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# Consonant or dissonant? – Reflections at the keyboards of a *Clavemusicum Omnitonum*, *cimbalo cromatico*, and «*cembalo naturale*»

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Bob van Asperen

Eager to explore on a real multiple-division instrument the sonority of intriguing compositions such as the *Esempi* in Fabio Colonna's *Sambuca Lincea* (Naples, 1618), composed by no less than Ascanio Mayone, organist to the Royal Chapel at Naples, and the *Sonata VII Stravagante, e per il cimbalo cromatico* by Gianpietro del Buono (Palermo, 1641), I was determined to grasp the chance of this colloquium to pursue and deepen my earlier experience in this field.<sup>1</sup> In particular the presence of a 19-note per octave, single-strung harpsichord by André Extermann, Givrins (Switzerland), after an Italian model, tuned in meantone temperament created a welcome opportunity and a necessary tool for realising this aim.

The layout of its keyboard (see figure 1, p. 96) represented for me a transitional stage, so to say, between my earlier experiments and later experience with the *Clavemusicum Omnitonum*. This last instrument was made in Venice in 1606 by Vito Trasuntino (owned now by the Museo Civico, Bologna), to which Dieter Krickeberg kindly introduced me during a visit to the *Germanisches Nationalmuseum* in Nuremberg in the late 1980s when the instrument was there for conservation. The copy made in the restoration workshop on that occasion by Friedemann Hellwig – unfortunately still

1 As a board member of the «Huygens-Fokker Foundation» for microtonality (both old and modern), Haarlem, The Netherlands, I presented works for arcicembalo by Giovanni Maria Trabaci, Ascanio Mayone and Carlo Gesualdo at the Foundation's home the Teyler's Museum, Haarlem (in the late 1970s) and later at «De IJsbreker», Amsterdam (see *Stichting Huygens-Fokker Jaarboek* 1994, pp. 21–28). In the first stage a «normal» harpsichord after Ruckers by Rainer Schütze, Heidelberg, with two eight-foot stops was used, tuned in meantone and provided with knee-levers to enable changes into the «tons éloignées», necessarily in an incongruous timbre. Later an Italian instrument with broken octave and two split keys per octave by Bruce Kennedy, now owned by the Conservatory of Amsterdam, was available. Its two eight-foot stops could here be used in an «expressive» way.

At the core of the Foundation's interest in the 31-tone division (calculated c1661 by Christiaan Huygens, the mathematician) is the museum's musical treasure, the 31-tone organ with two manuals and pedal designed by Prof. Adriaan Fokker. The instrument was dismantled recently to find a new home in the «IJsbreker» Concert Hall in the future.

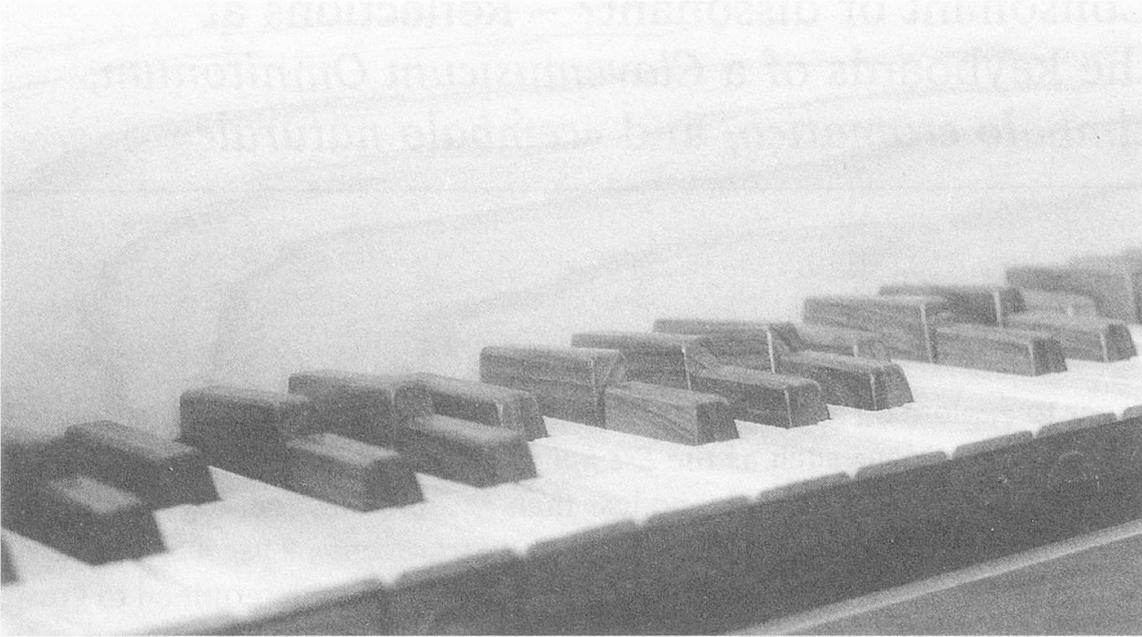


Figure 1  
Section of keyboard of the 19-tone harpsichord by André Extermann  
(Photo by M. Kirnbauer)

only one of two or three such instruments – was ready at that time and could be used to try and record some of the *Kyrie eleison Esempli* from the *Sambuca Lincea*, an unforgettable musical experience, alien and uncomfortable as it felt at first. In an attempt to revive Luzzaschi's skill at this enharmonic keyboard I thought it important to make an effort to reproduce and possibly record at least the existing, handed down repertoire written for it, even possibly to pave the way for new experiments.

At this point it seems appropriate to distinguish the musical use, on the one hand of what was a Renaissance interpretation of the old Greek genera – unfamiliar to musicians of our day – as demonstrated in Mayone's examples, and on the other hand the *durezza* and *stravaganze* experiments based on the Renaissance modal/tonal system.

To begin with the first, more neglected, category: as an initiation for the audience (and for the player as well) into this unknown field, still veiled in mystery, I performed two of these *Kyrie eleison* (see figure 2a and 2b) in a variant with repetition, as a response to Martin Kirnbauer's enthusiastic comments on the Trasuntino recording, in order to give, so to speak, the ear a second chance. The – literally – unheard melodic progression of a *grado enarmonico* from  $b$  to  $c^b$  at the opening of the first fragment – instantly followed by the interval  $e - f^b$  (the second tone of each being tuned «on the spot» as a perfect major third under  $e^b$  and  $a^b$ , respectively) caused a physical

Figure 2

Ascanio Mayone's examples of the enharmonic tetrachords, as included in Fabio Colonna's *La sambuca lincea* (Naples 1618), transcribed by Rudolf Rasch.

Ky - ri - e e - lei - son.

(a) *Enarmonico molle osservato nel soprano conforme il Tetracordo, & Ottocordo* (p. 92)

Ky - ri - e e - lei - son.

(b) *Enarmonico molle osservato in fuga da quattro parti* (p. 93)

Ky - ri - e e - lei - son.

(c) *Esempio dell'Enarmonico intenso con 4 parti* (p. 94)

reaction: it seemed, particularly by means of a carefully chosen fingering allowing an effective «over-legato», to force our ears open and make, so to say, our blood curdle at the same time. Would Plato have applauded to a *symphonia* of this type in his ideal state? *Mutatis mutandis* one could, when pursuing these experiments, risk coming upon «forbidden» modes, causing panic and hostility ...

When these musical scraps pass through the fingers – one has the consciousness of rediscovering that remnant of (this time authentic) Greek musical culture, the Seikilos song or the Leiden fragments – it occurs to the player that the physical interference, both vertically (the harmonies) and particularly horizontally (in terms of voice leading), touches a string in our soul, till then unknown. «Normal» chromatism seems colorless after this experience. Thanks to the instrument builder, the vibration of the strings, initiated by that primary, dull, and in itself uninteresting pluck, is amplified and sublimated by skillful application of these divine gifts of nature: cypress and spruce.

One imagines a similar emotion went through the minds of the friends of the Accademy when Mayone showed his innovative creations, ordered by Colonna: in our mind's eye we see his fingers – like ours now – wriggling like a spider over the dazzling, unconventional keyboard.

Sensations of a different kind are evoked when coming to the «modern» repertoire like Tarquinio Merula's *Capriccio Cromatico*, Johann Jacob Froberger's *Toccata VI da sonarsi alle Levatione* from his *Libro secondo* 1649, the *Lamento per la dolorosa perdita della Real Maestà di Ferdinando IV, Ré de Romani &c* (†1654) from the *Libro Quarto* 1656 and the *Sonata VII Stravagante, e per il cimbalo cromatico* (1641) by Gianpietro del Buono (see below). Now daily practice raises more practical issues: how has the harpsichordist to tune when performing 17th-century compositions using both  $e^b$  and  $d^\sharp$ ,  $a^b$  and  $g^\sharp$ ? Still more vexing are the  $d^b$ 's for which harpsichords and organs normally did not provide separate keys. The availability of the 19-tone instrument removes, in principle, all inconvenience. But still here the question arises to what extent men like Merula, Frescobaldi, and Froberger possibly had pure intonation of their accidentals in mind.

The fact that probably not more than roughly 25–50% of the 17th-century Italian harpsichords and virginals had two split accidentals per octave, let alone  $d^b$ 's – as required in Froberger's *Levazione Toccata* – puts it at least in doubt if these tones were really available – or even intended – by these composers.<sup>2</sup> On this point the colloquium discussion revealed that there was not a consensus.

2 This data was kindly communicated by Denzil Wraight; see also his article in this volume «The *cimbalo cromatico* and other Italian string keyboard instruments with divided accidentals».

It seems the harshness of an unaccentuated, or an even relatively accentuated diminished fourth replacing the usual pure major third, e.g.,  $b - d^\sharp$  in the tone of  $e$ , creates in the so-called «uninformed» public an impression of a certain «expressiveness». It was this aspect of «dissonant» dissonance that was brought forward for discussion by the inclusion in the programme of Froberger's Elevation-Toccatà and his *Lamento* for Ferdinand IV on a «cembalo naturale» after an Italian model with two eight-foot stops by Gianfranco Facchini, Ravenna, in meantone tuning, having a chromatic keyboard and no split keys.

In this context it is interesting to note two remarks from Italian sources from the early 18th century when meantone tuning was still often used, both mentioned by Patrizio Barbieri during the Colloquium. In an interview with the Florentine harpsichord maker Bartolomeo Cristofori by Scipione Maffei in 1709/10 we hear the great builder say: «good composers use the wolffifth for the expression of *il falso e 'l disgustoso*». The other statement comes from Giovanni Francesco de Capelli, 1723: «we use the wrong keys when playing  $d^\sharp$ s».<sup>3</sup>

Also it is enlightening to note Christiaan Huygens' preference for  $e^b$  as a (melodic) «leading note» in e-minor as having «quelque chose de plus tendre et plus plaintif, que E -  $D^\sharp$  - E» in his manuscript *Les divers modes*, after 1672.<sup>4</sup>

As in more universal matters of art appreciation, we do not hesitate to listen in this delicate question to the «general public» as well, whose judgement is, also here, surely not without importance ...

To allow a fair comparison between the various interpretations Merula's piece was played three times:

on the *cembalo cromatico* «correctly» (pure),

than «correctly» with «superchromatic» ornamentation (see below)

and on the *cembalo naturale* «as it comes», i.e. consonant and dissonant.

3 Patrizio Barbieri, «L'accordatura strumentale in Toscana: proposte e contrasti da V. Galilei a Cristofori (c. 1580–1730)», in: *Musicologia Humana. Studies in Honor of Warren and Ursula Kirkendale*, ed. by Siegfried Gmeinwieser, David Hiley & Jörg Riedlbauer, Firenze 1994 (= *Historiae Musicae Cultores*, Biblioteca 74), pp. 209–232, particularly p. 221.

4 See Patrizio Barbieri, «Il temperamento equabile nel periodo frescobaldiano» in: *Girolamo Frescobaldi nel IV Centenario della Nascita, atti di convegno internazionale di studi (Ferrara, 9–14 settembre 1983)*, ed. by Sergio Durante and Dinko Fabris, Firenze 1986 (= *Quaderni della Rivista Italiana di Musicologia* 10), pp. 387–423, especially p. 414, note 63.

An essential factor influencing the acceptability of the «harsh» performance of these *passi duriusculi* (leaving aside for a moment consonant, pure performance of these *blue notes* as resulting in «surrogates» for the dissonances without any notable effect) is the quality of the resonance of the instrument and its disposition (number of registers). This instrumental premise is of course a great help to the performer's aspiration towards integration of these tones: he might seek for a certain musical «preparation» in the act of playing, which begs, so to speak, for the listener's special attention and creating together with him a certain expectation.

Another aspect of the luxury of these additional accidentals now available is the possibility of applying them sometimes in an enriching way by changing notated accidentals into enharmonic ones – following Vicentino's advice in his *L'antica musica ridotta alla moderna prattica* (1555),<sup>5</sup> – or even adding «super-chromatic» (Frans Brüggen) tones incorporated in freely invented ornamentation at times.

As a pleasant surprise, giving so to say a historic justification of this «modern» experiment after the event, Patrizio Barbieri's quotation of Angelini Bontempi, 1695 (active in Perugia, Venice and Copenhagen) showed examples of improvised «microtonal» passing notes.<sup>6</sup>

To conclude, I would like to return now to the actual repertoire of the 19-tone instrument with a last word on Del Buono's *Harpsichord Sonata*, based on that graceful hymn *Ave maris stella*, which occupies a special place as one of the 14 very first Sonatas in music history intended specifically for the *cembalo*, «Signor di tutti l'istromenti del mondo» as his *collega arcicembalista* Giovanni Maria Trabaci called the instrument (see figure 3).<sup>7</sup>

As an oasis of calm in the midst of the diligent, at times even laborious counterpoints of the other sonatas, these pages take us on a journey, when performed on the 19-tone harpsichord with its both warm and lovely decaying curve of tone, during which its surprising alterations regularly touch us and

5 See Alexander Silbiger's translation on p. 8 of the introduction to his edition *Four enharmonic madrigals* by Nicola Vicentino, Utrecht 1990 (Corpus Microtonale 33).

6 Giovanni Andrea Angelini Bontempi, *Historia musica*, Perugia 1695, 158; see Patrizio Barbieri, «Violin intonation: a historical survey», in: *Early Music* 19/1 (1991), pp. 69–88, p. 80, and Patrizio Barbieri's article in this volume.

7 «...,+ in lei si possono sonare ogni cosa con facilità.» Giovanni Maria Trabaci, in *Il secondo libro de ricercate & altri varij capricci*, Naples 1615, at the heading of the *Partite artificiose sopra il Tenor de Zefiro*.

enchant us. In addition to the normal three sharps and two flats, the presence here of the pitches of  $d^\sharp$ ,  $a^\sharp$ ,  $a^b$ , and  $d^b$  results in the use of 16 tones in the octave, culminating in a daring though strictly functional confrontation of the two musical opponents,  $a^b$  versus  $g^\sharp$  at the final cadence: the silent meditation having a character principally of resignation, showing occasional bursts of rebelliousness or even trepidation, of an unique Neapolitan visionary.

As a composer he shows more wisdom than many of his colleagues of today, concluding his declaration «A i benigni lettori» with the commendatory phrase: «For the rest I trust to the <giudicio del buon Sonatore> ...».

Figure 3 (p. 102–104)

Gioanpietro del Buono, «Sonata Strauagante, e per il Cimbalo Cromatico» (from *Canoni, Oblighi et Sonate in varie maniere sopra l'Ave Maris Stella*, Palermo 1641), no. 7, transcribed by Martin Kirnbauer with suggestions and emendations by Bob van Asperen and Martin Kirnbauer (original accidentals, modern adaptations in brackets).

## Figure 3

## Sonata VII. Strauagante, e per il cimballi cromatico

G.P. Del Bono (1641)

First system of musical notation (measures 1-3). The score consists of four staves: two treble clefs and two bass clefs. The key signature has one sharp (F#) and the time signature is common time (C). The music is written in a style characteristic of the early Baroque period.

Second system of musical notation (measures 4-6). The score consists of four staves: two treble clefs and two bass clefs. The key signature has two sharps (F# and C#) and the time signature is common time (C). The music continues with various rhythmic patterns and melodic lines.

Third system of musical notation (measures 7-10). The score consists of four staves: two treble clefs and two bass clefs. The key signature has two sharps (F# and C#) and the time signature is common time (C). The music continues with various rhythmic patterns and melodic lines.

Fourth system of musical notation (measures 11-14). The score consists of four staves: two treble clefs and two bass clefs. The key signature has two sharps (F# and C#) and the time signature is common time (C). The music continues with various rhythmic patterns and melodic lines.

\* B T.14,4: notiert f(#)

15

Musical score for measures 15-18. It consists of four staves: two treble clefs and two bass clefs. The key signature has one sharp (F#). Measure 15 has a note marked with an asterisk (\*) in the bass staff. Measure 18 has a note marked with three asterisks (\*\*\*) in the top treble staff.

19

Musical score for measures 19-21. It consists of four staves: two treble clefs and two bass clefs. The key signature has one sharp (F#). Measure 20 has a note marked with two asterisks (\*\*) in the bass staff.

22

Musical score for measures 22-24. It consists of four staves: two treble clefs and two bass clefs. The key signature has one sharp (F#).

25

Musical score for measures 25-28. It consists of four staves: two treble clefs and two bass clefs. The key signature has one sharp (F#).

\* B T.15,5: Note fehlt / \*\* B T.20,5: notiert H

29

Musical score for measures 29-32. The score is written for four staves: two treble clefs (top two) and two bass clefs (bottom two). The key signature is one sharp (F#). The time signature is 4/4. The music features a complex melodic line in the upper staves and a more rhythmic bass line. Measure 29 starts with a quarter note G4, followed by a quarter note A4, a quarter note B4, and a quarter note C5. Measure 30 continues with a quarter note D5, a quarter note E5, a quarter note F#5, and a quarter note G5. Measure 31 has a quarter note A5, a quarter note B5, a quarter note C6, and a quarter note D6. Measure 32 ends with a quarter note E6, a quarter note F#6, a quarter note G6, and a quarter note A6.

33

Musical score for measures 33-36. The score is written for four staves: two treble clefs (top two) and two bass clefs (bottom two). The key signature is one sharp (F#). The time signature is 4/4. The music continues with a complex melodic line in the upper staves and a more rhythmic bass line. Measure 33 starts with a quarter note B5, a quarter note C6, a quarter note D6, and a quarter note E6. Measure 34 continues with a quarter note F#6, a quarter note G6, a quarter note A6, and a quarter note B6. Measure 35 has a quarter note C7, a quarter note D7, a quarter note E7, and a quarter note F#7. Measure 36 ends with a quarter note G7, a quarter note A7, a quarter note B7, and a quarter note C8.

37

Musical score for measures 37-40. The score is written for four staves: two treble clefs (top two) and two bass clefs (bottom two). The key signature is one sharp (F#). The time signature is 4/4. The music continues with a complex melodic line in the upper staves and a more rhythmic bass line. Measure 37 starts with a quarter note D6, a quarter note E6, a quarter note F#6, and a quarter note G6. Measure 38 continues with a quarter note A6, a quarter note B6, a quarter note C7, and a quarter note D7. Measure 39 has a quarter note E7, a quarter note F#7, a quarter note G7, and a quarter note A7. Measure 40 ends with a quarter note B7, a quarter note C8, a quarter note D8, and a quarter note E8.

40

Musical score for measures 41-44. The score is written for four staves: two treble clefs (top two) and two bass clefs (bottom two). The key signature is one sharp (F#). The time signature is 4/4. The music continues with a complex melodic line in the upper staves and a more rhythmic bass line. Measure 41 starts with a quarter note F#7, a quarter note G7, a quarter note A7, and a quarter note B7. Measure 42 continues with a quarter note C8, a quarter note D8, a quarter note E8, and a quarter note F#8. Measure 43 has a quarter note G8, a quarter note A8, a quarter note B8, and a quarter note C9. Measure 44 ends with a quarter note D9, a quarter note E9, a quarter note F#9, and a quarter note G9.

\* C Schlussnote Terz zu hoch notiert