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Baroque and Classic Vibrato

The Vibrato Controversy

Frederick Neumann

Vibrato represents a means of enriching musical tone by rapid, regular oscillations of pitch, loudness, or timbre, or by a combination of these.

Vocal vibrato appears to be ageless, since in most mature voices the throat produces oscillations spontaneously. On strings and other instruments, however, the oscillations are artificially superimposed on an essentially bland tone by a technique that has to be consciously acquired. Yet even instrumental vibrato might be as old as many instruments themselves. Haas speaks of a vibrato effect in classical Greece through the use of a plectron in kithara playing.¹

Today in mainstream performances voices and strings draw upon it pervasively, while performances that aspire to the epithet of being "historically informed" (a now fashionable euphemism for "authentic") employ it not at all or else restrict it severely. If only for reasons of this discrepancy, the degree of its presence in whatever may be understood as "early music" has become a controversial issue. The question arises: is elimination or severe restriction of vibrato historically justified?

1. Robert Haas, *Aufführungspraxis der Musik*, Handbuch der Musikwissenschaft (Wildpark-Potsdam, 1931), 25.

Before presenting documentation concerning vibrato prior to 1800, I readily admit that a ceaseless and omnipresent *instrumental* vibrato represents a 20th-century phenomenon, and that in previous eras, even in the 19th century, vibrato was introduced much more selectively than it is today. But (and this is the point I am seeking to make in the present paper) before 1800 it was by no means as rarely used, let alone as completely shunned, as many of our early music specialists would have it.

Of the two opposing views in the controversy a pro-vibrato stance is taken by Robert Donington, the doyen of performance practice theory, who writes: "Totally vibrato-less string tone sounds dead in any music. It is just as much an illusion to think that early performers preferred it as to think that early singers preferred a 'white' tone. Sensitive vibrato not only can but should be a normal ingredient in performing early music."²

An opposing position with regard to the classical era has been formulated by Zaslaw, ". . .there is good historical evidence to suggest that [vibrato was] used sparingly by soloists and generally eschewed by well-disciplined orchestra players."³

I shall not deal here with purely dynamic oscillations on the same pitch of the kind produced by the tremulant stop on the organ, or by the bow vibrato on strings (an oscillation of pressure without interruption of the stroke), or related artificial manipulations of voice and woodwinds that were frequent from the early 17th to past the mid-18th century, and were marked in the score most commonly with a wavy line over repeated pitches. I shall limit myself instead to pitch vibrato, generally not reflected in the score.

A failure to understand the nature of this pitch vibrato has produced serious misconceptions on the part of writers old and new. In it the pitch winds wave-like around a desired "correct" pitch with a spectrum of "wrong" pitches evenly distributed above and below its core. The desirable vibrato effect rests on the physio-psychological phenomenon of *sonance*, which is the fusion of the vibrato oscillation above a certain threshold of speed (ca. 7 cycles per second) into an aural sensation of richer tone, while the perception of the oscillation is minimized and that of the "wrong" pitches *disappears altogether*. On strings the combined range of the oscillation above and below the focal pitch is about a quarter tone; whereas for the voice it averages a half-tone. Electronic

2. *The Interpretation of Early Music*, (rev. ed., London: Faber and Faber, 1974), 255.

3. *Mozart's Symphonies* (Oxford: Oxford University Press, 1989), 481.

analyses of Caruso's records have revealed that in moments of great intensity the pitch range of the oscillations reached up to a whole tone!

The mysterious way in which the human brain transforms aural impressions can be likened to that of a rotating disk with rainbow colors. As long as we rotate it at a slow speed we see the "impurities" of its component colors. Above the critical threshold of speed they merge into a perception of pure white. We know about the constituent colors but no longer see them.⁴ We experience an optical "delusion". By analogy we experience an acoustical "delusion" at the hands of *sonance* with its transformation of sound and the apparent disappearance of pitch oscillations, which are just as real as rainbow colors but elude our aural perception. When, however, the speed of the oscillations is inadequate to achieve *sonance*, as can be the case with aging or ill-trained voices or with a string vibrato that is too slow, the wave motion becomes audible and we hear the unpleasant wobble of the "impurities." The acoustical illusion (or "delusion") of *sonance* is at the core of the vibrato phenomenon. The failure to recognize it as such has deceived most observers through the centuries (and up to the present) into misunderstanding the nature of pitch vibrato, and has notably misled them into grossly underestimating the near-universal presence as well as the size of the natural, innate vocal vibrato.

The latest victim of this aural "delusion" is Greta Moens-Haenen in her voluminous monograph *Das Vibrato in der Musik des Barock*.⁵ While trying to establish an only minimal use of pitch vibrato in baroque music the author is ill at ease and ambivalent about the innate vibrato of the voice. She does not deny its existence outright, but tries to make it appear insignificant in case it should exist. First she finds the question whether the voice vibrates spontaneously ("von Natur aus") difficult to answer, but admits that one must consider the "possibility" of a "very small" natural vibrato (p. 11). Later she hedges again by speaking of a "possibly existent" ("eventuell vorhandenen"), natural vibrato that would have to lie "considerably below" a conscious, "ornamental" vibrato, whose range and intensity is small to begin with (p. 31). Here again, an ear deceived by the delusion of *sonance* led to a misappraisal of the by no means hypothetical, but very real and substantial, innate vocal vibrato.

4. A similarly mysterious working of the brain can transform the superposition of two slightly different sound impressions in a stereophonic merger into a single one with added depth, or of two photographs of the same object taken from slightly different angles into a perception of three-dimensionality (with the help of a simple optical gadget).

5. Graz: Akademische Druck- und Verlagsanstalt, 1988.

We can indeed infer the near-universal presence of this natural vibrato solely from the considerable effort it takes singers to suppress it when they want to sound "historically informed." The effort involves a need to fight nature, and no historical evidence can be found that this kind of effort was ever expected from any singer.⁶ What we do find in the historical sources are a number of objections to the unpleasantness of an obtrusive wobble found in aging voices, or to the inability of certain singers to sustain the focus on one pitch. Thus Ellen Harris, who likes to justify non-use, or at best minimal use, of vocal vibrato in baroque music, quotes Christoph Bernhard as writing:⁷

Fermo, or the maintenance of a steady voice is required on all notes, except where a *trillo* or *ardire* is applied. It is regarded as a refinement because the *tremulo* is a defect...Elderly singers feature the *tremulo*, but not as an artifice. Rather it creeps in by itself, as they no longer are able to hold their voices steady. If anyone would demand further evidence of the undesirability of the *tremulo*, let him listen to such an old man employing it while singing alone. Then he will be able to judge why the *tremulo* is not used by the most polished singers, except in *ardire*.⁸

Harris comments that "Bernhard clearly uses 'tremolo' as an equivalent of the modern term 'vibrato' and is the most emphatic of all Baroque authors in objecting to its use." I do not believe this comment to be justified, Bernhard uses the term "tremolo" here not as equivalent for the modern 'vibrato,' but to designate one, as he takes great pains to describe, that is defective, impaired in its tremulousness by the debilities of old age. It cannot therefore be read as a condemnation of a healthy, youthful vibrato that achieves full *sonance* and with it a beautiful sound.

6. Will Crutchfield writes, "Most pedagogues are agreed that a fully developed singer cannot continuously suppress his customary vibrato without some kind of unhealthy tension of the vocal mechanism," in his chapter "Voices" (Classical era) in *Performance Practice: Music after 1600* (New York: W.W. Norton and Co., 1989), 295. Misunderstandings in this field often arise from the multiple meaning of such terms as *tremolo*. When W.M. Mylius in his *Rudimenta musices* of 1685 (ch. 5) refers to the tremolo as *ardire* and says it is "more a fault than a feat," he refers to the conscious repeated emphasis on one pitch, a form of the Italian *trillo*, a rapid tone repetition that could proceed in either a staccato or legato manner (the latter without interruption of the breath). He did not refer to natural vibrato. Mylius's teacher, Christoph Bernhard, as we shall presently see, used the term to designate an age-derived audible wobble; others still use *tremolo* in the modern sense of a (good) pitch vibrato.

7. Ellen Harris, "Voices" (baroque era), *Performance Practice: Music after 1600*, 104.

8. *Ardire* is defined by Bernhard as a *Tremol* (*sic*) used by a very few on the last note of a phrase.

Harris then tries (p. 104) to enlist Tosi, author of the famous treatise of 1723, as an opponent of vibrato, but this attempt, too, lacks persuasion. She refers to a passage in Tosi's treatise where he stresses the importance of teaching the student to sustain a tone on pitch without wavering and vacillating,⁹ starting the practice preferably with two measures at a time. Without such training, Tosi says, the student will acquire the habit of fluctuation back and forth with the voice. What Tosi talks about is not the oscillation of a vibrato, but the *meandering of the pitch focus itself*. This, too, cannot be read as a condemnation of vibrato. And Harris admits that "Even in the Baroque...the vibrato was not entirely absent, despite the statements of Bernhard and Tosi" (p. 104). She then quotes a description of Francesca Cuzzoni (ca. 1698-1770) as having a voice with a natural warble and a "nest of nightingales in her belly," and admits that this description might refer to a natural vibrato (p. 105).

More importantly, Harris quotes (in a translation by E. V. Foreman) Lodovico Zacconi, who suggests a continuous use of vibrato:

the tremolo, that is the tremulous voice, is the true portal to the *passaggi*, and the means of mastering the *gorgia* [i.e. coloraturas] . . . This tremolo should be slight and pleasing; for if it is exaggerated and forced, it tires and annoys; its nature is such that, if used at all, it should always be used . . .¹⁰

Harris writes on the same page, that "In the Classical era . . . a trend started towards a continuous vibrato."

Another eulogy of the vocal vibrato dates from the early baroque. Michael Praetorius declares a spontaneous vibrato to be an innate component of the human voice and a requisite for artistic singing. Speaking of boys to be instructed in the Italian manner of singing, he writes that they must have a good voice to begin with, and as the first of three requirements he lists the possession of a vibrato: "that a singer possess a beautiful, lovely, trembling, and wavering voice" ("eine schöne liebliche zitternd= und bebende Stimme").¹¹ Earlier in the same chapter he anticipated this statement when he criticized singers who, "gifted by God and nature with a singularly lovely, trembling, and fluctuating or wavering voice" indulge in excesses of embellishments that

9. "Gli faccia imparare di sostener le note senza, che la voce titubi, o vacilli . . ." Pierfrancesco Tosi, *Opinioni de cantori . . . sopra il canto figurato* (Bologna, 1723), 16-17.

10. *Prattica di musica* (Venice, 1592), Book 1, ch. 66.

11. *Syntagma musicum* (Wolfenbüttel, 1619), 3: 229-30.

obscure the text. As Moens-Haenen points out (p. 18), this idea was echoed by Daniel Friderici in 1624; and it was anticipated by Georg Quitschreiber in 1598 when he wrote, "*Tremula voce optime canitur*" ("one sings best with a wavering voice").

A century and a half later we find this statement confirmed by another unimpeachable authority, Mozart, in a letter to his father from Paris (June 12, 1778):

Meissner, as you know, has the bad habit of purposefully pulsating the voice, marking on a long-held note all the quarters and sometimes even the eighths — and that manner of his I have never been able to tolerate. It is truly abominable and such singing runs counter to nature. The human voice vibrates by itself, but in a way and to a degree that is beautiful — this is the nature of the voice, and one imitates it not only on wind instruments, but also on strings, and even on the clavichord but as soon as one carries it too far, it ceases to be beautiful, because it is unnatural.

This passage is remarkable on several counts. It confirms the presence of vibrato as being "in the nature of the voice" and it stresses its beauty, which prompted its imitation on string and wind instruments, which Mozart clearly approved of; it characterizes the vibrato as a natural, spontaneous component of the voice, setting it apart from the willful, pulsating manipulation of the voice that Mozart found objectionable and outright "abominable" when done in the bad taste of Meissner's purposeful rhythmic emphases. One thing emerges clearly: Mozart desired the vocal vibrato as well as its discreet instrumental imitations.

I shall return to Mozart's statement because I feel that it has been misinterpreted by Neal Zaslaw.¹² In the meantime Mozart's statement forms a natural bridge to the instrumental pitch vibrato, which I shall now address.

Though instrumental vibrato is presumably age-old, as said at the outset, unambiguous theoretical statements seem to surface first in the 16th century. Martin Agricola, speaking of Polish violins (*Polishe Geigen*), tells in poetic form how "trembling" (*zittern frey*) sweetens the melody.¹³ In Italy an early reference occurs in the following passage from Silvestro Ganassi's viol treatise, "At times one trembles with the bow arm and with

12. See the following article, p. 31. — Ed.

13. *Musica instrumentalis deudsch* (rev. ed., Wittenberg, 1545, f. 42).

the fingers of the hand around the neck in order to achieve an expression appropriate for sad and aggrieved music . . ."¹⁴

In France Basset (first name unknown), writing in Mersenne's *Harmonie universelle* of 1636 about lute playing, describes a violent shaking of the hand while not allowing the finger to leave the string, then adds the interesting remark that (at the time of writing) vibrato was introduced only infrequently, as a reaction against its overuse by the older generation. Here we have the testimony of a fashion swing. Basset considers both extremes as deplorable and recommends a golden mean.¹⁵ Mersenne, speaking of the violin, refers in matters of ornamentation to Basset's chapter on the lute, implying that the same graces, including the vibrato, were to be practiced on the violin as well.¹⁶

In Germany Johann Crüger in 1654, while inveighing against the abuse of *passaggi* — especially on the cornet and violin — writes, "It would be more praiseworthy and more agreeable to the listener if on the violin [instead of coloraturas] they would make use of a steady, sustained, long bowstroke together with a fine vibrato" (" . . . mit feinem Tremulanten").¹⁷ His reference to a "steady, sustained bowstroke" makes it clear that he is speaking not of a right-hand but of a left-hand, pitch vibrato.

Thomas Mace, an English exponent of the French lute school, confirms the change of fashion (alluded to above by Basset). He calls the vibrato a "sting," and describes its execution in detail. He says it is "pretty and neat but not modish in these days." Nevertheless, he finds it "very excellent for certain humours."¹⁸ And speaking of the gamba, Christopher Simpson calls the vibrato a "close shake, and cleverly indicates its nature by means of a trill representation that remains within the confines of a single space on the staff."¹⁹ John Playford also adopted this model for his extraordinarily popular *A (Breefe) Introduction to the Skill of Musick*, which saw nineteen editions between 1654 and 1730.²⁰

Towards the end of the 17th century we have ample documentation concerning the French gambists' employment of vibrato. They recognized two distinct types. The originally preferred one was

14. *Regola rubertina* (Venice, 1542, 1543), pt. 1, ch. 2.

15. *Traité des instrumens à cordes*, 80-81.

16. *Ibid.*, 182.

17. *Synopsis musica* . . ., 189.

18. *Musick's Monument* (London, 1676), 109.

19. *The Division-Violist* (London, 1659), 9 (2d. ed., 12).

20. See the 7th ed. (London), bk. 1, 116.

accomplished with two fingers, the lower firmly placed on the string, the upper pressed tightly against the lower. A shaking of the hand brought the upper finger into gentle percussive contact with the string. The result was a trill-like oscillation producing a microtone. Such a trill-type technique was possible, however, only with the lower three fingers. When the little finger was on the string they had to resort to the shaking of the stopping finger instead. After about 1700 Marais and other players, realizing the wider color potential of the one-finger vibrato, extended its application to the other fingers as well, without abandoning the two-finger-type.

Danoville in his gamba treatise of 1687 writes that the vibrato "has tenderness, and fills the ear with sad and languishing sweetness."²¹ In the same year the eminent gambist Jean Rousseau, like Danoville and Marin Marais a student of the legendary Sainte Colombe, proclaimed in his gamba treatise that one might introduce the vibrato *any place* ("en toutes rencontres") where the length of the note permits it, and that it is continued for the full extent of the tone.²²

An interesting analogy to the gambists' two-finger vibrato can be found in the French flutists. When Jacques Hotteterre speaks of a *flattement* or *tremblement mineur* — both terms for the vibrato — he says that it is done with the technique of the trill, but that only the edge of the hole is struck. Thus, instead of the higher microtone of the gambists, the flute's vibrato is realized with the lower one. When all holes are held so that this technique is impossible, then (Hotteterre says) one should *shake the flute* in order to imitate the effect of the ordinary *flattement*.²³ In his first book of flute pieces Hotteterre indicates that vibrato should be introduced *on almost all the long notes* and that, as with trills and [multiple] mordents, one must realize it slower or faster, according to the tempo and character of the piece.²⁴

Martin Heinrich Fuhrmann, describing in 1706 what he calls the [vocal] *Tremoletto*, writes that it "can be best demonstrated on the violin by leaving the finger on the string and shaking it a little, thus making the tone waver."²⁵

21. *L'art de toucher le dessus et basse de violle* (Paris, 1687), 41.

22. *Traité de la viole* (Paris, 1687), 100-101.

23. *Principes de la flûte traversière* (Paris, 1707), 29-30.

24. *Premier livre de pièces pour la flûte traversière*, op. 2 (Paris, 1715), preface.

25. *Musicalischer Trichter* (Berlin, 1706), 66.

In the mid-18th century Tartini devotes an entire chapter of his ornamentation treatise to the *tremolo*, referring now solely to the left-hand pitch vibrato. He shows how the speed of the vibrato can be varied, being even, slow, fast, or accelerating according to the needs of the "affect." He reserves its use for special occasions, treating it as a genuine ornament, although he has no symbol for it.²⁶ Geminiani, by contrast, advocates a much more extensive use. He lists the various "affects" the vibrato can help evoke on long notes. On short notes, on the other hand, it simply "makes their sound more agreeable and for this reason should be made use of as often as possible."²⁷

Leopold Mozart's discussion of vibrato is entirely derived from Tartini, whose examples of its advisable use are bodily taken over. Leopold makes objection, however, to its constant use, and ridicules violinists "who tremble constantly on every note as if they had the permanent fever."²⁸ He cites impurities and a wavering sound as the basis for his disapproval of its constant use ("Weil . . . nicht rein in einem Tone sondern schwebend klinget"), yet fails to explain why he recommends an impure sound for those places in which he does suggest it.

In his violin method of 1777 P. Signoretti calls the vibrato *le balancé* and explains its execution "by the movement of the wrist while firmly pressing the finger on the string." He also provides an ingenious representation of it that shows a kind of "vibrato-messa di voce," where on a whole note the oscillations commence minutely, then become larger until the middle point is reached, whereupon they then decline once again.²⁹

Of the authors quoted thus far, Tartini and L. Mozart specifically limit the vibrato to special occasions, while Zacconi, Jean Rousseau, Hotteterre, and Geminiani specifically ask for its continual use on notes long enough to support it. Other authors praise its aesthetic value without, however, commenting on the frequency of its appearance. Praetorius and W. A. Mozart see in it a natural component of the beautiful voice. These two masters may be among the few who recognized the pitch element in the good vibrato of a healthy voice, not just in the bad vibrato of an aging or ill-trained voice. Almost everybody

26. Guiseppe Tartini, *Regole per arrivare a saper ben sonare il violino* (ms. in Bologna). Facsimile as supplement to the German-French-English publication of the *Traité des agréments*, ed. by E. R. Jacobi (Celle and New York, 1961), 15-16.

27. Francesco Geminiani, *The Art of Playing on the Violin* (London, 1751), preface and p. 26. Facsimile edition by David Boyden (Oxford: Oxford University Press, 1952).

28. *Versuch einer gründlichen Violinschule* (Augsburg, 1756), ch. 11, pars. 1-7.

29. *Méthode...de la musique et du violon* (Paris, 1777), 11.

else was deceived by the phenomenon of *sonance* into believing that a good vocal vibrato consisted only of intensity fluctuations on the same pitch. Johann Mattheson was among the many thus deceived.³⁰ Surprisingly, even such a modern scientific observer as Wilhelm Trendelenburg, an eminent German physiologist, who in 1924 produced what I have considered by far the best book on string instrument playing, fell victim to the same aural deception.³¹ And so did countless others, including, as we have seen, Moens-Haenen, well after the availability of electronic analysis that revealed the true nature and extent of the pitch vibrato.

None of the quoted authors had reservations about the vibrato's aesthetic assets, and those who did not specify definite contexts, certainly favored its more or less frequent adoption. L. Mozart did make a vague negative reference to the wavering sound, yet he starts his chapter-long discussion of the vibrato by telling us that it derives from nature itself. Nature, he writes is our teacher in the *ondeggiamento*, the wavering we hear when we strike a bell — a natural effect "that can be applied gracefully to a long note by good instrumentalists and skillful singers."³² This is hardly a negative comment, and I believe to have demonstrated that Ellen Harris's attempt to formulate a basic baroque ban on the vocal vibrato was not borne out by her quoted evidence.

I turn now to Neal Zaslaw, who deserves special attention as one of the leading figures in the "historically informed" interpretation of the classical era. He quotes the same passage from Mozart's letter that I had presented above about one singer's deplorable habit of constantly introducing rhythmic emphases. This letter is a paean to the beauty of a natural, spontaneous vocal vibrato that is — and deserves to be — imitated by strings, winds and clavichord. It is a powerful piece of evidence that Mozart welcomed the string vibrato. Yet Zaslaw, astonishingly, believes he can extract a negative verdict from it, as will be presently seen. Zaslaw quotes another letter by Mozart (4 April 1787) concerning the oboist Johann Christian Fischer, who "plays like a bad beginner" and has a nasal, tremulous tone. This is an indictment of Mr. Fischer's defective technique, not of a well executed vibrato. Zaslaw, moreover, characterizes as an "extreme position" Geminiani's recommendation to introduce vibrato "as often as possible," but does

30. *Der vollkommene Capellmeister* (Hamburg, 1739). Facs. ed. (Kassel: Bärenreiter Verlag, 1954), 114.

31. See *Die natürlichen Grundlagen der Kunst des Streichinstrumentspiels* (Berlin, 1925), 123.

32. *Versuch*, ch. 11, par. 1.

refer in a footnote to Jean Rousseau's (above cited) view about its pervasive use on the gamba.

As one of his main witnesses Zaslaw quotes Robert Bremner, a pupil of Geminiani. Bremner disagrees with his teacher's idea of making use of vibrato "as often as possible." Vibrato reminds Bremner of "the voice of one who is paralytic." Nevertheless he reluctantly concedes that — in solo playing — the vibrato "may . . . be admitted, at times, on a long note in simple melody; yet, if it be introduced into harmony . . . it becomes hurtful. The proper stop is a fixed point, from which the least deviation is erroneous: consequently the *tremolo*, which is a departure from this point will not only confuse the harmony . . . but also enfeeble it . . ." (Zaslaw, p. 479). Bremner does not explain why a "paralytic" sound should be used for long notes. For orchestral playing Bremner wants to ban the vibrato completely.

Zaslaw reports that Carl Friedrich Cramer, Bremner's German translator, writing in the 1780s, finds the latter "entirely too much prejudiced against the vibrato" and argues for its instrumental use "with discretion and upon reflection" (p. 479). L. Mozart's reference to "undulating" tone is then cited, hardly a condemnation in view of the positive comments Leopold makes about imitating this nature-given sound. But the last and most impassioned witness is Francesco Galeazzi, who writes: "[Vibrato] consists in pressing the finger well on the string. . . and then, marking with the hand a certain paralytic and trembling motion. . . resulting in a vacillating pitch and a certain continual trembling. . . ; but these are most genuine discords which. . . should be entirely banned from music by anybody equipped with good taste" (p. 480).

Prior to his above-quoted conclusion that good historical evidence suggests the avoidance of vibrato in orchestral playing, Zaslaw summarizes the critical comments in this fashion: "some (perhaps many) performers use vibrato; they sometimes use it too much; it makes perfect intonation impossible; there is something unpleasant or impure about it. (The words 'defect,' 'trembling,' 'palsy' and 'paralytic' are used, and Mozart writes three times, 'contrary to nature'." (Ibid. 481)

First, concerning the by-far most important witness: it is misleading to quote Mozart as writing three times "contrary to nature." His letter praises the beauty of the natural, spontaneous vocal vibrato and clearly approves of its tasteful imitation by other media. What he called "contrary to nature" were the deplorable vocal antics of Mr. Meissner

with his *purposeful* ("mit fleiss"), periodic emphases on quarters and eighths. They had nothing to do with either a natural vocal, or a good string vibrato.

Concerning the claimed impurities of sound and of intonation, they were all based on the misunderstanding of a good vibrato's true nature and of the phenomenon of *sonance*. It is true, of course, that in a pitch vibrato a spectrum of pitches surrounds the one on which the tone is focused, not unlike the spectrum of overtones. It is also true that in a poorly produced vibrato, where *sonance* is not achieved, a distinct wobble can be heard that is unpleasant to the ear. It is unpleasant because we perceive the "impurities." But, as explained above, the perception of these impurities disappears when we cross the threshold on which full *sonance* occurs. What counts is only what we hear, and not what we know to be in the airwaves. This is the fatal flaw of all the arguments referring to "impurities" and "paralytic" sounds. What we perceive aurally is a clear focus on one pitch only, while a new depth and richness has been added to the sound.

Is there anybody who will seriously contend that our finest modern singers, great modern string virtuosi, leading string quartets and orchestras play with wrong intonation, or that their sound evokes words like "defect" or "palsy" or "paralytic"? These thoughts alone show the fallacy also of L. Mozart's argument about the absence of a single clear sound, and still more so of the more elaborate contention of Bremner. As to Galeazzi, his emotionally charged diatribe is so patently irrational that it hardly deserves serious consideration.

For a more balanced picture it may be well to supplement Zaslav's one-sided résumé of only negative historical comments by some positive ones, which have been previously cited, but are here recapitulated for their cumulative effect.

Martin Agricola in 1545 said that vibrato "sweetens the melody"; Ganassi in 1543 recommended a combined left- and right-hand vibrato "in order to achieve an expression appropriate for sad and aggrieved music"; Zacconi in 1592 saw in the vocal vibrato "the true portal to the *passaggi*" and "if used at all it should always be used." Praetorius in 1619 spoke of a "singularly lovely, trembling, and fluctuating or wavering voice." Basset in 1636 objected to the neglect of vibrato on the lute in reaction to its earlier overuse, and sought for a golden mean; Thomas Mace in 1676 characterized it as "pretty and neat. . . very excellent for certain Humours"; Jean Rousseau in 1687 recommended its general use; and in

the same year his gambist colleague Danoville wrote that vibrato "has tenderness and fills the ear with a sad and languishing sweetness"; Hotteterre recommended that it be drawn upon on almost all long notes; while Geminiani in 1751 lists various effects the vibrato can produce in long notes, whereas on short notes it simply "makes their sound more agreeable and for this reason should be made use of as often as possible"; L. Mozart writes that the vibrato is an ornament that "derives from nature and can be applied gracefully to a long note not only by good instrumentalists but also by skilled singers"; and finally let us reread W. A. Mozart's own words: "the human voice vibrates by itself, but in a way that is beautiful — this is in the nature of the voice, and one imitates it not only on wind instruments, but also on strings, and even on the clavichord."

What are the implications for "historically informed" performances? As to the voice, its production, training and style have been subject to changing fashions, but its natural, native vibrato, extolled by Praetorius and Mozart, could not have changed. The artificial elimination of the vocal vibrato in performances of "early music" is simply historically misinformed.

String vibrato was certainly not as all-pervasive as it is today, and in particular the overly-rich, voluptuous, "schmaltzy" variety practiced by some of today's players is inappropriate for 18th-century music. But string vibrato as such was presumably not nearly as rare as some early music scholars believe, and no genuine evidence exists that, as Zaslav contends, it was generally eschewed by orchestral players. Certainly some differences were present between soloistic and orchestral performance, but they had mostly to do with the license to add small ornaments with the former, and the prohibition of doing so in the latter. These differences were greater in the *galant* and baroque era than they were for Mozart. But string vibrato is a matter of technical skill, and we have no reason to assume that a fine player with the command of a good vibrato would have felt obligated to refrain from applying it in an orchestral performance. Even Moens-Haenen, no partisan of frequent pitch vibrato, writes that in the "best orchestras," which had some quite virtuosic performers among their members, "the vibrato surely had its place" ("das Vibrato sicher seinen Platz eingenommen [hat]")(p. 252).

We have, of course, no way of knowing exactly to what extent vibrato was adopted by either soloists or orchestras, nor to what extent composers would have preferred that it be used. In historical performance we can only deal with probabilities, never with certainties. But since a pleasant,

discreet, and tasteful vibrato adds life, luster, warmth, expressiveness, and sweetness to the tone, and does absolutely none of the evil things that Bremner, Galeazzi, and Zaslav reproach it for, it is highly improbable that, say, Mozart, would have distanced himself from any or all of its truly enriching attributes.