STOPPED NOTES ON THE HORN: SOME AESTHETIC CONSIDERATIONS[1]

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A new musical era was ushered in with a patent issued in Prussia on April 12, 1818 for a brass instrument valve.[2] Initially a means of quickly changing the basic pitch of a natural brass instrument, Heinrich Stölzel's and Friedrich Blühmel's invention provided for the easier playing of difficult stopped notes, but as the valve represented more than a mechanical improvement of the natural horn, it was not universally acclaimed in professional circles.[3] Essentially, the valve created a completely new instrument that had considerable effect on the idiomatic use of the horn, on instrumentation, aesthetics, and overall on the increasing degree of chromaticism in orchestral and operatic music in the eighteenth century. Not without cause, even advocates of the new valved horn recommended viewing the innovation as simply a means of augmenting handhorn stopping technique, and one did not have to wait long for the sometimes inflammatory articles to appear in critical literature, concerning the use of chromatic horns in works originally conceived for the natural horn.[4] To the present day, the dispute over "authenticity" of valved horns in place of natural instruments remains unresolved among advocates and opponents of historical performance practice. In one respect the dispute seems unnecessary, as obviously intentional stopped effects on the natural horn are easily produced on the valved instrument as well. What then was the underlying reason for the initial antipathy towards the valved horn? It was not, as one might assume, the supposed unreliability of the mechanism itself, such as leaking or sticking valves, even if existing examples of early attempts do indeed exhibit certain technical imperfections. And even if one finds the occasional article in contemporary journals complaining of imperfections of the device or noting improvements in valve construction, the nucleus of the problem is aesthetic rather than mechanical. Significantly, the instrumental music of the late eighteenth and early nineteenth centuries idealized the sound of the human voice. In 1792, Georg Sulzer maintained that:

> Of all instruments with which one can enthusiastically create tones, the human throat is without any doubt the noblest. For this reason, one can consider it a basic principle, that those instruments are superior which are most capable of imitating all the tonal nuances of song as produced by the human voice.[5]

In his *Ideen zu einer Ästhetik der Tonkunst*, dating from 1784 though not published until 1806, Christian Friedrich Daniel Schubart emphasizes Sulzer's premise:

> The human voice is quite naturally *the* pure tonal sound [*Urton*], and all other voice parts in the world are merely distant echoes of this divine elemen-

> tal voice [*Urstimme*]. The human throat is the first, purest, most splendid instrument in creation.[6]

The recurrent discourse concerning the instrumental "vocal ideal" alerts us to an aesthetic difference of opinion between innovators experimenting with the technical playing possibilities of the instruments and traditionalists wishing to define limits of this new virtuosity. And significantly, the controversy concerning the valved horn is also anchored here. Unknowingly, Johann Friedrich Reichardt had already anticipated the dissension over the valved instrument at the end of the eighteenth century:

> The invention of such artificial instruments, on which one can, through the convenient and multifarious employment of the fingers, more easily play and produce various modulations and embellishments as with the voice, soon distanced instrumental music still further from the vocal. Instead of expression, of significance, there was simply affectation: easily mastered difficulties, which were in themselves worthless, inspired admiration, and the common man, already insincere perhaps to the same degree, gladly spread wide jaws, nose, and ears at the new wonderful sounding hocus-pocus.[7]

For Beethoven's composition teacher, Johann Georg Albrechtsberger, the idiomatic dialect of the horn remains unequivocally inseparable from vocal music:

> The horn should sing; here lies its most beautiful, singular, truly magical strength. The tones have to unfold completely, only gradually, just as with the human voice, with the most delicate nuances, in a true *portamento di voce* ….[8]

In his horn method, presumably published in 1810, Joseph Fröhlich recommended that "Whoever therefore should want to accomplish anything at all on this instrument [the horn] should simply study the school of singing,"[9] and in his *Vollständige theoretisch-praktische Musikschule* of the same year he continues:

> The most exquisite tool of expression for the social communication of joyful as well as sorrowful feelings which a most generous nature has bestowed upon all humans is the voice. … The true rules of interpretation for every instrument into which the artist can breathe spirit are therefore none other than those for the voice (only with consideration for the specific characteristics of each [instrument]), and the greatest praise which one can ascribe to a master of any instrument is when one tells him that "all that is lacking is the words to his singing."[10]

The importance of this aesthetic ideal of the human voice to the instrumental music of the Classical era is clear. However, what one can easily overlook in respect to Fröhlich's above cited quotation is the phrase "only with consideration for the specific characteristics of each [instrument]." Although he actually wants to point out here the dangers inherent in an increasing and unbridled virtuosity, he has unconsciously addressed the essential premise of the valved horn controversy. The characteristic changes in timbre resulting from the varied degrees of stopping, contrasting with the open, non-stopped notes of the natural horn, represented an idiom specific to the natural horn, the absence of which was seen as a great loss by opponents of the new, valved instrument. The uniform quality of the open, non-stopped notes of the valved horn was greeted on the one hand as a technical improvement to playing the natural horn; yet on the other hand it was lamented as an atypical neutralization of the hand-stopping idiom. Interestingly, the altercation surrounding the introduction of additional keys to the contemporary Boehm flute had a similar origin. Advocates of the established transverse flute and the natural horn criticized the mechanical innovations for their absence of vocal shadings, which were characteristic of the earlier forms of both instruments. The roots of the parallel rejection are to be found not in mechanics, but in aesthetics.[11]

The change of tone color created by closing the hand in the bell of the horn was not considered an unfortunate "last resource" by the late-eighteenth- and early-nineteenth-century audience; it was not a regrettable alternative to an as of yet non-existent invention, the valve;[12] on the contrary, the stopping technique was a horn idiom rich in extra-musical associations with the hunt, the forest, and Romanticism in general. In an article by Carl Gottlieb Reissiger in the *Allgemeine Musikalische Zeitung* from 1837—a time when valved horns were becoming increasingly popular—the author begs to know "what do we have from the numerous valves and keys lately invented? They spoil and distort the natural, characteristic tone and lead us to the point where we soon shall have no more than yellow and red, with which we shall not be able to properly color and tint."[13]

In an essay that appeared in the *Neue Zeitschrift für Musik* in 1843 under the heading "Bericht über Berlioz' musikalische Reise," the anonymous author (Berlioz) perceives the danger of a distorted tonal picture resulting not from the type of instrument played, but rather from the manner of playing:

> It is foolishness to think that the effect of stopped notes, which are sometimes quite characteristic and required by the composer's idea, should be lost on the valved horn, as one can produce these notes by inserting the hand into the bell just as well on the valved horn as on the ordinary natural horn. That is, to put the blame on the instrument for that which is the player's fault, when he does not do this.[14]

A similar view is represented in an article dated 1878, entitled "Das Blech in der Musik," which appeared in the *Allgemeine Musikalische Zeitung*. At a point in time when—in German-speaking countries, at least—one can speak of the established integration of valved

horns in the orchestra, the anonymous author refers to the advantages offered by the valved horn, not in terms of the avoidance of stopped notes, but primarily in the possibilities created by quicker changes of the fundamental pitch or key of the instrument, analogous to crook changes on the natural horn. He writes:

> The most basic advantage to the use of the valved instrument is that the composer is now no longer compelled to have the horns and trumpets rest or change crooks in modulations to distant keys. The character of the instrument can thus remain fully intact; one need not hear at all that valves are being used.[15]

In his *Lehrbuch der Instrumentation* (Leipzig, 1889), Salamon Jadassohn recommends to the fledgling composer that he ensure that the idiomatic dialect of the natural horn is preserved:

> The pupil should always remember that a valved horn is nothing more or less than a natural horn, which, in addition to its original pitch, is capable of being pitched in six other keys. Fast diatonic or chromatic passages will never have a good effect, although they are possible on the valved horn; they are not suitable to the nature of the instrument.[16]

In 1898, as Richard Strauss was completing his *Ein Heldenleben* and three years after the premiere of Gustav Mahler's Symphony no. 3—works in which the use of natural horns can hardly be imagined—Henri Kling, the multitalented horn player, composer, and author of countless articles, writes in the *Neue Zeitschrift für Musik:*

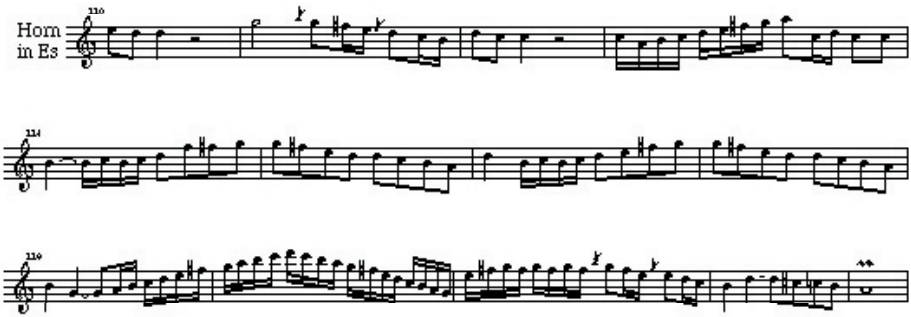
> The chromatic horn (with cylinders, pistons, or valves) dates from the year 1830. There still exist very many prejudicial opinions regarding this splendid instrument; but the chromatic horn is in reality nothing more than a perfected natural horn, which is played essentially as such, and carries out everything which one can execute on the latter.[17]

What is noteworthy beyond the aesthetically idiomatic importance of the natural horn at this relatively late date is the connotative implication that stopped effects, which are inherently a given on the natural horn, are possible on the valved instrument as well.

The question necessarily arises then: What is to be understood by the above quoted phrase referring to the "effect of stopped notes" which are "required by the composer's idea"? This inherent characteristic of the natural instrument is of especial importance in modern practice, as the effects obviously called for by the composer are for the most part completely ignored. The author of an article that appeared in 1885 in the *Neue Zeitschrift für Musik,* entitled "Ueber die Verbreitung des chromatischen oder Ventilhorns" ("Concerning the proliferation of the chromatic, or valved horn") writes:

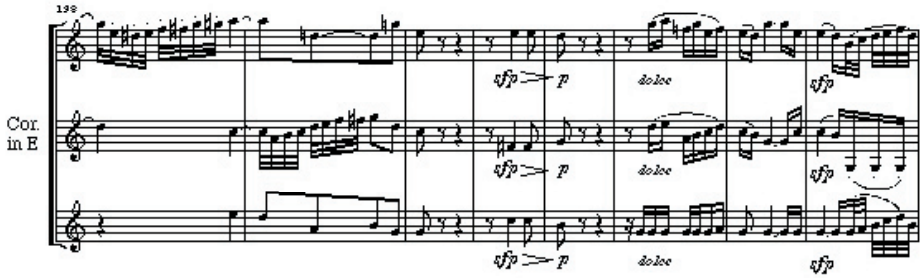
> I strongly recommend to composers the study of the conventional natural horn, as until now its effect remains unknown and unobserved; in the opera, for example, strongly played, *brassy* stopped notes can lend a shocking, hairraising effect to coarse subjects, and an accompaniment or solo for four differently pitched horns, selected so that mostly stopped notes are required, would certainly create a beautiful effect.[18]

The stopping technique, the idiomatic dialect of the natural horn, can be divided into two categories: (1) the intentional use of stopped notes as a "rhetorical" or "dramatic" dissonant tone color and (2) the "lyrical" use of stopping, which represents the idiomatic, near-vocal dialect essential to the natural horn of the Romantic and Classical Periods. A passage from Domenico Cimarosa's 1786 opera *L'Impresario in angustie* (Example 1), which incidentally shares certain features in common with Mozart's *Idomeneo* (1781), serves to illustrate the use of "lyrical" stopping, as does the (1874!) horn solo for *Cor ordinaire* from Camille Saint-Saëns' *Danse macabre.* Although the "lyrical" use of stopped notes can be best seen in solo and chamber music, demanding stopping technique can occasionally be found in the symphonic and opera literature, as in the third movement of Beethoven's Symphony no. 3, op. 55 (1812), in the aria, number 11, "Komm Hoffnung" from the first version of his opera *Leonore*, composed between 1802 and 1805 (Example 2), or in the second movement of Carl Maria von Weber's Symphony no. 2 (1807). One can interestingly compare the stopping technique required in these works composed before the invention of the valve with the demanding chromatic writing called for by Berlioz in his *Damnation de Faust,* which had its premiere in 1846. In Part IV, Scene 17, Berlioz expressly wanted the parts for Horns I-III to be played on natural horns, while Horn IV he wanted to be played on a valved horn because of its low range.[19]



Example 1
Domenico Cimarosa *L'Impresario in angustie* (1786)

The structural significance of "rhetorical" stopped notes is generally underestimated. Since the introduction of the valved horn into the orchestra of the nineteenth century, critics have warned of the dangers inherent in disregarding this idiom through the more



Example 2
Ludwig van Beethoven, *Leonore*, first version, aria number 11, "Komm Hoffnung"
(between 1802 and 1805)

comfortable chromatic use of the valve. This misgiving has unfortunately been confirmed in that even today, important stopped effects are overlooked by valved horn players, largely through unawareness. In an apparently neglected chapter on the valved horn in his otherwise much-read treatise on instrumentation, Berlioz calls the conductor to answer for the correct performance of natural horn parts:

> Many composers have an aversion toward these new instruments [valved horns], as these have, since their introduction into the orchestra, also been used by many horn players when the conventional natural horn is called for, the players finding it more comfortable to play the stopped notes with the help of this [valve] mechanism as open notes, where the composer expressly desires the specific effect of the stopped notes. This is of course a dangerous abuse, which, however, the orchestra conductor quite readily can correct; beyond that, one should not forget, that in the hands of a skilled player, the valved horn is capable of all the stopped notes possible on the conventional horn, and even a few more—stopped, as well—as [with the valved horn] it is possible to play a complete scale without one single, open note.[20]

Berlioz refers here in 1844 to the "specific effect of the stopped notes." Almost twenty years later, Franz Ludwig Schubert sees this effect as an intentional, acoustical dissonance:

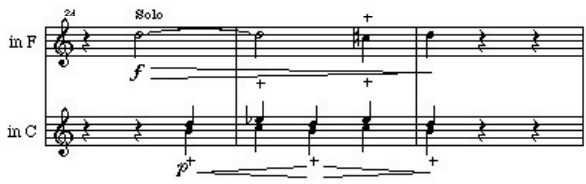
> One must differentiate on the horn between *natural,* or *open* and *stopped* notes. … In terms of strength and beauty, the natural ones are superior to the stopped, for which reason the open notes are preferred, if one does not want, as an exception, to achieve special effects through the use of stopped notes.[21]

In 1865, as Munich celebrated the premiere of Wagner's *Tristan und Isolde*—a work in which, if for no other reason than the demanding chromaticism and the exploitation of the lower register, anything but valved horns would be unthinkable—Schubert expressed

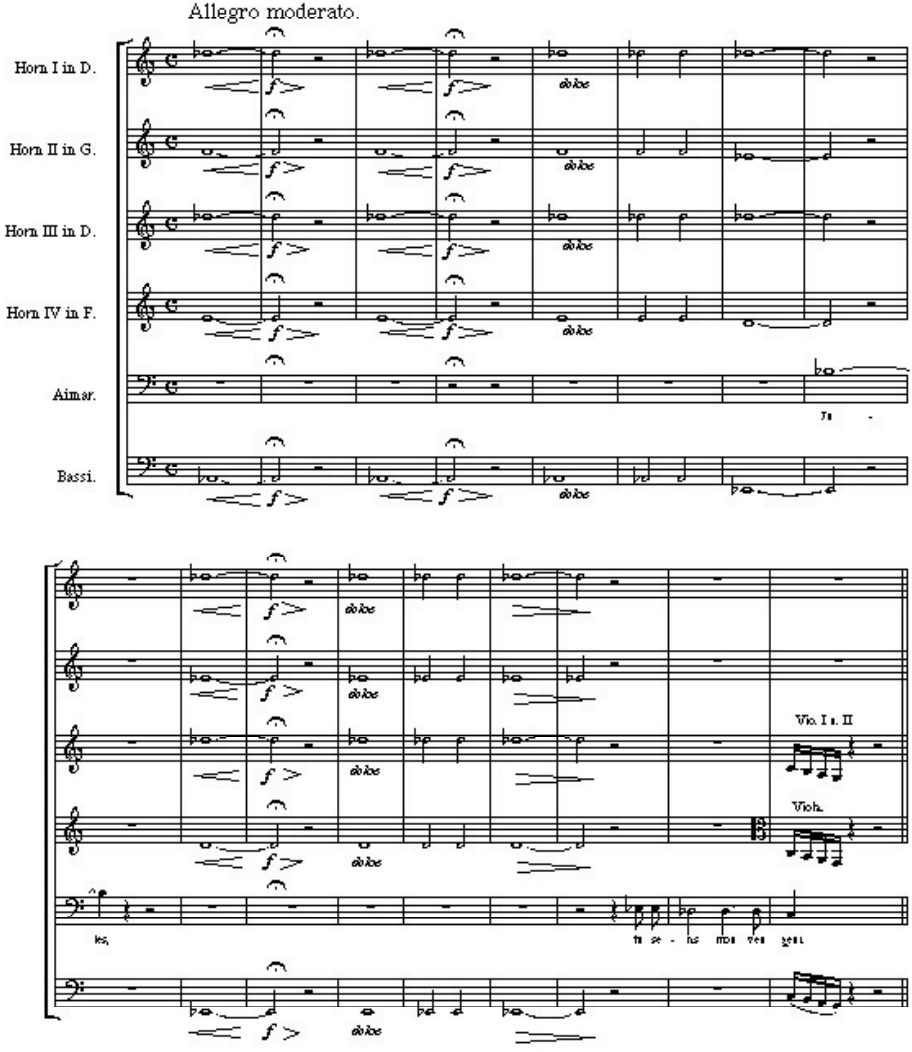
himself more forcefully regarding the neglect of stopped effects, which he (like Berlioz) sees as the result of horn players' indifference. In an article "Ueber den Verbrauch und Mißbrauch der Ventilinstrumente in Verbindung mit anderen Instrumenten" ("Concerning the use and abuse of valved instruments together with other instruments"), he even indicates the specific notes that he considers structurally significant:

> If the author dare speak a word of reproof here, this censure is addressed directly at those conductors who tolerate the use of valved instruments in orchestral works in which horns and trumpets without valves are indicated, and the use of valved horns pitched in F to replace all possible crookings of the natural horns. Even if one is unaffected by the difference between *natural* and *valved tones*, one should at the least require the horn players to play all given *stopped notes*, such as f♯, g♯, a, b♮, c♯, d♯ and f, in a corresponding manner, especially when it is clear that the composer has assigned particular importance to a stopped note.[22]

This "particular importance" (for Berlioz the "specific effect") of the "rhetorical" use of stopped notes is most clearly seen in works with text, where stopped effects primarily serve as word-painting, to underscore text and/or dramatic passages. For example, in Luigi Cherubini's opera *Médée* (1797), the atmosphere of danger or ill-boding in Act I, Scene 1 is underlined further through the sighing effect of the stopped notes e♭'' and a♭'' in mm. 160 and 162 respectively, as is the significance of the word *douloureux* in Act II, Scene 5, m. 108 through the *sforzato* f♯' in Horn II. A similar effect can be seen in Cherubini's choice of a stopped a♭' in m. 9 at the beginning of Act III, whereas this stopped note, not reinforced by doubling in any another part, also has structural value as the last and first note respectively in a motivically important falling third. Stopped notes that serve as acoustical definition for sighing motives, becoming in themselves acoustical motives, can be seen, for example, in the F-Horn parts from the overture to Étienne Nicolas Méhul's opera *Uthal* (1806), as well as in the following C-Horn parts (Example 3). To create a specific mood in his opera *Mélidore et Phrosine*, Méhul calls for all four horns to play stopped together, choosing four different crookings to achieve this (Example 4). The passage is exceptional from the standpoint of instrumentation in that it is customary to have one hornist in a horn pair act as an anchor by playing an open note if the other is playing a stopped note.



Example 3
Étienne Nicolas Méhul, *Uthal* (1806)



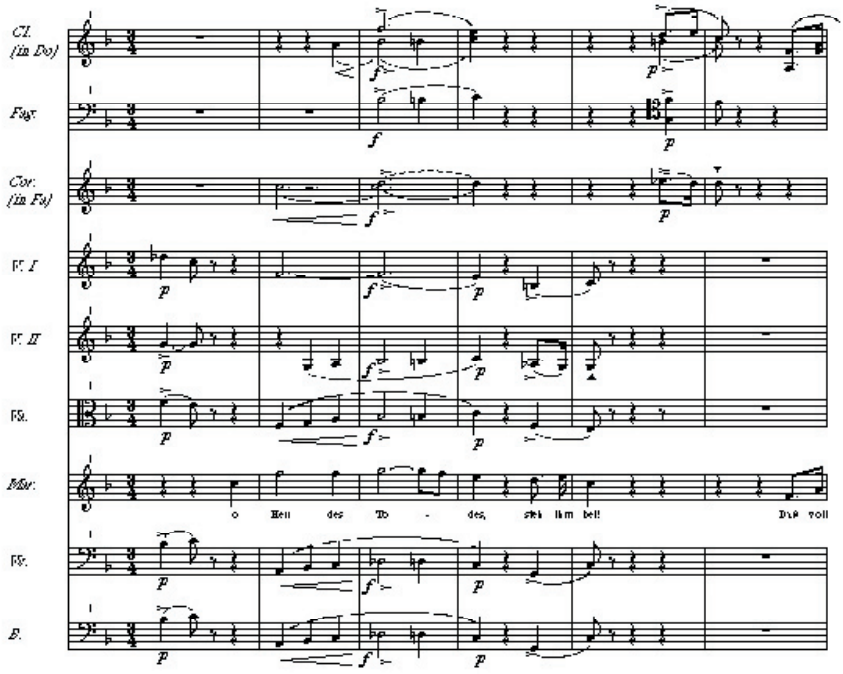
Example 4
Méhul, *Mélidore et Phrosine* (1794)

A number of instances of "rhetorical" applications can be found in works by more well-known masters: for example, in the overture to Weber's *Der Freischütz* (1821) (the a♭ in mm. 46 and 48), as well as in the Trio, no. 9 (the f♯, m. 87). Further examples of stopped notes that serve to underline text-related passages acoustically are the stopped e♭'' in m. 223 of the *Credo* in Beethoven's *Missa Solemnis*, the e♭'' and d♭'' in m. 24 of the *Sanctus*, and the sighing effect of the stopped f♯ in the second horn part, mm. 79 and 81 of the *Agnus Dei*. Franz Schubert uses acoustical dissonance as word painting in his 1820 oratorio fragment *Lazarus* (Example 5). Immediately after the text passage "O Herr des Todes, steh ihm bei" ("O Lord of death, stand by him") follows a stopped e♭'' (sounding a♭') in Horn I in m. 127. The dissonance of this appoggiatura is enhanced by the almost subliminal acoustical dissonance of the stopping, and the resultant frictional effect contributes significantly to a heightened definition of the text.

An indication for the mistrust many composers harbored against the valved horn, which conversely serves to illustrate innovative attempts to exploit instrumentation possibilities afforded by the new instruments, is the scoring of horns by pairing two natural with two valved horns. It is significant that the natural horn pair is frequently placed above the valved horn pair in scores for works where both instruments are required. In studies of works involving four horns with no specific indications as to what type of horn is meant, this hierarchy can be helpful in differentiating between the two. Many composers were unfortunately not clear in indicating which type of instruments they desired, using somewhat interchangeable nomenclature such as *Corni, Hörner,* or *Cors.* The terms *Corni* and *Hörner* can imply either valved or *Wald-* (i.e., natural) horns. A presumed instrumentation is possible only after a careful examination of the idiomatic treatment of the individual parts, particularly with regard to voice leading.

A comparison between works in which specific indications are given demonstrates the general differences in instrumentation between valved and natural horns, e.g., the contrasting voice leading of valved and natural horns in the third and fourth movements of Saint-Saëns' Symphony No. 1(1855). A look at Wagner's application of both types of instruments in his opera *Rienzi* (1842) suffices to demonstrate also the use of the valved horn primarily to exploit the lower register. This represents a characteristic criterion for instrumentation already established with the first authenticated scoring for valved horns in the opera, in Jacques-François Fromenthal Halévy's *La Juive* (1835).

What is not evident in a visual examination of written music is the acoustic phenomenon of dissonantly sounding stopped notes, an intentionally composed effect. It is possible even in a theoretically consonant harmony to introduce a "frictional" dissonance, as for example in the overture to Weber's opera *Abu Hassan* (1811). The written stopped note e♭'' (sounding c'') in mm. 28 ff. is theoretically consonant within the C-major harmony at this point. Requiring a hand position more than partially (if not completely) closing the bell, played on a horn pitched in A-alto (which has a clear, even piercing timbre), and all this in a *fortissimo* context, the overall effect is one of jangling brassy discord, complementing perfectly the desired Turkish Janissary connotations. Variations in tonal color with different crookings, a further characteristic of the natural horn, was a topic addressed by,



Example 5
Franz Schubert, *Lazarus* (1820)

among others, the authors of horn methods, such as Domnich, Froehlich, Meifred, and Mengal,[23] and authorities on instrumentation, e.g. Jadassohn, Guiraud, or Hofmann.[24] This acoustical aspect of natural instruments, however, is beyond the scope of the present study.[25]

Acoustically dissonant stopped effects are more frequently used to underline mood or atmosphere than as word painting, as in the opening measures of Berlioz' Requiem (1837). The written b' of the horns in E♭, a brassy note when played *sforzato*, sounds as *unisono* d' with the other instruments. The written e♭'' of the horns in C in mm. 9 ff. has a similar effect. It is significant that had Berlioz not expressly wanted the specific timbre created by the acoustical dissonance of these stopped notes, he could have exchanged the C and E♭ horn parts. In that case, the sounding d' in m. 3 would be the ninth partial for the horns in C, and the sounding e♭' (now an octave lower) would be the eighth partial for the horns in E♭. Written in that manner, these notes would lie within the overtone series, and be playable with an open hand position; they would not be stopped notes. Apparently,

however, the specific acoustical dissonance of the stopped notes was important to Berlioz, as it also appears to have been to Saint-Saëns forty years later at the beginning of *Samson et Dalila* (1877). To create a desired mood, he prefers the *Cors ordinaires en Fa* to the *Cors chromatique en Si*♭(here the unaccompanied stopped notes c♯' and a'). In Berlioz' Requiem the stopped d♭' and a♭ underscore the text "Mors stupedit et natura, cum resurget creatura," and are accompanied by the verbal instruction *faites cuivrer le son bouché.*

With respect to the examples above, it should be noted that there are in neither the horn parts nor in the scores any indications that these are stopped notes. As these stopped notes, or effects, are innate to the natural horn, the additional instruction "stopped," or *touché* would have been superfluous. Only with the advent of the valved horn did a disregard for stopped effects become a problem.[26] Berlioz, at least, confronted with the possibility that the parts he conceived for the natural horn might very well be played on valved horns, felt it necessary to accompany important stopped effects with specific directions for the player (*sons bouchés*), as seen in *La Damnation de Faust*.

In the 1865 preface to *Tristan*, Wagner laid a cornerstone which, through the direction *gestopft* ("+"), served to ensure that stopped effects, idiomatic to the natural horn and primarily "rhetorical," would indeed be observed. The instruction was necessary, as valved horn players would not normally play these notes using hand stopping. On the other hand, there is a false logic here which resulted in a practice handed down by generations of horn players and conductors, and which persists to the present day. It is silently (and mistakenly) understood that all notes are to be played as overtone partials (as open notes), if they are not accompanied by an indication to the contrary, i.e. *stopped, gestopft, bouché, chiuso* or +, regardless of whether or not said notes are foreign to the given overtone series. As a result, important stopped effects in works conceived for the natural horn and composed before or during the transition to the valved horn are either overlooked or ignored in modern practice.

For analysts who are familiar with, or at least have some knowledge of stopping technique, the evaluation of stopped notes with respect to their differing acoustical qualities is relatively easy. It is self-evident to every horn player, for example, that every note attained by closing the hand with the bell and increased air pressure is accompanied by a relative change in timbre. Even stopped notes that normally sound muffled can become nasal to brassy with increasing loudness, and even more so, if played *sforzato*. It cannot, however, be taken for granted that this acoustical characteristic of the natural horn (or better, the stopped horn) is universal knowledge.

It would be safe to say, even in light of the many supporting Baroque and Classical models, that it is often overlooked that the natural horn, due to the timbre of alternately changing open and stopped notes, probably came closer than any other instrument to approaching the eighteenth- and nineteenth-century ideal of vocal imitation. On the other hand, strongly played stopped notes were an excellent means of creating dramatic effects through timbral dissonance. Unfamiliarity with both categories of stopped notes manifests itself today in various ways. For one, stopping technique is employed by many natural horn players in a universal manner, i.e. without differentiating between the diametrically opposed categories of "lyrical" and "rhetorical" usage. In solo concerti as well as in orchestral

literature one often hears an emphasis, a highlighting of stopped notes in lyrical passages, where the difference in timbre between stopped and openly played notes should generally be equalized. The fusion of "lyrical" and "rhetorical" categories is not only wrong from a musical and aesthetic standpoint; it openly contradicts established historical performance practice of the Baroque and Classical periods as well. Whether the reason for this lies in the use of stylistically unsuitable or uncharacteristic mouthpieces and/or instruments, or whether this can be the result of a performer's trying too hard to be heard in the last rows of too large a concert hall, is a question not easily answered. On the other hand, structurally important, dramatic stopped effects are not observed by players of modern chromatic valved horns. Stopped notes, played as a matter-of-fact on the natural horn, remain lost in modern practice.

The greatest problem associated with the interpretation of stopped passages lies largely in the identification of structurally important stopped effects and in the evaluation and classification of stopped notes in terms of individual tone quality. The latter is more difficult, as acoustical parameter such as dynamic context, register and instrumentation as well as tempo must be considered. The printed score is only of limited help here, as in very many cases the composer's indications for natural and valved horns are not all specified. Although subjective, the practical experience of horn players can be decisive in determining the relative importance of specific stopped passages or notes in timbrally dissonant contexts. A word of caution is necessary here, as the playing and acoustical idiosyncrasies of instruments even among given contemporary historical types can vary greatly. Considering the fact that the forms and bores of mouthpieces and instruments have undergone a continuing developmental process for primarily utilitarian reasons, the appropriate instruments should be used for evaluation within a given musical epoch.

With the use of valved instruments in works which were conceived for natural horns, "rhetorical" stopped effects should be indicated through the additional instruction "stopped," the sign "+," or an equivalent direction. As it would be unrealistic to call for a revised edition of all works conceived for the natural horn, it must remain at least for the present the responsibility of primarily performers, be they horn players or conductors, to insure that intentionally dissonant stopped effects are observed, even when not indicated in the score or parts. In view of the fact that the established modern performance practice is *de facto* hereby confuted, a certain amount of courage and initiative is called for. It is especially important for beginning players of the modern valved horn to learn, as a complement to interpretative musical attributes such as dynamics, articulation and phrasing, the use of stopped notes as a means of expression.

In closing, I would like to offer an alternative to the aesthetic problem of disregarded stopped effects. Although the following quotation dates from 1893, the observations of the author have (unfortunately) not suffered from loss of topicality. Over one hundred years ago, Richard Hofmann wrote in his handbook on instrumentation:

> In the works of our old masters, it would be especially advisable to use natural horns, or *Waldhörner*. Nowadays, however, the absence of these instruments is becoming more and more obvious. This unfortunate situation could soon be remedied at no great cost by concert or theater managements.[27]

NOTES

[1] The present paper, a translation of my article "Stopftöne beim Horn als Strukturelles Ausdrucksmoment," *Das Orchester*, no. 2 (1994), is based on my doctoral dissertation, *"L'Instrument le plus romantique": Das Naturhorn in der Klassik und Romantik* (Bochum, 1991).

[2] See Herbert Heyde, *Das Ventilblasinstrument: Seine Entwicklung im deutschsprachigen Raum von den Anfängen bis zur Gegenwart* (Wiesbaden, 1987), pp. 14-21.

[3] Cf. Christian Ahrens, *Eine Erfindung und ihre Folgen: Blechblasinstrumente mit Ventilen* (Kassel, 1986).

[4] The generic and commonly used term "natural horn" refers here to the instrument developed after ca. 1750, on which notes not inherent in the overtone series can be produced by closing the bell with the help of the hand (stopping). A more specific term would be "handhorn," although this is not universally recognized.

[5] "Unter allen Instrumenten, worauf leidenschaftlich Töne gebildet werden, ist die Kehle des Menschen ohne allen Zweifel das vornehmste. Darum kann man es als eine Grundmaxime ansehen, daß die Instrumente die vorzüglichsten sind, die am meisten fähig sind, den Gesang der Menschenstimme, nach allen Modificationen der Töne nachzuahmen." Johann Georg Sulzer, *Allgemeine Theorie der schönen Kunst* (Leipzig, 1792; rpt. Hildesheim, 1967), 1: 679.

[6] "Die Menschenstimme ist ganz natürlich Urton, und alle übrigen Stimmen der Welt sind nur ferner Nachhall dieser göttlichen Urstimme. Die Menschenkehle ist das erste, reinste, vortrefflichste Instrument in der Schöpfung." Christian Friedrich Daniel Schubart, *Ideen zu einer Ästhetik der Tonkunst* , ed. L. Schubart (Vienna, 1806; rpt. Hildesheim, 1964), p. 335.

[7] "Die Erfindung solcher künstlichen Instrumente, auf denen man durch den bequemen und mannigfaltigen Gebrauch der Finger, mancherley Abwechslungen und Verzierung und Spiele leichter hervorbringen konnte, als mit der Kehle, führte bald die Instrumentalmusik weiter vom Gesange ab. An die Stelle des Ausdrucks, der Bedeutung trat oft bloße Künsteley: leicht überwundne Schwierigkeiten, die auch nichts sagten, erregten Bewunderung und der gemeine Mensch, vielleicht schon in demselben Grade unwahrer, sperrte dem neuen wunderbar klingenden Hokuspokus gern Maul, Nase und Ohren auf." Johann Friedrich Reichardt, "Instrumentalmusik" in *Musikalisches Kunstmagazin* (Berlin, 1782-1791; rpt. Hildesheim,1969), p. 24.

[8] "Das Horn soll singen; darin liegt seine schönste, einzige, wahrhaft magische Kraft. Die Töne müssen sich erst allmählich vollständig entwickeln, gleich der Menschenstimme, mit den zartesten Nuancen, im ächten Portamento di voce … ." Johann Georg Albrechtsberger, *Sämtliche Schriften über Generalbaß, Harmonielehre und Tonsetzkunst zum Selbstunterrichte* (Vienna, 1837), 3: 182.

[9] "Wer daher irgend etwas auf diesem Instrumente [dem Horn] leisten will, der bilde sich blos nach der Singschule." Joseph Froehlich, *Horn-Schule* (Bonn, [1810]), p. 5.

[10] "Das vorzüglichste Werkzeug, welches die gütige Natur allen Menschen zum Ausdruck, und zur geselligen Mittheilung ihrer frohen, wie ihrer traurigen Empfindungen verlieh, ist die Stimme. … Die wahren Regeln des Vortrags bey jedem Instrumente, welchem der Künstler eine Seele einhauchen kann, sind daher auch keine andere, als jene des Vortrags beym Gesange (nur mit Beybehaltung der jedem zukommenden Eigenthümlichkeit), und das größte Lob, welches man einem Meister auf irgend einem Instrument beylegen kann, ist jenes, wenn man ihm sagt, 'es fehlen blos die Worte zum Gesang'." Joseph Fröhlich, *Vollständige theoretisch-praktische Musikschule* [Bonn, 1810], I: 18.

[11] See Rogan, *Naturhorn* , pp. 16-21. It is also possible that valved horn players would arbitrarily or intentionally select a tubing length, which although making it possible to play an intended stopped note as an open one, would not necessarily be the better choice for a given partial, thereby creating

a different tonal distortion. This may have been an additional reason for the rejection of the valved horn. However, variations in tonal character and timbre between the conical tubing lengths on a terminally crooked orchestral horn are (to the author's ear, at least) far more evident than those caused by changing the cylindrical tubing lengths in the middle of the valved instrument, relatively uncommon natural horns with fixed mouthpipes and internal crooking, such as the *Inventionshorn* and the *Cor-solo,* notwithstanding. It is also possible that optical considerations may have been a factor contributing to the initial rejection of the valved horn, in that it may have been simply considered ugly in comparison with the natural instrument. This is however, to the author's knowledge, undocumented, and would seem to have concerned only the musicians and not the general public, which would have been alerted by audible means to the new instrument.

[12] This is not to imply that hand-stopping was not bemoaned in many quarters. Certainly, even before the advent of the valve, technical and musical ineptitude on the part of individual performers and increasing demands made on players by contemporary composers contributed to sometimes hostile criticism. However, the natural horn was the only horn instrument available before the invention of the valve, and represented the idiom against which the valved horn was measured. Contemporary rejection of hand-stopping for aesthetic reasons, found in treatises such as the *New Instructions for the French Horn* (London, 1772-9) should also be seen in the proper context. The self-appointed "Judges of the Horn," writing here in a paragraph entitled "Should you want to make the Cromatic tones" point out that "Mr. Ponto and many others, famous on this instrument, constantly uses this method, by which means the half-tones are expressed, which is not to be done by any other method; but it is deemed by Judges of the Horn that the principal beauty, the Tone, is greatly impaired thereby." W.F.H. Blandford, in his article "Studies on the Horn" in *The Musical Times* (August, 1922) calls the passages preceding this paragraph "valueless advice," and considers the work "remarkable for the pretentiousness of its preface and the skill with which all difficulties of exposition are shirked" (547). Be that as it may, it is entirely possible that the "Judges of the Horn" may have felt justified in their criticism, given the possibility that in isolated instances the technique of hand-stopping very well may have been abused by performers as well as composers. However, the above passage remains an exception to documented contemporary literature establishing hand-stopping as idiomatic to the horn.

[13] "Was sollen uns die vielen Ventil- und Klappengeschichten neuer Erfindungen? Sie verhunzen den natürlich charackteristischen Ton und machen, dass wir bald so weit gekommen sein werden, nur noch Gelb und Roth zu haben, womit wir nicht mehr gebührend malen und schattieren können." Carl Gottlieb Reissiger, "Ueber Ventil-Hörnern und Klappen-Trompeten," in *Allgemeine Musikalische Zeitung* (=*AMZ*) (September 1837), col. 608.

[14] "Es ist Thorheit, wenn man meint, daß der Effekt der gestopften Töne, welcher zuweilen ganz charakteristisch und durch die Idee des Componisten nothwendig bedingt ist, verloren gehe auf dem Ventilhorn, da man auf dem Ventilhorne durch Einlegen der Hand in den Schalltrichter diese Töne eben so gut hervorbringen kann, wie auf dem gewöhnlichen Horne. Das heißt, dem Instrumente zur Last legen, was Schuld des Bläsers ist, wenn er es nicht thut." Anonymous, "Bericht über Berlioz' musikalische Reise" in *Neue Zeitschrift für Musik* (=*NZfM*) (1843), 2: 156. See also Hector Berlioz, *Mémoirs,* 2nd ed. (Paris, 1881), 2: 94.

[15] "Der wesentlichste Nutzen der Ventilinstrumente besteht darin, daß der Componist jetzt nicht mehr gezwungen ist, bei Modulationen in eine entfernte Tonart die Hörner und Trompeten pausieren oder umstimmen zu lassen. Der Charakter der Instrumente kann dabei völlig gewahrt bleiben; man braucht gar nicht zu hören, daß Ventile angewendet sind." Anonymous, "Das Blech in der Musik," *AMZ* (January 16, 1878), col. 33.

[16] "Der Schüler wolle immer bedenken, dass ein Ventilhorn nichts anderes ist als ein Horn, welches sich ausser seiner ursprünglichen Stimmung in sechs andere Stimmungen bringen lässt. Schnelle

diatonische oder chromatische Tonfolgen werden nie gute Wirkung machen, obschon sie auf dem Ventilhorne auszuführen sind; sie sind in der Natur des Instrumentes nicht angemessen." Salamon Jadassohn, *Lehrbuch der Instrumentation* (Leipzig, 1889), p. 264.

[17] "Das chromatische Horn (mit Cylindern, Pistons oder Ventilen) datirt vom Jahre 1830. Gegen dieses herrliche Instrument existieren noch sehr viele Vorurtheile; aber das chromatische Horn ist in Wirklichkeit nicht anderes, als ein vervollkommnetes Naturhorn, welches im Wesentlichen ebenso wie dieses gespielt wird und alles ausführt, was man auf dem letzteren ausführen kann." Henri Kling, "Studie über das Waldhorn," *NZfM* (1898), 2: 535.

[18] "Den Componisten aber empfehle ich das Studium des gewöhnlichen Horns noch ganz besonders, denn bis jetzt wird dessen Effect noch ganz verkannt und nicht benutzt; so z.B. zu crassen Sachen in der Oper kann das gewöhnliche Horn durch stark angeblasene g e q u e t s c h t e Stopftöne einen gräslichen 'Haarbergan' hervorbringen und ein Accompangement oder Solo für vier verschiedene Hörner, so gewählt, daß meisten Stopftöne nöthig werden, würde gewiß einen schönen Effect bewirken." C. RDT., "Ueber die Verbreitung des chromatischen oder Ventilhorns," in *NZfM* (1835), 2: 178.

[19] Orig.: *Cors I, II en Ut, Cors III, IV en F (dont le 2d à pistons).*

[20] "Mehrere Komponisten haben gegen diese neuen Instrumente [valved horns] eine gewisse Abneigung, weil dieselben seit ihrer Einführung ins Orchester von manchen Hornisten auch dann gebraucht werden, wenn das gewöhnliche Horn vorgeschrieben ist, da die Bläser es bequemer finden, durch diesen Mechanismus die gestopften Töne als offene vorzutragen, während der Komponist gerade die besondere Wirkung der gestopften Töne haben wollte. Das ist allerdings ein geführlicher Mißbrauch, den aber der Orchesterdirigent sehr gut steuern kann; außerdem, darf man auch nicht aus dem Auge verlieren, daß das Ventilhorn in der Hand eines geschickten Künstlers all gestopften Töne des gewöhnlichen Hornes, und selbst noch einige mehr—ebenfalls gestopft—anzugeben vermag, da es die ganze Tonleiter spielen kann, ohne einen einzigen offenen Ton anzuwenden." Hector Berlioz, *Instrumentationslehre [Traité de l'instrumentation et d'orchestration modernes]*, supplemented and revised by Richard Strauss (Leipzig, 1955) 278.

[21] "Man unterscheidet bei dem Horne n a t ü r l i c h e oder o f f e n e und g e s t o p f t e Töne. . . . An Kraft und Wohlklang sind die natürlichen Töne den gestopften überlegen, daher man die offenen Töne bevorzugt, wenn man nicht ausnahmsweise Effekte durch gestopfte Töne erzielen will." Franz Ludwig Schubert, *Die Hilfsmittel des musikalischen Effekts: Ein Hinweis für schaffende und ausübende Künstler* (Leipzig, 1863), pp. 87-88.

[22] "Wenn nun Ref. einen Tadel hier auszusprechen wagt, so betrifft dieser Tadel besonders solche Capellmeister, welche dulden, daß Orchesterwerke, in welchen Hörner und Trompeten ohne Ventile gesetzt sind, mit Ventilinstrumenten besetzt werden, und daß die Ventilhörner in F alle möglichen Stimmungen der Naturhörner ersetzen. Selbst wenn man Nichts auf den Unterschied zwischen Natur- und Ventilton giebt, sollte man doch wenigstens die Hornisten dazu anhalten, alle als 'Stopftöne' vorgeschriebenen Töne, wie fis, gis, a, h, cis, dis und f, ebenfalls als solche zu behandeln, besonders wo es ersichtlich ist, daß der Componist auf einen gestopften Ton einen Effect gelegt hat." Schubert, "Ueber den Gebrauch und Mißbrauch der Ventilinstrumente in Verbindung mit anderen Instrumenten," *NZfM* (1865), 2:296.

[23] Cf. Heinrich Domnich, *Méthode de Premier et de Second Cor* (Paris, 1808),10-11, 13-14; Fröhlich, *Horn-Schule*, p. 5; [Pierre-] J[oseph-Emile] Meifred, *De l'Entendue de l'Emploi et des Resources du Cor en général et de ses Corps de rechange en particulier* (Paris [1829]), pp. 3, 5, 7; [Jean-Baptiste] Mengal, *Méthode de Cor* (Paris, 1835), p. 5.

[24] Cf. Jadassohn, *Lehrbuch*, p. 245; Ernest Guiraud, *Traité pratique d'Instrumentation* (Paris, 1892), p. 33; Richard Hofmann, *Praktische Instrumentationslehre* (Leipzig, 1893), 4: 2-3, 6.

[25] See Rogan, *Das Naturhorn* , 9ff. and 21.
[26] *Cor-mixte* players, such as Duvernoy and others, ignored or misrepresented intentional effects as well. Playing on one natural horn, usually pitched in F, the given key would then be transposed, calling for a constellation of open and stopped notes often completely different than those which would have resulted with the use of the correctly corresponding length of tubing. This interesting practice was criticized, however, by Dauprat and others, and serves to illustrate the deliberate non-observance of stopped (and open) passages even among natural horn players. However, the more widely practiced (and therefore more serious) abuse of intentional stopped effects is to be found—then as now—among valved horn players.
[27] Bei den Werken unserer alten Meister wäre es besonders rathsam, die Natur- oder Waldhörner zu verwenden. Heutzutage nacht sich aber der Mangel and solchen Instrumenten immer fühlbarer. Diesem Uebelstand könnte von Seiten der Concert- und Theater- Directionen ohne bedeutende Kosten bald abgeholfen werden." Hofmann, *Instrumentationslehre*, 15.