

‘SO KLINGT WIEN’: CONDUCTORS, ORCHESTRAS, AND VIBRATO IN THE NINETEENTH AND EARLY TWENTIETH CENTURIES

BY DAVID HURWITZ*

IN THE BOOKLET NOTES issued with his recording of Mahler’s Ninth Symphony for the Hänssler Classic label, conductor Roger Norrington asserts:

This live performance of Mahler’s 9th Symphony, made at a single concert in September 2008, is perhaps the first for 70 years which has sought to recreate the sound world which Mahler would have taken for granted when he wrote the symphony in 1909/10. The previous performance with a similar sound was a famous live recording made by EMI engineers in the Vienna Musikverein in January 1938. Bruno Walter, Mahler’s assistant and friend, was conducting the Vienna Philharmonic only weeks before he fled the city and the German ‘Anschluss’.

Walter’s performance marked the end of an era. It was the last time that any Mahler was played on German soil for seven years.¹ It was the last recording of an orchestra that still played with the great traditions of the nineteenth century. And it was the last time that any orchestra could be heard playing with pure tone. For, difficult though it is for all of us to imagine today, surrounded as we are with constant vibrato, steady tone in orchestras was simply the norm for Brahms, Wagner, Bruckner, and Mahler, as it had been for Bach, Mozart, or for Beethoven in the centuries before.²

This proposition is not new. For some time now, Norrington has been denying the presence of vibrato in orchestral string sections prior to the First World War. In a *Boston Globe* interview, for example, he states emphatically: ‘It [vibrato] didn’t come into the Vienna Philharmonic until 1940.’³ Nevertheless, as will be made clear, these declarations fail to hold up under scrutiny, and it would be a mistake to assume that artists favouring so-called historical performance practice are united behind Norrington’s reading of history. They are not. Witness the following comment by Nikolaus Harnoncourt, taken from an interview with Jonathan Toren aired on New York radio station WKCR on 29 December 2005:

My memory goes far back into the 1930s, my actual memory. And I think, this way started really with Mendelssohn. And when they played Bach for instance in Vienna, in the time of Brahms and Dvorak, it was very, very Romantic and with a very great orchestra, and believe it or not with a lot of vibrato then already. And I think with a composer like Paul Hindemith

*Classicstoday.com. Email: Dhurwitz@classicstoday.com.

¹ Norrington is wrong. Mahler’s Second Symphony, for example, was played in 1941 in Berlin by the orchestra of the Jewish *Kulturbund*, conducted by Rudolf Schwarz. See Martin Goldsmith, *The Inextinguishable Symphony* (New York, 2000), 259.

² Mahler, Symphony No. 9. Radio-Sinfonieorchester Stuttgart des SWR (Hänssler Classic CD 93.244).

³ David Weinger, ‘Norrington Steps to the Podium at H&H’, *Boston Globe*, 12 Jan. 2007.

and [Ernst] Krenek, they started to play Bach without Romanticism and very dry. It was already a kind of step away from Romanticism. But for me it was without life, it was boring, it was too objective. The personality of the musician was not there. And I think what we did later was to bring again a little bit of Romanticism into the interpretation, but not in the sound, just in the way of playing.⁴

Harnoncourt's position starts out with one substantial advantage in terms of its credibility. He is Austrian, and speaks from personal experience of the musical tradition in which he was raised and trained. Norrington, on the other hand, appeals primarily to the evidence of early recordings to substantiate his views, with all of their technical shortcomings and the subjective impressions of the individual listener that this implies. Both artists speculate freely regarding the use of vibrato in musical performance in periods before the advent of sound recordings. Norrington's position, however, has come to reflect much of the current thinking in the field of Applied Musicology. It finds support in the work of Clive Brown⁵ and other scholars active in the study of period performance practice.

The Vienna Philharmonic itself formerly agreed with Harnoncourt's statement, but now evidently finds it politic to adopt a more equivocal stance, perhaps so as to placate guest conductors inclined towards non-vibrato performances of the Viennese classics. Its website originally featured a detailed article, 'The Sound of the Vienna Philharmonic', written by orchestra member Prof. Wolfgang Schuster, claiming:

Das Geheimnis des philharmonischen Streicherklanges wäre, so ziehen Moser/Nösselt aus Äußerungen Carl Fleschs den Schluß: '...ein in sich geschlossenes breites Vibrato sowie die Fertigkeit der intensiven, aber stets locker schwingenden Tongebung nahe am Steg'.⁶

(The secret of the Philharmonic string tone, as derived by Moser/Nösselt, based on remarks by Carl Flesch, would be '...a broad, rounded vibrato, along with the ability to produce an intense, but always freely oscillating tone near the bridge.')

This has now been emended to read: 'In the field of the Viennese strings, which are justly famous for their sound, in-depth studies have still to be carried out. Although there is a clearly perceptible continual development there is no fully standardized Viennese violin school.'⁷ The previous mention of vibrato has been removed, and perhaps with it some of the audible patrimony of this great ensemble. Originally then, if Flesch (1873–1944) is to be believed, the orchestra dated its 'vibrato legacy' at least to the start of the twentieth century, well before the 1940s and the time that Norrington's wing of historical performance scholarship theorizes.⁸ Just as significantly, it was described as an intrinsic component of the orchestra's string timbre.

⁴ Full transcript at <<http://welltemperedmusic.blogspot.com/2005/12/harnoncourt-interview-transcript.html>>.

⁵ See Clive Brown, *Classical and Romantic Performance Practice, 1750–1900* (Oxford, 1999).

⁶ The author wishes to thank Prof. Wolfgang Schuster for providing a copy of his original essay.

⁷ Revised article (English version by the orchestra) at <http://www.wienerphilharmoniker.at/index.php?set_language=en&ccpage=viennese.sound>.

⁸ Flesch's appointment in Vienna by Mahler, as co-principal first violin (he declined the offer), also casts doubt on another of Norrington's assertions about vibrato in the Vienna Philharmonic, and other orchestras as well: that the sound of the entire string section was basically determined by what we know of the behaviour of the leader. Rosé was, famously, a violinist of the old school of limited vibrato, although recordings reveal that his tone still falls within normal parameters in this respect. There is no suggestion, however, that he imposed his own personal technique, even if that were possible, on his colleagues. It certainly would have been beyond the bounds of professional courtesy for him to do so on Flesch.

Here are two very different views of the vibrato tradition in orchestral music. Which is correct? Was vibrato absent from orchestral performance until the late 1930s and 1940s, or is it Norrington and his colleagues who represent the true break with traditional performance practice? Was that 1938 Walter Mahler Ninth really ‘the end of an era’?

The answer is that Harnoncourt’s recollections did not play him false, whereas Norrington’s theory cannot be substantiated by anything in the historical record, be it early recordings or other types of evidence. Vibrato, it will be argued, was a natural component of basic orchestral timbre in the nineteenth century, though the facts adduced in favour of this view have significant implications for orchestral practice in earlier times as well. There are many paths that lead to this conclusion—examining scores and consulting treatises on instrumental performance among them. This essay, for the most part, takes a different approach.

Since the problem has been defined through statements by two noted conductors, it seems both logical and enlightening to learn how their colleagues active during the period in question handled orchestral vibrato—both what they said, and what they did. This perspective is all the more valuable in that it offers a necessary fact-check and corrective to another of Norrington’s postulates. When asked, in the same *Boston Globe* article cited above, why conductors who worked in the alleged pre-vibrato days raised not a single objection to the new, post-War style, he answered: ‘They had to get used to it.’ This remains to be seen. Furthermore, since the focal point of those initial comments concerns the Viennese playing tradition in the late nineteenth and early twentieth centuries, that will serve as a primary object and point of departure for this study as well.

Initially, however, it will be helpful to outline some basic facts about orchestral vibrato: what it is, and how it has been used since the nineteenth century. This is important because the position of Norrington and his proponents is not just lacking evidentiary substance. It is demonstrably incorrect in some of its most basic premisses. These include its description of the modern practice against which the period performance school defines itself, and its adoption of a methodology that permits an incomplete understanding of Baroque practice to be imposed on twentieth-century performance situations. The denial of orchestral vibrato’s existence is built upon this flawed foundation.

ORCHESTRAL VIBRATO DEFINED

The conductor Norman Del Mar, in his book *Anatomy of the Orchestra*, writes: ‘It is to a large extent the combination of many individual vibrati which is the predominant characteristic of the string mass, and which gives it its unique colour, the very colour which identifies the symphony orchestra itself.’⁹ That vibrato permits string players to personalize their tone has been known for as long as their instruments have existed. Siegfried Eberhardt, who was assisted by Carl Flesch in assembling his 1911 treatise *Violin Vibrato: Its Mastery and Artistic Uses*, put it this way: ‘Individuality of tone can arise only when the fingers of the left hand are placed upon the strings. These fingers vibrate. They vibrate differently. Difference in vibrato begets difference in tone.’¹⁰

There is no question that two orchestral string sections, both purportedly using modern continuous vibrato, can sound widely different from each other in the same

⁹ Norman Del Mar, *Anatomy of the Orchestra* (Berkeley, 1981), 136.

¹⁰ Siegfried Eberhardt, *Violin Vibrato: Its Mastery and Artistic Uses*, trans. Melzar Chaffee (New York, 1911), 7.

music. Simply compare, for example, the timbre of the Berlin Philharmonic under Herbert von Karajan in a Brahms symphony to that of the Cleveland Orchestra under George Szell. This fact raises a critical issue: just as important a factor as the presence or absence of vibrato generally is the question of *kind*. There is fast vibrato and slow, wide and narrow, and every gradation in between. Vibrato is not one thing but a timbral continuum, a nuance, like dynamics, and it may be used for many different purposes. Certain orchestras and conductors favour specific vibrato types in creating a mean ensemble sonority; others give this aspect less attention.

In all cases, however, active cooperation—whether dictated by the conductor, a particularly uniform school or tradition of performance within a section, or simply the markings in the score being played—helps to distinguish expressive timbre from the usual ensemble tone arising from each player’s use of vibrato according to personal whim. Thus, as the British composer, author, and violin pedagogue Cecil Forsyth (1870–1941) pointed out early in the twentieth century, the average, unmodified timbre of an orchestral string section contains a natural level of vibrato:

In the orchestra vibrato is left to chance. If a player feels like making it on a note, he does; if not, he doesn’t. The conductor as a rule does not interfere. The most he can do, when he has plenty of time at rehearsal, is to say, of a phrase, ‘I want plenty of vibrato on this’, or ‘No vibrato here’.¹¹

This is still the basic performance practice today. So to be perfectly clear, whether the current style is called ‘permanent’, as by Norrington, or ‘continuous’, as by others of similar bent,¹² the traditional handling of vibrato within an orchestra occurs on several different planes. First, there is the general or baseline timbre of the string ensemble. Next, there are the additional means that contribute to creating a unique corporate sonority within the section, including matching vibratos, or those points at which the conductor does indeed interfere in order to impose a personal timbral preference. Exploiting these various elements, over time, leads to the establishment of identifiable playing habits and a distinctly audible sonic fingerprint.¹³

While orchestral vibrato helps to define the timbre of a string section or bring intensity to an expressive passage, it virtually never can be heard as a distinct oscillation in pitch; that is, as an ornament, a melodic embellishment as it might be used by an instrumental soloist or a singer. The individual timbres of all the players simply fuse to produce the general string tone. Given this fact, both logic and common sense dictate that any rules or customs theoretically pertaining to the use of vibrato as an ornament should be waived, or at least modified, to accommodate the specific circumstances of orchestral performance. Indeed they were. Musicians have long recognized the practical value of vibrato in accompaniments, as an aid to balance, ensemble blend, and other comparatively utilitarian roles within the string section. This is the tradition out of which continuous vibrato arises, not from a relentless excess of ornamentation.

¹¹ Cecil Forsyth, *Orchestration* (New York, 1914, rev. 1935), 404.

¹² See e.g. Brown, *Classical and Romantic Performance Practice*, 525.

¹³ It is also important to note, as a threshold issue, that although the terms ‘permanent’ and ‘continuous’ vibrato will be used here as a convenience, they are in fact technically incorrect. David Montgomery points out in his monograph *Franz Schubert’s Music in Performance* (New York, 2003), 132: ‘Even today the majority of notes played upon the violin are played *senza vibrato*, if only because the majority of notes in most scores occur in shorter note values than those which state the tunes.’

To cite just a few examples of this phenomenon (out of many) from the period under scrutiny here, consider first the composer Vincent D'Indy (1851–1931). His entire life pre-dates the alleged advent of modern vibrato, but his composition course at the Schola Cantorum in Paris had this observation to make about orchestral violins and cellos in unison passages:

en général, la sonorité des Violons est totalement absorbée par celle des Violoncelles, à moins que les Violons ne fassent entendre un *vibrato* énergique sur leur *quatrième corde*.¹⁴

(in general, the sonority of the violins is totally absorbed by that of the cellos, unless the violins make themselves heard with an energetic *vibrato* on their *fourth string*)

Clearly, this purely timbral advice is not an expressive ornament, but a tool to be exploited in specific circumstances to create a distinct ensemble balance. Mention of it in 1901/2 suggests a sophisticated understanding of vibrato's orchestral uses, which must have evolved over many years, most likely decades. It is not the kind of observation that can be made in the absence of practical, real-world experience. Nevertheless, in discussing the single appearance of the word 'vibrato' in Mahler's Fifth Symphony, a work composed at the exact moment when D'Indy's course was being given, the Austrian musicologist Reinhold Kubik claims: 'In fact vibrato was regarded as a kind of ornamentation, exclusive to solo music.'¹⁵

This astonishing assertion arises from the view of vibrato as one thing, having one purpose—a wholly modern perspective, albeit one derived from a selective reading and interpretation of historical sources. To support this contention, and his concurrent claim that 'the strings of the orchestra normally played without vibrato',¹⁶ Kubik cites the early music specialist Greta Moens-Haenen's essay 'Vibrato im Barock', thus revealing graphically, and (methodologically speaking) dubiously, how much the current thinking on this issue reflects the curious notion that speculative findings regarding seventeenth-century performance practice remain equally valid with respect to the twentieth century—even when the result flies in the face of known fact.

That orchestral vibrato in reality has multiple purposes can be shown very simply by glancing at a famous passage from Richard Strauss's opera *Elektra* (1906–8). Between figures 82a and 89a,¹⁷ Strauss writes in a footnote: 'alle Streicher sehr seelenvoll, mit sehr viel *vibrato*, daher keine leeren Saiten benutzen!' (all strings very soulful, with very much vibrato; accordingly use no open strings!). Again, one could hardly call this use of vibrato a solo ornament. It applies to the entire string section simultaneously, which Strauss at one point divides into fifteen parts. The passage lasts for some fifty bars and encompasses both melody and accompaniment. Technically, Strauss wants a uniform timbre unblemished by the relatively jarring tone of open strings. His request for 'very much vibrato' obviously means 'more than usual'. It is also a measure of quality as much as quantity, indicative of a vibrato presence along a broad expressive continuum. In other words, Kubik's contention that vibrato was seen primarily as a solo embellishment, one denied orchestral players, has absolutely no validity in considering the late nineteenth and early twentieth centuries.

¹⁴ Vincent D'Indy, *Cours de composition musicale* (Paris, 1901/2), ii, Pt. 2, 57.

¹⁵ Reinhold Kubik, "'Progress' and 'Tradition': Mahler's Revisions and Changing Performance Practice Conventions", in Jeremy Barham (ed.), *Perspectives on Gustav Mahler* (Burlington, Vt., 2005), 401–16 at 404.

¹⁶ *Ibid.*

¹⁷ Dover Edition (1991), 223 ff.

This fact can even be demonstrated with respect to specific notational signs. For example, Clive Brown states emphatically that ‘there can be no doubt that vibrato and accentuation of all kinds were closely linked in nineteenth-century violin playing’.¹⁸ Curiously however, he restricts his analysis to solo writing. The illogicality of this position is self-evident. If orchestral players foreswore vibrato as a matter of principle, then the exact same terms and symbols would have two very different meanings depending on whether or not the player was performing alone or in a group.

There is no evidence in any of the sources cited by Brown supporting the idea of a dual system of musical notation, one for soloists and one for orchestral string players. The truth is just the opposite. Brown’s remark appears in the course of a convincing demonstration that the hairpin accent (< >) was in fact a vibrato indication used in solo playing at the turn of the nineteenth century. The Belgian composer and treatise-writer François-Auguste Gevaert (1828–1908) agreed, but in a specifically orchestral context, stating in his 1890 *Cours méthodique d’orchestration*: ‘On sait que le soufflet [< >], lorsqu’il se pose sur des sons compris dans un dessin mélodique, désigne le *vibrato*, l’accent passionnée.’¹⁹ (It is known that the hairpin, when it appears on the tones comprising a melodic pattern, designates *vibrato*, the passionate accent). Examples drawn from mid-nineteenth-century orchestral music then follow, the first being an extract from Schumann’s *Manfred*, Op. 115 (incidental music). Aside from Schumann, other composers who favoured the < > accent in orchestral music include Mendelssohn (also cited by Gevaert), Joachim, Brahms, Elgar, and Mahler. Starting with Pierre Rode (1774–1830), one of the composers Brown credits with first describing the meaning of this particular sign as vibrato, the notation can easily be seen to have been used frequently and consistently in both solo and orchestral music throughout the entire nineteenth century.

It also follows from this analysis that there is no validity to the contention that vibrato usage was restricted mainly to those instances where the actual word ‘vibrato’ appears. Historically, the term ‘vibrato’ has several meanings. Its use in reference to the entire family of pitch oscillation techniques is relatively recent. Over the course of the nineteenth century it gradually replaced the multipurpose and even more confusing ‘tremolo’,²⁰ alongside various other words and phrases (such as ‘close shake’²¹ in England). Originally, however, vibrato as an instrumental effect referred specifically to a highly agitated variety of pitch oscillation. A vibrato was the equivalent, in its own timbral sphere, of a *forte*, and indeed it often appeared in tandem with that dynamic indication. This is how it is used most often, for example, in the scores of Rossini in the early nineteenth century, but it can also be traced back well into the 1700s.²² Eugène Sauzay (1809–1901), professor of violin at the Paris Conservatoire and

¹⁸ Clive Brown, ‘Bowing Styles, Vibrato and Portamento in Nineteenth-Century Violin Playing’, *Journal of the Royal Academy of Music*, 113 (1988), 97–128 at 119.

¹⁹ François-Auguste Gevaert, *Cours méthodique d’orchestration* (Paris, 1890), 329. This citation belies Brown’s claim: ‘Later nineteenth-century treatises on the orchestra appear not to have concerned themselves with special vibrato effects or selective vibrato in the string section. . . . François-Auguste Gevaert’s monumental *Nouveau traité d’instrumentation*, for instance, is silent on the subject, and instrumental tutors, without exception, continued to treat these techniques as something for the soloist.’ See Brown, *Classical and Romantic Performance Practice*, 556. Aside from neglecting to investigate the *Cours méthodique*, Brown’s arbitrary line of demarcation at the year 1900 excludes evidence clearly applicable to the 19th c. such as D’Indy, or the Joachim/Moser *Violinschule* of 1905, which traces an unbroken tradition of orchestral and ensemble vibrato to the classical period and the works of Schubert and Gluck.

²⁰ Used by Spohr, Leopold Mozart, and many others.

²¹ Used by Geminiani and other writers in English until the 19th c.

²² Examples are too numerous to list, but see the orchestral introduction to Amenaide’s second act *Scena e Cavatina* (‘Di mia vita infelice . . . No, che il morir non è’) in Philip Gossett’s critical edition of Rossini’s *Tancredi* (1813), pub-

son-in-law of seminal treatise writer Pierre Baillot, excoriates poor violinists for their ‘*vibrato épileptique*’, but praises those employing an ‘*ondulation souple et sensible*’ (supple and sensitive undulation).²³

The use of vibrato both at will and, as Clive Brown suggests, in connection with ‘accentuation of all kinds’ means that the actual word(s) for the technique need seldom appear. When they do, as in the passage from Mahler’s Fifth cited by Kubik, they often retain their original meaning. For example, the use of a ‘loud’ vibrato in a soft context is rare, and it remains so today,²⁴ but it occurs frequently enough to establish the validity of this general observation. Further examples will follow in the course of this discussion.²⁵ It is therefore a mistake, and a serious one, to adopt the modern all-purpose definition of the term, turn it into a single nondescript solo ornament, and impose the resultant artificial construct on an earlier period—in the process denying the plain vibrato meaning of a wide range of consistently used notational signs and verbal cues.

Orchestral vibrato does differ from the solo, ornamental variety, however, in one crucial respect. It is a collaboration, a complex interaction between the players, the conductor, and the score. Indeed the testimonial evidence, as already suggested by Forsyth, reveals as inconceivable the notion of a conductor taking complete command over a traditional orchestra’s handling of vibrato at every possible moment. This is a perfectly manageable feat, however, for proponents of the non-vibrato school, since nothing is easier than imposing a unilateral ban, or restricting the application of vibrato to a mere handful of notes.

What makes this behaviour even more anachronistic and historically anomalous is the fact that for most of the initial period in which the use of vibrato allegedly was limited or denied (the seventeenth and eighteenth centuries), the one element unquestionably and uncontroversially absent from the orchestra was not modern vibrato but the modern conductor. The decision to use vibrato was the player’s prerogative, presumably acting in response to the character of the music and (hopefully) the notated directions of the composer.

As a viable construct, then, any theory that vibrato was not a normative constituent of orchestral string timbre historically must prove the truth of at least some of the following propositions: (a) all players in a given ensemble avoided vibrato at all times as a matter of individual choice; (b) no string sections understood or attempted to use vibrato to distinguish their particular sound from that of other string sections, either within or between orchestras; (c) no conductors exploited vibrato for expressive purposes, and indeed, they forbade its actual use as a matter of principle even as a simple timbral enhancement; (d) composers neither expected, desired, nor notated its presence; and (e) to the extent orchestral players were forbidden to use vibrato, the same expressive terms and notational signs that demand it in solo performance were understood as *not* asking for it when employed in an orchestral score.

lished by Ricordi and the Fondazione Rossini Pesaro (1984). In the 18th c., consider Plutone’s second act aria ‘Per onor dell’offeso mio Regno’ in Tommaso Traetta’s *Ippolito ed Aricia* (1759), in the Garland Publishing facs. edn. (1982).

²³ Eugène Sauzay, *Le Violon harmonique* (Paris, 1889), 46–7.

²⁴ One telling example: the *sempre vibrato* indication for the strings in Candide’s song ‘It Must Be So’ from Leonard Bernstein’s eponymous operetta (Boosey & Hawkes, 1955, rev. 1989). It need hardly be stated that the term ‘vibrato’ in this context certainly does not mean that a Broadway pit orchestra in the period 1955–89 used no vibrato beyond this single, specifically notated passage.

²⁵ The extract from *Elektra* previously mentioned illustrates this point particularly well. Although Strauss defines what he wants as ‘very much vibrato’ in his footnote, the actual term he uses at repeated intervals to sustain the desired timbre throughout the passage is simply ‘vibrato’.

This is a tall order, but not an unreasonable one. As Harnoncourt elaborates in the same interview cited above, ‘An orchestra like the Vienna Philharmonic has a very special sound which you cannot reach in ten years or so. It is a grown thing. It is a very valuable thing.’ Tracing the importance of vibrato in achieving this or any orchestra’s special string sound to the period before recordings is difficult, but not impossible. The evidence must, necessarily, be anecdotal, but two critical factors weigh in its favour. First, those doing the reporting have no axe to grind with respect to the vibrato issue; they have nothing to prove about its historical use and simply relate what they heard, saw, or otherwise believe. They are reasonably objective and impartial.

Second, as just noted, in order for vibrato to contribute significantly to a distinctive timbre it has to be of a specific kind, and used with sufficient frequency to make a quantifiable impression. Just what variety and how often may be a matter of debate, but there can be no question that vibrato must have been employed continuously enough effectively to rule out the ‘little or none’ theory on its face, or else no one would have remarked on its presence in the first place. It is important in this respect not to forget the opportunistic side of this debate. The elimination of vibrato from historical orchestral tone has a purpose: to justify the specific interpretative habits of a modern school of playing. There is a substantive difference between approaching historical sources with this objective in mind and a more nuanced view that admits of varying degrees of vibrato depending on repertory, performing tradition, training, and local conditions.

HISTORICAL EVIDENCE FOR ORCHESTRAL VIBRATO

One of the more remarkable observations that can be made about many of the conductors and orchestras examined here is that as soon as they began to attract regular notice for their artistic uniqueness, vibrato became a factor in contemporary descriptions of their performances. It seems that this has essentially been the case since time immemorial. Concerning the Vienna Philharmonic, for example, which was formally established in 1842, the journalist and critic Richard Specht (1870–1932) described the Court Opera/Philharmonic orchestra in these terms for the period 1869–1919:

von den Musikern der Siebzigerjahre dürfte kaum einer, von denen der Richter-Zeit nur der oder jener noch da sein, die Dirigenten sind andere, aber das Orchester, seine Besonderheit, sein singulärer Glanz und Wohllaut sind durch 50 Jahre unverändert die gleichen geblieben. Es gibt heute gewiß Orchester von gleichem Rang. Keines von gleicher Art. Es ist etwas Unnachahmliches in dem Vibrato und der passionierten Virtuosität der Geigen, in dem Schmelz der Cellokantilenen, der Kraft der Bässe.²⁶

(of the musicians of the 1870s there might be scarcely one left; of those from Richter’s time only a vanishing few remain. The conductors are different, but for the past fifty years the orchestra, its characteristics, its singular finish and sonority have invariably remained the same. Today there are acknowledged orchestras of the same rank, but none of the same kind. There is something inimitable in the vibrato and the passionate virtuosity of the violins, in the bloom of the cello cantilena, the power of the basses).

²⁶ Richard Specht, *Das Wiener Operntheater von Dingelstedt bis Schalk und Strauss: Erinnerung aus 50 Jahren* (Vienna, 1919), 82.

Specht's comment obviously falls into the category of generalization, but the fact that he mentions vibrato at all is surely significant. Furthermore, it is the *type* of vibrato in Vienna that is special, not that it exists in the first place. This orchestra's vibrato stands apart from that present in all other orchestras. Specht additionally assumes that the presence of orchestral vibrato is so well known that it may be taken for granted in making the comparison. The kind of vibrato that colours the Vienna Philharmonic's string body is a permanent musical signature, not an ornament. No orchestra ever achieved a special timbral identity by the way that it plays trills or mordents. This should be kept in mind particularly in considering reports of how vibrato was handled by the various men on the podium.

Perhaps the most famous of these was Gustav Mahler, and his attitude towards vibrato is known not just from his scores, but as attested to by the musicians who played under him. One of them, Herbert Borodkin, violist with the New York Philharmonic in 1904–9, recalled that Mahler 'used a lot more vibrato than most conductors do today. He insisted on it. He asked for it. When you played a melodic tune, you would have to use a lot of vibrato and sing, as he called it.'²⁷ The 'today' that Borodkin is referring to, by the way, is 1964. Mahler's demand for additional vibrato naturally would have been on top of whatever the orchestral musicians were in the habit of providing unprompted, and this in turn sheds light on those moments in Mahler's scores where he specifically asks for vibrato by name. It does not mean 'here because nowhere else', but rather 'here, audibly, in addition to whatever else'.

That at least some orchestral players probably adopted a modern type of vibrato in Vienna at a comparatively early date has been confirmed by the work of the Brahms scholar Styra Avins, who has documented that the Vienna Court Opera (and Philharmonic) principal cellist David Popper, according to his student and biographer Steven De'ak, used vibrato essentially in the modern manner 'for short tones as well as long'.²⁸ In fact, Avins reports that there was a contemporary newspaper controversy about the very subject, debating pro and con the question of Popper's continuous vibrato. Popper took up the first cellist's chair in 1867. He was also a member of the Hellmesberger Quartet, which was founded in 1849 and whose principal violin, Joseph Hellmesberger Sr, became concertmaster of the Court Opera Orchestra in 1860. His son, Joseph Jr, also played in the quartet and became *Hofkapellmeister* of the Vienna Court Opera in 1890. Carl Flesch, among others, has pointed out that the Hellmesbergers' Viennese vibrato was closer to modern taste than the rapid, narrow German norm of their day.²⁹

Avins, incidentally, has also described the conductor Hans von Bülow's stated preference for the rich, vibrato tone of the Franco-Belgian school in orchestral strings in a letter dating from his assumption of the music directorship in Meiningen (1880).³⁰ Von Bülow (1830–94) was arguably the most famous and influential German conductor before Mahler. He was succeeded in Meiningen by Richard Strauss, and then in

²⁷ 'I Remember Mahler', interviews with William Malloch, 7 July 1964; included in *New York Philharmonic: The Mahler Broadcasts 1948–1982* (The Philharmonic Symphony Society of New York), 12-CD set.

²⁸ Cited by Styra Avins, 'Performing Brahms's Music: Clues from his Letters', in Michael Musgrave and Bernard D. Sherman (eds.), *Performing Brahms: Early Evidence of Performance Style* (Cambridge, 2003), 11–47 at 29.

²⁹ Carl Flesch, *The Art of Violin Playing, Book One*, trans. and ed. Eric Rosenblith (New York, 2000), 176. Flesch's book was published in 1924.

³⁰ See Styra Avins, 'The "Excellent People" of the Meiningen Court Orchestra and the Third Symphony of Johannes Brahms', in Maren Goltz, Wolfgang Sandberger, and Christiane Wiesenfeldt (eds.), *Johannes Brahms' Werke der 1880er und 1890er Jahre — Internationales musikwissenschaftliches Symposium Meiningen 2008* (Munich, 2010), 36–48.

1886 by Fritz Steinbach (1855–1916), whose notes on the performance of Brahms's symphonies have been preserved and were published by Walter Blume in 1933. As Avins points out, there is no mention there of the strings actually using additional vibrato, but there are two passages, one each in the First and Third Symphonies, where the players are told not to do so, thereby demonstrating that if vibrato was not used as constantly as it is currently, its appearance was without doubt normal and an ever-present possibility.

Moving further into the twentieth century, other writers also describe the special qualities of the Vienna Philharmonic, including its characteristic use of vibrato. One of the most interesting of these is the British author Henry Welsh, who in 1931 published an article entitled 'Orchestral Reform' in *Music & Letters*:

After having heard many different orchestras in this country as well as abroad, and notwithstanding the recent success of the New York Philharmonic (which, I believe, was due more to the glamour attached to the genial Toscanini than to the actual playing of the orchestra), I have come to the conclusion that the Vienna Philharmonic is far and away the best in the world, and it is for this reason that I propose to take it as my model.³¹

Although he gives few specifics in his article, the concerts to which Welsh refers occurred on 27 and 29 April 1930, under the leadership of Wilhelm Furtwängler. The first included Mozart's Serenade No. 13, Schubert's 'Unfinished' Symphony, Smetana's *The Moldau*, Richard Strauss's *Don Juan*, and Johann Strauss Jr's 'The Blue Danube' Waltz. The second programme featured Bruckner's Symphony No. 4, Schubert's *Rosamunde* interlude and ballet music, Strauss's *Till Eulenspiegel*, and Wagner's *Meistersinger* Prelude. Welsh discusses the sterling qualities of the orchestra section by section. Regarding the strings, he writes:

Many of us did not fail to notice their particularly rich and luscious tone, far sweeter than in the Berlin strings. It has something of a Latin quality in it, which may be accounted for by the fact that the Austrians lie nearer to Italy than the Germans.

Welsh does not actually mention string vibrato until he comes to the woodwind section:

To begin with, our method of blowing the woodwinds is unsatisfactory. We have adopted the French and Italian system, viz., with a vibrato. It is extremely difficult properly to control the reed when playing with even the slightest of vibratos. It is this circumstance that impairs the purity of tone and intonation in the higher registers. *The vibrato of which I speak is, I believe, an absurd endeavour (perhaps unconsciously) on the part of the performer to imitate the vibrato of the string players, and of the human voice. In the case of the former the vibrato of the left hand is nowadays regarded as a fundamental necessity, and is used at all times, except on open strings* [emphasis added] . . . But as for the woodwinds, I fail to see any aesthetical or technical reason why they should trespass on the noble and intimate qualities which belong so inseparably and essentially to the strings.

The Vienna Philharmonic to which Welsh refers was still under the leadership of Arnold Rosé, and in the late 1920s featured some of the same players as in Mahler's time. Its use of continuous vibrato under Furtwängler was not unique. According to Welsh, the Berlin and New York Philharmonics did so as well, and evidently most other orchestras besides. However, each sounded distinct. The issue, then, once again, is not just that vibrato was used regularly, but that different types of vibrato were

³¹ Henry Welsh, 'Orchestral Reform', *Music & Letters*, 12 (1931), 21–5.

used with sufficient frequency to colour the string tone generally, creating an individual identity for each ensemble.

There is very good evidence supporting this contention beyond that applicable to Vienna. Consider the other orchestras that Welsh mentions, starting with the New York Philharmonic under Toscanini. Here is a conductor whose characteristic handling of orchestral sonority was often a source of (usually) admiring comment. The British critic Julian Herbage, for example, noted that ‘One of the secrets of Toscanini is that he insists on pianissimos always being “warm”—that is, played with vibrato’.³² Certainly Toscanini did not feel it necessary to wait for the continuous vibrato revolution to sweep through orchestras the world over before adding this particular stratagem to his expressive arsenal.

The Italian maestro’s own attitude towards vibrato has been reported, very amusingly, by Samuel Chotzinoff, Manager of the NBC Symphony. According to Chotzinoff, one way to deflect the conductor’s infamous tantrums against the orchestra during the difficult war period 1939–45 was to change the subject to something he found even more irritating—in this case, critics. Given the chance to vent his anger against a new target, Toscanini exclaimed: ‘Don’t speak to me about critics! They know nothing! They think because the violins vibrate all the time they make a beautiful tone! No! A fast vibrato make a beautiful tone, not a slow one. Our NBC violins make quick vibrato. That make a beautiful tone.’³³

Toscanini is speaking of the NBC Symphony here, and not the New York Philharmonic, but there is absolutely no reason to suspect that his treatment of vibrato a couple of years following his departure as Music Director of that ensemble was any different from at any earlier point in his career—or that orchestras played substantially differently. Once again, Toscanini’s spontaneous outburst implies that variations in the use of vibrato have less do to with frequency than with type, since by his own admission ‘the violins vibrate all the time’, and he accepts this without demur.

These statements, though telling, remain blanket generalizations. Special circumstances call for a special handling of vibrato. Bernard Shore, principal viola of the BBC Symphony Orchestra from its founding in 1930 through to 1940, played in Toscanini’s BBC Beethoven symphony cycle. Regarding the slow movement of the ‘Pastoral’ (a 1937 recording of which exists) he observes that Toscanini ‘insisted that the lower strings, which begin the movement of the brook, should use the shortest possible bows, with the slightest tremor of the left hand at each beat of the bar, to obtain that lovely imperceptible current of the stream which must never become lifeless and mechanical’.³⁴

Another podium legend of the period who shared Toscanini’s ‘secret’ in pianissimo passages was Serge Koussevitzky (1874–1951). Bernard Shore recalls a particularly intense rehearsal of Beethoven’s ‘Eroica’ Symphony in which the close of the first movement exposition elicited from the conductor the admonishment: ‘*Pianissimo* must always have substance and arrive to the audience! Vibrato! Always vibrato in *pianissimo*!’³⁵

Koussevitzky was, famously, a double-bass player, Toscanini a cellist. This could at least partially explain their preference for vibrato at soft dynamic levels. The French

³² Julian Herbage, ‘Brains Trust’, *Penguin Music Magazine*, 1 (Dec. 1946), 78.

³³ Samuel Chotzinoff, *Toscanini: An Intimate Portrait* (New York, 1955), 107.

³⁴ Bernard Shore, *Sixteen Symphonies* (London, 1950), 61.

³⁵ Bernard Shore, *The Orchestra Speaks* (London, 1938), 107.

conductor Désiré-Émile Inghelbrecht (1880–1965), writing in 1949, found lower string players unusually partial to the technique. ‘This means of expression would otherwise be efficient if employed with more moderation’, he suggests, ‘especially by’ celli and double-bass players who abuse it immoderately. For example, transition from *piano* to *pianissimo* may be most perfectly achieved by simply cutting out the vibrato—and vice versa.³⁶ This statement yields tantalizing clues about how string sections handled vibrato when Koussevitzky and Toscanini were themselves starting their careers as orchestral players, in 1894 and 1886 respectively.

Shore also sheds light on how the orchestra might—or should—play certain passages irrespective of interference (to use Forsyth’s term) from the podium. Thus he claims that at the start of the slow movement of Mozart’s Symphony No. 40 in G minor, K. 550, ‘A touch of left-hand vibration will bring the notes to life, with the bow subtly changing its pressure to allow each of them to breathe.’³⁷ These observations about changing the quality of vibrato as much as its quantity apply with particular force to the composer Nicolas Nabokov’s description of a concert given by the last of Welsh’s three major orchestras, the Berlin Philharmonic. Nabokov describes a performance that he attended in Berlin under Arthur Nikisch (1855–1922) in the early 1920s:

The strings of the Berlin Philharmonic changed their character and tone after the Mozart overture that preceded Tchaikovsky’s Fifth. Instead of being thin and sharp, the tone became round, full of what Pushkin used to call *nega* (‘bliss’) and a kind of Slavo-Jewish voluptuousness. And yet there was no imprecision of intonation hiding behind the strings’ vibrato.³⁸

Note that Nabokov does not insist that the Mozart was performed without vibrato; rather, the orchestra adapted its characteristic timbre to the works being played, and this required (for Tchaikovsky at least) vibrato of a specific kind.³⁹ His remarks reveal an awareness on the part of the artists both of period style, and of the need to use vibrato to create timbral contrast. This level of sophistication does not happen in an ensemble overnight; it results from systematic training, practice, experiment, and the evolution of technique over a period of decades, perhaps even generations.

It makes sense at this point also to enquire about what was happening in the lesser orchestras, or those not led by superstar conductors such as Toscanini, Furtwängler, Mahler, and Nikisch. The answer seems to be: much the same thing. For example, in February 1903, the Belgian magazine *Le Guide musical* published a review of an omnibus concert given on the eighth of that month by the Société Sainte-Cécile of Bordeaux. The programme consisted of two works by Handel, his Oboe Concerto in G minor and the arrangement of the ‘Largo’ from *Xerxes* more fully described below, two modern novelties, Brahms’s Second Symphony, two Schumann romances arranged for oboe and orchestra by the conductor (a M. Pennequin), Franck’s *Le Chasseur maudit*, and finally the ‘Bacchanale’ from Saint-Saëns’s *Samson et Dalila*.

³⁶ Désiré-Émile Inghelbrecht, *The Conductor’s World*, trans. G. Prerauer and S. Malcolm Kirk (London, 1953), 67 (originally published in 1949 as *Le Chef d’orchestre et son équipe*).

³⁷ Shore, *Sixteen Symphonies*, 29.

³⁸ Nicolas Nabokov, *Bagázh: Memories of a Russian Cosmopolitan* (New York, 1975), 103.

³⁹ The writer David Pickett quotes this same passage without noticing at all what it suggests regarding vibrato usage. See his article ‘Was mir die Aufnahmen erzählen’ [What the Recordings Tell Me], in Reinhold Kubik (ed.), *Musikinstrumente und Musizierpraxis zur Zeit Gustav Mahler* (Vienna, 2007), 226. He also cites three of the ‘I Remember Mahler’ interviews without reference to the remarks on vibrato, although he discusses the subject extensively.

The critic, Henri Dupré, expressed a slight reservation concerning the performance of Handel's 'Largo':

Un arrangement par E. Guiraud du *largo* de Xerxes de Haendel pour violons, harpes et orchestra, a produit un grand effet sur la public, qui l'a bissé. La richesse des timbres alliée à la noblesse de cette page célèbre était à nature de séduire l'auditeur. Peut-être les violons, par l'abus du vibrato individuel, lui ont-ils fait perdre un peu de son caractère de haute sérénité.⁴⁰

(An arrangement by E. Guiraud of Handel's 'Largo' from *Xerxes* for violins, harps, and orchestra produced a great impression on the public, and so was encored. The richness of timbre allied to the nobility of this famous piece was of a nature that seduced the listener. Perhaps the violins, through the abuse of individual vibrato, caused it to lose a bit of its character of elevated serenity.)

These remarks capture Harnoncourt's paradigm in action: Baroque music played with an excess of vibrato during the period in question, but, and this is the significant point, Dupré sees no cause to take issue with the use of vibrato in any of the other pieces on the programme. Clearly it makes little sense to assert that vibrato may have been used in this single Handel piece and nowhere else. Rather, the critic objects mildly to the sonority of the string section that results from the behaviour of its individual players—in other words, to their lack of unanimity and, perhaps, taste. Also implicit in these remarks is an understanding, if not of idiomatic period style as this is defined today, then of the role vibrato plays when seeking appropriate expressive parameters for each individual work.

Perhaps the most extensive treatment of the subject of orchestral vibrato in the 'pre-continuous' period can be found in the conductor Hermann Scherchen's *Handbook of Conducting* (1929). Here, vibrato's multifarious uses in ensemble playing receive systematic treatment, in tandem with illustrative musical examples:

Intensity of tone (Stravinsky: *L'Histoire du soldat*)

Sensuous intensification of tone (R. Strauss: *Don Juan*)

Expressive intensification (Reger: *Sinfonietta*)

Tone-colour (Beethoven: *Grosse Fuge*)

Tone-characterization (Glinka: Overture to *Ruslan and Lyudmila*—a passage incidentally marked 'vibrato' in the original score)

Effects of registration (Bruckner: Symphony No. 2)

Non-vibrato: (Busoni: *Turandot* and Schoenberg: *Verklärte Nacht*)⁴¹

All the above effects require a modification of whatever baseline vibrato timbre is present naturally; non-vibrato, as Scherchen presents it, has already become an unusual effect reserved for special expressive circumstances.

A fascinating personality and originally a violist, Scherchen (1891–1966) began his conducting career in Riga in 1914, and claimed to have developed the method for his *Handbook* working in Winterthur, Switzerland,⁴² whose orchestra he led from 1922 to 1950. The above list, as the quixotic mix of repertory suggests, clearly represents a codification of existing practice rather than a novel approach to conducting technique. Perhaps Scherchen's most useful observations on orchestral vibrato, however, do not

⁴⁰ *Le Guide musical*, Feb. 1903, p. 170.

⁴¹ Hermann Scherchen, *Handbook of Conducting*, trans. M. D. Calvocoressi (Oxford, repr. 1989), 54–6.

⁴² *Ibid.* p. ix.

appear in the section of the *Handbook* devoted specifically to that subject, but rather in connection with what he calls ‘intensive slow *legato* singing tone, *pp*’. Here he suggests that in the examples selected—the opening of the Adagio finale of Mahler’s Third Symphony and the allegro of Weber’s *Der Freischütz* Overture—‘each single note of the melody’ should be ‘given animation by a light *vibrato*-pressure of the left hand’.⁴³

The reason this is so intriguing is that the Mahler passage is not specifically marked to be played with extra vibrato at all (although it is abundantly supplied with just about every other exhortation to heightened expressivity imaginable), while the movement’s ensuing minor-key second theme is in fact so designated.⁴⁴ Here, then, is clear evidence of vibrato that is not just being used continuously, but variably, as an intrinsic component of orchestral timbre over what is effectively the span of an entire movement more than twenty minutes in length.

Scherchen’s exceptional catholicity of musical interests highlights the need of modern conductors and their orchestras to use timbre in order to differentiate the styles of an increasingly large and highly varied active repertory, one consisting both of new works and (by 1900) at least a century and a half of certified ‘classics’. Until recently, it was inconceivable that all of this music should be performed in a manner that is, timbrally speaking, virtually the same. It is easy to understand the role that continuous but variable vibrato played in creating an expressive continuum appropriate to concert programmes in which (to take Nikisch’s example) a Mozart overture might rub shoulders with a Tchaikovsky symphony.

In other words, what ultimately determines how musicians handle vibrato, and much else besides, is the range and diversity of music that they are called upon to play. It is this eminently sensible consideration that has been forgotten (or ignored) in the modern attempt to eliminate vibrato from orchestral performance. More to the point, limiting the use of vibrato—whether historically correct or not—on purely aesthetic grounds may be defensible in the early eighteenth century when orchestras played a repertory of mostly contemporary, arguably less vibrato-friendly pieces. But to adopt this same approach for the mixed programmes that became standard as the nineteenth century wore on fails to give due weight to the historical context that justifies the aesthetic behind the original practice.

The conductor (and composer) Eugene Goossens (1893–1962) gives further substance to this argument in a paper entitled ‘Modern Developments in Music’, issued in the journal of the Royal Musical Association in January 1922.⁴⁵

it is interesting to note the fondness of the modern writer for the somewhat cold precision and uncompromising qualities of wind instruments. This is almost a mild revulsion against the excessive abuses which have crept into the string-playing of some of our orchestras wherein the strings as a body have full license to wallow in excessive rubato, vibrato, portamento, and other evils, which do so much to detract from the real value of so many impressive passages. Composers nowadays will therefore trust a simple unadorned theme to a wind instrument with far fewer misgivings than would be the case had the passage in question been relegated to the tender mercies of an oversentimental violinist. This may sound exaggerated, but in reality there is a very strong substratum of truth in the matter which leads one very forcibly to the conclusion that in point of actual fact, the strings of the orchestra are far more constantly employed in a rhythmic, figurative or percussive capacity than was the case formerly.

⁴³ Ibid. 40–1.

⁴⁴ See rehearsal figures 5 and 14 in the Philharmonia score (No. 468).

⁴⁵ Eugene Goossens, ‘Modern Developments in Music’, *Proceedings of the Musical Association*, 48/1 (Jan. 1922), 57–76.

Obviously, the ‘abuses’ of which Goossens speaks had been present for some time when he presented his paper. Indeed, John S. Dwight of the Boston-based *Dwight’s Journal of Music* was sounding a transcontinental vibrato alarm as early as 4 September 1875:

But the evil takes on wider range than even our [London] correspondent points out: it has extended very considerably into the instrumental world of music. Solo players on the violin have not been permitted its exclusive use, but all the members of the stringed family freely employ it. The various kinds of wind instruments are following suit: from the gentle flute to the brazen ophicleide, all seem afflicted with the senseless wobble.⁴⁶

These observations, dating well back into the nineteenth century, echo precisely Harnoncourt’s understanding of Romantic performance practice. They offer a telling context in which to understand the growth of the anti-sentimental school of composition that Goossens describes—the advent of composers such as Stravinsky and Hindemith in the late 1910s and early 1920s. They also reveal a critical fact concerning the type of vibrato that is found to be objectionable: one that is either very slow, very wide, or both, because this is the only type that is audible as a distinct ‘wobble’. Toscanini’s fast vibrato ‘make a beautiful tone’ because tone, as various studies have confirmed, is all that can be heard, not an unpleasant pitch pulsation.⁴⁷

It is also worth noting that Goossens includes vibrato and portamento *together* in his catalogue of orchestral ‘evils’. Some of today’s historically informed performers disassociate the two in Romantic expressive playing, accepting portamento but denying vibrato, with singularly strange results both timbrally and logically. It is particularly odd to insist that portamento vanished from orchestral practice just as vibrato became continuous. If the response of younger players in the 1930s and 1940s to the new music of the twentieth century was a moderation of the sentimental style, then this naturally would have affected all aspects of tone production. Vibrato would have been moderated as well, and not increased as part of an unspoken orchestral conspiracy among players seeking to compensate by other means for the loss in expressivity.

The colloquy following the presentation of Goossens’s paper suggests the answer to this question, and deserves to be quoted at length:

Mr. W. W. COBBETT: Like the old lady of 94 I am always anxious and eager to learn, and I have learnt much this evening. Mr. Goossens knows that I am one of his sincerest friends and admirers, but I do stand up to protest against what he said about the wallowing in emotion of the violins of the orchestra. On the contrary, when I go to hear our London orchestras play I always feel that they do not play with sufficient emotional expression. There is no ‘wallowing’. I would rather say that the strings express feelings of romantic idealism which cannot be expressed to the same extent by wind instruments, exception being made perhaps of the oboe and of the lower notes of the clarinet. I sometimes think regarding the young composers, whom I admire, that they repress feelings of emotion too much, thus discouraging something which has always given us the greatest joy in the past and from which we hope to derive the greatest joy and delight in the future unless music is to be dehumanised.

Mr. GOOSSENS: Mr. Cobbett has referred to my remark about the strings wallowing. Personally I can never make them wallow sufficiently, except at times when they ought not to do so at all. I am a violinist myself; I have played in the orchestra for ten years, so I know something about it. But when you get sixteen violins all wallowing at different rates of vibration

⁴⁶ *Dwight’s Journal of Music*, 4 Sept. 1875, p. 84.

⁴⁷ See Carl E. Seashore, *Psychology of Music* (New York, 1938), 33–52.

in a rather tender passage, it becomes a little dangerous; but, of course, it is obviously difficult to lay down the law about a thing like this.

Note that no one here questions the value of vibrato or the reality of its frequent use in the period in question. The issue, again, is that of quality, or kind, and how these can be exploited expressively to create a stylistically appropriate ensemble sonority. Despite the reservations expressed in his paper, Goossens does not do the obvious thing in his own compositions and ask his players to refrain from using vibrato or portamento. He works with what he finds and lets his personal style make its own case. A casual survey of half a dozen orchestral works from the period 1911–33⁴⁸ reveals no request to eliminate either technique, and no shortage of cantabile or espressivo passages for the strings. So the presence of too much of a good thing does not justify going to the opposite extreme.

What the evidence reveals about this period, then, is not an absence of vibrato in the orchestra, but rather an abundance of it, sometimes excessive and possibly quite annoying to certain listeners, with much still left to the players' discretion. Did this state of affairs constitute a huge and audible difference between performance practice in earlier times and that of modern orchestras in the second half of the twentieth century? Once again, a conductor and impartial observer suggests an answer—in this case, Adrian Boult (1889–1983), a student of Arthur Nikisch who lived and worked through the alleged transition from 'pure tone' to 'continuous' vibrato.

In his book *The End of Early Music*, the Baroque oboist Bruce Haynes cites an interview with Boult in 1977 regarding changes in twentieth-century performance practice. After remarking on the swift disappearance of orchestral portamento in the early decades of the century, Haynes reports the following exchange:

Peter Wadland: I gather that at certain stages [in] the orchestras, some of the old members used the [unclear] straight playing, while the younger members used the more modern vibrato playing.

Boult: Yes, I suppose that happened. It seemed to blend pretty well in the end [last 3 words unclear], but I wasn't really conscious that the thing was changing very much.⁴⁹

Boult's reply is noteworthy for several reasons. First, the question is a leading one. Rather than asking whether or not it was true in the first place that orchestras had some members who did not use vibrato and some who did, or if the very concept of 'straight playing' as postulated today bears any resemblance to the reality at the time in question, these assumptions are taken as given. Wadland (as well as Haynes) merely look to Boult for confirmation of what they already assume to be true. Boult's answer provides no such confirmation. Rather, what he suggests is that even if the premisses are correct, the timbral difference in mean sonority between modern and prior practice was in fact negligible.

This makes perfect sense. As Norman Del Mar states, the ensemble sonority of a mass of strings results from the average of what every individual player does. Even if

⁴⁸ Miniature Fantasy for String Orchestra, Op. 2 (1911); Suite in G after Bach (1917); Sinfonietta, Op. 34 (1922); Oboe Concerto, Op. 45 (1927); Concertino, Op. 47 for String Octet/String Orchestra (1928); Suite from *Kaleidoscope* (1933).

⁴⁹ Bruce Haynes, *The End of Early Music: A Period Performer's History of Music for the Twenty-First Century* (Oxford, 2007), 55.

some use vibrato while others do not, the end result will still be a vibrato-enriched baseline timbre. The audible distinction between a situation in which some players use as much vibrato as they please while others use none at all, and one in which everyone uses a modest, relatively unobtrusive amount unless otherwise encouraged, must necessarily be a subtle one. It cannot have been significant except in circumstances, such as those noted in Vienna, where the performance practice included a specific handling of vibrato by most of the players, most of the time (that is, continuously).

However, the fact that some players used—and still use—less vibrato than others cannot be cited as evidence that orchestras at any time used no vibrato at all, or that this was ever a timbral ideal in orchestral string sections. In fact, historical evidence dating back well into the eighteenth century unambiguously reveals that vibrato was a common and unexceptional feature of orchestral sonority, whether it was appreciated or not.⁵⁰ Perhaps the only substantive difference between earlier practice and that today concerns whether ensemble vibrato resulted primarily from the independent behaviour of individual players, or from a definite choice on the part of musicians and conductors working together to exploit the full range of vibrato effects in a systematic way.

Furthermore, just as a distinctive vibrato rapidly became a defining characteristic of full-time, professional orchestras such as the Vienna Philharmonic, so too does mention of it appear in connection with the first generation of modern conductors. Some of the evidence previously cited already suggests this, but the point can be driven home with particular clarity in considering the work of the Irish conductor Hamilton Harty (1879–1941) because, save for his last few years, and on account of his untimely death, virtually his entire career remained on the ‘no vibrato’ side of the theoretic timbral divide. In other words, like Mahler and Nikisch, he was not a conductor who, to use Norrington’s words, ‘had to get used to it’.

Harty spent the years 1920–33 as Music Director of the Hallé Orchestra in Manchester. The first violinist Leonard Hirsch, who joined the orchestra in 1922, describes Harty’s technique this way: ‘Few conductors could, without asking, so exactly indicate by the beat the kind of staccato, or the pulse of the vibrato, or the length of the note required.’⁵¹ Bernard Shore, who played the viola under Harty in the BBC Symphony Orchestra in the 1930s, recalls Harty’s instructions to the strings at the opening of Berlioz’s *Symphonie fantastique*: ‘No expression or feeling, 1st violins! No vibrato! These are only random thoughts that come into the mind. Use expression later!’⁵²

These observations track Forsyth’s comments on performance practice especially closely. They tellingly reveal how automatic the use of vibrato was at this time—the conductor’s concern being not to eliminate it, but to harness its musical potential in a characterful way. Harty’s equation of vibrato with ‘expression’ is also worth emphasizing. This would be obvious save for the fact that Norrington’s school has attempted to redefine the traditional understanding of such terminology, rewriting

⁵⁰ See e.g. publisher Robert Bremner’s oft-quoted 1777 essay ‘Some Thoughts on the Performance of Concert Music’. Bremner claims that ‘Many gentlemen players on bow instruments are so exceeding fond of the *tremolo* [vibrato], that they apply it wherever they possibly can’, even in orchestral music. See Neal Zaslaw, ‘The Compleat Orchestral Musician: Text and Commentary on Robert Bremner’s “Some Thoughts on the Performance of Concert Music (1777)”’, *Early Music*, 7 (1979), 46–57 at 48.

⁵¹ Leonard Hirsch, ‘Memories of Sir Hamilton’, in David Greer (ed.), *Hamilton Harty: His Life and Music* (Belfast, 1978), 67.

⁵² Shore, *Sixteen Symphonies*, 175.

history so as to eliminate the vibrato component almost completely. Hence, ‘expressive’ playing may include portamento, *tempo rubato*, accentuation of the phrase, but not the traditional prominent vibrato, despite there being no question that period sources, including those often cited by scholars as calling for restraint (e.g. Spohr, de Bériot), make this connection specific and unequivocal.⁵³

Modern revisionist scholarship notwithstanding, the fact remains, as indicated by Norman del Mar, that the directive ‘expressive’ includes vibrato where possible. Even a popular nineteenth-century musical dictionary explicitly defines ‘expression’ as, among other things, ‘the *vibrato* effect on bow-instruments’.⁵⁴ Given this reality, it is clear that the dispositive issue regarding vibrato usage is not absolute frequency but rather quality of timbre conditioned by the demands of the individual works being performed. Conductors understood vibrato; musicians had no inhibitions in supplying it as requested; and the absence of some degree of vibrato was very much a special effect, and not the timbral norm. There is no particular reason why these same observations will not hold true and cannot be traced in orchestral performance as far back as documentary research permits.

Just how unexceptional orchestral vibrato must have been by the early 1900s can be gleaned from an 1875 review of a St Petersburg performance of Donizetti’s *Linda di Chamounix* featuring the legendary soprano Adelina Patti:

Constatons que la voix de Mme. Patti, qui semblait exclure toute possibilité d’un nouveau charme, en présente pourtant encore un nouveau. Dans les *forte*, qui doivent dominer les masses chorales, la voix de l’artiste nous semblait participer au *vibrato* des instruments à cordes, ce qui nous porterait à assimiler cet organe exceptionnel au son d’un violoncelle dans la clé de violon, pour le registre aigu. Ce *vibrato*, inhérent à la voix, en était un charme tout particulier.⁵⁵

(We note that the voice of Mme Patti, which seemed to preclude all possibility of new charms, presents a new one yet again. In the *fortes*, which must dominate the choral masses, the voice of the artist seemed to us to participate in the vibrato of the string instruments, to the point that would cause us to equate this exceptional organ with the sound of a cello in the violin clef, in the higher register. This vibrato, inherent in the voice, was especially charming.)

All this evidence reveals, beyond a reasonable doubt, that by the end of the nineteenth century the frequent use of vibrato in an orchestral context truly was commonplace. It was old news, old enough to spark the anti-Romantic reaction to which Harnoncourt and Goossens refer.

BRUNO WALTER REFUTES NORRINGTON’S CLAIMS

The foregoing discussion provides the context to consider now the issue presented at the start of this essay: whether or not Bruno Walter’s 1938 Vienna Philharmonic Mahler Ninth represents ‘the end of an era’ as regards the presence (or absence) of vibrato in the orchestra’s string section. So far, the proofs presented regarding style and technique in Vienna as well as elsewhere in Europe and the United States argue strongly in favour of a relatively continuous, variable vibrato timbre. Bruno Walter arrived at the same conclusions. On 31 May 1960, while in Vienna for a series of concerts, Walter

⁵³ See, e.g. Brown, ‘Bowing Styles, Vibrato and Portamento’.

⁵⁴ Theodore Baker, *A Dictionary of Musical Terms* (New York, 1897), 68.

⁵⁵ *Le Guide musical*, 9 Dec. 1875.

gave an interview to Austrian Radio in which he recalled his first experience of Vienna and its Philharmonic Orchestra in 1897.⁵⁶

Ich hatte Wien zum ersten Male gesehen im Jahre 1897. Da hatte ich ein Engagement in dem kleinen Stadttheater Pressburg. Ich kam von Breslau, ging nach Pressburg, weil ich Erster sein wollte. Es waren kleinste Verhältnisse, aber ich fühlte, da galt, was ich sagte als erster Kapellmeister. Pressburg war anderthalb Stunden von Wien, damals, ich fuhr mit dem Boot die Donau hinunter nach Pressburg, aber als ich in Wien war, hörte ich nun die Philharmoniker zum ersten Mal.

Das war für mich ein lebensentscheidender Eindruck, weil ich diesen Klang des Orchesters, den ich da erlebt habe, hab'ich das Gefühl: So soll ein Orchester klingen, so soll es spielen, das hatte ich noch niemals gehört, die Schönheit, diese Ruhe des Klanges, diese Art von Glissando, die Art von Vibrato, der Streicherklang, die Mischung von Holz mit Streichern, mit Blech, das Maß im Blech, das sich einfügte mit dem Schlagzeug zusammen in den Gesamtklang des Orchesters.

Für mich war dieser Eindruck lebensentscheidend, und jetzt möchte ich etwas vorgreifen und Ihnen folgendes sagen: Dieser Klang, 1897, ist *heute* der gleiche. Da ist nicht mehr *ein Mensch* aus der Zeit von damals, können Sie sich denken. Anfang der Fünfziger, nach der fürchterlichen Zeit, ich war in Amerika und ich traf mich mit den Wiener Philharmonikern in Edinburgh zur Mitwirkung an den Festspielen. Und es war ein rührendes Wiedersehen mit ihnen nach langer Trennung, und als sie anfangen zu spielen, das war *derselbe* Klang, und jetzt, als ich mit ihnen musizierte und anfang Schubert zu probieren: derselbe Klang, den ich 1897 mit solchem Entzücken in mich aufgenommen hatte. Was das ist, das dürfte man Tradition nennen. Hier ist eine lebendige Stadt, die ihre Musikalität in diesen Menschen ausdrückt, die da zum Orchester versammelt sind. Die musikalische Kultur hat sich gerade in Wien in einer ganz bestimmten lokalen Form ausgedrückt. So klingt Wien.

(I saw Vienna for the first time in 1897. I had an engagement then in the small Municipal Theatre in Bratislava. I came from Breslau; went to Bratislava because I wanted to be in charge. They were the most paltry terms, but I felt that there, what I said would be as First Conductor. Bratislava was one and a half hours from Vienna at that time; I went by boat down the Danube to Bratislava, but when I was in Vienna, I finally heard the Philharmonic for the first time.

For me this was a life-altering impression, because it was this sound of the orchestra that I have experienced ever since—I have the feeling: this is the way an orchestra should sound; the way it should play. I had never heard the beauty, this calmness of the sound, that sort of glissando, the manner of vibrato, the string sound, the blend of woodwinds with the strings, with the brass, the balance of the brass in combination with the percussion contributing together to the overall sonority of the orchestra.

For me, this impression was definitive, and now I would like to anticipate a point and tell you this: this sound, 1897, is the same *today*. There is not *a single man* left from that time, as you can imagine. In the early fifties, after that terrible period, I was in America, and I met up with the Vienna Philharmonic in Edinburgh to take part in the Festival. And it was a touching reunion to play with them after such a long separation, and when they began to play it was *the same* sound; and even now, when I made music with them and began rehearsing Schubert: it was the same sound that had given me such delight in 1897. What this is can only be called tradition. Here is a vibrant city expressing its musicality through the people assembled there, in that orchestra. The musical culture has been expressed in Vienna, especially, in a very specific local form. This is the sound of Vienna.]

⁵⁶ The author wishes to acknowledge very gratefully the assistance of Styra Avins and Michael Lorenz for mentioning the existence of this interview, with particular thanks to Dr Sören Meyer-Eller for sourcing, courtesy of North German Radio (NDR), the actual tape and transcribing the segment cited.

Walter's own words could not be clearer or more dispositive. The sound of the Vienna strings in 1960 was essentially the same as in 1897, and that sound derived at least in part from a characteristic treatment of vibrato. To the extent that even Norrington's theory acknowledges the presence of continual or permanent vibrato in Vienna after the Second World War, then from Walter's impartial testimony such also must have been the case in the 1890s (and likely well before). Must the situation have been exactly the same? Of course not, but it seems to have been audibly very similar, which is what matters. There is no support for the notion that the 1938 Mahler Ninth lacks vibrato or represents the last gasp of an old tradition recently revived by the historical performance movement.

Rather, Walter's interpretation falls squarely within the continuum of ongoing performance practice, one which includes vibrato as a primary component of the orchestral string section's corporate identity. Nor is there any reason to believe that in encountering the Vienna Philharmonic, Walter was hearing orchestral vibrato for the first time. Rather, it was the way that it was used in Vienna that stood out as special, and not the fact that it existed at all. It was this Viennese model that served as Walter's paradigm for the rest of his career. Denying or ignoring the presence of vibrato, then, as the recent evidence of the Vienna Philharmonic's own website disturbingly suggests, represents the true break with traditional performance technique dating back to the orchestra's founding.

Additional support for this conclusion can be found in quite a different sort of documentation featuring another of Europe's major ensembles: the Royal Concertgebouw Orchestra of Amsterdam. A 1931 video made in Paris under the conductor Willem Mengelberg (1871–1951), of the strings-only Adagietto from Bizet's *L'Arlésienne* Suite No. 1, offers pellucidly clear images of the orchestra's players.⁵⁷ They use vibrato exactly as would any string section today, from none at all, to the merest wisp in *pianissimo*, to a rich and healthy throbbing at the lyrical climaxes. The very opening offers a particularly fine shot of the entire cello section vibrating freely to the strains of the first bars.

What makes this evidence particularly valuable is the fact that sonic limitations are not an issue: the images speak for themselves. They also reveal that there is absolutely no correlation (contrary to that suggested by the author in the Boult interview cited above) between a player's age and vibrato usage. Of the sixty-one members of the string section in 1931, the breakdown in length of tenure with the orchestra was:⁵⁸

No. of players	Tenure (years)
7	31–43
10	25–30
31	10–24
13	<10

In other words, at least seventeen vibrato-using players in 1931 were with the orchestra at the turn of the twentieth century, some even going as far back as the orchestra's founding in 1888.

There is no reason to assume that their colleagues at that early date played any differently, for two reasons. First, a brief length of employment with this particular

⁵⁷ Included in *The Art of Conducting*, Teldec DVD 0927 42668 2 (1997).

⁵⁸ The author gratefully acknowledges the support of Ms Mieke Bleeker, Assistant Director of Artistic Administration, Royal Concertgebouw Orchestra, and Mr Johan Giskes, Music Historian, Gemeente Amsterdam Stadsarchief, who graciously assisted in providing this information.

orchestra is not in and of itself an indication of youth; it merely means that the players were displaying their talents elsewhere, vibrato included, before joining the Royal Concertgebouw. The average length of tenure with the orchestra in 1931 was approximately seventeen years, but the average age was 44. Since there is no discernable relationship between age and vibrato usage, it would be safe to date the observed timbral standard of the orchestra back several decades, at least.

There is much more to this story, however, than the age and employment history of the orchestral musicians. Just as significant for this analysis is the fact that for the period 1895–1945 the orchestra was led by the same conductor: Willem Mengelberg, who, beyond the visual proof, evidently had very definite ideas about vibrato.

The BBC Symphony violist Bernard Shore, for example, claimed that the Dutch maestro's handling of the love scene from Strauss's *Ein Heldenleben* (composed in 1898 and dedicated to Mengelberg and the Royal Concertgebouw Orchestra) 'might almost be labeled the "left hand of the strings", so frequently does he demand the utmost warmth and life in the vibrato, as much as in great breadth of bowing'.⁵⁹ In the elegiac concluding section, 'the left hand of the violins is singled out for his medium of expression, the bows held well in control to avoid over-emphasis'.⁶⁰ Can there be any doubt that a similar frequency and range of vibrato sonority is exactly what Mengelberg demanded of his players in his performances during the 1890s, or in his celebrated 1928 New York Philharmonic recording of Strauss's tone poem for RCA Victor?

Shore's description of Mengelberg's use of vibrato in *Ein Heldenleben* also clarifies Strauss's intent in the passage six bars before figure 42, where the violas and cellos sustain *pianissimo* chords marked 'vibrato', and then 'poco a poco senza vibrato' leading to the entry of the offstage trumpets.⁶¹ This is, obviously, a special effect. The direction to use 'loud' vibrato means to exaggerate the sonority of what is otherwise a very soft, subsidiary part (the violins have the tune). It does not mean that additional vibrato, beyond the orchestra's baseline timbre, was unintended or unexpected in situations where it most naturally belongs (melodic parts, passionate passages, lines marked 'dolce', 'espressivo' and the like, or characterized by various types of accentuation).

The example of Mengelberg demonstrates that in order to make the case for little or no vibrato in the 1890s, it would be necessary to show that the same players, under the same conductor, played the same music in totally different fashion in performances just a few decades apart. This is not an unfair standard, nor is the task as impossible as it sounds given the abundance of available evidence. One could argue, for example, that this is exactly what happened in the case of portamento: the same players, or at least some of them, simply stopped using it in the 1920s and 1930s. Witness Adrian Boult, who observed: 'It [portamento] just seemed to go out of fashion. Quite suddenly. People didn't talk about it, you know. It just happened.'⁶²

However, note that musicians and conductors, the very ones who—like Boult—did not notice a substantive change in orchestral vibrato and who were in fact cultivating its use, *did* notice something different going on with respect to portamento, and to the

⁵⁹ Shore, *The Orchestra Speaks*, 122.

⁶⁰ *Ibid.* 124.

⁶¹ Dover Edition (1979), 228.

⁶² Haynes, *The End of Early Music*, 52.

extent that the use of vibrato may have evolved, it apparently did so in a way completely contrary to what Norrington's school of thought claims. This was already suggested by Harnoncourt's initial statement regarding the decline of the very prominent, Romantic vibrato in the 1930s, as well as New York Philharmonic musician Herbert Borodkin's claim previously cited that Mahler used more vibrato than was the norm in 1964.

A PLAUSIBLE ALTERNATIVE HISTORY OF TWENTIETH-CENTURY ORCHESTRAL VIBRATO

Imogen Holst (1907–84), conductor, composer, and biographer of her father Gustav, puts some flesh on this argument in a most helpful way in her discussion of 'Venus' in *The Planets*:

In *Venus* the problem I used to worry about was the way the solo cello's espressivo rising phrase at the Largo sounded as if it had strayed by mistake from nineteenth-century romantic surroundings into the austere to-and-fro of the tranquil Adagio. This problem, however, has solved itself. At the time when *The Planets* was first performed, many of the distinguished solo string players in England had studied in Germany when they were young; they had listened to the Joachim Quartet playing Brahms, and they had handed down to their own pupils the tradition they had learnt. In that tradition, an espressivo rising phrase such as the Largo in *Venus* would have meant *molto vibrato*, and *portamento* at each shift of position. But a change has come about in espressivo string playing since then, and today's performers play the passage in *Venus* in a style that belongs to the rest of the movement.⁶³

Imogen Holst was not only a distinguished musician and a pioneering woman in her profession, but as one who lived through the transition to modern vibrato she was perfectly placed to comment on what actually happened, particularly as it applies to the often forward-looking stylistics of her father's work. *The Planets* was composed in 1914–16, and the phrase in 'Venus' to which she refers occurs at bar 83. It is not actually marked 'espressivo', but rather by Gevaert's hairpin vibrato accent [$\langle \rangle$]. The 'problem' that had been corrected by 1983, at the time that Holst revised her musical biography to include the above remark, obviously was the excessive portamento and prominent vibrato characteristic of string playing at the time of the work's premiere in 1918.⁶⁴

In other words, even if the frequency of vibrato increased in the period following the Second World War, its obtrusiveness apparently decreased. The net difference in the baseline timbre of solo playing might have been relatively noticeable, but that of an entire string section would have been slight, just as Adrian Boult's comments suggest. The change in the use of portamento, because it is a true melodic ornament (that is, it alters both the notes played as well as their rhythm), would have been far more prominent than any gross variation in vibrato, which affects only tone. That these observations completely contradict current thinking regarding vibrato usage in the early twentieth century tellingly reveals just how far from authentic practice some of today's theoretically historically informed performers really are.

⁶³ Imogen Holst, *The Music of Gustav Holst and Holst's Music Reconsidered* (Oxford, 1951, rev. 1984), 144.

⁶⁴ Gustav Holst's works also provide valuable insight into the decline of orchestral portamento. His 1927 tone poem *Egdon Heath* starts with multiply divided strings playing a slow, legato phrase in which each part is marked 'senza portamento'. The objection to portamento at this period obviously has something to do with the preference of contemporary composers for clean rhythms and ensemble precision, as also suggested by the Eugene Goossens discussion previously cited. Significantly, however, Holst does not indicate 'senza vibrato' at the same time.

The usefulness of Holst's observations does not end here, however. Both the score of *The Planets* and her comments on the German origins of *espressivo* string playing provide insight into the composer's intentions, and how orchestras of his day responded to them. Specifically, at the start of 'Neptune', Holst pencilled into his copy of the original edition of the work, published in 1921, the following footnote: 'The Orchestra is to play *sempre pp* throughout, dead tone, except for Clarinet and Violin after fig. V.'⁶⁵ This reveals that before 'Neptune' the tone of the orchestra clearly was not 'dead'. In other words, it presumes a normative measure of vibrato in the strings elsewhere, and most likely the woodwind as well since English players at the time used it freely (recall the statement of Henry Welsh to this effect). The fact that Holst added the comment regarding 'dead tone' to the presentation copy of his score suggests that he had difficulty getting the players of his time to produce the correct timbre.

At the designated passage in 'Neptune', the clarinet and orchestral violins are marked 'dolce' (starting at b. 58). This is the only expressive term relating to tone colour given to the strings in the entire work, but it is also the only traditional, vocal melody that the violins have in 'Neptune'. Evidently, Holst was extremely wary of asking for additional vibrato in music so forward looking, particularly in its rhythmic demands and complex textures. This mirrors the previously cited comments of Eugene Goossens on the unsuitability of prevailing orchestral practice to the stylistic requirements of contemporary orchestral writing. 'Dolce' in this context means that a quantity of vibrato should return to the violin tone, and also that it should have a particular quality, one probably derived from the German tradition inculcated by Joachim and his string-playing colleagues. Fortunately, there is strong evidence as to exactly what Holst had in mind, and what the players of his day should have done.

The precise extent to which Joachim typified or influenced the use of vibrato in his time remains a source of controversy. The Brahms scholar Styra Avins summarizes the salient points very well:

There is a school of thinking that calls for using vibrato only sparsely in Brahms's music, based on the supposition that Joseph Joachim, Brahms's favorite violinist, played essentially without vibrato, using it as an ornament. The assumption is that Joachim followed the recommendations set out in Louis Spohr's *Violinschule* (1832), which call for saving the effect for notes of long duration, or those marked by a *sforzando* or an accent, or in passionate passages, or wherever a singer would use it. There can be no doubt that Joachim used less vibrato than modern violinists do, but we will have an extremely difficult time obtaining a clear picture of just how much or how little that means. For one thing, accents, passionate passages, and long notes make up quite a large part of many a composition. The entire *Köl Nidrei* by Max Bruch, dedicated to Robert Hausmann, one of Brahms's favourite cellists, is such a piece.⁶⁶

Avins goes on to note instances, such as the trio of Brahms's Fourth Hungarian Dance in Joachim's arrangement, as well as a run-through of the Third Piano Trio in 1887, where vibrato was indeed either notated (in the former case) or added in performance as part of a general *espressivo* (the latter). Hausmann was, incidentally, the cellist in the Joachim Quartet to which Holst refers, and which she takes as the exemplar of the extreme *espressivo* style typical of early twentieth-century English string playing. Also, as previously noted, Joachim's own *Violinschule* (1905) not only confirms the vibrato meaning of the hairpin [\diamond] accent, it comments approvingly on the possible

⁶⁵ Subsequently taken up in the 1979 Curwen Edition of the score prepared by Imogen Holst and Colin Matthews.

⁶⁶ Avins, 'Performing Brahms's Music', 27.

uses of ensemble vibrato in chamber and orchestral music (citing Schubert and Gluck respectively) dating back to the early Classical period. Joachim thus seeks and gains historical sanction for what is tacitly assumed to be a well-known contemporary practice.⁶⁷

One of his colleagues and avowed disciples, Alfred Gibson (1849–1924), gives a helpful sense both of the performance practice of the time and the lessons to be learnt from the German tradition cited by Holst regarding the handling of vibrato. During the first two decades of the twentieth century, Gibson stood among the most distinguished and respected violin pedagogues in England. He taught the violin at the Royal Academy of Music during the period 1895–1922, and the viola at the Guildhall School for roughly the same period, in addition to having numerous private pupils. He began his career in London in the 1860s, playing in several opera orchestras, including Covent Garden, and led the orchestra in two coronation ceremonies (for Edward VII and George V). As a quartet player, he toured the English provinces with the Joachim Quartet, and from 1893 played in England's Popular Quartet. Gibson also kept an autographed portrait of Joseph Joachim on the wall of his study.⁶⁸

In 1896, Gibson gave a newspaper interview in the course of which he was asked point blank: 'Is there not too much tendency towards continual vibrato?'⁶⁹ His answer:

The vibrato is a very beautiful means of getting effects, but it seems to me that it is but imperfectly studied. It ought to be studied as thoroughly as everything else in violin playing. So many people can only do it at one pace, *i.e.* they can only give the quick vibrato; a slow wave they cannot produce. (Here Mr. Gibson gave a beautiful example on his own instrument, showing a finely graded swell.) The vibrato seems an exaggeration or a mannerism when it can only be done quickly. The quick vibrato, used to express a sweet, suave melody, is ridiculous. I agree with its very free use. All the best players use it freely, but with perfect command; they do not observe one pace, but grade the tone from a mere wave of sound to the quickest and most passionate expression.

Holst himself recorded *The Planets* twice: acoustically in 1923, and electrically in 1926, in both cases with the London Symphony Orchestra.⁷⁰ Few firm conclusions can be drawn from either of these recordings. In 'Venus', the solo cello's epic portamento is obvious in 1923, vibrato less so due to engineering limitations rather than the player's technique, as the greater naturalness of the 1926 remake suggests. More specific comparison is rendered largely futile by the approximately 40 second disparity in tempo between the two versions, a huge difference in a slow movement only lasting about seven and a half minutes, and critical in considering a timbral enrichment such as vibrato in which the player's ability to produce it audibly, and the listener's ability to hear it, both depend on the amount of time available for the effect to register. Similar reservations apply to the 'dolce' passage in 'Neptune', underlining the difficulty of using historical recordings as evidence of vibrato performance practice in individual works, never mind entire eras.

⁶⁷ See Joseph Joachim and Andreas Moser, *Violinschule*, iii (Berlin, 1905), 6–8.

⁶⁸ Gibson is best known today as the owner of a celebrated Stradivarius violin subsequently acquired by, and then in 1936 stolen from, Bronisław Huberman. It was recovered in 1985, and is currently played by Joshua Bell.

⁶⁹ *Musical Herald*, 1 Jan. 1896, p. 4.

⁷⁰ Available on Pearl CD 9417 (1923) and Naxos CD 8.111048 (1926).

Holst's 'dolce', nevertheless, is most likely a request for a slow, sweet vibrato, Gibson's 'mere wave of sound'. Recorded documents may not be useful in arriving at this conclusion, but testimonial evidence supports it. Unfortunately, potentially valuable insights into nineteenth- and early twentieth-century performance practice such as this risk being lost utterly if the theory is accepted that orchestras everywhere largely avoided vibrato during this entire period. The evidence analysed thus far points beyond the mere fact of its intrinsic presence to differing traditions in vibrato quality and usage. Much work remains to be done in this field. The persistence of a relatively stable vibrato tradition in Vienna need not be the same as Toscanini's preference for fast vibrato in New York, even if its frequent use in both cases renders it effectively continuous.

FINDINGS, SUMMARY, AND CONCLUSION

Given that Walter's 1938 Mahler Ninth, by his own admission, probably employs about as much (Viennese) vibrato as would a performance conducted in 1960, and there is clear video evidence of perfectly normal (Dutch) vibrato usage well before it theoretically was supposed to be there, how is it possible that Norrington and his associates fail to note its presence in Walter's and other early recordings (such as Mengelberg's 1928 *Ein Heldenleben*, also mentioned)? There are actually two possible answers, although it lies outside the scope of this essay to do more than present them for further consideration, and by way of conclusion.

The first answer is a technical one: even solo vibrato, unless distinctly exaggerated, can be very difficult to detect. Orchestral vibrato, never mind which type, cannot be heard at all as a distinct oscillation in pitch. It comes across simply as general timbre, as Norman Del Mar has already stated. Additionally, in his book *Performing Music in the Age of Recording*, Robert Philip confirms that 'In an orchestra, it is impossible to know whether an individual string-player is using vibrato on a particular note, or playing a portamento over a particular interval, or phrasing in a particular way. What one hears is the combined effect of what everyone in the section is doing.'⁷¹

These facts have been shown to be true in scientific testing under controlled conditions, most notably by Dr Carl Emil Seashore, who published his findings in a series of studies appearing from the 1920s through the 1930s, summarizing them in his path-breaking *Psychology of Music*. Seashore writes:

(1) The vibrato is always heard as of very much smaller extent than it is in the physical tone. For example, a pulsation of a semitone is ordinarily heard as less than 0.2 of a tone. It is this illusion which makes the vibrato tolerable.

(2) *Much of the most beautiful vibrato is below the threshold for vibrato hearing and is perceived merely as tone quality.* [emphasis added] Individual differences in the capacity for hearing the vibrato are very large. In a normal population, one individual may be 50 or 100 times as keen as another in this hearing In view of these large and often relatively fixed individual differences each individual has his own illusion, and his individual sense of vibrato determines what shall be good or bad for him. This introduces a most serious obstacle to the efforts toward establishing norms for a vibrato which shall be pleasant to all listeners.

⁷¹ Robert Philip, *Performing Music in the Age of Recording* (New Haven, 2004), 104.

(3) Regardless of the extent of pitch, intensity, or timbre pulsation, we always hear an even mean pitch corresponding to the true pitch, an even intensity and continuous timbre.⁷²

For these reasons recordings, whether historical or recent, cannot normally be cited by individual listeners as evidence of the absolute quantity or kind of vibrato being employed, except in very unusual circumstances. Their use as documents of vibrato performance practice, as in the David Pickett article on Mahler recordings previously mentioned, is highly suspect.

Nevertheless, when some degree of vibrato usage is a known fact, comparisons between recordings may serve to define its contribution to a given string ensemble's timbre beyond mere supposition produced by listening alone. This was true of *The Planets*, thanks to Imogen Holst, but to illustrate the point more clearly consider the most obvious test case suggested by this essay: Roger Norrington's and Bruno Walter's recordings of Mahler's Ninth Symphony. The former uses no (or very little) vibrato. The latter, as is now clear, evidently employs a form of continuous vibrato, Viennese-style, one which Norrington does not hear. His string section sounds nothing like Walter's, and as an effort at recreating that particular sonority the performance falls short.

It therefore follows that excessive reliance on the subjective impressions arising from listening to recorded music most likely will prove misleading, both in scholarship and in the concert hall. Without independent and impartial eyewitness testimony such as Walter's or Shore's about how the musicians actually handled vibrato, it is possible to make virtually any claim,⁷³ and that is exactly what we see happening here. The situation resembles the tale of 'The Emperor's New Clothes', only in reverse: insist confidently that the vibrato cloak is missing, and a goodly number of experts and music lovers obediently hail the naked timbre of pre-war orchestral strings allegedly preserved on early recordings. This 'evidence' is then seen as objective proof of the correctness of period practice. It is a self-fulfilling prophecy, one which raises disturbing questions about how preconceived theories influence musical perception.

Robert Philip also criticizes Norrington's habit of adopting those qualities he finds worthy of emulation in historical recordings, non-vibrato specifically, while neglecting others:

[Norrington] draws on historical recordings to support his taste in this matter. Why, in that case, is Norrington not interested in the equally traditional portamento of those orchestras? Because he does not like it. There is an uncomfortable feeling, despite the selective appeal to history, that the orchestra has become like a young boy's train set, which he is free to take to pieces and rearrange whenever he gets bored with the current layout.⁷⁴

⁷² Seashore, *Psychology of Music*, 45–6.

⁷³ Other technical considerations, such as room acoustics, dynamic range, microphone placement, and frequency response, also have an obvious and often significant impact on individual vibrato perception. It has been shown, for example, that the ability to hear solo violin vibrato decreases markedly with sound-quality generally. See Dorottya Fabian and Emery Schubert, 'Is There Only One Way of Being Expressive in Musical Performance?—Lessons From Listeners' Reactions to Performances of J. S. Bach's Music', in C. Stevens, D. Burnham, G. McPherson, E. Schubert, J. Renwick (eds.), *Proceedings of the 7th International Conference on Music Perception and Cognition* (Sydney, 2002), 112–15.

⁷⁴ Philip, *Performing Music in the Age of Recording*, 222.

Philip makes a good point. Norrington's Damascene conversion on the question of historical recordings and vibrato apparently occurred at about the same time that he began performing and recording Elgar and Mahler with modern orchestras.⁷⁵ Roughly a decade and a half previously, as evidenced by his own statements in the 1991 booklet notes to his Brahms First Symphony recording with the London Classical Players, he was suggesting that he and his ensemble were 'almost at the end of our long march through the history of performance practice', and that as far as early recordings were concerned, 'in seeking for a historical viewpoint, we can only hope for limited help from them'.⁷⁶

However, even granting the validity of Philip's observations, the second answer to the question of why Norrington makes his particular claims cannot be reduced to a quixotic combination of caprice, opportunism, and personal taste. He is by no means alone in taking an absolutist position on the vibrato question; rather, he is merely the most successful, vocal, and extreme example of a major trend in contemporary performance. It is important, then, to move beyond 'the Norrington question' and consider the problem that he represents in a broader context.

There is little doubt that the 'anti-vibrato' position speaks to the desire to give interpretations of the standard classical and Romantic repertory a proprietary sound, especially when performed on modern instruments. Eliminating vibrato creates an instant 'differentness' that some players and listeners genuinely enjoy (questions of idiomatic style aside), while the scholarly underpinning of 'authenticity' validates the approach at little personal risk to the performer. The price, however, which many seem willing to pay, is an all-or-nothing view of vibrato that fundamentally mistakes both current and historical performance practice.

As the evidence cited here shows, conductors and orchestras have always been concerned with finding an expressive sonority that is appropriate to the repertory being performed. This concern took the form of an ongoing discussion in musical circles about the type and extent of vibrato that soloists and orchestral string sections should use. It was a debate in full progress at the end of the nineteenth and the beginning of the twentieth centuries, and it continues still.

However, the fact that a musical controversy exists, even a passionate one, with tempers flaring and hyperbolic language flying on both sides, does not argue for an equally extreme *audible* difference in specific works arising out of the performance practice parameters claimed by the two sides to the conflict. Vicious arguments over relative subtleties are hardly uncommon. When it comes to the vibrato question at the turn of the twentieth century, there is perhaps no more enlightening comment than that of the eyewitness and Royal Academy of Music violin professor Rowsby Woof:

Some years ago I listened to an illuminating discussion between two well-known violinists, who might be considered typical representatives of the older and younger schools of violin culture. The younger man was a great advocate of vibrato, while the older man affected to despise its constant use. 'In my time', said the latter, 'expression was produced by the bow.' 'And I should like to know how you did it', was the former's rejoinder. The net result of the

⁷⁵ Specifically, in a Feb. 2004 article 'The Sound Orchestras Make', published in the journal *Early Music*, 32 (2004), 2–6, Norrington stated: 'My impression is that 90 per cent of historically informed players, and of course 100 per cent of modern executants, have no notion of what can be so simply revealed in a good gramophone collection: that no German orchestra played with vibrato until the 1930s.'

⁷⁶ Programme note for Johannes Brahms: Symphony No. 1 and Variations on the Theme by Haydn. 1991, EMI Classics CD 7 54286 2.

conversation was a misunderstanding—for both were right. The older man insinuated that the modern idea of ‘expression’ consisted solely in the use of vibrato; the other, in his ardent defense of it, momentarily overlooked the fact that all variety of tone volume is produced by altering the bow pressure on the strings. A happy combination of both is a necessary foundation for all truly expressive playing.⁷⁷

This eminently sensible observation goes far towards explaining the observed facts in the Willem Mengelberg video cited earlier. That different schools of performance may have worked side by side does not mean that spectators saw or heard significantly different results in actual performance. The emotional qualities of the music, the demands of the conductor, and the notational specifics of the score all tend to encourage a basic similarity of response irrespective of the tradition to which the player avowedly owes allegiance. Or to place the matter in a broader context, there is a much larger shared understanding of the style and meaning of Western art music that tends, as a practical matter, to override minor disputes over technique. For this same reason, a general philosophy of vibrato usage, say, in the Vienna Philharmonic cannot be adduced from noting that the concertmaster Arnold Rosé was a violinist of the ‘older school’ mentioned above.

Bernard Shore could not be more eloquent on this point, noting pertinently that ‘Mahler . . . can be delicious. Yet the endless sustained notes of the slow movement of his 4th symphony [are] dreaded by the strings. Only a string player knows what it means to play long sustained notes that must be kept alive with the left hand for about fifteen minutes on end.’⁷⁸ Shore would have performed Mahler’s Fourth with the BBC Symphony Orchestra on 23 April 1933, in a concert conducted by no less an authentic Mahlerian than Anton Webern.⁷⁹ His description of a constant vibrato timbre could not be more telling; so is the view that the preference of the player has no bearing on his obligations as a performer charged with delivering whatever the composer requires. In this case, the demand for continuous expression necessarily begets continuous vibrato as an intrinsic and fundamental stylistic component of the music.

It is thus erroneous to conclude that even an orchestral violinist opposed to continuous vibrato would not use it frequently, or as Gibson puts it, ‘very freely’, especially if there was no doubt as to the composer’s intentions. The claim that orchestral vibrato did not exist at all (or only very minimally) sidesteps this issue, and avoids the far more telling arguments so strikingly evident in the source material concerning the nature and extent of its correct usage for artistic purposes. It elevates aesthetic dogma and conjecture over practical performance reality. Acknowledging the presence of vibrato in a positive sense—to say that the true question was not ‘yes or no’ but ‘yes, and how much or what kind’—fatally undermines the ‘no’ perspective, since to grant that the application of vibrato can vary over an almost unlimited range of colours and intensities concedes the possibility of its legitimate use in an equally wide range of musical situations.

The refusal to explain properly the historical debate on vibrato thus leads to an incorrect description of modern practice; most problematically to the assertion that continuous or permanent vibrato means the same vibrato, used mindlessly and at all times. To understand just how fallacious this position is, consider an especially

⁷⁷ Rowsby Woof, *Technique and Interpretation in Violin-Playing* (London and Guildford, 1920), 73.

⁷⁸ Shore, *The Orchestra Speaks*, 133.

⁷⁹ See Lewis Foreman, ‘Webern, the BBC and the Berg Violin Concerto’, *Tempo*, ns 178 (Sept. 1991), 2–10.

entertaining formulation of contemporary practice by Leonard Bernstein in a 1965 script for one of his televised Young People's Concerts:⁸⁰

You see, there are all kinds of ways to make vibrato, and they're all very expressive of something; but the question is, which one is expressive of Haydn? All right, let's test it. Mr. Munroe, would you play us the vibrato you used when you played the first phrase. [Example: Haydn's Symphony No. 88, Largo second movement] Do you approve of that? [Cellist Munroe shakes head 'No.'] No, of course, it's too sentimental. It's like those singers who drive you crazy with the tremolo in their voices: [Bernstein sings Haydn melody]. It's an unbearable sound. All right, Mr. Munroe, let's hear the phrase with what you consider the proper vibrato. [Munroe plays.] That's more like it. A small, rapid vibrato. Very elegant indeed. And now that we know so much about vibrato, let's listen to that same string-phrase again, in all its sentimental wrongness, using the big, slow, wide vibrato which would be great for music written one hundred years later, but not for Haydn. [Orchestra plays.] Beautiful, you say? Ghastly. And it's not only the vibrato that was wrong. All the instruments have been playing in their highest positions, where the vibrato shows up most garishly . . . The higher the position of the hand on the string, the more wobbly that vibrato is going to sound. And therefore more, shall we say, 'emotional'. Which is a dandy sound for Wagner or Mahler, but not for Haydn.

More succinctly but no less cogently, the conductor John Barbirolli (1899–1970), a generation older than Bernstein, spoke of his years in Manchester as Music Director of the Hallé Orchestra from 1943 to 1970 in similar terms:

The Hallé are even taught to play with different kinds of vibrato, for different kinds of music (every 1st class player should be equipped with this quality). There are, of course, different types of portamentos, though few are aware of these, and there is the important question also of *no vibrato* and *no portamento*, which in any case must be used only to stress certain melodic and emotional elements, as Mahler well knew.⁸¹

There is a strong echo of Gibson's comments here, which is not surprising. Barbirolli studied the cello at the Royal Academy of Music in 1912–16. The principle of variable vibrato that Gibson espoused represents the tradition in which Barbirolli was trained, and in which composers such as Brahms, Mahler, and Strauss worked. It is what they expected, from orchestras no less than from soloists. More to the point, from Gibson through to Barbirolli's death, it is possible to point to a consistent vibrato performance practice dating well back into the nineteenth century. There is not a shred of evidence to suggest a major revolution in orchestral string technique after the 1940s, certainly not at the Hallé Orchestra, whose use of vibrato under Hamilton Harty in the pre-war period has already been noted.

Bernstein's and Barbirolli's comments would have made perfect sense to any of the conductors previously cited; they reflect the true tradition of orchestral vibrato performance practice in the nineteenth and early twentieth centuries, and perhaps in centuries past as well, since they describe phenomena that any group of reasonably adept string players could figure out and begin exploiting musically within a reasonable amount of rehearsal time. But they do not agree with the description of a generic,

⁸⁰ Leonard Bernstein, 'The Sound of an Orchestra.' Transcript available at <<http://www.leonardbernstein.com/ypscscripts.htm>>.

⁸¹ Quoted in Michael Kennedy, *Barbirolli: Conductor Laureate* (London, 1971), 200–1.

permanent vibrato advanced by an increasingly populous branch of the historical performance movement.

This same observation also applies to the spurious assertion that the absence of vibrato generates a tone that is ‘pure’, ‘straight’, or ‘steady’, with its (sometimes) unspoken implication that the use of vibrato is ‘impure’, ‘approximate’, or ‘thick’. No less a figure than Arnold Schoenberg exploded this fallacy in 1931,⁸² once again prior to the alleged advent of permanent vibrato, in remarks published in his collection of essays, *Style and Idea*:

Whereas the ‘open’ string shuts off its far end with a hard, ‘stiff’ piece of wood, giving a ‘sharp demarcation’, in the case of the ‘stopped’ note this marking-off is done by the ‘soft’, ‘movable’ finger, giving less sharp demarcation. So absence of vibrato will not mean a pure tone, because of this indefinite demarcation. The note need not actually be out of tune, but its intonation is unconvincing. There will, in addition, be a vague tremor on the part of the finger. So to touch up the impurity of this lifeless tone one uses vibrato . . . This makes the tone ‘living’, ‘interesting’, ‘lively’, ‘warm’, and all the rest of it.⁸³

The fact that vibratoless timbre does not result in the perception of pure or steady tone has striking implications for orchestral performance. Although ‘in solo parts, both vocal and instrumental, the artist has larger latitude for giving prominence to the vibrato than he has in ensemble’, Carl Seashore found nonetheless that ‘The more nearly alike the timbres of the instruments within an orchestral choir, the greater may be the demand for the vibrato in that choir.’⁸⁴ In other words, the use of some measure of vibrato among instruments of the same type simply improves their collective sound.

At the conclusion of the first section (‘Orchestral Vibrato Defined’), this essay issued a challenge: any theory that vibrato was *not* a normative constituent of orchestral string timbre must prove the truth of some or all of five distinct propositions. However, because the evidence presented argues so strongly against this possibility, those initial propositions must be reformulated in a manner that correctly tracks the source material and accurately describes the performance practice of orchestras in the nineteenth and early twentieth centuries:

- (1) Individual players in given ensembles did use vibrato at will;
- (2) string sections understood and used vibrato to distinguish their particular sound;
- (3) conductors exploited vibrato extensively for expressive purposes;
- (4) composers expected, desired, and notated its presence, and;
- (5) the same expressive terms and notational signs that demand vibrato in solo performance ask for it similarly when employed in an orchestral score.

The notion that vibrato levels should vary with the repertory is neither new nor controversial. It is because of this fact, and the concurrent need to validate and exaggerate

⁸² That Schoenberg may have been thinking about vibrato at this very time, and was mindful of its ubiquity in orchestral performance, is attested to by the score of his opera *Moses und Aäron*. The first act was completed on 14 July 1931, and at bar 234 (Edition Eulenberg 8004, p. 52) the cellos suddenly are marked ‘ohne Vibrato’ at the end of a phrase with no other previous specific expressive directions. This designation makes little sense unless Schoenberg had the expectation of an intrinsic vibrato timbre in the orchestral strings, and was seeking a vibratoless tone as a special effect.

⁸³ Arnold Schoenberg, ‘“Space Sound”, Vibrato, Radio, ETC.’ in *Style and Idea*, ed. Leonard Stein, trans. Leo Black (Berkeley, 1984), 150.

⁸⁴ Seashore, *Psychology of Music*, 52.

the significance of its purported discoveries, that a branch of the period performance movement has taken the position that vibrato was essentially absent from orchestral playing until well into the twentieth century. Perhaps the most illogical and peculiar consequence of adopting this view has been the resulting bifurcation of a hitherto unbroken tradition. Conductors, musicians, and composers effectively worked, it is claimed, in two starkly different timbral worlds pre- and post-1940, even those whose careers straddled the divide. Yet because there seems to be little or no comment about the alleged massive upheaval in vibrato usage from the people who lived through it (as opposed to those who merely hypothesize about it later), the whole process remains rather mysterious.

The only way that the regular use of vibrato in nineteenth- and early twentieth-century orchestras can be denied is by disregarding what the conductors, players, and those who saw them actually heard and reported. The plain evidence of the relevant contemporary sources must be ignored. Period performance practice is defined through a tortuous application of seventeenth-century aesthetic sensibilities, and substantiated by subjective impressions gleaned from a limited selection of technically primitive recordings. In the process, a broad range of colourful vibrato types and applications has been reduced to an assertion about frequency that admits of only two possibilities: all or nothing.

There are more than enough ways that vibrato can be used (and not used) in orchestral performance, both as intrinsic timbre and as a special expressive effect, to accommodate such wide-ranging and frequent shifts in taste and fashion as current scholarship allows. Vibrato is praised, vibrato is disparaged, but it *exists*, with an audible persistence, variety, and in sufficient abundance to excite notice and comment. Accordingly, the tendency to banish vibrato in orchestral string playing must be seen as little more than a contrivance, a fad, as opposed to an interpretative option supported by a close analysis of original sources and a sympathetic understanding of period performance practice. It is not even a particularly new fad—just an extreme manifestation of an old one. Désiré-Émile Inghelbrecht's comments, from 1949, remain singularly pertinent:

In one case only do string players change their extravagance of vibrato into a puritan non-vibrato: when they interpret Bach or Beethoven. They just have this slightly over-simplified way of expressing their respect for the classics—for these two, at least. They even go as far as hardening the tone a little, as if to withdraw from it all the charm it might have. They are, then, possessed with the same urge of humility which makes a courtesan take off her makeup before entering a church.⁸⁵

ABSTRACT

There are two competing theories of vibrato usage in late nineteenth- and early twentieth-century orchestras coming from the historical performance movement. Roger Norrington contends that pitch vibrato in string ensemble playing was largely absent and not used in the modern, 'continuous' manner until the late 1930s and early

⁸⁵ Inghelbrecht, *The Conductor's World*, 67.

1940s. He cites as evidence Bruno Walter's 1938 recording of Mahler's Ninth Symphony with the Vienna Philharmonic. Nikolaus Harnoncourt, on the other hand, holds that the presence of vibrato in the Romantic orchestra was significant. Documentary evidence demonstrates Harnoncourt's view to be correct. No substantive case can be made for a radical shift in vibrato performance practice, with the Second World War as the dividing line. Source material reveals a strong general continuity in vibrato levels, naturally modified from time to time by the demands of conductors and the need to find idiomatic styles for the range of repertory actually played.