

Viola da Gamba Society: write-up of talk given at St Gabriel's Hall, Pimlico, 27 January 2019

John Bryan: *The highs and lows of English consort music: investigating compass, range and register as a guide to instrumental character*

The ideas and research presented here were central to a chapter in *Early English Viols: Instruments, Makers and Music*, jointly written with Michael Fleming (Routledge, 2017) so this article should be viewed as an introduction and summary of some of the more detailed evidence available there.

My premise is that one way of trying to understand what English viols might have been like in the Tudor and Stuart periods is to investigate the ranges of the pieces they played. On the whole, composers tend to know their instruments and write what is effective for them. So Haydn writes differently for the piano when he's heard instruments made in London in the 1790s, exploiting their sonorous bass register in comparison with the more lightly strung instruments he had known in Vienna. Some composers' use of range challenges norms: Beethoven's addition of piccolo and contrabassoon to the woodwind in the finale of his Symphony 5 (1808) revolutionised the sound of the orchestra by adding an extra octave at either end of the section. Analysing the ranges used in English viol consort music might therefore provide insights into the sonorities and functions of the instruments of the period.

First some definitions, as used here:

- **Compass:** the distance between the lowest bass note and the highest treble note in a composition. John Dowland, in his translation of Ornithoparcus' *Micrologus* (London, 1609) writes: 'The Compasse is nothing else, but a circuite or space allowed by the authoritie of the Musicians to the *Tones* for their rising and falling.'
- **Range:** the distance between the lowest and highest note of a single part or voice within a polyphonic composition.
- **Register:** a sub-section of 'range', e.g. the most used register of a part with a range of a 9th might be the 4th between the 5th and 8th notes; in a piece with two tenor viols of equal range, one might typically inhabit a register a 5th above the other.
- Helmholtz pitch notation is used, based on 'c':
 - c''' = two leger lines above treble clef
 - c'' = treble clef third space
 - c' = middle c
 - c = bass clef second space
 - C = two leger lines below bass clefSo a bass viol's open strings [ascending] are D, G, c, e, a, d' while a treble viol's would be d, g, c', e', a', d''

For the purposes of note counting, I work to the nearest pitch name rather than semitone, so c-c' = 8, as would c flat to c sharp, but b-d flat would = 10! This means that statistical analysis is very much an approximate art and it is therefore important to look at **bodies of work** to average things out and see trends, rather than getting too hooked on a single example. For quick reference: an octave = 8; two octaves = 15; three octaves = 22; so the range of a viol in normal tuning from lowest open string to top open string = 15 + 4 to its top fret = 19 in total.

William Byrd's music gives us a good opportunity to investigate whether he thought differently in terms of range in music conceived primarily for voices or instruments. An excellent starting point is his 1588 publication *Psalmes, Sonets, & songs of sadnes and pietie*, because his Epistle to the Reader actually distinguishes between 'Musicke of great compasse ... songs, which being originally made for Instruments to expresse the harmonie, and one voyce to pronounce the dittie' and those 'of smal compasse & fit for the reach of most voyces'. A thorough analysis of compasses and ranges utilised in this set shows:

- The average compass of these 35 songs is just over 21 notes, with only 8 exceeding two octaves; the individual parts range from 7 to 14 notes, with the inner parts generally being wider than the top or bottom voices.
- Byrd's combination of ranges largely follows a stratified system in which each inner part overlaps with those above and below it, but tends to inhabit its own characteristic register. This is designated by the choice of clefs, most usually C1 C2 C3 C4 F4 or G2 C2 C3 C4 F3. So the five distinct parts do not fall neatly into the three standard viol sizes: treble, tenor and bass.
- Extremes of register are generally avoided in all parts: the *superius* goes as high as the top fret a" in only three of the 35 pieces in the set. The *bassus* never goes below F nor above d'. This would be unremarkable if the part had been conceived for a voice, but Byrd's decision not to extend higher or lower in a part originally made for an instrument may give significant insights into the Tudor bass viol's optimum register. We should remember that this music was published when there is little evidence that sound-posts were commonly used, and string technology led to a bass viol being described as 'grumbling'.
- The designated 'first singing part' (the one originally conceived as the solo vocal line) is different in nature from the parts that were originally untexted: it is generally more syllabic, has fewer text repetitions, usually enters last in the contrapuntal web, and is often narrower in range. So Byrd appears to have had a different aesthetic in mind for his vocal and instrumental lines, of which range was one.
- In all but one of the songs 'of great compasse' Byrd places the 'first singing part' in the *medius*, so that the *superius* is to be taken by a viol, regularly taking the part up to g", and even to a" in 'Lulla lullaby'. The implication for this 'descant viol' scoring is that Byrd's treble viol must have been capable of floating relatively quietly above the vocal line without obscuring it. This particular attribute was also noted by Praetorius in *Syntagma Musicum III* (Wolfenbüttel, 1619), when he stated, 'the highest strings on the treble viol are quite soft and not heard with the same intensity as the other lower strings of the tenor or bass viols'.

Before comparing Byrd's use of range in his 1588 set with some of his other repertory, it is worth remembering that his pupil Thomas Morley, in *A Plaine and Easie Introduction to Practicall Mvsicke* (London, 1597), explained that the conventional **compass for voices** ran from G (Gamut), below which 'the voice seemed as a kinde of *humming*' up to e", above which it represented 'a kinde of constrained skricking (screeching)'. So the theoretical compass for a vocal piece was 20 notes (less than three octaves), though music from the earlier English pre-Reformation liturgical repertory such as that in the Eton Choirbook of c. 1510 exploits a considerably wider overall range than this. Incidentally, Morley's 20-note ambitus is exactly the compass Byrd used for both settings of 'This sweet and merry month of May' written for Thomas Watson to publish in *Italian Madrigals Englished* (London, 1590).

The five **five-part Latin motets** that Byrd included in his joint publication with Tallis, *Cantiones sacrae* (London, 1575) all have compasses wider than Morley's standard 20 notes, frequently taking the top part up to g'' and the bass down to F (so limiting the possibility of downward transposition), and the individual voice parts are generally a couple of notes wider than those in the 1588 set. The majority (60%) use 11 or 12 notes, and again we see the widest ranges being given to the three inner parts. Since these motets were probably conceived with professional/collegiate choirs in mind rather than the amateur market of the 1588 set, we should not be surprised to see this, nor the relative restriction of the boys' parts in comparison with those for the men.

The evidence from Byrd's **five-part instrumental consorts** is interesting, as it shows him treating the ranges with greater freedom than he was to do either in the 1588 songs or the 1575 motets:

- All 9 pieces have compasses of three octaves or more, though again the bass never goes below F and the treble is only taken to its top fret (a'') in 2 pieces. However, Byrd was not completely averse to taking his bass viol down to D, as he does this in the single six-part fantasia that he published in *Psalmes, Songs, and Sonnets: some solemne, others ioyfull, framed to the life of the Words: Fit for Voyces or Viols* (London, 1611).
- The ranges of the three inner parts (once again all wider than the treble and bass) raises the question of whether they were all designed for one tuning ('tenor', nominally in G): if so the *altus* part of the 'Canon' fantasia uniquely takes the instrument above the top fret [e''], while 'Browning' takes the lowest tenor onto its bottom string (with a single occurrence of B flat) rather than the more usual use of c' as the tenor's lowest note. So if all three inner parts were to be played on instruments of the same tuning, they would exhibit a total range of 18 notes, something not seen in an individual consort music part until some of Lawes's bass parts in the 1630s. This suggests that Byrd either expected instruments of the same tuning but with different registral strengths, or that not all three inner parts were played on G tenors (part IV rarely goes high on another D bass), or that he was happy to accept compromises of sonority.

At this point a consort [Ibi Aziz, John Bryan, Luke Challinor, Alison Crum, Roy Marks] performed the opening of Byrd's 'Canon' fantasia to demonstrate the 'stratification' of the parts: the middle part begins on c', followed by part IV on f and the bass on c; then part II on g' and finally the treble on c'', each voice entering a 4th or 5th below or above the previous ones. We then played an later extract which takes part II up to e'' and compared that with the opening of 'Browning' which takes part IV down to B flat: both parts being played on G tenor viols.

1599 saw the first English publication that specifies viols as the chosen performance medium: **Antony Holborne's** set of *Pavans, Galliards, Almains, and other short Aeirs both graue, and light, in five parts, for Viols, Violins, or other Musically Winde Instruments*.

- While 5 of these 65 dances use a compass narrower than Morley's conventional vocal limit, the majority (71%) have a compass of three octaves or more, with one galliard [54 in d] exploiting both the bottom D of the bass and the top a'' of the treble to give a compass of 26 notes.
- The ranges of Holborne's individual parts are relatively restricted, perhaps to allow for the alternative scoring for wind instruments. 67% use a range of a 9th or less (thus

requiring a maximum of only three strings on a viol). The Cantus and Altus parts in particular show average ranges of less than a 9th (a few use only a 6th), and are actually narrower than Byrd's 'first singing parts' in his 1588 collection.

- On the other hand Holborne's Galliard in F (46) has the widest individual part range we have seen so far today (15 notes), from the bottom to the top open strings of the bass viol (D to d'), and the composer makes a special feature of this by including a complete two-octave scale downwards in the middle strain. It is intriguing that not one of these bass parts goes above the open top string, perhaps because Holborne felt it important for the bass part not to invade the tessitura already occupied by the Tenor and Quintus parts, or even possibly suggesting the use of a five-stringed viol with the top d' being played on the a string?

The consort performed Holborne's Pavan 37 to illustrate the theoretical concept that all five parts could fit on tenor viols in G (its compass runs only from G to d''). Rather than use 5 tenors, I played the treble part in strain 1, the bass of strain 2, and then retired gracefully to the comfort zone of the altus for the last strain! We also played Galliard 46 to show the wide-ranging bass part.

Shortly after Holborne's collection came **John Dowland's** *Lachrimae, or Seaven Teares figured in seaven passionate Pauans, with diuers other Pauans, Galiards, and Almands, set forth for the Lute, Viols, or Violons, in five parts* (London, 1604).

- The average compass of these 21 dances is exactly three octaves, with 8 of the 21 pieces exceeding this. Dowland shows a similar treatment of individual part ranges to that of Holborne, with the higher voices using narrower ranges than the lower parts, and none exceeding 13 notes (all in the bass part). Dowland's part ranges are rather wider on the whole than Holborne's, with more than half using a 10th or more, compared to Holborne's a third. The top part of several of the galliards are of course derived from songs, so we might well expect a smaller range here.
- One sign of a newer trend in scoring of consort music is represented in Dowland's set by 'M. Thomas Collier his Galiard' (1604/17) which Dowland designates as 'with 2 Trebles'. Both top parts ascend to g'' and part III (Tenor) consequently inhabits a higher tessitura than elsewhere in the set.

It is slightly puzzling that Holborne and Dowland, both publishing collections of music specifically for viols, exploit part ranges more closely associated with voices, while the mainly vocally-orientated composer Byrd is prepared to expand the range of his parts for instruments. In nearly every dance both Dowland and Holborne ensure that each part inhabits a distinct register (stratification, again), even though this will overlap frequently with those of the instrument above and/or below it. This raises the question of how much Tudor composers actually thought in terms of 'instruments' and 'voices' as distinctive elements:

- Until relatively late in the sixteenth century there appears to have been no common term for 'an instrumental piece' so the generic 'song' was used for both vocal and instrumental pieces. And 'songs' such as some by Dowland were also dances.
- The first published collection of English part music, *XX Songes* (London, 1530), of which only the Bassus partbook survives, contains three textless pieces by Fayrfax, Cornysh and Cowper. Cornysh's textless fantasia 'Fa la sol' appears both in *XX Songes* and in the so-

called 'King Henry VIII's Book': by way of a comparison with the later Tudor consort music under consideration today, it has a compass of three octaves (22 notes) and the individual parts have ranges of 10 (bassus), 11 (superius) and 12 (tenor) notes respectively. In contrast none of Cornysh's 10 texted songs in 'King Henry VIII's Book' has a compass of more than 19 notes, and the individual vocal parts range from 6 to 11 notes (average just over an octave). This limited sample appears to indicate that even at the start of the Tudor period a composer such as Cornysh made a clear distinction in the ranges and compasses he employed in secular song and textless music.

The quintessential form of Tudor consort repertory, the *In Nomine*, clearly has its origins in vocal music, so the mid-century output of **Christopher Tye** makes an interesting comparison both with Byrd's mixed vocal collection of 1588 and with the later published dance sets of Holborne and Dowland:

- The compasses of these 19 pieces appears abnormally wide (averaging over 25 notes) with more than half (10) regularly using the full range from D to a'', and one *Ronde* taking one treble part up to an unprecedented c'', giving a compass of one note short of 4 octaves. Since so many of Tye's *In Nomines* exceed the compass of Morley's vocal *ambitus*, we can genuinely point to them as examples of specifically instrumental music.
- But investigation of the individual part ranges in these pieces shows Tye to be not quite so experimental as this might suggest. Nearly half the individual parts range no wider than a 10th.
- The phenomenon seen in other repertories of the inner parts ranging more widely than the outer is reversed in Tye's *In Nomines*. Two-thirds of the treble and bass parts have average ranges of 12 or more notes, compared to inner parts two-thirds of which have ranges of 10 notes or fewer (we should remember that the *altus* part frequently carries the *cantus firmus* with its 9 note range, which will to some extent determine the lower figure for this part). Might this suggest that Tye had access to a different set of instruments than those known to other composers?
- One interesting feature of Tye's writing is that he is not afraid to use the lowest notes of the bass viol. Bottom Ds abound, not only in the unusual final chords where a higher d is frequently doubled at the lower octave, but in the normal course of events too: 11 of the 19 pieces touch this bottom note during polyphonic play.

The consort performed Tye's In Nomine 'Ronde' with its two equal range and often intertwining treble parts.

In order to see whether later composers for viol consorts operated with different concepts of compass and range than their Tudor predecessors, I also investigated the nine five-part pavans and four almans of **Alfonso Ferrabosco junior**, appointed as 'musician for the viols' to Queen Elizabeth I in 1592, and the 13 five-part fantasias and *In Nomine* of **John Ward**, who probably composed these pieces in the decade 1610–20.

- Both composers extend the compass down to C (though only in one piece each) and Ferrabosco takes the treble above the frets to a high bflat'', possibly under the influence of court violinists. But the average compasses of their pieces (Ferrabosco 23 notes; Ward just over 23 notes) is significantly less than that of Tye's *In Nomines* (over 25).

- The individual part ranges are also still relatively narrow (Ferrabosco's in particular) though each gives their basses a range that occasionally breaks the two-octave barrier, pointing the way to the bass becoming the 'solo' member of the family.

It is only when we look at the equivalent figures for **William Lawes's** five sets of five-part music, probably composed in the 1630s that we see a real difference, with no individual part using a range narrower than a 10th, and in the case of the bass part of the Aire in c minor a virtuoso range only one note shy of three octaves [C – b flat']. Lawes's trebles frequently go above a'' and parts III and IV both use the bottom string of a tenor viol as well as reaching the 5th fret of the top string [c''].

So what conclusions might we reach from such an analytical approach to compass, range and register? And how might these affect our own performances? I would suggest that:

- Tudor composers did appear to make some important distinctions in terms of range when writing for consorts of instruments rather than voices. This is true of composers (like Cornysh) at the start of the 16th century through to Byrd in the early 17th.
- 16th century composers were generally pretty conservative in terms of the exploitation of extremes of register for instruments (despite the example of Tye). After 1600 lower basses and consistently higher trebles become more frequent. Was this conservatism due to the fact that composers felt constrained by notions of 'vocal' range/ and or craved adaptability of their music for other less wide-ranging instruments?
- It is possible that the surviving music was designed principally for teaching or domestic performance (whereas their largely undocumented solo viol music, lute or keyboard music might have been played by themselves professionally, and exploited the full range of the instruments).
- In performance this music might have been subject to ornamentation, and even some transposition that might expand it beyond the written norms of compass and range.
- They avoided extremes (e.g. the highest register of the top string and bass notes of lowest string(s) because string technology was unreliable; or simply that the instruments 'worked' best (with greater resonance?) in mid-register.
- Or is it even possible that not every Tudor viol had six strings?

My hope is that as players we become more aware of the styles and dates of the music we are playing and where possible choose appropriate instruments, and experiment with different scorings. For example many low-lying 'treble II' parts might have been intended for tenors and sometimes a smaller size of bass might be good on low-lying 'tenor' parts, with a bigger bass on the bottom. Do look at the original clef and the range of your part before deciding what is most appropriate: some modern editions are not always totally helpful in their suggestions of part designations. We should also be aware of not 'soaring' on the treble viol's higher strings, and that bass notes might well have been somewhat muffled ('grumbling') in comparison to what we have become used using later string technologies.