

Aspects of contemporary technique (with comments about Cage, Feldman, Scelsi and Babbitt)

The twentieth century presents string players with two sets of (somewhat related) technical problems: the variety of timbral and dynamic demands made upon the bow arm; and the intervallic demands made upon our left hand/arm. There are other concerns that make the music of this century difficult for many (i.e. complex metric and rhythmic structures, and general questions of form and musical content), but these concerns affect all musicians, not just string players.

As regards the first problem, the assumption is usually made that the demands *per se* are new; unique; different. This assumption is at least partially false. It is the *rate* at which the demands *change* that is new, not the demands themselves.

As regards the left hand/arm, these problems result from the intervallic and harmonic choices used by composers in the music of this century, and string players have simply disregarded anything in their preparatory studies that might make this music less of a physical cipher to them. Indeed, the training material and thought processes behind today's teaching have generally continued as if the compositional milestones and solutions of this century had never happened.

The primary timbral demands made today upon our bow arm (other than normal bowing – which still constitutes the majority of what we do) are: pizzicato; playing on the bridge (Ital. = *sul ponticello*; Fr. = *sur le chevalet*; Ger. = *am Steg*); playing on the fingerboard (*sul tasto*; *sur la touche*; *am Griffbrett*); playing on or with the wood of the bow, either struck or drawn (*col legno*); and (occasionally) playing behind, or on the 'wrong' side of the bridge. Cases where one is required to 'jump' strings while still preserving a melodic line are usually more of a musical or perceptual problem, as opposed to a timbral or production one. All of the above demands are of course combined with constantly varying loudness levels which we refer to as dynamics.

Most of these demands are not new. Monteverdi specified the use of pizzicatos (and tremolos). Haydn used playing on the bridge and on the fingerboard. Playing with the wood, or behind the bridge, are not inventions of this century. Indeed, if truth be told, one moment after the start of the first orchestral rehearsal that ever was, some disgruntled string player did all of the above simultaneously, long before any composer dreamed of asking for it.

What distinguishes this century's usage, and creates the problem for us, is how brief the durations are between changes from one type of right-arm use to another. For example, the second movement of Haydn's Symphony No. 97 (written in 1792) has a concatenated forty-three(!)-bar passage marked *al ponticello* followed by *vicino al ponticello*. If (for argument's sake) one accepts Czerny's metronome marking (crotchet = 112, which at least in some circles is a very brisk Adagio ma non troppo), those forty-three bars of $\frac{4}{4}$ have a total duration somewhat longer than 1.5 minutes ($43 \times 4 / 112$).

As a counter-example, compare bars 15-17 of the solo violin part of Luigi Nono's *Varianti* (1957). In the space of eleven crotchets lasting barely ten seconds there are twelve pitches, each one of which has a specific right-arm indication, viz:

1. bowed *flautando*
2. bowed *sul ponticello*
3. bowed *sul ponticello flautando*
4. pizzicato
5. bowed normal
6. pizzicato *sul ponticello*
7. bowed *sul ponticello*
8. bowed *sul ponticello flautando*
9. bowed normal
10. bowed normal
11. bowed *sul ponticello*
12. bowed normal

Note that this progression of changes involves three dimensions, i.e. bow vs. pizzicato (hand-grip change), normal bow position vs. *ponticello* (horizontal-plane change), and normal bow pressure vs. *flautando* (vertical-plane change) as opposed to the single horizontal dimension change of the Haydn (normal bow position vs. *ponticello*).

These two examples may represent extremes but are hardly isolated instances. As the rate of change for dynamics has also increased dramatically with this century's music, and as the number of possible dynamic/timbral combinations is large, it becomes increasingly difficult to control the bow, forcing us to create new approaches to the bow arm.

As regards left hand/arm problems something as basic as Geminiani's suggestion of practising *all* the intervals within the octave¹ has still not been taken seriously after only 239 years! The practice of all the intervals is not only beneficial as regards training the ear, but also serves to 'balance' the hand, in that the physical inverse of an octave (first finger on lower string, fourth finger on upper string) is a second (first finger on upper string, fourth finger on lower); the physical inverse of a third is a seventh; and that of a sixth is a fourth. We can hardly expect to feel comfortable with the pitch and intervallic concerns of today's music when we have neither the aural nor physical cosiness that the habitual practising of traditional interval scales (thirds, sixths, octaves and tenths) provides for diatonic music. Incorporating all the other intervals in our daily practice routine would be an enormous step forward in our ability to be of service to today's music.

Another left-hand area where our knowledge tends to be wanting is harmonics. Few violinists approach them systematically, yet today's music frequently required them for

¹ F. Geminiani, *The Art of Playing on the Violin* (London, 1751). Essempio xxii, pp. 30-1.

timbral and structural reasons, and they are useful as substitute fingerings in certain extreme passages.²

As a result of our not keeping up with their musical demands, many recent composers have either avoided writing for strings or have kept their demands within fairly traditional confines. Of those composers whose thought-processes and demands have most influenced how I think about the violin,³ and who have made large and new contributions to our craft (all of whose music I care more or less deeply about and with some of whom I have often collaborated), I can mention John Cage, Morton Feldman, Giacinto Scelsi and Milton Babbitt.

I credit Cage with three ideas, at least two of which are of primary importance for violinists, the third being potentially of great use to composers as well as violinists.

The first of these ideas is the concept of a 'gamut' of sounds. By this Cage means (for string players) the assignment of a specific string for a specific pitch, so that each time that pitch occurs at the same octave, it is always played on the same preassigned string.⁴ The concept of a 'gamut' is one that Cage has used generally,⁵ but its general application to violin fingerings opens possibilities of delineating structural lines, or colouring a work sonically, that traditional position-maintaining fingerings simply do not allow.

The next of Cage's ideas – and one of great usefulness – is the incorporation of chance into music. The specific application that I am thinking of (and one that I am proud to have had a hand in inventing) concerns the use of chance to determine bowings and fingerings.⁶ Chance cannot be relied upon to provide a practical and expedient fingering or bowing, nor should that be its function. What it does do, and does without fail, is open a window on possibilities that one never thinks of because of one's training – training having the simultaneous advantage/disadvantage of making certain responses autonomic, while at the same time reducing one's need, and sometimes ability, to think.

The third idea is the result of the compositional process used in Cage's *Freeman Etudes* – a 'Chord Catalogue', consisting of all the chord-ranges used in the work. The catalogue will serve two purposes. On the most simplistic level it will be a reference for the possible and not quite so possible, thereby serving (throughout extrapolation) as a guide to both composers and violinists. Of far greater interest (at least to me) is that it

² For a chart of most harmonics see P. Zukofsky, *An All Interval Scale Book* (New York, G. Schirmer, 1977).

³ In the interest of full disclosure, my principal violin teacher was Ivan Galamian, whom I credit not only with teaching me to *play* the violin, but far more importantly, with teaching me to think about *how to learn* to play the violin. The fact that our musical worlds and interests were so different only underscores the solidity of his foundation.

⁴ As an example see John Cage's *Six Melodies for Violin and Keyboard* (1950).

⁵ As examples see Cage's prepared piano music, or (for a group of instrumentalists) *Sixteen Dances* (1952).

⁶ See P. Zukofsky, 'John Cage's Recent Violin Music', in *A John Cage Reader* (New York, 1982).

could serve as the basis for a mapping of left arm-hand-finger configurations in three-dimensional space. These configurations are not as self-evident as one might think because of the confounding of the decreasing geometry of string lengths (ascending one string, the first octave uses one half the total string length; the second octave one quarter of the length; the third one eighth; and so on *ad infinitum*, although that is of no practical use to us) and the rounded body of the instrument, both of which make it impossible to maintain the same angles between arm, hand and finger throughout the complete fingerboard length.

Morton Feldman's later music,⁷ which explores small variations in various domains (pitch, duration, register, timbres, attacks and decays) over long periods of time, forces us once again to think seriously about intonation systems. This is not the place to discuss specifically how such systems might operate in music since Schoenberg, i.e. in music based on a concept of twelve equal tones. Suffice it to say that while it is theoretically possible for string players to adopt an equal temperament system for such music, it is not clear that they can, or do, do so;⁸ and certainly, a true equal temperament prevents us from using what might be called an 'opinionated' intonation, i.e. a colouring device that allows us to indicate where we think we are going 'harmonically'.⁹ Feldman utilised a system where, for example, an e-flat is played sharper than a d-sharp, or to generalise, for any enharmonic pair, the higher pitch label always implies the higher pitch. In short, Feldman returned us to a world where double sharps and double flats have real and individual physical, musical and emotional meaning, as opposed to equal microtones, which simply present finer slices of equal temperament.¹⁰

One cannot discuss vibrato as it might be thought of today without confronting the music of Giacinto Scelsi. Scelsi explored the phenomena of wavering single-note surfaces, creating a palette that included acoustic beating, tremolos (both slurred and reciprocating bowing), microtonal trills, different vibratos, and in certain cases, *scordatura*, using tunings that enabled him to combine all of the above on one instrument.¹¹ His ideas and works ought to affect every aspect of our thoughts on vibrato, as opposed to what today passes for 'slow, medium and fast' vibratos. It should be pointed out that there is a large amount of string music written in this century that requires no vibrato.¹² Some of this is a reaction to the excesses of an older style. Some

⁷ As examples see Morton Feldman's *For John Cage* (for violin and piano), *Violin Concerto*, or *Piano, Violin, Viola, Cello*.

⁸ As the average of Pythagorean and just intonation approximations – the former used for melodic lines, the latter for beatless intervals – approaches tempered intonation, it is not clear how one could analyse the data of, as an example, a string quartet, so as to reveal which system is actually being used.

⁹ I admit that the line between 'opinionated' intonation and simply being 'out of tune' is a fine one. The placement of the line is primarily a function of the producer's intention, and the receiver's impression.

¹⁰ To quote Cage in regard to equal microtones: 'When the apple is rotten, cutting it in half does not help.' See Zukofsky, 'John Cage's Recent Violin Music.'

¹¹ See his *Xnoybis* for solo violin, or his *String Quartets Nos. 3 and 4*.

¹² Cage and Feldman both have specific injunctions against the use of vibrato. Stravinsky, as an example, does not; however, the use of a typical nineteenth-century-style vibrato in the great neo-Classical solos (such as in *Orpheus* or *Agon*) seems to me extremely incongruent.

of it is due to compositional concerns which wish to emphasise steady-state pitch precision. For whatever reasons, the twentieth century explodes the concept of vibrato as we tend to think about it (when and if we do think about it, as opposed to using it like ketchup).¹³

The relevance of Milton Babbitt's use of dynamics to our control of the bow with respect to speed, pressure and distribution combinations cannot be overstated. Some of our problems arise from his use of a quantised, as opposed to analogue, representation of dynamics; i.e. Babbitt will use a different dynamic on each note rather than a global symbol such as a crescendo. Some of our problems arise from not grasping that the dynamics are indications that the metric stress (relative to the bar) has shifted, the general metric rule being to play *what* the durational patterns are, as opposed to emphasising *where* they are relative to pro forma barlines. The concepts we must employ when bowing Babbitt's music completely contradict the stasis that is our norm, i.e. do the same thing for a very long time. Once, however, having opened the door, one suddenly finds oneself using portions of this approach very effectively in older virtuosic music.

There are of course today's equivalents to yesterday's tricks, i.e. Xenakis's use of *glissandi*,¹⁴ or Penderecki's use of playing behind the bridge could be thought of as similar in manner to the 'flying staccato'. There are also idiosyncratic usages, such as Stravinsky's instruction 'glissez avec toute la longueur de l'archet',¹⁵ or Schoenberg's insistence on the most abstruse (when not outré) harmonics, but to my mind, none of these provide a basis for technical thought, or have opened my eyes violinistically, as did the works of Cage, Feldman, Scelsi and Babbitt.

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¹³ 'Performers there are who tremble consistently on each note as if they had the palsy.' L. Mozart, *A Treatise on the Fundamental Principles of Violin Playing*, tr. E. Knocker (London, 1948), p. 203.

¹⁴ Because of the geometry of string lengths, in order to achieve an ascending *glissando* on one string that changes pitch at a temporally equal rate, one must move the left hand quickly at the beginning of the *gliss.*, and slow down as one ascends. Descending *glissandi* require the opposite behaviour.

¹⁵ Gliding the bow lightly *through its entire length, usually at very high velocity*, due to the shortness of the duration allotted for each stroke. The sound produced is a whistling one, and is best achieved by using a stiff right elbow, thereby preventing the bow from being parallel with the bridge, and thereby adding to the 'glissez' effect.