collections of airs with accompaniment for the guitar, harpsichord or harp.[2]

The original repertoire for the harp not only consists of songs with harp accompaniment, but also solo works including sonatas, variations, potpourris, chamber music and concertos.[3]

[1] The word "harp" is used throughout this thesis to refer exclusively to a harp with a single-action pedal mechanism.

[2] Simon, *Second Recueil*; chevalier d'Herbain, *Recueil d'Ariettes*; Petilliot, *Recueil d'airs*. These three collections were advertised in "L'Avantcoureur: feuille hebdomadaire," 1760, 139, 207, 734. The Petilliot collection may be the one found today in the F-Pn: Petilliot, *Recueil d'airs choisis avec accompagnement de guitarre et de harpe* (Paris, 1776), as the work has the same title as the magazine advertisement. However, the F-Pn catalogue attributes the year 1776 to this collection, referring to another advertisement in *Annonces, affiches et avis divers*, 1776, 366. The advertisement states: "*Recueil d'Air choisis, avec accompagnement de harpe*". It does not mention the guitar as an alternative accompanying instrument, so the author concludes that the 1776 advertisement refers to a later collection by Petilliot.

[3] Klaus-Peter Brenner, *Die Naderman-Harfe in der Musikinstrumentensammlung der Universität Göttingen: ein französisches Instrument des 18. Jahrhunderts als Maschine, Skulptur, Möbel, Prestigefetisch, Ware und Klangwerkzeug* (Göttingen: Ed. Re, 1998), 190, for harp repertoire in Cousineau and Naderman music catalogues; Maydwell, "Georges and Jacques-Georges Cousineau and the Harp in the Latter Half of the Eighteenth Century." For pre-1800 published works see Catherine Michel and François Lesure, *Répertoire de la musique pour harpe publiée du XVIIe au début du XIXe siècle* (Paris: Klincksieck, 1990). For a selected list of 550 works for the harp, see Barthel, "La harpe.". Modern repertoire books include some eighteenth-century repertoire: Annie Glattauer, *Dictionnaire du répertoire de la harpe* (Paris: CNRS ed., 2003). Most of the research here has been carried out using my own personal database of harp pieces. This database contains more than 2,000 works, which the author has consulted personally in libraries and private collections.

The largest volume of works published for the harp are songs with harp accompaniment, either as a *basso continuo* or as a written-out accompaniment.[4] This genre remains a static form for many decades, where the notated music remains unchallenging.[5] Even Spohr wrote an *Aria* for harp which reflects the simple compositional style of this genre rather than his usual fiendishly difficult harp parts.[6] These songs were composed and published for amateur harpists who played for their own amusement in domestic settings, where the cultural significance of this repertoire and playing the harp were highly important at the time.[7]

The remaining repertoire consists of solo works for harp, chamber music where the harp has a principal role, and finally concertos. The scores from all of these genres provide much information about how and where to pedal on the harp.

There are two main styles of composition within the chamber music repertoire of the harp. The first consists of works for harp where other instruments like the violin, flute and violoncello play *ad libitum* parts. An example of this instrumentation is Petrini's *Quatre Sonates*, Op. 4, where the violin part and the right hand of the harpist play the same line, sometimes in different octaves.[8] Other chamber music is composed in a way where the harpist's right hand dialogues with the melody instrument, while also providing a rhythmic and harmonic accompaniment. Sonatas by Giacomo Gotifredo Ferrari's are written in this style.[9]

Concertos for the harp show a certain flexibility in orchestration. They can be played either with a soloist and orchestra, or as a duo for harp and violin. An example of this orchestration is the *Cinquième Concerto* Op. 7 by Krumpholtz, where the title page states:

> "Cinquieme Concerto pour La Harpe…Avec accompagnement De deux Violon, Alto, et Basse, deux Hautbois, deux Cors, une Flûtte, et un Basson Ad Libitum…Ce concerto est non seulement arrangé pour la facilité de l'execution pour ce qui regarde la partie de la Harpe; mais aussy pour les accompagnements, car il peut à la rigueur s'éxecuter en Sonate, avec le premier Violon seulement, en passant les Tutti indiqués avec les petites notes."[10]

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[4] See section 5.2.1 for an example of both types of songs from the eighteenth century with harp accompaniment.

[5] Both forms of accompaniment could be made as difficult as one would like, by the realisation of the *basso continuo* part or by elaborating on the written-out accompaniment, according to HIP. Bruce Haynes, *The End of Early Music: A Period Performer's History of Music for the Twenty-First Century* (Oxford: OUP, 2007), 14.

[6] Louis Spohr, *"Was treibt den Waidmann in den Wald" für Singstimme mit Begleitung von Harfe oder Klavier und Horn*, WoO. 92 (Vienna: Bermann, 1825).

[7] See Chapter 7 for the social and cultural aspects of playing the harp.

[8] Henri Petrini, *Quatre Sonates pour la harpe avec accompagnement de violon ad libitum*, op. 4 (Paris, 1780).

[9] Ferrari, *Three Grand Sonatas*. Giacomo Gotifredo Ferrari (1763-1842), harpist and composer.

[10] Jean-Baptiste Krumpholtz, *Cinquieme Concerto pour La Harp*, op. 7 (Paris, 1778): "Fifth Concerto for the harp…with accompaniment of two violin, viola, and bass, two oboes, two horns, one flute, and one bassoon ad libitum…This Concerto is not only written for ease of performance with respect to the

Other concertos can be played either with orchestra or simply as a solo harp piece. An example is the *Sixième Concerto* Op. 9 by Krumpholtz, where these instrumentation options are detailed on the title page:

> "Sixième Concerto pour la Harpe Avec Accompagnement de deux Violon, deux Hautbois, deux Cors, une Flûtte, Taille et Basse par M. Krumpholtz... Ce Concert peut aussi s'exécuter sans aucun accompagnement quelconque. En passant tous les Tutti indiqués avec les petites notes".[11]

Piano and harp concertos were regularly played as solo pieces, without the orchestra accompaniment. The pianist John Field performed Krumpholtz's *Sixième Concerto*, Op. 9, on the piano in his debut concert on April 4, 1792, at the Rotunda, Dublin.[12]

Solo pieces, chamber music and concertos are valuable sources for most facets of pedalling, when indications or symbols are included in a score. This information merely corroborates with the mass of information that is found in the harp treatises and methods. This time, the information is applied to an exact bar or note, so the various ways to move pedals can be reproduced by following the instructions on the score.

4.1 The "base" key

The single-action harp can be set-up in several different "base" keys, however, the most usual key is E-flat major.[13] Each "base" set-up key allows certain pedal solutions and limits others. In most published works, no instruction is included at the beginning of a piece to tell the harpist how to set-up up the harp.

A rare example is Petrini's *Sonate*, Op. 39 where "le Ton est en Mi♭" appears before the music staves on page 2. The following statement is written at the bottom of the page: "l'auteur dans toutes ses œuvres ne s'est jamais départi de cet accord."[14]

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harp part, but also for the accompaniment, as it can be played as a Sonata, with the first violin only, omitting the Tutti parts indicated by the smaller font." At a first glance, it would appear that only the bassoon is an *ad libitum* instrument, if the concerto is performed with an orchestral accompaniment. However, at the bottom of the title page, Krumpholtz gives an alternative instrumentation of simply harp with one violin. The harp part includes, in small print, the bass line and first violin line, so actually the concerto could be played as a solo harp piece.

[11] Jean-Baptiste Krumpholtz, *Sixième Concerto pour La Harpe*, op. 9 (Paris, 1783): "Sixth Concerto for the harp with accompaniment of two violins, two oboes, two horns, one flute, viola and bass by M. Krumpholtz...This Concerto can also be played without any accompaniment. One leaves out all the place where *Tutti* is indicated with the notes in small print".

[12] John Field (1782-1837), Irish pianist and composer. Brian Boydell, *Rotunda Music in Eighteenth-Century Dublin* (Blackrock: Irish Academic Press, 1992), 144; Patrick Piggott, *The Life and Music of John Field, 1782-1837, Creator of the Nocturne* (University of California Press, 1973).

[13] See section 3.1.

[14] "The key is E-flat". "The author in all of his works never departs from this tuning ["base" set-up key]."

Another example is Marin's *Six progressive Sonatinas*, Op. 16, *Sonatina*, no. 2 [c. 1800] (fig. 4.1) which is in the key of E-flat major, and the third movement, *Minuetto*, is in B-flat major.[15] The key signature for the *Minuetto* contains two flats, B and E, and a natural sign for the A, indicating to the harpist that this movement is in another key and that the A pedale must be fixed in the lower notch. It is written in the treble and bass clefs of the *Minuetto* to fix the A and then to unfix it for the *Trio* section.

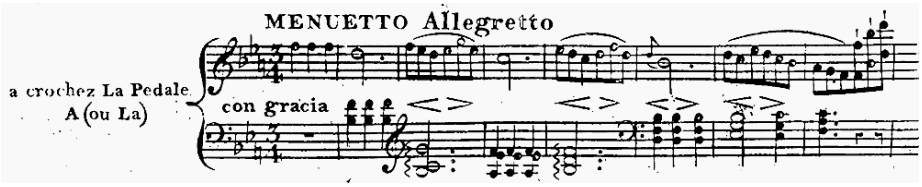

Figure 4.1: Marin, *Sonatina II*, Op. 16, *Minuetto*

In most circumstances it is usually up to the harpist to work out the "base" set-up key for themselves. This can be discovered by reading or playing through the whole work, deducing which notes are absolutely necessary and which notes can be played by their enharmonic alternatives.

The majority of pieces require a "base" set-up key of E-flat major, but there are also pieces that require other "base" set-up keys. A selection of pieces where the composer/publisher indicates at the beginning of a piece to set-up the harp in the "base" key of A-flat major are included in Table 4.1. This simply means that the harpist tunes the five A strings on the harp a semitone lower.

Table 4.1: List of pieces where the "base" set-up key is A-flat major.

Composer	Title	Key of work
D'Alvimare	*Sonata III*, Op. 18	F min./F maj.
D'Alvimare	*Sonata II*, Op. 9	C min./E♭ maj.
D'Alvimare	*Ouverture et airs du ballet de Daphnis et Pandrose*	C maj.
D'Alvimare	*Le Torrent, Romance* par Eusebe Salverte	A♭ maj.
D'Alvimare	*Six Airs russes*, Op. 25, no. 4	F maj./min.
Bochsa	*Les Cloches Bleues*	F maj./min.
Naderman	*L'Alliance Caprice pour harpe*, Op. 36	F min.
Spohr	*Fantaisie pour la harpe*, Op. 35	C min.

Spohr composed at least two works for a harp set-up in the "base" key of D-flat major. These are *Sonate* WoO 27/28 and probably also the *Concertante*, no. 2, WoO 14.[16] The harp part is in F minor and the violin part is in E minor which are the

[15] Vicomte de Marin (1766-1847), harpist and composer.

[16] The only known copy of Spohr's WoO 14 is part of the private collection of Heinz Holliger and

same keys as the *Sonate* WoO 27, so the author concludes that WoO 14 is in the same "base" set-up key. This cannot be confirmed until the score can be consulted.

The key signature of a piece does not necessarily indicate the "base" set-up key of the harp. Most of the pieces in Table 4.1 are in A-flat major or its relative minor key of F minor, and indeed these works do require that the "base" set-up key is A-flat major. However, two of the above pieces are in C minor and one in C major, and the composer/publisher forewarns the harpist from the beginning of the piece that D♭ is obligatory by delineating the "base" set-up key. This is due to the fact that normally an E-flat major "base" set-up tuning would suffice for a piece in C minor/major, but an A-flat major also works and is sometimes also essential.

Therefore, a simple rule is that the "base" set-up key must have, as a minimum, the same amount of flats or sharps as the key signature of the piece, but may also have more flats or sharps, but not less.[17]

Krumpholtz writes on the frontispiece of his *Deux Simphonies*, Op. 11, in the Naderman edition[18]:

> "Pour faciliter l'éxécution dans le maniement des Pédalles pour toute Musique quelconque composée pour la Harpe: l'Auteur indique quelque fois dans son Œuvre XI^{e} le Sol♯ en place du La♭ pour ne pas décrochez le La qui se trouve naturel à la Clef, ou bien Ut♯ en place de Re♭ ainsi que le Re♯ au-lieu de Mi♭…En observant générallement cette méthode, on trouvera bien moins de difficultés dans cet instrument."[19]

These instructions may appear on the surface to be an aid to the harpist with respect to the enharmonic alternatives in the works. However, they also indicate the "base" set-up key, as Krumpholtz states to use C♯ as an enharmonic for D♭ and to use D♯ as an enharmonic for E♭. Therefore, the harp is tuned in E-flat major; the harpist has the possibility of playing D♮ and D♯, but not D♭. Every D♭ is then played as C♯.

This same statement is found at the bottom of the catalogue included in the Naderman editions of Krumpholtz's Opp. 11, 13, 14, 15 and 16. It could be assumed then that all of these works are written for a harp set-up in the "base" key of E-flat major, but this is not always the case.[20]

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is not available for consultation. The incipit of this *Concertante* for violin, harp and orchestra is known from Louis Spohr, "Verzeichniß sämtlicher Compositionen von Louis Spohr," after 1822. This incipit is transcribed in Folker Göthel, *Thematisch-bibliographisches Verzeichnis der Werke von Louis Spohr* (Tutzing: Schneider, 1981), 278. Göthel refers to this manuscript catalogue as *Louis Spohr, Eigenhändiges Werkverzeichnis*, EWV. See Abbreviations.

[17] See Martin Wulfhorst, "Louis Spohr's Early Chamber Music (1796-1812): A Contribution to the History of Nineteenth-Century Genres" (PhD Dissertation in Music (Musicology), City University of New York, 1995), 351–58, and this Chapter 5, Table and "base" keys for the harp.

[18] The editions of Cousineau and Momigny do not include these instructions.

[19] Jean-Baptiste Krumpholtz, *Deux Simphonies pour la Harpe Seule ou avec Accompagnement de Violon*, op. 11 (Paris: Momigny, n.d.): "To facilitate the execution in moving the pedals for all music composed for the harp: the author indicates sometimes in his Op. XI that the G♯ replaces the A♭ in order not to release the A which is found in the key signature, or the C♯ replaces the D♭ and the D♯ replaces the E♭… Observing this method in general, one will find fewer problems on this instrument."

[20] See Chapter 5.

The harp as a transposing instrument

The following phrase is found on the first page of the harp part of the *Deuxième Concerto*, Op. 48, by Demar: "il faut accorder le Si♭ de la harpe, avec le La de l'orchestre". This means that the harp is tuned a semitone lower than the orchestra. The harp part is notated in C minor, while the orchestral parts are notated in B minor.[21] The harps built by French luthiers like Cousineau and Naderman were built for a lower pitch.[22]

These indications have nothing to do with the "base" set-up key, but rather a practical solution to accommodate harps at one pitch and other instruments at other pitches at a time when pitch was not standardised.[23] On the frontispiece of Krumpholtz's *Deux Concertos*, Op. 6 (1777), the following advice is given to the harpist:

> "le ton de fa soit à l'unison du mi-majeur, et celui de mi-bémol à l'unison du ton de ré-majeur. C'est pour l'effet des accompagnemens que cela est fait."[24]

The choice of these keys like E major and D major utilise the "open strings" on the violin, whereas flat keys utilise more "open strings" on the harp, minimising the amount of fixed pedals.

Spohr's name is often associated with this practice of composing for the harp as a transposing instrument.[25] He was not the first composer to use this ingenious solution, but he was simply following in a tradition that already existed for several decades before his first experiments in 1805.[26] The tradition continued after Spohr with Théodore Labarre publishing his *Fantaisie*, Op. 101 for harp and orchestra in 1840 for a double-action pedal harp that is "baisser d'un demiton."[27]

4.2 Enharmonics

Section 3.3 deals with how enharmonic solutions are applied to short musical examples that are found in harp treatises and methods. When these alternative notes are necessary or recommended by the composer, they are often written near

[21] "The B♭ of the harp ought to be tuned with the A of the orchestra". A version of this same Concerto for piano and orchestra has all instruments notated in B minor.

[22] Wolf, "Timeline-Pedalharps." When variables including the length and diameters of strings are taken into account, Wolf has calculated that harps up to 1805 were built for a pitch around A=425-430Hz. See section 2.1.2.

[23] Bruce Haynes, *A History of Performing Pitch: The Story of "A"* (Scarecrow Press, 2002), 306–12.

[24] "The key of F is in unison with E major, and that of E-flat is in unison the key of D major. This is done for the sake of the accompaniment."

[25] Wulfhorst, "Louis Spohr's Early Chamber Music (1796-1812)," 201: Spohr "invented" the tuning method in 1806, 350: the tuning method was kept a "secret"; Louis Spohr, *Trio Für Harfe, Violine Und Violoncello, F-Moll*, ed. Folker Göthel, WoO 28 (Merseburger, 1984).

[26] Spohr began experimenting with writing works for violin and a transposing harp around 1805. The first work written in this fashion is a fragment of a sonata movement, WoO 24. See Chapter 5.

[27] Théodore Labarre (1805-1870), harpist and composer. "Lowered by one semitone."

or on the music. In Krumpholtz's later works (Opp. 11, 13, 14, 15 and 16), it is recommended by Krumpholtz or Naderman, the publisher, that each E♭ is played with the D string, using the enharmonic alternative D♯ and the G string is used to play A♭.

The first movement, *Allegro assai*, of Krumpholtz's *Deux Simphonies*, Op. 11, shown in fig. 4.2, shows how enharmonics are used in a piece. The harp is set-up in the "base" key of E-flat major, according to Krumpholtz's instructions in the Naderman edition.[28]

Even without these initial instructions, it would be clear for any harpist that Krumpholtz or the publisher intended this work to be played on a harp set-up in the "base" key of E-flat major, as "D♯" is written several times above the music stave, indicating that D♯ is the enharmonic substitute for the notated E♭ and every notated D♭ in this movement has a "C♯" written above the stave.

The use of enharmonic notes is fundamental in two practical situations when playing the harp.

- The first use is when a pitch does not exist on the harp, so playing an alternative enharmonic note is obligatory. For example, a harp set-up in the "base" key of E-flat major does not have the pitch D♭, so the use of its enharmonic alternative, C♯, is indispensable.
- The second situation is when the notated pitch is difficult to use, due to pedalling constraints. Then the pedal of the enharmonic note is often found to be an easier solution. An example of this is given below in Krumpholtz *Deux Simphonies*, Op. 11, bars 42 and 68, fig. 4.3 and 4.4, later in this chapter.

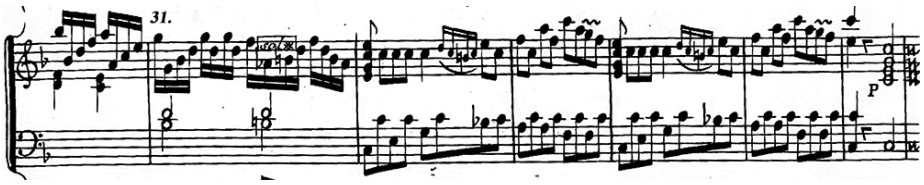

Figure 4.2: Krumpholtz, *Deux Simphonies*, Op. 11, *Allegro assai*, bars 31-36.

This movement is in F major and so the E and A pedals are fixed in the lower notches. Bar 31 is an example of how Krumpholtz approaches pedalling. This bar has an A♭ notated in the music. Without the knowledge of Krumpholtz's instructions on the "base" set-up key of the harp and the enharmonic markings on the score, the harpist would normally unfix the A pedal with the right foot while pressing down the B pedal with the left foot. The B pedal is moved because there is a ♮ sign before the B in the score; there is no additional marking for the pedal. However, Krumpholtz averts the harpist to use G♯, for the A♭ in bar 31.

The chord on the second minim of bar 31 is a diminished seventh chord on B, which resolves to C major in bar 32. When the enharmonic alternative G♯ is used instead of

[28] See section 4.1.

the notated A♭, this chord becomes an augmented sixth chord on B. This is precisely an example which contradicts Backofen's claim that French composers prefer to notate diminished seventh chords as augmented sixth chords, as the latter notation doubles up as the pedal solution.[29] In this situation, the harpist could read the accidental in the score and this accidental is the pedal solution. This would indeed be easier for the harpist, but is not the case in Krumpholtz's music.

The mental processes proposed by Krumpholtz and his contemporaries may seem more complicated than they are. The harpist reads the notation on the music, reads above the note that an enharmonic alternative is advised, and then they find the enharmonic string and pedal, neither which are written in the musical notation. However, it is my opinion that there is a system within this complexity, which in the long run is easier for the harpist. The emphasis is on the musical structure and harmony, and a historical approach to pedalling.[30]

There are several possible reasons for Krumpholtz's extra use of enharmonics, beyond the two practical situations mentioned above. Bar 31 might appear to be a superfluous use of an enharmonic, where a notated A♭ is substituted with a G♯. A harp set-up in the "base" key of E-flat major has both G♯ and A♭ as pitches. One reason for using the G pedal rather the A is that the G pedal is closer to the harpist, so it could be considered less effort to move that pedal rather than the outermost A pedal.

The second reason derives from Krumpholtz's explanation of not releasing "the A which is found in the key signature."[31] This statement could point to an approach to pedalling where if certain pedals are fixed due to the key signature of a piece, these are then left, as much as possible, fixed in the position of the key signature. Any additional accidentals are henceforth made with pedals that are in the upper, unfixed state and are operated by pressing down and releasing because they are not "found in the key signature". The action of pressing down and releasing is a momentary gesture, which moves in harmony with the musical phrase. So whereas the fixed A pedal in the lower notch is an integral part of the key signature, the G pedal is used for the momentary A♭ accidental.

It is as if the two pedals, E and A, that are fixed in the lower notches, become part of a new "base" key and the harpist works from this new setting to add or subtract additional accidentals. Perhaps this approach to pedalling also favours the pressing and releasing pedal movements rather than the motion of unfixing a fixed pedal, which then at a later stage has to be re-fixed to put the harp back into the key signature of the piece.

If a harpist plays bar 31 in this way, the G pedal is pressed down and then released by the middle of bar 32, where there is a G♮ on the second minim. The state of holding down a pedal is an unstable position for the foot; the foot is in tension. The natural action of the foot in this case is to release tension as soon as possible, by

[29] See section 3.3 and footnote 47 for translation of Backofen's text.
[30] See Chapter 5.
[31] See section 4.1.

releasing the pedal.

If, on the other hand, the harpist plays the A♭ in bar 31 as notated, they will unfix the A pedal and then their foot will be without tension and might "forget" to re-fix the A by bar 33, which has an A♮ on the first crochet. The unfixing motion of the foot implies the end of an action, so re-fixing becomes an extra movement afterwards, which is a mechanical movement but not necessarily part of the musical gesture.

There are still other reasons for using a G♯ instead of an A♭ in bar 31. The action of pressing down both the B and G pedals might be considered more organic and simpler, than two opposing movements for the feet which would be pressing the B pedal down with the left foot while releasing the A pedal upwards with the right foot.

A final but, probably the most musically significant reason for several enharmonic choices regards how to stop the vibrations and over-tones of a certain string, especially a note that is not part of an ensuing harmony. If A♭ is plucked in bar 31, that string will continue to resonate and vibrate into the next bar where the harmony changes to C major. An A string plucked as A♭ also activates the sympathetic vibrations of every A♭ on the harp and all their over-tones in the harmonic series, which are not part of a C major harmony. If the G string is used in bar 31 as G♯, to replace the notated A♭, the G string is again plucked on the first beat of bar 32, but now as G♮. The vibrations of the G♯ are forcibly halted by using the same string for two notes. Bars 66 and 79, shown in fig. 4.3, are even better examples of this case. If the A string is first used to sound as A♭, this string will continue to vibrate and enter the harmony of the G major chord in bar 67. If the G string is used to sound as A♭ in bar 66, and then re-plucked in bar 67 as G♮, the vibrations of the first use of the G string are abruptly halted.

Further examples in this first movement show how enharmonics are used for ease of pedalling, which is one of the two primary practical uses of enharmonic notes. Bar 42 (fig. 4.4) and bar 68 (fig. 4.3) contain E♭ and F♯, but the E and F pedals are both situated on the right-hand side of the harp. It is possible to play one after the other, but if the notated E♭ is played as D♯, then each foot can operate one pedal: the right foot moves the F pedal, the left foot moves the D pedal to produce an E♭. If D♯ is used in this bar, it also assists the resulting resonance, as the D♯ vibrations can be stopped in bar 43, when the D string is re-used to play D♮. Another example is bar 188 (not shown in any figure) where the same situation occurs, but this time with G♯ and A♭.

Bar 215, shown in fig. 4.5, contradicts any theory that employs enharmonics for purely over-tone motivations. Krumpholtz recommends the use of the enharmonic G♯ in bar 215, where the A♭ would appear to be the more musical solution. If the A string is firstly used as A♭ and then re-plucked in bar 216 as A♮, it halts the vibrations of the A♭ in the previous bar. Krumpholtz's choice to use the G pedal for A♭ could be due to the fact that the G pedal is closer to the harpist than the A pedal, therefore, it is more convenient to move. Another explanation may be that this bar is a repeat of bar 31, so Krumpholtz suggests the same pedal gesture for both

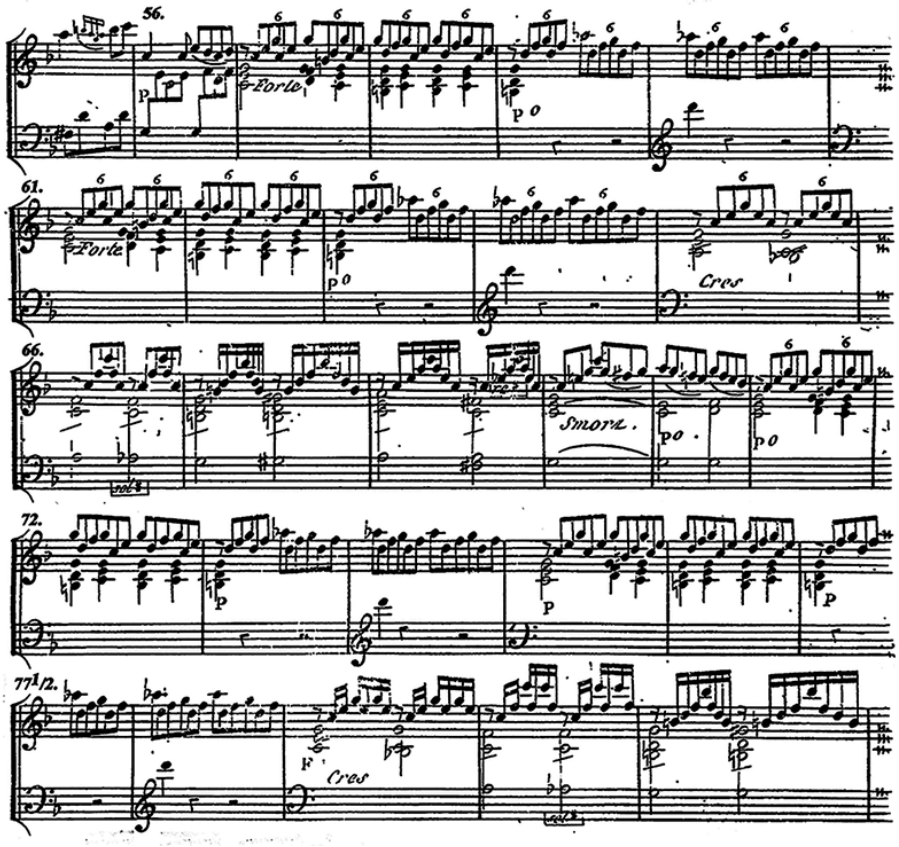

Figure 4.3: Krumpholtz, *Deux Simphonies*, Op. 11, *Allegro assai*, bars 56-81.

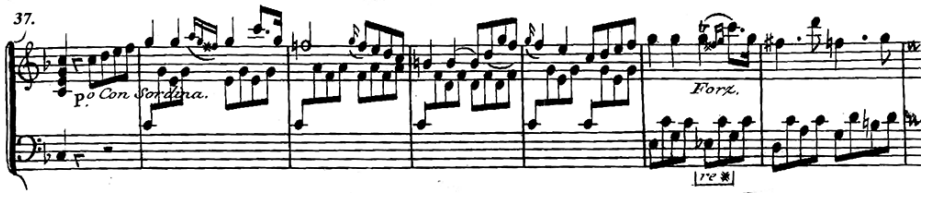

Figure 4.4: Krumpholtz, *Deux Simphonies*, Op. 11, *Allegro assai*, bars 37-43.

bars in order to maintain the same foot movement, even if the harmonic gesture is altered. The harmony in bar 32 moves to C major, whereas the harmony in bar 216 moves to A minor.

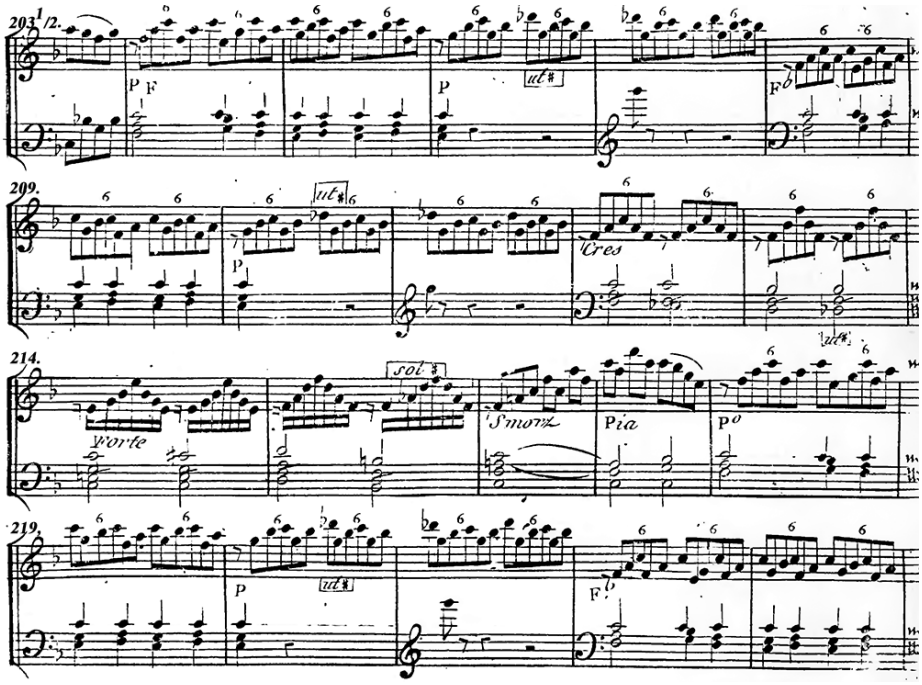

Figure 4.5: Krumpholtz, *Deux Simphonies*, Op. 11, *Allegro assai*, bars 203-23.

The only other notated A♭'s in this movement are found in a motive where A♭ repeatedly pivots with G♮ in bars 59-60, 63-64, 73-74 and 77-78. These A♭'s are not marked to be played with their enharmonic G♯, but could easily be played so. This passage is repeated a tone higher where B♭ pivots with A♮ in bars 107-8 and 111-12, but there is no enharmonic solution for these two notes on a harp set-up in the "base" key of E-flat major. There are also no pedal movements required in these bars as there are no accidentals that are not part of the key signature.

The same passage is again repeated in bars 206-7, 210-11, 220-21 and 223-24, at an interval of a fourth higher with D♭ pivoting with C♮. A harp set-up in E-flat major does not contain D♭, and indeed these passages are marked to be played with their enharmonic alternative C♯.

If Krumpholtz's enharmonic recommendations are part of a coherent published system, where all his enharmonic solutions are written in the score, then bars 59-60, 63-64, 73-74 and 77-78 are played as written, with the notated A♭'s. If, however, there is a systemic approach to combine pedalling with the musical gesture, then the intention could be to use the enharmonic alternative, G♯, the pedal that is closer to the harpist and the pedal that will be used in the intermittent bars 66 and 79,

which are indeed notated with enharmonic alternatives by Krumpholtz. If the G pedal is used to produce the notated A♭, this will result in an articulation that is not possible if the pedal would be excluded from the music.

The harp repertoire is full of enharmonic solutions that are marked in the scores. These markings are the first types of pedal markings. Further examples of enharmonic writing can be found in Naderman's *Trois Sonates*, Op. 5, 1er livre, pages 16 and 19. Marin instructs the harpist at the beginning of his *Sonatina IV*, Op. 16 that "tous le A♭ doivent etre fais avec le G♯" and before *Sonatina V* that "les D♭ doivent se faire avec le C♯."[32] Marin's *Sonatina VI* also begins with a *Prélude pour L'usage des Pedales* with several enharmonic alternatives.

The *Fantaisie avec Huit variations…sur un Jeune Troubadour* by d'Alvimare, pages 10-11, shown in fig. 4.6, includes an *ossia* version for the harpist, where the enharmonic alternatives are notated on two additional staves. The notated enharmonic notes are the pedal solutions. This example shows that the pedals were strongly allied to the music and directly linked to the musical notation, albeit a notation that is harmonically incorrect or intentionally miswritten on the staves. The pedals and pedal solutions are not considered a mere mechanical feature of the instrument or a non-musical component but rather an inherent part of the musical gesture.

4.3 *Jeu des pédales*

A review of eighteenth- and early nineteenth-century discussions on how to press, release, fix and unfix pedals is found in section 3.4. The first pedal markings consist of the composer or publisher's wish to avert the harpist to necessary or suggested enharmonic substitutes. The second phase in the history of pedal markings are situations where pedals are fixed in order to leave the foot free to move another pedal on the same side of the harp. The foot movement to simply press down and release was the norm, so this exception to the rule (fixing a pedal) was necessary to mark in the music. Examples of moving one pedal at a time and two pedals with two feet are included in section 3.4.

Most pre-1800 scores contain no pedal markings, besides those indicating the enharmonic alternatives. The few markings that are published are very similar to the examples already found in pieces included in the treatises and methods. The following example is a special case, but in general, the harp repertoire offers little additional information regarding single-pedalling and the four basic foot movements-pressing, releasing, fixing and unfixing-to the musical examples found in the treatises and methods in Chapter 3.

The *Duo a quatre mains pour la harpe*, Op. 19 by d'Alvimare, shown in fig. 4.7, is a work dedicated to two sisters playing on one harp, the 1st harpist sits, plays a melody and bass line utilising the middle range of the harp and operates the pedals

[32] "All the A♭'s ought to be made with the G♯." "All the D♭'s ought to be made with the C♯."

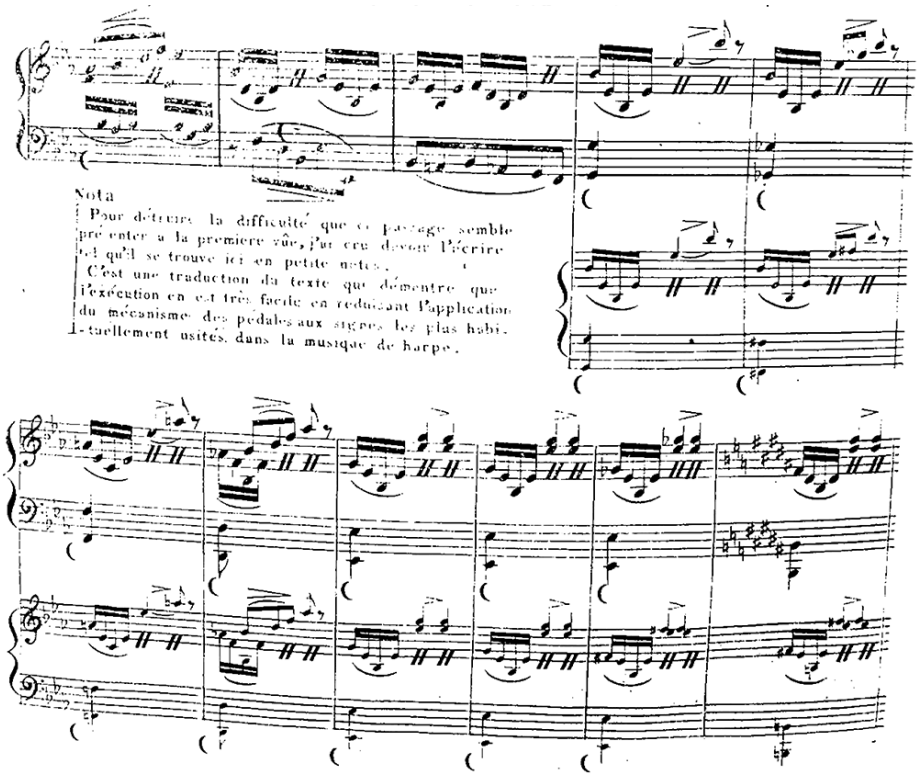

Figure 4.6: D'Alvimare, *Fantaisie avec Huit variations…sur un Jeune Troubadour*, p. 10.

for both harpists. The 2nd harpist stands, plays a melody in the upper octaves and a bass accompaniment in the lowest octaves of the harp.[33] Page seven of d'Alvimare's Op. 19 includes this instruction:

> "Ce Signe est placé pour avertir d'accrocher les pédales pour la facilité de l'exécution."[34]

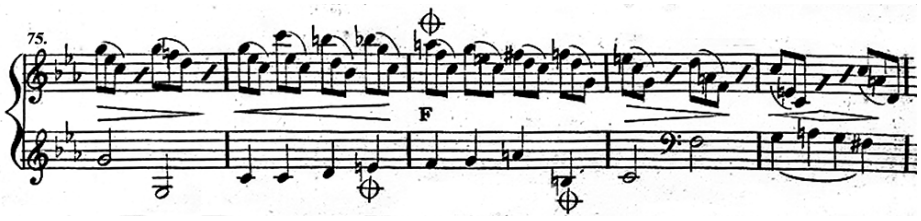

Figure 4.7: D'Alvimare, *Duo a quatre mains pour la harpe*, Op. 19, bars 75-79.

The right foot fixes the E pedal in bar 76 and the A pedal in bar 77, so that the right foot is free to press the F pedal down on the third crochet of bar 77 and then release the F on the fourth beat while the left foot fixes the B pedal. The B pedal is then fixed as the next sixteen bars require a B♮, and this fixing movement is indicated. The movement of the F pedal is not marked, because this pedal is the only one that is not fixed in this passage.

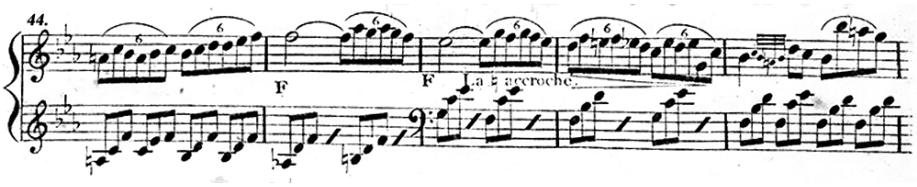

Figure 4.8: D'Alvimare, *Duo a quatre mains pour la harpe*, Op. 19, bars 44-48.

The indication to fix the A pedal in bar 46, shown in fig. 4.8, is to indicate to the 1st harpist to move a pedal for the second player. It is the standing 2nd harpist who actually requires an A♮ in this bar, whereas the sitting 1st harpist only requires an A♮ in bar 48. The pedal is fixed as A♮ is part of the harmony until bar 71, which is a total of 25 bars. A similar harmonic passage is found from bar 27 to bar 45, shown in fig. 4.9, where the piece modulates into B-flat major and an A♮ is required for a total of 18 bars.

There is no instruction in fig. 4.9 to fix a pedal, but it would be normal practice for any harpist to fix the A pedal in bar 27, so that the right foot can press down and release the F pedal in bars 29 and 31 and the E pedal in bars 34 and 36. This is

[33] Marin also wrote a piece for two harpists on one harp: *Duet for two Performers on one harp*, Op. 12. The author only knows of these two pieces written for two harpists playing on one harp.

[34] "This sign is placed to alert to fix the pedals for ease of execution."

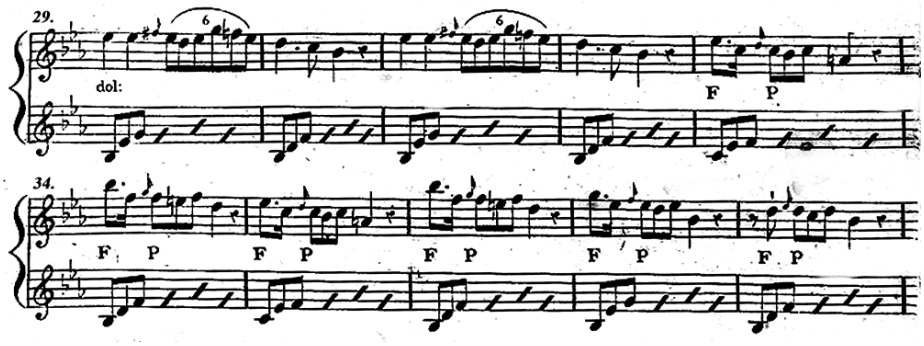

Figure 4.9: D'Alvimare, *Duo a quatre mains pour la harpe*, Op. 19, bars 29-38.

an example of the inconsistency of pedal markings in the printed repertoire. The same foot movements are required in both passages, where the A pedal needs to be fixed, but this is not marked in the score. The E and F are not fixed in this passage, so do not need to be marked.

The final pedal marking in this *Duo* is found in the *Rondo*, page 19, bar 134, fig. 4.10. The indication to press down the E pedal is to indicate to the 1st harpist to move a pedal for the second player. In the previous bar, the 1st harpist requires a C♯ for herself, but this pedal change is not marked. This example shows that most pedal changes were not marked, because the harpist could read the changes from the accidentals notated on the music. Two of the three places where pedal changes are marked in this piece are due to the fact that the 1st harpist moves pedals for the 2nd harpist that are out of context for her. These indications are necessary for the 1st harpist, because the pedal movements in bars 46 and 134 have no musical sense in those precise places for the 1st harpist.

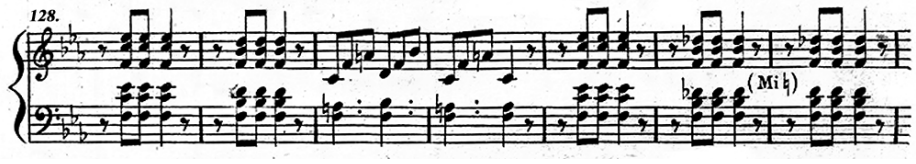

Figure 4.10: D'Alvimare, *Duo a quatre mains pour la harpe*, Op. 19, bars 128-34.

4.3.1 Double- and triple-pedalling

The practice of operating two or more pedals together with one foot is seldom described in the treatises and methods.[35] There are just as few examples, written

[35] See section 3.4.4.

or explained, in musical scores.[36] Five sources have been identified out of over 2,000 pieces already consulted for the harp. There are few sources because multi-pedalling was not necessary in most of the repertoire and because it was probably a technique only used by professionals and virtuoso players like Dorette Spohr, Madame Krumpholtz and d'Alvimare. These performers played their own difficult compositions which would not have been possible for most amateur harpist even to attempt. There also could have been an element of protecting a secret technique, by mystifying both the amateur players who were not aware of these ways of pedalling and the audience who heard rare harmonic modulations from the *virtuoso* harpists.[37]

4.3.1.1 Krumpholtz

Krumpholtz's *Amante abandonnée, Air Parodié sur l'Adagio de Œuvre XIV* for violin, voice, harp or piano and "contrebasse" is an adaption of the first movement of his *6^{me} Sonate*, Op. 14 for solo harp.[38] On page four, the following sentence is found under bar 36:

> "il faut relever la Pédale su Sol a demeure pour pouvoir mettre le pied sure celle du La et du Fa♯ au bien lieu du Sol♭ en même temps ce qui se reïtere dans se morceau tres frequement."[39]

This is the earliest dated written evidence of double-pedalling described in words in a score, shown in fig. 4.11.[40] The G pedal is folded away and then the right foot is placed across the F and A pedals. The F and A pedals are pressed down on the second crochet of bar 36 and then released on the second crochet of bar 38, where both F♮ and A♭ are required. As Krumpholtz writes, the diminished chord on F♯ and hence double-pedalling with the right foot on the F and A pedals can be found in many bars in the piece: bars 40, 42, 48-50, 75, 82 and 86.

The harmony of this piece and the original first movement of the *6^{me} Sonate* are the same, so double-pedalling with the G is pedal folded away, could also be applied to the *Sonate*, even if there are no instructions to do so in any of the publications of this *Sonate*. There are however much fewer *pédale à renforcement* indications[41] in the *Amante abandonée* compared to the *6^{me} Sonate*, perhaps because the left foot is occupied playing Krumpholtz's *Contrebasse* and not with the *pédale à renforcement*.

[36] This is an ongoing research of mine, as the only way to find more sources is to look at every page of music ever written or published for the harp.

[37] See Chapter 6 for contemporary reviews of the performances of Dorette Spohr.

[38] It is the author's opinion that the "contrebasse" in the title is referring to Krumpholtz's invention *Contrebasse ou Clavicorde à marteau*, a pedal board that was placed under the harp and played with the feet. It was one of the inventions that Krumpholtz presented to the *l'Academie Royale de Sciences* in November 1787.

[39] "one should lift up the G Pedal so that remains safe in order to put the foot on the A and the F♯ - which takes the place of the G♭ – together, which is reiterated very often in this piece". Jean-Baptiste Krumpholtz, *L'Amante Abandonée, Air Parodié* (Paris, 1788), 4.

[40] It is the author's opinion that Petrini's *Folies d'Espagne*, see 4.3.1.2, could have been written before Krumpholtz's *Amante abandonée*, as the compositional writing is of an earlier style.

[41] See section 4.5.1.

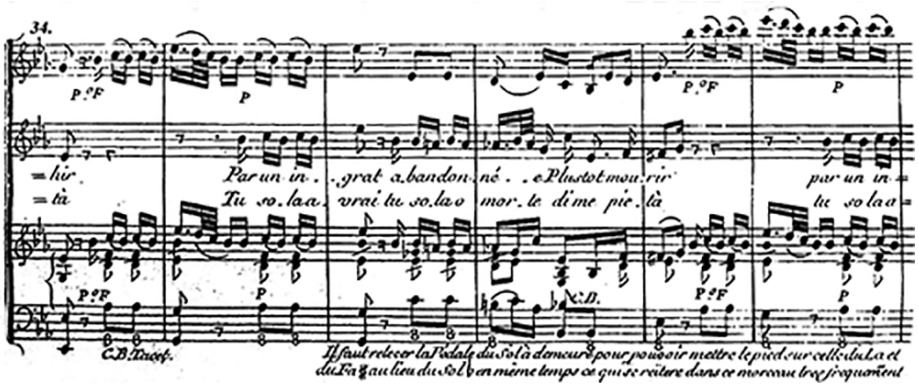

Figure 4.11: Krumpholtz, *Amante abandonnée*, bars 34-39.

4.3.1.2 Petrini

Petrini's *Folies d'Espagne*,[42] Op. 28, no. 11, 6 states:

> "Pour prendre les Pédales du Fa et du La ensembles on baisse en même temps la pédale du Sol".[43]

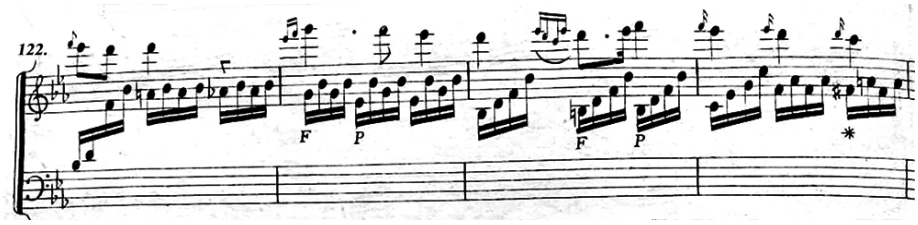

Figure 4.12: Petrini, *Folies d'Espagne*, Op. 28, no. 11, var. 7, bars 122-25.

Figure 4.12 shows bars 122-25. This instruction is marked with an asterisk pointing to bar 125, where the A♭ and F♮ both change to A♮ and F♯ in a semiquaver motion.[44] The two pedals are then released with the F♮ in bar 126. This is not the only occasion

[42] The author performed this work at the Palmensaal, Sanssouci, Potsdam, Germany on June 11, 2016, using double-pedalling techniques as indicated by Petrini, and additional ones by the author. This work has been recorded by the French harpist Sandrine Chaton, *Le Salon de Musique de Marie-Antoinette*, Ambroisie AM179, 2008. Chaton used an Erard harp from 1799, No 7, 41 strings, from the collections of the Musée de la Musique in Paris, pitch: 430 Hz and 1/8 comma temperament. She did not use any double-pedalling techniques in this recording.

[43] Petrini, *Folies d'Espagne*, 6: "to take the F and A pedals together, lower the G pedal at the same time".

[44] I have found no explanation why this instruction is written so late in the music, considering that either double- or triple-pedalling can be used in several passages before bar 125. The piece is a set of variations with a repeating harmonic structure that returns in nearly every variation, so it would make musical sense to use the same foot gesture for harmonically parallel passages.

in this piece where triple-pedalling can be used. The whole piece also works with double-pedalling, as there is no G♯ in the entire piece, so the G pedal could be folded away from the beginning of the piece, as Krumpholtz describes, and then the right foot moves the F and A pedal with ease. Double-pedalling and variations of moving the F and A pedals together and separately (pivoting with the heel and toe), can be found in bars 7-8, 23, 39-41, 107, 141-42 and 173-77. Triple-pedalling, as described by Petrini can only be used in bars 23, 107 and 125. This is due to the fact that if the F, G and A pedals are held down, then the G string will sound as G♯, but G♮ is required in all the bars listed above where double-pedalling is feasible.

4.3.1.3 Naderman

Thêmes favoris de l'Opéra des Bardes by Naderman also includes one single instruction to move two pedals together, namely the G and F pedals in bars 317 and 321, where Naderman writes to "mettez le sol et le fa du même pied."[45] The harmonic progression from bar 317 moves from F major to the augmented sixth chord on F♯ which resolves to a cadence in C major, as shown in fig. 4.13.

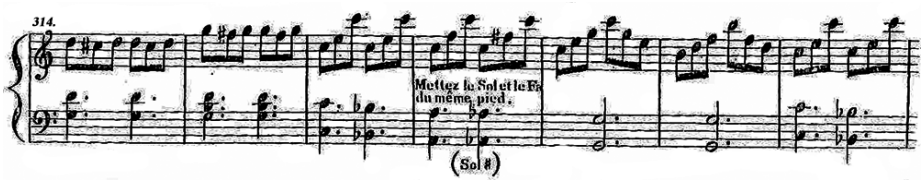

Figure 4.13: Naderman, *Thêmes favoris de l'Opéra des Bardes*, bars 314-20.

This piece is in C major so the B, E and A pedals are fixed in their lower notches from the beginning. This makes double-pedalling across the F and G pedals easy, as the A pedal is on the lower plane, while the F♮ and G♮ are situated on the upper plane. Double-pedalling using the right foot to press down the F and G pedals together is also found on page 14 (bars 419 and 427), and on page 15, bar 486. These bars all contain the same harmonic progression as bars 317-18.

Naderman actively avoids the progression of an F minor chord going directly to the diminished seventh chord on F♯, which is found in the above example of Petrini's *Folies d'Espagne*, Op. 28, no. 11. Double-pedalling with the F and A pedals is never utilised in Naderman's piece, whilst double-pedalling with the F and G pedals is favoured in this work. When Naderman uses the diminished seventh chord on F♯, it is always carefully prepared in order to avoid double-pedalling with the F and A pedals. Figure 4.14 shows the harmonic progression in bars 490-95, which moves from the chord of A-flat major to it's augmented 6^{th} chord (on A with an F♯), followed by the diminished seventh chord on F♯ resolving to G major. This means that the F and A pedal are moved separately, one after another.

[45] Naderman, *Thêmes favoris des Bardes*, 11, bar 317: "put the G and F down with the same foot".

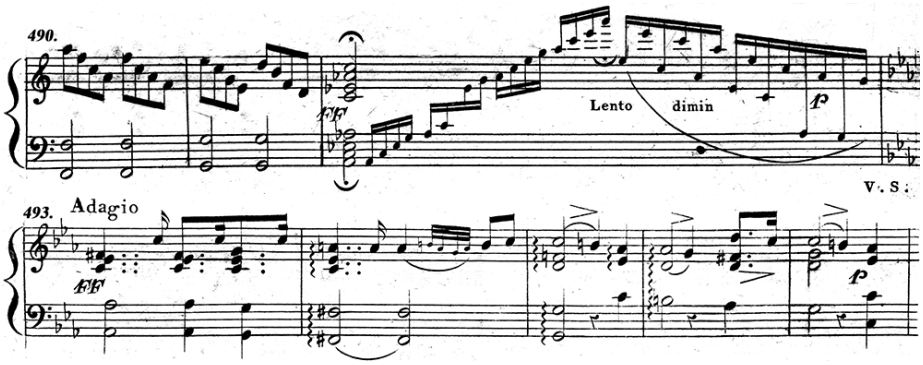

Figure 4.14: Naderman, *Thêmes favoris de l'Opéra des Bardes*, pages 15-16.

4.3.1.4 Dauprat

The *Air Écossais Varié pour Cor et Harpe (ou Piano)*, Op. 22 by Louis-François Dauprat[46] includes the brief instruction on page 3, bar 28, "les 2 Ped:" ("the two pedals"). The *Air Écossais* is most probably conceived for a harp set-up in the "base" key of E-flat major.[47] There is no G♯ in the entire piece, so the G pedal can be folded away, as Krumpholtz recommends, in order to leave the right foot move the F and A pedal together with ease.

Bar 28 contains a G♭ on the second crochet beat of the bar, as shown in fig. 4.15. This is played with its enharmonic alternative, F♯, where the heel or toe press the F pedal down and release on the third crochet, where an F♮ is required. The A and F pedals are then pressed down together for the fourth crochet of bar 28, as A♮ and F♯ are required in the descending *arpeggio*. Both pedals are then released at the beginning of bar 29.

This piece contains several other phrases where double-pedalling with the F and A pedals can be applied, including one just before the written instruction in bar 28. Bar 25 has a G♭ on the first crochet beat of the bar. This is played with its enharmonic alternative, F♯, where either the right heel or toe presses the F pedal down and releases it for the F♮ on the fourth quaver of the bar. On the fourth crochet the F and A pedals are pressed down again. The right heel is released for the last F♮ of the bar and the toe fixes, or simply holds down, the A pedal until the beginning of bar 27.

If the harp is set-up in the "base" key of E-flat major, then it does not include the pitch D♭. This means that all D♭'s in the piece are played with the enharmonic

[46] Louis-François Dauprat (1781-1868), French horn player, harpist, teacher and composer. I would like to thank the Australian harpist Hannah Lane for identifying this source and for sharing it with me. Anneke Scott and Hannah Lane performed this work at the Early Music Studio, Melbourne Australia on May 7, 2016.

[47] It could also be played in the "base" set-up key of A-flat major, but this does not concern the discussion of double-pedalling with the right foot.

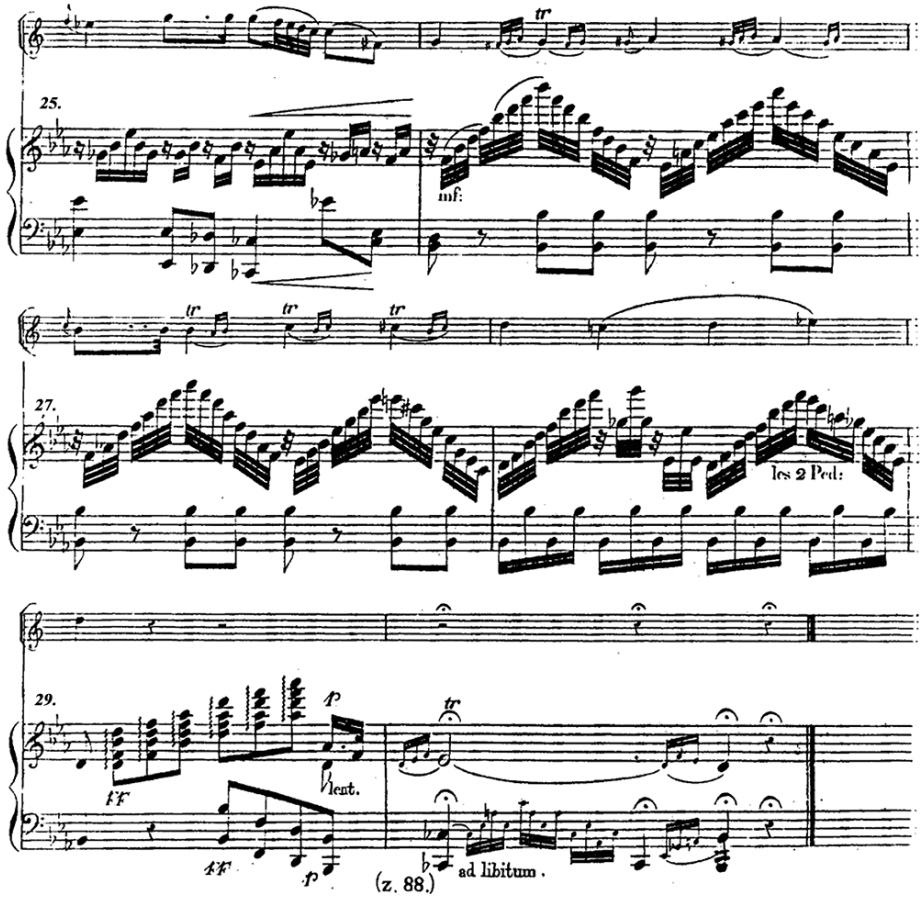

Figure 4.15: Dauprat, *Air Écossais Varié pour Cor et Harpe (ou Piano)*, Op. 22, bars 25-30.

alternative of C♯. Bar 25 then also includes a double-pedal movement for the left foot, where the C and B (producing the notated C♭) pedals are pressed down together on the fourth quaver and released at the beginning of bar 26.

If the harp is set-up in the "base" key of A-flat major, this bar does not contain double-pedalling for the left foot. The D♭ and B♮ (notated C♭) would require two single pedal movements.

Bar 30 has an F♮ in the right hand and an F♯ in the left hand, both on the third beat. This final *cadenza* bar of this *Introduction, Adagio* is in free time, so a musical solution would be to first play the left hand diminished chord with an F♯ and then play the resolution with the F♮ in the right hand just before the B♭ octave in the bass.

Other examples of F and A double-pedalling can be found in bars 69, 74, 90, 92, 103, 104, 124, 134. In bar 137 the F and A pedals are pressed down together and then the F pedal is released on the first beat of bar 138 while the A pedal is held down until the end of the bar.

4.3.1.5 D'Alvimare

The fifth written source of multi-pedalling in a musical score is d'Alvimare's *Sonate III*, Op. 18, in F minor [c. 1802], shown in fig. 4.16. [The author performed this work at the Palmensaal, Sanssouci, Potsdam, Germany on June 11, 2016, using multi-pedalling techniques as indicated by D'Alvimare, and additional ones by the author.] On page 40 of the first movement, *Agitato con moto*, bars 84-95 are written out a second time on the lower part of the page, showing the pedal solutions as an enharmonic *ossia* part.[48] The following instructions are found:

> "(N^{ta}): Pour faciliter l'exécution de ce passage qui au premier apperçu, semble offrir une grande difficulté, nous avons jugé utile d'en tracer le mécanisme d'une manière qui en démontrât la simplicité."

Between the staves in bar 89, this is written:

> "sur le 1re note de cette mesure, il faut accrocher le MI, appuyer les 3 pédales adroite avec le même pied, et en faire de suite autant avec le pied gauche pour les 3 pédales de ce côte."

Between the staves of bar 92, this is written:

> "sur la 1re notte de cette mesure, quittés les 3 pédales adroite ensuite décrochés le Mi."

And finally, in bar 93:

> "sur la 1re notte de cette mesure, quittés les 3 pédales a gauche."[49]

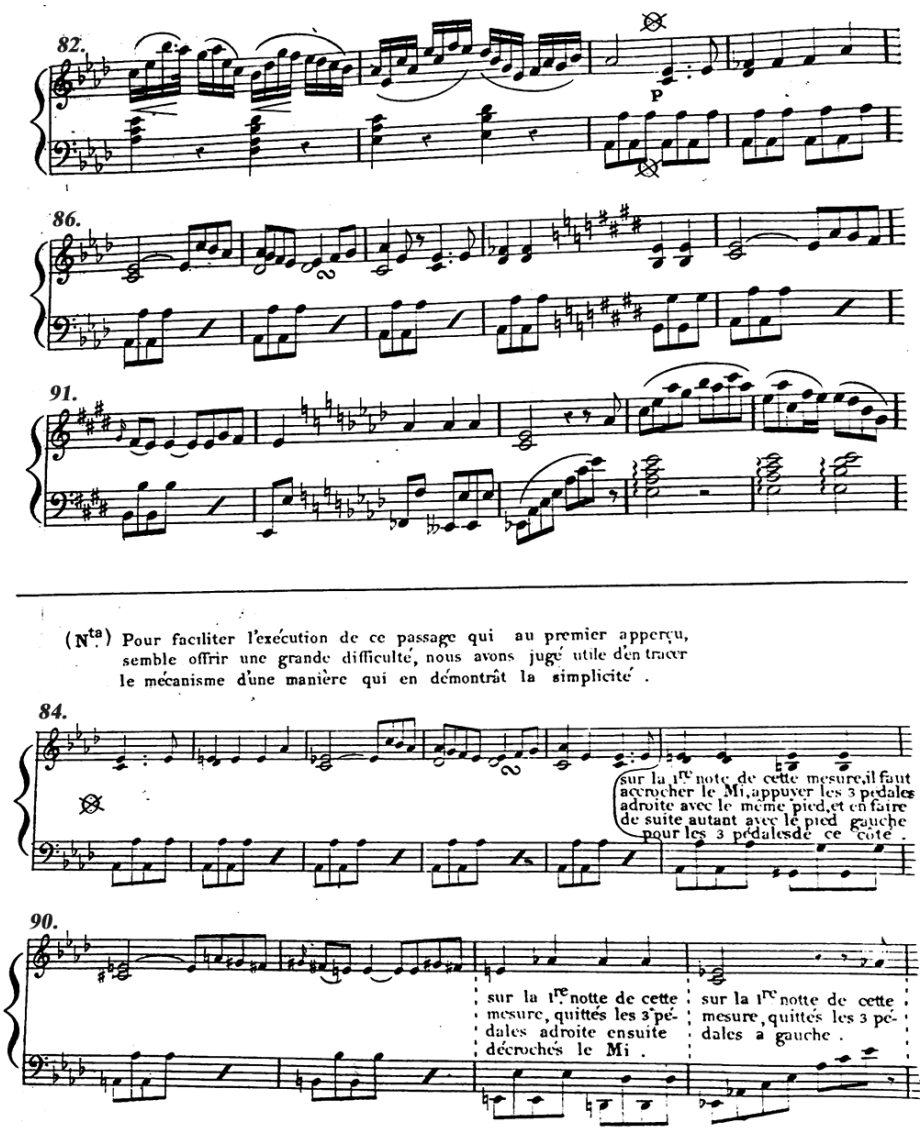

Figure 4.16: D'Alvimare, *Sonate III*, Op. 18, bars 82-95.

This passage is a unique example of modulating from A-flat major to E major in three foot movements by holding down six pedals at once. When the harp is set-up in the "base" key of A-flat major, it can only modulate up to A major when all the pedals are lowered. D'Alvimare modulates to E major but avoids D♯, which is not possible on the harp when set-up in A-flat major. The only possibility to play D♯ would be to use the E string as E♭. This would mean eliminating the tonic of the new key.

Triple-pedalling with the left foot may appear gratuitous in these bars. The C♯ in bar 90 could be played as D♭. The D pedal on the left side of the harp is not required until bar 92. Bars 89-92 could be solved with single-pedalling for the left foot, while the right foot presses down three pedals:
- The left foot presses down the B pedal in bar 89 and releases it at the beginning of bar 92.
- The C♯ in bar 90 is played as D♭.
- The D pedal is pressed down on the second minim of bar 92 and released during bar 93.

However, the sextuple pedal movement is precisely one that embraces the sheer musical gesture of pedalling. For a professional harpist, it was just easier to move as many pedals as possible, rather separate the movements. This leads to absolutely less noise. Secondly the whole harp moves into the new modulation, not just a portion of the harp. Following the harmonic development of a section (bars 88-92), the harpist transforms the harp from A-flat major into E major, in three moves (single-pedalling E, triple-pedalling in the right foot and triple-pedalling in the left). Further research of d'Alvimare's works may reveal that he used this modulation more than once in his compositions.[50]

4.4 Pedal *glissandi*

Section 3.5 reviewed pedal *glissandi* in the treatises and methods for the harp. The technique is a simple one, but it is a musical gesture that can be used to great effect, providing changes in sound and articulation. It is a pedal movement where the feet actually produce the sound or as Krumpholtz describes it, the notes are produced by the "mouvement de la pedal". The feet and their dextrous movements become a third and fourth hand, becoming as important as the hands that pluck the strings.

[48] See section 4.2 for another *ossia* part which shows the pedal solutions: *Fantaisie avec Huit variations…sur un Jeune Troubadour* by d'Alvimare.

[49] Pierre D'Alvimare, *Three Grand Sonatas for the Harp*, op. 18 (London: Birchall, c. 1802), 40. "N.B. The following explanation will greatly facilitate the execution of this passage". Indicated with an arrow: "At the 1st Note of this bar, fasten the E pedal and press down the three right pedals, with the same foot; afterwards press down the three left pedals, in the same manner". "At the 1st Note of this bar, raise the three right pedals, and unfasten the E". "At the 1st Note of this bar, raise the three left pedals". English version taken from the London edition. Barthel transcribed only one of the three pedal instructions written in the score. Barthel, "La harpe.", 224.

[50] An analysis of the complete works by d'Alvimare is beyond the scope of this thesis.

Krumpholtz's *Tempo di Minuetto* (fig. 4.17), which was first published as a separate piece at the end of Krumpholtz's Opp. 14 and 15 is one of the earliest examples of pedal *glissandi* explained in a score.[51] The pedal *glissandi* are marked with a slur sign, to show that the first note is plucked and the second note is produced by pressing down or releasing a pedal. Krumpholtz writes:

> "Ces trois nottes oy ne doivent etre produit que par le mouvement de la pedal pour exprimer les liaisons ainsi que celles ou l'on trouvera pour signe: p.d."[52]

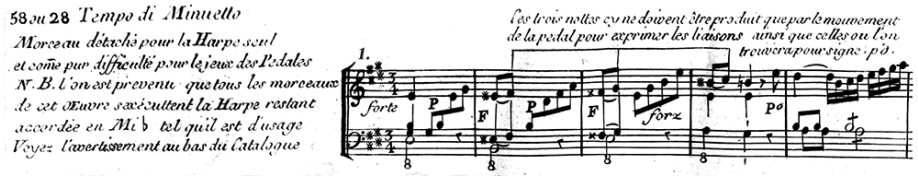

Figure 4.17: Krumpholtz, *Tempo di Minuetto*, bars 1-5.

The E♯ in bar 2 is played with its enharmonic alternative, F♮, and then the F pedal is pressed down to create the sound of F♯ on the second quaver of the bar. The F, G and C pedal are used to make pedal *glissandi* in bars 3, 4, 14-16 and 42-44.

Krumpholtz uses the term *liaisons* (elisions), whereas Petrini refers to pedal *glissandi* as *semi-tons filés*. Petrini's *Sonate pour servir d'Etude des Pédales et semi-tons filés*, Op. 39 includes pedal *glissandi* on the E, F, G, C and B pedals. Marin often uses a long dash above the notes that are plucked and the notes that are produced by moving the pedals. In his *Six Progressive Sonatinas* Op.16 (fig. 4.18), he also writes "par la vibration" above the notes "played" by the pedals.[53]

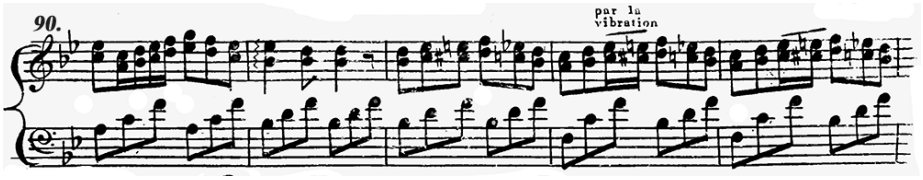

Figure 4.18: Marin *Sonatina III*, Op. 16, *Presto*, bars 92-93.

The term *son filé* (metallic sound) is used by Cousineau to describe pedal *glissandi*.

> "Observation pour les nouvelles harpes a sons files. Toutes les fois que l'on trouvera, dans un morceau une note après la quelle il y aura un ♯

[51] This piece was also published as part of Krumpholtz's *Principes* after 1790, and is discussed in section 3.5.

[52] Jean-Baptiste Krumpholtz, *Collection de Pieces de différens Genres distribuées en Six Sonates*, Op. 13 and 14 (Paris: Naderman, 1787), 58: "These three notes should be produced solely by the movement of the pedal to express the slurs and can be found with the sign: p.d."

[53] I would like to thank Mike Parker for having pointed out this example to me.

> ou un ♭ avec une liaison. C'est en mettant ou ôtant la pédale que l'on fera entendre la note haussée ou baissée d'un demi-ton ce qui produira un son filé."[54]

The word *filé* in this context refers to a metallic sound and when the pedal *glissandi* are used on the bass metal strings of a harp, the pedal movement not only changes the pitch but also produces a metallic sound. In modern harp technique, this is referred to as "pedal slides", as defined by Carlos Salzedo, where the change of pitch and the metallic vibrations of the bass strings are part of the desired effect.[55] The term *son filé* meant different things, according to the author and context.[56]

Table 4.2 contains a selection of pieces where pedal *glissandi* are indicated in the score with words or signs:

Table 4.2: Pieces with pedal *glissandi* marked and explained.

Composer	Title	Pedals used to produce *glissandi*
Krumpholtz	*Tempo di Minuetto*, part of Opp. 13 & 14	F, G, C.
Krumpholtz	*Sonate II*, Op. 13	B, E.
Petrini	*Sonate*, Op. 39	E, F, G, C, B.
D'Alvimare	*Apparition en forme Scène*	B.
D'Alvimare	*Fandango, Air favori tiré du Ballet*, Var. 5	B.
D'Alvimare	*Sonata*, no. 3, Op. 1	E, F, G, B.
Marin	*Petit Airs*, Op. 18, *Air Irlandais*	E, F, G, B, C.
Marin	*Six Petit Airs Variés*, Op. 13, *Air Savoyard*, Var. 1	B, C.
Marin	*Sonatina III*, Op. 16	C, E.
Marin	*Sonatina V*, Op. 16	C.
Marin	*Sonate I*, Op. 15	C, B, G.[57]

[54] *Cinqième pot-pourri*, Paris, Cousineau: "Observation for new harps with *sons files*. Whenever one finds in a piece, a note after which there will be a ♯ or ♭ with a slur. When one fixes or unfixes the pedal, one hears a higher or lower note by a semitone which will produce a son filé." Quoted from Barthel, "La harpe," 388.

[55] Carlos Salzedo (1885-1961), American harpist and composer of French birth; Carlos Salzedo, *L'Etude Moderne de La Harpe/ Modern Study of the Harp* (New York: G. Schirmer, 1921), 15.

[56] Cousineau, *Méthode*, 1803, 63–64. This reference is to the mechanism of the "harpe à chevilles méchanique" and not a playing technique. Genlis, *Nouvelle méthode*, 1802, 14; De Genlis describes the sound of Krumpholtz's *pédale à renforcement* as producing a "son filé". She adds in the second edition of her *Méthode* that Casimir Baecker produces the best "sons filés" using a bow on the harp. Casimir Baecker (1790- after 1863), harpist and composer of German birth. Genlis, *Nouvelle méthode*, n.d., 28. For Casimir Baecker's bowed harp see Robert Adelson, "La harpe virile: Mme de Genlis et la carrière manqué de Casimir Baecker," in *Madame de Genlis: littérature et education*, ed. François Bessire and Martine Reid (Rouen and Le Havre: Publications des Universités de Rouen et du Havre, 2008); Robert Adelson, "The Bowed Harp: Pioneering Use of Extended Techniques in the Late Eighteenth and Early Nineteenth Centuries," in *Unisonus: Musikintrumente Erforschen, Bewahren, Sammeln*, ed. Beatrix Darmstädter and Ina Hoheisel (Vienna: Praesens, 2014): 139-53.

[57] Pasetti, *L'Arpa*, 133, 135. Pasetti writes that this is one of the earliest examples of pedal *glissandi*, attributing a publication date of 1800 to Op. 15. The Krumpholtz examples date from at least thirteen years earlier.

4.5 Additional pedals

This section includes examples of pedal movements that alter the timbre of the sound but not the pitch of a note, which are included as written explanations or symbols in harp pieces.

4.5.1 Krumpholtz's *pédale à renforcement* and *sourdine* pedal

Krumpholtz in collaboration with Naderman invented the *pèdal à reforcement* and the *sourdine* pedal which alter the dynamics and timbre of sound on the harp.[58] He also proposed a series of symbols to represent the possible ways of using these pedals.[59] Besides *6^{me} Sonate*, Op. 14, of which the first movement is found in Krumpholtz's *Principes* but entitled there *Étude pour le renforcement*, there are only four other published works by Krumpholtz with indications in the music to show when and how to use these eighth and ninth pedals.[60] The *pédale à renforcement* and the *sourdine* pedal were made public in 1787 and by this time, Krumpholtz had composed and published most of his works up to Opp. 1-13.[61] The sonatas in Opp. 14, 15 and 17 are in a later free *Fantasia* style. The classical sonata forms of Op. 16 are clearly from an earlier period of his life even though the publication date is around 1789. The style of Op. 17 is similar to Op. 15, but does not include any markings for the *pédale à renforcement* and the *sourdine* pedal, so this could suggest that it pre-dates Op. 14. Krumpholtz's Op. 18 is a re-print of Op. 13. Opp. 14 and 15 are probably the last compositions by Krumpholtz, due to the style of the pieces and the explicit markings for the *pédale à renforcement* and the *sourdine* pedal.

The Naderman edition of Op. 14 includes three folios, which provide technical and practical information about all of Krumpholtz's inventions.[62] The first folio ("Planche 40 ou 10") describes the *sourdine* pedal, the second folio contains technical drawings of how to construct this ninth pedal and the final folio contains drawings of the shutters, the soundbox for the harp, the *Contrebasse ou Clavicorde à marteau*, a list of signs and symbols for the *pédale à renforcement* and an extract from the public presentation of all of these inventions at the *l'Academie Royale de Sciences* in November 1787. Krumpholtz calls the eighth pedal which operates the shutters at the back of the soundbox, a pedal "*à renforcement, à Sons prolongès, à Sons ondés*".

[58] See section 2.2. See Glossary.

[59] See section 3.6.1 for the table of symbols.

[60] These are Op. 14, *Amante Abandonée* and Op. 15.

[61] Krumpholtz's early works, from *Six Sonates*, Op. 2, are densely marked with sudden *forte* and *piano* dynamics, which often occur over only one or two notes, leading me to propose that at least the *pèdal à reforcement*, if not the *sourdine* pedal, or some sort of expressive pedal already existed on Krumpholtz's harp from 1777. Krumpholtz arrived in Paris on February 14, 1777, and could be the date of his first publications. Some publications could date from even earlier. Krumpholtz, *Principes*, 4.

[62] Dugot, "Sonorités inouïes," 108–9. Dugot transcribes the two folios.

6^{me} Sonate, Op. 14 by Krumpholtz

This sonata is in three movements, *Adagio* and *Allegro molto* and *All^{o} Rondeau*. There are five symbols which represent the different ways to use the *pédale à renforcement*. Three of these are included in the music of the *Étude pour le renforcement* (part of Krumpholtz's *Principes*), indicating symbols for pressing and releasing the pedal quickly, fixing the pedal so that the shutters are in a fully open position (the sign "R") and pressing and releasing the pedal successively to produce an undulating sound ("W"). Krumpholtz also uses the normal musical symbols for *crescendo* and *diminuendo* (<, >) to indicate that the pedal should be pressed down gradually and released gradually. These two symbols are not found in any works, so the assumption would be that the normal dynamic markings for *crescendo* and *diminuendo* that are found in the music signify to open and close the shutters gradually.

There are three abbreviations to show how to use Krumpholtz's *sourdine* pedal. The first abbreviation indicates to apply (press down) the *sourdine* (aS.), the second to release it (SS.), and the final abbreviation ($.) indicates how to apply the *sourdine* and release it quickly so that it creates an echo sound produced solely from the vibrations of a previous chord. Table 4.3 lists all the pedal symbols found in Krumpholtz's *6^{me} Sonate*, Op. 14.

Table 4.3: Krumpholtz, *6^{me} Sonate*, Op. 14: symbols found in music for the *pédale à renforcement* and the *sourdine* pedal.

Effects	*Adagio*	*Allegro molto*	*All^{o} Rondeau*
Renforcement (<)	3,7,22,47, 57,59,61, 81	12,17,48,62.	
Tenir ouvertes (R)	23,57,59, 62, 82	1,12,18,49,63	32.
Refermer par dégrés (>)	4,8,23,48, 58,60,62, 82	13,23,51,67	36.
Renforcer, diminuer (V)	1-2, 5-6, 9-19, 25-8, 34-6, 48-9, 51-6, 63-7, 69-76, 78-79, 82-83, 85	41-2,45-6,55-6, 59-60	13-14, 29-30, 39-41, 43-45, 47-49, 51.
Onduler le son (W)	26,28,30-2, 34-6, 38,40,42, 44-7, 50,68,70, 72,74-81,86		
Sourdine on (aS.)		7,23,53,57	1-16.
Sourdine off (SS.)		8,31,55,59	17.

Effects	*Adagio*	*Allegro molto*	*All^{o} Rondeau*
Sourdine as echo effect	24, 50, 68	23.	

When the *pédale à renforcement* and the *sourdine* pedal are used, the left foot is unable to move the D, C and B pedals at the same time. In fact the first movement, *Adagio*, (fig. 4.19.), hardly uses the left foot, whereas the right foot moves the F and A pedals nine times together.[63]

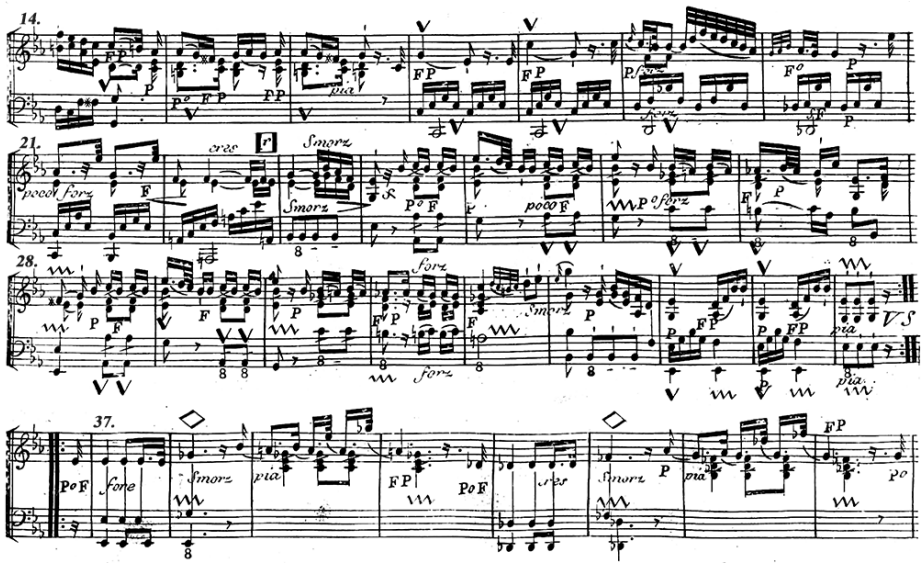

Figure 4.19: Krumpholtz, *6^{me} Sonate*, Op. 14, bars 14-44.

The *Adagio* is in C minor and the B pedal is fixed from the beginning of the movement. It is released at the beginning of bar 19 and then the *pédale à renforcement* is immediately pressed and released afterwards. Bar 20 contains a D♭, which is played as C♯ and is then released in bar 21. Neither of these bars contain *pédale à renforcement* signs, as the left foot is occupied in moving the B and C pedals. The *pédale à renforcement* signs in bars 27 and 31 may appear impossible to play, as both feet are moving other pedals: the right foot is releasing the F and A pedals and the left foot is pressing the B pedal down. The motion of undulating in these bars is done with the right foot on the *pédale à renforcement* slightly after the beat, when the right foot has released the F and A pedals.

The bars 38 and 42 both contain a diamond-shaped sign (<>) over the first beat and the undulating sign (“W”) above the bass clef. In the version of this movement in Krumpholtz’s *Principes*, this diamond-shaped sign is not present. On

[63]The harmony of this music is analysed in section 4.3.1.

the other hand, a third version of this music, namely the *Amante abandonnée, Air Parodié sur l'Adagio de Œuvre XIV*, contains the diamond-shaped signs but not the undulating signs. One of these signs is superfluous, if the diamond-shaped sign (<>) signifies a rapid *crescendo* and *diminuendo*. It is impossible to produce two effects simultaneously with one *pédale à renforcement*. It is my opinion that these signs double up on each other and the performer today implements one of these effects, probably the undulating effect would be most effective.

The other two movements contain far fewer *pédale à renforcement* movements, but the *sourdine* pedal is used throughout to create a muted and an echo effect. The pedal movements for these effects never conflict with the pedal movements which alter the resonating string length.

***Amante abandonnée* by Krumpholtz**

The *Amante abandonnée* is the second source with *pédale à renforcement* markings in Krumpholtz's published works. This version only contains the two diamond signs and no other *pédale à renforcement* markings. This could be due to the fact that the left foot is operating Krumpholtz's *Contrebasse ou Clavicorde à marteau*, so the *pédale à renforcement* and the *sourdine* pedal are defunct in this version.[64]

***Deux Sonates*, Op. 15 by Krumpholtz**

The final collection by Krumpholtz with eight and ninth pedal markings is the two sonatas of Op. 15. The signs are given at the top of page 2 and each sign for the *pédale à renforcement* is employed. There are no markings for the *sourdine* pedal. No other composer to my knowledge uses Krumpholtz's *sourdine* markings in their music besides the short pieces in the *Méthode* by Madame Merelle.[65]

***Deux Simphonies*, Op. 11 by Krumpholtz**

The Naderman edition of Op. 11 advertises the *sourdine* pedal on the frontispiece of Krumpholtz's *Deux Simphonies*, stating:

> "Ces Symphonies sone Composées tant pour les Harpes à 7 Pédales connues jusqu'à ce jour, que pour celles à Sourdines, nouvelle invention du S$^{r.}$ Naderman."[66]

No symbols are used, but from the first page, "*con Sordina*" and "*Senza Sordina*" are found in bars 37 and 44.[67] Indications for the *sourdine* pedal are not included in the Cousineau, Momigny or Chappell editions of Op. 11.

D'Alvimare, Bochsa and Marin

[64] See Chapter 5.

[65] Merelle, *New and Complete Instructions*, 23–48.

[66] "These symphonies are made for both the harp with 7 Pedals known to date, and for those with mutes, a new invention of S $^{r.}$ Naderman."

[67] See fig. 4.4. for bar 44 "without mute". Krumpholtz, *Principes*, 19. The ornament in bar 38 is not included in the discussion of ornaments in Krumpholtz's *Principes*, but is similar to the practical solution for his "Brisés en montant".

In several pieces by d'Alvimare, signs for the *pédale à renforcement* are found at the beginning of the piece. He calls it the *soupape* pedal, as do Bochsa and Casimir Baecker. D'Alvimare employs five different signs, but the effects are the same as those by Krumpholtz. The undulating effect is called "agiter", to agitate. Two movements of the *pédale à renforcement*, opening and closing (without specifying how quick or slow to move the pedal), and the undulating effect were used by several composers. Bochsa questioned the usefulness of Krumpholtz's *pédale à renforcement*, but still the indications for the *soupape* pedal are included in at least three of his published works.[68] The indications are not necessarily original markings by Bochsa, as he disapproved of the *soupape* pedal. They could have been added by Bochsa's publisher Duhan.[69]

Table 4.4 includes some examples of composers, besides Krumpholtz, who included markings for the *pédale à renforcement*.

Table 4.4: Compositions which include markings for the *soupape* pedal, not by Krumpholtz.

COMPOSER	TITLE
D'Alvimare	*Fantaisie avec Huit variations pour la Harpe sur un Jeune Troubadour*.
D'Alvimare	*Thême avec huit variations et un final Morceau favori*.
D'Alvimare	*Fantasie sur la Romance Charmant Ruisseau…de Domnich avec six variations*.
Bochsa	*Les Adieux, Fantaisie Guerrière sur l'air favori*.
Bochsa	*Gavotte d'armide variée…avec une Introduction ou Prélude*.
Bochsa	*Fantaisie sur plusiers Thêmes suivie de variations sur le joli Duo*.
Marin	*Sonatina I*, Op. 16.

[68] See section 3.6.1.

[69] Madame Duhan, (active 1780-1823), Parisian music publisher.

Casimir Baecker

Casimir Baecker employed his own two symbols for the pedal action of the *soupape*. These symbols are found in his *Rondeau…* which are:[70]

> "Signes pour ouvrir et fermer la soupape. pour ouvrir (Θ). pour fermer (Ж)."

The *Rondeau*, (fig. 4.20), begins with the *soupape* pedal in the upper position, where the shutters are closed. The pedal is released after playing the *arpeggio* on the second minim of bar 1 and then it is printed to release the pedal on the second crochet of bar 2. This is probably a printing error, as it would make more sense to release the *soupape* on the first crochet of bar 2, where the dynamic is *piano*. The *soupape* is written in the correct place in the bar in bars 1, 3-8. When the *arpeggio* is played, the opening of the *soupape* gives the effect of a *crescendo* before the natural *diminuendo* of the vibrating strings on the harp. The dynamic markings, *forte* and *piano*, do not directly correspond to an opening and closing of the *soupape* pedal, which either points to printing mistakes or that this pedal was utilised for a change in timbre, rather a specific change in volume on the harp. See fig. 4.21.[71]

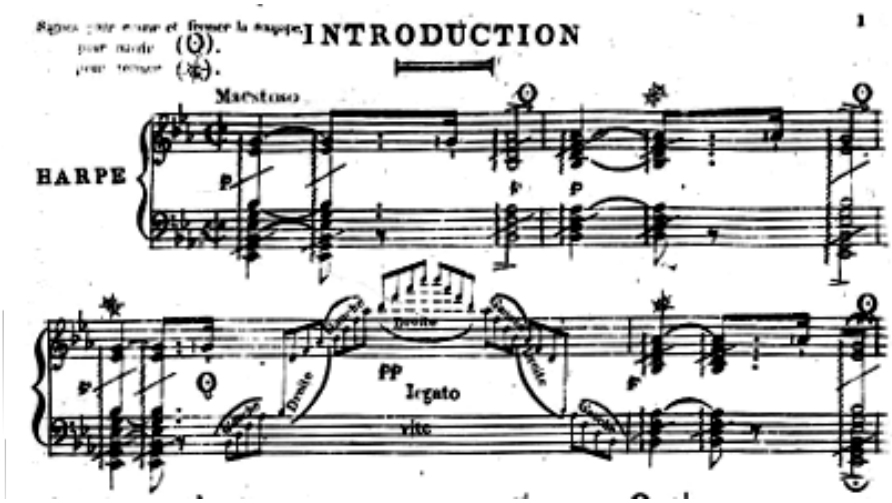

Figure 4.20: Baecker, *Rondeau*, 1

Alternatively, the *soupape* is used to change timbre on the harp. The *Rondo* (page 4) begins with the *soupape* closed in the upper position. When the theme is repeated for the second time with a lower bass accompaniment, the *soupape* is opened, but no dynamic marking is added to the score.

[70] Casimir Baecker, *Rondeau pour la Harpe*, op. 2 (Paris, 1807). The final *cadenza* of this work (pages 17-18), is also published in Genlis, *Nouvelle méthode*, 1802, 34: "Cadence de Casimir".

[71] See section 3.6.1 and Beat Wolf's comments on the *soupape* pedal.

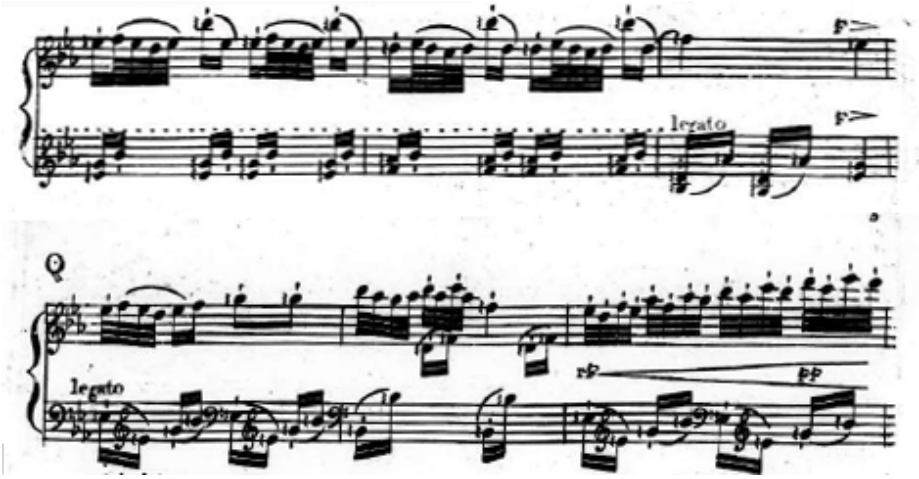

Figure 4.21: Baecker, *Rondeau*, 1

4.5.2 Cousineau's *sourdine/echo* pedal

At least two pieces by Cousineau contain markings for Cousineau's *sourdine* pedal.[72] The first piece is *Recueil d'Airs variée, contenant un Air de la Caravane*. In the fourth variation of *Charmante Gabrielle*, Cousineau describes the pedal action for the echo effect:

> "Pour chaque accord on appuie le pied sur la pédale de l'echo, et on relève le pied après l'accord ce quie répète le son sans l'articuler avec les doigts."[73]

The echo effect means that each chord will sound twice, once plucked and the second time an echo sound is produced by the releasing movement of the echo pedal.

Another piece by Cousineau which utilises the echo pedal is his *Septième Pot-pourri* (fig. 4.22).[74] Bar 65 is marked to play "*avec sourdine*", so the *sourdine* pedal is pressed down here. Each crochet chord in bar 67 is marked with an echo indication: the pedal is released after the chord has been played, producing a repeated echo sound from the vibrating strings. The section continues like this until bar 89. It is not clear from the score if the other bars in this passage should be played with the *sourdine* pedal pressed down or off. From a musical perspective, the whole passage is probably intended to be played with the *sourdine* pedal pressed down, producing an overall *piano* dynamic. This passage is a repeat of the previous twenty-four bars and the use of the *sourdine/echo* pedal for this passage would add variety to the

[72] See section 3.6.2. for an explanation of Cousineau's *sourdine* pedal.

[73] "For each chord one presses the foot on the echo pedal, and releases the foot after the chord which can be repeated without articulating with the fingers".

[74] Also listed in Barthel, "La harpe," 390–91.

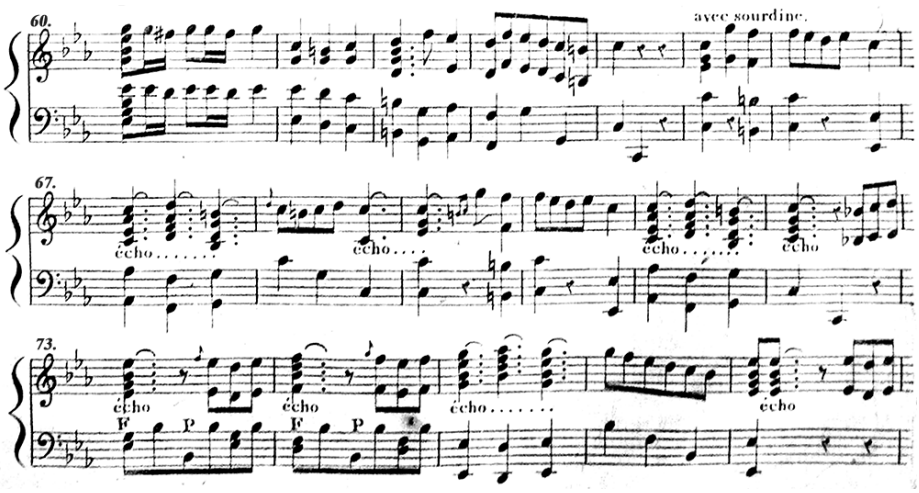

Figure 4.22: Cousineau, *Septième Pot-pourri*, bars 60-76.

repeated section. The Cousineau *sourdine* pedal can be used in two situations, either it is pressed down to produce a softer, muted sound, or it can be used to produce an echo effect as described above.

Conclusions

This chapter shows examples of how to use up to nine pedals on the harp in musical examples, where the composer or publisher included a written explanation or symbols in order to show the harpist what to do. Each pedal move, from enharmonics, single-, double-pedalling, to multi-pedalling involving up to six pedals at a time, can all be found in the harp repertoire. These examples can be reproduced on a harp by following the instructions of the eighteenth- and nineteenth-century composers and their publications.

Chapter 5

Works without pedal indications

This third chapter on historical sources proposes multi-pedal solutions in works for harps with a single-action pedal mechanism, where there are no written instructions in the music.[1] The pedal solutions emanate directly from the scores based on the historical multi-pedal techniques found in treatises and methods, and the rare instructions found in a handful of musical scores.

These two areas of historical sources have been discussed in Chapters 3 and 4. When a phrase and passage has a similar harmonic structure as those found in the treatises, methods and scores with indications, then the same pedal movements can be applied to other pieces which do not contain any instructions. The pedal solutions are identified by actually playing the pieces and establishing the feet movements adhering to all the known eighteenth- and nineteenth-century primary sources.

It was this practical area of research that brought me to discover and identify certain pedal techniques that are exclusive to the single-action harp.[2] This includes double- and triple-pedalling, moving pedals with the heel and toe independently and the art of folding and unfolding the G or C pedals.

When these pedal techniques are put into practice, other problematic features that are specific to playing the harp dissipate. The most usual complaint amongst harpist and listeners is that pedals on old harps make noise. It is the author's opinion that most pedal noises result from applying a modern harp pedal technique to the earlier pedal harps. There is a tendency to over-use the action of fixing every pedal, which is indeed necessary on the double-action pedal harp, as the pedals on

[1] The word "harp" is used throughout this thesis to refer exclusively to a harp with a single-action pedal mechanism.

[2] Spohr, *Sonate Concertante* Op. 115; Louis Spohr, *Fantaisie sur des Thêmes de Handel et Abbé Vogler*, op. 118 (Hamburg: Schuberth, 1845).

the double-action pedal harp have three levels: flat, natural and sharp.[3] However, fixing pedals on the single-action harp is an occasional action rather than the norm in classical and pre-romantic harp repertoire. Fixing can even often be a hindrance, when there are only two positions for the pedals: up or down, as seen in fig. 5.1, Plate V, 5.2 and 5.3. The simple movement of pressing and releasing is a smaller and more subtle movement, and can be done with ease. Most importantly, this action rarely entails pedal noises. The action of fixing pedals can however entail pedal noises and therefore should be avoided as much as possible.

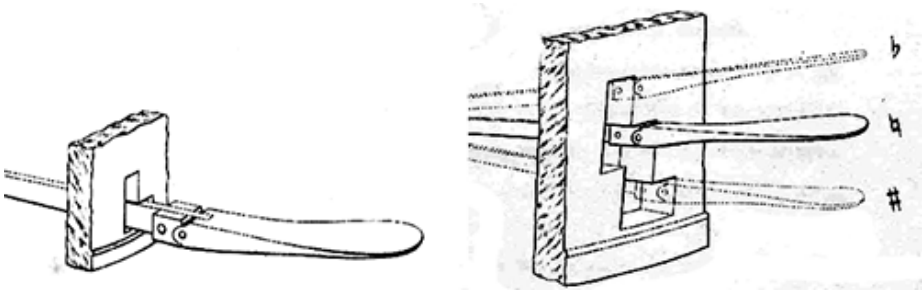

Figure 5.1: Erard, *The harp*, Plate V: single-action harp and Plate VI: double-action pedal harp.

A consequence of double-pedalling is that there are fewer pedal movements in a bar. There are rarely more than one or two moves per bar and pedalling either occurs on the strong beats of the bar or immediately before a notated accidental. Even if the hands are occupied with hundreds of scales or *arpeggi*, like in the music by Spohr, the feet movements become a slow dignified kind-of dance. This inevitably results in fewer pedal noises.[4]

The lack of pedal markings in most eighteenth- and early nineteenth-century harp pieces puzzles any modern pedal harpist, as it is common practice today to perform pieces with the pedal changes marked in the score either by the publisher, editor or the harpist themselves. However, when pedals have either an upper position or a lower position, the pedal markings are simply the accidentals already notated in the score. If these accidentals are read and double-pedalling is used as often as possible, and pedalling is approached as an integral part of the harmonic structure (and not merely an external mechanical action), then the author proposes that there is no need to ever write pedal markings in a score.[5]

This especially becomes apparent when music-making of the time is taken into consideration. Airs, sonatas and other chamber music were sight-read, seldom

[3] See Chapter 8.

[4] See Introduction: "Reviewing modern literature" for Barthel's criticism that triple-pedalling can create pedal noises. Barthel, "La harpe," 224.

[5] The author has been playing in this way for over two years, but acknowledges that is a difficult process, especially after nearly forty years of a modern training of writing in pedal markings in every piece. The author hopes that future generations of harpists can incorporate this musical practice into their study and performances of eighteenth- and early nineteenth-century harp pieces.

played more than once.[6] Therefore, it is all the more reason that if pieces were published without pedal markings, it means that the harpists at the time could sight-read without them.

This chapter takes the same format as the previous two chapters. First, the "base" set-up key and enharmonics in a piece are discussed, showing how to identify these initial factors before playing a piece with no pedal markings. Two short songs for voice and harp are used to show the basic single-pedalling movements. Following this, the principal examples in this chapter are excerpts from Mozart's *Concertante a La Harpe, e Flauto*, K.299[7] and Krumpholtz's *Recueil de douze Préludes*, Op. 2.

All the possible combinations of complex pedal techniques are then described. Krumpholtz's *Préludes*, Op. 2 is a case study in complex pedal moves, as the short pieces include multi-pedalling. Up to now, a historically-inspired performance[8] for a harpist may have included: historical ornamentation, fingering, articulation, elaboration, dislocation,[9] rolled chords and *arpeggi* techniques. Pedalling can now become an intentional musical gesture and can be assimilated into any performance, considering that the movements of the feet produce at least half of the notes on the single-action harp and provide all the alterations and chromatic nuances in the harmony.

5.1 The "base" key

Before playing a piece, the first step that a harpist must do is identify the "base" set-up key, determining which fourteen actual pitches[10] are essential in the piece and if all other accidentals found in the score are possible using enharmonic alternatives.[11] This process is done by looking for scale-like passages, step-wise movements and indispensable pitches in the melody, as these will all require a string for every note. The "base" set-up key is determined by not only the key signature of a piece, but also the accidentals in the piece.

Therefore, a simple rule is that the "base" set-up key must have, as a minimum, the same amount of flats or sharps as the key signature of the piece, but may also have more flats or sharps, but not less.[12]

[6] Haynes, *End of Early Music*, 100–101.

[7] I have performed this concerto several times, the last performances being in October 2012 with Wilbert Hazelzet, flute and the Amsterdam Baroque Orchestra, director, Ton Koopman. I used the pedal techniques detailed in this thesis.

[8] Ibid., 14: "HIP".

[9] Anna Scott, "Romanticizing Brahms: Early Recordings and the Reconstruction of Brahmsian Identity" (PhD, Universiteit Leiden, 2014), http://www.hum.leiden.edu/creative-performing-arts/research/anna-scott-2014.html, xix.

[10] See section 3.1.

[11] See section 4.1.

[12] Wulfhorst, "Louis Spohr's Early Chamber Music (1796-1812)", 353, Table VI/2: "In Spohr's works for harp, the instrument was tuned to the main key of each work or movement (rarely to its subdominant key), generally a key with three or four flats." Eight out of thirteen of the existing works by Spohr for the harp can indeed have a set-up "base" tuning key which is also the key of the piece, but this does not

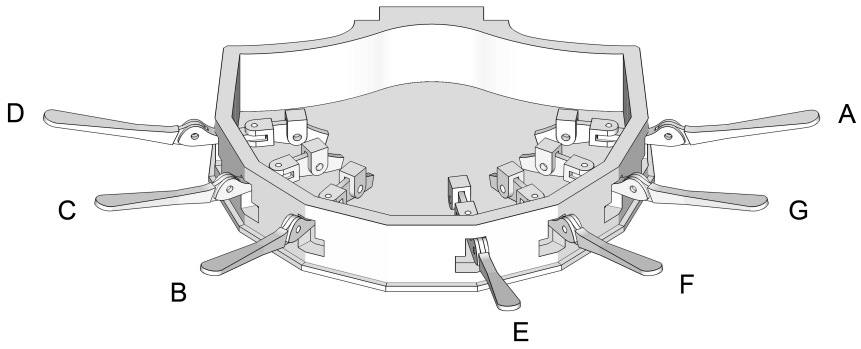

Figure 5.2: The positions of the pedals in the upper position.

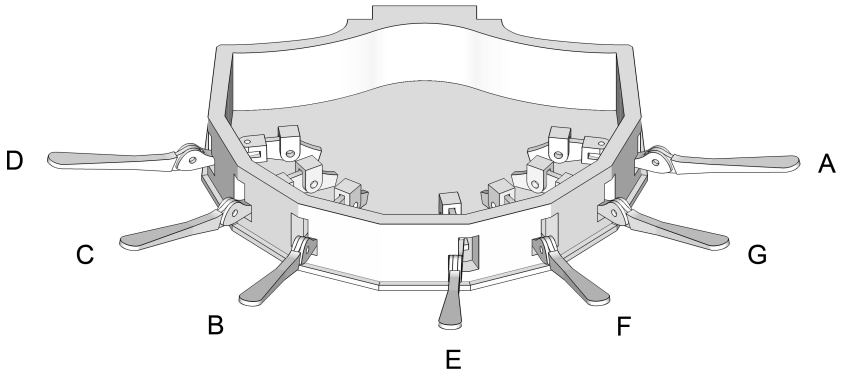

Figure 5.3: The positions of the pedals in the lower position.

5.1.1 Mozart, *Concertante a La Harpe, e Flauto*, K.299

The *Concertante a La Harpe, e Flauto*, K.299 (1778) by Mozart is taken as an example to show how to identify the "base" set-up key of a piece. The harpist reads or plays through the entire work determining which notes are essential and which ones can be played with their enharmonic alternatives. Table 5.1 lists the pertinent accidentals in the concerto.

Table 5.1: Accidentals that determine the "base" set-up key in Mozart's *Concertante a La Harpe, e Flauto*, K.299.

Notes	*Allegro*	*Andante*	*Rondo*
D♭	151.		
D♯	48, 177, 228.		488, 614.
E♭	159, 161-65.		
A♯	105, 176.		
A♭			616, 634-36, 639-40.
G♯	141.		476-78, 486, 622, 657, 659.

The harpist's first question is usually whether D♯ or D♭ is essential and to decide which pitch will be part of the fourteen actual pitches on the single-action harp. The instrument cannot have D♭, D♮ and D♯ as actual pitches. It can either have D♭ and D♮ or D♮ and D♯ as natural pitches, so the harpist has to chose whether the D♭ or the D♯ can be played with their enharmonic alternatives. The entire concerto contains only one notated D♭ in bar 151 (fig. 5.4) which can be played as C♯, whereas there are several occurrences of D♯ and it is an essential component of the melodic line in bars 48, 177 and 228 of the *Allegro* and in bars 488 and 614 of the *Rondo*.

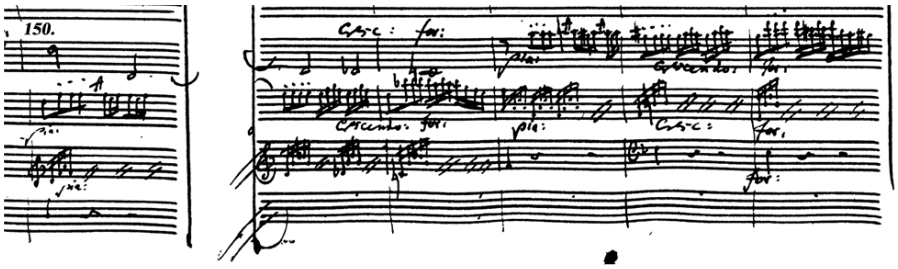

Figure 5.4: Mozart, *Concertante a La Harpe, e Flauto*, K.299, bars 150-55 with a notated D♭ in bar 151.

The pitches A♯ and A♭ are both notated in the score, so the harpist needs to identify and decide which of these is essential and which can be played as an enharmonic.

apply to Op. 16 (B-flat major), set-up key of E-flat/A-flat major; WoO 27/28 (F minor), set-up key of D-flat major; Op. 118 (C minor/B-flat major) and Op. 35 (C minor), both with a set-up key of A-flat major.

The pitch A♯ occurs twice, once as part of the melody in bar 105 (fig. 5.5) and once as part of the accompaniment in bar 176 (fig. 5.6). The A♯ in bar 105 could be played as a pedal *glissando* using the B pedal, but this trill-like motif occurs in parallel passages, with other pitches where all the notes are plucked. If the A♯ in bar 105 is played with the pedal, the resulting timbre would be quite different from all the other notes in the phrase and its integral part in the melodic phrase would be lost.

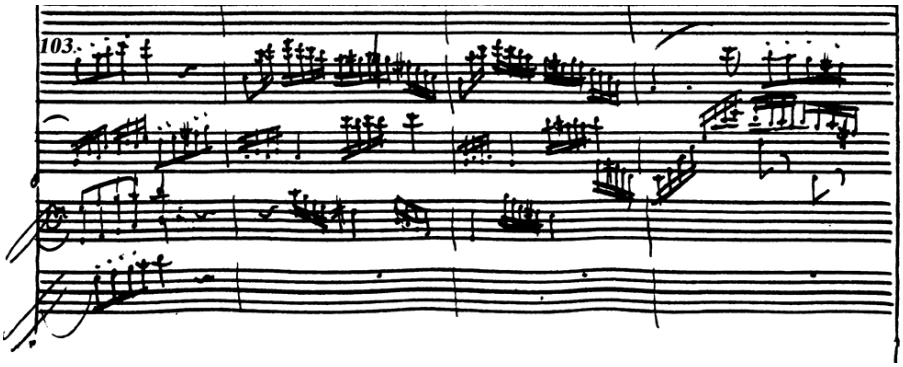

Figure 5.5: Mozart, *Concertante*, K.299, bars 103-6, notated A♯ in bar 105.

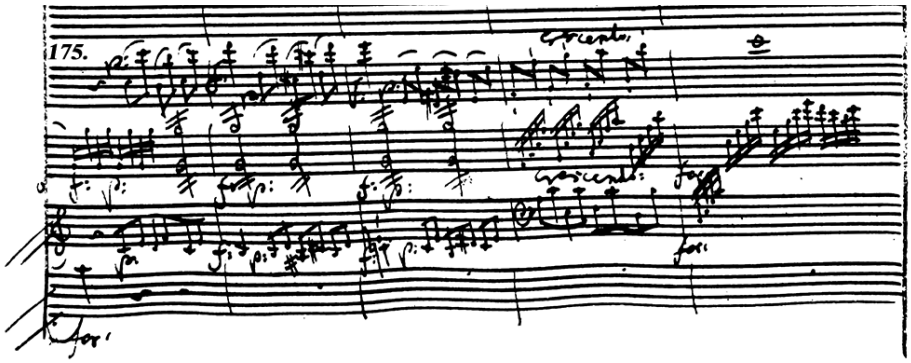

Figure 5.6: Mozart, *Concertante*, K.299, bars 175-79, notated A♯ in bar 176.

A♭ occurs in bars 616 (fig. 5.7), 634-36 and 639-40 (fig. 5.8) of the *Rondo*, but they are never part of a step-wise melody, so can be played as G♯, the enharmonic alternative of A♭.

From this analysis, it can be seen that the *Concertante a La Harpe, e Flauto* by Mozart is conceived for a harp set-up in the "base" key of B-flat major. Alternatively, if only one movement of the *Concerto* is performed, then the harpist could set-up the harp in B-flat major for the first movement or E-flat major for the final movement. Both set-up keys work for the second *Andante* movement. The harp repertoire from

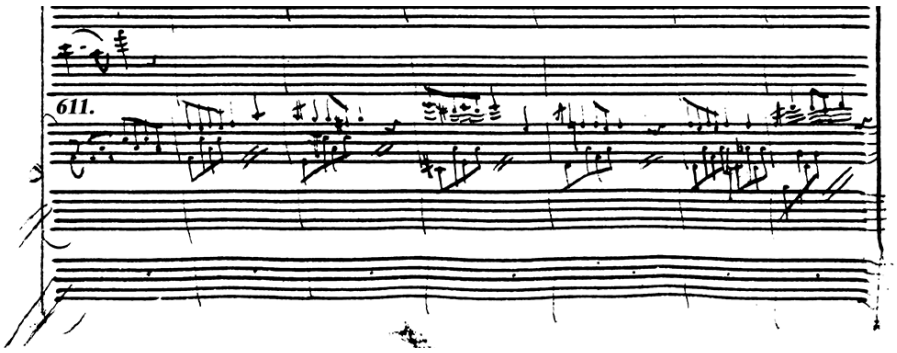

Figure 5.7: Mozart, *Concertante*, K.299, bars 611-17, notated A♭ in bar 616.

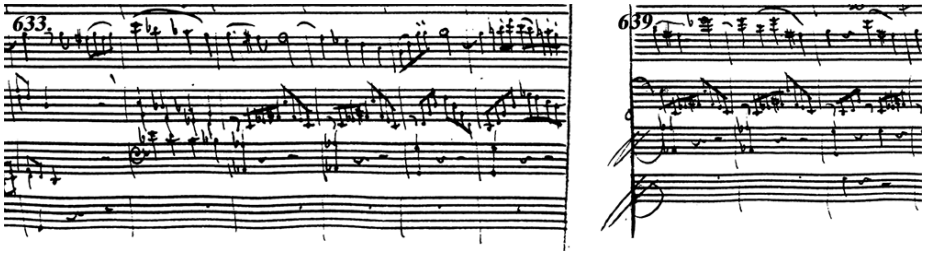

Figure 5.8: Mozart, *Concertante*, K.299, bars 633-41, notated A♭ in bars 634-36, 639-40.

the 1760's and 1770's is often written for a harp set-up in the "base" keys of B-flat or E-flat major.[13]

Mozart's *Concertante a La Harpe, e Flauto* was commissioned by the Duc de Guines, an amateur flautist and his daughter, Marie-Louise-Philippine Bonnières de Guines.[14] She played the harp and Mozart gave her twenty-four compositional lessons. According to Mozart's letters to his father, she could play over two hundred pieces by heart.[15] Two collections of music were dedicated to her, one by François Petrini and one by Krumpholtz.[16]

5.1.2 Krumpholtz, *Recueil de douze Préludes*, Op. 2

The *Préludes*, Op. 2, by Krumpholtz are fine examples that show the variety of "base" set-up keys that are possible on the harp. The subtitle of the collection reads:

> "O'n apprend par cés preludes à se Servir des pedals par les differentes modulations recherchées."[17]

Préludes nos. 1, 2 and 10 require a "base" set-up key in A-flat major. *Prélude* no. 1 is in the key of A-flat major, *Prélude* no. 2 is in F minor and *Prélude* no. 10 is in A minor. If *Prélude* no. 10 is played with a "base" set-up key of A-flat major, there are several possibilities to use double-pedalling with the right foot in conjunction with triple-pedalling with the left foot.[18] *Préludes* nos. 4-7 can be played with either a "base" set-up key of E-flat or A-flat major.

If the *Préludes*, Op. 2 by Krumpholtz and the Mozart *Concertante a La Harpe, e Flauto* were part of Mlle de Guines' repertoire, then this would imply that as a harpist, she used at least three different "base" set-up keys on her harp, namely B-flat, E-flat and A-flat major. The harpist was flexible and prepared to re-tune at least one or two notes in each octave to perform pieces in different "base" set-up keys, apart from the most used "base" set-up key of E-flat major.

The author uses these three "base" keys regularly, with the additional "base" set-up key of D-flat major for three works by Spohr.

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[13] See section 3.1 and Meyer, *Essai*, 5.

[14] Robert Adelson, "Mozart's First Composition Student: Mlle de Guines (1759-95)," in *Mozart-Jahrbuch*, 2002, 9–20.

[15] "Briefe und Aufzeichnungen," Letter, accessed May 6, 2016, http://dme.mozarteum.at/DME/briefe/letter.php?mid=1013&cat=2; Also transcribed in Adelson, "Mozart's First Composition Student," 11.

[16] François Petrini, *Quatre Sonates pour la harpe avec accompagnement de violon ad libitum*, op. 4 (Paris, [1774]). A copy of these sonatas has not been identified. It is not the Petrini, *Quatre Sonates*, which is located at the F-Pn. This collection was composed by the son of François Petrini, Henri Petrini (1775-c. 1800), harpist, composer and author of at least two harp *Méthodes*; Jean-Baptiste Krumpholtz, *Recueil de douze Préludes*, op. 2 (Paris, [1777]).

[17] "One learns by these preludes how the pedals work in the different sought-out modulations".

[18] The left foot operates the D, C and B pedals together in bars 25-26, 28-29, 31-33, while the right foot operates the F and A pedals together in bars 24-25, 27-28, 30-31. The left foot operates the E pedal in bars 24, 27, 30.

5.2 Enharmonics

Enharmonic substitutes are fundamental when playing the harp. Usually they are employed in *arpeggio*-like phrases[19] but not in scale-like passages.

Krumpholtz's *Préludes*, Op. 2, is used here as an example to show the enharmonic substitutes required to play these pieces. Table 5.2 lists the key signature of each *Prélude* and the "base" set-up key of the harp. The pertinent accidentals in the score are then listed, with their enharmonic alternatives written within brackets. The third column shows the bars where enharmonics are used, according to the "Krumpholtz rule" which states that even when the actual notated pitch is available on the harp, the harpist substitutes those pitches with their enharmonic alternatives.[20]

Table 5.2: Krumpholtz, *Recueil de douze Préludes*, Op. 2: key signatures, set-up key and enharmonics.

PRELUDE	KEY	SET-UP KEY	PITCHES	KRUMPHOLTZ RULE
1	A♭ maj.	A♭	C♯ (D♭) 10.	
2	F min.	A♭	G♭ (F♯) 54, 61.	
3	E♭ maj.	E♭	G♭ (F♯) 79, D♭ (C♯) 40, 41, 75	A♭ (G♯) 23, 24.
4	E♭ maj.	E♭/A♭	G♭ (F♯), C♭ (B♮).	
5	B♭ maj.	A♭		D♭ (C♯) 67.
6	G min.	E♭	D♭ (C♯) 18, 22.	
7	F maj.	E♭	D♭ (C♯) 27, 28, C (D♮), E♯ (F♮)	
8	D min.	E♭		
9	C maj.	E♭	D♭ (C♯) 48, 50, 51.	
10	A min.	A♭	A♯ (B♭) 22, G♭ (F♯) 27, C♭ (B♮) 28, D♯ (E♭) 30.	
11	G maj.	E♭		D♭ (C♯) 67.
12	E min.	E♭	D♭ (C♯) 27-28, 35, 57.	E♭ (D♯) 38, 39, A♭ (G♯) 49.

5.3 *Jeu des pédales*

If both feet and the seven pedals that alter the vibrating length of the strings are taken in consideration, a total of nineteen simple single-pedal moves and

[19] An example is Mozart's *Concertante a La Harpe, e Flauto* K.299, bars 150-55, with a notated D♭ in bar 151 (fig. 5.4) and a notated A♭ in bar 616 (fig. 5.7).

[20] See Glossary and section 4.1.

thirty-seven complex pedal moves are available to the harpist when playing the eighteenth- and nineteenth century repertoire.[21] The works by Spohr contain all the pedal moves, (*Jeu des pédales*),[22] listed below. Sometimes two complex moves are combined together, but these occur rarely and are treated as special cases.[23] In the list below, the total number of possible pedal moves for each category of pedalling is indicated in brackets, taking into consideration all combinations of pedals in category four.

1) **Simple single-pedalling (19)**
   i. one pedal at a time, one foot at a time: D, C, B, E, F, G, A. (7)

   ii. two pedals at a time, two feet: D/E, D/F, D/G, D/A, C/E, C/F, C/G, C/A, B/E, B/F, B/G, B/A. (12)
2) **Double-pedalling (D.P.)**
   2 pedals at a time, one foot, either left or right: D/C, C/B, E/F, F/G, G/A. (4)
3) **Double-pedalling, fold away G/C pedals, (D.P. G↑C↑)**[24]
   2 pedals at a time, one foot: F/A, D/B. (2)
4) **Double-pedalling, fold away G/C pedals, heel and toe move independently.** Each combination has two solutions, one for the left foot and one for the right. (Total=20 moves)
   i. Press 2 pedals together, release heel while fixing toe.

   ii. Press 2 pedals together, release & depress heel, release together.

   iii. Press 2 pedals together, release heel & toe separately.

   iv. Press 2 pedals together, release toe & heel separately.

   v. Press toe, press heel, release together.

   vi. Press heel, press toe, release together.

   vii. Heel & toe independently. Press heel/toe, press toe/heel, release separately.

   viii. Press heel, release heel while pressing toe, release toe-pivoting motion.

   ix. Press toe, release toe while pressing heel, release heel.

   x. Release 2 non-adjacent pedals from a fixed position.

[21] Other moves may be possible, like the right foot moving the inner B pedal on the left-hand side of the harp, but this current research has identified these thirty-seven complex pedal moves. This list is also found in Appendix II.

[22] See Glossary.

[23] An example is found in Krumpholtz, Op. 2, *9ème Prélude*. Bars 54-55 require a combination of moves 4 (i) and 4 (viii).

[24] See Glossary, ↑ means fold away a pedal.

5) **Left foot moves the E pedal on the right-hand side of the harp (LFoot).** (1)
6) **Triple-pedalling (T.P.)** (2)
7) **Pedal *glissandi*** (19)[25]

5.3.1 Single-pedalling

The basic single pedal moves are pressing, releasing, fixing and unfixing one pedal at a time, or two pedals where each foot moves one pedal. These moves are demonstrated using two songs with different styles of harp accompaniment.[26] Neither song contains pedal indications on the score, which is the case for most eighteenth-century harp scores. There are two styles of accompaniment for the harp, either a bass line that is figured or a written-out accompaniment. The harp provides harmonic and rhythmical support, sometimes with a short solo introduction or *ritornello* between verses.

These songs rarely modulate, or if they modulate, no special technique is required to move an occasional pedal. The "base" set-up key of the harp is nearly always E-flat major. The pedals are fixed according to the key signature of the piece (or the relative major key for a piece in a minor key) and if an accidental is required, that pedal is pressed down and then released as soon as possible. This is the most basic way of pedalling, as described in section 3.4.2.

The first example (fig. 5.9) is a typical *Ariette*, "Vois tu ces Côteaux", part of an anonymous collection of airs.[27] The airs in this three-volume collection are written on two staves, the upper treble clef is for the vocal line and other stave is a figured bass line.[28] This air is in C major and modulates to G major in bar 31 until bar 41, which is the final bar. No pedal markings are found on the score, but the sharp in the figured bass ciphers underneath bar 32 shows that an F♯ is required. Therefore, the F pedal is pressed down and then held down until bar 41.

The second example is an *Ariette* (fig. 5.10) for voice and harp with a written out accompaniment for the harp. P. J. Meyer's *Ariette de Fermer*[29] is in G major and begins with a solo harp introduction. In the middle of bar 29, the air modulates to G minor. The harpist notes from the new key signature in bar 29 what pedals need to be released, namely the E, F and B for the minor section. When the key

[25] This number includes seven single pedal *glissandi* moves plus pedal *glissandi* moves with two feet together. An example of pedal *glissandi* with two feet at the same time can be found in Marin's *Sonatina III*, Op. 16, *Presto*, bars 92-93, fig. 4.18. Double-pedal *glissandi* with one foot are not included in this list.

[26] See section 4.3.

[27] *Recüeil d'ariettes avec accompagnement de harpe et basse chiffrée*, vols. 1-3, 3 vols. (Paris: Bouin, 1787), Troisième Partie, Ariettes 1, 2.

[28] *Basso continuo* figures are not only found in songs but also in concertos like Marin's *Deux Concerto*, Op. 6.

[29] Philippe-Jacques Meyer, *Recueil de chansons choises dans les plus beaux opéra comiques avec accompagnement de harpe ou clavecin* (Paris: Chevardiere, 1765), 5.

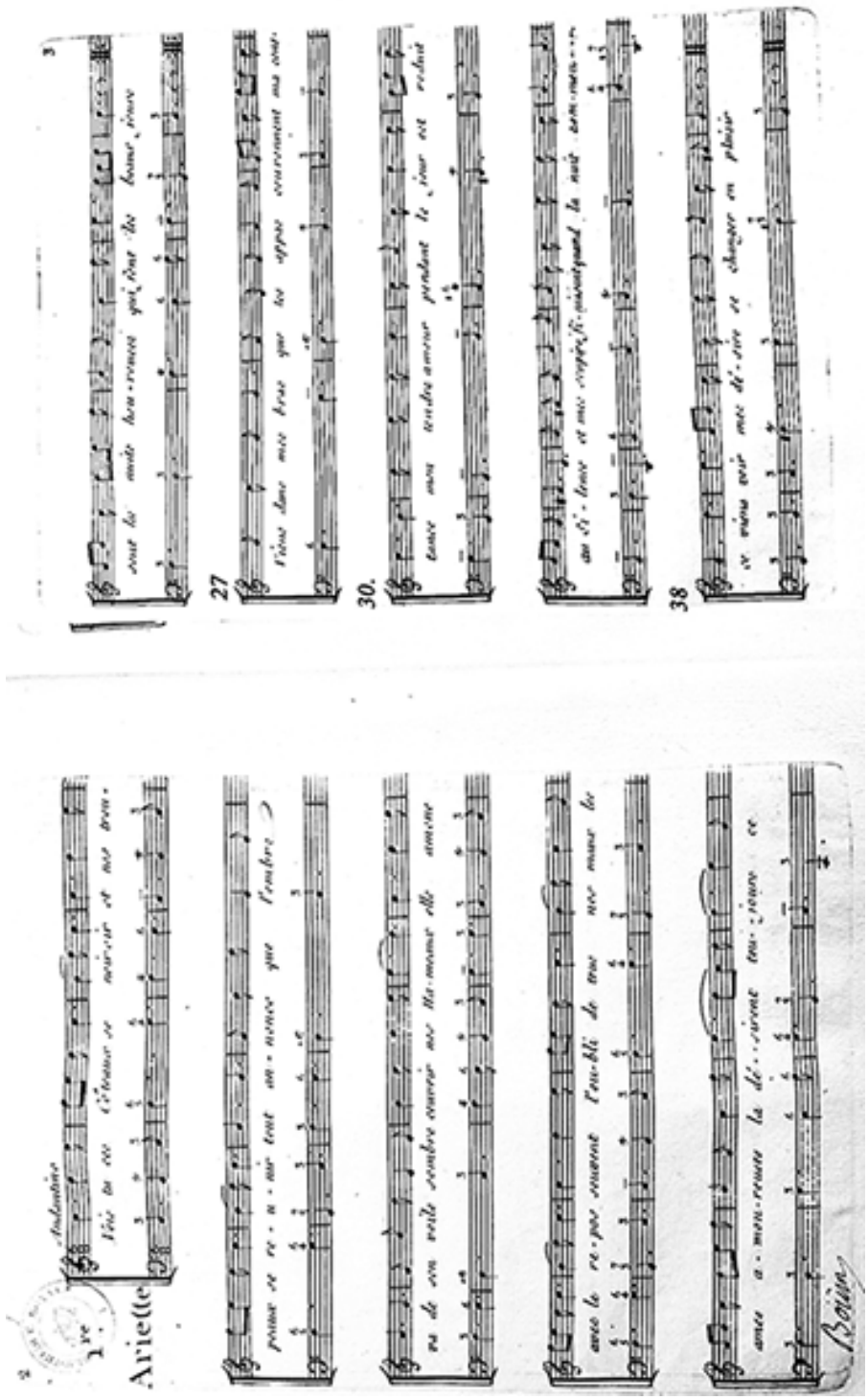

Figure 5.9: *Recüeil d'ariettes*, Troisième Partie, 2.

signature returns to G major in bar 37, for the *da Capo* section, the same three pedals are re-engaged.

5.3.2 Double-pedalling

The technique of moving more than one pedal at a time with one foot is found in many pieces in the repertoire. Certain harmonic sequences are rendered much easier when a foot moves two or three pedals together.[30] Double-pedalling (D.P.) also reduces pedal noises on the eighteenth- and early nineteenth-century instruments and eliminates the necessity to pencil in pedal markings in scores.

2: Double-pedalling (D.P.), two adjacent pedals are pressed down together and released with one foot

The double-pedalling moves described in Chapters 3 and 4 entail placing the left and/or the right foot across two or three pedals. The pedals are pressed down together and then later released together. The moves and musical examples in the treatises and methods all require a simple pressing and releasing action across two or three pedals. This also holds true for the indications found in the repertoire, as discussed in Chapter 4. Even when d'Alvimare indicates in his *Sonate III*, Op. 18, in F minor to press down and hold a total of six pedals together and then release three pedals per foot separately, the foot movements are still a simple up and down action.

It has been the author's experience that when placing a foot over two pedals, there are several other combinations of foot movements that are not described or written about in the eighteenth or nineteenth-century treatises, methods or pieces, which are garnered from reading and playing harp pieces. The music by Spohr calls for every combination of moving the heel and toe, together and separately, that is physically possible on the single-action harp. Each foot movement will be described and then some examples illustrate where these pedal movements can be used in the harp literature.[31]

The simple pressing and releasing action across two adjacent pedals usually occurs across the F and G pedals, the C and B pedals, or the D and C pedals. This type of double-pedalling is found in the methods by Backofen (B and C, F and G) and Naderman (C and D) and is described in section 3.4.4.1, and shown in fig. 5.11. Naderman also indicates double-pedalling with the F and G pedals in his *Thêmes favoris de l'Opera des Bardes*.[32] This same movement can be used in d'Alvimare's *Sonate I*, Op. 18, in the final movement, *Polacca, Allegro* (bars 165 and 169).

Double-pedalling with the D and C pedals can be used in d'Alvimare's *Sonate I*, Op. 2, in the second movement, *And^{no}. Poco All^{o}* (bars 17-23). Double-pedalling with

[30] Naderman, *École*, 92 and fig. 3.26.

[31] Other complex pedal moves may be possible, especially when performing music on the harp that was not originally written for the instrument. The author performs keyboard works, but these are not taken into consideration in this discussion, because they are not part of the original harp repertoire.

[32] See section 4.3.1.

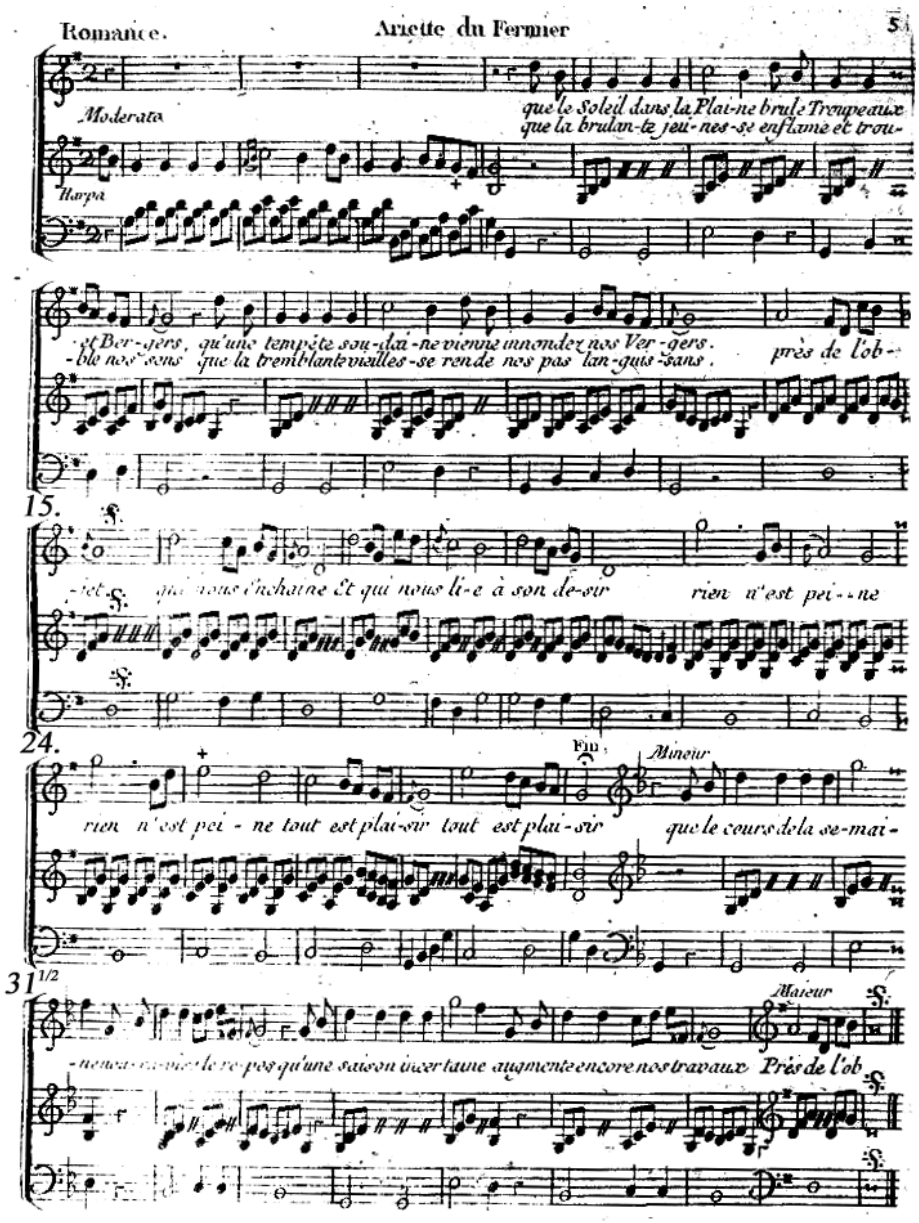

Figure 5.10: P. J. Meyer, *Recueil de chansons'ariettes*, 5.

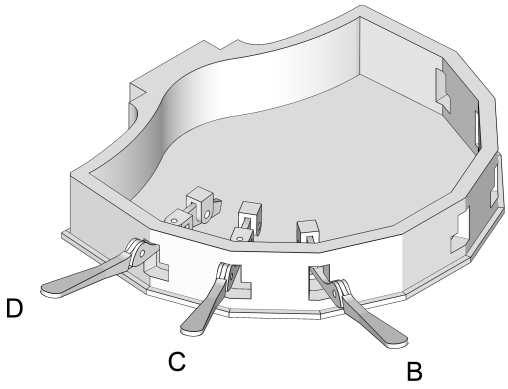

Figure 5.11: Double-pedalling (D.P.) over the D and C pedals, left-hand side of pedal box.

the E and F pedals can be used in Spohr's Op. 113.[33]

Rosalie Rebollo Pratt suggests that in the final movement of Mozart's *Concertante a La Harpe, e Flauto*, there is a double-pedal movement with the F and G pedals in bar 659 (fig. 5.12).[34] A double-pedal movement is indeed possible, but it is not a single manoeuvre. The heel is placed on the F pedal and the ball of the foot on the G pedal. The two pedals are pressed down on the first crochet of bar 659 and then only the ball of the foot is raised to release the G pedal on the fourth crochet, as the F remains sharp until the end of the phrase (bar 665). Moving the F and G pedals together, is usually facilitated when the E and A pedals are already fixed, so they are on a lower plane than the F and G. In Mozart's *Concertante*, only the E pedal is fixed on the lower plane, but this double-pedal move is still possible.

This same pedal movement can be found in Krumpholtz's *Prélude* No. 11, Op. 2, bars 90-94.

Double-pedalling with the C and B pedals (fig. 5.14) occurs in d'Alvimare's *Sonate I*, Op. 18, in the final movement, *Polacca, Allegro*. Poco All^{o} (bars 128-30, 133-34, 137-39, 165, 169), and in Dauprat's *Air Écossais Varié pour Cor et Harpe (ou Piano)*, Op. 22 (bars 25-26) which is analysed in section 4.3.1., and shown in fig. 4.15.

3: Double-pedalling with the G or C pedal folded away

The C and/or G pedals can be folded away flush against the resonance box of the harp so that the right foot can freely operate the F and A pedals with the right foot and the D and B pedals with the left foot. These moves are the most used of all the

[33] See section 6.2.3.4.

[34] Rebollo Pratt, "Krumpholtz," 56–57: "Salzedo erred when he condemned Mozart for having written two simultaneous pedal movements for the same foot. Again, this was very possible, and indeed, a much used device of the period. The harp construction was such that a player could easily move two pedals with one foot motion."

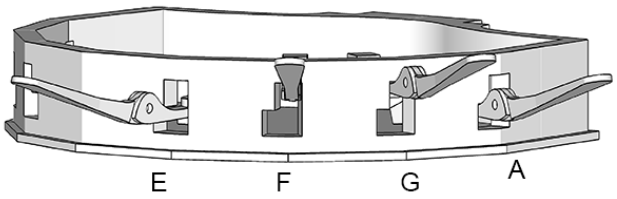

Figure 5.12: Double-pedalling (D.P.) over the F and G pedals, right-hand side of pedal box.

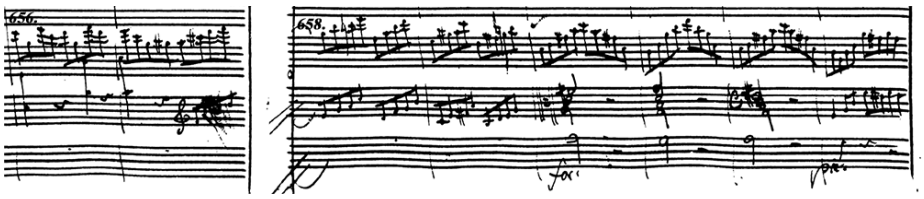

Figure 5.13: Mozart, *Concertante* K.299, *Rondo*, bars 656-63.

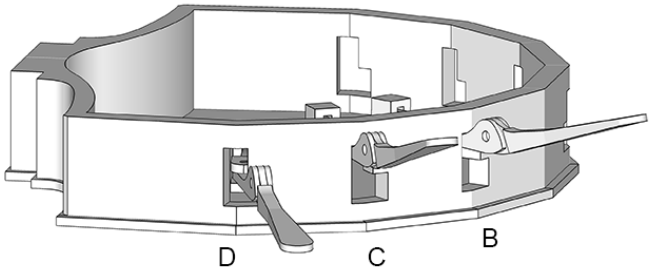

Figure 5.14: Double-pedalling (D.P.) over the C and B pedals, left-hand side of pedal box.

possible double-pedalling moves, especially with the right foot. With one movement of the right foot, the result is the diminished seventh chord on F♯. It is the most described foot movement in methods and scores as discussed in Chapters 3 and 4, and shown in fig. 5.14 and 5.15.

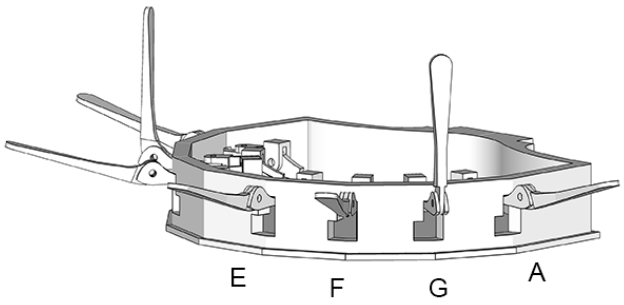

Figure 5.15: Double-pedalling (D.P.) with the G pedal folded away.

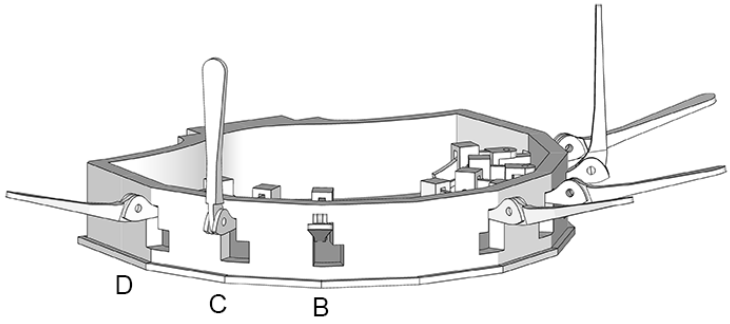

Figure 5.16: Double-pedalling (D.P.) with the C pedal folded away.

Double-pedalling with the F and A pedals is implied in many pieces including d'Alvimare's *Sonate I*, Op. 1, in the first movement, *All^o Vivace* (bars 86-98, 110-18, 120-25, 194-95). There is no G♯ in the whole piece, so the G pedal can be folded away from the beginning. The same applies to d'Alvimare's *Morceaux Choises de Pèrsée et Andromède, Ballet de Mr. Gardel, Musique de Mr. Mehul, Arrangés en Duo pour Piano et Harpe*. The G pedal can be folded away for No. 10, *Adagio non troppo*, and double-pedalling with the F and A pedals occurs in bars 1-2, 11-16. Another example is d'Alvimare's *Second Concerto*, Op. 30, where the same pedal

movement can be used in the first movement, *Allegro*, in bars 131-32, 199-201 and 211.[35] A final example of double-pedalling on the F and A pedals with the G pedal folded away is Petrini's *Troisième Duo pour deux harpes*, Op. 31, in the *Arpa Prima* part, *Allegro maestoso* in bar 147.

The *Fantaisie pour la Harpe*, Op. 35 by Spohr uses double-pedalling with the G pedal folded away for the entire piece and the C pedal is folded away for the whole piece, except for bar 43.[36]

4: Double-pedalling with the G or C pedal folded away, heel and toe moving independently

When the G (G↑) or C (C↑) pedals are folded away, either the left or right foot is placed across two pedals, perpendicular to the harp. It is the heel that presses and releases the inner pedals, either the F pedal on the right-hand side of the harp or the B pedal on the left-hand side. The toe operates the outer pedals, namely the A pedal on the right-hand side of the harp and the D pedal on the left. If a pedal needs to be unfolded, the sign ↓ is used.[37] The heel and toe can be moved separately in various combinations, as listed below.

4 (i): Depress two pedals together, release heel while fixing toe

This pedal move is the second most common of double-pedal movements, especially with the right foot. It can involve either moving the F and A pedals or the D and B pedals. The pedals are pressed down together, then the inner pedal, F or B pedal, is released. At the same time the toe fixes the outermost pedal, either A or D. An example has been already identified in Dauprat's *Air Écossais Varié pour Cor et Harpe (ou Piano)*, Op. 22 and described in section 4.3.1.

4 (ii): Depress two pedals together, release and depress heel, release together

The right or left foot presses down two pedals, the heel is released and then depressed again. The movement ends when both pedals are released together.

4 (iii): Depress two pedals together, release heel and toe separately

The right or left foot presses down two pedals, the heel is released and then the toe is released later.

4 (iv): Depress two pedals together, release toe and heel separately

The right or left foot presses down two pedals, the toe is released and then the heel is released later. It is an uncommon foot movement, but can be found in Spohr's *Fantaisie*, Op. 35, bar 135, on the second *arpeggio*.

[35] The *Second Concerto*, Op. 30, was recorded by Masumi Nagasawa and the Kölner Academie, SKU 38108, (2002). The author provided the original print of the Concerto and prepared a critical edition of the score and parts. Regarding this recording Nagasawa wrote: "I have made all the A and F with double-pedalling when it was possible or if it was convenient in the pieces." Email correspondence, May 31, 2016.

[36] See section 6.2.2.2.

[37] See Abbreviations "G↑".

4 (v): Depress toe, depress heel, release together

In this situation, the toe presses the outer pedals, the A on the right or the D on the left, then later the heel is pressed down on the inner F and B pedals. Both pedals are then released together.

4 (vi): Depress heel, depress toe, release together

In this situation, the heel presses the inner pedals, the F on the right or the B on the left, then later the toe is pressed down on the outer A and D pedals. Both pedals are then released together.

An example is found in Krumpholtz, Op. 2, *2ème Prélude*, bars 57-60.

4 (vii): Heel and toe independently. Press heel/toe, press toe/heel, release separately

The right heel moves the F up and down, in order that the toe remains hovering over the A pedal, if it needs to be pressed down or released. The left foot can do the same movement, moving the B pedal only with the heel while the left toe hovers over the D pedal.

An example is found in Krumpholtz, Op. 2, *9ème Prélude*, bars 42-46.

4 (viii): Depress heel, release heel while depressing toe, release toe-pivoting movement

The heel on the F or B pedal is pressed down. The F or B pedals are released while the toe presses an outer pedal (A or D) down. Then the toe releases the outer pedal. This pivoting movement with the foot means that one foot can move two separate pedals very quickly as the foot does not move but the heel and toe act as two feet on one side of the harp.

An example is found in Krumpholtz, Op. 2, *9ème Prélude*, bar 47.

4 (ix): Depress toe, release toe while depressing heel, release heel-pivoting movement

The toe on the A or D pedal is pressed down. The A or D pedals are released while the heel presses an inner pedal (F or B) down. Then the heel releases the inner pedal. This pivoting movement with the foot means that one foot can move two separate pedals very quickly as the foot does not move but the toe and heel act as two feet on one side of the harp.

4 (x): Release two non-adjacent pedals from a fixed position

This movement may seem impossible to many harpists, but is relatively easy on the single-action harp. If the F and A pedals are fixed in the lower notch, they can be released together by sliding the whole foot to the right to unfix the pedal. The same can be carried out with the left foot on the left-hand side of the harp. These positions are illustrated in fig. 5.17 and 5.18.

An example is found in Krumpholtz, Op. 2, *12ème Prélude*, bar 21, where the right foot unfixes the F and A pedals together.

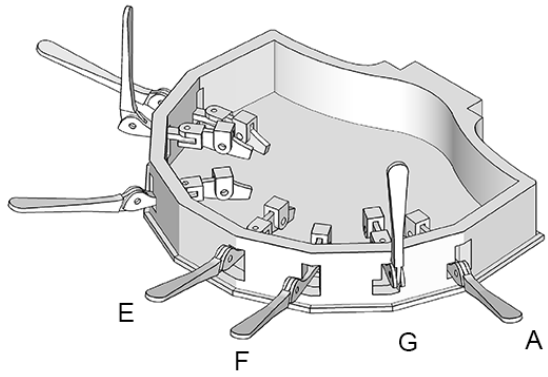

Figure 5.17: Release F and A (non-adjacent pedals) from a fixed position.

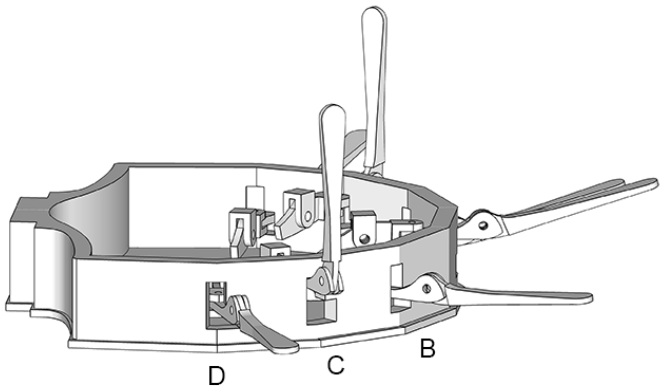

Figure 5.18: Release D and B (non-adjacent pedals) from a fixed position.

5: Left foot moves the E pedal on the right-hand side of the harp (LFoot)

This movement entails that the left foot moves the E pedal, which is the first pedal on the right-hand side of the harp, as shown in fig. 5.19. This pedal move and others, where the feet move pedals on the opposite side of the harp, is described for the first time in 1827 in the third harp method of Backofen.[38] When the right foot is placed over two (F and A) or three pedals (F, G and A), it is a natural consequence that the E pedal needs to be moved with the left foot. This movement is easy to do, as the E pedal is the innermost pedal so the left foot can reach over to press down and release the E pedal. This technique is part of normal modern harp pedalling today.

Examples are found in Krumpholtz, Op. 2, *10ème Prélude*, bars 24, 27 and 30 and also in Spohr's *Fantaisie pour la Harpe*, Op. 35, bars 107, 142-44.[39]

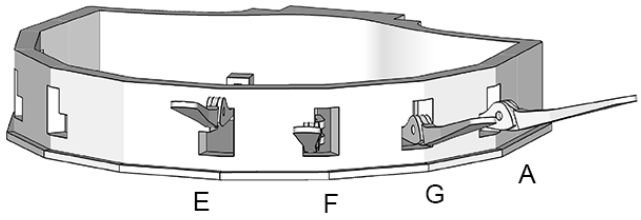

Figure 5.19: Left foot moves the E pedal on the right-hand side of the harp (LFoot).

5.3.3 Triple-pedalling

6: Triple-pedalling (T.P.)

Three pedals are pressed down together with one foot, as shown in fig. 5.20. The pedals are held and then released within a few bars. This is usually carried out on the right-hand side of the harp, involving the F, G and A pedals, but can also be performed with the D, C, and B pedals on the left-hand side of the harp. In my own experience, triple-pedalling is not an essential foot movement and it can often be substituted with double-pedalling where the middle pedal is folded away.

The *Sonate III*, Op. 18, by d'Alvimare is one of two known works where triple-pedalling is obligatory for the right foot, pressing the F, G and A pedals down

[38] Backofen, *Anleitung*, 1827, 35. See section 3.4.4.1, 3.4.4.3, and Chapter 8.
[39] See section 6.2.2.2. for Spohr *Fantaisie*, Op.35.

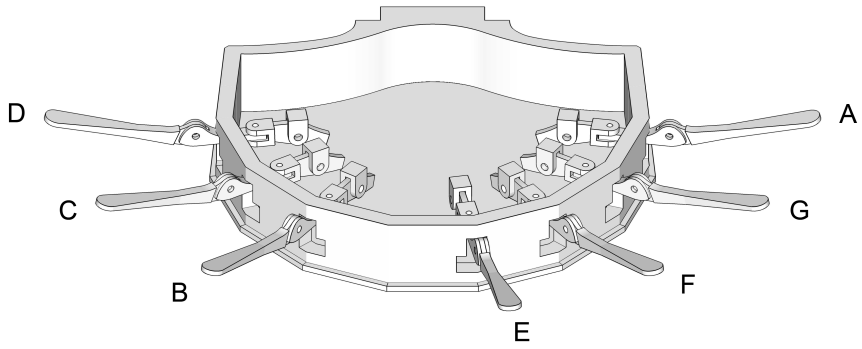

Figure 5.20: Triple-pedalling (T.P.).

together and then later releasing them together.[40] D'Alvimare also indicates to use triple-pedalling with the left foot, but it can be avoided and replaced with double-pedalling and a single-pedal movement in a subsequent bar, as described in section 4.3.1.

Other examples of triple-pedalling include Petrini's *Folies d'Espagne*, Op. 28, no. 11,[41] where the composer or publisher indicates to the harpist to move the F, G and A pedals together. There is no notated G♯ in the entire piece, so the G pedal can be folded away before performing the piece. In this way, the triple-pedal movement, as described in the score, can be replaced with double-pedalling with the F and A pedals.[42]

Sonata no. 3, Op. 1, by d'Alvimare contains five examples of triple-pedalling in the first movement. The G pedal cannot be folded away, as G♯ is required in several intermittent bars in the piece. The right foot is placed over the F, G and A pedals, pressed down and then released one or two bars later. This occurs in bars 67-68, 75-76, 222-23, 224-25 and 228-30.

Triple-pedalling can be used in Spohr's WoO 23 (*Adagio*, bars 2, 4, 17-18, *Allegro vivace*, bars 58-59), and Op. 113 (*Rondo*, bar 70), but all these bars also work with double-pedalling with the F and A pedals with the G pedal folded away.[43]

Krumpholtz's *Prélude* no. 10 includes obligatory triple-pedalling for the left foot.[44]

[40] See section 4.3.1. With further research, more triple-pedalling moves will come to light.
[41] See section 4.3.1.
[42] I use double-pedalling when performing this work, because it allows me move the F and A pedal independently. When I wish to improvise or elaborate upon the *Folia* theme, I am then freer to change harmonies with one foot movement.
[43] See sections 6.2.3.1. and 6.2.3.4.
[44] See section 5.4.

5.3.4 Pedal *glissandi*

Examples of pedal *glissandi* can be found in many pieces of the repertoire. This effect produces a dynamic accent between two notes as the first pitch is plucked and the second pitch is created by moving the pedal of the string just plucked.[45]

The final *Rondo* movement of Mozart's *Concertante a La Harpe, e Flauto* K.299 includes pedal *glissandi* using the G, F and B pedals. Bars 728, 732 and 734 use pedal *glissandi* with the F and B pedals in the bass line (fig. 5.11). The G♮ to G♯ in bar 657 can also be played with the pedal (fig. 5.12). Rebollo Pratt also identified pedal *glissandi* with the F and B pedals, but suggests that bar 657 is also a pedal *glissando* using the A pedal, where the A♭ is played by the enharmonic G♯.[46] A pedal *glissando* A♭-A♮ with the A pedal is not possible if the harp is set-up in the "base" key of B-flat major. In this "base" set-up key the A string can produce the pitches A♮ and A♯, favouring the actual notated A♯ as discussed in section 5.1.[47]

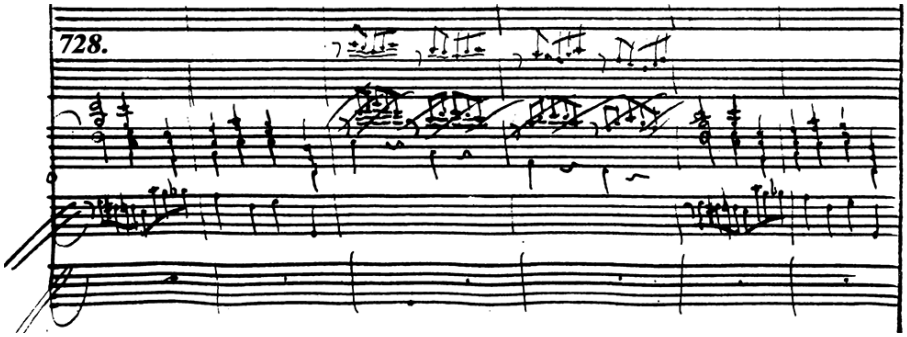

Figure 5.21: Mozart, *Concertante* K.299, *Rondo*, bars 728-33.

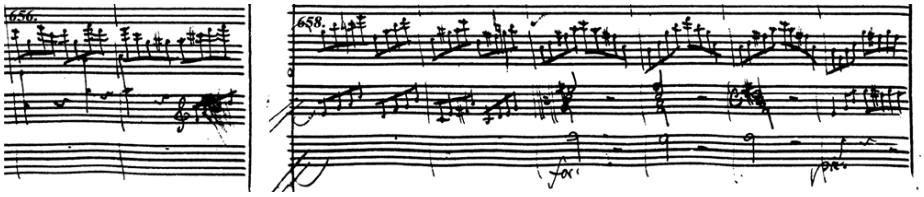

Figure 5.22: Mozart, *Concertante* K.299, *Rondo*, bars 656-63.

[45] Matthias Thiemel, "Accent," *Grove Music Online*, n.d., http://www.oxfordmusiconline.com/subscriber/article/grove/music/00098.

[46] Rebollo Pratt, "Krumpholtz," 56–57.

[47] In my experience, one rarely finds an actual notated G♯ substituted by the enharmonic A♭ in the harp literature. One rare example is d'Alvimare's *Sonate III*, Op. 18 in bar 118. This is contrary to the "Krumpholtz rule" which states that usually a notated A♭ is substituted by the enharmonic G♯. See Glossary.

Table 5.3 shows some examples of pieces in the harp repertoire which contain pedal *glissandi*.

Table 5.3: Pedal *glissandi* implied in harp pieces.

	WORK	PEDAL	BARS
Mozart	*Concertante a La Harpe, e Flauto Rondo*	• G • F • B	• 657. • 728, 732, 734. • 728, 732, 734.
D'Alvimare	*Trois Sonates*, Op. 2, no. 2 *Vivace Agitato*	• E • E • F	• 43, 45, 48, • 51, 53, 56. • 44, 46, 52, 54.
D'Alvimare	*Trois Sonates*, Op. 2, no. 3 *All^o Brilliante*	• F • C	• 70. • 68.
D'Alvimare	*Trois Sonates*, Op. 14, no. 1 *All^o Moderato*	• F • B	• 65, 67. • 130, 132.
D'Alvimare	*Fantaisie avec Sept Variations 5eme var., Adagio*	• F	• 1 , 2, 9, 10, • 21, 25, 26.
D'Alvimare	*Three Sonatas for the harp*, no. 1 *Pastorale Andantino*[48]	• F	• 12, 28.
D'Alvimare	*Three Sonatas for the harp*, no. 3 *Adagio*	• B	• 31.

[48]The collection of three sonatas has no opus number. It has been identified in RISM as ID no.: 853000257. See Abbreviations.

5.4 Case Study: Krumpholtz, *Recueil de douze Préludes*, Op. 2

I was inspired to immerse myself in an in-depth study of the complete collection of *Préludes* by Krumpholtz, when I was preparing a performance of Krumpholtz's Concerto No. 6, Op. 9 for the World Harp Congress in Sydney, July 2014.[49] The subtitle of the collection "O'n apprend par c'es preludes à se Servir des pedals par les differentes modulation recherchées" already gives a hint to the function of these short pieces.[50] The collection as a whole is an excellent introduction to historical pedalling: the pieces range in difficulty and include a variety of feet movements. *Prélude* No. 8 contains no multi-pedalling, whereas *Prélude* No. 10 contains triple-pedalling for the left foot in alternative bars to double-pedalling with the right foot. I used *Prélude* No. 10 as the basis of the cadenza for the first movement of my performance of Krumpholtz's concerto in 2014.

The *Préludes* are the basis of the author's historical pedalling teaching method, in conjunction with Appendix III. It shows harpists how to use pedals in the most musical way possible, understanding the harmonic implications of moving pedals, so that they are not mere mechanical movements. A scheme of pedal instructions for each *Prélude* has been prepared which includes all the information a harpist requires in order to perform the *Préludes* using historical pedalling including:
- Key of *Prélude*.
- The "base" set-up key for each *Prélude*.
- Which enharmonics to use and where.
- The use of the "Krumpholtz rule".
- Suggested pedal *glissandi*.
- Double-pedalling, triple-pedalling and places where the left foot moves the E pedal.
- Critical remarks on the score and any additional comments.

[49] I would like to thank Alice Giles for the invitation to perform a concerto at the World Harp Congress, the first time the single-action harp was featured as a solo instrument with orchestra at the Congress. I performed Krumpholtz's Concerto no. 6, Op. 9 and Bochsa's *Fantaisie Brilliante avec introduction et finale sur la dernière Walse de C. M. de Weber*, Op. 302, on July 24, 2014, at the City Recital Hall, Sydney with the Orchestra of the Antipodes. I performed on a *Louis XIV* model harp (A=415Hz), made by Beat Wolf and the property of ANU, Canberra. A DVD of the performance with the orchestra of the Antipodes is included with this thesis.

[50] See section 5.1.

The following pedal moves can be found in Krumpholtz's Op. 2, as in Table 5.2. Simple double-pedalling occurs with the E and F pedals and the F and G pedals with the right foot, and with the C and B pedals with the left foot. Double-pedalling with the G and/or C pedal folded away also occurs. Other pedal moves include a combination of double-pedalling, triple-pedalling, the left foot operating the E pedal and pedal *glissandi*.

1) **Single-pedalling**
   i. One pedal at a time, one foot at a time.

   ii. Two pedals at a time, two feet.

2) **Double-pedalling (D.P.)**
   2 pedals at a time, one foot, either left or right.

3) **Double-pedalling, fold away G/C pedals, (D.P. G↑C↑)**
   2 pedals at a time, one foot.

4) **Double-pedalling, fold away G/C pedals, two pedals at a time, heel and toe move independently.**
   i: Press 2 pedals together, release heel while fixing toe.
   vi: Press heel, press toe, release together.
   vii: Heel & toe independently. Press heel/toe, press toe/heel, release separately.
   viii: Depress heel, release heel while depressing toe, release toe-pivoting movement.
   x: Release 2 non-adjacent pedals from a fixed position.

5) **Left foot moves the E pedal on the right-hand side of the harp (LFoot).**

6) **Triple-pedalling (T.P.)**

7) **Pedal *glissandi***

Table 5.2. shows the set-up key, enharmonic "Krumpholtz rule"[51] and multi-pedalling moves for the twelve *Préludes* in Krumpholtz's Op. 2. This is an overview of the complete collection.

Table 5.4: *Recueil de douze Préludes*, Op. 2: *Jeu des pédales*

NO.	SET-UP KEY	K. RULE	Pedal *gliss.*	D.P.	T.P.	LFoot
1	A♭		F/A 82-83.		D/C/B 113-14.	
2	A♭			D/B 26, 57-60.		
3	E♭	A♭ (G♯) 23, 24		F/A 43-44, 73-74, 79-81.	F/G/A 43-44, 73-74, 79-81.	
4	E♭			F/A 27-34.		
5	A♭	D♭ (C♯) 67.		C/B 99-100; E/F 101-2.		
6	E♭		G♭-♮ 13.			
7	E♭			C/B 45-51.		
8	E♭					
9	E♭			F/A 44-48, 54-55.		
10	A♭			F/A 24-25, 27-28, 30-31.	D/C/B 25-26, 28-29, 31-33.	24,27,30.
11	E♭	D♭ (C♯) 67		F/G 90-94.		
12	E♭	E♭ (D♯) 38, 39, A♭ (G♯) 49	A♭-♮ 6. F	/A 21, 53-60.		

[51] See Glossary.

5.4.0.1 Krumpholtz's *Préludes*, Op. 2: Pedal solutions

The following twelve tables are the instructions to how to perform Krumpholtz's Op. 2, using historical pedal techniques. The items included are the "base" set-up key, enharmonics and the pedal movements in each *Prélude*. Any remarks regarding errors in the printed score or additional comments are noted below each table.[52]

Table 5.5: Krumpholtz *1er Prélude*

Key	A-flat major
Set-up key	A-flat major
Pedals: option 1	Fold up G pedal at beginning. Play the C♯ in bar 10 as written.
Pedals: option 2	Fold up the G & C pedal at beginning and play the C♯ in bar 10 as D♭.
Pedals: option 3	Fold up the G pedal at beginning and play the C in bar 10 as written, fold up C pedal for *Minuetto*.
Enharmonics	C♯ (D♭): 10 (optional).
Pedalling	D.P. 3: F/A 82-83, D/B 113-14; T.P.: D/C/B 113-14.

Critical remarks:
- b. 12: ♮ sign on G is for E.
- b. 15: ♭ missing on E.
- b. 69: first note in r.h. is a E♭, not G as written.
- b. 94: first note in l.h. is C, not D as written.
- b. 124: l.h. A is ♮. (♮ sign is incorrectly on C and not on A).

Table 5.6: Krumpholtz *2ème Prélude*

Key	F minor
Set-up key	A-flat major
Pedals	Fold up the C pedal at beginning.
Enharmonics	G♭ (F♯): 54, 61.
Pedalling	D.P.: 4(i) D/B 26; 4(vi) 57-60.

Critical remarks:
- b. 57: B♮ and A♭ in r.h.
- b. 80: r.h middle of bar, top note is D, not E♭ as written.
- b. 44: could be with A♮.
- b. 57: r.h. could be C♮.

[52] I used this scheme and Appendix III to teach the harp class of the Norwegian Academy of Music historical pedal techniques. This masterclass took place on May 10-12, 2016. I would like to thank the harp class and Isabelle Perrin for their willingness to experiment with me.

Table 5.7: Krumpholtz *3ème Prélude*

Key	E-flat major
Set-up key	E-flat major
Pedals	Fold up G pedal in 40.
Enharmonics	D♭ (C♯) 40, 41, 47; G♭ (F♯): 79; A♭ (G♯): 23, 24.
Pedalling	D.P. or T.P., 3: F/A 43-44, 73-74, 79-81.

Critical remarks:
- b. 75: l.h. E♮.
- The low F♯ may need to be re-tuned.

Table 5.8: Krumpholtz *4ème Prélude*

Key	E-flat major
Set-up key	E-flat or A-flat major
Pedals	Fold up G pedal at beginning.
Enharmonics	Play all G♭ as F♯, C♭ as B♮.
Pedalling	D.P. 4(vi): F/A 27-34.

Critical remarks:
- b. 1: l.h. lowest note is C. (not D).
- b. 26: G♮, not G♭.
- b. 33: r.h. A♮.

Table 5.9: Krumpholtz *5ème Prélude*

Key	B-flat major
Set-up key	E-flat major
Pedals	Fold up G pedal in 40.
Enharmonics	D♭ (C♯) 67.
Pedalling	D.P.: 3: C/B 99-100; E/F: 101-2.

Critical remarks:
- b. 45: l.h. extra ♮ sign on C.
- b. 54: r.h., first note is an A♮.
- b. 58: r.h. first A is A♮.
- b. 119: l.h., should read A, F, B♭, F.

Table 5.10: Krumpholtz *6ème Prélude*

Key	G minor
Set-up key	E-flat major

Enharmonics	D♭ (C♯) 18, 22.
Pedalling	Pedal *glissando* 13 (optional).

Table 5.11: Krumpholtz *7ème Prélude*

Key	F major
Set-up key	E-flat or A-flat major.
Enharmonics	D♭ (C♯) 27, 28; C as D♮; E♯ as F♮.
Pedalling	D.P.: 3: C/B 45-51.

Critical remarks:
- b. 53: r.h. is D♮.
- b. 57: l.h is A♮.

Table 5.12: Krumpholtz *8ème Prélude*

Key	D minor
Set-up key	E-flat major

Table 5.13: Krumpholtz *9ème Prélude*

Key	C major
Set-up key	E-flat or A-flat major.
Pedals	Fold up the G pedal at beginning.
Enharmonics	D♭ (C♯) 48, 50, 51; D♯ (E♭) 22, 23, 28, 29.
Pedalling	D.P.: 4(viii) F/A 44-51, 4 (i, viii) 54-55.

Critical remarks:
- b. 3: r.h. First E is actually F.

Table 5.14: Krumpholtz *10ème Prélude*

Key	A minor
Set-up key	A-flat major.
Pedals	Fold up the G pedal in bar 13.
Enharmonics	A♭ (G♯) 10-12; D♯ (E♭) 30; C♯ (D♭) 20-34; A♯ (B♭) 22; G♭ (F♯) 27; C♭ (B♮) 28.
Pedalling	T.P.: 3: D/C/B: 25-26, 28-29, 31-33; D.P.: F/A 24-25, 27-28, 30-31. LFoot: 24, 27, 30.

Table 5.15: Krumpholtz *11ème Prélude*

Key	G major
Set-up key	E-flat major.
Enharmonics	D♭ (C♯) 69; D♯ (E♭) 21, 22, 25, 28.
Pedalling	D.P.: 3: F/G 90-91.

Table 5.16: Krumpholtz *12ème Prélude*

Key	E minor
Set-up key	E-flat major.
Pedals: option 1	Fold up the G pedal at beginning.
Pedals: option 2	Fold up the G pedal from bar 6.
Enharmonics	D♭(C♯) 27-28, 35, 37; D♯ (E♭) 40-41; A♯ as B♭.
Pedalling	D.P.: 4(x) F/A 21, 4(vi, i combination) 53-60.
	Pedal *glissando* in bar 6.

Critical remarks:
- b. 23: E♭ in l.h.
- b. 25: second B is B♭ in l.h.
- b. 38: l.h. D is C, last G is F♯.
- b. 56: l.h. last note is C♮.
- b. 57: l.h first note is E♭.

Conclusions

The harp treatises and methods show only a few musical examples for how and where to use multi-pedalling. This current research discusses the five known pieces where multi-pedalling is indicated by the composer or publisher, found in sections 4.3.1.1-4.3.1.5. The third group of primary sources, with its implied pedal solutions on scores without written instructions, further enriches the mass of historical sources. This shows that complex pedalling was an inherent part of playing the single-action harp. The most intricate moves are found in the works by Louis Spohr and these are analysed with respect to the pedal moves in the following chapter.

Chapter 6

Pedalling and Spohr's harp pieces

6.1 Research question

This research began with the author's dilemma to how to play six passages in Spohr's *Sonate Concertante*, Op. 115 for violin and harp. These sections seemed impossible to play on a single-action harp,[1] if only one pedal is moved at a time with one foot.

The passages are:
- *Allegro* bars 6-7, 74-90, 217-31, 238-42.
- *Larghetto* bars 5-12.
- *Rondo* bars 294-304.

These bars will be discussed and analysed in section 6.2.1. Then a similar scheme, as used for Krumpholtz's *Préludes* in section 5.4, will show how double- and triple-pedalling is an integral part of Spohr's compositional style for harp, even if it is not indicated in the pieces. It is the author's opinion that this was the secret of Dorette Spohr's incredible technique, but was also what led her to retire from harp playing.

All of Spohr's compositions are physically playable with single-pedalling, except for Opp. 115 and 118.[2] However, single-pedalling implies pedal moves that need to be planned bars ahead and often have no musical sense. On the other hand, multi-pedalling can be performed exactly in the bar where the harmony changes and where the accidentals are written in the score. Since discovering the advantages

[1] The word "harp" is used throughout this thesis to refer exclusively to a harp with a single-action pedal mechanism.

[2] Spohr wrote eighteen works for the harp. Two works are incomplete: WoO 24 and WoO 25. Three other works are lost: WoO 29, WoO 33 and WoO 36. The double concerto WoO 14 is not available for consultation. See Chapter 4, footnote 18.

and ease of multi-pedalling, the author has applied these historical pedal techniques to every piece by Spohr. There are passages, where multi-pedalling may not appear indispensable, but it complements any execution that aims towards a historically informed performance. When pedals become part of the musical line, the feet gestures and the harmonic developments are in concordance with each other.

When employing multi-pedalling in Spohr's music, an important feature is folding and unfolding the C and G pedals. Folding away pedals can occur before the piece commences or during the piece. The simple movement of folding away a pedal entails using the toe to raise the pedal to fold the pedal flush with the resonance box of the harp, if that pedal is not required for an entire movement or piece. If the folded pedal is required during the course of the movement or piece, the pedal does not need to be completely flush against the resonance box. It can be left in a vertical position but slightly jutting out, leaving enough space so that the toe can quickly unfold that said pedal. Figure 6.1 shows the C pedal in a vertical position on the left-hand side of the pedal box. Unfolding a pedal can be a slightly riskier movement than folding away a pedal, as the pedal can get stuck and not unfold easily.

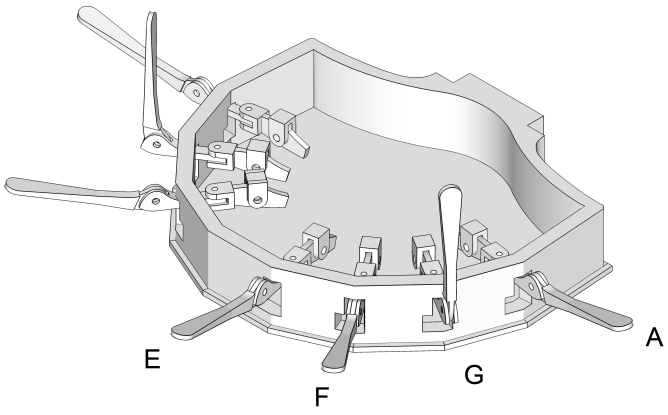

Figure 6.1: Double-pedalling (D.P.) on two non-adjacent pedals with the G and C pedals folded away. (Also see fig. 5.15 and 5.16.)

Every time a pedal needs to be folded or unfolded in a work by Spohr, there is either at least a half-a-bar's rest (and usually more) in the harp part, or the texture of the harp thins out to one part for one hand. The harpist therefore has ample time to fold or unfold a pedal. Multi-pedalling is not explicitly written in the Spohr's music, but why does Spohr's compositional style of writing incorporate rests precisely where a pedal needs to be folded or unfolded? The rhetorical silences in the music are the implicit clue to Spohr's harp compositional style and Dorette Spohr's pedal technique.

6.1.1 Dorette Spohr

Dorothée Henriette Scheidler (1787-1834), called Dorette, was born in Gotha, daughter of Johann David Scheidler (1748-1802), and Sophie Elisabeth Susanne Scheidler néè Preyßing (d. 1821 or 1832).[3] Her father was court cellist and composer and her mother was one of the two singers employed at the Gotha court from 1776. Dorette had two maternal uncles who also played at court up to 1837, Friedrich Wilhelm (violinist) and Carl Scheidler (cellist). They both formed part of Spohr's regular quartet in Gotha.

Little is known about Dorette's life, except through Spohr's autobiography and newspaper descriptions of her performances. She kept a diary, but this was lost after her death. Some of her letters have survived to Louis, one to her daughter Ida, and one to Clara Schumann.[4]

Musical career to 1806

Dorette played the piano and harp, and played the violin sufficiently well to play Viotti duets with Spohr. She knew both Italian and French as well as her native tongue, German. Her earliest documented concerts on the harp and piano are from 1802, when she was still fourteen-years-old. Four of her performances from that year are reported in the *Gothaischen gelehrten Zeitung*.[5] She performed a "Variationen auf der Harfe" on April 6, 1802, a second concert where she played piano, a third performance on December 17, playing a "Harfenconzert von Kleeberg,"[6] and a final concert, on December 27, where she played Mozart's two-piano Concerto with Caroline Schlick on two pianos.[7] All concerts took place in the Mohrenesaale Gotha.[8] Dorette performed with her mother, Madame Scheidler and Louis Spohr in a concert in Leipzig on December 16, 1805. There she performed a "Concert"

[3] All biographical information comes from: Clive Brown, *Louis Spohr* (Cambridge: Cambridge University Press, 1986); Spohr, *Lebenserinnerungen*; Göthel, *Thematisch-bibliographisches Verzeichnis*; Wulfhorst, "Louis Spohr's Early Chamber Music (1796-1812)"; Freia Hoffmann, *Instrument und Körper* (Frankfurt am Main: Insel, 1991), 336–52; Gisa Steguweit, *"Weibsbilder" in Gotha um 1800: zwischen Anpassung und Aufbegehren* (Druckmedienzentrum, 2015); Elizabeth Dobritzsch, *Barocker Bühnenzauber. Das Ekhof-Theater in Gotha* (München: Bayerische Vereinsbank, 1995). I thank Dr. Karl Traugott Goldbach, Director of the Spohr Museum, Cassel, Germany for his comments and research help. Anna Teresa Macías García, "El arpa e instrumentos emparentados y su presencia en la obra de Johan Wolfgang von Goethe" (PhD, Universidad complutense de Madrid, 2012), 82, gives an incorrect birthdate for Dorette.

[4] Louis Spohr and Dorette Spohr, *Louis Spohr - Briefwechsel mit seiner Frau Dorette*, ed. Folker Göthel (Kassel: Bärenreiter, 1957). Dorette Spohr, "Dorette Spohr an Clara Schumann," 1 Bl. hs. m. eigenh. U. ; 9,5 x 15,5 cm, (December 16, 1831), http://hansopac.slub-dresden.de/cgi-bin/slub.pl?t_tunnel=idn&idn=b132196.

[5] Steguweit, *"Weibsbilder" in Gotha um 1800*, 226–27. Steguweit cites four public performances of Dorette, cited in the *Gothaischen gelehrten Zeitung*, 1802.

[6] Christian Gottlieb Compositeur Kleeberg, *Grand concert pour le piano forte ou la harpe avec deux violons, alto et basse, une flûte, deux hautbois, deux bassons, deux cors ou trompettes et timbales, Op. 9* (Augsburg: Gombart, 1800). Christian Gottlieb Kleeberg, *Concert für Harfe oder Pianoforte*, n.d., https://opac.rism.info/metaopac/search?id=rism200045783.

[7] W. A. Mozart, *Concerto in Es für zwei Claviere*, K.365.

[8] Steguweit, *"Weibsbilder" in Gotha um 1800*, 226–27.

by Backofen,[9] a "Fantaisie" on the harp and she accompanied her mother singing Mozart's Arie K.505 "Non temer, amato bene".[10]

Johann Georg Heinrich Backofen (1768-1855), clarinettist, basset hornist and harpist at the Gotha court is named by Spohr as her teacher, but it would appear that Dorette was already performing in public before Backofen arrived in Gotha.[11]

Musical career after 1806 as a performer and teacher

Louis Spohr was appointed *Konzertmeister* in October 1805 at the Gotha court and he remained in this position until September 1812. In his autobiography, Spohr affectionally reminisces about their courtship and when he proposed marriage to Dorette: "Wollen wir so fürs Leben miteinander musizieren?"[12] The couple married on February 2, 1806, and they had three children that survived to adulthood: Emilie (b. 27/5/1807), Johanna Sophie Louise (Ida) (6/11/1808) and Therese (29/7/1818).

Their professional life as a duo involved several European concert tours including three extended tours:

- Mid-October to March/April 1807: [Weimar]–Leipzig-Dresden-Prague-Regensburg-Munich-Augsburg-Stuttgart–Karlsruhe-Heidelberg-Frankfurt.
- October 1809 to March 1810: Weimar-Leipzig-Bautzen-Wroclaw (orginally planned St. Petersburg)-Leignitz-Glogau-Berlin-Hamburg-Lübeck-Hamburg.
- October 1812 to April 1813: Leipzig-[Dresden]–Prague-Vienna.[13]

From April 11, 1811,[14] Dorette was employed as solo player and music teacher to the Princess at the Gotha court. This position was offered to her by the Duchess Caroline Amalie:[15]

> "Da sie mich sowie meine Frau höchst ungern so lange bei den Hofkonzerten vermissen werde, so erbiete sie sich, wenn ich die Reise aufgeben und baldigst nach Gotha zurückkehren wolle, meiner Frau

[9] Backofen, *Anleitung*, 1827. One movement of a *Concerto* in B-flat major by Backofen is found at the end of third edition of his method.

[10] "Berlinische musikalische Zeitung," 1805, No. 104: 412, AMZ, 1806: 206.

[11] Steguweit, *"Weibsbilder" in Gotha um 1800*, 226–27. The *Gothaischen gelehrten Zeitung* reports than Backofen played a concert in Gotha on August 4, 1802, but Dorette had already performed in public in April 1802.

[12] Spohr, *Lebenserinnerungen*, 96: "Shall we make music together for ever?"

[13] Wulfhorst, "Louis Spohr's Early Chamber Music (1796-1812)," Table III/1, 121-23. Wulfhorst lists thirteen performances of Dorette from 1805-1813, which were reviewed. This is not a complete list of Dorette's performances, as Dorette continued to perform on the harp up to 1820 and on the piano for the remainder of her life.

[14] Steguweit, *"Weibsbilder" in Gotha um 1800*, 238.

[15] Karoline Amalie of Hesse-Kassel (1771-1848), Duchess of Saxe-Gotha-Altenburg, daughter of Landgrave (later Prince) William I of Hesse and second wife of Emil Leopold August (1772-1822), Duke of Saxe-Gotha-Altenburg. The Princess mentioned in the quote underneath was Louise Dorothea Pauline Charlotte Fredericka Auguste (1800-1831), Princess Louise of Saxe-Gotha-Altenburg, daughter Duke of Saxe-Gotha-Altenburg from his first marriage.

> als Entschädigung dafür eine Anstellung als Solospielerin bei den Hofkonzerten und als Musiklehrerin der Prinzessin zu verschaffen."[16]

This position effectively lasted until October 1812, when the Spohr couple again depart on their third concert tour to Vienna, but Dorette did not officially leave this position until May 1813.[17] The Theater an der Wien, engaged Louis as "Orchesterdirektor" and Dorette as "Solospielerin auf der Harfe" by May 1813, but there is no evidence that she actually ever performed there.[18] Only three public concerts of the Spohrs are recorded in the newspapers during their sojourn in Vienna. The first concert took place on February 14, 1813, another on January 19, 1814, and their final concert before leaving Vienna permanently, on March 19, 1815. All concerts took place in the Redoutensaal.[19] Dorette gave birth to their only son, Friedrich on July 1, 1814, but he died less than three months afterwards.[20]

During the summer of 1815, the Spohrs stayed with Prince of Carolath-Beuthen on his Silesian estate, where Dorette taught his seventeen-year-old daughter Dorothea the harp and his fifteen-year-old daughter Henriette the piano.[21]

Dorette performed in public for the last time, while on their London tour in 1820. She played at least three public performances during their stay, the first concert on April 13, 1820, at the City Amateur Concert. The second occurred on April 24, at the Philharmonic concert season[22] and the final concert took place on Thursday, June 8, 1820, at the New Argyll Rooms.[23]

Spohr writes in his autobiography that after this tour, he begged Dorette to retire from harp playing for health reasons.[24] Dorette died on November 20, 1834, and afterwards Spohr seldomly performed with harp. One concert is documented with Marie Loew in Kassel and Spohr also may have performed with his niece Rosalie Spohr, daughter of his brother Wilhelm.[25]

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[16] Spohr, *Lebenserinnerungen*, 128: "As she will miss not only me, but also my wife, from the court concerts, she has offered us, when I want to give up travelling and as soon as possible when I can return to Gotha, employment to my wife, as compensation, as a solo player at the court concerts and music teacher to the Princess."

[17] Ibid., 167.

[18] AMZ, March 17, 1813: 194: "solo player on the harp". Also cited in Hoffmann, *Instrument und Körper*, 343. Hoffman implies that Dorette performed many times in Vienna, without quoting any engagement at the Theater an der Wien.

[19] AMZ, February 14, 1815: 115; AMZ, January 26, 1814: 72; AMZ, March 29, 1815: 218.

[20] Brown, *Louis Spohr*, 92.

[21] Spohr, *Lebenserinnerungen*, 194. Prince Heinrich Karl Erdmann III Fürst zu Carolath-Beuthen (1759-1817), Dorothea Carolath (1799-1848), Henriette Sophie Konstanze (1801-1874).

[22] "The Mirror of Fashion," *The Morning Chronicle*, May 4, 1820.

[23] Spohr, *Lebenserinnerungen*, Vol. 2, 72, footnote 9, 236.

[24] Dorette suffered "Nervenfieber" from after the birth of her second child. In the beginning of the nineteenth century, this meant several ailments from chronic fatigue, ailments of the liver or gall, bacteria in the intestine, pneumonia and typhus. The term was often used for men to refer to Typhus and was rife during the Napoleonic Wars. August Friederich Hecker, *Ueber die Nervenfieber, welche in Berlin im Jahre 1807 herrschten, nebst Bemerkungen über die reizende, stärkende und schwächende Kurmethode* (F. Maurer, 1808), 28.

[25] See Arthur Abell, "Some Unknown Letters of Louis Spohr," *Musical Courier* LXI, no. 7 (1910): 10–11; Arthur Abell, "Some Unknown Letters of Louis Spohr," *Musical Courier* LXI, no. 8 (1910): 5–6. Rosalie

6.1.2 Dorette Spohr's harps

Dorette first owned a "Strassburger" harp, meaning a harp from Strasbourg, which she had received from the Duchess of Brunswick-Lüneburg as a gift.[26] This harp was probably built by the eighteenth-century Storck family of instrument builders.[27] Between June 1806 and October 1807 the Spohrs bought a Henri Naderman harp, most likely with 41 strings, with a pitch range from F1 to d4.[28] As this harp was built in Paris, it was probably built for a pitch between A=425-430Hz.[29] Spohr constructed a special carriage to carry this harp on their many concert tours.[30]

Spohr had considered buying an Erard harp in 1808 for Dorette. In a letter from Louis Spohr to Peter's editions in Leipzig dated "Gotha, August 11, 1808", Spohr writes:

> "Wenn's mir einigermaassen möglich ist, werde ich allsdann auch nach Leipzig kommen, un Ihre Erhard'schen Harfen zu sehen und für meine Frau eine auszusuchen. Schon lange war diess mein sehnlichster Wunsch."[31]

It would appear that this purchase never came to fruition.[32]

Weber attended two concerts of the Spohr's in Gotha on September 29 and 30, 1812. Near the end of the duo sonata, Weber writes that on account of a new harp, a string broke and then "ein Pedal hängen blieb".[33]

Dorette's Naderman harp was also noted in a somewhat negative review from a concert in Zurich in 1816:

> "Die Virtuosität des Harfenspiels der Frau Spohr ist besonders ausgezeichnet in Sprüngen und im Pedalgebrauch. So groß der Beyfall war; so musste er doch bey den Nichtkennern geschmälert

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Spohr (1829-1918), harpist and niece of Louis and Dorette Spohr. She retired from public performances after her marriage to the Count von Saurerma.

[26] Spohr, *Lebenserinnerungen*, 102. Duchess Brunswick-Lüneburg, Princess Augusta of Great Britain (1737-1813) married Charles William Ferdinand, Duke of Brunswick-Wolfenbüttel (1735-1806) in 1764.

[27] See Pierre, *Les facteurs d'instruments de musique*, 373-74; Vannes, "Dictionnaire universel.", 346-47. See also Introduction, footnote 58.

[28] See "System of pitch notation", under "Abbreviations", page x.

[29] Wolf, "Timeline-Pedalharps." Email correspondence with Beat Wolf, June 23, 2016.

[30] Spohr, *Lebenserinnerungen*, 101; Max Maria von Weber, *Carl Maria von Weber: ein Lebensbild*, vol. 1 (E. Keil, 1864), 380. Carl Maria von Weber (1786-1826), composer, conductor, pianist and critic. He mentions that Dorette was playing on a new harp for two concerts that he attended in Gotha on September 29 and 30, 1812. There is no mention of a new instrument in Spohr's autobiography and it would appear that Dorette was still playing on her Naderman in 1816. See next footnote.

[31] AMZ, 1834: 299: "If it is to some extent possible, I will then also come to Leipzig to see your Erard harps and choose one for my wife. For a long time, this has been my dearest wish."

[32] Wulfhorst, "Louis Spohr's Early Chamber Music (1796-1812)," 352, footnote 2.

[33] Von Weber, *Carl Maria von Weber*, 1:380. There is no evidence that Dorette ever bought a new harp after 1807. The pedal that was "left hanging" could indicate that the pedal rod broke, the long metal rod that runs through the column of the harp and links the pedals to the mechanism in the neck. When this happens, the pedal does not function anymore, meaning that the vibrating length of the string cannot be altered.

> werden durch den Umstand, dass sie eine so mittelmäßige, in der Mitte herum, (der un- und eingestrichenen Octave) schlechte Harfe hat, eine ältere Nadermannische. Wir haben hier bessere, nicht bloß Nadermannische, neuere sondern Erhardische. Auch ein hiersiger Dilettant der instrument Baukunst, Hr. Notz, hat eine weit bessere verfertiget. Was Hr. Spohr für seine würdige Gattin componiert hat, ist vortrefflich; wenn er auch das Wesen und die Prästanz der Harfe-ich will nicht sagen, nicht zu kennen schient,-aber doch bey weitem nicht erschöpft.[34]

On the way to London in February 1820, it was decided to leave Dorette's harp in Brussels, as Spohr wanted to buy Dorette a new Erard harp *à double mouvement*.[35] When they arrived, the Spohr's visited the Erard company. In Spohr's autobiography he writes:

> Im Hause des Herrn Ries hatte ich auch die Bekanntschaft des Herrn Erard, dem Chef des Londoner Hauses frères Erard, gemacht und in Begleitung meiner Frau bereits das Magazin von fertigen Harfen besucht. Wir konnten uns jedoch nicht entschließen, sogleich eine derselben auszuwählen, da Dorette erst erproben mußte, welche Größe ihr am meisten zusagen würde, und ob sie sich überhaupt an den neuen Mechanismus werde gewöhnen können. Dieser Verlegenheit machte Herr Erard dadurch ein Ende, daß er sich freundlichst erbot, ihr eine Harfe nach ihrer Auswahl für die Dauer des Londoner Aufenthaltes zu leihen, die sie dann, wenn sie ihr nicht zusage, gegen eine andere vertauschen oder auch ganz zurückgeben könne. Dies nahm sie mit Dank an und begann nun sogleich, sich auf dem neuen Instrumente einzuüben. Es wollte ihr dies aber anfangs gar nicht recht gelingen, denn erstlich war die neue Harfe, obgleich vom kleinsten Format, doch noch um ein bedeutendes größer sowie auch stärker bezogen als ihre eigene und verlangte daher viel mehr Kraftanstrengung, und zweitens wurde es ihr sehr schwer, sich an den neuen Mechanismus à double mouvement zu gewöhnen, da sie den einfachen von Kindheit an geübt hatte. Sie sah daher bald ein, daß sie auf dieser Harfe erst nach Monaten werde öffentlich spielen können, und ich beschloß deshalb, sie nur einmal in meinem Benefizkonzert auftreten zu lassen, um diesem dadurch einen besondern Reiz zu geben.[36]

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[34] AMZ, 1816: 458: "The virtuosity of the harp playing of Mrs Spohr is particularly excellent in leaps and the use of pedals. From how great the applause was; the non-connoisseurs were not less satisfied by the fact that she has such an average, bad harp, in the middle range, (on the stave and lever lines), an older Nadermann one. We have here better, not just Nadermann harps, but the new Erard ones. Even the dilettante instrument maker, Hr. Notz has produced a far better [instrument]. What Mr. Spohr composed for his dignified wife, is excellent; but he [does not exploit] the nature and full capacities of the harp - I will not say that he does not know how to do this."

[35] Spohr, *Lebenserinnerungen*, Vol. 2, 66. In a letter to sister, Pierre Erard mentions that he heard Dorette play for the first time in London in 1820. Robert Adelson, email correspondence, March 21, 2016.

[36] Ibid., Vol. 2, 72: "In the house of Mr Ries, I had also made the acquaintance of Mr. Erard, the head of

With this harp in her possession,[37] Spohr continues in his autobiography:

> "Dorette, die sich ohnehin vor dem ersten öffentlichen Auftreten mit der neuen Harfe sehr fürchtete, war in großer Spannung vor dem, was da kommen werde, und ich hatte ernstliche Besorgnis, daß die Aufregung, in der ich sie sah, sowohl ihrem Spiele als ihrer Gesundheit nachteilig sein werde."[38]

The third and last concert that Dorette performed in London was at the Argyll Rooms on June 8, 1820. The couple played a sonata for violin and harp, but it is not known which one. The sonata is advertised as a "new one", only in manuscript,[39] so it is the author's opinion that the Spohrs played their most recently composed sonata, which would have been WoO 36 (EWV 78) in G major/A-flat major. Considering the key of this sonata and its probable set-up "base" key, it probably entailed double-pedalling with both the left and right feet. The work was written in 1819. The score is currently lost.

Spohr writes extensively about this concert, as it actually turns out to be also Dorette's last public performance on the harp:

> "Während der folgenden Arie stimmte ich im Nebensaale meiner Frau die Harfe und sprach ihr Mut zu. Dann führte ich sie in den Saal, und wir nahmen unsere Plätze ein, um das Duett zu beginnen. Schon verbreitete sich die Stille der Erwartung, und man lauschte unsern ersten Tönen, als sich plötzlich von der Straße her ein fürchterliches Geschrei erhob, dem auch sogleich eine Kanonade von Pflastersteinen gegen die unerleuchteten Fenster des Nebensaales folgte. Bei dem Klirren der Scheiben und Kronleuchter sprangen die Damen entsetzt von ihren Plätzen auf, und es folgte eine unbeschreibliche Szene der Verwirrung und Aufregung. Man beeilte sich, die Gasbeleuchtung des Nebensaales anzuzünden,... daß nun das Volk,...weiterzog und so nach und nach die frühere Ruhe wiederkehrte. Doch dauerte es

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the London house of the *frères* Erard, and in the company of my wife, visited the [Erard] factory. However, we could not decide straightaway, which harp to choose, as Dorette first had to try out what size would suit her most, and if she could at all get used to the new mechanism. Mr. Erard resolved this dilemma, as he kindly offered to lend her a harp of her choice for the duration of our stay in London, which she then, if it were not to her liking, could exchange it for another, or even return it completely. This she accepted with thanks and now immediately began to practise on the new instrument. It was not first a success, because in the first place the new harp, though, being the smallest size, was still significant bigger and with higher tension strings as her own [harp] and therefore required a lot more strength, and secondly, it was very difficult for her to get used to the new mechanism *à double mouvement*, since she had always played the single-action from childhood. She soon therefore realised that it would take months to play publicly on this harp, and I therefore decided that she would only play once in my charity concert, adding to it a special charm."

[37] There is no record of this loaned harp in the existing Erard ledgers, RCM, London. I thank Mike Baldwin, Erat researcher, for his assistance and expertise with these ledgers.

[38] Ibid., Vol. 2, 79: "Dorette, that anyway with the first public appearance with the new harp was very afraid, was in great stress of what will come, and I had serious concerns that the excitement in which I saw her, would be detrimental to her health."

[39] "The Mirror of Fashion," *The Morning Chronicle*, June 12, 1820.

> lange, bis das Publikum seine Plätze im Saale wieder einnahm und sich so weit beruhigte, daß wir endlich beginnen konnten. Ich war dabei nicht ohne Besorgnis, daß der Schrecken und die lange Pause meine Frau noch mehr aufgeregt haben würde, und horchte daher in großer Spannung auf ihre ersten Akkorde; als diese aber in gewohnter Kraft ertönten, beruhigte ich mich sogleich und überließ mich nun ganz der Aufmerksamkeit auf unser Zusammenspiel. Dieses, welches in Deutschland immer so sehr gefallen hatte, verfehlte auch auf das englische Publikum seine Wirkung nicht; es steigerte sich daher der Beifall bei jedem Satze des Duettes und wollte am Schlusse gar nicht enden. Als wir höchst erfreut über diesen Erfolg abtraten, dachten wir beide nicht, daß es das letztemal gewesen war, daß Dorette Harfe gespielt hatte![40]

Spohr's last comment in his autobiography about Dorette and harps follows:

> "Es folgt nun eine trübe Periode in meinem Leben, an die ich noch jetzt mit Wehmut zurückdenke. Dorette fühlte sich nämlich infolge der Anstrengung, mit der sie sich auf der neuen Harfe eingeübt hatte, und durch die wechselnden Eindrücke des Konzertabends so erschöpft und leidend, daß ich ernstlich fürchtete, sie möchte von einem dritten Anfall des Nervenfiebers heimgesucht werden."[41]

It may be difficult for harpists today to imagine the gaping difference between a harp with a single-action and a double-action pedal mechanism, as harpists today often perform on several sorts of harps. Harpist today often come from the modern pedal harp to the earlier pedal harp. Dorette Spohr's experience was quite the opposite. The differences between the two harps mentioned by Spohr are: issues with the string spacing, the size of the instrument, the extra muscular strength required for the hands and feet, and the difficulties of coping with a new pedal mechanism.

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[40] Spohr, *Lebenserinnerungen* Vol. 2, 85: "During the ensuing aria I tuned in a nearby hall, my wife's harp, and gave her courage. Then I led her into the hall, and we took our seats to start the duet. Then the silence of expectation came upon the room, and one listened to our first notes, when suddenly from the street a terrible clamour arose, which at once followed by canons of stones against the unlit window of the side hall. In the clatter of plates and chandeliers, the women jumped from their seats in horror, and this was followed by an indescribable scene of confusion and excitement. They hastened to light the gas lighting in the side hall to forestall a second hit… and so gradually the former peace recurred. But it took a long while before the audience occupied their seats again in the hall and calmed down so far that we could finally begin. I was not without concern that the terror and the long break would have unsettled my wife even more, and therefore listened with great attentiveness to her first chords; but as these were heard in the usual strength, I calmed down immediately, leaving now all my attention to our [musical] interaction. This, which had in Germany always been a success, did also not fail to touch the English public; therefore the applause increased at every movement of the duet and did not want stop [applauding] at the end. As we were delighted with this success, we both did not think it was the last time that Dorette would play the harp!"

[41] Ibid., Vol. 2, 85: "There now followed a dark period in my life, which I still think back with melancholy. Dorette felt because of the stress, with which she had practiced on the new harp, and by the changing impressions of the evening, so exhausted and under tension, that I feared seriously, that she would have a third attack of nervous fever."

The following table gives an idea of the differences between these two instruments. Dorette used a Naderman single-action harp for over fifteen years.

Table 6.1: Comparison of a Naderman single-action harp and an Erard small model double-action pedal harp

	Naderman single-action harp	Erard small model double-action
Type of harp	single-action	double-action
Type of mechanism	harp *à crochets*	harp *à fourcettes*
Possible pitch	A=425-430Hz	A=430-440Hz
No. of strings	41 strings	43 strings
Range	F1-d4	E1-e4
String spacing: c-c1	98-102mm	103-105mm
String spacing: c1-c2	96-97mm	100mm
String tension (after Lépine 1811)	5300N	6800N

Dorette's career was ended by her illness according to Spohr's autobiography and the above difficulties that she experienced trying to adapt to the newer and larger Erard double-action pedal harp, with thicker strings, higher tension and heavier pedal springs which required more physical effort.

It is the author's opinion that the principal obstacle for Dorette was to translate her double-pedalling technique to the new double-action pedal harp. The two primary double-pedalling moves involve operating the F and A pedals with the right foot and the D and B pedals with the left foot. When the pedals are in the upper "open" position on the single-action harp, the F and A strings sound as pitches F♮ and A♭; when the pedals are lowered the pitches become F♯ and A♮. On the double-action pedal harp, when the F string sounds as F♮, the F pedal is on the middle level and when the A string sounds as A♭, the A pedal is on the upper level, as shown in fig. 6.2 and 6.3. F♮ and A♭ are not anymore on the same plane, as is the case on the single-action harp, as shown in fig. 6.4 and 6.5.[42]

On the other hand, the most common pedal move with the left foot involves operating the D♭-D♮ pedal together with B♭-B♮ pedal. These pedals are still on the same plane, the two flats are on the upper pedal level and the two naturals are on the middle, second level. However, pressing and holding pedals, or employing the heel and toe separately is easy when the pressing means pressing down against gravity. Pressing and holding pedals, or operating the heel and toe separately on the second pedal level is less successful and a more unstable movement.[43]

The pedal movements that the author has found in Spohr's works are full of intricate and subtle foot movements. Double-pedalling which entails operating two pedals at the same time with one foot is feasible on the double-action pedal harp. However,

[42] See section 8.1, which shows that this movement did continue in the playing practice on the double-action pedal harp, according to the nineteenth-century harp methods and repertoire.

[43] See section 8.1.

Figure 6.2: Erard double-action pedal harp, 1816: pedals set-up to play E♮, F♮, G♮, A♭. F♮ and A♭ are no longer on the same plane.

Figure 6.3: Erard double-action pedal harp, 1816: pedals set-up to play E♮, F♯, G♮, A♮. F♯ and A♮ are no longer on the same plane.

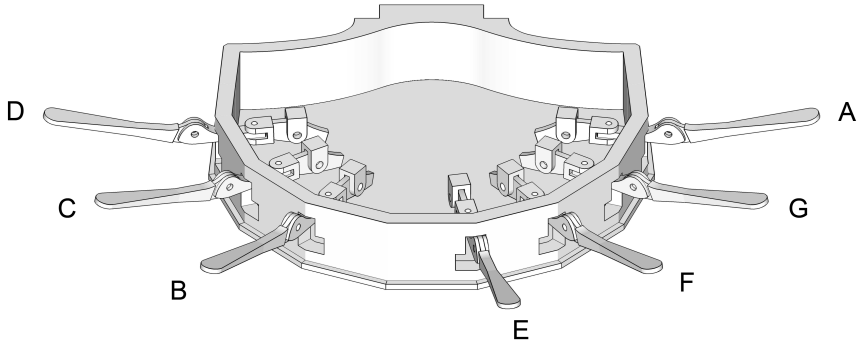

Figure 6.4: Single-action harp set-up to play E♭, F♮, G♮, A♭. F♮ and A♭ are on the same plane.

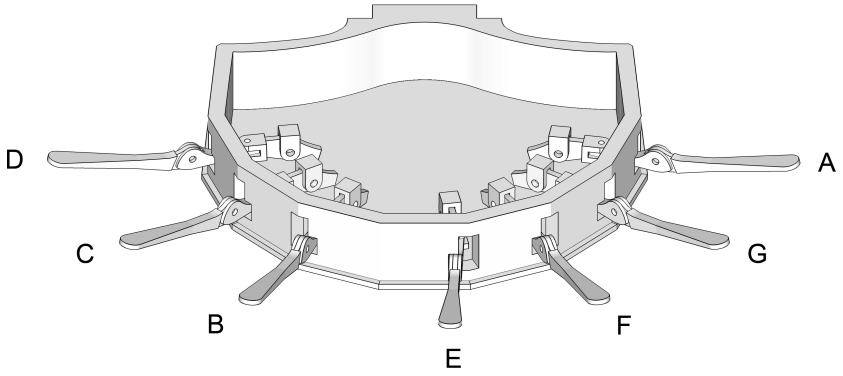

Figure 6.5: Single-action harp: pedals set-up to play E♮, F♯, G♮, A♮. F♯ and A♮ are on the same plane.

Spohr's music requires that the heel and toe move two pedals separately with a pivoting motion. This motion is easy on a single-action harp, but is an unnatural movement for the feet on a double-action pedal mechanism. Further research could involve using Dorette Spohr's double-pedalling techniques on a double-action pedal harp.

Tuning

Spohr writes this in his autobiography:

> "Die Auflösung der Truppen war eine so vollständige, daß die weggeworfenen Gewehre zu Tausenden auf den Feldern bei Gotha aufgesucht werden konnten. Bei einem Spaziergange, den ich einige Tage nachher machte, fand ich als Nachlese noch einen Ladestock, den ich zum Andenken an die verhängnisvolle Zeit mit zu Haus nahm. An einem Faden aufgehängt, gab derselbe im hellen Klange das einmal gestrichene B und diente daher lange Jahre statt Stimmgabel beim Einstimmen der Harfe."[44]

This tuning "fork" sounded to Spohr as B-flat who would have been accustomed at this time, in Germany, to an A sounding around 440Hz.[45] As Dorette's harp was tuned a semitone lower than the violin, this tuning fork was used to tune the B-flat of the harp, which corresponded to an A of Spohr's violin.[46]

Beat Wolf, the renowned single-action harp restorer and builder of our day, states that a Naderman harp from around 1805 would have been built for approximately A=425-430Hz.[47] If Dorette played her harp at A=415Hz, but with the diameter of strings for a higher pitched instrument, the general tension and feel of the strings would have been lower. The exact tension of her harp is not known but she could have compensated for this lack of tension by using thicker strings on her harp tuned at approximately 415Hz.

6.1.3 The repertoire of Dorette Spohr

When the Spohrs began playing together they had, as Wulfhorst describes it, "no useful model" of chamber works for musicians of their capabilities.[48] In fact, the first time that they shared a concert podium, they did not play together. Each one performed a concerto with orchestra and Dorette performed alone and accompanying her mother.[49] They were two professional players who needed to

[44] Ibid., 99: "The resolution of the troops was so complete that the discarded guns had been thrown away by the thousands in the fields near Gotha. On a walk, that I made a few days later, I found the remains of a ramrod, which I took home as a memory of that fateful period. Hung on a thread, it gave the same bright sound as B-flat and therefore served for many years as a tuning fork for tuning the harp."

[45] Haynes, *A History of Performing Pitch*, 334.

[46] See section 1.4. in this chapter for Spohr's use of the harp as a transposing instrument.

[47] Email correspondence with Beat Wolf, June 23, 2016.

[48] Wulfhorst, "Louis Spohr's Early Chamber Music (1796-1812)," 352.

[49] "Berlinische musikalische Zeitung," No. 104: 412.

create their own music for their level of technique. At this time, the violin and harp repertoire consisted of either works for harp and violin *ad libitum*, or works where the harpist's right hand dialogues with the melody instrument, while also providing a simple harmonic and rhythmic accompaniment.[50]

If Backofen was Dorette's teacher, then she would have known his compositions for harp.[51] Backofen arranged and published Mozart's sonata for violin and piano, K. 376 for violin, cello and harp, but this transcription is for the German *Hakenharfe*[52] and not for the single-action harp. Most of Backofen's compositions are for this German eighteenth-century harp with hooks that are manually changed to alter the vibrating length of the strings. Works for the single-action harp include a *Fantaisie* very similar to Spohr's Op. 35 which was published in the second edition of his method,[53] a *Concerto* in B-flat major (one movement only), included in the third edition of Backofen's method,[54] and *Suite de l'Etude pour la Harpe*, a set of ten short Preludes. These are all solo pieces for the harp, so did not contribute to the Spohrs' duo repertoire. One can only surmise that when the Spohrs began "musicieren,"[55] they may have experimented with playing violin and piano sonatas on the harp.

Spohr, probably with the collaboration of Dorette, wrote duos for themselves as professional performing musicians and this music was not composed for other players.[56] It was their private repertoire and they kept it to themselves, as Spohr wrote that "die meine Frau für sich behalten wird."[57] Spohr twice mentions in his autobiography that they performed by memory.[58] It was normal practice that eighteenth- and nineteenth-century virtuoso composer-performers wrote and exclusively performed their own works. The *Grande Sonate*, Op. 16 (1809), and the two surviving solo works for the harp, Opp. 35 and 36 (1816) are the only harp pieces by Spohr that were published during Dorette's lifetime. The second movement of Op. 114 was published as Op. 50 and the final *Rondo* movement of Op. 115 was published as Op. 51 for violin and piano in 1820.[59] Spohr described the sonata, Op. 16, as "eine der leichtesten und wird bei ihrer ungekünstelten Gefälligkeit dem Publico hoffentlich gefallen.[60]

Wulfhorst attributes the lack of publications of the works with harp partially "to the general level of harp playing at the time."[61] Spohr's works are the most difficult works ever written for the single-action harp and have remained so, even on the

[50] See Chapter 4.
[51] Rosenzweig, "Backofen," 80–97. This is the only published article on Backofen and the harp.
[52] See section 1.3.1.
[53] Backofen, *Anleitung*, 1807; Backofen, *Anleitung*, 1827.
[54] See section 6.1.3. for discussion of left foot moving the E pedal.
[55] "Musicieren" means music-making in English.
[56] Wulfhorst, "Louis Spohr's Early Chamber Music (1796-1812)," 347.
[57] Ibid., 201: "my wife will keep them for herself." (October 3, 1806).
[58] Spohr, *Lebenserinnerungen*, 148, 154.
[59] The piano parts of Opp. 50 and 51 were published in the violin keys.
[60] Wulfhorst, "Louis Spohr's Early Chamber Music (1796-1812)," 200, 474: "one of the easiest and it will be liked by the uncultured tastes of the public". Spohr's letter of December 6, 1808 to his publisher Simrock, quoted in Göthel, *Thematisch-bibliographisches Verzeichnis*, 30.
[61] Wulfhorst, "Louis Spohr's Early Chamber Music (1796-1812)," 201.

double-action pedal harp, due to the dense compositional texture and the chromatic writing which results in so many pedal moves in certain passages. Both of these difficulties can be overcome if the pieces are played on the only type of harp that Spohr knew: a single-action harp with thinner strings and one where certain double-pedalling technique moves are possible.

Spohr's works are based on a pedal technique that few used or even knew about. It is a technique that the Spohrs exploited to a maximum degree like no other composer or performer. One could say that today's harpists are still not at the level of Dorette's technique, considering that Opp. 115 and 118 have not been performed by any other harpist on a single-action harp besides the author[62] on a single-action harp in concert, since Dorette Spohr's pre-1820 performances. This is principally due to the fact that without certain double-pedalling techniques that are only possible on the single-action harp, these pieces, as notated in the scores, seem impossible to play on any pedal harp. It is for this reason that many pieces by Spohr are still not played. This is in contradiction to what Wulfhorst calls the:

> "mechanical limitations…[that] prevented the development of idiomatic and substantial harp music, until the double-pedal harp was invented in 1810...".[63]

Wulfhorst also writes that Spohr released Opp. 113-115, and 118 for publication from 1839 as:

> "the harp-playing technique and construction had progressed so far that the sonatas were accessible to a larger number of harpists."[64]

The evidence extracted from the scores and from performing the pieces on a single-action harp show quite the opposite. Spohr's music remained obscure and still is rarely played because as it was conceived for a single-action harp, some passages are actually impossible to play on the newly invented double-action pedal harp of 1810, most particularly passages in Opp. 115 and 118. The invention of another pedal mechanism did not popularise his music, but actually hindered the diffusion of his works. It could be said that Spohr's Opp. 115 and 118 are part of rare species of music that become unplayable on the newly invented harp with a double-action pedal mechanism. This is due to other technical constraints of the new harp.[65]

6.1.4 The compositional process

Spohr's autobiography is the principal source to comprehend his compositional process when writing for the harp.

[62] To my knowledge, no other harpist, besides myself, has performed Spohr's Opp. 115 and 118 in the original keys and using the multi-pedalling techniques described in this chapter.

[63] Ibid., 346.

[64] Ibid., 350.

[65] It is usually thought that the complete single-action harp repertoire is transferable to the double-action pedal harp, with its access to more keys - in theory, twenty-seven keys (compared to the thirteen keys possible on the single-action harp) - and enharmonic solutions. Spohr's music is an example of highly instrument-specific music.

> "Ich begann sogleich ein eifriges Studium der Harfe, um zu ergründen, was dem Charakter des Instrumentes am angemessensten sei. Da ich in meinen Kompositionen reich zu modulieren gewohnt war, so mußte ich besonders die Pedale der Harfe genau kennenlernen, um nichts für sie Unausführbares niederzuschreiben. Bei der großen Sicherheit, mit der meine Frau schon damals die ganze Technik des Instrumentes beherrschte, konnte dies freilich so leicht nicht geschehen. Ich überließ mich daher auch ganz dem freien Fluge der Phantasie, und es gelang mir bald, dem Instrument ganz neue Effekte abzugewinnen."[66]

From Spohr's first musings about the harp, he mentions that his music is chromatic and modulates often. To write for the harp, Spohr needed to understand what modulations were possible in which keys. Each new composition for the harp contains new double-pedalling experiments, as he gradually discovers the chromatic possibilities, modulations and diminished 7th chords that are available to him. He first uses the normal "base" set-up key of the harp, E-flat major, but then he experiments with A-flat major and D-flat major as "base" set-up keys. A-flat major becomes Spohr's preferred "base" set-up key, as then the harpist can fully exploit double-pedalling techniques on both sides of the harp.

Spohr says that his wife "fully knew the techniques of the instrument". It could mean that she knew all about double- and triple-pedalling from her teacher, Backofen, who was the first person to publish anything regarding multi-pedalling techniques.[67] Backofen shows how to pedal in first movement of his *Concerto*, which Dorette performed.[68] He suggests places where to use double-pedalling, so using the left foot to move the E pedal is implied at least three times.[69]

As so little is known about Dorette's life, it is also not known how much she contributed to the compositional process. Wulfhorst quotes Richard Holdermann as having actually seen works by Dorette.[70] Even though mutual collaborations were common in the nineteenth century between composer-performers, in this case, the music was published solely under Spohr's name.[71]

The harp as a transposing instrument

[66] Spohr, *Lebenserinnerungen*, 98: "I immediately began an in-depth study of the harp, to fathom what the character of the instrument was most appropriate for. As I was prone to rich modulations in my compositions, I had to learn the pedals of the harp especially well, in order to write nothing that was unplayable. Due to the greater sureness of my wife, who at that time knew the entire technique of the instrument, it could not easily happen, I lost myself in a free flight of the imagination, and I soon succeeded in achieving totally new effects from the instrument."

[67] See section 3.4.4.1.

[68] See section 6.3.

[69] Backofen, *Anleitung*, 1827, 44-46: double-pedalling marked in bars 15, 16, 17; Implied left foot moving the E pedal, on the right-hand side of the harp: 45, 54, 55, 58, 59, 67, 68, 69. A full analysis is this fundamental work in the art of moving the E pedal with the left foot and Dorette's pedal technique beyond the scope of this thesis.

[70] Richard Holdermann, "Spohr und Romberg in Gotha," *Neue Zeitschrift für Musik* 91: 97-98, no. 62/9 (1895).

[71] Examples of collaborations include the three sets of *Trois Nocturnes* written by the harpist Bochsa, cellist Jean-Pierre Duport and violinist Rodolph Kreutzer. Wulfhorst, "Louis Spohr's Early Chamber Music (1796-1812)," 181–82.

Spohr then describes the system of using the harp as a transposing instrument.[72]

> "Ein andrer Versuch zur Steigerung des Effekts hatte aber einen günstigeren Erfolg. Ich kam auf die Idee, die Harfe einen halben Ton tiefer als die Violine zu stimmen. Dadurch gewann ich zweierlei. Da nämlich die Geige am brillantesten in den Kreuztönen klingt, die Harfe aber am besten in den B-Tönen, wenn möglichst wenig Pedale angetreten werden, so erhielt ich dadurch für beide Instrumente die günstigsten und effektvollsten Tonarten: für Geige nämlich D und G, für Harfe Es und As. Ein zweiter Gewinn war der, daß bei der tiefern Stimmung der Harfe nun nicht so leicht während des Spieles eine Saite riß, was bei öffentlichen Vorträgen in heißen Sälen dem Harfenisten so leicht geschieht und dem Zuhörer den Genuß verleidet. Ich schrieb daher von nun an alle meine Kompositionen für Harfe und Violine in solcher verschiedener Stimmung."[73]

In this often-quoted text, Spohr points to the practical reason of tuning the instruments in two different pitches. The harp sounds better and is probably more in tune when the strings are in their "open" position. Writing in the key A-flat major, or its relative minor as the "base" set-up key on the harp means that four out of seven strings are in the "open" position.[74]

There are several advantages to this system, the first being that when the harp is set-up in the "base" key of A-flat major, it is possible to exploit double-pedalling techniques on both sides of the harp. A further reasoning may partly concern nineteenth-century thinking on the special characteristics of each key in music. Each major and minor key, as much as each interval in music, had its own characteristics, each evoking a certain passion, mood and colour.[75].

It would appear from Spohr's writings, that he did not know that other composers before him had written for the harp as a transposing instrument. This transposition was used for concertos with orchestra in Paris, but the author knows no other chamber music works, besides those by Spohr, written in this way. Spohr wrote his first two complete sonatas, WoO 23 (1805) and Op. 16 (1806) in the same keys for the violin and harp. All other duos are written for a transposing harp.

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[72] See section 4.1.

[73] Spohr, *Lebenserinnerungen*, 98: "Another attempt to increase the effects, however, had a better success. I had the idea, to tune the harp a semitone lower than the violin. By doing this, I won twofold. Namely, since the violin sounds most brilliant in the sharp keys, the harp however is best in the flat keys when as few pedals as possible are fixed, so I got the best and effective keys for both instruments: for the violin namely D and G, for the harp E-flat and A-flat. A second advantage was that at the lower tuning of the harp it was less likely that a string would break during a performance, which happens so easily in public places in hot concert halls and the enjoyment of the audience is spoiled. I wrote therefore from now on all my compositions for harp and violin in these different tunings."

[74] A comprehensive review of the keys used in the harp repertoire is beyond the scope of this study.

[75] For an in-depth study of key characteristics of the eighteenth century see Rita Steblin, *A History of Key Characteristics in the 18th and Early 19th Centuries, Second Edition* (University of Rochester, 2002). Primary sources of the epoch where key characteristics in music are discussed include André Ernest Modeste Grétry, *Mémoires, ou, Essais sur la musiques*, vol. 2, 1797, 357-58; Christian Friedrich Daniel Schubart and Ludwig Schubart, *Zu einer Ästhetik der Tonkunst* (J. V. Degen, 1806), 377-82.

A final paragraph by Spohr, once again, mentions the special effects on the harp:

> "Da ich die Eigentümlichkeit der Harfe, ihre Effekte und das, was meine Frau insbesondere darauf zu leisten vermochte, nun immer genauer kennen lernte, schrieb ich in jener Zeit wieder eine große Sonate für Harfe und Violine (Op. 115 bei Schuberth in Hamburg) und bemühete mich, das Ergebnis meiner Erfahrungen dabei in Anwendung zu bringen. Es gelang mir; die Harfenpartie dieser Sonate war bequemer zu spielen und zugleich brillanter wie die der frühern. Dorette übte sie daher mit besondrer Vorliebe ein und spielte dieses neue Werk bald mit derselben Sicherheit wie die vorhergehenden."[76]

Once again, Spohr refers to the "effects" that he has been able to achieve. The former sonata that he refers to is Op. 113, which only employs double-pedalling with the right foot, as described in harp methods and a handful of pieces. Spohr experiments with double-pedalling with the left foot in three works that proceeds Op. 115, namely WoO 27, WoO 28 and possibly WoO 14. Op. 115 culminates his experiments and is the first work where he uses double-pedalling in an exceptional way for both feet.

One wonders if the new "effects" that he is referring to are new pedal movements that no one else had asked a harpist to perform before. Spohr's use of the word "effect" would normally refer to sound effects or techniques like harmonics, *etouffés* or *Sons de Guitarre*,[77] which are often cited as the special effects in Spohr's harp music.[78] Spohr uses these effects rarely in his music, seldomly does he ask for pedal *glissandi* or guitar sounds. What is truly new, as an effect, is the complex and difficult nature of the music: fiendishly hard compositions for the harp with complex harmonies that are technically easy when a certain pedal technique is employed. The *concertante* form gave the Spohrs the chance to dialogue as two equal instruments.

6.1.5 Reception of Dorette's playing

Of the many reviews of Dorette's playing,[79] she is invariably described as a strong virtuoso player, but with subtle refinement in her playing. Spohr himself, when he heard her play for the first time described her as a "virtuosität auf Harfe und

[76] Spohr, *Lebenserinnerungen*, 124: "As I learned, now to know the peculiarity of the harp, its effects and what my wife in particular could achieve, and always knowing more and more precisely, I wrote, at that time again a great sonata for harp and violin (Op. 115 at Schuberth in Hamburg) and endeavoured myself to use all of my knowledge here. I succeeded; the harp part of this sonata was more comfortable to play and at the same time more brilliant than that of the former. Dorette practised on this [sonata] with special fondness and played this new work soon with the same confidence as the previous."

[77] Backofen, *Anleitung*, 1827, 28.

[78] Wulfhorst, "Louis Spohr's Early Chamber Music (1796-1812)," 472.

[79] Wulfhorst lists thirteen reviewed performances of Dorette from 1805-1813. This is not a complete list of Dorette's performances. This goes beyond the scope of this present research.

Pianoforte" with a "größter Sicherheit und feinster Nuancierung".[80]

A review from a concert at the end of March 1808 in Heidelberg, reported in the *Allegemeine Musik Zeitung* stated:

> "Seine Gattin spielte Harfe, wie man sie in Deutschland selten zu hören bekommt, – mit einer Zartheit, Leichtigkeit und Anmuth, mit einer Sicherheit und Stärke, mit einem Ausdrucke, der hinreißend ist"[81]

One of the most descriptive passages states:

> "…seine Gattin, die herrliche Harfenistin; ihre Harfe ist nicht groß genug für ihr volles und kräftiges Spiel und würde, wenn auch Spohr zuweilen mit seiner Violine sie meisterhaft unterstützte, das Ohr der viel verlangenden Zuhörer im großen Saale nicht befriedigt haben, hätte sie nicht durch ihr bezauberndes Spiel, durch den ätherischen Anhauch ihrer Töne, durch die geflügelte Hand, die im Arpeggio hundert Saiten auf einmal zum Tönen brachte, durch ihr tempo rubato, worin ihr Gatte nur eine Seele mit ihr auszuatmen schien, die Zuhörer zu einer Aufmerksamkeit gezwungen, die eine Stille hervorbrachte, worin man jeden Atemzug vernehmen konnte."[82]

This following review recalls Dorette's performance of Op. 35:

> "Zum Schlusse spielte Mad. Spohr allein eine Phantasie (C-moll) auf der Harfe, wobei sie dem Charakter der Komposition, Schwermut und düsterer Ernst, ganz entsprochen zu haben scheint."[83]

Following the first performance of one of the double concertos for violin, harp and orchestra in Leipzig, which was most likely WoO 13:

> "Über Herrn Spohrs und seiner Gattin Spiel haben wir schon ausführlich gesprochen… Mad. Spohr, durch große Fertigkeit, Nettigkeit und Anmuth des Spiels ganz gewiß überall ausgezeichneten Beifall finden wird."[84]

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[80] Spohr, *Lebenserinnerungen*, 93–94: "virtuoso on the harp and piano" with "utmost confidence and the finest nuances".

[81] Ibid., 109: "His wife played the harp, which one rarely heard played in that way in Germany-with a delicacy, lightness and grace, with a safety and strength, with an expression which is gorgeous". AMZ, 1807: 523.

[82] AMZ, 1808, 254: "…his wife, the exquisite harpist; her harp is not big enough for her full and vigorous playing and though Spohr sometimes with his violin she supported masterfully, the ear of her much desired listeners would not have been satisfied in the big hall had she not through her magical playing, through the ethereal breathes of her sounds, through the flying hands, the hundred strings played at once, her tempo rubato through which her spouse could see her soul, the listeners were driven into an attention that bore a crushed silence, where one could witness each breath taken."

[83] "At the end, Mad. Spohr played alone a fantasy (C minor) on the harp, which she seems completely in concordance with the character of the composition, its melancholic and dark seriousness."

[84] AMZ, 1807: 90-91. Leipzig, October 27: "About Mr. Spohr and his wife's playing, we have already spoken at length,… Mad. Spohr, through great skill, beauty and grace of performance, she certainly earns everywhere excellent applauses."

This critique inherently points to her pedal technique:

> "Mad. Spohr entwickelt in ihrem zarten und alle Schwierigkeiten der Modulation in die fremdesten Tonarten besiegenden Spiel eine höchst befriedigende Verbindung von Kunstfertigkeit und Geschmack. – Die Komposition ihres Gatten sprach ungemein an, und es machte eine freundliche Wirkung, wie das anspruchslose Künstlerpaar sich im Einklange zarter Töne sanft vereinte und dann wieder im stürmischen Wechselfluge kühner Phantasie überbot."[85]

This quotation from a concert review directly refers to Dorette's leaps (rolled *arpeggi*) and her pedal technique[86] from a concert in Zurich in 1816:

> "Die Virtuosität des Harfenspiels der Frau Spohr ist besonders ausgezeichnet in Sprüngen und im Pedalgebrauch."[87]

The critic present at Dorette's pen-ultimate public performance on April 24, at the Philharmonic concert season criticises the Spohr's musical style:

> "M. and MAD. Spohr performed a Duet for the harp and violin; the combination was interesting, but we were disappointed in the musical effect."[88]

The *concertante* style by Spohr may have seemed old-fashioned in 1820 for an English audience.

6.2 The complete works by Louis Spohr for the harp

Spohr composed at least twenty-two works and two fragments for Dorette, in which eighteen of these are for the harp and the remaining works are for piano.[89] The eighteen works for the harp include three solo pieces consisting of one free-form piece *Fantaisie* (Op. 35) and two variations forms (Op. 36 and WoO 29), seven sonatas for violin and harp (Op. 16, WoO 23, WoO 27, Opp. 113-115, Op. 33, Op. 36), one unfinished sonata movement (Op. 24), one *Introduzione* (WoO 25), two double concertos for violin, harp and orchestra (WoO 13 and WoO 14), one trio (WoO 28) which is an arrangement of the *Sonate*, WoO 27, two duos (Opp. 118 and

[85] Ibid., 61: "Mad. Spohr developed in her tender execution that surmounted all difficulties of modulations into the strangest keys, a highly satisfying combination of craftsmanship and taste. The composition of her husband spoke immensely, and it made a successful effect, such as the unpretentious artistic duo in unison play delicate tones gently combined and then surpassed in stormy changes, full of fleeting bold imagination".

[86] See this chapter, footnote 14 for complete quote and full translation.

[87] AMZ, 1816: 458: "The virtuosity of the harp playing of Mrs Spohr is particularly excellent in leaps and the use of pedals."

[88] "The Mirror of Fashion," Jun. 12, 1820.

[89] The works for piano include Opp. 34, 42, 50, 51, 52, 80. and Opp. 46, 23, 24 for their Italian tour.

33) and an *Aria* (WoO 92) for voice, horn and harp. Three works are lost: WoO 29, WoO 33 and WoO 36. The manuscript copy of the double concerto WoO 14 is not available for consultation.[90]

Each work is analysed with respect to the pedal techniques, with a special emphasis on Op. 115 and Op. 35. The *Jeu des pédales* are those detailed in section 5.3 and listed again in Appendix II. A certain chronology of pedal moves can be seen, while Spohr defines and matures his compositional style for the harp. His early works sometimes contain pedal moves that are not always organic and are awkward, both as single-pedal moves or as double-pedal moves. He gradually experiments more and more with double-pedalling and heel and toe pivoting, employing over thirty-seven different pedal moves in his entire opus for the harp.

6.2.1 Op. 115

Spohr's Sonate Op. 115 (EWV 36) was his second of three *Sonate Concertante* and was composed in the winter of 1809.[91] It was first published by Schuberth in Hamburg in 1841 with Plate number 383.384. This sonata is written in two keys, G major for the violin and A-flat major for the harp.[92] As with the other two *Sonates Concertantes*, Opp. 113 and 114, the 1841 publication provided two versions for the violin, one in the original key for the violin and other in the harp key of A-flat major for violin, flute and cello.

The final movement, *Rondo*, was actually published in 1820 as Op. 51 in G major, for Dorette to play on the piano. This means that Dorette played the work in two different keys on two different instruments. There is also an arrangement of the second movement, *Larghetto*, for bassoon and piano.[93]

Spohr describes in his autobiography his compositional process when writing Op. 115, as cited in section 6.1.4.

Once again Spohr refers to "Effekte" which Wulfhorst translates as "technical

[90] See Chapter 4, footnote 18.

[91] In February 2016 I meet the wizard harpist with pedals, Kim Glennie de Libero in Las Vegas. I asked her to collaborate with me and provide me with pedal solutions for these six passages, which she has previously not ever seen. I explained to her the possible notes that are available on a harp, when set-up in the "base" key of A-flat major. She most graciously provided me with her modern harp solutions and single-action harp solutions. Out of these six solutions, her solutions were identical as the author's solutions.

[92] To my knowledge, no other harpist, besides myself, has performed Spohr's Opp. 115 and 118 on a single-action harp in concert, since Dorette Spohr's pre-1820 performances. Davide Monti, violinist, and I first performed Op. 115 on May 4, 2014, at the Chiesa dell'Assunzione della Beata Vergine Maria, Caselle Landi, Italy and again on May 5, 2014, at the Teatro Vittoria, Turin, Italy. I used a harp, built by Jacob Erat, circa 1795, set-up in the "base" key of A-flat major at A=415Hz and the violin tuned at A=440Hz-complete with a chin rest after Spohr's model-made by Monti. I also used multi-pedalling techniques as described in this chapter. This work is part of the Arparla's second Spohr CD, recorded in October 2016.

[93] I thank Dr. Traugott Goldbach of the Spohr Museum for sharing this with me.

devices."[94] If the word "Effekte" is taken in this context to mean technical devices,[95] then it refers directly to the quantity of double-pedalling with both feet found in this sonata and the subtle heel and toe pivoting moves. Op. 115 includes the most foot moves of any work by Spohr up to this time.

***Allegro*, bars 6-7, fig. 6.6**

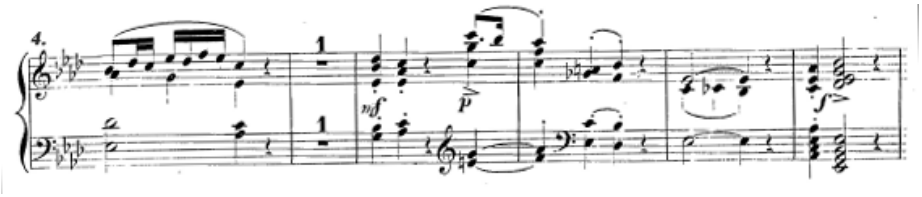

Figure 6.6: Spohr, Op. 115 *Allegro*, bars 6-7.

The movement begins with the G pedal folded away from bar 1. This first phrase uses the diminished seventh chord on F♯, which is the most used pivot chord in the whole harp repertoire.[96] The harmonic progression is different than the other examples cited in this thesis. The first cadence in bar 6 is from the sub-dominant to the tonic (A-flat major), followed by V-I cadence in the relative minor (F minor). Then the diminished seventh chord on F♯ is used as a pivot chord resolving to the sub-dominant chord of F minor (B-flat minor). This in turn moves to the dominant of F minor and is transformed with a 6-5 progression into the dominant of the home key, A-flat major.

This double-pedalling on F and A, in the opening introductory section, sets up the work as being a study on double-pedalling for both feet. Bar 6 could be played with a triple-pedal movement. However, double-pedalling is advantageous for several reasons. The first reason is that there is no G♯ in the first movement until bars 62-64. These bars are notated as A♭'s in the middle line accompaniment, but the upper melody has a trill with a turn, against this accompaniment, which requires an A♮. The second reason is that double-pedalling is very useful in bars 22-23, 33, 34 and 36. There are three crochet rests in bar 58, just before the passages where a G♯ is required. This bar can be used to calmly unfold the G pedal for the following section. Unfolding a pedal is a slightly more risky movement than folding away a pedal, so the pedal should be flush against the body of the harp, but in a vertical position, as shown in fig. 6.1.

Bar 7 cannot be performed with a single-pedal move, without moving pedals of strings that are still vibrating, like for example moving either the F or A pedal between the first and second crochet. The strings would still be vibrating, so single-pedalling is not advisable here. This is an example of a simple double-pedalling movement, where the right foot presses the F and A pedals down and releases the

[94] Wulfhorst, "Louis Spohr's Early Chamber Music (1796-1812)," 382.

[95] Spohr uses the word "Effekte" fives times in his *Lebenserinnerungen*, twice when writing about the harp.

[96] See sections 3.3.4, 4.3.1, and 5.3.2.

pedal with the relaxation of the harmony on the third crochet of bar 7, as shown in fig. 6.6.

***Allegro*, bars 74-90, fig. 6.7**

For this passage the G pedal is already folded away again since bar 65, 66 or 67, and remains folded away for the remainder of the first movement. The C pedal is folded away in the cadential bar 75. It is not folded down earlier in the movement because there are notated C♯'s in bars 48-52 and 70-75. These are the first passages where C♯ is essential due to C♯ being part of a scale, especially in bars 48-52. The C♯'s in bars 70-75 could be played with the enharmonic alternative, D♭. This would mean that the C pedal could be folded away much earlier, for example in bar 58, at the same time as the G pedal. From bar 74 to 91, Spohr writes a chromatic passage full of diminished seventh chords on F♯ and one on E♮. The foot movements entail double-pedalling with the right foot on the F and A pedals (bars 76, 78, 81, 88-90) and on alternative bars with the left foot on the D and B pedals (bars 79, 87).

If single-pedalling was used, it would entail moving pedals with the quaver beats which would cause a lot of noise from fast pedal changes, and fixing pedals into notches, in order for one foot to move from one pedal to other. Bar 79 has no single-pedal solution because the last semiquaver of the second crochet has a D♮ and B♮ which become a D♭ and B♭ on the first semiquaver of the third beat. One inorganic solution would be to play the D♭ with its enharmonic C♯ for the third beat and then lower the D pedal by the fourth beat. It results in more pedal moves in the bar and more noises. The sudden alternation from F♮ and A♭ at the end of bar 87 to F♯ and A♮ on the first beat of bar 88 has no convincing single-pedal solution, without moving pedals when the strings are still vibrating and the pedal change will be audible.

***Allegro*, bars 217-31, fig. 6.8**

For this passage, the G pedal is already folded away since bar 65, 66 or 67. The C is also folded away since bar 75, but C♯ is required in bars 203-5. This is a parallel passage to bars 62-64. The theme this time is in A-flat major and there are notated D♭ in the inner accompaniment line against D♮'s in the trill with a turn in the melody line. The enharmonic C♯ is required for these bars. The C pedal is then folded away afterwards, between bars 206 and 209.

Once again, the passage from bars 209-31 exploits the diminished seventh chords on F♯ (bars 211, 215, 220) and B♮ (229) and the dominant seventh chord on B♮ (209, 213, 217, 219, 223). Bar 220 is an example of the harmonic progression of C major moving to diminished seventh chords on F♯ to B-flat major. It is musically similar to bars 107-8 in the *Fantaisie*, Op. 35. Both passages require that the left foot moves over to the right-hand side of the harp to move the innermost E pedal.

***Allegro*, bars 238-42, fig. 6.9**

The author finds bars 329-42 to be the most gratifying bars to pedal in the whole harp literature. The two feet employ double-pedalling, one after the other, as if each foot is a separate voice dialoguing with each other. The left foot proposes a

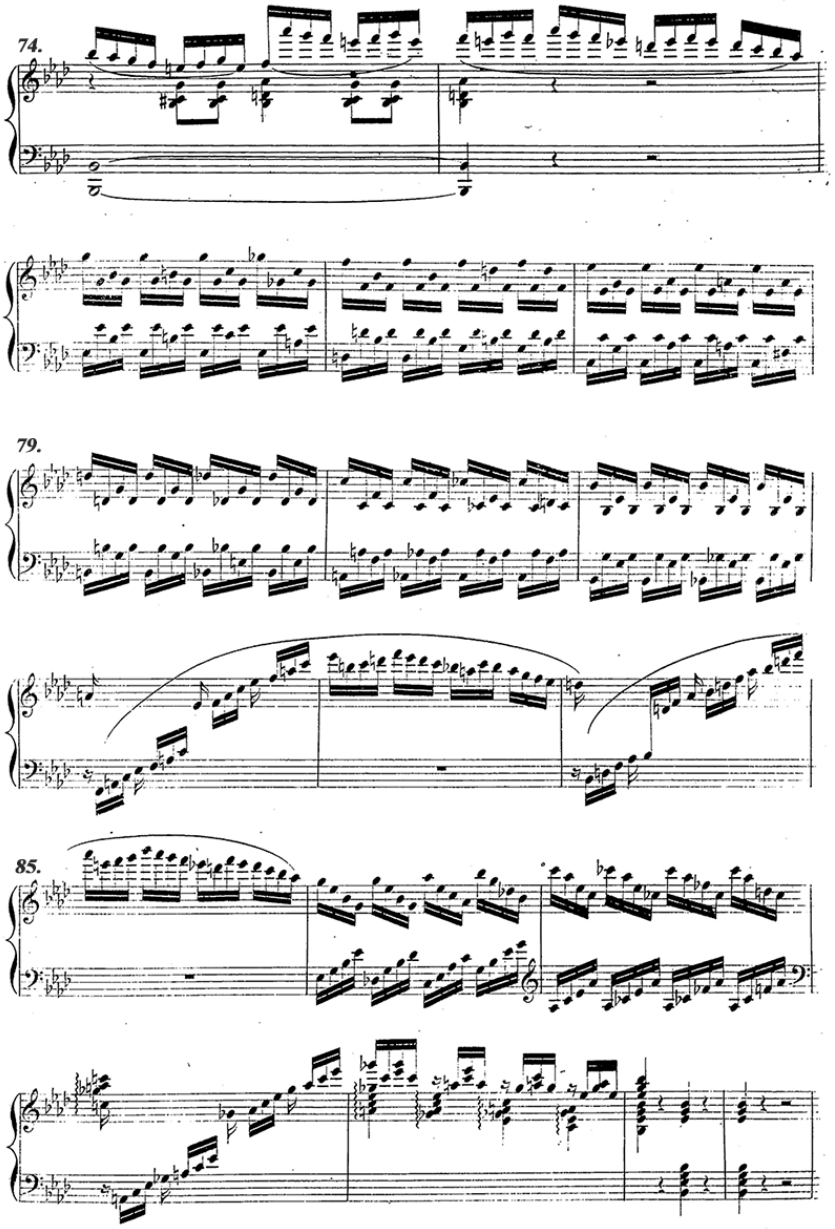

Figure 6.7: Spohr, Op. 115 *Allegro*, bars 74-90.

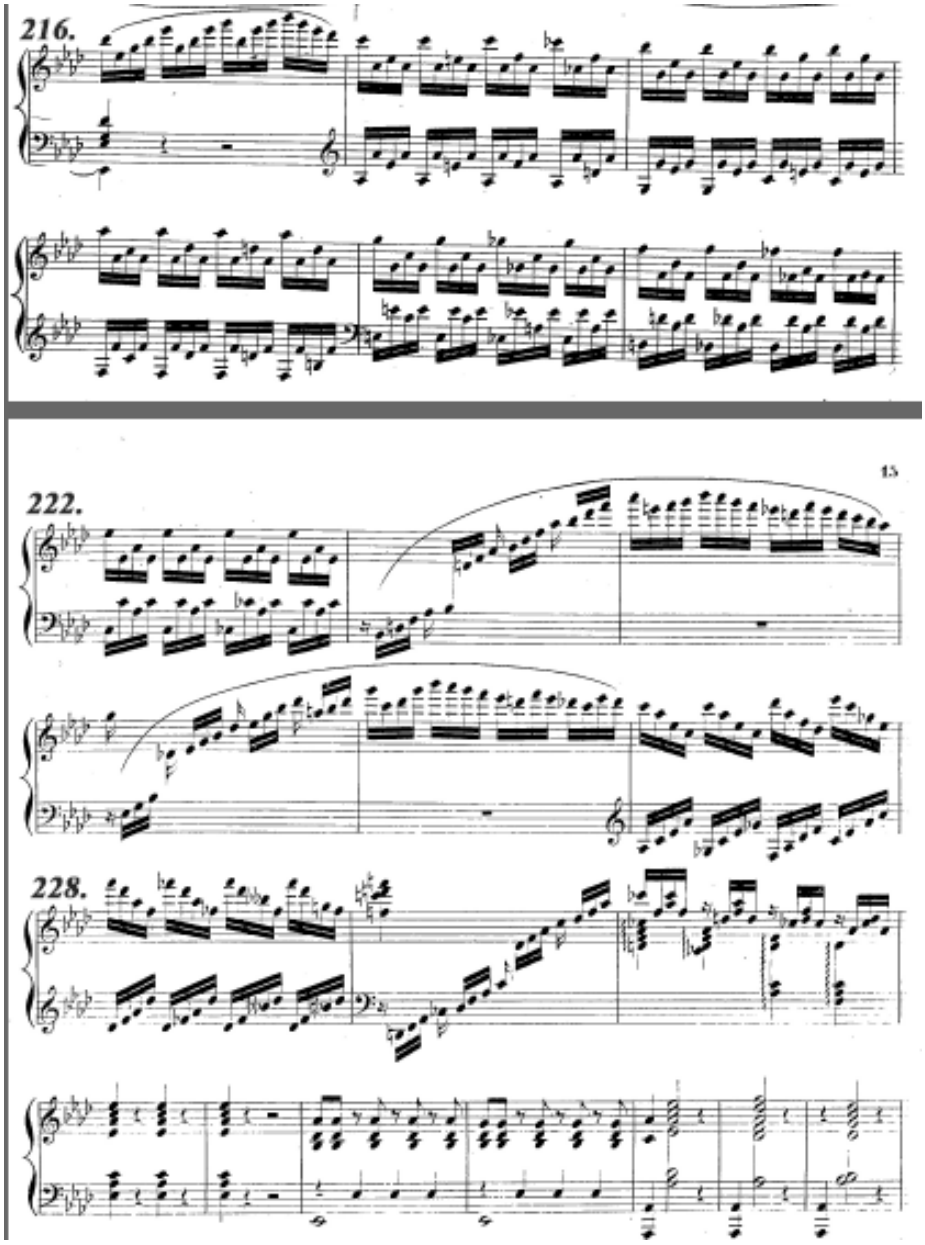

Figure 6.8: Spohr, Op. 115 *Allegro*, bars 216-37.

question, the right foot replies and hence forth. The left foot creates the dominant seventh chord on B♮ (bar 239) and the right foot creates its usual diminished seventh chord on F♯ (bars 239, 240). The diminished seventh chords on E♮ (bar 240) can be made by either foot, but the author's personal preference is to use the left foot, in keeping with a sense of a reciprocal exchange between the feet. Each diminished and dominant chord entails a downwards-pressing movement for each foot. This gesture generates physical tension in the whole foot and leg, which is then dissolved with the harmonic resolution of each seventh chord.

It is my opinion that Spohr is referring to these precise bars when he describes the compositional process and Dorette's pleasure in practising and performing.[97]

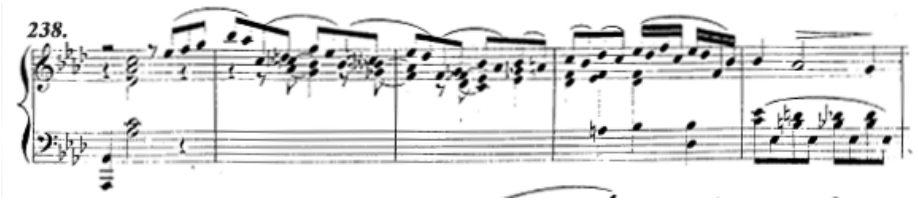

Figure 6.9: Spohr, Op. 115, *Allegro*, bars 238-42.

***Larghetto*, bars 5-12, fig. 6.10**

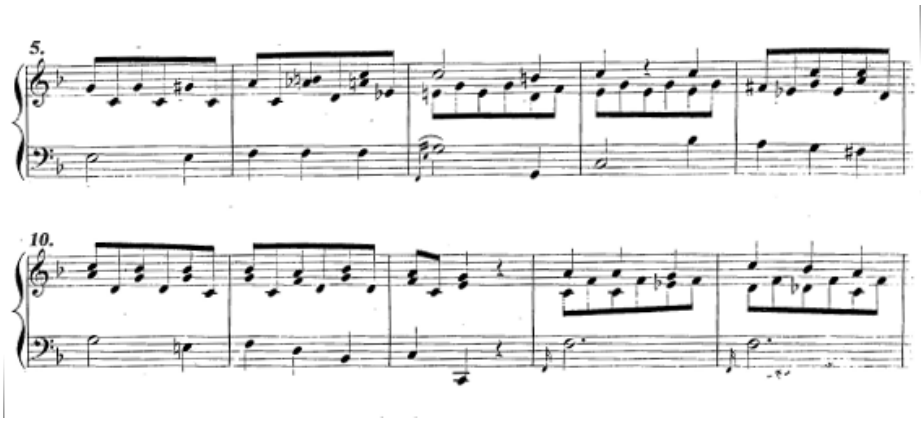

Figure 6.10: Spohr, Op. 115, *Largo*, bars 5-12.

The *Larghetto* is in F major and contains no C♯ in the entire movement, so the C pedal can be folded away from bar 1 to the end of the movement. There is only one G♯ in bar 61, which can be easily played with its enharmonic alternative, A♭. Therefore, the G pedal is also folded away from bar 1 to the end.

Bar 6 is similar to bar 220 in the *Allegro*, Op. 115, and bars 107-8 in the *Fantaisie*, Op. 35. This time the harmony progresses from F major on the first crochet of bar

[97] Spohr, *Lebenserinnerungen*, 124.

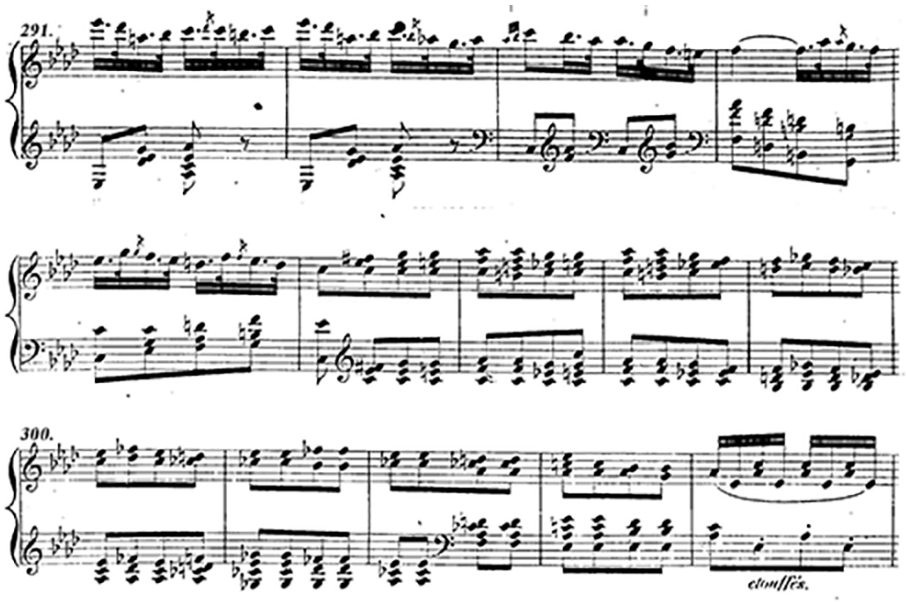

Figure 6.11: Spohr, Op. 115, *Rondo*, bars 291-300.

6 to the diminished seventh chord on B♮ on the second crochet to the diminished seventh chord on F♯ on the third crochet, resolving to a 6-4 7-5 progression on G to C major. Three pedals are required to be moved in quick succession in bars 6-7, all on the right-hand side of the harp. This is done by moving the F and A with the right foot and the left foot moves over to the right-hand side of the harp to move the innermost pedal E.

***Rondo*, bars 294-304, fig. 6.11**

This final section involves double-pedalling only with the left foot utilising the diminished seventh chord on B♮ resolving to C minor (bar 297) and to E-flat minor (bars 300-301).

These six sections are impossible to play on the harp, without using double-pedalling on one or both sides of the harp. However, with double-pedalling the solutions are actually easy actions, that require little haste, can be done calmly and yet result in the most chromatic progressions in the harp literature. Chromatic passages, like these bars, are an integral part of Spohr's compositional style. With the use of complex double-pedalling moves, he was able to achieve a style of writing incomparable with any other composer who wrote for the harp.

Conclusion

To aid harpists, Table 6.2 follows a similar lay-out as the instructions of Krumpholtz's Op. 2 found in section 5.4. All practical information is provided, so any harpist can play these pieces. Table 6.3 lists each type of complex pedal movement, following

the list of *Jeu des pédales* in section 5.3 and Appendix II.

Table 6.2: *Sonate Concertante,* Op. 115: initial instructions

Key	A-flat major.
Set-up key	A-flat major.
G Pedal: *Allegro*	G↑ from bar 1, ↓57, ↑64 **OR** G↓ from bar 1, T.P. in 33, 34, 36, ↑64. C↓ from bar 1, ↑75, (↓5 for *Da Capo*), ↓199, ↑208.
Larghetto	G↑, C↑ for whole movt.
Rondo	G↑ for whole movt., C↑, ↓41, ↑141, ↓168, ↑208.
Enharmonics: *Allegro*	G♭ (F♯) all; C♭ (B♮) all; F♭ (E♮) all; C♯ (D♭) 26, 50, 52, 54, 70, 74; D♭ (C♯) 203-25; A♭ (G♯) 62-63; B♭♭ (C♮) all.
Larghetto	A♭ (G♯) 61; G♭ (F♯) 23.
Rondo	G♭ (F♯) all; C♭ (B♮) all; F♭ (E♮) all; D♭ (C♯) 191, 193.
Pedal *glissandi*	*Rondo* 191, 193 (opt.).

Table 6.3: *Jeu des pédales*: *Sonate Concertante*, Op. 115, *Allegro*

JEU DES PEDALES	*Allegro*
3: A/F	7, 33, 34, 36, 88-90, 191-92, 215-16, 220-21, 239-40, 240-41.
3: A/F (opt.)	68, 72.
3: D/B	79, 87-88, 111-12, 113-14, 141-42, 174-75, 175-76, 177-78, 195-96, 217-18, 229–31, 238-39, 242.
4 (i): A/F	
4 (ii): D/B	209-10, 213-14.
4 (iii): A/F	76-80, 155-56.
4 (iii): D/B	145-46.
4 (v): A/F	192-93, 194-95.
4 (vi): A/F	139-41.
4 (viii): A/F	81-84.
4 (viii + v): A/F	107-9.
4 (viii): D/B	222-25.
4 (ix): D/B	79, 136.
5	220
6: A/G/F (opt.)	7, 33, 34, 36, 88-90, 191-92, 215-16, 220-21, 239-40, 240-41.

Table 6.4: *Jeu des pédales*: *Sonate Concertante*, Op. 115, *Larghetto* and *Rondo*

JEU DES PEDALES	*Larghetto*	*Rondo*
3: A/F	23.	54-56, 70, 117-18, 198–203.
3: D/B	34-44, 77-78, 80-81.	143-45, 210, 264-66, 274, 275-76, 230-33.
4 (i): A/F	6-7, 62-63.	
4 (i): D/B	50-56.	4-7.
4 (i): D/B (opt.)		118.
4 (ii): D/B		20-25, 147-52.
4 (iii): D/B		294-99.
4 (iv): A/F		278-79.
4 (vi): D/B		16-18.
4 (viii): A/F		186-89.
4 (ix + vi): D/B	26-31.	
5	6.	52, 54.
7		C♮-♯ 191, 193.

6.2.2 *Fantaisie* Op. 35

The *Fantaisie pour la Harpe, Composée et dedieé à Son Epouse*, Op. 35 (EVW 18), in C minor by Spohr[98] is one of the most played and recorded of harp pieces from the beginning of the nineteenth century.[99]

It is difficult to date when both the *Fantaisie* and the Variations, Op. 36, were composed. From Spohr's autobiography it would appear that both solo works pre-date Easter 1807.[100] The *Fantaisie* was published in 1816 by Simrock,[101] Berlin with Plate number 1214. Only four copies of this first edition are known by the author.[102] Twentieth-century editions, like those by John Thomas[103] and Hans Joachim Zingel alter many aspects of the historical performing practices.[104] These editions and all editions after the first Simrock edition omit the indicated "base" set-up key of the harp, pedal *glissandi* and ornamentation. They add *arpeggi*, *etouffé* and dynamic markings and alter the articulation markings. Unfortunately recent editions continue to revise and publish the Thomas and Zingel editions, rather than basing their editions on the original Simrock edition.[105] An arrangement for violin and harp of the *Fantaisie* Op. 35 was published in 1900. This edition is dedicated to "Monsieur Louis de Reeder", a violinist who worked in London in the 1890's.[106]

The *Fantaisie* was a great success from the beginning as seen from this 1807 review:

> "Fantasy for Solo Harp is the most solid, most meaningful, and most sophisticated among all the works of this kind for this instrument with which we have become acquainted in years"[107]

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[98] Wulfhorst, "Louis Spohr's Early Chamber Music (1796-1812)," 20: Everything ever written about Spohr's early Harp Fantasy Op. 35…does not add up to one page. It is the author's wish that these pages here will add to the knowledge and research on this piece, encourage harpists to use the original score from 1816 and employ historical performing practices (including historical pedal techniques) in their performances. Wulfhorst provides a detailed harmonic and structural analysis of the *Fantaisie*, 310-20.

[99] ibid., 652 lists over 14 recordings up to 1993. There are only two recordings for this work on a single-action harp: Frances Kelly, *The Harp Collection*, CD-SAR 36 (1989); Arparla, Davide Monti and Maria Christina Cleary, *Louis Spohr: So mach' die Augen zu/..allora chiudi gli occhi*, STR 33848 (2009). The piece was recorded on a harp by Georges Cousineau, Paris (c. 1770, restored 2004 by A. Conrad) with thirty-seven strings. Range: G1- a3, A=415HZ, temperament: 1/6 comma mean-tone. The harp belonged to Octavie de Lasalle von Louisenthal (1811-1890), and is now permanently exhibited at Heimatsmuseum Wadern, Saarland, Germany. My warmest thanks goes to Danielle and Bernd Schröder for the care they take to promote performances on this instrument.

[100] Spohr, *Lebenserinnerungen*, 102–3.

[101] Simrock, German firm of music publishers.

[102] The Simrock 1816 edition can be found in I-Mc, D-B, DK-Kk, GB-Lbl. There are undoubtedly more extent copies.

[103] John Thomas (1826-1913), Welsh harpist and composer.

[104] Louis Spohr, *Fantasie C-moll für Harfe (op. 35)*, ed. Hans Joachim Zingel (Kassel: Bärenreiter, 1954); Louis Spohr, *Fantaisie: Pour Harpe : Op. 35*, ed. John Thomas (London: Augener, 1900).

[105] The most recent publications include Louis Spohr, *Spohr Louis - Fantasie C-Moll Op. 35 Für Harfe Solo*, ed. Helga Storck (Köln: Dohr, c. 1999) and Louis Spohr, *Fantasia in C Minor (Op.35)*, ed. John Thomas (Cardiff: Adlais, 2011).

[106] Wulfhorst, "Louis Spohr's Early Chamber Music (1796-1812)," 627 quotes Göthel, *Thematisch-bibliographisches Verzeichnis*, 62 as suggesting that this arrangement is by Spohr himself.

[107] AMZ, April 11, 1807: 91.

Dorette played this piece throughout her career. It has been suggested that this work replaced an earlier *Fantasie* by Backofen that she had in her repertoire and performed in Leipzig in 1805.[108] Backofen did indeed publish a *Fantasie* in B-flat major as part of the 2nd edition of his method.[109] The first theme is followed by a series of diminished *arpeggi* and this sequence is very similar to bars 79-83 and 132-36 in Spohr's *Fantaisie* op. 35.

A concert description of a performance in Gotha on January 11, 1810, mentions that Madame Spohr played a "Phantasie for the harp in B minor", alongside Spohr's Violin concerto No. 3 in C minor, showing that the critique heard the Fantaisie as a piece in B minor with respect to the violin concerto in C minor.[110] Dorette's harp was therefore tuned a semitone lower than the "A" of the rest of the concert. Spohr's *Fantaisie* was performed by at least two other harpists during Dorette's lifetime.[111]

6.2.2.1 The work

The *Fantaisie* opens with a stately introduction, *Adagio molto*, in C minor (bars 1-16). Spohr's ingenious compositional skills are evident just in these first two pages; there is part writing, dialogues between different voices and the accompaniment is found in both the left and right hand. This first section ends with a written-out cadenza. The second section, *Allegretto* (bars 17-78), is a melancholic theme, where the first edition indicates precise articulation markings for the melody. The theme is elaborated and combined with a triplet figure, once again the melody appears as much in the bass line as the treble. The following section, *Allegro* (bars 79-83), is a sequence of diminished seventh *arpeggi* which create tension with a chromatic rising bass line. This is followed by a bridge passage leading to the principal theme, now in the major key of E-flat (bars 84-131). Another sequence of diminished seventh *arpeggi*, *Allegro* (bars 132-36), leads to the final section. The piece ends with a shortened version of the initial introduction, *Adagio molto* (bars 137-44), and main theme in C minor, *Allegretto* (bars 145-75).

6.2.2.2 Pedalling in Spohr's *Fantaisie*, Op. 35

On the first edition, it states "Harfe in As", so the "base" set-up key of the harp is A-flat major. The work includes no G♯ in the entire piece, so the G pedal can be folded up from the beginning of the piece. There is only one C♯ in bar 43, so the C

[108] AMZ, no. 15, January 8, 1806: 230; AMZ, January 11, 1810: 286.
[109] Backofen, *Anleitung*, 1807, 66–70.
[110] AMZ, January 11, 1810: 286: "Phantasie for the harp in B minor".
[111] AMZ 1826: 851: "Ferrari aus Christiania Ferrari aus Christiania zeigte in einer gehaltvollen Phantasie von L. Spohr ein sehr fertiges und nettes Spiel und erwarb sich damit allgemeinen Beyfall."; AMZ, no. 32, 1829: 538 "Dem. Marie Löw, (eine der neuen Sängerinnen unsers König). Sachs. Hofthealers, erfreute uns mit sehr fertigem und geschmackvollem Vortrage der schönen Spohr'schen Harfen-Phantasie". Another performance of "Dem. Löwe (jetzt in Magdeburg)", in Berliner Allgemeine Musikalische Zeitung no. 24, June 12, 1830.

pedal can also be folded up from bar 1. There are two pedal *glissandi* with the C pedal in bar 43 and with the B pedal in bar 44.

The *Fantaisie* Op. 35 by Spohr contains eleven of the thirty-seven complex pedal moves listed in section 5.3. Single-pedalling moves will not be listed or discussed. Both the right and left foot perform double-pedalling. The left foot also moves the E pedal.

Table 6.5: *Fantaisie* Op. 35: initial instructions

Key	C minor.
Set-up key	A-flat major.
Pedals	G pedal↑ for entire piece, C↑ bar 1, C↓ at 17, C↑ 79 to end.
Enharmonics	G♭ (F♯) 45, 46, 80; C♭ (B♮) 44, 45, 80.
Pedal *glissandi*	43, 44.

Table 6.6: *Jeu des pédales*: *Fantaisie pour la Harpe*, Op. 35

JEU DES PEDALES	BARS
3: A/F	1-3, 7-8, 54-55, 73-74, 82-83, 125-26, 137-39, 143-44.
3: D/B	7-10.
4 (i): A/F	45-49.
4 (i): D/B	98-99, 160.
4 (ii): A/F	75-78.
4 (ii): D/B	143-58.
4 (iii): A/F	107-16.
4 (iv): A/F	13-16, 135-36.
4 (vii): A/F	100-107.
5	107, 142-44.
7	C♮-♯ 43; B♮-♭ 44.

6.2.3 Other works by Louis Spohr for the harp

The two most important works for this thesis are Spohr's Opp. 115 and 35. The *Sonate Concertante*, Op. 115 is the inspiration for this complete thesis. The *Fantaisie* is one of the most important works in the pedal harp repertoire from the early nineteenth century. Spohr wrote eighteen works for the harp, where the Trio (WoO 28) is an arrangement of the Duo (WoO 27). There three are lost and one is not available for consultation. This leaves eleven works that will be analysed here for pedal movements.

The fragments of two sonatas (WoO 24 and WoO 25) contain no special pedal

movements. This is also the case of the *Aria* (WoO 92). This leaves eight known scores by Spohr for the harp. These are discussed below, in chronological order, and the schemes for Opp. 115 and 35 are also included to show the increased used of double-pedal combinations in Spohr's works.

6.2.3.1 WoO 23

This sonata is the first work for harp by Spohr written in 1805.[112] The sonata is in three movements, *Adagio*, *Allegro Vivace*, and a third movement *Andante-Allegro–Andante-Allegro*. The *Andante* is repeated and the two *Allegri* contain the same thematic material. The sonata is written in the same key for both instruments.

"Base" set-up key

The "base" set-up key is not initially evident for this sonata. It is as if Spohr is still experimenting with the chromatic modulations and harmonic possibilities that are available to him on the harp. Double-pedalling occurs only with the right foot; there are only **three** combinations of double-pedalling used throughout the whole work. In the final movement, *Allegro*, the G pedal is folded and unfolded several times, but each time the harpist needs to carry out this action, there is one bar's rest with *fermata* sign.

In the introductory movement, *Adagio*, Bars 3 and 4 contain D♭ which could be played with the enharmonic C♯, following the "Krumpholtz rule", but there is also a C♮ in the same bar. As C♮ and D♭/C♯ are found in the same bar, the D♭ is played as notated using the D string. Before taking a final decision on this "base" set-up key of A-flat, the harpist must check that all the D♯'s in the work can be played with its enharmonic E♭. D♯'s are found only in the fourth movement, *Allegro*, in bars 149, 165, 167, 176-77 and can all be played easily as E♭. Therefore, a harp tuned in A-flat major is preferable, even though an E-flat major tuning could work, but would make bars 3 & 4 in the first movement unwieldy to play.

The following table for the sonata WoO 23 shows the significant accidentals found in the sonata and necessary enharmonic solutions in brackets for a harp tuned in A-flat major.

Table 6.7: WoO 23: initial playing instructions

Key	C minor.
Set-up key	A-flat major.
G Pedal: *Adagio*	G↑.
Allegro vivace	G↑.

[112] This work is part of the Arparla's second Spohr CD, recorded in October 2016.

Andante-Allegro-Andante-Allegro	G↑ from bar 1, ↓142 (fermata), ↑157 (fermata) to end. **OR** ↑ from bar 1, ↓18 (fermata bar), ↑53 (bar's rest), ↓103 (fermata), ↑157 (fermata), ↓197 (fermata) to end.
Enharmonics: *Adagio*	D♭ (C♯) 14; G♭ (F♯) 4, 58; C♭ (B♮) 5.
Allegro vivace	D♭ (C♯) 38-39, 42-43, 54-57, 61-62, 69, 74, 152; G♯ (A♭) 163; G♭ (F♯) 58; C♭ (B♮) 48-49, 71, 80-81, 84-85; F♭ (E♮) 56-57; A♯ (B♭) 133-34.
Andante-Allegro-Andante-Allegro	D♭ (C♯): 76, 78; D♯ (E♭) 149, 165, 167, 176-77; G♯ (A♭) 20, 25, 43, 47, 105, 109, 127, 132, 141, 169, 199, 203, 211, 213; G♭ (F♯) 2, 4, 71, 181, 183; A♯ (B♭) 163.

Table 6.8: *Jeu des pédales*: WoO 23

WoO 23	*Adagio*	*Allegro vivace*	*Andante-Allegro-Andante-Allegro*
3: A/F	2, 4, 17–18.	58-59.	2-3, 4-5, 14-16*, 71-72, 92-93, 181-82, 183-84, 193-95.
4 (i): A/F		130.	
4 (x): A/F			178.
6: A/G/F (opt.)	2, 4, 17–18.	58-59.	2-3, 4-5, 71-72, 92-93*, 181-82, 183-84.

6.2.3.2 Op. 16

The *Grande Sonate pour La Harpe et le Violon*, Op. 16 (EWV 12), was written in 1806.[113] It was sent to Simrock on June 12, 1808, and published in 1809 with the Plate number 636. It is usually considered an early work, as it is one of two works for violin and harp where both instruments play in the same notated key.

The "base" set-up key is not clear-cut for this sonata, as the final movement, *Rondo* contains notated D♭'s as part of a scale in bars 113 and 115 and notated D♯'s in bars 139 and 141. The harpist needs to choose which is more important for the piece: the solution means either playing the D♭'s as C♯ or playing the D♯'s as E♭ pedal *glissandi* in the above-mentioned bars.

It is the author's personal choice to favour each pitch in the scale passages with a separate string, therefore setting-up the harp in the "base" key of A-flat major. However, an E-flat major "base" set-up key could work, substituting all D♭'s for C♯

[113]This work is part of the Arparla's second Spohr CD, recorded in October 2016.

and playing all D♯'s as written (*Allegro*: bar 100, *Rondo Allegretto*: bars 211, 215, 139, 141).

The chromatic possibilities are still not optimum for the harp and bars 113, 115, 139 and 141 do not offer a clear-cut solution. Double-pedalling is still only used with the right foot, but there are more combinations than in Spohr's earlier work WoO 23. The left foot moves the E pedal and pedal *glissandi* are introduced into Spohr's compositions for the first time, a total of **seven** complex pedal moves as described in section 5.4.

Table 6.9: Op. 16: initial playing instructions

Key	B-flat major.
Set-up key	A-flat major.
G Pedal: *Allegro*	G↑ 127 (to play 129), ↓147.
Adagio	G↑.
Rondo Allegretto	G↑, **OR** ↑167, ↓266 (*Da Capo*).
Enharmonics: *Allegro*	D♭ (C♯) 24, 40, 42, 75, 81, 206-11, 232, 253; G♭ (F♯); C♭ (B♮); D♯ (E♭) 100.
Adagio	G♯ (A♭) 21, 23; D♭ (C♯); G♭ (F♯); C♭ (B♮).
Rondo Allegretto	D♭ (C♯): 185, 186, 190, 194, 241; G♭ (F♯); D♯ (E♭) 211, 215; G♯ (A♭) 9-11, 17-19 (all optional); C♭ (B♮)

Table 6.10: *Jeu des pédales*: Op. 16

Op. 16	*Allegro*	*Adagio*	*Rondo Allegretto*
3: A/F		15, 52, 68-69, 70, 71.	
4 (i): A/F	249-50.		169, 173.
4 (vii): A/F		10, 47.	55-56 (opt).
4 (viii): A/F		11, 48.	
4 (x): A/F	129		
5:	130.	7, 11, 30, 44, 48.	211, 215.
7:	100.		140, 142.

6.2.3.3 WoO 24, WoO 25

This fragment of a sonata movement, WoO 24, of 76 bars in G major for the violin and E-flat major for the harp contains no special pedal moves.[114] Likewise, the

[114] See Wulfhorst, "Louis Spohr's Early Chamber Music (1796-1812)" for a complete analysis of these works and an in-depth discussion on the unusual transposition of WoO 24.

Introduzione, WoO 25 of 28 bars contains only simple single-pedal moves. These two works are however Spohr's first experiments in writing for the harp as a transposing instrument.

6.2.3.4 Op. 113

This *Sonate Concertante* is the first complete duet by Spohr where the violin and harp are notated in two separate keys, namely D major for the violin and E-flat for the harp.[115] From this composition onwards, Spohr composes his chamber music in this way.[116] This is also the first of three *Concertante* sonatas, where the two instruments have completely equal musical roles. The violin and harp dialogue, comment and interject with each other.

From the pedal solutions and notes that Spohr uses, it would appear that there is a conscious experiment on his part to limit the use of certain notes, in order to explore and exploit double and triple-pedalling moves. Each of the following works becomes a study on certain pedal moves. The G pedal is moved up and down once in the first movement and folded away completely for the second and third movements. The folding and unfolding move, which may appear a most unwieldy action is limited.

There is no notated D♯ in the entire sonata and every notated D♭ can be played as C♯, so this sonata can be equally performed on a harp set-up in the "base" key of A-flat or E-flat major. Double-pedalling occurs the right foot and Spohr introduces double-pedalling with the left foot on the adjacent pedals C and B. This double-pedal move can be found in Krumpholtz's Op. 2, *Préludes* no. 5 and 7. **Ten** complex pedal moves are used in this piece.

Table 6.11: Op. 113: initial playing instructions

Key	D/E-flat major.
Set-up key	A-flat/E-flat major.
G Pedal: *Allegro*	G↑, ↓24, ↑46 (*fermata*), **OR** ↑46 (*fermata*) and do T.P. in 10, 12-14.
Adagio	G↑.
Rondo	G↑ 48.
Enharmonics: *Allegro*	D♭ (C♯) (opt. for E-flat set-up key); G♭ (F♯); C♭ (B♮).
Adagio	D♭ (C♯)(opt. for E-flat set-up key); G♭ (F♯).
Rondo	D♭ (C♯) (opt. for E-flat set-up key); G♯ (A♭) 26, 28 (opt.); C♭ (B♮); G♭ (F♯); A♯ (B♭)

[115] There is only one recording of this work in the original keys and on original instruments, using historical performance practices. Arparla, Davide Monti and Maria Christina Cleary, *Louis Spohr: So mach' die Augen zu/..allora chiudi gli occhi*, STR 33848 (2009).

[116] Aria WoO 92 is an exception and is written in A-flat major for all instruments.

Table 6.12: *Jeu des pédales*: Op. 113

Op. 113	*Allegro*	*Adagio*	*Rondo*
3: A/F	10, 67-68, 76-77, 99-100, 116-17, 128, 164, 178-80, 183-84.	3-4, 14, 19-25, 28-32, 34-35.	170-71, 175-76, 184-85, 188, 191.
3: C/B (opt.).			102, 183-84.
4 (v): A/F	64-65, 73-74, 140-45.		
4 (vi): A/F	103-4, 107-10.	14	4-46.
4 (vii): E/F	58-62 (opt.).		
4 (viii): A/F	12-14, 129-30.	6-7.	179-81.
4 (viii): C/B	185-86.		
4 (x): A/F		2, 10, 33.	
5:	50, 77.	21, 23.	39, 70.
6:		1-2, 9-10, 32-33 (alt.).	70.

6.2.3.5 WoO 13

Spohr wrote two *Concertante* for violin, harp and orchestra. This first one, WoO 13 (EWV 16), is written in the keys G major and A-flat major and was possibly first performed in Leipzig on October 27, 1807. This is the first time that Spohr experiments with two pedals folded away, the G and C pedals, and double-pedalling is used with both feet. Actually he limits his compositional style even more than Op. 113, as this concerto has no G♯ and only one C♯ (*Adagio*, bar 52) notated in the entire work. The "base" set-up key is A-flat major to enable double-pedalling with the left and right feet.[117]

Table 6.13: WoO 13: initial playing instructions

Key	G/A-flat major.
Set-up key	A-flat major.
G Pedal: *Allegro*	G↑.
Adagio	G↑, ↓49 (for bar 52).
Rondo	G↑.
Enharmonics: *Allegro*	F♭ (E♮); G♭ (F♯); C♭ (B♮).
Adagio	G♯ (A♭) 51, 53; G♭ (F♯).
Rondo	F♭ (E♮); C♭ (B♮); G♭ (F♯).

[117] The author performed this work with Davide Monti and the Wymondham Symphony Orchestra, UK, conductor Andrew Parnell in November 2010. A single-action harp, kindly lent by Mike Parker, was used for the occasion. The original keys with used and the score and parts were prepared by Cleary and Monti, using Spohr's manuscript of the orchestral score located in the Piermont Library, New York.

Table 6.14: *Jeu des pédales*: WoO 13

WoO 13	*Allegro*	*Adagio*	*Rondo*
3: A/F	17–21, 144-45.		83.
3: D/B	102, 163-65, 261.	9, 32, 33, 40, 41.	55, 57, 59.
4 (i): D/B	145.		
4 (ii): D/B			61-79.
4 (v): A/F	95-96, 99-100.		
4 (vi): A/F	92-93.		
4 (vii): A/F			84-86.
4 (vii): D/B	236-37, 240-41.		1-6, 16-18.
4 (viii): A/F	182-83.		
4 (viii): D/B	233-34.		
7:			F♯-♮ 14; B♮-♭ 66.

6.2.3.6 Op. 35

The *Fantaisie pour la Harpe, Composée et dedieé à Son Epouse*, Op. 35 (EVW 18), in C minor is discussed in detail in section 2.2 of this chapter.

Table 6.15: *Fantaisie* Op. 35: initial instructions

Key	C minor.
Set-up key	A-flat major.
Pedals	G pedal↑ for entire piece, C↑ bar 1, C↓ at 17, C↑ 79 to end.
Enharmonics	G♭ (F♯) 45, 46, 80; C♭ (B♮) 44, 45, 80.
Pedal *glissandi*	43, 44.

Table 6.16: *Jeu des pédales*: *Fantaisie pour la Harpe*, Op. 35

JEU DES PEDALES	BARS
3: A/F	1-3, 7-8, 54-55, 73-74, 82-83, 125-26, 137-39, 143-44.
3: D/B	7-10.
4 (i): A/F	45-49.
4 (i): D/B	98-99, 160.
4 (ii): A/F	75-78.
4 (ii): D/B	143-58.
4 (iii): A/F	107-16.
4 (iv): A/F	13-16, 135-36.
4 (vii): A/F	100-107.

JEU DES PEDALES	BARS
5	107, 142-44.
7	C♮-♯ 43; B♮-♭ 44.

6.2.3.7 Op. 36

Variations sur l'air "Je suis encore dans mon printemps", Op. 36 (EWV 21), was published in 1816 by Simrock (Plate number 1213).[118] It is based on an Aria from Méhul's *Une Folie*. The first print indicates at the beginning of the piece to set-up the harp in the "base" key of E-flat major ("Harfe in Es"). Double-pedalling technique is not imperative in this piece, however there is the possibility to use a pivoting technique with the left foot across the C and B pedals. It is a pedal move found in Krumpholtz, Op. 2, 5^{eme} and 7^{eme} *Prélude*, and in Spohr's Op. 113.

Table 6.17: Op. 36: initial playing instructions

Key	E-flat major.
Set-up key	E-flat major.
Enharmonics:	D♭ (C♯).

Table 6.18: *Jeu des pédales*: Op. 36

Op. 36	
3: C/B 12-13.	
4 (viii):	31-32.
4 (v):	49.

6.2.3.8 WoO 27/WoO 28

The *Sonate* WoO 27 in E minor/F minor was written around 1806-1807.[119] A performance took place in Berlin on January 11, 1810. This work was probably

[118]There are three recordings of this work on single-action harps. The first is Frances Kelly, *The Harp Collection* CD-SAR 36 (1989). The second recording is by Masumi Nagasawa, *Amuse*, KTC 1263 (2004). The third recording is by the author, Maria Christina Cleary, *Louis Spohr: So mach' die Augen zu/..allora chiudi gli occhi*, STR 33848 (2009). This recording was made on a harp by Georges Cousineau, Paris (c. 1770, restored 2004 by A. Conrad) with 37 strings. Range: G1-a3, A=415HZ, temperament: 1/6 comma mean-tone. The harp belonged to Octavie de Lasalle von Louisenthal (1811-1890), and is now permanently exhibited at Heimatsmuseum Wadern, Saarland, Germany.

[119]There is only one recording of this work in the original keys and on original instruments, using historical performance practices. Arparla, Davide Monti and Maria Christina Cleary, *Louis Spohr: So mach' die Augen zu/..allora chiudi gli occhi*, STR 33848 (2009).

arranged by Spohr for violin, violoncello and harp (WoO 28). For the purposes of this study, the duo and the trio arrangement are taken as one piece, as the pedal moves in both pieces are identical. Spohr wrote at least two, if not three pieces, with a set-up key of D-flat major.[120] This means that to play a piece in the key of F minor, with a "base" set-up key of D-flat major, the G pedal is fixed in the lower notch, so it is on another plane than the other pedals, as shown in fig. 6.12. Double-pedalling with the right foot on the F and A pedals is then possible, as the G pedal is out of way, as if it is folded away, as shown in fig. 6.13. This is an ingenious solution by Spohr. He achieves a similar physical situation for the harpist, but two different musical solutions. If the G pedal is not folded away, then double-pedalling with the G and A pedals can occur in bars 43 and 85 of the *Adagio* and in bar 156 in the *Rondo*.

This sonata uses the "base" set-up key of D-flat major, meaning that the pitch G♭ is available to the harpist. However, the first G♭ that the harpist encounters, in bar 70 of the first movement, can be performed with its enharmonic F♯ in order to enable double-pedalling with the F and A pedals. If the harpist plays the pitch G♭ in bar 79, this pedal must be planned beforehand and re-fixed two bars later, whereas double-pedalling can occur right on the last quaver of bar 70 and then the pedals are released on the first beat of bar 80. The pitch G♭ occurs in bars 92, 97, 160-61, 168 and 216. Bars 92, 96, 168 and 216 can be played as either G♭ or F♯, but bars 160-61 require G♭, as the G♭ is part of a scale-like passage. There is no double-pedalling with the F and A pedals in the *Adagio* as the movement is in D-flat major. The double-pedalling with the F and A pedals in the *Rondo* can be played as the G pedal is fixed in the lower notch.

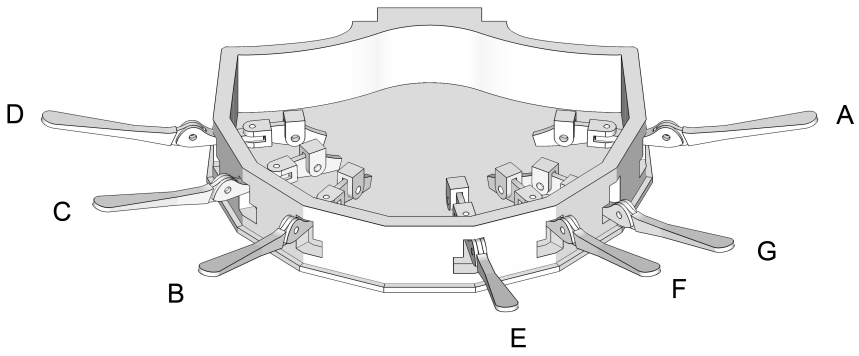

Figure 6.12: Position of the pedals when a harp is set-up in the "base" key of D-flat major to play a piece in the key of F minor.

Table 6.19: WoO 27/28: initial playing instructions

[120] WoO 27, WoO 28 and possibly WoO 14.

Key	E minor/F minor.
Set-up key	D-flat major.
C Pedal: *Allegro*	C↑, ↓195 (*fermata*), ↑199 (*fermata*) to FINE.
Adagio	C↑.
Rondo	C↑.
Enharmonics: *Allegro*	F♭ (E♮) 11, 39, 52-54; C♭ (B♮) 85, 170.
Adagio	F♭ (E♮) 47; C♭ (B♮); B♭♭ (A♮).
Rondo	F♭ (E♮); C♭ (B♮) 94.

Table 6.20: *Jeu des pédales*: WoO 27/28

WoO 27/28	*Allegro*	*Adagio*	*Rondo*
3: A/F	79. (Alternative)		49, 53, 62.
3: D/B	23-24, 58, 94, 99, 113-20, 129, 133, 135, 137, 166, 169, 217-18, 224, 229, 235.		51, 55-58, 94, 158, 171.
4 (viii): D/B	85-86.	85.	104-9.
4 (viii): G/A		43.	156.

6.2.3.9 WoO 14

The *Concertante* for harp, violin and orchestra was probably written in 1807. It is written in E minor for the violin and orchestra and F minor for the harp. As Spohr uses the same keys as WoO 27/28, it could be assumed that the "base" set-up key for the harp is also D-flat major. As this work is unavailable for consultation, nothing can be said about the pedalling combinations.

6.2.3.10 WoO 29

The Variations for solo harp is in E-flat major and only the incipit of the *Introduzione* and *Tema, Allegretto* exists from Spohr's catalogue.[121] The work was written in 1808.[122]

[121] Spohr, "Verzeichniß sämtlicher Compositionen von Louis Spohr."
[122] Göthel, *Thematisch-bibliographisches Verzeichnis*, 292.

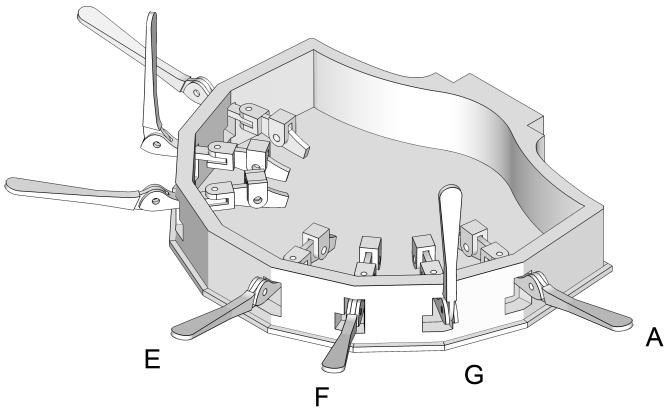

Figure 6.13: Double-pedalling (D.P.) with the G pedal folded away.

6.2.3.11 Op. 115

The *Sonate Concertante*, Op. 115 (EWV 36), is discussed in detail in section 2.1 of this chapter.[123]

Table 6.21: *Sonate Concertante*, Op. 115: initial instructions

Key	A-flat major.
Set-up key	A-flat major.
G Pedal: *Allegro*	G↑ from bar 1, ↓57, ↑64 **OR** G↓ from bar 1, T.P. in 33, 34, 36, ↑64. C↓ from bar 1, ↑75, (↓5 for *Da Capo*), ↓199, ↑208.
Larghetto	G↑, C↑ for whole movt.
Rondo	G↑ for whole movt., C↑, ↓41, ↑141, ↓168, ↑208.
Enharmonics: *Allegro*	G♭ (F♯) all; C♭ (B♮) all; F♭ (E♮) all; C♯ (D♭) 26, 50, 52, 54, 70, 74; D♭ (C♯) 203-25; A♭ (G♯) 62-63; B♭♭ (C♮) all.
Larghetto	A♭ (G♯) 61; G♭ (F♯) 23.
Rondo	G♭ (F♯) all; C♭ (B♮) all; F♭ (E♮) all; D♭ (C♯) 191, 193.
Pedal *glissandi*	*Rondo* 191, 193 (opt.).

[123]This work is part of the Arparla's second Spohr CD, recorded in October 2016.

Table 6.22: *Jeu des pédales*: *Sonate Concertante*, Op. 115, *Allegro*

JEU DES PEDALES	*Allegro*
3: A/F	7, 33, 34, 36, 88-90, 191-92, 215-16, 220-21, 239-40, 240-41.
3: A/F (opt.)	68, 72.
3: D/B	79, 87-88, 111-12, 113-14, 141-42, 174-75, 175-76, 177-78, 195-96, 217-18, 229–31, 238-39, 242.
4 (i): A/F	
4 (ii): D/B	209-10, 213-14.
4 (iii): A/F	76-80, 155-56.
4 (iii): D/B	145-46.
4 (v): A/F	192-93, 194-95.
4 (vi): A/F	139-41.
4 (viii): A/F	81-84.
4 (viii + v): A/F	107-9.
4 (viii): D/B	222-25.
4 (ix): D/B	79, 136.
5	220
6: A/G/F (opt.)	7, 33, 34, 36, 88-90, 191-92, 215-16, 220-21, 239-40, 240-41.

Table 6.23: *Jeu des pédales*: *Sonate Concertante*, Op. 115, *Larghetto* and *Rondo*

JEU DES PEDALES	*Larghetto*	*Rondo*
3: A/F	23.	54-56, 70, 117-18, 198–203.
3: D/B	34-44, 77-78, 80-81.	143-45, 210, 264-66, 274, 275-76, 230-33.
4 (i): A/F	6-7, 62-63.	
4 (i): D/B	50-56.	4-7.
4 (i): D/B (opt.)		118.
4 (ii): D/B		20-25, 147-52.
4 (iii): D/B		294-99.
4 (iv): A/F		278-79.
4 (vi): D/B		16-18.
4 (viii): A/F		186-89.
4 (ix + vi): D/B	26-31.	
5:	6.	52, 54.
7		C♮-♯ 191, 193.

6.2.3.12 Op. 114

This is the last *Sonate Concertante* for violin and harp, Op. 114 (EWV 43), in D major/E-flat major.[124] It was composed in 1811 and maybe first performed on November 15, 1811. It was first published by Schuberth, Hamburg in 1841 (Pl. 381.382). The sonata is in two movements, *Allegro vivace* and a *Potpuorri* based on themes from the *Nozze di Figaro* by Mozart. Spohr arranged the potpuorri for violin and piano and it was published in 1820 as Op. 51, in the same key as the violin. Dorette performed this work on the harp in E-flat major and in D major on the piano.

The harp can be set-up in the "base" key of E-flat or A-flat major. There is only one D♯ notated in the entire work (bar 83) and this can easily be played with its enharmonic alternative of E♭. For this thesis, the playing instructions are given for A-flat major.

Table 6.24: Op. 114: initial playing instructions

Key	D/E-flat major.
Set-up key	A-flat major.
G Pedal: *Allegro vivace*	G↑, C↑, C↓ 168, C↑ 173 **OR** C↑ 1, C↓ 168 (bar 186 is DP C/B)
Potpuorri	G↑.
Enharmonics: *Allegro vivace*	C♯ (D♭) (opt.) 32, 55, 160; G♭ (F♯); C♭ (B♮); F♭ (E♮) 185.
Potpuorri	G♭ (F♯); C♭ (B♮); G♯ (A♭) (opt.) 55; D♭ (C♯); D♯ (E♭) (opt.) 83.

Table 6.25: *Jeu des pédales*: Op. 114

Op. 114	*Allegro vivace*	*Potpuorri*
3: A/F	56, 56-57, 69, 71, 77-88 (opt.), 93-94 (opt.), 120-23, 141-42, 161, 195, 207, 211 8	1-2, 140-41, 142-43, 145-46, 201.
3: D/B	186 (or DP: C/B 186).	
3: E/F	108.	
4 (i): A/F	13, 185.	186.
4 (iv): A/F		121.
4 (v): A/F		210-15.
4 (v): E/F		2-8.
4 (vi): A/F		184-85.
4 (vi): E/F		172-74.

[124] There is only one recording of the second movement, *Pot-puorri*, in the original keys and on original instruments, using historical performance practices. Arparla, Davide Monti and Maria Christina Cleary, *Louis Spohr: So mach' die Augen zu/..allora chiudi gli occhi*, STR 33848 (2009).

Op. 114	*Allegro vivace*	*Potpuorri*
4 (viii): C/B		11
A/F: press tog, fix heel	187	
4 (x): A/F	35	94.
5:	56, 69; opt.: 71, 75.	145 (or D♯ 121-22.)

6.2.3.13 WoO 33

The *Rondo* for violin and harp is sadly lost. It was written in autumn 1813 in Vienna and is in D major for the violin and E-flat major for the harp.[125]

6.2.3.14 Op. 118

Fantaisie sur des Thêmes de Händel et Abbé Vogler pour Piano ou Harpe et Violon, Op. 118 (EWV 62), was written in 1814 in Vienna.[126] It was performed at the Spohr's final concert before leaving Vienna permanently, on March 19, 1815, in the Redoutensaal.[127] After the *recitativo*-like *Introduzione*, the first theme comes from Franz Danzi's (1763-1826), comic opera *Der Quasimann*, 1789, whereas the second theme is a *Ballo* in F major, which follows the aria *Verdi pianti grati* in Act Three of Vogler's *Castore e Polluce*.[128]

Table 6.26: Op. 118: initial playing instructions

Key	B minor/C minor.
Set-up key	A-flat major.
C Pedal	G↑, ↓260, ↑318 to FINE.
Enharmonics: *Allegro*	F♭ (E♮); C♭ (B♮); G♭ (F♯); D♯ (E♭); D♭ (C♯)

[125] Ibid., 295.

[126] The author performed this work with Davide Monti, violin, on September 14, 2016, in the Chiesa di San Bernardino, Verona, Italy. I used a harp, built by Jacob Erat, circa 1795, with the harp set-up in A-flat major at A=415Hz and the violin tuned at A=440Hz. I also used double-pedalling techniques as described in this chapter. This work is part of the Arparla's second Spohr CD, recorded in October 2016.

[127] AMZ, March 29, 1815: 218. It was published in 1845 by Schuberth, Hamburg (Plate number 746.748). The piece is in B minor/C minor with the harp set-up in the "base" key of A-flat major.

[128] Abbé Georg Joseph Vogler (1749-1814), German composer, theorist, organist, and teacher. *Castore e Polluce*, Opera, first performed in the Munich Hof, January 12, 1787. It was revised in German in January 1806. RISM 450113700 - BSB-Hss Mus.ms. 3143.

Table 6.27: *Jeu des pédales*: Op. 118

Op. 118	
3: A/F	14-15, 49-56 (opt.), 113, 122-27, 192, 208, 240, 242, 245-46, 249, 256, 335-36, 338-39.
3: E/F	331 (optional).
4 (i): A/F	97-100, 321.
4 (iii): A/F	258-59.
4 (viii): A/F	252-53.
4 (x): A/F	42, 289, 299
5:	99-100, 299, 341

6.2.3.15 WoO 36

Spohr's last major work for harp is the *Sonate* in G major for the violin and A-flat major of the harp. It was written in 1819 in Frankfurt and performed at least three times.[129] The score is lost, but a set-up key of A-flat major for the harp could be presumed.

6.2.3.16 WoO 92

The *Aria* for voice, horn and harp Aria WoO 92 is the last harp part that Spohr wrote. It is in A-flat major for all instruments and the harp contains no special pedal moves.

Conclusion

This chapter is a first attempt to research and analyse Dorette Spohr's pedal technique and give new insight into Louis Spohr's compositional style for the harp. The first eight works for harp by Spohr have been put in chronological order, according to the "base" set-up keys and the Spohr's use of more and more complex double-pedalling combinations. These culminate with Op. 115. As several works are still to be re-discovered, perhaps more information can be added to this research in the future.

[129] Ibid., 298.

Chapter 7

Shoes and pedalling

When pedalling on harps with a single-action mechanism,[1] one of the first questions that comes to mind is what sort of shoes did harpists of the time wear? How did these shoes help or hinder pedalling and especially what were the consequences for double- and triple-pedalling? This final chapter of historical sources discusses the styles of shoes, using any contemporary descriptions of the harpists' shoes, paintings and illustrations of harpists.

The harp flourished in Paris from 1760 as harp-making, harp performances and harp publications began in ernest.[2] The time period of this thesis covers two main fashions in shoes: footwear before the French Revolution, and the period afterwards. Men's shoes up to 1792 were mostly black, made of leather, medium-heeled and pointed.[3] They usually also had silver or gold buckles. Women's shoes were made from embroidered silks and painted leathers, were high-heeled, and often with buckles that could be transferred from one shoe to the other.

Figure 7.1 is an example of women's shoes around 1780.[4] These shoes were probably made from pink satin with blue satin bows in front. The heel is a low court heel.

Figure 7.2 shows a similar type of shoe with a low court heel, probably made from white satin.[5]

[1] The word "harp" is used throughout this thesis to refer exclusively to a harp with a single-action pedal mechanism.

[2] See Chapters 2 and 4.

[3] I am indebted to the expert advice, assistance and correspondence of June M. Swann, MBE, British footwear historian, formerly the Keeper of the Boot and Shoe Collection at the Northampton Museum and Art Gallery in England. Without her help, this chapter and any attempts of coupling shoe and harp research would not have been possible. Her publications include: June Swann, *Shoes* (London: B.T. Batsford, 1983), June Swann, *Shoemaking* (Princes Risborough: Shire, 1986).

[4] Niklas Lafrensen the Younger (1737–1807), attributed, *Jeune femme à sa toilette*, oil on canvas, 68 x 51 cm, c. 1780.

[5] Jean-Laurent Mosnier (1743-1808), French painter and miniaturist. Full-length portrait of a harp and harpist. I would like to thank Dr. Gerrit Walczak, Institut für Kunstwissenschaft und Historische

Figure 7.1: Niklas Lafrensen the Younger, attributed, *Jeune femme à sa toilette*, c. 1780, location unknown.

Figure 7.2: Jean-Laurent Mosnier, attributed, Full-length portrait of a harp and harpist, location unknown.

Figure 7.3: Étienne Aubry, *Portrait de Madame Victoire, daughter of Louis XV, playing the harp*, 1773, Musée National des Châteaux de Versailles et de Trianon.

Figure 7.4: Detail of fig. 7.3, left shoe.

The portrait of Madame Victoire, shown in fig. 7.3 and 7.4, show a typical high-heeled white satin shoe with a block "Pompadour" heel.[6]

Figure 7.5 shows pre-Revolution shoes for men, even if the harp is a single-rowed harp with no pedals.[7]

Shoe fashions for both men and women changed dramatically after 1792, most importantly heels were lowered and were usually now between 5 to 25 mm in height, or had simple wedge or waisted heels with a tiny top piece.[8] From 1790 to 1814 (or even to 1850), women's shoes were very flexible slip-on shoes, quite low cut with thin soles and often made of satin. Ready-to-wear shoes also became available.[9] In fact, it was a hobby for elegant women to make their own shoes,

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Urbanistik, TU Berlin, for sharing this image with me. "It derives from the Munich Central Collecting Point in 1945. The painting was handed back to an unknown private owner in Germany, the sitter remaining unidentified." Email correspondence, January 10, 2016.

[6] Étienne Aubry (1746–1781), French painter, *Portrait de Madame Victoire, daughter of Louis XV, playing the harp*, oil on canvas, 263 x 177 cm, Musée national des Châteaux de Versailles et de Trianon, Accession No.: MV8969. http://collections.chateauversailles.fr/?permid=permobj_75076199-f9c4-4bf3-8e88-46f16ed8e09d. The sheet music (air de Julie) is in front of a bust of Louis XV.

[7] Nathaniel Dance-Holland (1735-1811), English portrait painter, *Portrait of Giuseppe Lidarti and Giovanni Battista Tempesti*, oil on canvas, 72.4 x 62.2 cm, Accession Number B1981.25.201, Yale Center for British Art, Paul Mellon Collection. http://collections.britishart.yale.edu.ezproxy.leidenuniv.nl:2048/vufind/Record/1670828. Cristiano Giuseppe Lidarti (1730-1795), Austrian musician of Italian descent. Giovanni Battista Tempesti (1732-1804), artist. The author has not been able to identify any full-length image of a male harpist before 1792, where the pedals and feet are visible. Louis Carmontelle dit Carrogis, *Mr de La Live, introducteur des ambassadeurs*, 1769, http://www.culture.gouv.fr/Wave/image/joconde/0349/m505201_0000390_p.jpg. Carmontelle is a sketch of a harp with pedals, but the shape of the neck of the instrument is more similar to a triple harp. Mersenne, *Harmonie universelle, contenant la théorie et la pratique de la musique*, 170. The scroll and base of the column are clearly in the Louis XVI style. As the harp does not correspond to any known model, the author has excluded it in this research. Carmontelle drew this atypical harp twice and drew a normal Louis XVI-style harp twice.

[8] Private email correspondence, November 11, 2015, with June M. Swann.

[9] Giorgio Riello, "The Boot and Shoe Trades in London and Paris in the Long Eighteenth Century" (PhD Thesis in History, University College London, 2002).

Figure 7.5: Nathaniel Dance-Holland, *Cristiano Giuseppe Lidarti and Giovanni Battista Tempesti*, 1759/1760, Yale Center for British Art, Paul Mellon Collection.

especially during the Napoleonic Wars. The average size of women's feet between 1760 and 1820 was between sizes 4-5 English and 36-38 Paris points. Figure 7.17 shows characteristic women's shoes from the beginning of the nineteenth century.

Men after 1792 wore either flat leather shoes or boots. The average size of men's feet was between 39-41.[10] Examples of men's shoes can be seen in fig. 7.6, worn by Bochsa taken from his *Nouvelle Méthode* of 1813.

Figure 7.6: Bochsa, *Nouvelle Méthode*, 1813

He is wearing typical men's shoes of the 1790-1815 period with a low heel and ribbon lace. Baecker, in fig. 7.7, wears Hessian boots, with a low heel and without a tassel on top. Shoes, and knee and calf high boots, were worn indoors as well as outdoors and were very fashionable, even for dancing. These new shoes with a low heel or no heel were ideal for placing the foot across several pedals. The heel

[10] Private email correspondence, June 26, 2016, with June M. Swann.

and toe are level, so more than one pedal could be moved at a time, making double- and triple-pedalling easy.

Figure 7.7: De Genlis, *Nouvelle Méthode*, 2nd ed., *Casimir Baecker*, [1804]

7.1 Portraits and historical pedalling

Most harp repertoire before 1792 does not require excessive pedalling as the music rarely modulates.[11] This repertoire was aimed at amateur harpists, and it would have been possible to move the few pedals with any sort of shoe. The action of

[11] See Chapter 4.

pressing and releasing pedals entailed lifting the whole foot off the ground and the tip of the shoe pressed down on the pedal. The heels had no consequence for this sort of pedalling. The changes in shoe fashions were in fact irrelevant for amateur harpists.

Of over two-hundred-and-fifty images (1760-1840) researched for the purposes of this research, most are portraits, *genre* paintings, with some book illustrations and sketches.[12] The portraits of the nobility of the late eighteenth century and early nineteenth century often contain a harp somewhere in the scene. The harp is depicted accurately, so much so that the harp-builder and model of harp can be identified. The carvings on the top of the harp column and the decoration on the sound-board are visible. When the right side of the harp is in view, the one row of rivets, which is part of the pedal mechanism under the tuning pins is shown; when the left side of the harp is in view, the strings and the type of mechanism to shorten the strings[13] is painted carefully. Strings that have not been cut off at their ends are left dangling, as in fig. 7.5. The colours of the strings, red, blue and cream, are visible and also the difference between the gut strings and the bass octave wound-silver strings. There are few exceptions to this accuracy of the harp, which is new in the tradition of iconography of the harp.[14]

These images have been divided in three categories:

Harp is in the background

The harp is frequently in the background of a lady's boudoir. It is part of the scene like another piece of furniture. This scene is a private one, one of the daily life of a noble woman, surrounded by books, *objects d'art* and sometimes also other musical instruments like a guitar or harpsichord. In these paintings, the harp is usually not shown in full, but the part that is on display is correct and with details. The sitter is never playing the instrument. Figure 7.1 is an example of this situation, where the harp is in the background. The author has identified more than thirty images in this category.

When the harp takes a central role in a portrait, the author has identified two general poses:

The standing pose

The sitter, while standing, rests the right arm on the curve of the neck of the harp, while the left hand is free or placed on the strings. This pose is used for both half-length and full-length portraits. There is no attempt to capture the harpist in the real act of playing. The harp is to one side of the painting, most often to the right of the sitter, allowing as much of the canvas as possible to display the sitter's

[12] Caricatures are not included, as they often do not show a realistic harp or playing position.

[13] *Béquilles*, *forchettes* etc. See section 2.2.

[14] Most images of harp before 1760 are symbolic representations, often relating to the harp as a sacred or celestial instrument. For the purpose of this study, over 250 paintings have been studied. Not one image depicts the single-action harp incorrectly. In some rare cases, if the harpist is in a playing position, the harp is placed on the left shoulder rather than on the right, or the harp is simply resting against the shoulder of the sitter.

gown, shoes, hat and jewellery. Sometimes the sitter appears to be preparing to play, even if she is standing. There is a music stand with an open score on it, and the sitter often has a tuning key in the right hand. Figure 7.2 shows this pose.

Another example is Rose-Adélaïde Ducreux's *Self-portrait with a Harp*, 1791, shown in fig. 7.8 and 7.9. She holds the tuning key, while her right hand rests on the neck of the harp, and her left hand is placed high on the strings. There is a music book open behind the harp. The left three pedals, the D, C and B are all folded away. It is the author's opinion that this is done for the visual lines of the painting. She is leaning forward and if the pedals were unfolded, they would impede her standing pose.[15] The visual aspect of the harp with folded pedals is more important in this portrait than capturing a real moment in time before playing. A professional harpist would hardly have allowed themselves to be painted with a harp with unfolded pedals. The author has identified more than 120 images in this category.

The sitting pose

The subject is sitting and both hands are on the strings as if in the act of playing. In half-length portraits, only the upper half of the body of the subject and the harp is visible. The hands are slightly open with the fingers facing the strings. The left hand is sometimes placed higher on the strings than the right hand, as is described in harp treatises like Backofen's method.[16] The left side of the harp is in view, so the strings and mechanism for shortening the string lengths are also visible. The subject's attire is also on view, including her gown, hat, fashionable hairstyle and jewellery. Bracelets are often on the left arm of the sitter so they are also on display.

When the paintings are full-length portraits, several additional features are noted. The full attire of the subject and the harp are now on show. For this study, full-length portraits are especially pertinent, as the pedals and shoes are visible. In most portraits, where the sitter appears to be playing the harp, the feet are usually positioned in front of the harp and the pedals. This pose favours the folds of the dress and the tip of the shoes. Otherwise, the feet are simply placed on the floor behind the pedals. There are over one hundred of these type of paintings.

7.1.1 The act of pedalling

The author has identified over fifteen images, where one foot is actually placed over one or two pedals. These images would seem to capture the act of playing and pedalling.[17] However, none of these images are of known professional harpists and it is the author's opinion, that the foot may be positioned on the pedal to merely

[15] Rose-Adélaïde Ducreux (1761-1802), French painter, *Self-portrait with a Harp*, 1791, oil on canvas, 193 x 128.9 cm, Metropolitan Museum of Art New York. http://www.metmuseum.org/art/collection/search/436222. Inscribed on the music: (on book) Opera; (on music) Romance / par Benoit pollet / [?] tendre amour . . . marit je rend l[es] / ar-me je rend les ar-me / il est pour moi si plein de / charme que j'en atta . . . (verses from a song by Jean Joseph Benoît Pollet [1753-1818], which has not been identified).

[16] Backofen, *Anleitung*, 1801, 14.

[17] Parker, *Child of Pure Harmony*, 52.

Figure 7.8: Rose-Adélaïde Ducreux's *Self-portrait with a Harp*, 1791, Metropolitan Museum of Art, New York.

Figure 7.9: Detail of fig. 7.8.

highlight the footwear of the subject, rather than to show the historical pedalling technique. Even if the foot seems to be placed across two pedals, it is more likely that the alignment with the pedal box of the harp is visually more pleasing. There is no evidence that the shoes or attire worn in the portraits were actually ever used when the subjects were playing the harp. Several factors could have been relevant as far as the choice of clothing is concerned. The clothes and shoes in portraits may have had no relevance to daily harp playing or pedalling.

The following six images show harpists in the act of playing and pedalling, with a foot off the ground or poised on one or possibly two pedals. These works are discussed in chronological order.

Pierre-Michel de Lovinfosse's harpist is wearing a yellow dress and waist heel yellow shoes.[18]

The left foot of the harpist, in fig. 7.10 and 7.11, is perched across the D and C pedals. Pressing the D and C pedals together is described in Naderman's *École*[19] and required in d'Alvimare's *Sonate I*, Op. 2, in the second movement, *And^{no}. Poco All^{o}* (bars 17-23)[20] and C. P. E. Bach's *Solo für Harfe*, Wq. 139.[21]

The portrait of Glafira Ivanovna Alymova by Dmitry Levitsky shows the sitter playing a Naderman harp in a yellow dress and yellow satin shoes with a waisted heel (fig. 7.12).[22] The left foot is perched across the D and C pedals, as in the previous portrait.

[18] Pierre-Michel de Lovinfosse called Noblet (1745-1821), Belgian painter, *An elegant party in the countryside with a lady playing the harp and a gentleman playing the guitar*, 1771, oil on canvas, 89 x 113.6 cm, private collection. Sold at Sotheby's (Lot 257), New York, January 22, 2004. The following inscription is on a tablet at the feet of the guitarist: DAPHNIS/ ET/ AMALTEE/ OPERA/ EN-3/ ACTES, referring to Claude-François-Felix Boulenger de Rivery's *Daphnis et Amalthée*.

[19] Naderman, *École*, 92. See section 3.4.4.1. and fig. 5.11.

[20] See section 5.3.2.

[21] Carl Philipp Emanuel Bach (1714-1788), German composer. *Solo für Harfe*, Wq. 139, Berlin, 1762.

[22] Dmitry Levitsky (1735-1822), Russian painter, *Portrait of Glafira Ivanovna Alymova*, 1775. Oil on

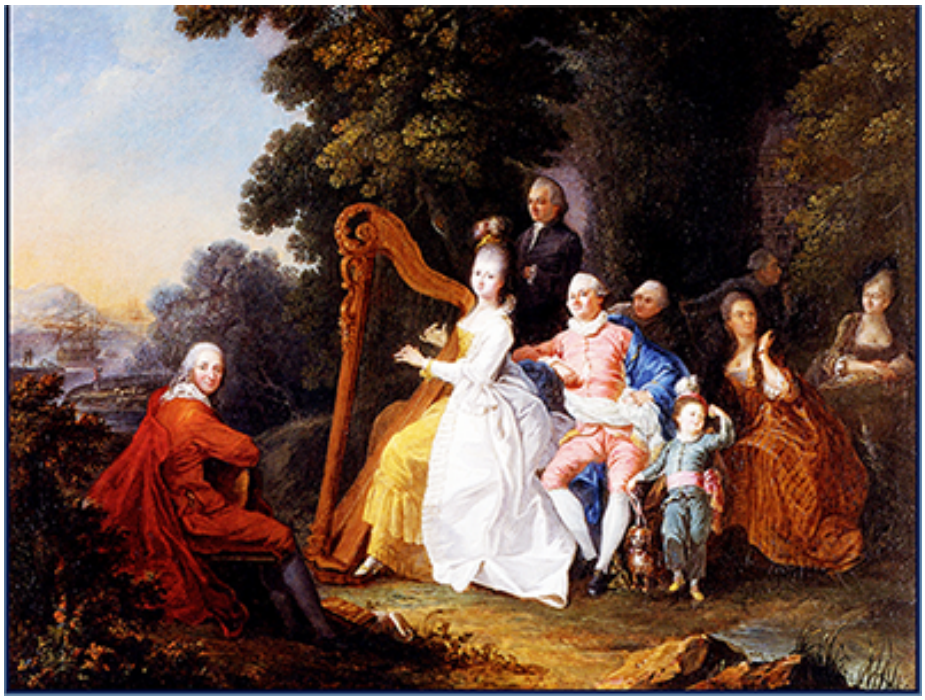

Figure 7.10: Pierre-Michel de Lovinfosse, *An Elegant Party in the countryside with a lady playing the harp and a gentleman playing the guitar*, 1771, location unknown.

Figure 7.11: Detail of fig. 7.10.

Figure 7.12: Dmitry Levitzky, *Portrait of Glafira Ivanovna Alymova*, 1775, The Russian Museum St. Petersburg, Russia.

Figure 7.13: Richard Cosway, *Marianne Dorothy Harland, Later Mrs. William Dalrymple*, 1779, The Metropolitan Museum of Art, New York.

Figure 7.14: Detail of fig. 7.13.

Richard Cosway's portrait of Marianne Dorothy Harland (fig. 7.13 and 7.14) shows the subject with both hands on the strings and a pink shoe placed on the C pedal, or across the C and B pedals.[23] It was first exhibited at the Royal Academy London in 1779.[24]

Margaret Casson's *Lady playing the harp under the tree*, in fig. 7.15 and 7.16, show a woman playing the harp also in a white dress and pink satin shoes.[25] The left foot is placed over the C pedal, or possibly over the C and B pedals. This could enable double-pedalling with the C and B pedals together, or a pivoting pedal technique. These pedal moves are found in Krumpholtz's, Op. 2, 5^{eme} and 7^{eme} *Prélude*, Spohr's Op. 113, d'Alvimare's *Sonate I*, Op. 18, in the final movement, *Polacca, Allegro*. Poco All^{o} (bars 128-30, 133-34, 137-39, 165, 169),[26] and in Dauprat's *Air Écossais Varié pour Cor et Harpe (ou Piano)*, Op. 22 (bars 25-26).[27]

The anonymous book illustration in fig. 7.17 shows a woman in a pale dress and flat pumps,[28] with her left foot placed above the D pedal.[29] The woman's hands are outstretched towards the gentleman who is approaching her and the harp. The open door in the background leads to a bedroom, where part of the bed is visible.[30]

This following description of the harpists' feet and pedalling echoes the illustration:

> "Even the Lilliputian foot, dressed in its white satin slipper, peeped out from time to time; and popping up in full view on the pedal, looked as saucy and as pretty, as a canary bird on its perch."[31]

The harp also gave women the possibility to show off all of their physical features, including the feet:

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canvas. The Russian Museum, St. Petersburg, Russia. Glafira Ivanovna Alymova (1758-1826), was the daughter of Colonel Ivan Akinfievich Alymov. She studied in the Smolny Institute and graduated with a gold medal. In 1776, she became maid of honour to the Empress Catherine II, and later was lady-in-waiting. Her first husband was A. A. Rzhevsky, author, freemason and vice director of the Academy of Science. Her second husband was I. P. Maskle, translator and later consul of Russia in Nice. Alymova was awarded the Order of St. Catherine. She was buried in the Vagankovsky cemetery in Moscow. http://www.abcgallery.com/L/levitzky/levitzky19.html.

[23] Richard Cosway, *Marianne Dorothy Harland (1759–1785), Later Mrs. William Dalrymple*, oil on canvas, 71.1 x 91.8 cm. The Metropolitan Museum of Art, New York, gift of Mrs William M. Haupt, from the Collection of Mrs James B. Haggin, 1969. http://www.metmuseum.org/art/collection/search/435993.

[24] Richard Leppert, *The Sight of Sound: Music, Representation, and the History of the Body* (University of California Press, 1993), 110–12. Leppert analyses this painting with respect to the social culture and domesticity of music.

[25] Carl H. Pforzheimer Collection of Shelley and his Circle, The New York Public Library: Margaret Casson, *Lady playing the harp under the tree*, July 8, 1796, watercolour, 12 x 7.5 cm, New York Public Library Digital Collections. Accessed August 12, 2016. http://digitalcollections.nypl.org/items/510d47db-b6ba-a3d9-e040-e00a18064a99

[26] See fig. 5.14.

[27] See section 4.3.1., fig. 4.15.

[28] Swann, *Shoe Dictionary*, unpublished. E mail correspondence, August 12, 2016.

[29] Anonymous, German, 19th century, Design for a Book Illustration: *A Man Approaching a Woman Playing a Harp*, Pen and brown ink, brush and brown wash, 9.2 x 6.8 cm. http://www.metmuseum.org/art/collection/search/335766.

[30] This and other images were discussed in 'Undressing the single-action harp', Maria Cleary, bodies/music Conference, April 19-20, 2010, University College Cork.

[31] Margratia Loudon, *Maternal Love* (London: Cautley Newby, 1849), 346.

Figure 7.15: Margaret Casson, *Lady playing the harp under the tree*, 1796, The New York Public Library.

Figure 7.16: Detail of fig. 7.15.

Figure 7.17: Anonymous, *A Man Approaching a Woman Playing a Harp*, 19th c., The Metropolitan Museum of Art, New York.

> "The contour of the whole form, the turn and polish of a beautiful hand and arm, the richly-slippered and well-made foot on the pedal stops, …"[32]

The pedal harp was an important symbol in music, art and literature within the Paris, and then later, London salons. As the harp was rapidly established as an instrument played by women in domestic settings, the instrument became feminised.[33] The sexual innuendos are transformed into music ones, as continuous series of *arpeggi* meant that a woman's arms were continuously in motion, while the movement of the feet on the pedals was considered bawdy to the public. These overtones are often found in literature and art where the harp is used to woo a new lover,[34] or the harp cover was used to hide the secret lover.[35] This German illustration is part of an erotic genre, where the man not only approaches the harpist but also the harp, as if their embrace would also encompass the gender-loaded musical instrument.

The final painting of the Viennese Lewy family shows Melanie with her right foot across, at least, the A and G pedals on the harp.[36] There is no musical example of double-pedalling with the A and G pedals on a single-action harp. There are two explanations for this foot position: it is once again for the visual effect, or this could be an example where the G pedal is folded away and her foot is lying across the F and A pedals. Double-pedalling with the F and A pedals is the most common double-pedal move in the harp repertoire.[37]

To conclude, these images capturing the act of playing and pedalling merely enforce the technique of lifting the whole foot off the ground to pedal as was the historical way. Double- and triple-pedalling were certainly easier with the flat post-Revolution shoes for both women and men. It is not known if the altered shoe fashion enabled these techniques, or if harpists, even before the Revolution, used special flat shoes for pedalling. It is the author's personal experience with multi-pedalling and the single-action harp that links the development of more and more complex pedal moves and shoes without heels. When the toe and heel are level with each other,

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[32] Lady of distinction, *The Mirror of the Graces: Or, The English Lady's Costume* (New York: I. Riley, 1811), 195.

[33] For a history of the feminisation of the harp, see Robert Adelson and Jacqueline Letzter, "'For a woman when she is young and beautiful': The Harp in Eighteenth-Century France," in *History/Herstory*, ed. Annette Kreutziger-Herr and Katrin Losleben (Köln/Weimar: Böhlau Verlag, 2008), 314–35.

[34] James Anthony Froude and John Tulloch, *Fraser's Magazine* (J. Fraser, 1837), 461–76: "Drawing the harp towards her, her small black satin slipper on its pedals, her arms gracefully thrown round it, and her eyes timidly glancing towards the Doctor to see if he understood her song …".

[35] Pierre Noel Famin, *L'obligeant maladroit* (Paris: Denné, 1793). Pierre-Noël Famin (1740-1833), French playwright.

[36] Albert Schindler, attributed, "The Lewy family", oil on wood, 38 x 51.5 cm Museum Niederösterreich, St. Pölten, Austria, Inv. KS-13640. Albert Schindler (1805-1861), Austrian painter. Eduard Constantin Lewy (1796-1846) with his sons Richard (1827-83) on horn, Carl on the piano and daughter Melanie (c. 1824-1856) on harp. Melanie later married the harpist Elias Parish-Alvars. Freia Hoffmann and Juliane Schaer, "Melanie Lewy," *Europäische Instrumentalistinnen des 18. und 19. Jahrhunderts*, 2008, http://www.sophie-drinker-institut.de/cms/index.php/lewy-melanie. It is quite probable that this harp is a small double-action harp, rather than a single-action harp.

[37] See sections 3.4.4, 4.3.1, and 5.3.2 for double-pedalling on the single-action harp. See section 8.1 for double-pedalling with the right foot on the double-action pedal harp.

Figure 7.18: Schindler, attributed, Eduard Constantin Lewy with his son Richard and daughter Melanie, c. 1835, Museum Niederösterreich, St. Pölten.

Figure 7.19: Detail of fig. 7.19.

several pivoting pedal moves are possible, which is the essence of Spohr's harp music. No image has been identified depicting the C or G pedals folded away, in order to show that most common double-pedal move.

7.2 Harpists' shoes

From the other historical sources cited in Chapter 3 to Chapter 6, it can be summarised that the following professional harpists used multi-pedalling when playing the harp:

- François Petrini (1744-1819)
- Jean-Baptiste Krumpholtz (1747-1790)
- Madame Krumpholtz (1766/68-1813) (Anna Margarita/Anne/Julie Steckler-Krumpholtz)
- Johann Georg Heinrich Backofen (1768-1839)
- Xavier Desargus (c. 1768-1832)
- (Martin)-Pierre D'Alvimare (1772-1839)
- (Jean)-François-Joseph Naderman (1781-1835)
- Louis-François Dauprat (1781-1868)
- Neville Butler Challoner (1784-after 1835)
- Dorette Scheidler-Spohr (1787-1834)
- Robert Nicholas Charles Bochsa (1789-1856)
- Casimir Baecker (1790- after 1863)

Two drawings of professional harpists exist, depicting Bochsa playing in shoes with no heels (fig. 7.6.) and Casimir Baecker playing in Hessian boots (fig. 7.7).

Madame Krumpholtz's probate contains a list of her footwear[38] This includes:

> "two pair [sic.] of Jean boots, two pair of ditto Shoes and two pair of Stout walking ditto, two pair of ditto boots a pair of Clogs two pair of Jean Shoes and two pair of Sarsnet ditto".

Swann comments on this list of shoes:

[38]The National Archives, London, PROB/31/1085 of Julie Krumpholtz, February 26, 1814.

> "The list of her [Krumpholtz's] shoes would be typical of any well-to do woman. Her Jean (textile) boots would be ankle high, side-lace, the stout walking boots & shoes would have been made of leather or possibly also wool. Sarsnet was a common silk used for the slip-on sandal shoes. The clogs may be old overshoes, though as she travelled much on the continent, even that is not certain, as wooden shoes were widely worn there."[39]

The relationship between shoes and pedalling is a new area of research. Further investigation will lead to more images and perhaps shoe manufacturers inventories, indicating special shoe orders for harpists. Modern harpists normally play with shoes with some heel, as the modern technique usually is one where the heel is always on the floor and the toe is flexed to move one pedal at a time.

[39] June M. Swann, email correspondence, February 9, 2016.

Chapter 8

Double-pedalling on a double-action pedal harp

This thesis discusses historical pedal techniques on a single-action harp.[1] However, with the introduction of double-action pedal harps in 1810, the possibilities for certain pedal moves were still possible, while others became obsolete. This chapter considers the implications of multi-pedalling on the newer type of pedal harp.

The double-action pedal harp

The double-action pedal harp is tuned in C-flat major and each string can be shortened by one semitone twice. This means that each string produces three pitches, in total twenty-one possible pitches, as shown in fig. 8.2.[2] The pedals have also therefore three levels, a flat (♭) level that is the upper position of the pedals, a middle level for natural (♮) pitches and the lower level for the sharp (♯) pitches.

To fully exploit the tonal possibilities on the double-action pedal harp, a musical work must satisfy at least one of the following criteria:

- The three pitches on one string are used during the piece, without employing any enharmonic alternatives.
- The work moves upwards or downwards from one major or minor key more than seven times through the circle of fifths. For example a piece in A-flat major modulates at least to E major and upwards in the circle of fifths.
- The work contains a cluster chord which employs more three consecutive strings.

[1] The word “harp” is used throughout this thesis to refer exclusively to a harp with a single-action pedal mechanism.

[2] Erard, *The Harp*, 15.

The following piece, shown in fig. 8.1, fulfils the above first criteria. This is *Auld Lang Syne, A favorite Scotch Air with Brilliant Variations for the harp*, Op. 13, by Frederic Charles Meyer.[3] It was published by Cramer, Addison and Beale, London (Plate number 1993), probably in the late 1830's.

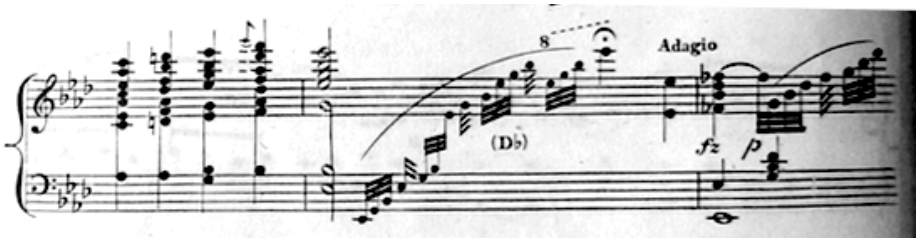

Figure 8.1: F. C. Meyer, *Auld Lang Syne*, Op. 13, 2

This work is unplayable, as published, on the single-action harp. The first crochet chord of the *Adagio* bar includes the three adjacent strings of E♭, D♭ and F♭. On page 8, F♯ is required, so F string functions as F♭, F♮ and F♯ in the piece. This is the first criteria for identifying a work that is written exclusively for the post-1810 pedal harp.

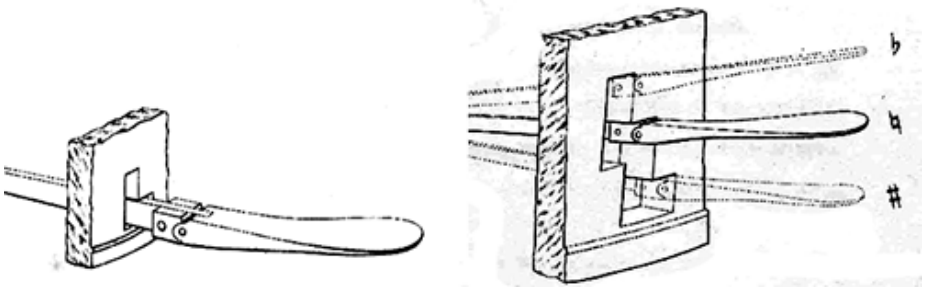

Figure 8.2: Erard, *The harp*, Plate V: single-action harp and Plate VI: double-action pedal harp.

The single-action harp

The single-action harp can be set-up in a variety of "base" keys from D-flat major to B-flat major and each string can be shortened by one semitone, producing two pitches from each string. The pedals have two levels, which can mean a flat, natural or sharp pitch, depending on the "base" set-up key of the harp. The range of keys, where every pitch of the scale is available, without using enharmonics, goes from one major or minor key to a maximum of seven steps away through the circle of fifths. For example, a harp set-up in the "base" key of E-flat major can play all keys up to E major, but cannot play in B major.

[3] Frederic Charles Meyer (?1780-?1840), harpist, composer and teacher in London, was the second son of the harpist, composer and teacher, Philippe Jacques Meyer, who wrote the two earliest dated methods for the harp.

Comparing pedal techniques

The harp pedal technique consisted mostly of simple moves that entailed pressing and releasing the pedals. The pedals could be fixed in the lower position, by inserting the pedals into the lower notch. However, fixing a pedal in a lower notch was primarily used to set-up the harp in the key of a piece.[4]

On the double-action pedal harp, with three levels for the pedals, fixing a pedal becomes necessary. This occurs not only when the harp is set-up in the key of a piece, but also for any accidentals during a piece. It is indeed possible to press a pedal from the flat (♭) position to the second, middle position, which is the natural (♮) level, and not fix the pedal in the second level notch. However, the pedal is then in an unstable position, as the pedal is not pressed fully against the ground, as is the case when the pedal at the lower sharp level.[5]

Other factors also come into play including the fact that pedals on the double-action pedal harp are heavier and can require more strength to simply press and hold down. On the single-action harp it entails no effort for the harpist to press and hold a pedal without fixing. Pedals on the double-action harp also become shorter, unlike the longer eighteenth-century pedals, visible in fig. 7.8 and 7.9.

8.1 Double-action pedal harp methods

Double-pedal moves on the single-action harp regularly entail folding away the G or C pedals, so other pedals can be moved together. On the right-hand side of the harp, double-pedalling most often involves moving the F and A pedals together. When the pedals are in the upper “open” position, the F and A strings sound as F♮ and A♭; when the pedals are lowered the pitches become F♯ and A♮. On the double-action pedal harp, when the F string sounds as F♮, the F pedal is on the middle level and when the A string sounds as A♭, the A pedal is on the upper level. F♮ and A♭ are not anymore on the same plane, as was the case on the single-action harp, so it would appear that this double-pedalling move is not anymore possible.

The author has found three descriptions of double-pedalling for the double-action pedal harp in the nineteenth century. This shows that the practice of double-pedalling continued and can be used in this repertoire. As described in an article in *The Harmonicon*, it remained a technique for the “expert” or professional players.[6] See fig 8.3.

[4] See Chapters 3, 4 and 5.

[5] Double-action pedal technique is not the scope of this thesis. Further research would be required to research a separate historical pedal technique for the early double-action pedal harps where fixing would occur less often than is used today by modern harpists.

[6] I. P., “On Harps,” *The Harmonicon*, 1831, 30–31. The author’s name is simply signed “I. P.”. It could be John Parry (1776-1851), Welsh instrumentalist, composer and writer.

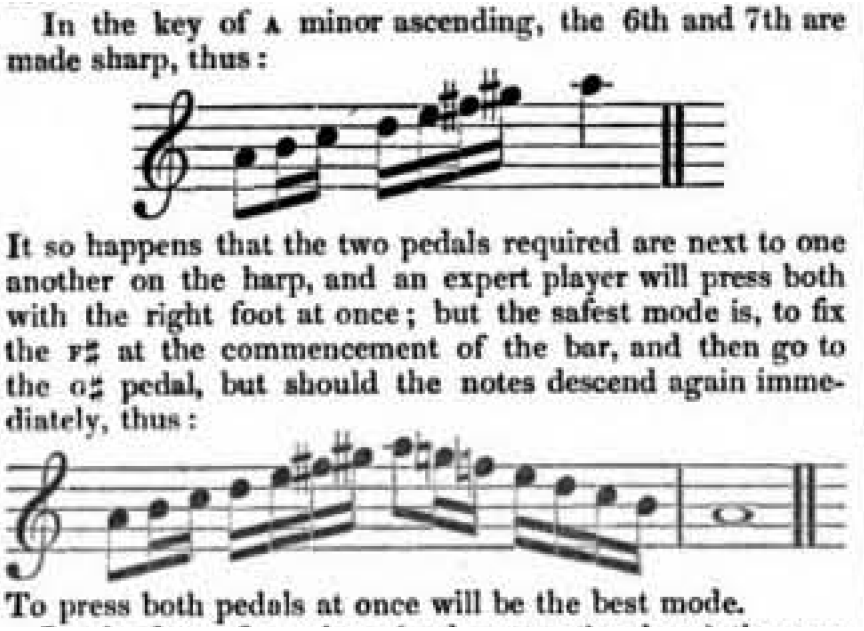

Figure 8.3: I. P., *The Harmonicon*, 1831, 31.

F. C. Meyer, *New Treatise*, 1825

Frederic Charles Meyer's method describes double-pedalling and explains the indications found in his scores. He writes:

> "Sometimes two Pedals are required to be put down together, the following signature is then used, Ex. [D♯ C♯] [E♯ G♯] which implies that the Pedals should be pressed down together but not fixed. in the second Ex. the foot must be places across the three Pedals. E. F. & G but if the F is already sharp, it is of no consequence."[7]

T. Labarre, *Méthode complète*, 1842

At the end of Chapter XXVII of Théodore Labarre's *Méthode complète*, there is this short paragraph with a musical example.

> "Il y a de certains cas on l'on appuie à la fois deux pédales de même côte l'une avec le talon, l'autre avec le bout du pied. Il faut avoir soin de laisse remonter le pied immediatement, car, en abaissant le *La*♮ et la *Fa*♯ , vous avez nécessairemente abaissé aussi le *Sol*♯ , et le *Sol* qui suit la tierce *La*♮ *Fa*♯ , doit être naturel. Quant à ce qui regarde la tierce *Ré*♮ *Si*♮, on ne rieque pas d'abaisser l'*Ut*, parceque cette pédale étant

[7] Meyer, *A New Treatise*, 82; Review of F.C. Meyer's method is found in Richard Mackenzie Bacon, "The Quarterly Musical Magazine and Review," 1825, 249–50.

> fixée à la première entaille, elle ne se trouve pas au niveau de celles qui doivent agir."[8]

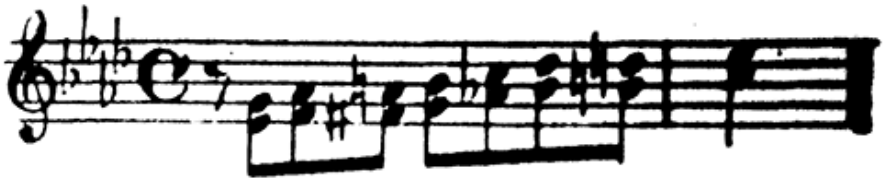

Figure 8.4: Labarre, *Méthode complète*, 45.

The musical example shows a raising scale in thirds, where the passage from the second quaver to the third quaver requires double-pedalling on the F and A pedals with the right foot. The movement from F♮ and A♭ to F♯ and A♮ are not on the same plane as the F pedal moves from the natural (♮) middle level to the third sharp level (♯), while the A pedal moves from the upper position (♭) to the natural (♮) middle level. The G pedal is fixed in the natural (♮) middle level beforehand. When moving the F and A pedals like this, the G pedal is also touched by the weight of the whole foot over the pedals. For this reason, Labarre advises the harpist to release the pedals immediately as the fifth quaver contains a G♮.[9]

A. Prumier, *Méthode*, 1865

Antoine Prumier's *Méthode* includes five musical examples for multi-pedalling.[10] The first two extracts are similar to Labarre's instructions and examples, but are in a different key. He then follows with a further three phrases and this explanation:

> "Dans cet exemple [exemple 6] il faut, au 3e. temps de la 1o. mesure appuyer le pied droit (toujours en poussant) sur les 3 pédales *FA, SOL, LA*, le talon sur le *FA* et la pointe du pied un peu élevée, de telle façon que le talon fasse descendre la pédale du *FA* tout à fait en bas pour le ♯ et que la pointe du pied fasse descendre la pédale du *LA* au ♮, il faut ensuite levée le pied pour laisser remonter les deux pédales."[11]

[8] Théodore Labarre, *Méthode complète pour la harpe contenant les notions élémentaires etc, suivies de 20 exercices en forme d'études*, op. 118 (Paris, 1842), 49: "There are some cases when one presses two pedals at a time on the same side, one with the heel, the other with the toe. One must be careful to raise up the foot immediately because, lowering the F and the A, you also lower the G by default, and the G that follows the third A and F, must be natural. Concerning the third D and B, there is no risk to lower the C, because this pedal fixed in the first notch, so it is not at the level of those [pedals] that will be moved."

[9] Ann Fierens, an expert on nineteenth-century double-action pedal harps, has most graciously tried out these pedal moves on her Erard double-action pedal harp. She says they are "surprising easy". Email correspondence, December 15, 2015. I thank for her involvement in this pedal research.

[10] Antoine Prumier, *Méthode de harpe à double mouvement*, op. 76 (Paris: Brandus & Dufour, 1865), 23. Antoine Prumier (1794-1868), French harpist, teacher and composer.

[11] ibid., 23: "In this example, the right foot must be pressed down (always pushing) on the 3 pedals, F, G, A, on the third beat of the first bar, the heel on the F and the toe raised a little, in order that the heel can go entirely down to the sharp [notch] and that the toe of the foot can lower the A pedal to the

Figure 8.5: Double-action pedal harp: pedals set-up to play E♮, F♮, G♮, A♭. The pedals F♮ and A♭ are not on the same plane.

Figure 8.6: Double-action pedal harp: pedals set-up to play E♮, F♯, G♮, A♮. The pedals F♮ and A♭ are not on the same plane.

He continues:

> "Dans les exemples 7 et 8, c'est encore le talon qui doit appuyer sur la pédale la plus rapprochée du harpiste, c'est à dire sur le *MI*♯ dans le 7^{e} exemple et sur le *SI*♯ dans le 8^{e}, mais l'autre note étant ♯ aussi, le pied doit appuyer de façon à faire descendre entièrement la pédale qui doit produire l'autre ♯."[12]

Prumier's instructions continue by stating that no horizontal movement of the feet should occur, in order to not fix the pedals. He also suggests an alternative to double-pedalling and suggests to use two feet on one side of the harp. Backofen[13] and Prumier are the only two harp methods known that suggest to use the left foot for the pedals on the right of the harp and vice versa. He also warns that the harp can slip and suggests to put some pieces of chamois under the two rear feet of the harp to stabilise the instrument. Modern harps use rubber to prevent the harp slipping.

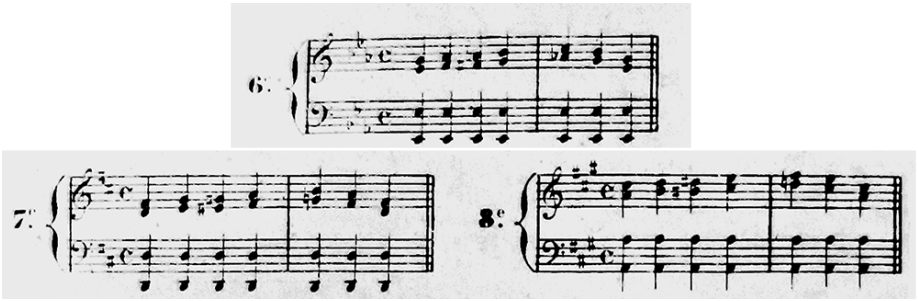

Figure 8.7: Prumier, *Méthode*, 23.

8.2 Double-action pedal harp repertoire

The following musical examples from the nineteenth-century double-action pedal harp repertoire and all works by F. C. Meyer, show that double-pedalling was an inherent part of the harp technique.

F. C. Meyer's *Fantasia and Variations on the Favorite Scotch Air, Saw ye my Father*, Op. 24

Fantasia and Variations on the Favorite Scotch Air, Saw ye my Father, Op. 24 (Pl. 1995), is by F. C. Meyer. It is difficult to date this piece to establish whether it was

natural [notch], then the foot immediately releases the two pedals."

[12] ibid., 23: "In examples 7 and 8, it is again the heel that pushes on the pedal closest to the harpist, that is the E♯ in the 7th example and on the B♯ in the 8th, but the other note was already ♯ too, the foot ought to push in a way that the other note also becomes ♯." He means the G♯ in example 7 and D♯ in example 8.

[13] Backofen, *Anleitung*, 1827, 35. See section 3.4.4.1.

composed after the invention of the double-action pedal harp around 1810. Meyer published other pieces between 1813 and 1817.[14] The *Fantasia* was published by the publishing house Cramer, Addison & Beale of 201, Regent Street and 67, Conduit Street, which was founded in 1824.[15] The *Variations brillantes, pour le piano forte, sur la ronde favorite "Je vends des scapulaires"*, Op. 12, by Frédéric Chopin, written in 1832, was published by Cramer *et al* around 1834 and the plate number of this work is 1251. As music went out of fashion quickly at this time, it could be assumed that the work was published after Chopin's Op. 12, therefore after 1832.

The score is published for a double-action pedal harp as can be seen by one printed pedal marking, G♭-♮, in bar 4 of Variation 3. A score for the single-action harp would not include a G pedal marking, as this harp does usually not have the pitch of G♭ (F♯ is, of course, feasible).[16]

The *Fantasia and Variations*, Op. 24, by Meyer is in the key of E-flat major and seems conceived perfectly for the single-action harp. Actually there is nothing in this work, as so much of the harp repertoire up to 1840, that exploits the new keys and modulations that were possible on the new Erard double-action pedal harps.

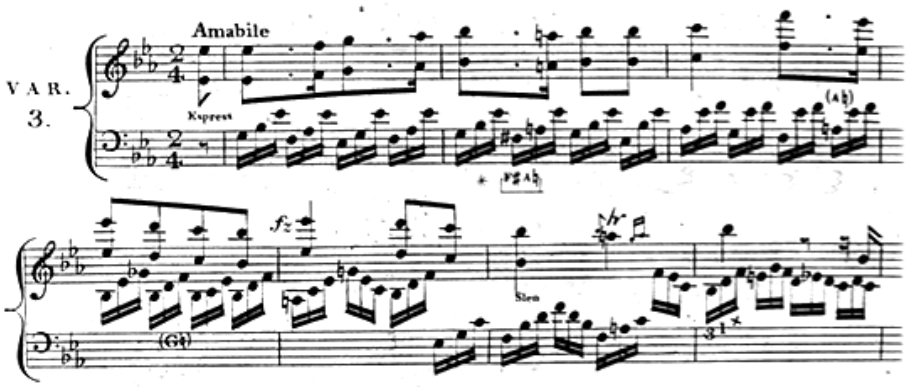

Figure 8.8: F. C. Meyer, *Fantasia and Variations on the Favorite Scotch Air*, Variation 3.

If a harpist plays this piece on an Erard double-action pedal harp and follows the pedal markings printed in the score, then double-pedalling on the F and A pedals with the right foot occurs in bar 2. The asterisk and bracket under F♯ and A♮ points to the note at the bottom of page 5 of the piece stating: "To be put down together". The G pedal is not folded away, as bar 4 has a notated G♭, which is played as such

[14] D. W. Krummel, Alan Tyson, and William Hawes, eds., *Music Entries at Stationers' Hall, 1710-1818: From Lists Prepared for William Hawes, D.W. Krummel and Alan Tyson and from Other Sources* (Routledge, 2016), 675, 682, 687.

[15] Simon McVeigh, Jerald C. Graue, and Thomas Milligan, "Cramer: (2) Johann Baptist," *Grove Music Online*, n.d., http://www.oxfordmusiconline.com/subscriber/article/grove/music/44589pg2#S44589.2.

[16] An exception is Spohr's WoO 27/28, as the harp is set-up with the "base" key of D-flat major.

because the composer/publisher has indicated after the G♭ to press the G pedal down to the natural level making a G♮ for bar 5.

From the perspective of a single-action harpist, I would simply play the G♭ as F♯ in bar 4, using the F pedal which my foot is already over from bars 2 and 3. The G pedal move and marking seems superfluous. If the piece is a pre-1810 work, then it is my opinion that the G pedal is the editor's later addition, making the work appear as a piece for the new double-action pedal harp. However, the double-pedalling markings indicate that the piece could have been composed before 1810, as the double-pedal instructions point to an earlier style of composition.

F. C. Meyer's *A Favorite March and Pastorale*, Op. 31

In Meyer's *A Favorite March and Pastorale*, Op. 31, page 7, there is a similar passage where double-pedalling with the F and A could be possible, but the pedal markings show that the F and A are intended to be pedalled separately. This piece contains written indications however for double-pedalling with the E and G pedals.[17]

This publication is an example of a transition period in pedal technique, where indications for both types of pedal harp are found within one piece. The old approach (D. P.: F♯ and A♮) is combined with the new possibility of playing the notated G♭ with the G string and using the G pedal.

F. C. Meyer's *Serenade Du Troubadour*, No. 2

The diminished seventh chord on F♯ was instantly accessible on the single-action harp using double-pedalling with the right foot on the F and A pedals. Meyer uses this same chord in music for the double-action pedal harp by employing double-pedalling with the E and G pedals.

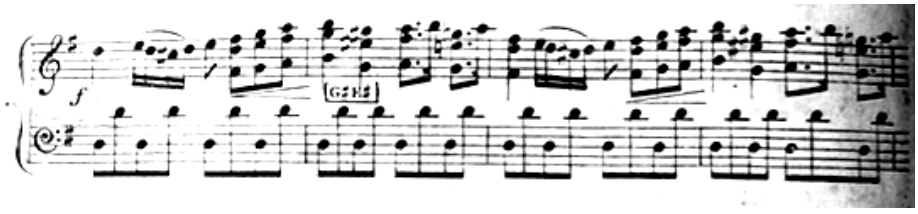

Figure 8.9: F. C. Meyer, *Serenade Du Troubadour*, No. 2, 6

If the F pedal on a double-action pedal harp is fixed on the lowest level, sounding as F♯, then the E♮ and G♮ pedals can be easily moved together to make E♯ and G♯. The chromatic sequence shown in the second bar of fig. 8.9 shows G♯ resolving to A♮ and E♯ resolving to F♯. This is the same as A♭ resolving to A♮ and F♮ resolving to F♯, which is a commonly found in the single-action harp repertoire.[18] This work is in D major and is published for the double-action pedal harp, but is completely playable on a single-action harp with a "base" set-up key of E-flat major.

[17] See below, F. C. Meyer's *Serenade Du Troubadour*, No. 2.

[18] Petrini, *Folies d'Espagne*, Op. 28, no. 11. See section 4.3.1.2.

Meyer employs this same pedal solution several times in his pieces, like in his *A Favorite March and Pastorale*, Op. 31 (Plate number 1997), which has E♯ and G♯ double-pedalling on pages 1 and 4. Another piece is *Auld Robin Gray, Divertimento for the harp* (Plate number 1024), which indicates E♯ and G♯ double-pedalling on page 5. This was advertised in *The Harmonicon* in February 1827. Both of these pieces are also completely playable on the single-action harp.

F. C. Meyer's *Adagio Patetico and Waltz of the Black Forest*, Op. 26

Double-pedalling with the left foot is possible on both pedal harps. Moving the D and B pedals from flat to natural position is still possible as the D♭ and B♭ are on the same plane on both harps, but was rarely used, except by Spohr. The *Adagio Patetico and Waltz of the Black Forest*, Op. 26 (Pl.1999), instructs the harpist to use this pedalling on page 2. This piece is written for the double-action pedal harp, as it uses the *synonyme* effect,[19] where two strings B♭ and A♯ are used to play one pitch.

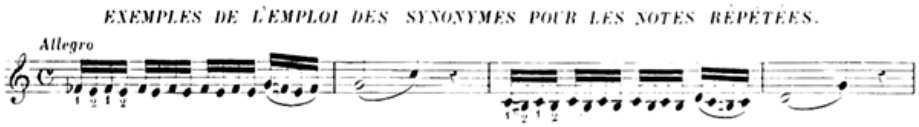

Figure 8.10: Labarre, *Méthode complète*, 49

It is not known if this piece was composed before the invention of the double-action pedal harp or afterwards. It could be assumed that the work is later.

8.3 Double-pedalling in the twentieth century

Double-pedalling is still considered an exception to the modern harp technique. One of the most important harp methods of the twentieth century discusses double-pedalling and gives a musical example.[20] Peter Eagle, Professor of harp at the Indiana School of Music, Bloomington from 1965-81, taught his pupils double-pedalling and used multi-pedalling techniques extensively in his own performances.[21]

Most jazz harpists move at least two or three pedals on one side of the harp.[22] Classical harps who use double-pedalling include Josh Layne, who wears soft leather

[19] The *synonyme* effect means employing two notes to sound at the same pitch. In the nineteenth century it was compared to the strumming of a mandolin. It is like a Baroque *trillo*.

[20] Renié, *Méthode*, 7, 81. Henriette Renié (1875-1956), French harpist, composer and teacher.

[21] I thank Kim Glennie de Libero of Las Vegas for this insight. Peter Eagle (1910-1988), harpist, teacher and designer of Venus harps.

[22] Park Stickney, American/Swiss jazz harpist.

shoes with a very low heel.[23] The French harpist, Pauline Haas, pedals in her socks, with her feet off the ground and uses double-pedal techniques.[24]

When the author began researching historical pedalling techniques, she re-read Salzedo's bi-lingual method of 1921. This method does not discuss double-pedalling but Salzedo devised internationally recognised symbols for pedalling and most extended techniques on the harp.[25]

Salzedo describes the act of pedalling in a poetic way, showing how pedalling is a musical act and not a mechanical one. This is often lost in current harp teaching.

> "This *new musicalness* (infinitely more in harmony with the elemental vibrations of the Universe), finds in the harp, and in the harp alone, a perfectly responsive medium, thanks to the use of the pedals, whose multifold combinations open an illimitable field both to science and to fantasy in harmony; thanks also to the tone-effects, so diverse and as yet so little known, which spring naturally from the *direct* contact established between the sensitiveness of the executant's touch and the vibration of the strings producing the sounds."[26]

> "Every unnotching of the pedals is scrupulously indicated in accord with the rhythms of the musical expression. By conscientiously taking note of this, one will acquire two things important in themselves and necessary to interpret faithfully the musical thought. First of all, the pedals will cease to occasion special solicitude, and thus the needless worry they cause will disappear. Then, also, owing to their correspondence with the musical accentuation (æsthetically and sonorously considered) the movements of the feet will no longer be left to chance. The action of the pedals can thus be controlled in a manner both unnoticeable and silent (a most important matter), and the ensemble of the player's gestures will constitute a **whole** indissolubly harmonious and more essentially artistic."[27]

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[23] Josh Layne, Canadian harpist and composer. He uses "Jazz dance shoes made by Capezio, with a thin sole", email correspondence, August 17, 2016. www.youtube.com/watch?v=dtkZGMR4eWo. https://www.youtube.com/watch?v=kfd7jt1whJE. I thank Prof. Robert Adelson for pointing out these videos to me.

[24] Pauline Haas, French harpist. www.youtube.com/watch?v=9NOQqCzbw1w.

[25] Salzedo, *L'Etude Moderne*.

[26] Ibid., 3: "Cette *musicalité nouvelle* (infiniment plus en accord avec les vibrations élémentales de l'Univers), trouve dans la harpe—et dans la harpe seule—son médium parfaitement adapté, grâce au jeu des pédales dont les multiples combinaisons offrent un champ illimité à la science et à la fantaisie harmonique; grâce aussi aux sonorités si diverses et encore si peu exploitées, qui découlent naturellement du contact *direct* établi entre la sensibilité tactile de l'exécutant, et les vibrations des cordes productrices des sons."

[27] Ibid., 4: "Chaque déclanchement de pédale est scrupuleusement indiqué en accord avec les rythmes de l'expression musicale. En en tenant consciencieusement compte, on acquerrera doux choses importantes en soi et nécessaires pour interpréter fidèlement la pensée musicale. D'abord, les pédales cesseront d'être une préoccupation particulière, ce qui fera disparaître l'effroi qu'illogiquement elles causent. Puis, du fait de leur correspondance avec les accentuations musicales (esthétiquement et sonorement considérées), les mouvements des jambes et des pieds ne seront plus livrés au hasard. Ainsi, l'action des pédales pourra s'effectuer (ce qui est de toute première importance) de façon aussi

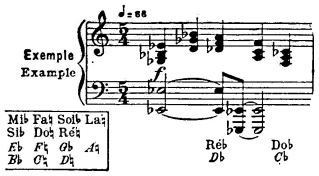
SIGNES EN USAGE ET NOUVEAUX SIGNES POUR L'ÉCRITURE DE LA HARPE.

(Les mouvements métronomiques placés en tête des exemples donnés, ont pour but de démontrer la vitesse correspondant le mieux au caractère de l'effet demandé.)

SIGNS IN USAGE AND NEW SIGNS FOR THE METHOD OF WRITING FOR THE HARP.

(The Metronomic tempi indicated at the head of the given examples, are intended to denote the rate of speed at which each effect appears at its best.)

Ce signe, mis en tête d'un morceau, ou d'un passage, indique l'ARMATURE HARPISTIQUE (*la disposition des pédales*).
This sign, at the head of a piece, or of a passage, indicates the HARPISTIC KEY-SIGNATURE (*the arrangement of the pedals*).



La♯ / A♯ — pour indiquer une pédale. / to indicate a pedal.

Mi♯ / E♯ — pour indiquer qu'une pédale appartenant au jeu du pied droit devra être actionnée avec le pied gauche (et vice versa). / to indicate that a pedal on the right side must be moved by the left foot (and vice versa).

Ré♯-♮ / Do♯-♮ — pour actionner deux pédales avec le même pied. Ce mouvement, qui ne peut être employé que pour des durées très brèves, est conseillable seulement lorsque l'autre pied ne pourrait atteindre l'une des pédales, ou lorsque trois pédales devraient être actionnées simultanément.

D♯-♮ / C♯-♮ — to move two pedals with the same foot. This motion—impracticable excepting for very brief durations—is advisable only when the other foot cannot reach one of the pedals, or when three pedals have to be moved simultaneously.

Sol♯ / G♯ — pour actionner une pédale sans la mettre dans le cran (le pied ne quittant pas la pédale). / to move a pedal without putting it in the notch (keeping the foot on the pedal).

Do♯ / C♯ — pour actionner une pédale pendant un point d'arrêt. / to move a pedal during a hold.

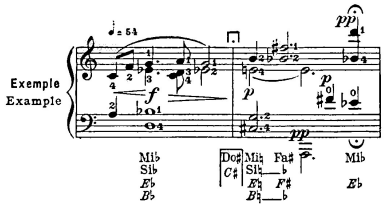


Figure 8.11: Salzedo, *l'Étude*, 7

inapercevable que silencieuse, et l'ensemble des mouvements de I'instrumentiste constituera un **tout** indissolublement harmonieux et plus essentiellement artistique."

Conclusion

In 2004, I began working and researching the music for harp by Louis Spohr. I recorded several of his works with my husband Davide Monti in 2007. (Arparla, Davide Monti and Maria Christina Cleary, *Louis Spohr: So mach' die Augen zu/..allora chiudi gli occhi*, STR 33848 (2009)). The music provided me with technical challenges and I learnt every day from playing on my original eighteenth-century single-action harp. When I began to learn Spohr's Opp. 115 and 118 in 2014, the only two works by Spohr that I had not learnt or performed, I found certain passages impossible to play, if my foot operated only one pedal at a time, on one side of the harp.

From the scores, it seemed as if Spohr was asking the harpist to move at least two pedals at a time. Knowing that Backofen's method, *Anleitung zum Harfenspiel* (1801) had written about double-pedalling, which is simplified by folding away one pedal in order to operate two non-adjacent pedals at the same time, I began to look for other historical sources on pedalling. From this research on double-pedalling, I also found that pedalling was a movement of the whole foot completely off the floor and that most pedals were not fixed. Pedals were moved as much as possible at the moment where an accidental is indicated in the music and then released immediately.

I identified nine harp treatises and methods that discuss double- and triple-pedalling, listed in Appendix I, section I.2. I have identified five pieces for harp, where the composer instructs the harpist to press more than one pedal at a time: four where double-pedalling is required and one sonata by d'Alvimare where triple-pedalling is required with both feet simultaneously, listed in Appendix I, section I.3. These historical sources show a technique where the whole foot moves two or three pedals together.

I re-visited the complete extent works by Spohr for harp and analysed his use of multi-pedalling techniques. Spohr not only employs the techniques described in the above sources, but his works also require that the harpist uses the heel and toe to operate two pedals independently. I have now classified thirty-seven core moves that are possible on the harp and that are found in Spohr's music. These moves derive from my own artistic research, combined with the historical theoretical evidence. These pedal techniques underline his compositional style.

Spohr composed for harp in a way that the harpist has usually at least one bar's rest each time a pedal needs to be folded or unfolded.

I investigated images of harps and harpists in the act of pedalling and singled out several portraits where the harpist's foot is completely off the floor and placed over a pedal, or perhaps two pedals.

I looked for historical descriptions of any pedalling techniques. As the single-action and double-action harps co-existed for over thirty years, I reviewed the historical sources of the later harps to see if multi-pedalling survived on this instrument. I discovered that some double-pedal moves remained, while some new ones were introduced, due to the different organisation of the pedals.

The research is important for several aspects of harp research. For pedal harpists, the pedals are the most important part of playing, as they produce more than half of the notes on the single-action harp and two-thirds of the notes on the double-action pedal harp. No other comprehensive study on harp pedalling exists.

This research adds to any past studies on harp treatises and methods, identifying here over one hundred books for learning the pedal harps. The music published in the late eighteenth- and early nineteenth-centuries may look easy on the page. However, a small segment of the repertoire was music for *virtuosi*, composed and played by professionals who developed extraordinary playing techniques including pedal techniques.

Questions from harpists, restorers and organologists regarding pedal noises are addressed in the study. When historical pedalling is used, the important action is a simple up and down movement. Fixing pedals is a rare foot action and is used occasionally and only in exceptional cases. The mystery regarding the lack of pedal markings in harp music up to the middle of the nineteenth century is explained by the pedal technique. Pedal markings are obsolete for tonal repertoire if the feet movements become the musical gesture and work with the hands. Just as much as the hands move when reading a score, the feet "read" the accidentals in the score and act upon them.

The music for harp by Spohr and his compositional style can be viewed in a completely new light, when pedalling is taken into account. A chronology of his works can be delineated by his increasing demands for more and more pedal moves, combinations of the heel and toe operating independently from each other. For any harpist, Spohr's music becomes much easier to play when multi-pedalling techniques are used.

As I have been able to identify that double-pedalling did not die out with the demise of the single-action harp, and continued into the double-action pedal harp repertoire, these techniques can be applied today, on any pedal harp. The techniques are feasible and simplify harmonic modulations for any harpist. Improvising becomes easier.

This research attempts to show the musicality of multi-pedalling, how pedalling is an inherent part of the musical gesture and not a mechanical obligation. The

physicality of the pedal moves becomes of upmost importance, creating tensions and resolutions that mirror the musical line. The findings here can add to the academic field of gesture and music.

The methodology for this study combines distinct historical sources with artistic practice to arrive at a musical performance. This multifaceted approach means that theoretical works (harp treatises and methods) and pieces, where pedalling is described in words, are coupled with non-verbal testimonies, which are the musical ones found hidden in the score. This artistic project was carried out while playing the harp. Without this practical component, it would appear that there are no historical records of moving the heel and toe independently while pedalling. The investigations into shoes and historical portraits give few definite answers presently, but point towards some fundamental aspects of historical pedalling, like lifting the whole foot off the floor.

The most surprising discovery for me was the historical evidence that double-pedalling continued into the Romantic harp repertoire. The new double-pedal possibilities substituted the older ones, sometimes achieving the same harmonic result but using different pedals. As much as my research is an expansion of Mike Parker's research, I hope that the many issues that I have affronted here can be used for further research.

More examples of multi-pedalling may be found in newly identified harp methods, treatises and pieces. In this study, I identify Spohr as being the only composer to use the toe and heel independently and to such an epitome of technique. However, other composers may have also used these moves. Further research is required into the music specifically by Krumpholtz, Backofen and d'Alvimare.

Samenvatting

Ter voorbereiding op een concert in 2014, begon ik met het instuderen van Louis Spohrs Opp. 115 en 118, de enige twee stukken van Spohr die ik nog niet eerder had gestudeerd of uitgevoerd. Ik ontdekte dat sommige passages onmogelijk te spelen waren als mijn voet slechts één pedaal tegelijk, aan één kant van de harp, zou indrukken. Vanuit de partituur gezien leek het of Spohr de harpist vroeg tenminste twee pedalen tegelijkertijd te bedienen.

Ik raadpleegde Backofens methode voor harp, *Anleitung zum Harfenspiel* (1801), omdat ik wist dat hij daar schreef over dubbel pedaalgebruik dat eenvoudig gerealiseerd kan worden door het middelste pedaal weg te vouwen zodat twee naast elkaar gelegen pedalen tegelijk bediend kunnen worden. Ook bestudeerde ik Mike Parkers boek over de enkelpedaalharp.

Naar aanleiding hiervan besloot ik alle aspecten van pedalen op de enkelpedaalharp te onderzoeken, met name voor het spelen van virtuoze stukken, uitgevoerd door uitzonderlijke harpisten in de achttiende- en vroeg negentiende eeuw. Het onderzoek naar meervoudig pedaalgebruik strekte zich uit naar vijf historische onderzoeksgebieden: methodes en traktaten, muzikale bronnen door de componist of uitgever waar speciale oplossingen worden aangevoerd, muzikale bronnen waar geen speciale oplossingen worden aangevoerd door de componist of uitgever maar waarin dubbel pedaalgebruik impliciet is als de stuk gespeeld wordt, en historische schoeisel, portretten en illustraties van met pedaal spelende harpisten. Tenslotte heb ik nog verschillende andere bronnen onderzocht die licht zouden kunnen werpen op pedaaltechnieken. Ik putte uit krantenverslagen van concerten, tijdschriften en literaire beschrijvingen.

Niet-verbale bronnen zijn onder meer het complete werk voor harp van Spohr en Op. 2 van Jean-Baptiste Krumpholtz. Bij het spelen van Spohrs muziek gebruikt de harpist de hiel en de tenen onafhankelijk van elkaar, resulterend in zevenendertig complexe voetbewegingen. Als een pedaal moet worden weggevouwen tijdens het stuk, schrijft Spohr tenminste één maat rust.

Aangezien de enkelpedaalharp en de dubbelpedaalharp tenminste dertig jaar naast elkaar bestonden, heb ik de historische bronnen over de laatste ook onderzocht, teneinde te zien of het meervoudig pedaalgebruik op dit instrument werd voortgezet.

Historisch gezien was het indrukken van een pedaal een beweging van de hele voet, helemaal los van de vloer en een handeling waarbij de pedalen niet waren vastgezet. Pedalen werden ingedrukt op het moment dat in de muziek een relevant voorteken stond genoteerd om daarna zo snel mogelijk weer te worden losgelaten. Pedaal aanduidingen in de partituur zijn overbodig als pedaalgebruik inherent is aan het discours van de muziek en niet louter een mechanische verplichting. Alsdan is de fysieke handeling van het indrukken van het pedaal juist van groot belang, spanningen en oplossingen creërend die de muzikale lijn weerspiegelen.

Summary

In 2014, while preparing for a concert, I began to learn Spohr's Opp. 115 and 118, the only two works by Spohr that I had not learnt or performed. I found certain passages impossible to play, if my foot pressed only one pedal at a time, on one side of the harp. From the scores, it seemed as if Spohr was asking the harpist to move at least two pedals at a time.

I consulted Backofen's method for harp, *Anleitung zum Harfenspiel* (1801), where I knew that he had written on double-pedalling, which can be simplified by folding away a middle pedal in order to move two non-adjacent pedals at the same time. I also consulted Mike Parker's book on the single-action harp.

From this, I decided to explore any aspect of pedalling on the single-action harp, especially with respect to the *virtuoso* pieces performed by exceptional harpists of the eighteenth- and early nineteenth centuries. The research into multi-pedalling was extended across five historical areas of research: treatises and methods, musical sources where a special solution is written by the composer/publisher, scores with no instructions, but where multi-pedalling is implied by the music, historical shoes, and finally images (portraits and illustrations) of harpists pedalling. Finally, I sought out any other historical sources that may point to evidence of pedalling techniques. I used newspaper accounts of concerts, journals and literary descriptions.

The non-verbal historical sources include the complete works for harp by Spohr and Op. 2 by Krumpholtz. To play Spohr's music, the harpist uses the heel and toe independently where over thirty-seven complex moves are part of his music. When a pedal is folded or unfolded during a piece, Spohr writes at least one bar's rest for the harpist.

As the single-action and double-action harp co-existed for at least thirty years, I reviewed the historical sources of the later harp to see if multi-pedalling continued on this instrument.

Historical pedalling was a movement of the whole foot, completely off the floor, and an action where most pedals are not fixed. Pedals were moved at the moment where an accidental is written on the music staves and then released as soon as possible. Pedal markings are unnecessary, if pedalling is an inherent part of the musical gesture and not a mechanical obligation. The physicality of the pedal moves

becomes of upmost importance, creating tensions and resolutions that mirror the musical line.

Curriculum Vitae

Born in Ireland in 1972, Maria Christina Cleary studied harp at the College of Music Dublin. She consequently studied Psychology at Trinity College Dublin and later harp at the Koninklijk Conservatorium, The Hague and the Koninklijk Conservatorium, Brussels. She holds three Bachelor degrees from Dublin, London and The Hague and two Master's degrees from The Hague and Brussels.

Since 1996, she has specialised in historical harps. She performs on medieval harps with hexachordal, modal and chromatic tuning systems, the Italian *arpa doppia*, the Spanish *arpa de dos ordenes*, the Welsh *triple harp* and the *harpe organisée*.

She has been prizewinner at the following competitions as soloist: Utrecht Early Music Competition (First Prize ex-aequo, 1997), Nippon International Harp Competition (sixth prize, 1996), Dutch National Harp Competition (second prize, 1997). As an orchestral player she has worked as Principal Harpist in the Koninklijk Concertgebouworkest Amsterdam and further held the position of harpist of the RTE Concert Orchestra Dublin. Maria has worked for years in the area of contemporary music, with MusikFabrik Köln and Remix Ensemble Porto. She has premièred over fifty pieces for solo harp and harp in ensemble, including "Arc Song" by T. Hosakawa at the Darmstadt Festival in 2002 with Peter Veale (oboe).

She has performed as soloist with, among others, Amsterdam Baroque Orchestra, American Bach Soloists, Bayerische Staatsoper, Portland Baroque Orchestra, Arion Ensemble Montreal and the RTE Concert Orchestra. In 2014, Maria was invited to perform a Concerto by J. B. Krumpholtz with the Orchestra of the Antipodes at The World Harp Congress in Sydney. This was the first time the *harpe organisée* was featured at the Congress. Maria performs regularly with Davide Monti under the name Arparla, a violin and harp duo specialising in repertoire from the seventeenth to the nineteenth centuries. She performed and recorded with Ensemble Tetraktys with Kees Boeke and Jill Feldman from 2004-2008.

She has recorded over forty CDs with ensembles and orchestra. Solo and duo recordings include *So mach' die Augen zu*, the first ever CD of Louis Spohr's music using original instruments and historical performing practices. Other solo recordings of works by Frescobaldi, Merula, Uccellini and Rossi on Arparla's CDs: *Le Grazie del Violino*, *Sonate over Canzoni* by Uccellini Op. 5, Uccellini Op. 4. *Le*

Grazie del Violino is the first CD using the harp exclusively as an accompanying and solo instrument in seventeenth-century music.

Maria teaches historical styles, improvisation and chamber music to modern and historical players. She has taught at the Guildhall School of Music London, Conservatories of Singapore, Brisbane, Venice, Padua (2005-2008), Krakow Academy of Music, Sibelius Academy Helsinki, Haute École de Musique de Genève, the Juilliard School of Music New York and at the Urbino Summer Music Festival. She holds the position of historical harp professor at the Conservatorio E. F. Dall'Abaco, Verona, Italy.

Appendices

Appendix I

Primary Sources

This Appendix includes various tables of primary sources for the single-action harp.[1]

Tables I.1-I.4 attempt to list, in chronological order, harp methods, treatises on *basso continuo*, accompanying, composing and improvising preludes, study and exercise books and finally tuning methods. Each edition is listed separately, as often later editions contain different material like Backofen's and de Genlis' methods. The cut-off date is difficult to determine, as most of these publications are not precisely dated as of current research. These lists are not necessarily complete but are the most comprehensive inventories in recent research.[2]

Section I.2 lists the harp treatises and methods that include any information on double- and triple-pedalling techniques. Section I.3 lists the harp pieces, known to the author, that specify the use of double- and triple-pedalling in the scores.

I.1 Harp treatises and methods 1763-1840

Table I.1: Harp treatises and methods 1763-1840.

AUTHOR	TITLE	DATE	PLACE
P. J. Meyer	*Essai sur la vraie manière de jouer de la harpe*, Op. 1	1763	Paris
P. J. Meyer	*Essai sur la vraie manière de jouer de la harpe*, Op. 1	1772	Paris
P. J. Meyer	*Essai sur la vraie manière de jouer de la harpe*, Op. 1	1798	Paris

[1] The word harp is used throughout this thesis to refer exclusively to a harp with a single-action pedal mechanism.

[2] See footnote 4 of this chapter for other lists.

AUTHOR	TITLE	DATE	PLACE
P. J. Meyer	*Essai sur la vraie manière de jouer de la harpe*, Op. 1	[post-1798]	Paris
Hochbrucker	*Six Sonates pour la harpe avec une Game*, Op. 1	1772	Paris
Wernich	*Versuch eine richtigen Lehrart die Harfe zu spielen*	1772	Berlin
Wernich	*Versuch eine richtigen Lehrart die Harfe zu spielen*, 2nd ed.	[post-1772]	Berlin
P. J. Meyer	*Nouvelle méthode pour apprendre à jouer de la harpe*, Op. 9	1774	Paris
Corrette*	*Nouvelle méthode pour apprendre à jouer de la harpe*	1775	Paris
Corbelin	*Méthode de harpe*	1779	Paris, Versailles
Compan*	*Méthode de harpe ou principes courts et clairs*	1782	Paris
Compan*	*Méthode de harpe ou principes courts et clairs*	1782	Paris
Cardon	*L'Art de jouer de la Harpe*, Op.12	1784	Paris
Cousineau	*Méthode de harpe*, Op. 4	1784	Paris
Cousineau	*Méthode de harpe*, Op. 4	1784	Paris
Ragué	*Principes de Harpe*, Op. 8	1786	Paris
Anon	*Méthode de harpe*	1787	Paris
Mr T	*Méthode et Gamme de harpe*	1790	Paris
Blattman	*Premières leçons de harpe*	1792	
Herbst	*Ueber die Harfe, nebst einer Anleitung sie richtig zu spielen*	c. 1796	Berlin
Petrini	*Abrégé de la méthode de harpe avec la manière de l'accorder*	1797	Paris
Schwanne-burg*	*Vollständiges theoretisch-praktisches Lehrbuch zur Davids-und Pedalharfe*	1797	Wien
Petrini*	*Méthode pour harpe*	[c. 1790]	Paris
Petrini*	*Repertoire des elèves de harpe*	[post-1793]	Paris
Petrini*	*Etude préliminaire de la composition*	[c. 1793]	Paris
Laurent*	*Méthode de harpe*	[pre-1800]	Paris
Merelle	*New and complete instructions*	1800	London
Weippert	*Weippert's Instructions for the Pedal Harp*	1800	Philadelphia
Weippert	*Weippert's Instructions for the Pedal Harp*	[post-1800]	London
Backofen	*Anleitung zum Harfenspiel*	1801	Leipzig
Backofen	*Anleitung zum Harfenspiel*, 2nd ed.	1807	Leipzig
Backofen	*Backofen's Harfen-Schule*, 3rd ed.	1827	Leipzig

AUTHOR	TITLE	DATE	PLACE
De Genlis	*Nouvelle methode pour apprendre à jouer de la harpe*	1802	Paris
De Genlis	*Nouvelle methode pour apprendre à jouer de la harpe*, 2nd ed.	1805	Paris
De Genlis	*Nouvelle methode pour apprendre à jouer de la harpe*, 3rd ed.	1806	Paris
Heyse	*Anweisung die Harfe zu spielen*	1802	Leipzig
Heyse	*Anweisung die Harfe zu spielen*	1822	
Cousineau /Ragué	*Méthode de harpe*, Op. 14, 2nd ed.	1803	Paris
Cousineau	*Méthode de harpe*, Op. 14, 2nd ed.		Paris
Desargus	*Nouvelle Methode*	1803	Paris
Desargus	*Nouvelle Methode*	1809	Paris
Demar	*Méthode de harpe divisé en Trois Parties*, Op. 21, 1ere Suite	[1806]	Paris
Elouis	*New Instructions for the pedal harp*	1807	
Gatayes	*Nouvelle méthode de harpe*, Op. 18	[c. 1807]	Paris
Gatayes	*Nouvelle méthode de harpe*, Op. 18	1807-11	Paris
Saint Pierre de Newbourg	*La nouvelle méthode française pour la harpe*	1808	London
Plane /Krumpholtz	*Principes pour la harpe*	pre-1790, pub. 1809	Paris
Desargus	*Cours complet*, Op. 18	1810	Paris
Craven	*Scale of the new patent harp*	post-1811	
Barthélémon	*Tutor for the harp*	[c. 1811]	
Desargus	*Cours complet*, 2nd ed.	1812	Paris
Bochsa	*Nouvelle Méthode de harpe en deux Parties*, Op. 60	1813	Paris
Davis	*A new and complete system of music*	1815	
Bedard	*Nouvelle méthode de harpe claire et précise*, Op. 51	[c. 1815]	Paris
Horn	*Rudiments for the Single and double movement harp*	1816	
Challoner	*A new receptor for the harp*	1816	London
Challoner	*A new receptor for the harp*	[post-1816]	London
Challoner	*A new receptor for the harp*	[post-1816]	London
F. C. Meyer	*Complete instructions for the harp*	1816	London
F. C. Meyer	*A new and improved edition*	post-1816	London
F. C. Meyer	*A complete demonstration of the advantages*	1816	London
Bochsa	*A new improved method of Instruction for the Harp*	1819	London

AUTHOR	TITLE	DATE	PLACE
Pollet	*Méthode de harpe*	[pre-1817]	Paris
Pollet	*Méthode de harpe*	[c. 1817]	Paris
Desargus	*Traité général*	1821	Paris
Desargus	*Traité complet et raisonné composé*	1822	Paris
Desargus	*Premier [-deuxième] recueil de la second partie du traité général*, 2nd ed.	[post-1817]	Offenbach
Bochsa	*Petite méthode pour la harpe*, Op. 61	1822	Paris
Bochsa	*Petite méthode pour la harpe*, Op. 61	[post-1822]	Paris
Bochsa	*Méthode pour la harpe = (Harfenschule)*, Op.61	[post-1822]	Paris
Bochsa	*Piccolo Metodo per Arpa*	1823	Milano
Bochsa	*Harfenschule, oder vollständige, leicht fassliche Anweisung*	[c. 1823]	Hamburg
Bochsa	*Petite méthode pour la harpe*	[c. 1823]	Paris
Bochsa	*Méthode de Harpe, suivies de 3 Recueils avec la Basse chiffrée*	[c. 1823]	Paris
Egan	*A new series of instructions... for the Royal portable harp*	1823	
Bochsa	*The first six weeks or daily precepts*	1826	
Bochsa	*Tasteful Exercises for the harp*	1826	
Egan	*The Royal harp director*	1827	
Egan	*The harp primer: being a familiar introduction to the study of the harp*	[c. 1825]	
Hoffman	*Hoffmann's Instructions*, Op. 15	[c. 1825]	
Dizi	*École de harpe*	1827	
Gelinek*	*Exercise du modulation*	1829	Paris
Steil	*Elementary Treatise*	[c. 1830]	
Bochsa	*Méthode de harpe à double mouvement*, Op. 321	[c.-1830]	Paris
Bochsa	*Bochsa's Explanations of his New harp effects and Passages*	1832	
Naderman	*École ou Méthode Raissonnée*, Op. 91, 1ère Partie	1833	Paris
Naderman	*École de la harpe*, Op. 92	1833	Paris
Naderman	*École de la harpe*, Op. 93	1833	Paris
Naderman	*École de la harpe*, Op. 94	1833	Paris
Naderman	*École de la harpe*, 5.me partie, Op. 95	1833	Paris
Cheron	*Élémens de musique*	1834	Paris
F. C. Meyer	*New treatise on the art of playing*	1835	
F. C. Meyer	*New treatise on the art of playing*, 2nd ed.	[post-1835]	
Bochsa	*Método de arpa*	1840	Paris
Bochsa	*Passi ed effetti nuovi per l'arpa*	[1842]	Milano
Bochsa	*Standard tutor for the harp*	[c. 1842]	

AUTHOR	TITLE	DATE	PLACE
Bochsa	*Breve método*	1844	Madrid

Table I.2: Harp methods for *basso continuo*, accompanying, composing and improvising preludes 1767-1840.

AUTHOR	TITLE	DATE	PLACE
Garnier	*Nouvelle méthode pour l'accompagnement*	1767	Paris
Garnier	*Nouvelle méthode pour l'accompagnement*	c. 1782	Paris
Krumpholtz	*Recueil de douze Préludes*	[1777]	Paris
Ragué	*L'Art de Preluder sur la Harpe*	1786	Paris
Bemetzreider	*La science et la pratique de l'harmonie*	1798	Paris
Kollman	*An Introduction to extemporary modulation*, Op. 11	c. 1811	London
Phillis	*Nouvelle méthode*, Op. 6	c. 1790	Paris
Moulet*	*Tableau harmonique*	pre-1800	Paris
Petrini	*Trois Préludes pour la harpe avec la basse chiffrée*	[c. 1793]	Paris
Petrini	*Nouveau sisteme d'harmonie en soixante accords*	[c. 1793]	Paris
Petrini	*Nouveau sisteme d'harmonie en soixante accords*	[c. 1793]	Paris
Petrini	*Etude préliminaire de la composition*	[c. 1793]	Paris
Petrini	*Règles de l'harmonie*, Op. 51	[c. 1793]	Paris
Concone	*Étude pour la harpe*, Op. 26	[c. 1790]	Paris
Concone	*Étude pour la harpe*, Op. 26, 2nd ed.	[c. 1800]	Paris
Viner	*Introduction to the Art of Modulation*	[c. 1811]	London
Viner	*A New Collection of the most popular Airs*	[c. 1811]	London
Viner	*Introduction to the Art of Modulation in the different keys*	[c. 1828]	London
Degola	*Méthode abrégée et facile*	1830	
Bochsa	*Twelve lessons*, Op. 15	1826	
Le Camus	*L'art du chant; méthode en trois parties*	[c. 1833]	
Bochsa	*The Harp Preludist*	[1833]	
Tutton	*Six Preludes*	[c. 1835]	
Weippert	*Preludes*, Op. 22	[c. 1830]	
Weippert	*Lessons*, Op. 13	[c. 1830]	
F. C. Meyer	*Fourteen progressive lessons*	[c. 1830]	

Table I.3: Harp study and exercise books, 1788-1840.

AUTHOR	TITLE	DATE	PLACE
Petrini	*Etude de la main gauche*, Op. 9	1788	Paris
Burckhoffer	*8^{e} livre contenant la gamme*, Op. 23	1789	Paris
P. J. Meyer	*Four original lessons for the harp*	[post-1800]	London
Dizi	*48 studies*	[c. 1821]	
Dizi	*48 studies*	1821	
Parry	*Scales and preludes, for the single and double action harps*	1821	
Dizi	*Second series of 12 fantasias*	1823	
Dizi	*12 fantasias or exercises for the harp*, Book 1	[c. 1825]	
Dizi	*12 fantasias or exercises for the harp*, Book 2	[c. 1825]	
Dizi	*12 fantasias or exercises for the harp*, Book 3	[c. 1825]	
Laurent*	*8 Etudes progressives*	[c. 1825]	Paris
Bochsa	*Pupil's Companion*, Vol. 1	[c. 1826]	
Bochsa	*Pupil's Companion*, Vol. 2	[c. 1826]	
Bochsa	*Pupil's Companion*, Vol. 3	[c. 1826]	
Bochsa	*Pupil's Companion*, Vol. 4	[c. 1826]	
Bochsa	*Introductory Exercises*, Book 1	1826	
Bochsa	*Introductory Exercises*, Book 2	1826	
Bochsa	*Étude pour la harpe*, Op. 34	[c. 1826]	
Bochsa	*Preparation a l'Etude*, Book 1	[c. 1826]	
Bochsa	*Preparation a l'Etude*, Book 2	[c. 1826]	
Bochsa	*Preparation a l'Etude*, Book 3	[c. 1826]	
Bochsa	*Preparation a l'Etude*, Book 4	[c. 1826]	
Bochsa	*Forty Studies*	[c. 1826]	
Bochsa	*25 exercises-etudes*, Op. 62	[c. 1826]	
Desargus	*Douze Exercises*	[c. 1826]	
Naderman	*Sept Sonates progressives avec Doigté chiffré*, Op. 92	c. 1835	Paris

Table I.4: Methods on tuning the harp, 1792-1840.

AUTHOR	TITLE	DATE	PLACE
Martini	*Mélopée moderne, ou l'art du chant*	1792	Paris, Lyon
Godin	*Nouvelle Méthode claire et facile*	1794	Paris
Martini	*Mélopée moderne, ou l'art du chant*	1803	Paris

I.2 Methods on multi-pedalling techniques, 1801-1833

Table I.5: Methods on multi-pedalling techniques, 1801-1833

AUTHOR	TITLE	DATE	PLACE	
Backofen	*Anleitung zum Harfenspiel*	1801	Leipzig	51
Backofen	*Anleitung zum Harfenspiel*, 2nd ed.	1807	Leipzig	43
Desargus	*Cours complet*, 2nd ed.	1812	Paris	37
Bochsa	*Nouvelle Méthode de harpe en deux Parties*, Op. 60	1813	Paris	51
Challoner	*A new receptor for the harp*	1816	London	22-23
Bochsa	*A new improved method of Instruction for the Harp*	1819	London	43
Backofen	*Backofen's Harfen-Schule*, 3rd ed.	1827	Leipzig	34-35
Desargus	*Traité général*	1821	Paris	74
Naderman	*École de la harpe*, Op. 91	1833	Paris	92

I.3 Repertoire which specifies multi-pedalling techniques

Table I.6: Single-action harp repertoire which specifies multi-pedalling

AUTHOR	TITLE	DATE	PLACE
Krumpholtz	*Amante abandonnée*	1788	Paris
Petrini	*Folies d'Espagne*, Op. 28, no.11	[1800]	Paris
Naderman	*Thêmes favoris de l'Opéra des Bardes*		Paris
Dauprat	*Air Écossais Varié pour Cor et Harpe (ou Piano)*, Op. 22		Paris
D'Alvimare	*Three Grand Sonatas for the Harp*, Op. 18	[1802]	London

I.4 Diderot's *Encyclopédie*

Diderot's *Encyclopédie ou Dictionnaire raisonné*, Vol VIII, 1765

This Appendix includes the complete text of the "Harp" article and the explanations that accompany the four Plates which describe the *harpe organisée* in detail. The article and *Planche XVIII* and *Planche XIX* are translated, as they contain important information on how to play the harp.[3]

I.4.1 "Harp" article by Oginski, 45-46

HARPE, (Hist. anc. & Lutherie.) [Histoire ancienne , Lutherie] Hoghenski , Cahusac

HARPE, f. f. (Hist. anc. & Lutherie) instrument de Musique. Son origine est fort ancienne; David en joüoit pour chanter les loüanges du Seigneur, & les sons mélodieux qu'il en tiroit empêchoient Saül d'être tourmenté du démon. La *harpe* du prophete-roi n'étoit pas celle d'aujourd'hui; il n'auroit pû danser devant l'arche en joüant de cet instrument. On ignore & quelle étoit la *harpe* de David, & quel est l'inventeur de la nôtre. Les noms des inventeurs des choses utiles ou agréables sont presque tous ensevelis dans les ténebres des tems, moins parce que les écrits de ceux qui ont voulu conserver ces noms à la postérité sont perdus, que parce que la plûpart de nos inventions sont l'ouvrage, non d'un homme, mais des hommes. En effet, il est assez naturel de penser que ceux qui sont venus après, pressés par les mêmes besoins & excités par les mêmes passions, n'auront pas manqué de perfectionner ce qui n'étoit d'abord qu'imparfaitement ébauché, & qui ne méritoit pas encore auparavant le nom d'*invention*.

Il y a apparence que la *harpe* a pris naissance, de même que tous les instruments de Musique, dans des tems d'abondance et de joie, ou qu'elle est le fruit des recherches de quelque spéculatif amateur de Musique.

Cet instrument (*Pl. de Luth*) est composé de trois parties principales: 1°. d'une caisse *A*, faite de bois leger et sonore; 2°. d'un montant *B*, solide quand la *harpe* est simple, mais creux quand la *harpe* est organisée; 3°. d'une bande *C* à chevilles pour attacher les cordes qui tiennent par l'autre extrémité, à la table ou partie supérieure de la caisse sonore. Cette bande contient encore des crochets *d*, qui peuvent avancer & reculer, pour faire les diéses. On était obligé, pour faire ces tons sur la *harpe*, d'appuyer sur un de ces crochets avec la main gauche, jusqu'à-ce qu'il touchât la corde; ce qui la raccourcissait de la seizième partie de sa longueur, & faisoit monter le son d'un semi-ton: mais c'était-là un inconvénient. Pour le faire sentir, les lecteurs doivent savoir qu'on fait vibrer les cordes de cet instrument, en les pinçant avec les doigts; la main droite exécute ordinairement le dessus, & la gauche accompagne: ainsi aux endroits où il y a des dièses on était obligé de laisser aller le dessus seul, puisque la main qui devoit l'accompagner se portait

[3] It is beyond the scope of this thesis to provide a complete annotated translation of the harp articles in Diderot's *Encyclopédie*.

aux crochets. On a remédié à cette imperfection, en ajoûtant des pédales à cet instrument; & on dit alors qu'il est organisé. Nous allons exposer l'art avec lequel ces pédales sont faites ; ensuite nous expliquerons leur mécanisme: afin de ne pas embrouiller la figure, nous ne tracerons qu'une des pédales; le lecteur suppléera facilement les autres; il lui suffit de savoir qu'il doit y en avoir autant que de notes dans l'octave, c'est-à-dire sept. *E F* est un levier dont l'appui *G* est dans une chape qui tient au fond *M N* de la caisse sonore. Ce levier communique à un autre *F I*, dont l'appui *H* est aussi dans une chape qui tient au même fond. A l'extrémité *I* est attaché un fil-d'archal *I O*, d'environ une ligne de diamètre, qui tient au bout *O* du bras *O P* du levier coulé *O P Q*. Au point *Q* tient par une petite charnière simple, une mince lame de fer qui s'attache de même au levier composé *R S T*, dont la partie *S T*, qui est à-peu-près perpendiculaire à la mince lame *Q R*, est la queue d'un des crochets dièses : une pareille lame tient de même au point *R*, & communique à un levier semblable au précédent; ainsi de suite. Le point *V* du dernier levier composé se joint toûjours par une lame de fer à un ressort *X* roulé en spirale; & c'est-là l'assemblage de toutes les pièces qui composent une pédale dans cet instrument. Venons maintenant à son jeu, je dis à *son jeu*, parce qu'on ne sauroit expliquer le mécanisme de l'une, qu'en même tems on n'explique celui des autres.

Si l'on met le pié sur le bras *E G* du levier *E H*, que je suppose être la pédale d'*ut*, le point *I* descendra, de même que l'extrémité *O* ; alors les points *R Y Z*, etc. des leviers composés décriront des arcs en s'approchant de la tête de la *harpe*; et les queues *S T* des crochets sortiront par rapport à la face *A* de la bande, ou rentreront par rapport à la face *W*: alors les crochets *D* sont montés à vis sur leurs queues, de manière qu'ils toucheront toutes les cordes *ut*, lesquelles au lieu de vibrer depuis la table jusqu'aux obstacles 2, ne vibreront que depuis la table jusqu'aux obstacles 3, c'est-à-dire qu'elles seront raccourcies de la partie 3, 2, qui est égale à un seizième de toute la corde: mais la tension restant la même, si une corde se raccourcit, elle doit rendre un nouveau son qui soit au premier réciproquement comme les longueurs des cordes. Or par la supposition, la corde est raccourcie d'un seizième; donc le premier son est au second comme 15 est à 16, c'est-à-dire que le dernier est plus haut que l'autre d'un semi-ton majeur ; mais le premier par l'hypothèse est l'*ut* naturel; donc le second est l'*ut* dièse: & c'est ce qu'il fallait expliquer.

En cessant d'appuyer le pié sur la pédale, le ressort spiral, que la pression du pié avoit forcé à se bander, remettra, en se rétablissant, les choses comme elles étaient auparavant. Mais s'il y a des dièses tout le long de la pièce, par exemple, si la note *ut* est par-tout dièse, quand on aura baissé la pédale, pour n'être pas obligé d'avoir toûjours le pié posé dessus, on la poussera à côté. Pour favoriser ce mouvement, le levier *E F* est brisé en *K*; de maniere que sa partie *E K* peut se mouvoir horizontalement autour du point *K*, mais seulement d'un côté: étant poussée, comme nous venons de dire, la pédale ne pourra remonter, à-cause qu'elle rencontrera la cheville *L*, placée exprès pour cela en cet endroit: par ce moyen, tous les *ut* seront dièses; & le pié qui sera libre pourra faire les dièses accidentels qui pourraient se rencontrer dans la pièce.

Pour empêcher que le bas des pédales ne se détruise, soit par l'humidité, par la

poussière, ou par le choc de quelques autres corps étrangers, on adapte un double fond *4*, *5*, à la *harpe*, & on enveloppe l'entre-deux par une bande légère de bois, ou par la continuité des faces latérales de la caisse sonore, en laissant de petites fenêtres pour passer les queues des pédales. Enfin on couvre le devant du montant *B*, de même que le devant de la bande *C*, l'un & l'autre d'une planche mince, afin de garantir d'insulte ce que chacune de ces pièces contient dans son interieur.

Il nous reste encore à dire pourquoi la bande *C* est courbée en-dedans, et pourquoi la caisse sonore est plus grosse vers le bas. 1°. Ceux qui joüent de cet instrument ont remarqué, lorsque la bande *C* est droite, que quoique les cordes les plus minces soient beaucoup plus courtes que les grosses, cependant elles cassoient constamment plus souvent que les autres: d'où ils ont conclu qu'il falloit, pour leur donner plus de résistance, les raccourcir davantage ; & c'est ce qu'on a fait en courbant la traverse. 2°. Comme les petites cordes s'attachent vers le haut de la caisse sonore, & les grosses vers le bas, & que les sons que rendent celles-ci ont plus d'intensité que les sons que rendent celles-là; il étoit nécessaire de faire la caisse plus vaste & plus forte aux endroits où sont attachées les grosses, qu'à ceux où sont attachées les petites: afin qu'il y eût dans le bois de la caisse une inertie proportionnée à l'intensité des sons, & que le volume d'air renfermé, de même que celui qui environne la caisse immédiatement, fût dans une espece de proportion avec la force de ces sons. La meilleure *harpe* sans-doute seroit celle où la force du son seroit en équilibre avec les parties correspondantes de la caisse sonore.

Cet instrument rend des sons doux & harmonieux; il est très-touchant & plus propre à exprimer la tendresse & la douleur, que les autres affections de l'âme. Les cordes de la *harpe* veulent être touchées avec modération; autremen telles rendroient des sons confus, comme ferait le clavecin, si les vibrations des cordes n'étaient pas arrêtées par un obstacle. Enfin je dirai pour finir, que les Irlandais sont entre tous les peuples ceux qui passent pour joüer le mieux de cet instrument. *Cet article a été donné par M. le comte de HOGHENSKI, qui veut bien nous permettre de lui rendre ici, en le nommant, un témoignage public de reconnaissance: c'est peut-être le plus modeste & le plus habile joüeur de harpe. Il y joint la connaissance de la plus profonde & brillante harmonie au goût noble d'un homme de qualité qui a bien profité d'une éducation proportionnée à sa haute naissance.* [*B*]

Translation:

HARP, (Hist. Anc. & Luthier.) [Ancient History, Luthier] Hoghenski, Cahusac (Page 8:56)

HARP, s. f. (Hist. Anc. & Luthier.) Musical instrument. Its origin is very ancient; David played upon it to sing the Lord's praises, and the melodious sounds that he made prevented Saul to be tormented by the devil. The harp of the prophet-king was not that of today; he might have been dancing in front of the ark playing this instrument. It is not known what was the harp of David, and who was the inventor of it. The names of the inventors of useful or agreeable things are almost always buried in the darkness of time, less due to the writings of those who want to keep these names for posterity being lost, because the greatest part of our inventions

are the work not of a man but of men. Therefore, it is quite natural to think that those who came after, pressed by the same needs & excited by the same passions, have not failed to perfect what was at first imperfectly drafted, and which do not yet merit the name of the invention.

It is apparent that the harp was born, as well as all the instruments of Music, in times of abundance and of joy, where she is the result of research of some speculative lover of Music.

This instrument (Plate of Luthier) consists of three main parts: 1. a box *A* made of wood light and sound; 2 °. a support *B*, solid when the harp is simple, but hollow when the harp is organised; 3 °. a strip *C* of pins to attach the strings that are held at the other end, at the table or upper part of the soundbox. This band also contains some hooks *d*, that can move forward and backward, to make the sharps. It is obliged, to make these notes on the harp, by pressing on one of these hooks with the left hand, until it touches the string; which is shortened by a sixteenth part of its length, and makes the sound rise by a semi-tone, but it was wieldy. To let one hear, the readers should know that to vibrate the strings of this instrument, one plucks with the fingers; right hand usually plays above, and left accompanies: thus in places where there are sharps one is obliged to leave the upper alone, since the hand which ought to accompany, moves the hooks. To remedy this imperfection, pedals are added to this instrument; and then it is said to be organised. We will reveal the art with which these pedals are made; then we will explain their mechanism: in order not to confuse the drawing, we will trace one of the pedals; the reader will supply easily the others; it is sufficient to know that there must be as many as the notes in the octave, that is to say seven. *E F* is a lever which supports, *G* is a cover that holds down *M N* to the base of the soundbox. This lever communicates with another *F I*, which supports H which is a cover that holds it down to the same base. At the extremity *I* attached to a brass ire *I O*, about a line in diameter, which holds the end of *O* to the arm the *O P* to the cast lever *O P Q*. At the tip of *Q*, held by a small single hinge, a thin iron blade that attaches to the same compound lever of *R S T*, therefore a part of *S T*, which is nearly perpendicular to the thin blade *Q R*, is the end of one of the sharp hooks: a similar blade holds the same to point *R*, and communicates with a lever similar to the previous; and so on. The point *V* of the last compound lever is attached still by an iron blade to a spring *X* rolled in a spiral; and that is the assembly of all the parts that make up a pedal on this instrument. We now come to his playing, I said to his playing, because one cannot explain the mechanism of one, at the same time as explaining the others.

If one puts the foot on the arm *E G* to lever *E H* , which I assume to be the pedal *C*, the tip of *I* will descend, as will the extremity *O*; then the tips of *R Y Z*, etc. the compound levers make an arch approaching the head of the harp; and the end *S T* of the hooks emerge in front *A* of the strip, where they re-enter with respect to the front *W*: then the hooks *D* are mounted with screws at their ends, in a way that they touch all the strings *C*, those which instead of vibrating from the table to the obstacle 2, they vibrate from the table to the obstacles 3, that is to say they will be shortened by the section 3, 2, which is equal to one sixteenth of the entire

string, but the tension remains the same, if a chord is shortened, it should make a new sound which ought to be the first reciprocal to the lengths of the strings. By this supposition, the string is shortened by a sixteenth; therefore the first sound is the second as 15 is to 16, that is to say the last is higher than the other major semitones; but the first by hypothesis *C* natural; so the second is *C* sharp: & this is what he had to explain.

By ceasing to press the foot on the pedal, the spiral spring, which the pressure of the foot had forced to bend it, returns, and re-establishes, things how they were apparently before. But if there are sharps throughout the piece, for example, if the note *C* is everywhere sharp, when we have lowered the pedal, not to be obliged to have always the foot placed above, it will push it to the side. To favour this movement, the lever *E F* is broken at *K*; in a way that the part *E K* can move horizontally around the point *K*, but only to one side: being pushed, as we have said, the pedal will not go back up, due to meeting the pin *L*, placed on purpose at this place: by this means, all *C* will be sharp; & the foot there will be free to make the sharp accidentals are met during the piece.

To prevent that the bottom of the pedals are not destroyed by moisture, by dust, or by the shock of some other foreign bodies, one fits a double base *4, 5*, on the *harp*, and wraps between a light strip of wood, or for the continuity of the lateral sides of the soundbox, leaving small windows for the ends of the pedals to pass through. Finally, one covers the support *B*, as well as the front of the strip *C*, one and the other with a thin board, to ensure against injury to each piece contained in its inside.

It leaves us just to say why the strip *C* is bent inside, and why the sound is bigger nearer the bass. 1. Those who play this instrument will notice, when the strip *C* is straight, that although the thinner strings are much shorter than the bigger ones, however, they constantly break more often than the others: hence it can be concluded that it is necessary to give them more resistance, to shorten is advantageous; & this is made by bending the cross. 2 °. As the small strings are attached to the top of the soundbox, and the large ones towards the bottom, and the sounds that they render here are with more intensity than the sounds that are made there; it was necessary to make the widest & strongest box possible where the biggest strings are attached, than those where the smaller ones are attached: so that there would be an inertia on the wood of the soundbox proportional to the intensity of sounds, and the volume of stale air, the same which surrounds the immediate box, is in a kind of proportion to the strength of these sounds. The best *harp* no-doubt would be one where the strength of sound would be in equilibrium with the corresponding parts of the soundbox.

This instrument renders soft sounds and harmonious; it is very touching & more appropriate in expressing tenderness & pain, than the other affections of the soul. The strings of the *harp* ought to be touched with care; otherwise, they render sounds that are confusing, as made on the harpsichord, when the vibrations of the strings are not stopped by an obstacle. Finally, I will say at the end, that the Irish are above all the people who play this instrument the best. *This article was given*

by Count HOGHENSKI, who wants to help us make it here, naming it, a public testimony of gratitude: this is perhaps the most modest & most skilful player of the harp. He joins the knowledge of the profoundest & brilliant harmony with noble taste of a man of quality who enjoyed a proportionate education suitable to his noble birth. [*B*]

I.4.2 LUTHERIE. | Seconde suite. | PLANCHE XVIII

La vignette représente l'attelier d'un Luthier, où sont plusieurs compagnons occupés à différens objets de cet Art.

Fig. 1. Compagnon qui rabote la table d'un instrument placée sur l'établi.

2. Compagnon occupé à faire la console d'une harpe. On voit qu'il perce les trous des chevilles.
3. Compagnon qui acheve un violon.
4. Autre compagnon qui vernit le bras & la console d'une harpe organisée. Le bras est enté pour la commodité de l'ouvrier sur un bâton à pié que l'on voit en a. On voit en b un corps de basse qui vient d'être collé, & qui est pressé par des happes à vis jusqu'à ce qu'il soit sec.
5. Corps sonore d'une harpe détaché du bras & de la console, que l'ouvrier fig. 4. vernis. c la table du corps sonore. d le crampon de fer qui unit le bras au corps sonore. e deux pitons ou chevilles de fer qui unissent la console au corps de la harpe.
6. Harpe organisée montée & toute finie.
7. f: Vielle en luth toute finie. g: l'étui de la vielle. Le surplus de l'attelier contient différens instrumens à cordes & à vent.

Translation

PLATE XVIII.

This drawing represents the atelier of a Luthier, where several companions are busy with different items of this Art.

Fig. 1. A Companion who planes the table of an instrument placed on the workbench.

2. A Companion busy making the neck of a harp. One sees that he pierces the holes for the pins.
3. A Companion that completes a violin.
4. Another companion who varnishes the arm & the neck of an organised harp. The arm is grafted for the convenience of the worker on a walking stick that one can see in "a". One can see in "b" the body of a bass that has to be glued, and which is pressed by the screw clamps until it is dry.
5. Soundbox of harp detached from the arm and the neck, the worker fig. 4. varnishes. "c" soundboard. "d" iron clamp that connects the arm to the soundbox. "e" two plugs or iron pins that link the neck to the soundbox.

6 Organised harp assembled and completely finished.

7. Hurdy-gurdy completely finished. "g" the case of an old hurdy-gurdy. The remains of the atelier containing different stringed and wind instruments.

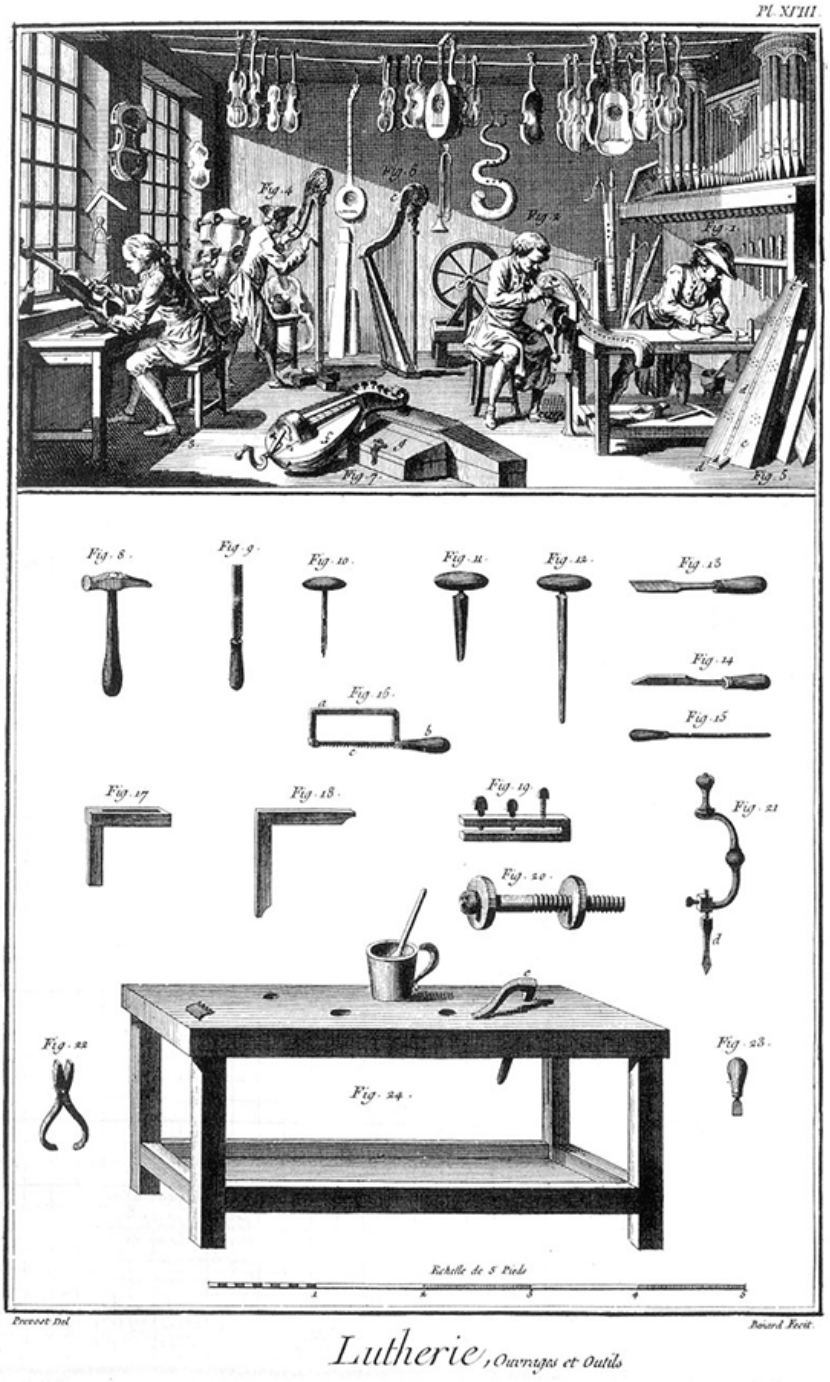


Figure I.1: Diderot, *Encyclopédie*, Planches XVIII.

I.4.3 LUTHERIE. | Seconde suite. | PLANCHE XIX

Harpe organisée

L'Antiquité la plus reculée fait mention de la harpe, comme d'un instrument supérieur aux autres à tous égards. L'Histoire sacrée en fait l'instrument favori du fameux prophete roi; & les Hébreux de ce tems le connoissoient sous les noms de nable, cythare ou hazur, & de kinnor qui avoit alors la forme d'un triangle acutangle ou d'un Δ, portant simplement neuf cordes. Les Grecs, c'est - à - dire les Syriens, les Phrygiens (Mém. des Insc. T. IV. p. 126.) l'employerent sous le nom de trigonon, à cause de sa figure, & le monterent d'un plus grand nombre de cordes, lesquelles étoient relatives à leur systême de musique. Voyez Lyre, Systeme, Echelle ou Gamme. Ensuite les Celtes, peres des Gaulois & des Germains, ainsi que les Anglo - Saxons, se distinguerent par leur goût pour la Musique, & principalement par la maniere de pincer cet instrument; & si pendant plusieurs siecles écoulés la harpe paroît avoir été oubliée, elle a cela de commun avec tous les Arts en général, qui n'ont repris vigueur qu'après la renaissance des Lettres. Il étoit enfin réservé à nos jours de voir cet instrument porté à un degré de perfection qu'il n'a jamais pu avoir. C'est par cette raison que nous croyons nécessaire de nous étendre ici un peu, tant sur sa construction, son méchanisme, que sur son étendue & sur la maniere de le pincer. Nous pensons d'autant mieux encore le devoir faire, que cet instrument auquel nul autre n'est comparable, est le seul aujourd'hui qui triomphe à juste titre, & qui devient l'objet de l'amusement d'un sexe né sensible, qui, loin de se refuser aux émotions que la harpe sait exciter dans nos ames par la douceur de son harmonie & la suavité de ses sons, lui prête encore des secours favorables, afin d'en augmenter le charme.

Description abrégée de la Harpe organisée.

Cet instrument haut environ de quatre piés, est de la figure à - peu - près d'un triangle scalene, c'est - à - dire à trois côtés inégaux. La harpe est composée de trois parties. Le corps principal, celui qui réfléchit le son des cordes, & qu'on appelle par cette raison le corps sonore, se construit de huit pans de bois assemblés & collés les uns près des autres, sur lesquels la table est posée. Cette table est de sapin, & a six ouies ou ouvertures faites en forme de treffle, de rosette ou autrement. Le corps supérieur qu'on appelle en Allemagne clavier & en France console, à cause de sa figure, est percé d'autant de trous, & porte autant de chevilles de fer qu'il y a de cordes; & le troisieme corps appellé bras, qui n'est considéré, relativement à la construction de la harpe, que comme un arcboutant nécessaire au soutien des autres corps, renferme intérieurement sept tringles mobiles correspondantes à autant de ressorts pratiqués dans le clavier, lesquelles sont dirigées dans l'angle le plus aigu, ou le pié de l'instrument, par des leviers attenant à sept pédales de fer destinées à l'action des piés. Par ce mouvement méchanique les ressorts agissent dans le clavier & font mouvoir des crochets par le moyen desquels les cordes sont attirées & fixées sur de petits sillets, en sorte que par la distance proportionnée de ces sillets aux chevilles, les cordes de même nom, octaves les unes des autres, & par ce moyen raccourcies d'un seizieme de leur longueur, deviennent plus aiguës, lorsqu'on les

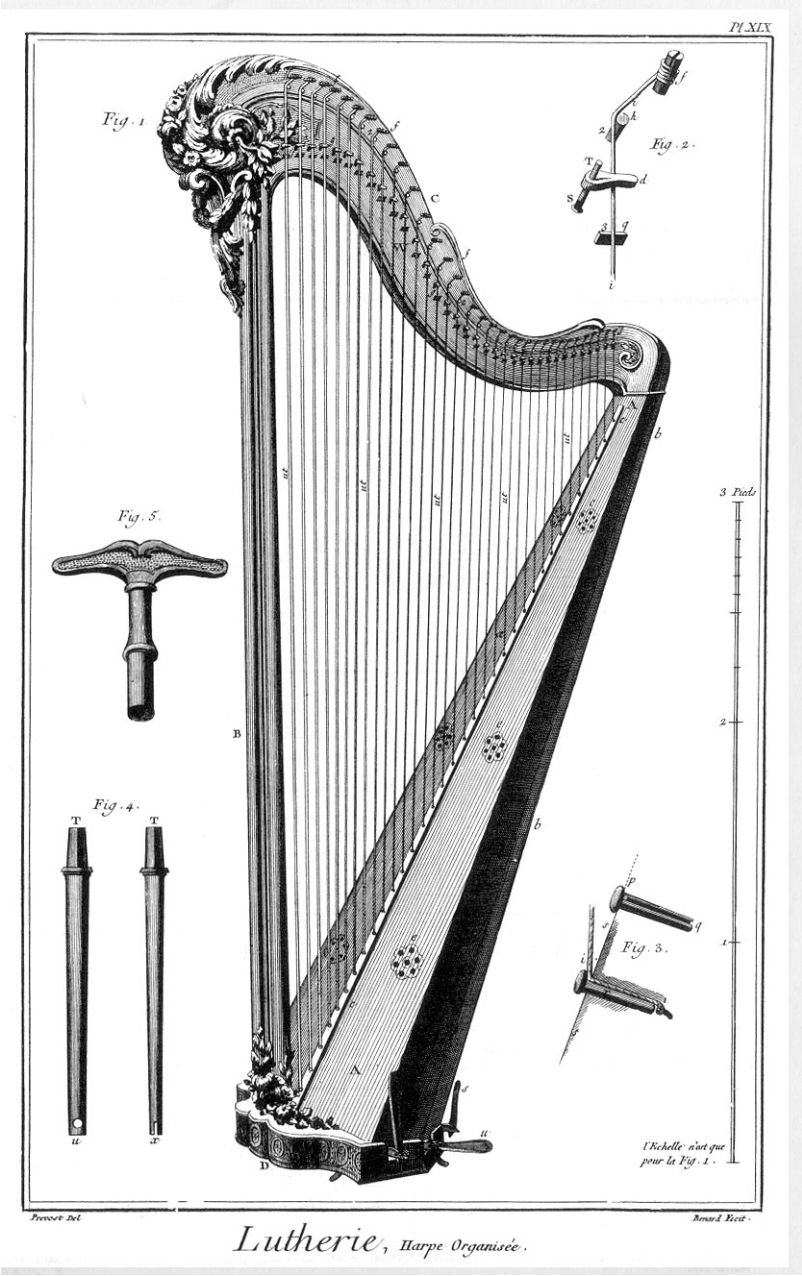


Figure I.2: Diderot, *Encyclopédie*, Planches XIX.

pince; delà les demi - tons. Ce méchanisme très - ingénieux a été inventé, afin de rendre cet instrument susceptible de toutes les modulations possibles.

Les harpes organisées ont à - peu - près l'étendue d'un clavecin à grand ravalement; elles sont montées ordinairement de 33 ou de 35 cordes diversement colorées, dont la plus grave est à l'unisson du premier si bémol des basses du grand clavier, & la plus aiguë à l'unisson du dernier fa ou du dernier la dans les dessus, c'est ce qu'indiquent dans la table générale du rapport de l'étendue des voix & des instrumens comparés au clavecin, Pl. XVIII. les nombres 33 & 1, termes extrêmes qui renfermant tous les intermédiaires, répondent aux autres cordes. Quelques harpes ont une corde au grave de plus, laquelle répond au la des basses du clavier: c'est ce qu'on indique dans la même table par une astérique; d'ailleurs cette addition n'est pas générale. Quant à la diversité des couleurs qui regne entre ces cordes, elle est telle que toutes les cordes qui sonnent l'ut, sont rouges, & que toutes celles qui sonnent le fa, sont bleues; les autres restent blanches c'est - à - dire de la couleur qui leur est naturelle.

Ce qui devient une autorité de plus pour l'opinion que cet instrument étoit en usage chez les Grecs; car ceux qu'ils employoient, comme nous l'avons déjà dit, sous le nom de trigonon & de simichon, étoient montés du tems de Timothée le Milésien selon son systême, c'est - à - dire chromatiquement, & les cordes répondoient aux caracteres peints colorés ou marqués, du mot chroma. Or ce systême portoit donc alors les cordes appellées mobiles de différentes couleurs; celui de la harpe détermine exactement ces mêmes cordes de quatre en quatre, donc il ne differe aucunement à cet égard de l'ancien systême des Grecs. Ainsi, puisque les ut & les fa, appellés chez ces peuples hypaton chromatiqué, meson chromatiqué, synemmenon chromatiqué, diezeugmenon chromatiqué, hyperboleon chromatiqué, sont encore les mêmes cordes chromatiques ou colorées qui subsistent actuellement dans la harpe, cela sert à prouver plutôt l'ancienneté de cet instrument, que les moyens d'en faciliter la pratique, ainsi que le prétendent la plupart; car il importeroit fort peu d'ailleurs, pour l'exercice des doigts, que ces cordes fussent d'une seule couleur, ou qu'elles le fussent de plusieurs. Ne voit on pas même encore des claviers d'orgue & de clavecin, dont les touches ou marches sont aux uns de couleurs opposées à la couleur de celles des autres? Ce qui sert à prouver qu'il y a dans ce fait plus d'arbitraire que de nécessité.

L'accord général & diatonique de toutes les cordes à vuide de cet instrument est toujours dans le ton de b - fasi bémol, comme celui qui est le plus commode, eu égard à la fonction des pédales, qui est de hausser toutes les cordes au moyen desquelles tous les si & les mi bémols deviennent naturels, & montent la harpe au ton de C - sol - ut, lorsqu'il s'agit de jouer dans ce ton, & ainsi du reste à l'égard des autres tons, quand il est nécessaire. La maniere d'accorder la harpe, est la même que celle dont on use pour accorder les clavecins, c'est - à - dire en altérant un peu chaque quinte jusqu'à ce que la derniere se trouve naturellement d'accord d'elle - même. Voyez Partition, Tempérament. Ainsi par ce moyen & celui des sept pédales, la harpe se trouve exactement accordée relativement à tous les sons ou modes possibles.

La harpe se pince des deux mains; la main gauche est principalement destinée aux basses, & la droite aux dessus. On tient cet instrument entre les jambes, le corps sonore appuyé contre l'épaule droite, pour avoir la facilité d'agir de l'un & de l'autre côté, en observant toujours de pincer les cordes le plus près possible de la table, afin que les sons en soient plus moelleux, plus suaves.

Quant aux sept pédales, il y en a trois du côté du pié gauche, & quatre du côté du pié droit: les trois premieres portent le nom de pédales de si, d'ut, de re; les quatre dernieres, celui de pédales de mi, de fa, de sol, & de la, du nom des cordes qu'elles alterent, & leur effet est tel qu'on le voit indiqué, Pl. XVIII. dans les cellules qui répondent au clavier par les trois lettres droites & les quatre penchées de la premiere octave au grave qui fait mouvoir en même tems les trois autres octaves à l'aigu, désignées par des petites lettres & des points correspondans.

Voici maintenant le développement de toutes les parties qui composent la harpe organisée. Description de toutes les parties qui composent la Harpe organisée.

Fig. 1. Pl. XIX. A a b le corps sonore de la harpe, creux en dedans. A a la table. c c la bande où sont attachées toutes les cordes par le moyen d'autant de petits boutons. e e e les ouies. b le dos de la harpe.

B le bras ou montant, creux en dedans. Lorsque les harpes sont simples, c'est - à - dire sans pédales, & qu'on appelle petites harpes, ce bras est plein.

C console garnie de chevilles, sur lesquelles s'attachent toutes les cordes. f f f les chevilles qui tendent les cordes. g g crochets ou sabots, qui en pinçant les cordes, rendent les sons diesés ou bémols. Voyez la fig. 2.

D pié de la harpe, ou cuvette. s, u, r sont des pédales si, ut, re. Pour se servir des pédales, on les abaisse comme celle marquée u. Il y en a quatre autres de l'autre côté de cet instrument que l'on ne peut pas voir ici, & ces sept pédales répondent à sept tringles de fil d'archal renfermées dans le bras B, & montent jusqu'en haut; ces tringles correspondent à sept ressorts qui sont renfermés dans la console C, & qui font mouvoir les crochets d d. On verra dans la Planche suivante le méchanisme des pédales développé en grand, afin de le faire mieux sentir.

La harpe que nous représentons ici, a 35 cordes. Les deux premieres grosses cordes & les trois dernieres petites ne sont pas diesées ici, c'est - à - dire qu'il n'y a point de pédales pour elles, attendu que l'usage en est très - rare, par rapport à la plupart des pieces de musique destinées pour cet instrument.

Le nombre des cordes est assez arbitraire dans les harpes. On peut monter ces instrumens depuis 30 cordes jusqu'à 36 ou 37, cela ne dépend que de celui qui les fait faire. On est dans l'usage, pour la facilité de jouer, suivant l'opinion commune, de teindre en rouge toutes les cordes ut, & en bleu toutes les cordes fa, & les autres à l'ordinaire. Voyez ce qui vient d'être dit plus haut à ce sujet.

2. Chaque corde est fixée par son extrémité inférieure sur la table par le moyen des boutons, voyez fig. 3. & son extrémité supérieure répond à une cheville qui traverse toute l'épaisseur de la console, & dont on ne voit ici que le bout f.

Cette cheville sert à tendre la corde. h, 2 est le porte - corde qui est un piton de cuivre; c'est entre le porte-corde & l'attachement inférieur que se fait la vibration de la corde i, i. q est un sillet de cuivre placé sous chaque corde à une distance 2, 3 donnée du porte - corde. Cette distance fait la seizieme partie de toute la longueur de la corde, prise depuis son attachement inférieur jusqu'au porte-corde h.

S T d le crochet. S T la queue de fer terminée en vis. d le sabot de cuivre vissé sur sa queue. Lorsque la queue est mue par une pédale, son mouvement est de reculer de T en S, alors le sabot venant à rencontrer la corde i i, il la serre de maniere qu'- elle vient s'appuyer sur le sillet q, & la vibration de la corde se trouvant alors interceptée au point 3, lequel détermine la seizieme partie de la longueur de la corde, le son qu'elle rend, se trouve par ce moyen élevé d'un demi - ton, c'est - à dire que d'ut naturel, par exemple, qu'il étoit, il devient ut diese, & ainsi de tous ceux qui lui sont correspondans.

3. p, q, r boutons qui entrent juste dans les trous dont la bande de la table est percée. Chaque bouton a une rainure p q dans toute sa longueur; cette rainure sert à loger la corde comme on le voit en i, r, i, on fait un noeud au bout de la corde, & on introduit le bouton dans le trou jusqu'à ce que sa tête affleure la bande représentée ici par la ligne s s.
4. La cheville de fer pour tendre les cordes. T u chevilles pour les sept ou huit premieres grosses cordes; à l'extrémité u est un oeil pour passer la corde. T x chevilles pour les moyennes & petites cordes. L'extrémité x est une rainure dans laquelle on fait entrer la corde, afin de la fixer.
5. Clé ou accordoir pour tourner les chevilles, monter les cordes, & mettre l'instrument d'accord.

On a représenté les fig. 2, 3, 4 & 5 de grandeur naturelle.

TRANSLATION

PLATE XIX.

The remotest antiquity mentions the harp, as a superior instrument to others in all respects. The sacred history makes it the favourite instrument of the famous prophet king; & The Jews of that time knew it under the names of nable, cythare or Hazur, & the kinnor which had then the form of an acute triangle or Δ, with just nine strings. The Greeks, that is to say the Syrians, the Phrygians (Memory of Inscriptions T. IV p 126.) used it under the name trigonon, because of its shape, and mounted it with more strings, those which were relevant to their system of music. See Lyre, System, Scale or Range. Then the Celts, fathers of the Gauls & of the Germans, also of the Anglo-Saxons, distinguished themselves by their musical taste, and mainly by the way of plucking this instrument; & so for several centuries the schools of harp appeared to have been forgotten, it has this in common with all the arts in general, which have been revived with vigour after the revival of letters. It finally was reserved to our times the duty to lead this instrument to a degree of perfection that it never had. It is for this reason that we believe it necessary for us to understand here a little, both on its construction, its mechanism, as to its

scope & on the way to pluck it. We think even more that the duty to be done, as this instrument which no other compares to it, is the only one today who rightly triumphs, and who becomes the object of amusement of a gender sensitive born, whom, far from denying the emotions that the harp knows how to excite in our souls by its gentle harmony & the suavity of its sounds, yet lends favourable relief, in order to increase the charm.

Short description of the organised Harp.

This instrument height approximately four feet, has the shape a little, almost a scalene triangle, that is to say three unequal sides. The harp is composed of three parts. The main body, one that reflects the sounds of the strings, and it is called for this reason the soundbox, built of eight timber frames assembled & pasted one next to the other, on which the table is laid. This table is made of fir, and has six vents or openings made in the shape of clover, rosette or something else. The upper body is called in German the keyboard & in France the neck, due to its shape, is pierced with many holes, and as much iron pins as there are strings; & the third body is called the arm, which is not considered, for the construction of the harp, more than a necessary buttress to support other parts, to enclose internally the seven mobile rods that correspond to the springs on the keyboard, those which are placed in the most acute of angles, or by the foot of the instrument, by levers which link to the seven iron pedals made for the action of the feet. By this mechanical movement the springs act on the keyboard & move the hooks by means of which the strings are drawn & fixed on small nuts, so that by the distance of these nuts with respect to the pins, the strings of the same name, octaves from one to another, and thereby shortened to one sixteenth of their length become more acute when they are plucked; hence the half-tones. This mechanism, very ingenious was invented, in order to make this instrument playable to all modulations possible.

The organised harps have closely the compass of the big harpsichord; they are usually mounted with 33 or 35 differently coloured strings, therefore the lowest is in unison with the first B-flat of the bass of a great keyboard, and most acute in unison with the last F or the last A on high, this is what is indicated in the general table with respect to the compass of the voices & instruments like the harpsichord, Plate XVIII. numbers 33 & 1, terms for the extremities that contain all the intermediaries, referring to the other strings. Some harps have a string that is lower, which corresponds to the low A of the bass of the keyboard: this is indicated on the same table by an asterisk; besides this addition, it is not usual. As for the diversity of colours that reign between those strings, it is such that all the strings that sound as C, are red, and that all those who sound as F, are blue; the others remain white, that is to say the colour that is natural for them.

For those who want to become more knowledgeable regarding the opinion that this instrument was in use among the Greeks; because those they employed, as we have already said, under the name of trigonon & of simichon, were mounted in the time of Timothy the Miletus only with his system, that is to say chromatically, and the strings answered to the colourful characters painted or marked, to the word chroma. However, when this system used therefore the strings called mobile

with different colours; it was the harp that determines exactly the same string of four on four, so it does not differ in this respect from the old system of the Greeks. Thus, since the C & F, referred to among these people as hypaton as chromatic, meson chromatic, synemmenon chromatic, diezeugmenon chromatic, hyperboleon colour, are still the same chromatic coloured strings that currently exist on the harp, this serves to prove rather the age of the instrument, rather the means to facilitate the practice, as claimed by most; because little else matters, to exercise the fingers, these strings were of one colour, or that they were of several. Do we not even see the same on keyboards of organs & harpsichords, whose keys are one of the opposite colour to the colour of those others? This serves to prove that there is in this fact more arbitrariness than necessity.

The general tuning and diatonic for all the empty strings of this instrument is always in the key of B-flat, as that is most convenient, considering the function of the pedals, which is to raise all the strings by which all the B and the E flats become natural, and setting-up the harp in the key of C, when it comes to playing in that key, and so forth with respect to the other keys, when it is necessary. The manner of tuning the harp is the same as that which we use to tune the harpsichords, that is to say, by altering slightly each fifth until the last is found naturally to agree with itself. See Score, Temperament. And by this means and that of the seven pedals, the harp is exactly tuned with respect to any sound or potential modes.

The harp is plucked with both hands; the left hand is primarily for bass, and the right for above. We take this instrument between the legs, the soundbox leaning against the right shoulder, to have the facility to move from one side to the other side, observing always to pluck the strings as close to the table as possible, so that the sounds are softer, more sweet.

As for the seven pedals, there are three on the side of the left foot, and four on the side of right foot: the first three are called pedal B, C, D; the last four, those pedals are E, E, G, and A, the names of the strings that alter, and their effect is as seen above, Pl. XVIII. in which that those correspond to the keyboard by the three right letters & the working four of the first octave in the bass that move at the same time the other three octaves on high, denoted by the small letters & corresponding dots.

Here now is the development of all the parts that make up the organised harp. Description of all the parts that make up the organised Harp.

Fig. 1. Pl. XIX. Ab: The soundbox of the harp, hollow inside. Aa: The table. cc: The strip where all the strings are attached by means of as many small buttons. eee: The f-holes. b: the back of the harp.

B: The arm or support, hollow inside. When harps are simple, that is to say without pedals, and they are called small harps, the support is solid.

C: neck with fitted with pins which the strings are attached to. fff: the pins that hold the strings. gg: hooks or clogs that by plucking the strings, render the sounds sharp or flat. See Fig. 2.

D: foot of the harp, pedalbox. s, u, r are the pedals B, C, D. To use the pedals,

one lowers them as marked “u”. There are four others on the other side of this instrument that you can not see here, and these seven pedals correspond to seven brass wire rods of archal enclosed in arm B, and rise up to the top; these rods correspond to seven springs that are contained in the console C, and which move the hooks dd. We will see in the next Plate the pedal mechanism developed on a larger scale, in order to understand better.

The harp that we represent here, has 35 strings. The first two thick strings & the last three are not small sharpened here, that is to say that there are no pedals for them, since its use is very - rare compared to most musical pieces intended for this instrument.

The number of strings is quite arbitrary on these harps. You can string these instruments from 30 up to 36 or 37 strings, it just depends on who makes them. It is usual, for ease of playing, according to common opinion, to have all C strings dyed red, and every F string blue, and others as usual. See what has been said above about this above.

2. Each string is fixed on its lower end on the table by means of buttons, see Fig. 3. & its upper end meets a peg which traverses the entire thickness of the neck, and of which we can see here that the end f. This peg is used to tighten the string. h, 2 is the holder of the string that is a copper peg; it is between the holder of the string & lower attachment that is the vibration of the string i, i. q is a copper nut placed under each string at a distance 2, 3 shows the holder of the string. This distance is a sixteenth of the entire length of the string, taken from its lower attachment to the holder of the string h.

S T the hook. S T iron tail ended in screws. d the clogs of copper screwed on the tail. When the tail is driven by a pedal, the movement backs up on T S, then the clog comes to meet the string, i i, it is closed like this - it comes to press on the nut q, & the vibration of the string finds itself intercepted at point 3, which determines the sixteenth part of the length of the string, the sound it makes, is found in this way to be raised by a semitone, that is to say - C natural, for example, which it was, becomes C sharp, and so all those corresponding to it.

3. p, q, r buttons that just fall into the holes of which the band of the table that is pierced. Each button has a groove p q in its entire length; this groove serves to lodge the string as seen in i, r, i, one makes a knot at the end of the string, and introduces the button in the hole until its head is flush with the band represented here by the line s s.
4. The iron peg to tighten the strings. T u pins for the first seven or eight thick strings; at the extremity of “u” is an eye for passing the strings. T x pins for the medium & small strings. The extremity “x” is a groove in which the strings enter to be secured.
5. Key or tuning key to rotate the pegs, hold the strings, and put the instrument in tune.

The figures 2, 3, 4 & 5 represent the real size.

I.4.4 LUTHERIE. | Seconde suite. | PLANCHE XX

Développement & détail des pédales.

Fig. 1. A le plateau au fond du corps sonore vu par dessous, sur lequel sont attachés tous les leviers des pédales si, ut, re; mi, fa, sol, la.

E F levier qui a son point d'appui dans une châpe G. Ce levier est brisé au point K & au point M, com - me on peut le voir dans les fig. 4 & 5.

F I autre levier qui communique son mouvement à une des tringles montantes dans le bras de la harpe. H est une châpe qui sert de point d'appui à ce levier. L est une cheville dont on verra l'usage fig. 3. M est le point où le bras E peut se relever perpendiculairement, comme on le voit fig. 5.

B platine de fer, sur laquelle sont rivées toutes les châpes H des pédales; cette platine tient au plateau du fond A par des vis.

n, o, n crampon de fer qui passe dans l'épaisseur du plateau, & qui unit & assujettit le bras de la harpe au pié du corps sonore. n, n écroux qui serrent ce crampon. Voyez fig. 2.

C, C, les trois trous qui reçoivent les vis qui adaptent la cuvette ou double fond au pié de la harpe.

2. n, o, n crampon avec ses écroux p, p.
3. Une des pédales dans sa situation naturelle, le pié de la harpe étant supposé verticalement. A le plateau ou fond du corps sonore. b, b vis de la platine. g vis de la châpe G. B le bras de la harpe coupé verticalement. d D d la cuvette ou doule fond. E F levier qui a son point d'appui dans la châpe G. Lorsque l'on pose le pié sur le bras E, l'extrémité F fait remonter l'extrémité f du levier f I qui se meut dans sa châpe au point H, & le point I est forcé de descendre ainsi que l'extrémité O de la tringle I O qui répond au levier coudé O P Q, dont le point d'appui est en P; alors la branche P Q décrit l'arc du cercle Q r, en attirant à elle une autre tringle renfermée dans la console, comme on le verra dans la Planche suivante, fig. 1 & 2. On voit en M, K les points où le bras E F peut se briser, voyez fig. 4 & 5. L est la cheville sous laquelle on fait passer le bras E K, en le baissant jusqu'en y, afin que la note se soutienne toujours diésée, sans que le joueur soit obligé d'appuyer continuellement son pié sur la pédale; c'est ce qu'on appelle accrocher la pédale.
4. E K F le premier levier mû horisontalement autour du point K. M charniere verticale représentée dans la fig. suivante.
5. e m k bras du premier levier représenté relevé de m en e, & dans la situation où il doit être, lorsque l'on ne veut pas s'en servir. Voyez Pl. I. fig. 2. deux pédales r s relevées.
6. D cuvette ou double fond qui s'adapte au pié de la harpe par le moyen de trois vis dont on voit un des trous c. Voyez les trous correspondans C, C, C dans la fig. 1. r, r, r piés de fer qui servent à garantir le fond de la cuvette du frottement qu'il éprouveroit étant posé à terre. La cuvette a quatre piés

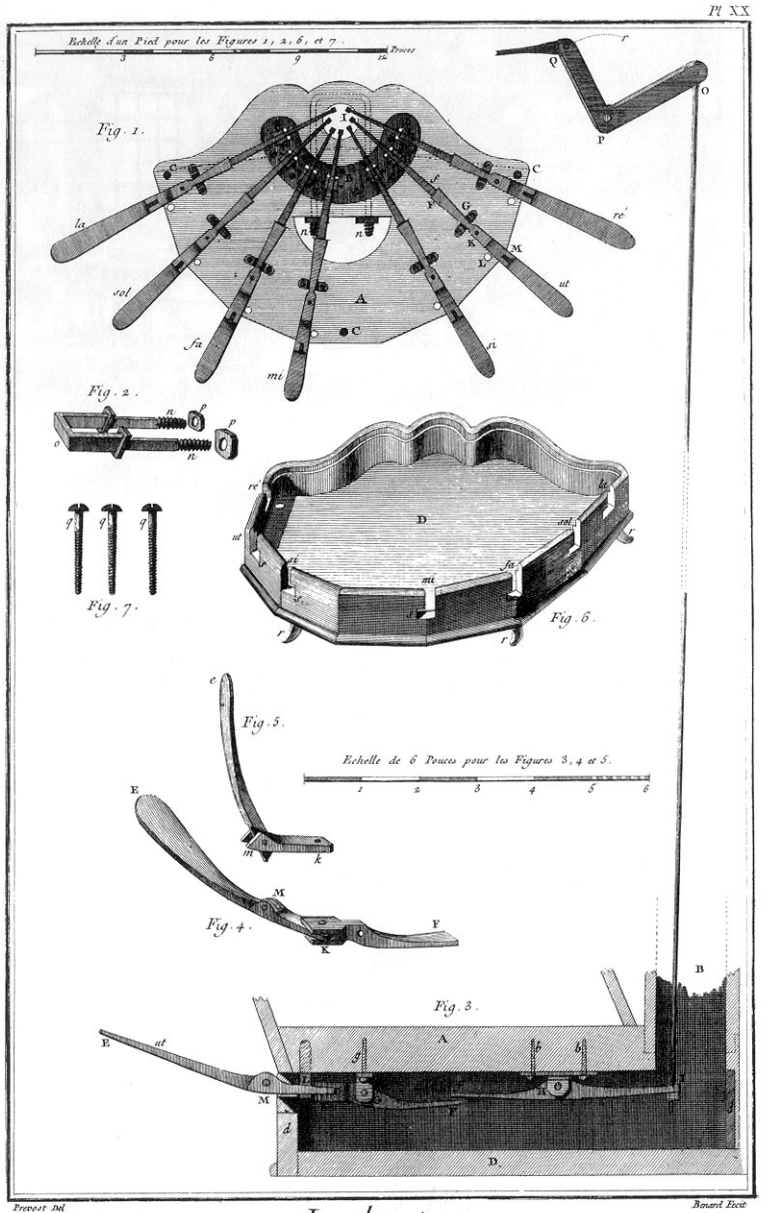


Figure I.3: Diderot, *Encyclopédie*, Planches XX.

de cette espece, dont on ne peut ici en représenter que trois. Sur les faces latérales du dos de la cuvette sont représentées sept ouvertures par lesquelles passent les queues des pédales si, ut, re; mi, fa, sol, la. Ces ouvertures se retournent d'équerre par en bas, comme on le voit en s, afin que la queue se loge sous le cran s, lorsque la pédale est accrochée.

7. q, q, q les vis de la cuvette.

I.4.5 LUTHERIE. | Seconde suite. | PLANCHE XXI

Console de la harpe; détail des leviers & des ressorts qu'elle renferme.

Fig. 1. A A console d'une harpe organisée ouverte pour laisser voir les tirans des crochets contenus dans sa boîte D. B le bras de la harpe supposé coupé verticalement dans la partie inférieure pour laisser voir les tringles I o qu'il renferme.

On a vu dans la fig. 3. de la Pl. précédente comment chaque tringle I o agit sur un levier coudé o p q. Il y a sept leviers coudés qui se joignent chacun par une rivure à charniere q à une mince lame de fer q 1, q 2, q 3, q 4, q 5, q 6, q7. Chacune des lames est un tiran qui s'unit dans toute sa longueur avec les leviers des crochets des cordes ut; le tiran 2 agit sur tous les leviers des cordes re, & ainsi des autres, parce qu'il y a sept tirans pour les sept cordes si, ut, re; mi, fa, sol, la. On peut voir en grand ce méchanisme dans la fig. suivante.

C le dedans du corps sonore que l'on suppose coupé verticalement. e, e, e les boutons qui attachent les cordes sur la table du corps. a a a les têtes des chevilles à tendre les cordes; & c'est de ce côté que se remonte l'instrument.

2. Q X un des tirans qui s'unit à charniere au point R avec un levier. R, r ce levier est fixé sur un arbre r Y qui se meut librement sur deux pivots. L'arbre a un bras Y Z qui reçoit en S la queue du crochet S T d. l, m, n, n les supports des arbres des leviers. o o les piés des supports qui sont rivés sur une platine de fer qu'on voit fig. 4.

T la queue du crochet. d le sabot qui se visse sur la queue. i, i la corde que l'on suppose être serrée par le crochet sur le sillet q.

3. D plan de la platine de fer qui s'adapte au fond de la boîte de la console par le moyen des vis e, e, e. On a supprimé ici tous les tirans qui sont dans la fig. 1. afin de laisser voir l'arrangement de chaque arbre avec son levier, qui répond à la queue du crochet qui est censé être de l'autre côté de la platine. r y, r y arbres. y s, y s leviers des queues des crochets. s, s, s, s trous par où passent les queues. 1, 2, 3, 4, 5, 6, 7, les ressorts qui ramenent les tirans, lorsque les piés du joueur n'appuient plus sur les pédales. Voyez ces ressorts, fig. 4.
4. Représentations en grand des ressorts. X ressort vu de côté, & qui est fixé sur un arbre z, autour duquel il se roule en spiral. Son extrémité V porte un crochet qui passe dans un oeil pratiqué à l'extrémité du tiran, & qui lui est propre. Voyez la fig. 2. où le tiran Q X est percé pour recevoir le crochet du ressort au point X. x, x le même ressort vu en dessus. u son crochet. y, y

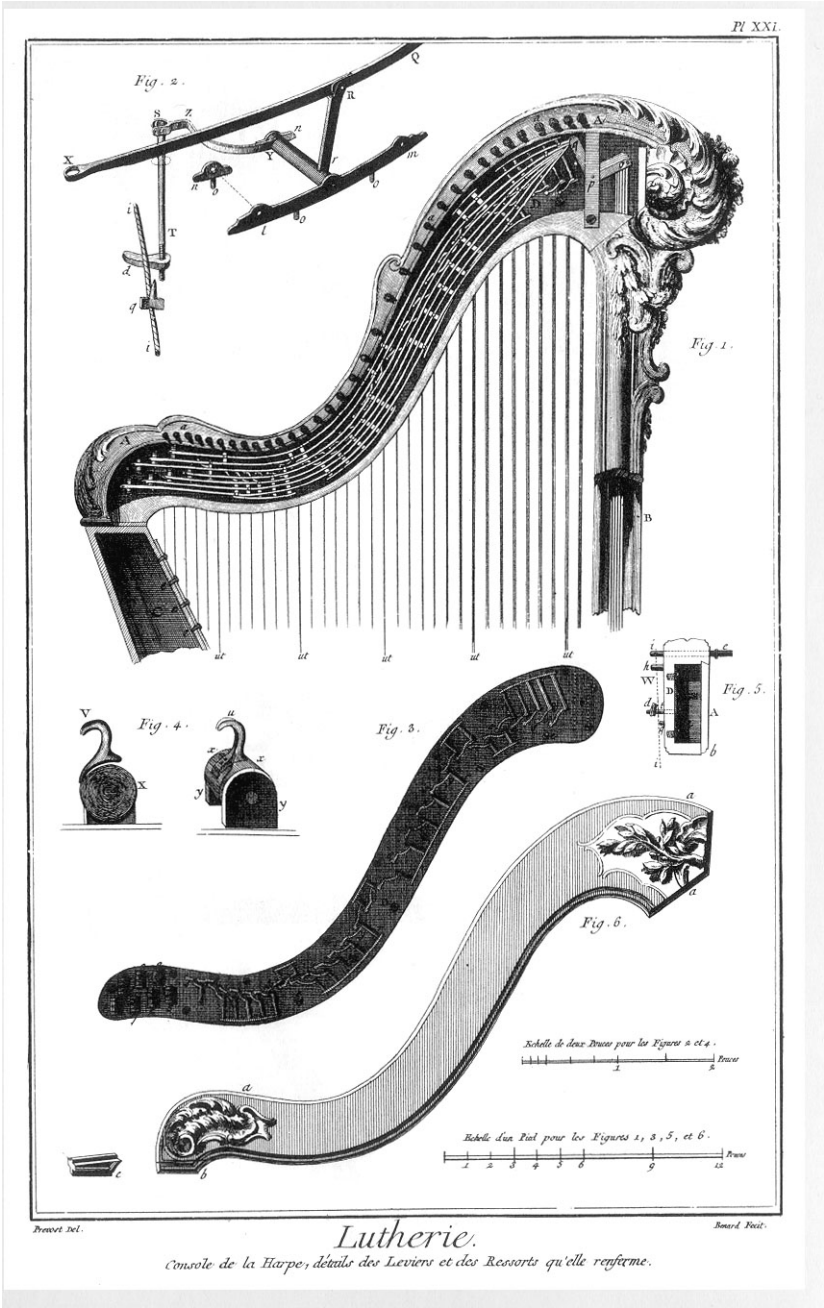


Figure I.4: Diderot, *Encyclopédie*, Planches XXI.

les supports sur lesquels l'arbre du ressort est rivé par ses extrémités. Les supports sont rivés sur la platine.

5. Console coupée sur son travers. W est le côté des cordes & des crochets. A est le côté qui contient les tirans. b porte de la boîte. c la profondeur de la boîte. D la platine. e, i la cheville qui tend la corde. i i la corde. h le porte - corde. t la queue du crochet. d le sabot. q le sillet.
6. Porte de la boîte de la console. Cette boîte est toujours fermée afin de garantir toutes les pieces qu'- elle contient de tout accident. a a languette ou chanfrein fort mince qui s'introduit dans une rainure pratiquée au haut de la boîte. b petite clé qui fait partie de la porte, & qui se met après coup pour assujettir la porte dans son lieu. c la clé vue séparément.

Les explications de ces dernieres Planches du méchanisme de la harpe ont été fournies par M. Prevost.

Appendix II

Jeu des pédales

If both feet and the seven pedals that alter the vibrating length of the strings are taken in consideration, a total of nineteen simple single-pedal moves and thirty-seven complex pedal moves are available to the harpist when playing the eighteenth century a harp with a single-action pedal mechanism.

The works by Spohr contain all the pedal moves, *Jeu des pédales*, listed below.[1] Sometimes two complex moves are combined together, but these rarely occur and are taken as special cases.[2] The number of possible pedal moves are indicated in brackets, when the various combinations of pedals is taken into consideration.

[1] Other moves may be possible, like the right foot moving the inner B pedal on the left-hand side of the harp, but this current research has identified these core thirty-seven complex pedal moves.

[2] An example can be found in Krumpholtz, Op. 2, *9ème Prélude*, bar 54-55 is a combination of moves 4 (i) and (viii).

1) **Simple single-pedalling (19)**
   i. One pedal at a time, one foot at a time: D, C, B, E, F, G, A.

   ii. Two pedals at a time, two feet: D/E, D/F, D/G, D/A, C/E, C/F, C/G, C/A, B/E, B/F, B/G, B/A. (12)
2) **Double-pedalling (D.P.)**
   2 pedals at a time, one foot, either left or right: D/C, C/B, E/F, F/G, G/A. (4)
3) **Double-pedalling, fold away G/C pedals, (D.P. G↑C↑)**
   2 pedals at a time, one foot: F/A, D/B. (2)
4) **Double-pedalling, fold away G/C pedals, two pedals at a time, heel and toe move independently.** Each combination has two solutions, one for the left foot and one for the right. (Total=20 moves)
   i. Press 2 pedals together, release heel while fixing toe.

   ii. Press 2 pedals together, release & depress heel, release together.

   iii. Press 2 pedals together, release heel & toe sep.

   iv. Press 2 pedals together, release toe & heel separately.

   v. Press toe, press heel, release together.

   vi. Press heel, press toe, release together.

   vii. Heel & toe independently. Press heel/toe, press toe/heel, release separately.

   viii. Press heel, release heel while pressing toe, release toe.

   ix. Press toe, release toe while pressing heel, release heel.

   x. Release 2 non-adjacent pedals from a fixed position.
5) **Left foot moves the E pedal on the right-hand side of the harp (LFoot).** (1)
6) **Triple-pedalling (T.P.)** (2)
7) **Pedal *glissando*** (7)[3]

[3] Pedal *glissandi* could occur with two feet together, adding an extra twelve pedal *glissandi* moves. An example of pedal *glissandi* with two feet at the same time can be found in Marin's *Sonatina III*, Op. 16, *Presto*, bars 92-93, fig. 4.18. Double-pedal *glissandi* with one foot are not included in this list.

Appendix III

Method for historical pedalling

For my teaching practice, I give this brief modern method as a hand-out to students when introducing historical pedalling on the *harpe organisée*. It is often a modern harpist's first encounter with historical pedal techniques. This method is based on the knowledge that I have gleaned from eighteenth- and nineteenth-century harp treatises, methods and repertoire. It is also based on my own experience and is devised as a pedagogical aid for pedal harpists.

For practical examples, I use the schemes on how to pedal in Krumpholtz's *Préludes*, Op. 2, which are found in section 5.4.

Modern pedal technique is broadly based on two underlying principles:
- The heels always remain on the floor[1] while the remaining part of the feet flex to move the pedals up and down.
- A maximum of two pedals can be moved at a time, one pedal by each foot. If the heel remains on the floor, this means the foot is parallel to the harp and pedals and the toe is used to move a pedal. This can only mean moving one pedal at a time with each foot.

Historical pedal technique
- Pedalling is always calm.[2]
- Pedals are moved with the whole foot (heel and toe) off the floor.
- Pedals are most often simply pressed down and released. Fixing a pedal into a pedal notch is a rare occurrence.
- Two or three pedals on one side of the harp can be moved together by placing the foot across the pedals, or certain pedals can be folded away, if not required,

[1] Kondonassis, *On Playing the Harp*, 22–23, Chapter on "Pedal Technique": "Your heels should always rest on the ground."

[2] Krumpholtz, *Principes*, 15: "éviter les mouvemens brusques".

enabling double-pedalling to be used more frequently.
- The heel and toe of both feet can move pedals independently by pivoting the foot.

Questions to consider:
- If my feet are off the floor, what consequences does this have to my sitting and playing position?
- Why are pedal markings extremely rare in eighteenth- and nineteenth century scores?

General considerations for historical pedalling
- "Base" set-up key of the harp.
- Position of the feet and sitting position.
- Enharmonics.
- Symbols, abbreviations, pedal markings.
- Double- and triple-pedalling.
- Pedal *glissandi*.
- *Pédale à renforcement*.[3]

III.1 Preparing for historical pedalling

III.1.1 Shoes

When playing a single-action harp for the first time or when playing an instrument that is new to you, shoes can often be an added hindrance. The first thing to do is to remove your shoes.

Having direct contact to the pedals with your feet can make you more sensitive to feel how each individual pedal works. Feet sizes, especially for women have increased over time; the pedals on a single-action harp were designed for smaller feet.[4]

The pedal mechanism on each harp may vary, the variants being:
- the length and width of the pedals.
- the pedal springs, making the pedals lighter or heavier to move. Each pedal can feel different, even on one harp.
- the depth of the pedal slot, from the upper position to the lower position.
- the height of the pedal slot from the floor

When wearing shoes, I would suggest ballet pumps or shoes with no heel, where the heel and toe are on the same plane. The heel and toe need to be on the same

[3] Only one harp is privately owned with a working 9th *sourdine* pedal. Additional 9th to 14 pedals are not taken into consideration, because these harps are not accessible for most harpists.

[4] Private email correspondence, June 26, 2016, with June Marion Swann MBE, British footwear historian, formerly the Keeper of the Boot and Shoe Collection at the Northampton Museum and Art Gallery in England. "Women's shoes 1760-1820 were on average English sizes 4 – 5, Paris points were sizes 36 –38, while men's shoes were on average 39-40/41."

horizontal plane so when the foot is placed across the pedals, two or three pedals can be pressed down with equal strength.[5]

Figure III.1: Showing the flex of the heel and toe.

III.1.2 Position of the feet

The most basic way of moving pedals is done by lifting the whole foot off the floor, the toe is placed on the pedal and then the pedal is pressed down and held until the music requires it to be released. This motion is a small movement, as the harp's pedals are approximately ten centimetres from the ground. When two or three pedals on the same side of the harp need to be moved, the foot, either the right or left, is placed across the pedals, perpendicular to the harp. This way the whole foot moves the pedals. Alternatively if the pedals are not adjacent, like the F and A pedals on the right of the harp and the B and D on the left, the toe moves the outermost pedals – the A and D – while the heel moves the inner pedals. When no pedal movement is required the feet can rest on the ground.

III.1.3 Sitting at the harp

How to sit at the harp can be very personal, depending on each harpist and on each harp. Historical drawings of harpists and their harp show that the harp is in an upright position, very close to the point of balance of the instrument, meaning that there is little weight on the harpist's shoulder or knees. Moving pedals with the whole foot also allows the harpist to chose a sitting position that is solely based on the ease of reaching the strings, rather than taking into account the necessity of keeping the heels firmly on the ground at all times. As this last requirement is often part of the modern double-action pedal technique, it sometimes implies a more reclined position of the harp.

[5]Adapted from "Experiment Shows: Walking Heel First More Efficient," Simba Tango, accessed November 30, 2015, http://simbatango.com/2010/02/16/ experiment- shows- walking- heel- first- more- efficient/.

III.1.4 The “base” set-up key

To fully exploit the complete range of pedal techniques possible on the harp, A-flat major is an optimal “base” set-up key and virtuoso pieces usually require this key. The harp repertoire with few modulations, hence single-pedalling, can be played with a “base” set-up of E-flat major. Before playing a piece, one needs to check which set-up key is required, looking out for scale-like passages where a certain pitch is indispensable and then deduce which enharmonics are possible and/or necessary. Sometimes other tunings are required like B-flat major for Mozart’s *Concertante a La Harpe, e Flauto*, K.299, or D-flat major for Spohr’s WoO 27 and WoO 28.

III.1.5 Pedal markings

Pedal markings are extremely rare in eighteenth-century harp scores, as opposed to modern day practices where published scores often come with pedal solutions already printed in the score. It is also common practice for any modern harpist to mark every pedal change in a score, if it is not done so already.

The lack of pedal markings on classical scores is due to several possible reasons. Much of the harp music that was published has few modulations, so the pedal solutions are apparent by simply reading and then playing the accidentals written in the score. It was not necessary to write “F♯” on the score if the F in the music has a sharp in front of it.

After playing hundreds of pieces on the single-action harp, it is my experience that most pedal movements can be deduced by the accidentals in the score and the harmony implied in the musical phrase.

It is advisable to try to **avoid writing in any pedals and to remember that the principal movements are pressing and releasing, with no pedals fixed in the notches.**

Sometimes it can be useful to write in a cautionary accidental before the note which has to be altered, as a way to show that that pedal needs to be pressed down or released, usually it is the releasing action that may not be clear from reading the score.

If pedal markings are unavoidable, it is advisable to try to write the pedal changes as in the eighteenth century and write in only the pedals that need to be fixed, like “fix A” in the score. It is also possible to invent one’s own system of symbols!

III.1.6 Enharmonics

Enharmonics are very important when playing the harp. The single-action harp has fourteen possible notes per octave. Depending on which notes are essential for a piece or movement of a piece, the other notes have to be played with their

enharmonic alternative. The music in the eighteenth- and nineteenth-century scores are invariably notated correctly according to the rules of harmony. It is up to the harpist to identify if the notated note must be played by a different string and using a different pedal.

The practice of notating the actual string that a harpist will pluck in a piece is common nowadays. This assists the harpist when reading and playing, but does not respect the rules of harmony in a piece and is rather a visual solution and not a musical solution.

Therefore, I recommend to **use the "Krumpholtz rule" of enharmonics**. According to Krumpholtz, when playing the harp in the "base" set-up key of E-flat major, every notated A♭ and D♭ are played with their enharmonic alternatives G♯ and C♯. This applies especially to eighteenth-century sonatas.

III.2 *Jeu des pédales*

Moving pedals, which is referred to as *jeu des pédales*, should always be a **calm experience**. The movements are gentle yet measured, even when the music is lively. Usually difficult passages in harp music are a combination of copious notes and changing accidentals. However, by using multi-pedalling techniques where the feet are positioned over two or more pedals, the result is that the hands are free to play dense passages, while the feet move **slowly and calmly**, avoiding any brusque movements, as according to Krumpholtz.[6]

Pedal movements are carried out as close as possible to the notated accidental in the score and released as quickly as possible afterwards, depending naturally on each individual musical situation. The feet move with the harmonic modulations with as little planning of pedal movements/solutions as possible. This may appear to augment the total amount of pedal movements in a piece, which is sometimes the case, but it makes pedalling an integral gestural component of the music. The total amount of pedal movements will invariably be less when double-pedalling techniques are incorporated.

Pedals can be practised alone, to learn the subtle movements of the toe and heel.

A total of nineteen simple single-pedal moves and thirty-seven complex pedal moves are available to the harpist when playing the eighteenth century harp. The works for the harp by Spohr contain all the pedal moves, *jeu des pédales*, listed below. Sometimes two complex moves are combined together, but these rarely occur and are taken as special cases.

[6] Ibid., 15: "éviter les mouvemens brusques".

III.2.1 Pressing and releasing pedals

This is the most common pedal movement. Simply press the pedal down, hold it down for the accidental notated in the music and then release as soon as possible afterwards. Pressing and releasing pedals makes less noise compared to fixing and unfixing pedals.

Abbreviations

DP: Double-pedalling-place foot across two pedals.
TP: Triple-pedalling–place foot across three pedals.
LFoot: Move the E pedal with the left foot.
G↑, C↑: Fold G or C pedal away.
G↓, C↓: unfold the G or C pedal.

III.2.2 Fixing and unfixing pedals

This occurs in two principal situations:
- Pedals are fixed or unfixed to establish the key of a piece or movement of a piece.
- Pedals are fixed, when the same foot is required to move another pedal in quick succession.

III.2.3 Single-pedalling

Simple single-pedalling (19)
- one pedal at a time, one foot at a time: D, C, B, E, F, G, A.
- two pedals at a time, two feet: D/E, D/F, D/G, D/A, C/E, C/F, C/G, C/A, B/E, B/F, B/G, B/A. (12)

III.2.4 Double-pedalling

Definitions: Double-pedal technique or double-pedalling is the act of moving two adjacent pedals or two non-adjacent pedals on one side of the harp using one foot. This is achieved by placing the foot perpendicular to the harp, across the pedals. The pedals can be pressed down together or separately by pivoting the foot. The heel moves an inner pedal and the toe moves an outer pedal.

When the pedals are not adjacent to each other, double-pedalling is achieved by folding away a pedal, usually the C pedal on the left side or the F or G pedal on the right side of the base of the harp. With these pedals out of the way, the remaining D and B pedals on the left-hand side of the harp and the F and A pedals on the right can be moved together.

2 pedals at a time, one foot, either left or right: D/C, C/B, E/F, F/G, G/A. (5)

Example

Krumpholtz's *5eme Prélude* Op. 2 uses this technique once for each foot. Place the left foot across the B and C pedal and press down in bar 99 and release in the following bar. With the right foot across the E and F pedal, press down in bar 101 and release in the next bar. The G-flat in bar 101 is an enharmonic note and is played as F-sharp.

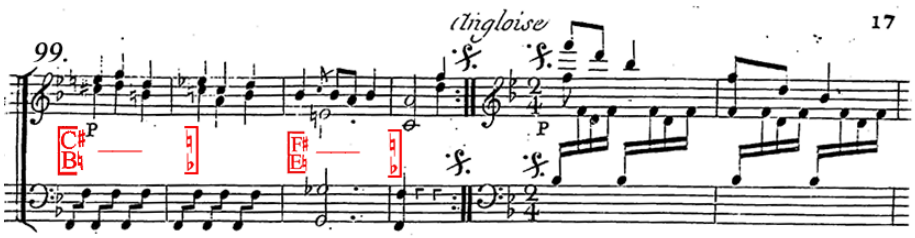


Figure III.2: Krumpholtz, *5eme Prélude*, Op. 2.

Double-pedalling, fold away G/C pedals, (D.P. G↑C↑)

2 pedals at a time, one foot: F/A, D/B. (2)

Example

This *1er Prélude*, Op. 2 by Krumpholtz begins with both the C and G pedal folded away and neither pedal is required for the whole prelude. The passage *Moderato*, bar 79, begins with the right foot pressing down and releasing the E pedal. Then the right foot is placed over the F and A pedal and is pressed down in bar 82 and released in 83. Later on in the *Minuetto*, the same technique is applied to the left foot. In bar 113, the left foot is placed over the B and D pedal and pressed down together and then released in the following bar.

Double-pedal technique: heel and toe

Once again the C and/or G pedals are folded away, leaving the feet free to be placed across the D and B pedals on the left-hand side of the harp and the F and A pedals on the right-hand side of the harp. In this situation both the heel and toe move separate pedals at different times.

Double-pedalling, fold away G/C pedals, two pedals at a time, heel and toe move independently.

Each combination has two solutions, one for the left foot and one for the right. (Total=20 moves)
i. Press 2 pedals together, release heel while fixing toe.
ii. Press 2 pedals together, release & depress heel, release together.
iii. Press 2 pedals together, release heel & toe separately.
iv. Press 2 pedals together, release toe & heel separately.
v. Press toe, press heel, release together
vi. Press heel, press toe, release together.
vii. Heel & toe independently. Press heel/toe, press toe/heel, release separately.

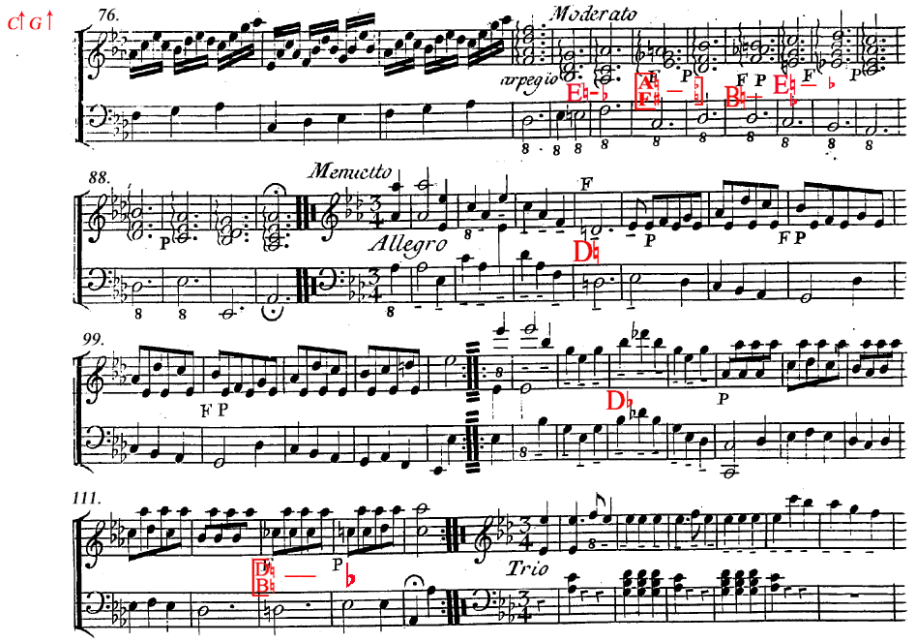


Figure III.3: Krumpholtz *1^er^ Prélude*, Op. 2.

viii. Press heel, release heel while pressing toe, release toe.
ix. Press toe, release toe while pressing heel, release heel.
x. Release 2 non-adjacent pedals from a fixed position.

Some examples

Press 2 pedals together, release heel while fixing toe

Another example is Krumpholtz's *3^eme^ Prélude* Op. 2, where the G pedal is folded away for the whole prelude. The right foot is placed over the F and A pedals and both are pressed down in bar 43. The heel releases the F pedal in bar leaving the toe holding the A pedal. At the time the A pedal can be fixed by slipping it into the lower notch.

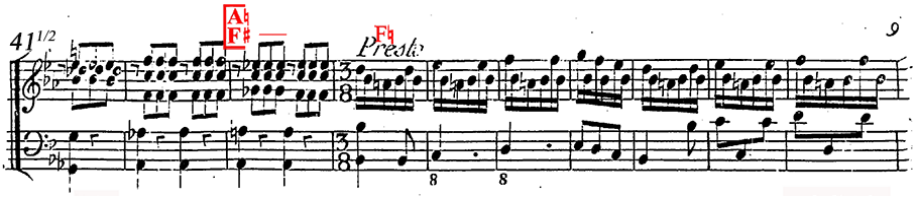


Figure III.4: Krumpholtz *3^eme^ Prélude*, Op. 2.

Press heel, press toe, release together.

Krumpholtz's 2^{eme} *Prélude* Op. 2 is played with the C pedal folded away from the beginning of the piece. With the left foot placed across the D and B pedals, the heel presses down and holds the B pedal in bar 58, then the toe presses down and holds the D pedal in bar 59. Both pedals are released together on the second minim of bar 60.

Usually difficult passages in harp music are a combination of many notes and many pedals. However, by having the feet so often positioned over two or more pedals this leaves the hands free to play virtuosic phrases, while the feet move slowly and calmly.

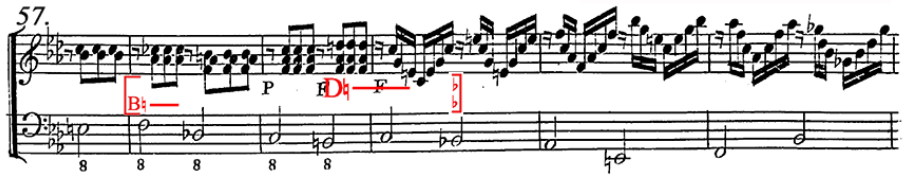


Figure III.5: Krumpholtz 2^{eme} *Prélude*, Op. 2.

III.2.5 Left foot moves the E pedal

Using the left foot to operate the E pedal on the right-hand side of the harp (LFoot). When the E-pedal is moved with the left foot, which is the innermost pedal on the right-hand side of the harp, it is up to the harpist if this pedal is either fixed or simply held down. This movement is required when the right foot is already engaged in moving one or more pedals, like the F, G or A pedals and is not free to additionally move the E pedal. This technique is described for the first time in Backofen's *Harfen-schule* of 1827 and goes hand-in-hand with multi-pedalling techniques. The left foot operates the E pedal frequently, when double-pedalling is used often. I use Salzedo's symbol of a pedal inside a box to indicate this pedal movement

III.2.5.1 Triple-pedalling

Triple-pedal technique or triple-pedalling occurs when three pedals are pressed down together with one foot (T.P.). This is usually carried out on the right-hand side of the harp, using the F, G and A pedals, but can also be performed with the left pedals: D, C, and B. The term multi-pedalling refers to all the above ways of pedalling, without specifying one way in particular.

III.2.5.2 Pedal *glissandi*

When a string is plucked and then the pedal is pressed down or released, the pedal movement produces another sounding note, either a semitone higher or lower. It is

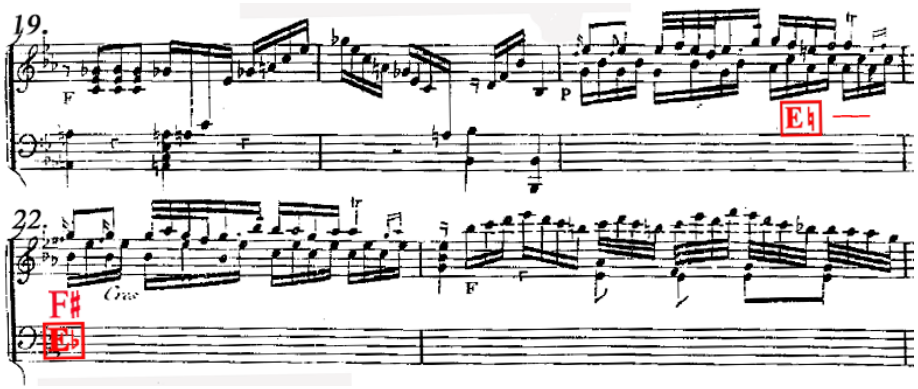


Figure III.6: Krumpholtz *Sonate*, Op. 3, No. 2, bars 19-23.

a pedal movement produces the sound. Pieces with pedal *glissandi*:
- Petrini, *Sonate*, Op. 39.
- D'Alvimare, *Sonate*, No 1, Op. 3.

III.3 Additional pedals

If you have the chance to play a harp with a *pédale à renforcement* or a *sourdine* pedal, use the following literature to experiment with the changes in sound:
- Krumpholtz, *Principes*, *Étude pour le renforcement*.
- Merelle, *New and Complete Instructions*, 23-48.
- Krumpholtz, 6^{me} *Sonate*, Op. 14.

Conclusion

Students are invited to consider how these historical pedal techniques can be applied or incorporated into their own modern techniques considering these questions:
- Is double- and triple-pedalling possible today on a double-action pedal harp?
- How can I integrate these techniques into my way of playing?
- How can pedal gestures in general become part of the musical phrase?

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