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Monteverdi: onwards and downwards

FRESH from directing a performance of Monteverdi's 1610 Vespers in New York, I was a little surprised to read in Roger Bowers's article in last November's *Early music* that downward transposition by a 4th of its high-clef movements was supposedly no more than 'theoretically' possible.¹ While he argues that 'the properties of the music itself deny its applicability',² my own recent experience (with both *Lauda Jerusalem* and the Magnificat *a7* down a 4th) had been of an ease and naturalness that seemed to render further theoretical justification wholly unnecessary.³ Bowers wholeheartedly accepts the need for downward transposition; it is the appropriate *interval* of transposition that he calls into question.⁴ Where I have long advocated downward transposition of a fourth ($\downarrow 4$ th), Bowers now proposes a whole tone ($\downarrow 2$ nd).

This turn of events—somewhat unexpected after two decades—has had the entirely healthy effect of sending me back to my original *Early music* article (hereinafter 1984),⁵ as well as to a pile of notes on subsequent findings. Rather than delay in order to accumulate yet more material (while readers mislay their copies of Bowers's article, forget the details of its contents or simply lose interest), I have chosen to respond swiftly and as succinctly as the subject permits, focusing on the Magnificat *a7*. The present contribution therefore reiterates very little of 1984 and should be regarded as supplementary to it. New material is marked with an asterisk (*).

Revisiting the subject in this way and with the benefit of others' more recent research into related matters of mode⁶ has left me with a much clearer understanding of certain critical points. As a conse-

quence I am now distinctly more confident than before that the *only* plausible transposition for these high-clef movements really is $\downarrow 4$ th. Attractive though Bowers's suggestion may appear, I can discern no basis for it in the practice of Monteverdi's time. Even though I argue for its rejection, my hope is that the reasons for doing so will help clarify an issue which has ramifications far beyond this one publication and its composer.

Bowers's approach

Acknowledging that music variously written in high clefs and 'normal' clefs (= Bowers's 'low' clefs)⁷ represents 'not two distinct pitch-levels, but a single pitch-level diversely notated' (see table 1), Bowers observes that in Monteverdi's publication (hereinafter 1610) transposition $\downarrow 4$ th 'fails to accomplish a perfect or all-but-perfect reconciliation' of the two pitch-levels.⁸ His analysis of the vocal ranges aims to show that there is a differential of only a 2nd between the two configurations.⁹ Since transposition by this interval is said to 'receive some support from contemporary local theory',¹⁰ and since the resultant instrumental writing presents 'no problem that was actually insurmountable',¹¹ the intended 'solution' must be to transpose 1610's high-clef movements $\downarrow 2$ nd.

Table 1 Voice parts in high and normal clefs

	S	A	T	B
<i>High clefs</i>	G ₂	C ₂	C ₃	F ₃ /C ₄
<i>Normal clefs</i>	C ₁	C ₃	C ₄	F ₄

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Bowers does not seek to introduce new historical information (theoretical or musical), nor does he choose to re-examine any source other than 1610. Instead he sets out to isolate 1610 from the available contemporary material, discounting an ‘array’ of comparative vocal ranges as ‘exceptional’ and dismissing a ‘cornucopia’ of evidence on transposition as inapplicable to ‘North Italian practice on the Mantua–Venice axis’ (*exeunt* all Romans, plus Praetorius, Schütz *et al.*).¹² Even the testimony of Monteverdi’s own high-clef *Laudate pueri a5* (1650)—unequivocally marked to be performed $\downarrow 4$ th—is disregarded.¹³ As a consequence, Bowers’s case rests not on historical foundations of the usual sort, but on his own ‘additional body of data’, a new analysis of 1610’s vocal (and instrumental) ranges. Indeed, it is no exaggeration to say that the case he presents depends utterly on the presumed *absence* of historical evidence ‘relevant’ to 1610.

Any conclusion based on such an approach naturally needs to be treated with extreme caution. We may begin therefore by asking whether there is precedent, first, for the specific transposition proposed ($\downarrow 2$ nd) and, second, for the resultant ‘key’. (Bowers provides instances of neither.)

Clefs and transposition down a 2nd

Fluency in transposing was cultivated by most professional instrumentalists.¹⁴ Such is the sheer abundance of evidence for the practice that we may wish to imagine there to have been little restriction on *what* could be transposed and *by how much*. Thus, in support of his proposal, Bowers merely cites my earlier ‘copious’ examples, and reports that ‘Italian theorists of the late 16th and early 17th centuries ... specifically mention downward transposition by one tone.’¹⁵

But matters are not quite so simple. High clefs and low clefs were in fact each associated with their own

set of transpositions, as Virgiliano (c.1590) shows perhaps most clearly;¹⁶ see *illus.1* and *table 2*, which indicates how cornettists and trombonists may transpose.

Here, as with Virgiliano’s other instruments, transposition $\downarrow 2$ nd does not occur with high clefs, and is instead linked exclusively to normal-clef writing, just as it is in Diruta’s explicit instructions (1609) for organists.¹⁷ Equally, both writers specifically associate music written in high clefs (usually with one flat) with the wider transposition $\downarrow 4$ th. Zacconi (1592) expresses it thus:

you can generally play the musical Tones given in their natural positions [i.e. in normal clefs] a 2nd lower and [those in high clefs] a 4th or 5th [lower] ...¹⁸

This is not abstract theory but practical information for instrumentalists. It therefore comes as no surprise to find these principles confirmed in the musical sources themselves. One of the very earliest publications to include an organ bass—and therefore one of the very earliest sources in which one might hope to find evidence of such transposition—is *Croce (1594), a collection of motets *a8* ‘comodi per le voci, e per cantar con ogni stromento’ by the then *vicemaestro di cappella* of S. Marco in Venice.¹⁹ All but two of its 17 items are supplied with instructions for transposition, mostly as a pair of options such as *Alla quarta, e quinta bassa* ($\downarrow 4$ th & $\downarrow 5$ th); see *table 3*.

Table 2 Transpositions for wind players, after Virgiliano

	<i>Normal clefs</i>	<i>High clefs</i>
<i>up</i> (\uparrow)	2nd [†]	–
<i>down</i> (\downarrow)	2nd, 3rd	4th, 5th, 6th, 7th

† Also $\uparrow 5$ th for cornett but not for trombone

Table 3 Transpositions in Giovanni Croce, *Motetti* (1594)

	<i>Normal clefs</i>	<i>High clefs</i>
<i>up</i> (\uparrow)	–	–
<i>down</i> (\downarrow)	–/2nd (×6), 3rd (×2), –/3rd/4th (×1), 3rd/4th (×1)	4th/5th (×4), 5th (×1)

MODI TUTTI
DA SONAR IL
CORNETTO

Si mandare...
in un...
piu basso...
alla...
si vuol...
tener me...
in un...

Are.

Vn tuo piu alto p. b.

Alla quarta alta p. b. e p. h.

Vn tuo piu alto p. b.

Alla 4: balla p. b. e p. h.

Alla 5: balla p. b. e p. h.

Alla 6: balla p. b. e p. h.

Alla 7: balla p. b. e p. h.

Vn tuo piu basso p. b. e p. h.

Alla 3: balla p. b. e p. h.

Vn tuo piu basso p. b. e p. h.

Alla 3: balla p. b. e p. h.

Vn tuo piu basso p. b. e p. h.

Alla 3: balla p. b. e p. h.

1 Aurelio Virgiliano, *Il dolcimelo* (c.1590), p.[105]: 'Modi tutti da sonar il cornetto'

The two main points to observe here are that transposition $\downarrow 2\text{nd}$ again occurs *only with normal clefs*, and that high-clef writing in each case goes $\downarrow 4\text{th}$ at least.²⁰ The additional flexibility of Croce's collection does not in any way conflict with these broader principles. As Agazzari (1607) puts it:

one must see which [transposition] is most appropriate and suitable to the given Tone, not as some do who pretend to play every Tone at every level, for if I could argue at length, I would show them their impropriety and error.²¹ [My italics]

In short, while the general practice of transposing is handsomely documented, the specific transposition which Bowers proposes—of high-clef music $\downarrow 2\text{nd}$ —is conspicuously absent not only from Zacconi, Croce, Virgiliano and Diruta, but from all the relevant contemporary sources I have so far encountered.²²

IF the Magnificat *a7* is to be transposed $\downarrow 2\text{nd}$ from its written level, it moves—in instrumental terms—from G minor into an outlandish F minor (with a signature of three flats but plenty of additional *D*'s). This is barely mentioned by Bowers.²³ If there is any string or wind music from this period—yet alone any comparably sophisticated and virtuoso writing—specifically intended for this remote and problematic key, I have yet to see it. (It does not appear even amongst Diruta's 23 written-out examples of organ transposition.)²⁴ On the other hand, in D minor (i.e. $\downarrow 4\text{th}$) Monteverdi's writing for violins and cornetts not only lies completely naturally and idiomatically under the fingers but emerges as a strikingly exact counterpart in range, tessitura and character to passages in his *Orfeo* (performed 1607, published 1609); see ex.1, which also shows some parallels of vocal writing.²⁵ Bowers offers no comment on this phenomenon.

Experienced organists and others probably did find themselves in F minor from time to time. If so, they are more likely to have arrived there by a different route from the one Bowers proposes, perhaps by taking a *normal-clef* G minor piece $\downarrow 2\text{nd}$.²⁶ And, just as we are more accustomed to transposing hymns or simple anthems than intricate cantatas, it is conservative vocal polyphony rather than elaborate concerted music that is most likely to have attracted such transposition. For any composer of

Monteverdi's day to write a virtuoso vocal and instrumental showpiece specifically *intended* to be played in F minor (whatever its notated level) would presuppose some very special circumstance. To write such a work without any apparent concession to the particular nature of this highly unusual key would also be quite remarkable.²⁷ And, not least, to do so without including any instruction to alert performers to the need for a wholly exceptional form of transposition—*un tuono più basso* from high-clef notation—would be to court disaster, causing performers instead to adopt a conventional one.

Transposition down a 4th

According to Bowers there is only one unequivocal source for the *degree* of transposition appropriate to high clefs: namely, Praetorius (1619). A key passage begins thus:

Every vocal piece in high clefs ... must be transposed ... as follows: if it has a flat, down a 4th ...²⁸

This major source is then rejected as 'peripheral' to Monteverdi's practice on the grounds that 'Praetorius was no Italian': only the music and writings of Northern Italy should be taken into consideration—and these are said to be silent on the matter. 'If ever it turns out that some writing of Michael Praetorius happens to match and coincide with this prime evidence, then well and good.'²⁹

By these means Bowers argues himself into a position where the only evidence that counts is his own analysis of 1610's vocal ranges. The vast body of information enshrined in the works of Heinrich Schütz, for example, is therefore disregarded in its entirety³⁰—despite the composer's five or so years of study in Italy (mostly in Venice), first with Giovanni Gabrieli (whose high-clef *Lieto godea* he reworked, $\downarrow 5\text{th}$)³¹ and later perhaps with Monteverdi himself.³² Ruled out similarly for geographical reasons is the testimony of Roman publications such as G. F. Anerio's (1613), with its 37 high-clef pieces, each and every one bearing an instruction for transposition either $\downarrow 4\text{th}$ or $\downarrow 5\text{th}$.³³ But is modal theory, which lies at the heart of transposition practice,³⁴ really so particular about geography?³⁵ Roman practice demonstrably accords with that of Germany, for example.³⁶ Bowers (beyond his analysis of 1610's vocal ranges)

Ex.1 Passages from *Orfeo* (a, c, e) and the 1640 *Gloria a7* (g), compared with 1610, *Magnificat a7* ($\downarrow 4$ th) (b, d, f, h)

(a) cornetts

(b) cornetts

(c) violins

(d) violins

(e) Apollo

(f) TI can - tan - - - - - (- d'al coelo)

Glo - - - - - ri - a

(g) B I

Qui se - - - - - (- des)

(h) B I

Qui - a fe - - - - - (- cit)

offers no evidence to suggest that Northern Italy followed a separate path.

Fortunately the matter need not remain purely conjectural, as 'prime' evidence from Northern Italy turns out not to be lacking. Asked by his *discepolo* about high clefs, the *maestro* in *Banchieri (Bologna, 1601), for example, answers in terms that correspond exactly to those of Praetorius (1619):

when the G2 clef has a flat, then ... the notes are to be taken a 4th lower.³⁷

(From Naples *Picerli (1631) says the very same thing: 'when the composition uses ... the G2 clef, it is to be transposed, mentally or in writing, down

a 4th or 5th ... with B \flat it is to be transposed down a 4th'.)³⁸ And for two examples of comparable evidence from the musical sources we may turn first to the instructions given in *Croce (1594), where—as we have seen above—all five high-clef pieces are marked to go $\downarrow 4$ th at least. (Even if Croce's practice here is seen as somewhat more flexible than Banchieri's and Praetorius's theory, there is no disguising the fact that it also flatly contradicts Bowers's proposal.) A more orthodox example is found in *Palestrina (1608), a Venetian reissue of his fourth book of motets *a5* (1584): complete with organ continuo, all 23 original high-clef items have here been transposed and renotedated in normal clefs,

↓4th in the case of each of the 15 motets with a signature of one flat.³⁹

The 'reconciliation of inconsistent clef-systems'

In Bowers's view, when Monteverdi's high-clef movements are set ↓4th, the 'tessituras of all the voices emerge as gratingly low compared with those of the generality of the rest of the movements'.⁴⁰ With this we come to the heart of the matter. It is this perception—shared perhaps by many—that generates the search for 'an alternative solution'. But what degree of uniformity is it reasonable to expect between one piece and the next?

Monteverdi's publication is a dazzling catalogue of styles and techniques, and the individual characteristics of its component parts naturally give rise to—and result from—differing tessituras. Thus, when the normal-clef movements are compared with each other, we find that some lie significantly higher than others (compare *Laetatus sum* and *Ave maris stella*),⁴¹ while the tessituras of individual voice parts can vary by a good minor 3rd; see ex.2. To think purely in terms of *composite* tessituras—the aggregates of several movements—is therefore potentially misleading. And while 1610's high-clef writing (when ↓4th) may well end up lower than the 'generality' of its normal-clef pieces, the Magnificat *a7* nevertheless does align revealingly well with two other *individual* items, namely *Audi coelum* and *Ave maris stella*; see ex.3. If, even after transposition ↓4th, the Magnificat *a7* proves so remarkably similar in tessitura to these two movements, are they, too, to be considered implausibly low? (And, if so, are we to

start transposing all such movements at will in order to bring them in line with a supposed norm?) Or is it merely the Magnificat's wider—and lower—bass range that puts it beyond the pale?

Before looking at vocal scoring in general, and at these bass parts in particular, we may query the underlying assumption of Bowers's article, that 'the perfect or all-but-perfect reconciliation of pitch-levels ... is the objective sought by the application of some degree of transposition'.⁴² Are we really justified in demanding that high and normal clefs always yield virtually identical sounding ranges?

Clefs and clef-combinations served, in part, as compositional tools to regulate vocal (and instrumental) ranges. Having chosen one or other set of clefs, a composer was assured that workable ranges for each voice (and appropriate relative ranges for the voices as a whole) could be achieved through the simple expedient of not writing above or below a staff; any need for ledger lines acted as a warning that normal modest limits were being exceeded. Individual and overall ranges from Monteverdi's time are therefore much more intimately related to clefs than in most later repertories. As ex.4 shows, if two hypothetical compositions are compared—one in high clefs, the other in normal clefs, each employing the full extent of its staves—we find that to transpose the former ↓4th *necessarily* produces a lower tessitura (by one degree) than that of the latter, for the simple reason that the two systems themselves do not lie a 4th apart but only a 3rd.⁴³ It follows that conventional transposition ↓4th is no guarantee of an exact alignment of ranges and that the sort of

Ex.2 Divergent ranges within 1610

Ex.3 Voice ranges in 1610 compared: (a) *Audi coelum*; (b) *Ave maris stella*; (c) Magnificat *a7* (↓4th)

Ex.4

In (a) \circ = written pitch; in (c) these pitches are shown transposed \downarrow_4 th following the normal-clef range of each voice.

‘mismatch’ (of roughly a tone) that may seem puzzling in *1610* is almost intrinsic to the process.⁴⁴ In short, high clefs tend quite naturally—if somewhat paradoxically—to yield *lower* tessituras than normal clefs.

Core vocal ranges

‘The starting-point for a fresh evaluation of the evidence’, writes Bowers, is the ‘identification of the core ranges’ (as opposed to total ranges) of *1610*’s vocal writing; this ‘can usefully be undertaken in respect only of the movements composed for chorus or ensemble of non-specialist voices’.⁴⁵

In the context of the Vespers music this use of the word ‘chorus’ is not intended (I trust) to carry any necessary implication of more than one singer per part. While the idiom of *1610*’s Mass does suggest such an ensemble, the remainder of the music gives not the slightest indication that Monteverdi had anything other than solo voices in mind.⁴⁶ What is more striking, though, is the notion that ‘non-specialist voices’ (‘standard voices’) might have had a role in courtly concerted music-making of this sort. Certainly some sections demand less virtuosity than others (just as some lie higher than others), but there are no serious grounds for imagining that Monteverdi is writing for two distinct groups of singers, ‘virtuoso voices’ and a ‘non-virtuoso ensemble’.

Unfortunately, this spurious distinction seriously undermines the value of Bowers’s analysis: in order to achieve ‘the most secure conclusions’, all virtuoso writing is excluded from consideration. The reader, however, is left in considerable doubt as to what remains in and what is out; mention is made only of ‘the solo motets (including the first section of *Audi coelum*) and certain Magnificat sections’.⁴⁷ Are the

duetting tenors in *Laudate pueri* (‘Excelsus super omnes gentes dominus’) and all the cascading voices of *Laetatus sum* (‘Illuc enim’) therefore presumed to be ‘non-specialist’? And if the tenor’s solo opening of *Audi coelum* has been discounted, why does its single fleeting top *f* remain to define the upper limit of tenor ‘core range’ for that movement?

Core range, rather than ‘the rare liberties represented by the extremes of range’, is justifiably considered to be the critical indicator of a composer’s understanding of voice-types,⁴⁸ but Bowers’s analysis contains noticeable inconsistencies. With *Dixit Dominus* a unique and quite short *f*[#] (in S I only) is allowed to represent the upper end of soprano core range; similarly, a single (semiquaver) bass high *c* is retained for *Laetatus sum*.⁴⁹ As it happens, the effect of both oversights, and of that in *Audi coelum*, is to create the misleading impression of a somewhat *higher* tessitura than is actually the case. (All three are normal-clef movements.)

With the Magnificat *a7* the picture is more seriously distorted. If its ‘non-virtuoso ensemble movements’ have been omitted from consideration, we need to know which they are; are we left with seven of the 12 sections, or just three?⁵⁰ Clearly, the duetting basses of ‘Quia fecit’ have been ruled out; the conspicuous absence of their repeated high written *f*’s (\downarrow_4 th = *c*’) at ‘fecit mihi magna’ causes an entire minor 3rd to be chopped off the top of the movement’s bass core range. Here, then (in this high-clef movement), the impression is given of a *lower* tessitura than is actually the case.

Vocal scoring and ranges

Transposition was not a free-for-all, nor was vocal scoring. Uncertainty about pitch standards and (as we have seen) a lack of familiarity with the practical

implications of the different clef-systems have conspired to cloud the issue for us. But another factor complicates matters further: the simple assumption that Monteverdi's vocal categories equate directly with our own.

Instead of needing to scrutinize each vocal line in the time-consuming way that both Bowers and I have done, musicians of Monteverdi's time understood that clefs were a succinct indicator both of core ranges and of vocal scoring. In each system a particular clef identifies a specific voice-type—soprano, alto, tenor, bass (as in table 1)—and also broadly prescribes its potential range, which is roughly that of the staff itself (as in ex.4). (As the distances between clefs also show the relationships of the various parts, we may note that alto and tenor lie closer to each other than other voices.)

*Banchieri (1614) is rather more specific about vocal ranges: for each voice he gives both a (core) range of a 10th—for the *Cantore perfetto*—(see ex.5, range (a)) and one of a 12th—for the *Cantore perfettissimo*—extending a degree further in each direction (range (b)).⁵¹ Naturally enough, it is in solo writing that we can most often expect to encounter these wider ranges. Particularly convenient for comparison with Banchieri are the *Cento concerti ecclesiastici* by *Viadana (1602), a collection which opens with short solo items for each voice-type in turn (ten apiece, plus *falsobordoni*).⁵² While Viadana's soprano and alto conform fairly closely to Ban-

chieri's wider limits, his tenor reaches down as far as 'bass' *F* in two separate items (albeit briefly) and his bass extends both higher and lower (touching low *D* on two separate occasions);⁵³ see ex.5, range (c). Not surprisingly these composite ranges from Viadana turn out to be wider for each voice than for any individual Vespers item in 1610, including the Magnificat *a7*. Indeed, both tenor and bass possess what Bowers describes as 'gigantic overall ranges of two complete octaves', something he regards as intrinsically 'neither very practical nor very probable' for 1610 as a whole.⁵⁴ Although Monteverdi calls more frequently for bass low *D* (with the movement set $\downarrow 4$ th), all his ranges lie comfortably within those of Viadana; see range (d). By contrast, the effect of Bowers's proposed narrower transposition $\downarrow 2$ nd—range (e)—is to nudge each of Viadana's (already wide) ranges discernibly upwards, consistently creating new upper limits and scarcely approaching the lower ones.

From today's perspective normal-clef music from the late 16th and early 17th centuries may generally appear to lie rather low for voices., and anything lower is certainly liable to be regarded with scepticism.⁵⁵ Clearly, differences in pitch standard need to be taken into account (see below), but the matter is further complicated by a natural tendency to assume that the terms 'soprano, alto, tenor, bass' carry more or less the same connotations as they do for us today. In particular, while the alto in church music of

Ex.5 Voice ranges compared: (a) Banchieri (*Cantore perfetto*); (b) Banchieri (*Cantore perfettissimo*); (c) Viadana, *Cento concerti ecclesiastici*; (d) Monteverdi, 1610, Magnificat *a7* ($\downarrow 4$ th); (e) Monteverdi, 1610, Magnificat *a7* ($\downarrow 2$ nd); (f) Palestrina, *Vergine saggia* (◐ = written note, ◑ = sounding note, after Doni (1640))

The image displays six musical staves, labeled (a) through (f), representing different voice ranges. The staves are arranged vertically and labeled on the left as S (Soprano), A (Alto), T (Tenor), and B (Bass). Each staff shows a sequence of notes and rests across six measures. The notes are represented by solid black dots (◑) for sounding notes and open circles (◐) for written notes. The staves are in various clefs: Soprano (S) is in soprano clef, Alto (A) is in alto clef, Tenor (T) is in tenor clef, and Bass (B) is in bass clef. The notes are placed on the lines and spaces of the staves to indicate their pitch. For example, in staff (a), the Soprano part has notes on the first line (G4), first space (A4), and second line (B4). In staff (f), the Bass part has notes on the first space (F3), first line (G2), and second line (A2).

Monteverdi's time is commonly taken to have been either a falsettist or a castrato (as in some later traditions), the weight of evidence points instead to a voice that we would call a (high) tenor.⁵⁶ (Bowers, who probably has the falsetto voice in mind, notes that 'for some reason as yet undetermined' Monteverdi's normal-clef alto parts are relatively narrow, with a usual upper limit of *a'*;⁵⁷ while their close proximity to tenor parts removes the need for much use of the lower range, it is easy enough to see why the non-falsetto alto's upper range would be restricted in this way.) Falsettists and castratos were both still associated with soprano (rather than alto) parts, while boys who could hold their own in elaborate concerted music were probably a rarity.⁵⁸ The remaining male voices were divided not into two categories (tenor and bass) but into three (high, medium/high and low), with the range of the middle voice perhaps best described as that of a baritone tenor.⁵⁹ This understanding of early 17th-century practice in Italy is compared in table 4 with the more familiar distribution of voices in two types of present-day choir—the mixed-voice choir and the Anglican cathedral or collegiate choir.

The implications of this are considerable. As an illustration we may take Palestrina's setting of Petrarch's *Vergine saggia*; see ex.5, range (f). Apart from a rather high-lying bass part the madrigal's written ranges conform tolerably well to modern expectations of SATB scoring, such that today's editors would probably be loath to transpose it more than, say, $\downarrow 2$ nd. (And at such a level it would neatly match Bowers's proposed transposition of the 1610 Magnificat *a7*; see range (e).) However, *Giovanni Battista Doni (1640) is adamant not only that Palestrina's madrigal should be transposed—'because it is notated high, as they say, and would prove too

uncomfortable if it were sung as it stands'—but that the 'most usual type of transposition' (in this instance) is of altogether another order: namely, $\downarrow 5$ th.⁶⁰ Our present SATB paradigms, it seems, are very unreliable guides to early 17th-century vocal scoring.

Basses and pitch standards

A specific effect—or aim—of Bowers's proposal (ex.5, range (e)) is to eliminate the bass low *D*s that result from transposition $\downarrow 4$ th (range (d)). These notes, which many still find perplexing, are all doubled by organ and are almost wholly confined to the Bassus part (B I) of 'Et misericordia', a slow-moving dialogue between three upper and three lower voices.⁶¹ (It may be helpful to remind readers that the music under consideration here is concerted music and thus primarily, if not exclusively, the preserve of select solo voices; see n.46.) In 1984 I pointed to no fewer than ten other sacred works by Monteverdi himself that unambiguously call for this note.⁶² Ex.6 reproduces a telling extract from his 1640 *Gloria a7* ('pax hominibus'), where the seven voices, each in its lowest register, combine to produce a dark, sober texture unmistakably similar to that of 'Et misericordia' ($\downarrow 4$ th), complete with low *D*s⁶³—and thus, despite the composer's full authority, 'gratingly low' in Bowers's terms.

In questioning the significance of these and other instances of low vocal ranges, Bowers suggests that 'each represents not conventional but *exceptional* practice'.⁶⁴ (Interestingly, the very opposite argument is employed in defence of some unprecedented instrumental writing: the instrumental demands of the Magnificat *a7* are, he claims, 'not routine but genuinely exceptional'.)⁶⁵ Let me nevertheless briefly offer two further instances of low bass writing

Table 4 Varying understandings of SATB

	<i>Mixed voices c.2000</i>	<i>Anglican choir c.2000</i>	<i>Italian vocal ensemble c.1600</i>
S	woman (high)	boy (high)	man (falsetto)/castrato
A	woman (low)	man (falsetto)	man (high)
T	man (high)	man (high)	man (medium/high)
B	man (low)	man (low)	man (low)

Ex.6 Monteverdi, Gloria a7, 'pax hominibus'

in Venetian publications. In *Ercole Porta's *Missa secundi toni* (1620) the Kyrie, Gloria and Credo each require the bass voice, in their very opening bars, to descend to low *D* ('*elei-son*', '*Et in terra pax*', '*et ter-rae*'),⁶⁶ while in *Giovanni Valentini's *Missae quatuor* (1621) two specified transpositions for optional organ (\downarrow_4 th and \downarrow_5 th) take the bass part respectively to low *D* (*Missa Susanna*) and, further still, to *C* (*Missa Stabat mater*).⁶⁷

Little is known, sadly, of Mantua's bass singers in the early 1600s, but some decades later *Doni (1640) commented that Monteverdi had had 'certain very low basses' at his disposal there.⁶⁸ Moreover, in 1614, shortly after the composer's departure for Venice, *Ferdinando Gonzaga's agent in Rome reported having found there *un Basso per camera*, a new bass singer for the court's chamber singing: '*va basso sino al ottava di D sol re*' ('he goes down to low *D*').⁶⁹

Exactly how low might Monteverdi have expected this *D* to sound? The question has been deferred until this point because Bowers's subject—and

mine—is the *relation* in pitch between high- and low-clef movements in 1610, a matter which is indeed 'preliminary to, and entirely independent of, identification' of an appropriate pitch standard.⁷⁰ Suffice it to say that all salient information on Italian pitch standards for the period has helpfully been brought together by Bruce Haynes⁷¹ and that the two strongest candidates in the case of 1610 appear to be, in approximate terms, $a' = 440$ and one semitone above $a' = 440$. (For what it is worth, the 1565 Graziadio Antegnati organ in Mantua's court chapel of Santa Barbara has been restored in recent years to its original condition, reportedly at the higher pitch.)⁷² Having performed the Vespers music at both pitch levels, but always with the same principles of vocal scoring (see above), I merely offer two observations: that, while on balance the higher pitch is probably somewhat easier for most voices, the overall width of ranges has never proved problematic, and that the *relative* pitch levels of high- and normal-clef movements (with the former \downarrow_4 th) have always felt utterly convincing.

Instruments

If I have scarcely touched on the obligato instrumental writing in the Magnificat *a7*, this is primarily because I have dealt with the matter at length elsewhere.⁷³ But it is also the least persuasive part of Bowers's argument: his suggestion that the very real problems caused by transposition $\downarrow 2$ nd can be solved by 'the simple engagement of instruments of a size identified as capable of realizing the sounding of these particular parts transposed down by one tone' side-steps too many issues and is in any case far from 'simple'.⁷⁴ And, while the very basis of his analysis of ranges is that *1610* is written for 'a single unchanging vocal ensemble' (of 'non-specialist' singers?),⁷⁵ the reader is required to imagine that by contrast the corresponding instrumental ensemble has one set of instruments for *Domine ad adiuuandum*, *Dixit Dominus*, *Ave maris stella* and the *Sonata sopra Sancta Maria* but a second set especially for the Magnificat *a7*. (This would certainly put a damper on another—and, in my view, more plausible—hypothesis, that the *Sonata*, despite its printed position in *1610*, was intended to function as an antiphon substitute at the Magnificat's conclusion;⁷⁶ with half a dozen or so virtuoso players needing to switch instrument, it would be hard to avoid either an unseemly delay or an unholy scramble.)

Almost as if seeking refuge from these imponderables, Bowers proceeds to justify the presence in *1610* of the second Magnificat (*a6*)—a related work without obligato instruments—on the grounds that 'for many ensembles, and perhaps for most,' the more elaborate setting was 'simply out of reach' on account of Monteverdi's 'unconventional' instrumental demands.⁷⁷ A more satisfactory explanation of 'the ostensible enigma' of the two Magnificats⁷⁸ is, in my view, that the composer's intention was the wholly practical one of providing a complete Vespers that could be performed either with or without instrumental ensemble: instead of the grand toccata-like setting, the usual simple chant could be reinstated for the opening Response, the ritornellos in *Dixit Dominus* and *Ave maris stella* could be omitted (as sanctioned by the composer himself in the case of the former),⁷⁹ and the liturgically inessential *Sonata* could safely be dropped altogether.

Neither the flaunting of extreme (if 'playable') top notes nor the mere avoidance of 'insurmountable' problems are hallmarks of Monteverdi's other known instrumental writing, not least the virtuoso *Sonata sopra Sancta Maria*.⁸⁰ Yet to perform the Magnificat *a7* $\downarrow 4$ th would, Bowers suggests, reduce 'the capacities required of the players of violin and cornett to those of entirely conventional performers'.⁸¹ Given its striking similarities (at this lower pitch) with passages for the same instruments in *Orfeo* (see ex.1), the claim would also require us to imagine that Monteverdi had been content to supply his Orpheus with undemanding writing for 'entirely conventional' instrumentalists at the very moment (in Act 3) when music's powers are being tested to the full. The wholesale transfer of idiomatic figuration to a higher and distinctly less grateful key scarcely seems how a composer of Monteverdi's subtlety would choose to demonstrate 'the brilliance of his artistic imagination'.⁸²

Despite its modest role, the third cornett part in the Magnificat *a7*, which lies exactly a 5th beneath the others, has attracted attention on account of what Bowers calls its 'anomalous low pitches' ($\downarrow 4$ th).⁸³ While the part *can* be played on a treble instrument,⁸⁴ a low range of this sort may well be unexpected. However, a glance at the double-choir 'echo' canzona *a10* in *G. Gabrieli (1597) demonstrates that our expectations may need some revision.⁸⁵ Here, no fewer than eight cornetts are seen at work—four in each choir, with four different clefs (G₂–C₁–C₂–C₃) and four distinct ranges, the top one playing a full octave higher than the lowest (but—we may note—only up to *a''*)⁸⁶. All are simply labelled 'cornetto', as are Monteverdi's, although it seems very unlikely that all are intended for *treble* cornetts. An *inventory from Stuttgart (1589) lists a cornett 'two tones lower than the treble cornett',⁸⁷ and among the musical details of a *Florentine wedding celebration (1608) is reference to a 'Cornetto Torto p[er] un Contralto', apparently a tenor instrument playing an alto part.⁸⁸ But perhaps even more important than the size of the instrument is the player's embouchure and ability to play in the particular register (see n.84). Certain players undoubtedly specialized in inner/lower parts, and Bologna's municipal wind ensemble (the Concerto Palatino),

for example, included a position for *contralto di cornetto*.⁸⁹ An intriguing detail of 1610's *Sextus* part-book may support the idea that Monteverdi was thinking along similar lines. At 'Quia respexit' the cornett III part shares a stave with trombone I, making it entirely feasible in this verse for one and the same player first to play cornett (of one size or another), then tenor sackbut, and finally cornett again, using the intervening woodwind duets to switch instruments.

FROM around the time of 1610's composition and compilation there is overwhelming evidence not only that vocal music notated in high clefs was generally understood by Italian musicians to demand downward transposition, but also that the expected interval of transposition was most frequently a 4th and sometimes a 5th.⁹⁰ Thus, when high-clef madrigals by Monteverdi turn up in a collection of spiritual contrafacta by *Aquilino Coppini (1607), it is no surprise to find that—without comment—the *Partito* (score) sets two of them ↓4th (and not less) from the pitch of the vocal part-books.⁹¹ Only later in the century did a narrower downward transposition (↓3rd) begin to be associated with high-clef pieces.⁹² By contrast, transposition ↓2nd was seen not as a primary transposition required by the notation and essential for correct vocal (and instrumental) scoring, but as a secondary one which, at the discretion of the performer, could in some circumstances effect a helpful small adjustment (where, for example, an organ's pitch was unusually high). For all its originality, Monteverdi's *Magnificat a7* possesses no exceptional features that would have obliged, encouraged or even allowed contemporary performers to override these fundamental principles.

What of 1610's three other high-clef movements? Despite its lack of obbligato instruments, the less well-known *Magnificat a6* is in notational terms identical with its sibling *a7*; consequently, the same conventional transposition is almost certainly to be understood. In both the *Mass* and *Lauda Jerusalem*, however, the absence of a flat signature would, according to theory, indicate a wider transposition

(↓5th),⁹³ though in practice this particular rule was increasingly ignored in favour of transposition ↓4th (as is seen, for example, in much of the *Vesperi* by the Milanese composer *Serafino Cantone, 1602).⁹⁴ In Monteverdi's case, and especially for the *Mass*, the voice ranges suggest that performers of the composer's time are most likely to have taken the higher option—as does the later Brescian organ score of the *Mass*.⁹⁵

Innumerable untransposed performances over the past 70 years have doubtless helped establish the view that 'extrovert brilliance' constitutes the 'particular characteristics' of the *Magnificat a7*.⁹⁶ The perceived threat to these supposedly intrinsic characteristics is perhaps the biggest obstacle to any objective re-evaluation of the question of its transposition.⁹⁷ We therefore do well to remind ourselves that specific expectations of this sort derive in most cases not from acquaintance with the notated music or with the performance conventions on which the composer's notation depended, but from the infinitely more potent experience of hearing it (perhaps repeatedly) as performed by musicians of our own time. But this questionable familiarity is by no means the only barrier to understanding Monteverdi's *Magnificat a7* more fully: while the niceties of 16th- and 17th-century transposition practice are simply too remote from current modes of thinking to attract widespread attention,⁹⁸ critical differences between earlier and current conventions of vocal scoring have scarcely begun to be acknowledged. Small wonder then if the idea of transposing the movement downward (especially by as much as a 4th) appears, to some, 'still controversial'.⁹⁹

The present discussion will, I hope, contribute to a somewhat clearer understanding of high-clef notation. If so, its usefulness need not be thought to be confined to a single composition (the *Magnificat a7*), to a single collection (1610) or to a single composer's output (Monteverdi's): vast quantities of high-clef Renaissance and early Baroque vocal music—a good two-thirds of Palestrina's output, for example¹⁰⁰—await re-exploration in fuller awareness of the notation's practical significance.

- 1 R. Bowers, 'An "aberration" reviewed: the reconciliation of inconsistent clef-systems in Monteverdi's Mass and Vespers of 1610', *Early music*, xxxi (2003), pp.527–38 (hereinafter cited simply as Bowers), at p.532.
- 2 Bowers, p.533. The argument is surely circular: 'such transposition ... cannot be applied in instances, such as 1610, in which the properties of the music itself deny its applicability.'
- 3 The New York Collegium, St Ignatius Loyola, New York, 8 Oct 2003. The *New York Times's* review (15 Oct) makes no mention of the transpositions: 'The listener had the sense of being surrounded, physically immersed in the music, and it was thrilling.'
- 4 Bowers, pp.527, 537.
- 5 A. Parrott, 'Transposition in Monteverdi's Vespers of 1610: an "aberration" defended', *Early music*, xii (1984), pp.490–516.
- 6 See in particular P. Barbieri, 'Chiavette and modal transposition in Italian practice (c.1500–1837)', *Recercare*, iii (1991), pp.5–69. See also S. Bonta, 'Clef, mode, and instruments in Italy, 1540–1650', unpublished paper delivered at the Fifth Biennial Conference on Baroque Music, Durham (1992); J. Kurtzman, 'Tones, modes, clefs and pitch in Roman cyclic Magnificats of the 16th century', *Early music*, xxii (1994), pp.641–64; R. Rasch, 'Modes, clefs, and transpositions in the early seventeenth century', *Théorie et analyse musicales, 1450–1650*, ed. A.-E. Ceulemans and B. Blackburn (2001), pp.403–32.
- 7 'It would be anachronistic to identify either of these clef-configurations as "normal"; Bowers, p.528. In fact, by the early 1600s the lower clef-configuration had established itself as easily the more common one, as 1610's Vespers music testifies. Describing the lower clef-system as 'low' can moreover both suggest *undue* lowness (as opposed to a 'normal' pitch-level) and create confusion with yet another clef-configuration (C2–C4–F3–F5), which is lower still.
- 8 Bowers, p.528.
- 9 Bowers, pp.532, 535.
- 10 Bowers, p.533.
- 11 Bowers, p.537.
- 12 Bowers, pp.532–3.
- 13 1984, pp.501–2. Bowers also ignores examples of transposition \downarrow 4th found in Venetian publications of works of Rossi (1600), Viadana (1602) and Rigatti (1640); see pp.496, 498, 505.
- 14 1984, pp.505–8.
- 15 Bowers, pp.535, 533.
- 16 Aurelio Virgiliano, *Il dolcimelo* (ms. treatise, c1590; R/1979), pp.[102–3, 105]; see also 1984, p.506 (table 2).
- 17 Girolamo Diruta, *Il transilvano*, part 2 (Venice, 1609; R/1983), bk.3, pp.4–11; compare 1984, p.492.
- 18 Lodovico Zacconi, *Prattica di musica* (Venice, 1592; R/1967), f.218v; see 1984, pp.506–7. The transposed Dorian of Monteverdi's two Magnificat settings is not listed by *Praetorius among those modes that sometimes go \downarrow 2nd; Michael Praetorius, *Syntagma musicum*, iii (1619; R/1958), p.82.
- 19 Giovanni Croce, *Motetti a8* (Venice, 1594); see Bonta, 'Clef, mode, and instruments in Italy', table 13.
- 20 We may also note that *downward* transposition—never upward—is an option for all ten normal-clef pieces, and that in only one of 12 cases do Croce's alternative pitch-levels lie more than a tone apart.
- 21 Agostino Agazzari, *Del sonare sopra'l basso* (Siena, 1607; R/1969); see 1984, p.493.
- 22 Diruta, moreover, regards \downarrow 2nd not as a 'primary' or mandatory transposition but as an expedient to compensate for the *unduly high* pitch of some organs; 1984, p.492. Bowers's proposition goes in the opposite direction: while accepting that downward transposition is required by the notation, he seeks to avoid unduly low ranges by adjusting the resultant pitch *upward* (reducing the conventional interval of a 4th to a 2nd).
- 23 See Bowers, p.535 and n.19.
- 24 See n.18, above, but see also Giovan Paolo Cima, *Partito de ricercari & canzoni alla francese* (Milan, 1606), ex.4.
- 25 Also given in 1984, p.508 (as ex.18).
- 26 See Virgiliano, *Il dolcimelo*, and Diruta, *Il transilvano*.
- 27 Bowers argues that 'these unconventional demands were ... intentional and genuine'; p.537. The composer's contemporaries, on the other hand, would (I suspect) have regarded any such writing as something of an aberration; see also below.
- 28 Praetorius, *Syntagma musicum*, iii, pp.80–81; 1984, pp.493–4.
- 29 Bowers, pp.532–3.
- 30 1984, pp.496–7, 500.
- 31 1984, p.497.
- 32 Schütz also knew Praetorius personally, while Praetorius himself was evidently familiar at least with 1610's *Ave maris stella*; Praetorius, *Syntagma musicum*, iii, pp.128–9 [recte 108–9].
- 33 Two further items in Giovanni Francesco Anerio's collection—*Antiphonae, seu sacrae cantiones* (Rome, 1613)—have organ parts written \downarrow 4th from the high-clef vocal parts; 1984, pp.496, 498.
- 34 Barbieri, 'Chiavette and modal transposition', pp.17–35.
- 35 See Rasch, 'Modes, clefs, and transpositions', whose examples are of music from the Netherlands.
- 36 1984, p.496–500.
- 37 'Quando poi la Chiave di G sol re ut sarà per b molle, all' hora ... pigliarassi le voci una quarta bassa'; Adriano Banchieri, *Cartella overo Regole* (Bologna, 1601), p.23 (quoted from Barbieri, 'Chiavette and modal transposition', p.42).
- 38 '... quando la compositione si canta ... per la chiave di G sol re ut, la compositione si trasporta mentalmente, ò in scritto, una quarta, ò una quinta sotto ... si trasporta una quarta sotto, quando si canta col b molle'; Silverio Picerli, *Specchio secondo di musica* (Naples, 1631), p.192 (quoted from Barbieri, 'Chiavette and modal transposition', p.44).
- 39 Giovanni Pierluigi da Palestrina, *Mottetti a5*, book 4 (Venice, 1608). The remaining eight motets (without flat) have been transposed \downarrow 5th; Barbieri, 'Chiavette and modal transposition', p.51.
- 40 Bowers, p.531.
- 41 *Laetatus sum* has an overall range of bass F to soprano g", while that of *Ave*

maris stella is E–d”.

42 Bowers, p.528.

43 Just as the lines of a staff represent steps of a 3rd, so too are the various clefs separated from each other by 3rds. From this it follows that any written-out transposition ↓4th (from high to normal clefs) will necessarily shift the notes *one degree lower* on the staff. (Transposition by a 3rd or a 5th can be achieved simply by substituting a different clef and signature, while keeping the notes in exactly the same position on the staff; with transposition of a 2nd or a 4th, however, the notes inevitably shift their position on the staff, irrespective of any change of clef.) By the same token, any note or phrase in a particular position on the staff will also end up *sounding* one degree lower after such transposition.

44 A good test of this would be the 244 compositions in Anerio (1613), where all 37 high-clef items are marked to be transposed ↓4th; see 1984, p.498.

45 Bowers, pp.528–9.

46 For a brief outline of the Italian origins of German one-to-a-part practice in concerted music see A. Parrott, *The essential Bach choir* (2000), pp.29–32. At the New York performance mentioned above (see n.3) Monteverdi’s music was sung entirely by solo voices and with no unspecified instrumental doubling.

47 Bowers, p.529.

48 Bowers, p.529.

49 Bowers, p.529, ex.1.

50 Bowers, p.529.

51 Adriano Banchieri, *Cartella musicale* (Bologna, 1614), ‘p.146’ [recte p.138]; reproduced in Barbieri, ‘*Chiavette* and modal transposition’, p.36. I have corrected what I take to be errors in Banchieri’s bass column, where the use of black and void noteheads seems to have become muddled.

52 Lodovico Viadana, *Cento concerti ecclesiastici* (Venice, 1602). In five cases there is ‘bitonal’ notation, where a high-clef vocal line is unambiguously intended to sound at the lower written pitch of the organ part—specifically, ↓4th.

53 This data meets Bowers’s objection (p.532) that my earlier ‘array of

instances’ of very low vocal pitches cannot be found ‘within any single and cohering body of music issued at a single date as a single publication’. Should further evidence be needed, it may also be found in Giovanni Gabrieli’s posthumous *Sacrae symphoniae*, ii (Venice, 1615). In *Jubilate Deo*, for example, both optional vocal bass parts (*si placet*) contain several low *D*s and one of them eight *C*s. With more obvious textual justification the soprano part (*C*₁) of *Misericordia tua* descends at the word ‘inferiori’ to semibreves on low *a* and *g*(#), while in *Quem vidistis* the soprano (*C*₂) touches low *g* at ‘in terris’ and two of the tenors descend to low *G* at ‘humiliter’.

54 Bowers, pp.531–2.

55 The apparent sacrifice of a ‘high’ piece through downward transposition is particularly likely to meet with stout resistance.

56 There is insufficient space to elaborate here, but I think it better to alert the reader to the issue (and to some of my conclusions) than to ignore it.

57 Bowers, p.530. The alto part of *Laetatus sum* has a single brief *b*’.

58 For some observations on soprano parts see Parrott, ‘Monteverdi’s Vespers of 1610 revisited’, *Performing practice in Monteverdi’s music*, ed. R. Monterosso (Cremona, 1995), pp.166–7.

59 On the survival of a comparable distribution of voices into the late 17th and 18th centuries, see A. Parrott, ‘Performing Purcell’, *The Purcell companion*, ed. M. Burden (1995), pp.417–24, and A. Parrott, ‘Falsetto and the French: “Une toute autre marche”’, *Basler Jahrbuch für historische Musikpraxis*, xxvi (2002), pp.129–48.

60 ‘... perchè è segnato all’alta, come dicono, & riuscirebbe troppo scommodo, se si cantasse, come stà’, ‘alla quinta bassa, ch’è la maniera più consueta di trasportatione’; Giovanni Battista Doni, *Annotazioni sopra il compendio* (Rome, 1640), p.250, quoted in Barbieri, ‘*Chiavette* and modal transposition’, p.45. I am grateful to Hugh Griffith for his help with this passage in particular.

61 There is a single *D* for B II (*Sextus*) in ‘Et misericordia’ and a further one

each for B I and B II at the start of ‘Sicut erat’. In the 1610 Mass, the same transposition produces just four *D*s.

62 1984, p.502. See also Parrott, ‘Monteverdi’s Vespers of 1610 revisited’, p.168.

63 The two passages are compared in 1984, p.503 (ex.10).

64 Bowers, p.532.

65 Bowers, p.536.

66 *Seventeenth-century Italian sacred music*, ii, ed. A. Schnoebelen (New York, 1995).

67 Hellmut Federhofer, ‘Zur Chiavetten-Frage’, *Anzeiger der österreichischen Akademie der Wissenschaften: Philosophisch-historische Klasse*, x (Jahrgang 1952), pp.148–50.

68 ‘... certi Bassi molto profondi’ Doni, *Annotazioni sopra il compendio*, p.155.

69 Paolo Faccone (1614), writing from Rome to Ferdinando Gonzaga in Mantua; S. Parisi, ‘Acquiring musicians and instruments in the early Baroque: observations from Mantua’, *Journal of musicology*, xiv (1996), p.137. Parisi gives ‘Dessore’ for what I take to be ‘Dsolre/D sol re’.

70 Bowers, p.527.

71 B. Haynes, *A history of performing pitch* (Lanham, MD, 2002), pp.58–75.

72 Haynes, *A history of performing pitch*, p.73; see also Parrott, ‘Monteverdi’s Vespers of 1610 revisited’, pp.169–70.

73 1984, pp.508–10 and Parrott, ‘Monteverdi’s Vespers of 1610 revisited’, pp.164–6.

74 Bowers, p.535. For a discussion of related matters see N. Mitchell, ‘Choral and instrumental pitch in church music, 1570–1620’, *Galpin Society Journal*, xlvi (1995), pp.13–32.

75 Bowers, p.528.

76 Parrott, ‘Monteverdi’s Vespers of 1610 revisited’, pp.170–74.

77 Bowers, p.537.

78 Bowers, p.536.

79 In 1610’s Bassus generalis this movement is headed: ‘Li Ritornelli si ponno sonare & anco tralasciar secondo il volere’ (‘The ritornellos can be played or omitted as desired’).

- 80 Bowers, pp.536–7.
 81 Bowers, p.537.
 82 Bowers, p.537.
 83 Bowers, p.534; see also 1984, p.509.
 84 The sackbut player Mack Ramsey (Boston, USA) plays this part on treble cornett.
 85 Giovanni Gabrieli, *Sacrae symphoniae* (Venice, 1597), Canzon in echo duodecimi toni.
 86 Similarly, the cornett and violin parts in two 'Simphonie' from *G. F. Anerio's, *Teatro armonico* (Rome, 1619) go up to *a*" but not beyond; Barbieri, 'Chiavette and modal transposition', p.60.
 87 'Cornetto', *New Grove II*.
 88 T. Carter, 'A Florentine wedding of 1608', *Acta musicologica*, lv (1983), p.107; 'Un cornetto muto p[er] contralto' is also mentioned.

- 89 O. Gambassi, *Il concerto palatino* (Florence, 1989), pp.196, 212.
 90 To the already abundant evidence cited in 1984 and above, the following sources may be added: *Usper's *Vulnerasti cor meum* (1614), *Rigatti's *Laudate pueri* (1640) and the collections of *Orfeo Vecchi (1600), *Assandra (1609), *Osculati (1615) and *Cesis (1619).
 91 Aquilino Coppini, *Musica tolta dai madrigali di Claudio Monteverdi e d'altri autori* (Milan, 1607); the two retexted madrigals in question, from book 5 (1605), are *Qui pendit/Ecco Silvio* and *Pulchrae sunt/Ferir quel petto*. Their ranges after transposition ↓4th are once again consistently lower than those proposed by Bowers for the Magnificat *a7*.
 92 See Barbieri, 'Chiavette and modal transposition', p.53 and Rasch, 'Modes, clefs, and transpositions', p.405.
 93 See 1984, pp.491–94 and Barbieri,

- 'Chiavette and modal transposition', pp.42–4.
 94 See Barbieri, 'Chiavette and modal transposition', p.52. We may also note that **Descendit Angelus* from Croce, *Motetti a8*, a high-clef piece without flat signature, is marked 'Alla quarta, e quinta bassa'; Bonta, table 13.
 95 See 1984, p.501.
 96 Bowers, p.535.
 97 See Parrott, 'Monteverdi's Vespers of 1610 revisited', pp.167–8.
 98 Rasch ('Modes, clefs, and transpositions', p.403), noting 'quite divergent' scholarly opinions, begins his essay thus: 'All three key words mentioned in the title of the present contribution—modes, clefs, and transpositions—are controversial'.
 99 Bowers, p.527.
 100 S. Hermelink, *Dispositiones modorum: die Tonarten in der Musik Palestrinas und seiner Zeitgenossen* (1960), p.21.

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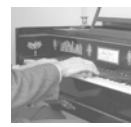
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