Kwartalnik Młodych Muzykologów UJ
no. 45 (2/2020), 5–22
DOI 10.4467/23537094KMMUJ.20.028.13901
www.ejournals.eu/kmmuj

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The French Art of the Natural Horn Playing and the Adaptation of Valve Mechanisms in the 19th Century

Abstract

The article is an attempt at identifying issues related to the problem of the adaptation of valve mechanisms in Parisian orchestras and Conservatoire. Opinions and postulates of supporters and opponents are being presented, as well as the concepts of combining the valve instrument with the use of the natural horn playing technique. In this context, the perspective of natural horn players, who contributed to the significant delay in the adaptation of valve horns in Paris, are being discussed. Further parts of the text explain the construction of natural horns commonly used in the discussed period in France (*cor solo* and *cor d'orchestre*), as well as various issues related to the specific playing technique. The differences between *cor alto* and *cor basse* are being examined as well as the concept of *cor mixte* proposed by Frédéric Duvernoy.

Keywords

natural horn, valve horn, French horn, *cor d'orchestre*, *cor solo*, adaptation of valve horns

The evolution of horn construction in the nineteenth century was extremely dynamic, especially with regard to the construction of instruments that would allow the full chromatic scale to be achieved. The final shape of the valve horn used today was developed by German builders—primarily Heinrich Stölzel (1777–1844) and Friedrich Blühmel (1777–1845), later also Joseph Riedl (d. 1840) and others.[1] Among French builders, Jacques Christophe Labbayé[2] and Joseph Émil Meifred (1791–1867) contributed to the improvement of the instrument. At the same time, part of the Parisian community, especially musicians associated with the Conservatoire, openly rejected the valve horn and emphasised their attachment to the sound characteristic of the natural horn.

The following text presents the opinions and postulates of French supporters and opponents of the introduction of valve horns into orchestras, as well as the proposals of solutions combining the valve horn playing with the use of the natural horn technique. In this context, the point of view of horn players as well as teachers (performance perspective) will be presented, who with their undertakings have contributed to a significant delay in the adaptation of the valve horns in Paris. The following parts of the text will explain the construction of natural horns, commonly used in France at that time, as well as technical issues related to playing technique.

Directions of the development of the horn playing in 19th-century in France

The question of the sound of the natural horn was repeatedly addressed both by the teachers of the Paris Conservatoire—including

[1] Nathan Adams, Wilhelm Wieprecht, Josef Kail, and François Périnet, among others.

[2] The dates of birth and death remain unknown.

Louis-François Dauprat, Jacques-François Gallay, Joseph Émile Meifred—and by significant artists and critics, such as Hector Berlioz (1803–1869) or François-Joseph Fétis (1784–1871). Both enthusiastic voices and, much more often, harsh criticism were present in the discussion of the valve horn built in 1815. Understandably, there were also various proposals to combine the techniques inherent in both instruments. The overriding issue for supporters of the natural horn, that is, its characteristic sound resulting from the timbre of closed tones, allowing selected harmonic relations to be highlighted, was the main reason for the general disagreement on the adoption of the new instrument, constructed in principle to eliminate *sons factices*.[3] The advisability of using an instrument with valves in repertoire composed for natural horn was also questioned.[4] The opinion of Louis-François Dauprat, long-time lecturer at the Paris Conservatoire, is a representative example of the attitude of Parisian horn players to the modification of the instrument's construction:

> Some have wished that by means of holes and keys the considerable series of factitious sounds on the horn might be eliminated, while at the same time and in the same way those that are totally lacking in the low register would become possible. But this method, already applied to the [keyed] trumpet, has changed the timbre of the instrument to the point of giving it a quite peculiar character, creating an instrument which is neither a trumpet nor any other known instrument. […] The horn would probably fare likewise were it made to undergo similar alterations: it would lose its character and the true quality of its natural and factitious tones. Most of these latter have a charm that is particularly theirs, and which serve, so to speak, for shadings and nuances in contrast with the natural sounds. It must then be presumed that, far from gaining by their complete removal, the horn would lose a great deal. And what is said here about the

[3] *Sons factices* are factitious sounds, usually called *sons bouchées* (stopped or closed notes). In English terminology one can find two terms, i.e. 'stopped notes' and 'closed notes'. In this article, in reference to the technique of playing the natural horn, the author decides to use consistently the term closed notes, as it does not specify the degree of closing the hand in the bell. The use of the term closed notes provokes the idea of sounds that are completely closed. However, such sounds are not frequent in the range of the natural horn.

[4] B. Coar, *A Critical Study of the Nineteenth-Century Horn Virtuosi in France* (DeKalb (IL): B. Coar, 1952), 27.

> various sounds of the complete range of the instrument must obviously extend to the different crooks. Each of these, taken by itself, has its own colour, its timbre, and its special character; but if they were all combined in a single assembly, becoming but one and the same instrument, this instrument would certainly have, if you will, the same range of low, high, and middle sounds. However, the more the new inventions produce equality among all the sounds, the more the characters, colours, and timbres of the individual crooks would be distorted and confused. [5]

Similar opinions about the usefulness of valve horns and the impoverishment of their sound relative to natural instruments were expressed by other horn players, including Jacques-François Gallay.[6] Interestingly, these were not based on experience of playing the instrument discussed by Dauprat—Birchard Coar makes clear that the prejudice of a group of horn players at the Paris Conservatoire against playing the valve instrument was expressed without practical verification.[7] Indeed, none of the leading Parisian horn players (Gallay, Dauprat, Duvernoy) sought to explore the new playing technique. On the other hand, the practical application of the horn with valves, introduced systematically into French orchestras, deviated from the original intentions of its constructors due to the non-uniformity of the playing rules. According to sources cited by John Ericson and John Humphries,[8] horn players unaccustomed to the valve mechanism sometimes used the new instruments in the same way as the natural horn—ignoring the possibility of eliminating unwanted closed notes, treating the valves as a mechanism allowing for an efficient change of the tuning of the instrument between parts of works. Another tendency—the simplification of musical notation and the performance of all notes as open sounds against the will of the composers—was noted by

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5 L.-F. Dauprat, *Method for Cor Alto and Cor Basse*, tr. and ed. V. Roth, (Bloomington (IN): Birdalone
Music, 1994;), cited in: J. Ericson, *Dauprat on the Tone of the Natural Horn. The aesthetics of the natural horn*, http://www.public.asu.edu/~jqerics/dauprat_tone.htm, accessed 1 June 2020.

6 J.-F. Gallay, *Methode pour le Cor*, Op. 54, (Paris: Henry Lemoine & Cie., [1845]).

7 Coar, *A Critical Study*, 156.

8 J. Humphries, *The Early Horn. A Practical Guide* (Cambridge: Cambridge University Press, 2000), 19.

Hector Berlioz in his *Grand traité d'instrumentation et d'orchestration modernes*:[9]

> Many composers object to this new instrument because, since it began to appear in orchestras, certain horn players use pistons to play parts written for the ordinary horn; they find it more convenient to use the mechanism to play as open notes those notes which the composer *intended* to be played stopped. This is in fact a dangerous misuse and it is up to conductors to stop it spreading. One should not forget, after all, that in the hands of an able player the piston horn can produce all the stopped notes available on the ordinary horn *and more besides*.[10]

Despite the efforts of the proponents of the new instrument, aware of the possibilities it offered—both in maintaining the traditional technique of operating the hand in the horn, and within the framework of an emerging separate repertoire for the instrument—the adaptation of the French valve horn was significantly delayed in comparison with other musical centres such as Berlin, Leipzig, Dresden.[11] This was connected with the high performance standard of Parisian horn players in the first half of the nineteenth century, resulting from the *cor mixte* technique mastered to perfection by the French,[12] and the strong position of the teachers of the local music academy (including Jacques-François Gallay, whose vivid activity as a composer and concert pianist was to have a direct influence on the flourishing popularity of the natural horn at least until the 1860s).[13]

As John Humphries notes, the intransigence of the Parisian horn players became isolated over the years in the face of progressive changes in instrumentation. Indeed, attitudes towards valve instruments

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9 H. Berlioz, *Grand traité d'instrumentation et d'orchestration modernes* (Paris: Schonenberger, 1843).

10 H. Macdonald, *Berlioz's Orchestration Treatise: A Translation and Commentary* (Cambridge: Cambridge University Press 2002), 181.

11 J. Humphries, *The Early Horn*, 16.

12 *Cor mixte*, *genre mixte* (mixed horn, mixed genre) was a performance concept popular in the third and fourth decades of the nineteenth century, formulated by Frédéric Duvernoy, based on limiting the range of parts to the middle part of the instrument's range and combining the qualities of the first and second horn. It was applied to chamber and solo music of that period. An extended definition of *cor mixte* can be found later in this text.

13 R. Morley-Pegge, *The French Horn. Some Notes on the Evolution of the Instrument and of Its Technique* (2nd edn, London: E. Benn: 1973), 100.

outside the walls of the Paris school began to change. Although between 1833 and 1864 the Conservatoire offered parallel training in valve and natural horn, Joseph Meifred's valve horn class was secondary. Meifred was one of the first and few Parisian popularisers of the new instrument, and after his retirement in 1864 the teaching of valve horn was not continued. The same year, when Gallay—then the head professor at the Conservatoire—died, the care of the students was entrusted to his graduate, Jean Baptiste Victor Mohr. In practice, this meant the Conservatoire valve horn class was terminated. François Fétis, an enthusiast of the concert activity of the horn players associated with the Conservatoire, expresses his disappointment with their conservatism and prejudice in an article from 1865, advocating the need to replace natural instruments with valve horns. The generalisation he applies to the supposedly unconditional adoption of valves outside France should be seen as a rhetorical device to pit the conservative Parisian milieu against the rest of Europe.

> The discovery of the effect of pistons[14] was received with enthusiasm in Germany and Belgium, but France, almost always late in adopting new ideas, has shown little interest in it, and of all the instruments with pistons, adopted at first only the cornet, which soon fell into most ignoble degradation in the country taverns. […] In Paris, force of habit, prejudice, and certain special interests, which are encountered have placed many serious obstacles in the way of improving the orchestra through the betterment of brass instruments. In Europe, India, America, in everywhere except in Paris and in the provinces of France, the orchestral music has made notable progress by the use of horns, trumpets, trombones with pistons and by substitution of the bass and contrabass saxhorns for the ophicleide. […] The prejudice against cor à pistons is so deep rooted that the most skillful artists have disdained this instrument. They are convinced that the tone of the *cor à pistons* is inferior to that of the hand horn. […] The resistance, moreover, against the adoption of the *cor à pistons* in the orchestra in Paris and in the provinces of France seems plain nonsense to me. It could be well founded, only if composers never wrote

[14] At this point, the difference between pistons and valves should be clarified. In the studies on instruments, valve is the name for a mechanism which includes additional tubes (crooks) in the body of the instrument, extending the stream of air and thus changing the pitch. Such valves are divided into rotary ones, commonly called simply valves, and piston valves. For the purposes of this text, both term,: valves and pistons, are treated synonymously.

> for these instruments, but that is not so. Meyerbeer, in several of his operas, notably in *l'Africaine*, makes constant use of the two *cors a pistons* and writes other parts for the hand horn only for the sake of not going contrary to the prejudice of certain artists.'[15]

The last quarter of the nineteenth century was a period of transition in Paris: the instruments were mixed with one another, but the presence of the valve horn in orchestras was still rare. At the same time, the Paris Conservatoire remained passive in the face of the changes that were actually taking place. It was not until 1903 that the teaching of valve horn was officially resumed thanks to the activity of François Brémond (1844–1925),[16] the professor at the Conservatoire from 1891 to 1922.[17] In practice, this meant the definitive closure of the natural horn class.

The construction of inventionshorns: *cor solo* and *cor d'orchestre*

The issues presented in this text refer to the form of the instrument in use from the 1750s to the end of the nineteenth century. The inventionshorn, considered to be representative of the instruments of Classicism and Romanticism, was constructed at the latest in 1753 by Johann Werner in cooperation with the horn player Joseph Hampel.[18] The ambition of Hampel, a Czech horn player in the Dresden ensemble, to create an instrument with a new construction was related to his work on the development of a new playing technique—it is thanks to him that the possibility to change the pitch (modifying the length of the air column) with the use of the hand placed in the instrument's bell was discovered.[19]

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15 F.J. Fétis, 'De la necessité de substituer les nouveaux instruments d'Adolphe Sax aux anciens, dans les orchestres', *Revue et gazette musicale* (1865, XXXII), 215–16; cited in: B. Coar, *A Critical Study*, 129–131.

16 B. Coar, *A Critical Study*, 138.

17 B. Coar, *A Critical Study*, 156–157.

18 A. Baines, *Brass Instruments: Their History and Development* (London: Faber & Faber, 1976), 162.

19 H. Domnich, *Methode de Premier et de Second Cor* (Paris: Le Roy, 1808), V.

The horns which were commonly used in the eighteenth century were constructed with the use of the combination of crooks, placed one on another (so-called 'multicrook system'). The crook itself should be defined as a tube which extends the air column; it was formed in the shape of a loop. The fragment of the instrument used for tuning was the place of joining the last crook with the bell. The distance between the mouthpiece and the body of the instrument, which varied depending on the number of crooks put together, made it difficult to play with the hand which would dynamically change its position in the bell. Finding the existing construction uncomfortable, Hampel and Werner created a horn tuned with the use of an additional tube, the so-called 'invention crook',[20] placed in the central part of the instrument's body. The crooks that enabled to change the tuning were applied separately. The common name for the resulting instrument was an orchestral horn (*cor d'orchestre*). The constructional changes, leading to the development of the contemporary model of the instrument, were also connected with the stylistic changes in early Classical music, including the departure from the *clarino* technique[21] in favour of the new, traditionally understood role of orchestral horns—completing the harmonic layer, operating in the middle register and appearing more and more often in the chamber repertoire. The advances in the use of the hand in the horn bell allowed the chromatic scale of the instrument to be completed and in practice led to more frequent horn appearance in chamber and solo repertoire.

The inventionshorn constructed by Werner and Hampel is characterised by an invention crook built into the central part of the instrument's body. It provides a large margin to allow each horn crook to be tuned. Inventionshorns in the orchestras were supplemented with the crooks (B basso, C basso, D, E-flat, E, F, G, A, B alto, C alto) allowing to change the instrument's tuning between the movements of the composition. It should be noted that in the case of this instrument,

[20] The invention crook, in contemporary instrument usually called the slide assembly, is an additional fragment of the instrument that is characteristically distorted and has a movable part which allows for a precise tuning of the instrument.

[21] A *clarino* technique, developed in the seventeenth and eighteenth centuries, is a technique of the trumpet and horn playing which involves the highest registers of the instruments in the advanced passages.

the leadpipe[22] was an integral part of the crook. The instrument constructed in this way was commonly used in nineteenth-century orchestras.

Establishing the horn as a solo instrument was the basis for Joseph-Lucien Raoux[23] to create a new French model of the inventionshorn, called *cor solo*, in the 1880s. As an instrument dedicated to soloists, it was used by the most famous natural horn virtuosos.[24] It was characterised by a slimmer construction and the crooks applied in place of the invention crook. This is connected with the most important feature of the instrument—the immobile leadpipe (unchangeable regardless of the changes of the crooks). The leadpipe of a brass instrument is considered to be one of the most sensitive structural elements affecting the sound of the instrument—determining its timbre, quality, articulation, intonation. Changing the leadpipe during playing can directly affect the soloist's performance capabilities. The construction of *cor d'orchestre* described above necessitated these changes, as the leadpipe was an integral part of each crook. Therefore, the Raoux's intention was to create a horn with a fixed leadpipe and to equalise the sound across the range, in every tuning of the instrument. While Hampel's classical inventionshorn was an instrument for both orchestral and solo playing, the *cor solo* was an impractical instrument in the orchestra due to its non-functional way of changing the crooks.

Markings for open and stopped sounds

One of the clearest and most lucid descriptions of horn playing technique, its possibilities and technique can be found in Hector Berlioz's *Grand traité d'instrumentation et d'orchestration modernes*. First published in 1843, this instrumental treatise also addresses the issue of

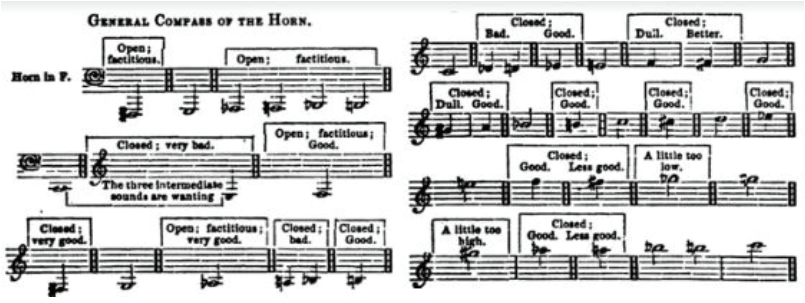
[22] The leadpipe is the part of the instrument of a widest bore size.

[23] Joseph-Lucien Raoux (1753–1821) –a maker of wind instruments and the son of famous maker (circa 1727 – circa 1800).

[24] Including Giovanni Punto, i.e. Jan Václav Stich (1746–1803), Charles Turrschmidt (1753–1797), Johann Palsa (1752–1792), Louis-François Dauprat (1781–1868) and Giovanni Puzzi (1792–1876).

combining the so-called right hand technique with the use of valves.[25] Although the valve horn occupies a secondary place in the treatise, Berlioz was one of the enthusiasts of the possibilities of the new instrument—he emphasised, however, that its true value lies in the preservation of the traditional playing technique. The author explains the principles of the instrument's functioning and describes the intonation relationships resulting from its natural tuning:

> Stopped notes make a sound that differs markedly not only from that of open notes but also one from another. These differences arise from the degree of closure applied to the bell by the player's hand. Some notes require the bell to be stopped a quarter or a third or a half; for others it has to be closed almost completely.[26]

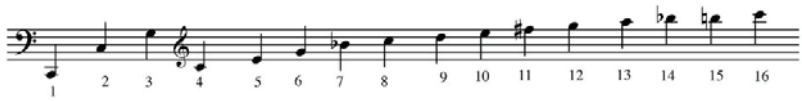


Ex. 1: The entire range of the horn together with the commentary on the intonation of particular tones. Source: H. Berlioz, *A treatise on modern instrumentation and orchestration*, tr. M. Cowden Clarke, ed. J. Bennett, Novello, (London–New York: Ewer & Co., 1882).

[25] Nowadays, almost all horns are left-handed instruments (valves are operated with the fingers of the left hand, while the right hand is in the horn). In nineteenth-century horn schools, there is usually an instruction that the instrument should be held in the left hand with the right hand in the bell. However, it should be noted that there were exceptions from the rule. Until the valve horns become common, the way of holding the instrument, i.e. 'right-handedness' or 'left-handedness' could depend on the preference of the performer. Louis-François Dauprat wrote: 'Some people hold the horn in their right hand, most of the foreign virtuosos that we have seen and heard in Paris hold the instrument just like that. So it is not a mistake, the way of holding the instrument is quite arbitrary.' The historically inaccurate English term 'right hand technique', referring to the right hand efficiently changing its position in the bell, was adopted in the 1970s.

[26] Macdonald, *Berlioz's Orchestration Treatise*, 166–167.

The natural horn, using a harmonic series of aliquots, makes it possible to obtain twenty-one pitches in a span of four octaves.[27] The open sound belonging to the harmonic series of a given horn usually does not require any interference in intonation from the performer, except for specific sounds (e.g. the eleventh and thirteenth degree of the harmonic series).



Ex. 2: A harmonic series of aliquots: open sounds that can be performed by the natural horn.

Covering the bell with the hand can lower or raise the open sound by a semitone or a whole tone, the final effect being dependent on other parameters related to sound, such as air pressure, articulation or tongue position.[28] The technique of the right hand, consisting in 'closing', 'stopping' or 'covering' the horn, allows for precise regulation of intonation, and mastered at a professional level, gives performance possibilities similar to playing a valve instrument. Authors of schools for horn have variously marked, described and interpreted closed or partially covered sounds, creating distinct concepts for performance practice. In fact, the right-hand technique requires flexibility beyond the markings used in the schools, adapting it both to the anatomy of the body and to the possibilities of the instrument—the various structural features of the horn, including the bore size and bell diameter, as well as the material from which the instrument was made, can affect the timbre and intonation of individual sounds.[29]

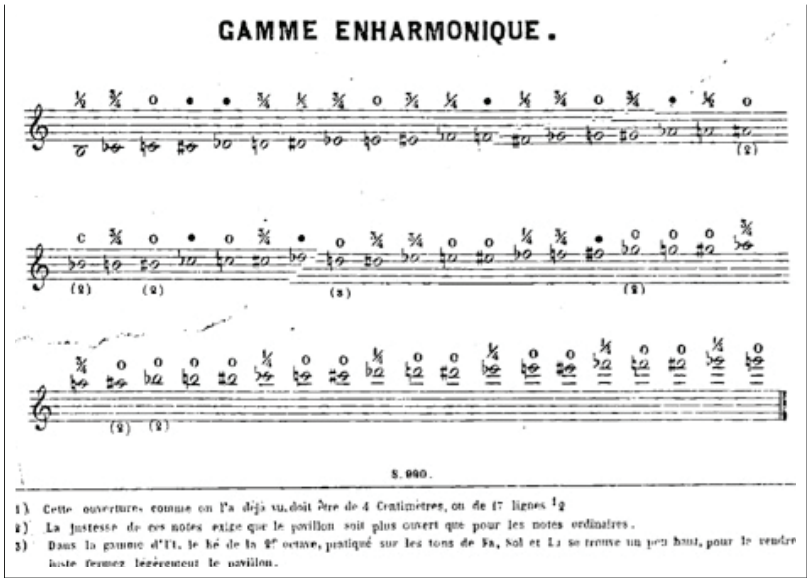
Jacques-François Gallay's *Methode pour le cor* is an example of the school giving closed notes detailed markings. Gallay proposes the symbol 'open zero' (o) (*zero ouverte*) for a natural open sound, a 'closed

[27] L.-F. Dauprat, *Le professeur de musique, ou, L'enseignement de cet art. Mis a la portee de chacun au moyen d'un instrument a sons fixes et du metronome de Maelzel* (Paris: A. Quinzard, 1857), 110.

[28] P. Farkas, *The Art of French Horn Playing* (Evanston (IL): Summy-Birchard, 1956), 46–52.

[29] J. Montagu, *Horns and Trumpets of the World. An Illustrated Guide* (Lanham (MD)–Plymouth: Rowman & Littlefield, 2014), 37.

zero' (-) for a completely closed note, and fractions: 1/4, 1/2, 3/4, corresponding to the degree of deviation of the hand from the bell, which is the essence of obtaining various closed notes. Other, earlier French schools—by authors such as Duvernoy, Dauprat or Domnich—deal with the use of advanced instrument chromaticism in a very general way, although over the years its use has become a marker of the instrument's individual character.



Ex. 3: The range of the horn, open and closed notes. Source: J.-F. Gallay, *Méthode pour le Cor*, Op. 54.

Terminology: *cor-alto* and *cor-basse. Cor mixte*

Different technical requirements of the upper and lower register of the horn, as well as the physical parameters of the instruments, led in the course of the eighteenth century to the development of characteristic specialisations of the first and second horn. The necessity of separating the parts was mainly due to the instrument's range spanning four octaves. It also had its basis in performance technique and required

adepts to determine their predispositions at an early stage of education,[30] unlike in the case of other wind instruments. The first French school specifying the characteristics of both parts while systematising the issue of closed notes was Heinrich Domnich's *Methode de Premier et Second Cor*. Although the right-hand technique had been in use since at least the 1850s, the principles of writing for the classical natural horn had not been clarified until the publication of this school in 1808.[31] Domnich explains in the preface of the work:

> Until now, it has been difficult for composers to make good use of this instrument. They were not sure whether the parts they would write would be possible to play. The possibilities of the horn were not defined precisely, and its range, high and low registers, depended on individual predispositions. In this context, the reasons for the variety of mouthpieces, the form of which was never specified, become clear. Those who used a large mouthpiece and made low notes with ease were unable to achieve high registers. Those who chose narrow mouthpieces played high notes easily, but could not reach low registers. Since the skill of playing acquired on one type of mouthpiece no longer allowed the use of mouthpieces of other dimensions, the need arose to distinguish between the specialities of the first and second horn. Everyone worked on perfecting their part, reaching extremes of register together. From that moment the whole range of the instrument was known, although it required the cooperation of two people.[32]

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30 Nowadays, horn players specialise at a late stage of their education, often in connection with their chosen position in the orchestra. The differences in question have been blurred due to the universal playing technique and the construction of instruments and mouthpieces allowing both high and low orchestral parts to be mastered equally.

31 Coar, *A Critical Study*, 24.

32 'Jusqu'alors il avait été difficile aux compositeurs de tirer parti de cet instrument ; ils n'étaient pas surs que ce qu'ils écrivaient put etre exécuté. La portée en était incertaine et les limites des sons aigus et des sons graves dépendaient des individus. En réfléchissant sur cette particularité, on en reconnut la cause dans la difference des embouchures, dont la forme et les proportions n'étaient pas déterminées. Ceux qui se servaient d'une embouchure large et qui formaient les sons graves avec facilité, ne pouvaient atteindre aux sons aigus. Ceux qui avaient adopté l'embouchure étroite avaient la plus grande aisance pour les sons aigus, sans pouvoir descendre aux sons graves. Comme l'habitude contractée par les levres ne permet pas a celui qui s'est exercé sur une embouchure quelconque d'en employer une d'un autre diametre, on sentit la nécessité de former deux genres, qu'on distingua par les noms de premier et de second Cor. Chacun travaillant de son côté a perfectionner le genre qu'il avait

Supplementing the fragment presented above, it should be added that the classically understood second horn part required a flexible technique, allowing for the realisation of passages filling out the texture in chamber works while maintaining full sound and effectiveness in the lower register, as well as—especially in later classical literature—proficiency within the realisation of closed notes from the fourth octave.[33] The advancement of the first horn part was usually associated with a high tessitura of the part, in early classical examples still reminiscent of the Baroque *clarino* technique.

French didactic literature is dominated by two types of names—*premier* and *second cor* (the most popular), and *cor alto* and *cor basse*, referring to the same range of parts, treated synonymously. The discrepancies in nomenclature in French schools were caused by the exceptional importance attached by some teachers to the terminology. The permanent introduction of the terms *cor alto* and *cor basse* was postulated by Louis-François Dauprat. He justified his idea by the exceptional technique differences between the two parts, seeing in the traditional distinction between *premier* and *second cor* a misunderstanding of the role of the second horn:

> These denominations, a bit vague, have always presented a prejudicial misunderstanding of the *Second Horn,* in causing [one] to believe that this latter title, instead of designating a particular type, assumed a degree of inferiority in the artist's talent. This idea gained more credence when some *First Horns,* by self-interest, by vanity, or even by both of these motives, often availed themselves of [this idea] to the detriment of their comrades. Meanwhile, it is good to know, even in orchestras where there are only two Horns, that each performer is first in his part, and that one cannot replace the other, because they are equally useful in the musical performance; the Horns are not like Violins, Flutes, Oboes, Bassoons, etc., who can indifferently execute one or the other of the two parts written for their instrument; the horns, on the contrary, cannot in most cases exchange parts without being thwarted by the insufficiency of their means.[34]

choisi, on parvint de part et d'autre au terme extreme ; et des-lors oute l'étendue de l'instrument fut connue quoique le concours de deux individus fut nécessaire pour la parcourir en entire.' Domnich, *Methode de Premier et de Second Cor*, II-III.

33 Humphries, *The Early Horn*, 11.

34 L.-F. Dauprat, 'Methode de Cor-alto et Cor-basse', tr. J.L. Snedeker, *Historic Brass Society Journal* 4 (1992), 171–172.

In distinguishing the terminology relating to the part of horn, a comment should be made about *cor mixte*, a performance concept of the 1820s and 1830s sometimes referred to as *genre mixte*. It was Frédéric Duvernoy's idea to combine the qualities of the first and second horns while limiting the range of the parts to the instrument's middle register. This proposal forced—to an unprecedented degree—the performance of pitches within the fourth octave, for the most part forming a set of closed notes. Although the concept died out rather quickly, its representatives had a significant influence on the popularity of the natural horn in Paris, provoking the development of an excellent playing technique in French horn players, as well as contributing to their later intransigence in artistic choices.[35]

An example of music exploiting the qualities of *cor mixte* is nineteenth-century repertoire for horn and harp—the juxtaposition of the timbres of these instruments was a stylistic trend found exclusively in Paris from the late eighteenth century until the 1830s. According to Jean Mongrédien, this combination was very popular and 'its sweetness made sensitive souls tremble with delight.'[36] The repertoire consists mainly of compositions by composers associated with the Concert Society of the Paris Conservatoire (*Société des concerts du Conservatoire*), including François Joseph Naderman (1781–1835), Frédéric Nicolas Duvernoy (1765–1838), as well as Louis-Emmanuel Jadin (1768–1853), François-Adrien Boïeldieu (1775–1834) and Nicolas-Charles Bochsa (1789–1856).[37]

First valve horns

The construction of the first instrument allowing mechanical pitch change by means of valves extending the air column in 1815, followed by the first patenting of such a construction in 1818 by Heinrich Stölzl and Friedrich Blühmel, marked the beginning of a period of intensive work by instrument makers to develop and improve the form of the valve horn.[38]

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35 Humphries, *The Early Horn*, 20.

36 Humphries, *The Early Horn*, 276.

37 J. Mongrédien, *French Music from Enlightenment to Romanticism 1789–1830*, tr. S. Frémaux (Portland (OR): Amadeus Press, 1996), 275–277.

38 J. Ericson, 'Early Valve Designs', http://www.public.asu.edu/~jqerics/earlval.htm, accessed 1 June 2020.

This activity resulted in the development of six most popular types of mechanisms over the course of the nineteenth century:[39] Stölzel valves (Stölzel/Blühmel, 1815), rotary valves (Nathan Adams, 1824), box valves (Stölzel/Blühmel, 1817/18), Berlin valves (Stölzel/Wilhelm Wieprecht, 1827/1828), Vienna valves (Joseph Riedl/Josef Kail, 1823) and Périnet valves (François Périnet, 1838/39).[40] Of all these, the most popular mechanism used in France were the Stölzl valves (1815), from today's point of view the most imperfect and archaic mechanism.[41] The second most popular solution were the valves designed by the Frenchman François Périnet, an improvement on the Stölzl valves. It should be added that the typical Stölzl horn was the most common model of valve instrument used before 1850 in Europe.[42] Despite the conservatism of the leading French horn players, Parisians also had an influence on the evolution of the Stölzl's construction. Apart from François Périnet, these included the first populariser of the valve horn, Joseph Émil Meifred, and the wind instrument builder Jacques Charles Labbayé. Their work on perfecting the work of the valve mechanism was supposed to allow for the development of a playing technique that would preserve the specificity of the natural horn.

Conclusion

The problem of the adaptation of the Paris valve horn provokes an exploration of the literature in search of answers to the question of what instruments nineteenth-century composers wrote for and what their expectations of performers were. The will of composers was often confronted with the habits and prejudices of musicians, their abilities and the availability of instruments. It is worth attempting to break the schematic thinking of nineteenth-century instruments as successive to their older counterparts. Instruments long intermingled, techniques

39 Ericson, 'Early Valve Designs'.

40 Ericson, 'Early Valve Designs'.

41 Two out of six types of valves mentioned above are commonly used in modern performance. The first of these is the rotary valve, designed in 1824 by Nathan Adams and patented in 1835 by Joseph Riedl. Gradually popularised in Germany in the second half of the nineteenth century, they became the most popular type of valve mechanism. The second design still in use today is the so-called Vienna horn, patented in 1823 by Joseph Riedl and Josef Kail.

42 Ericson, 'Early Valve Designs'.

were combined and applied according to preferences and demands. The horn part in the *Symphonie Fantastique* is an emblematic example: its realisation, according to Berlioz's remarks, should take into account the use of a piston instrument while employing the right-hand technique characteristic of the natural horn.[43]

The Parisian school made the natural horn the Romantic solo instrument. The most important didactic literature and highly advanced compositions for natural horn[44] were created in France at a time of intense development of European instruments, whose main trend was to unify the sound of instruments and strengthen their volume, forced by the increasing number of performing ensembles. Meanwhile, the French, rejecting mechanical improvements to the horn and emphasising their attachment to the sound qualities characteristic of the natural horn, led to a considerable delay in the adaptation of the valve horns. However, as Birchard Coar points out, the persistent use of natural horns in French orchestras until the end of the nineteenth century was not a sign of backwardness, but evidence of the technical excellence of Parisian horn players.[45]

Bibliography

Secondary sources

Baines, A., *Brass Instruments, Their History and Development* (London: Faber & Faber, 1976).

Berlioz, H., *Grand traité d'instrumentation et d'orchestration modernes* (Paris: Schonenberger, 1843).

Berlioz, H., *A treatise on modern instrumentation and orchestration*, tr. M. Cowden Clarke, ed. J. Bennett (London–New York: Novello, Ewer & Co., 1882).

Coar, B., *A Critical Study of the Nineteenth-Century Horn Virtuosi in France* (DeKalb (IL): B. Coar, 1952).

43 In the edition of the score from 1845, Berlioz indicates to 'play the stopped sounds with hands, without pistons' ('faites les sons bouchés avec la main sans employer les cylindres').

44 See A. Rozwadowska, 'Życie i tworczość Jacquesa-Françoisa Gallay'ego' (MA thesis, Poznań: Adam Mickiewicz University, Institute of Musicology, 2018).

45 Coar, *A Critical Study*, 138.

Dauprat, L.-F., *Le professeur de musique, ou, L'enseignement de cet art. Mis a la portee de chacun au moyen d'un instrument a sons fixes et du metronome de Maelzel* (Paris: A. Quinzard, 1857).

Dauprat, L.-F., *Methode de Cor-alto et Cor-basse* (Paris: Zetter, 1824).

Domnich, H., *Methode de Premier et de Second Cor* (Paris: Le Roy, 1808).

Ericson, J., 'Dauprat on the Tone of the Natural Horn. The aesthetics of the natural horn', http://www.public.asu.edu/~jqerics/dauprat_tone.htm, accessed 1 June 2020.

Ericson, J., 'Early Valve Designs', http://www.public.asu.edu/~jqerics/earlval.htm, accessed 1 June 2020.

Farkas, P., *The Art of French Horn Playing* (Evanston (IL): Summy-Birchard, 1956).

Gallay, J.-F., *Methode pour le Cor*, Op. 54 (Paris: Henry Lemoine & Cie., [1845]).

Humphries, J., *The Early Horn. A Practical Guide* (Cambridge Cambridge University Press, 2000).

Morley-Pegge, R., *The French Horn. Some Notes on the Evolution of the Instrument and of Its Technique* (2nd edn, London: E. Benn, 1973).

Montagu, J., *Horns and Trumpets of the World. An Illustrated Guide* (Lanham (MD)–Plymouth: Rowman & Littlefield, 2014).

Mongrédien, J., *French Music from Enlightenment to Romanticism 1789–1830*, tr. S. Frémaux (Portland (OR): Amadeus Press, 1996).

Rozwadowska, A., 'Życie i twórczość Jacquesa-Françoisa Gallay'ego', (MA thesis, Poznań: Adam Mickiewicz Universtity, Institute of Musicology, 2018).