

Prenez sur moi vostre exemple:

The ‘clefless’ notation or the use of fa-clefs in chansons of the fifteenth century by Binchois, Barbingant, Ockeghem and Josquin

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The bibliography for Ockeghem’s famous puzzle canon ‘Prenez sur moi vostre exemple amoureux’ is as large as the piece is small, as Peter Urquhart remarked.¹ I have no intention of contributing new insights to the enormous amount of learned scholarship, which has been performed on the enigmas surrounding this song since the 16th century. By now most questions concerning its notation, tonality and Glarean’s characterization of it as a *katholikon* seem to be answered satisfactorily through the latest publications by Fallows, Urquhart and van Benthem.²

However, in most publications Ockeghem’s song is classified as member of an exclusive group of ‘clefless’ compositions. That this is a too comprehensive categorization becomes clear after a browse through David Fallows’ eminent catalogue of polyphonic secular songs in the 15th century.³ In his enumeration of songs the term ‘clefless’ describes pieces without any clef at all as well songs using combinations of flats in all or some of its voices to organize pitch structures.⁴ The last-mentioned songs do not use the conventional ‘letter clefs’ to specify the pitch, but they are certainly not ‘clefless’, since the flats or rather the *fa*-signs, which refer to contemporary hexachordal theory, carry out some of the functions of the normal clefs, and it is thus most productive to regard them as using ‘*fa*-clefs’. Ockeghem’s famous *Missa Cuiusvis toni* may stand as an example of an extended composition, which uses neither letter- nor *fa*-clefs, only different symbols to specify the placement of the music’s

1 Peter Urquhart, ‘Another Impolitic Observation on *Absalon, fili mi*’, *The Journal of Musicology*, 21 (2004), 343–80 (at 369, n. 42). My thanks to David Fallows, Claus Røllum-Larsen, the Centre for Music and Theatre at The Royal Library, Copenhagen, and the Music Department of the State and University Library, Aarhus, for their help with information and materials.

2 David Fallows, ‘Prenez sur moy: Ockeghem’s tonal pun’, *Plainsong and Medieval Music*, 1 (1992), 63–75; Peter Urquhart, ‘Calculated to Please the Ear: Ockeghem’s Canonic Legacy’, *Tijdschrift van de Koninklijke Vereniging voor Nederlandse Muziekgeschiedenis*, 47 (1997), 72–98; Jaap van Benthem, ‘“Prenez sur moy vostre exemple”. Signae, text and cadences in Ockeghem’s *Prenez sur moy* and *Missa Cuiusvis toni*’, *ibid.* 99–118.

3 David Fallows, *A Catalogue of Polyphonic Songs, 1415–1480* (Oxford, 1999).

4 Several sources especially from Central Europe contain examples of music entirely without clefs as the *Schedelsches Liederbuch* and *Lochamer Liederbuch* (cf. Bettina Wackernagel (ed.), *Das Liederbuch des Dr. Hartmann Schedel*. Faksimile (Das Erbe deutscher Musik, 84; Kassel, 1978), and Konrad Ameln (ed.), *Lochamer-Liederbuch und Das Fundamentum organisandi von Conrad Paumann*, *Faksimile-Nachdruck* (Kassel, 1972)), or for example the sources catalogued in Kurt von Fischer (ed.), *Répertoire International des Sources Musicales. Handschriften mit mehrstimmiger Musik des 14., 15. und 16. Jahrhunderts I* (RISM BIV/3; München-Duisburg, 1972), 360–72 (D-Mbs5023), 385–89 (D-TR322), 421 (DK-Kar102).

final notes – it is really clefless.⁵ On the other hand, its companion in the Chigi Codex, the *Missa Prolationum*, was most likely originally notated entirely in *fa*-clefs.⁶

How to decode the notation of ‘Prenez sur moi’ and other songs in *fa*-clefs was established in two short articles by Carl Dahlhaus in the 1960s.⁷ Here he rejected the prevailing interpretation of the sign formations in the examples under discussion as erroneous key signatures or as insufficient directions for the performers,⁸ and he recognized that they rather should be interpreted as hexachordal signs, which identify the positions of the semitone steps in the tone system. His interpretation has been the point of departure for later work on these topics.⁹

David Fallows did put his finger on a crucial question, when he concerning the notation of ‘Prenez sur moi’ asked ‘Why are the pieces written without clefs?’:

These writers are mainly concerned to derive appropriate transcriptions but fail to explain convincingly why the pieces are written without clefs. I cannot fill that gap except in offering two observations. The first is that the notion of a puzzle or game was plainly intriguing to many composers, particularly if it involved the kind of economy resolved by simple logic that we find here. The second observation is that composers have always derived inspiration from challenges erected by their predecessors; then as now, they show an awareness of the tradition within which they write.¹⁰

The notion of a puzzle and the awareness of tradition are certainly of relevance for Ockeghem’s design of the notation of ‘Prenez sur moi’, but they fail to answer the why-question about earlier songs. Here Knud Jeppesen proposed that an important characteristic of the ‘clefless’ notation was that it allowed performances at different pitches a fifth apart.¹¹ And in line with Dahlhaus’ description of the *fa*-clef system Jaap van Benthem thinks that its features included an undefined sounding pitch of the music:

Since clefs are not provided in any source, performers are free to intone the music at whatever pitch is convenient for them. Any [modern] notation of the music remains editorial ...¹²

5 Although the copyist of the Chigi Codex did put flats in some parts of the Credo section, which may be traces of an alternative reading of the music; cf. Johannes Ockeghem (ed. Jaap van Benthem), *Missa Cuiusvis toni upon re and mi* (Masses and Mass Sections, fascicle III,3; Utrecht, 1996), VII–X (see further below).

6 Cf. Jaap van Benthem’s reconstruction in Johannes Ockeghem, *Missa Cuiusvis toni upon fa-ut. Missa Prolacionum* (Masses and Mass Sections, fascicle III,4; Utrecht, 1996), XII–XVII.

7 Carl Dahlhaus, ‘Ockeghem’s “Fuga trium vocum”’, *Die Musikforschung*, 13 (1960), 307–10, and ‘Zu einer Chanson von Binchois’, *Die Musikforschung*, 17 (1964), 398–99.

8 In the case of ‘Prenez sur moi’ he opposed Joseph S. Levitan’s interpretation in ‘Ockeghem’s Clefless Compositions’, *The Musical Quarterly*, 23 (1937), 440–64, and in the case of Binchois’ ‘Mon seul et souverain desir’ the edition by Wolfgang Rehm in *Die Chansons von Gilles Binchois (1400–1460)* (Musikalische Denkmäler II; Mainz, 1957), 27.

9 Knud Jeppesen independently found a similar solution in his comments on ‘L’omme banny’ (see below) in *La Frottola*, vol. II: *Zur Bibliographie der handschriftlichen musikalischen Überlieferung des weltlichen italienischen Lieds um 1500* (Acta Jutlandica, XLI:1, Aarhus, 1969), 14–16.

10 Fallows, ‘Prenez sur moy’, 66.

11 Jeppesen, *La Frottola* II, 15.

12 Benthem, “‘Prenez sur moy ...’”, 100.

This is also the position of Margaret Bent in her discussion of these pieces in connection with the understanding of the *musica recta* system:

The problems of signatures and transposition is posed in a more pointed form by the phenomenon of ‘clefless’ pieces, or rather, pieces signed only with flat signatures of undetermined and undeterminable letter-name pitch, often with differentiated signatures, whose pitches indeed do not need to be named except for purposes of transcription into modern notation ...¹³

The whole idea of a repertory of pieces sounding at indeterminate pitch – how small this repertory may be – is of great importance for the discussion of pitch in the 15th century. That unaccompanied liturgical chant was performed at a flexible pitch standard is well known, songs in different modes and ranges were intoned and sung within the same convenient tessitura. How much such practices influenced the performance of sacred or secular polyphony is difficult to ascertain.¹⁴ But as a consequence of the expansion of the total vocal range in polyphony during the 15th century it is apparent that the leeway for a flexible pitch standard must have been considerably reduced.

My current research includes an online edition of the French chansonnier, MS Thott 291 8° in the Royal Library of Copenhagen (the Copenhagen Chansonnier),¹⁵ and in this project its relations with contemporary chansonniers is highly prioritized, first and foremost its relations with the group of sources dated around 1470, which we today designate as the Loire Valley chansonniers.¹⁶ The edition presents the songs in the different sources as independent performances and focuses on their sound and expressive qualities.¹⁷ There seems to be a close connection between their expression as sounding entities and their vocal instrumentation, their total range and pitch and the relations between the single voices. Great care has been lavished on these parameters, not only concerning the individual songs but also in the selection and combination of compositions in series or in complete chansonniers. Here we often meet a careful balancing of contrasts in tessitura with changes in sound and mood, but also series of songs in the same range in which other features have to ensure variety and individuality. All this presupposes that the songs were composed with a relatively fixed pitch standard in mind, which of course does not preclude that practical issues at times overruled the notated pitch in performances. In this connection the existence of a small repertory of songs possibly created with an undefined or optional sounding pitch in mind is thought provoking. In addi-

13 Margaret Bent, *Counterpoint, Composition, and Musica Ficta* (New York, 2002), 9.

14 Cf. the article ‘Pitch. I. Western pitch standards’ by Bruce Haynes in *Grove Music Online* (Dec. 2009), and Kenneth Kreitner’s balanced account in ‘Renaissance pitch’, in Tess Knighton and David Fallows (eds.), *Companion to Medieval and Renaissance Music* (London, 1992), 275–83.

15 Edited by Knud Jeppesen in *Der Kopenhagener Chansonnier* (Copenhagen, 1927; reprinted with a new preface, New York, 1965).

16 By Jeppesen characterized as ‘Burgundian chansonniers’. The acknowledgment of them as Central French sources began with Paula Higgins’ Princeton dissertation of 1987, *Antoine Busnois and Musical Culture in Late Fifteenth-Century France and Burgundy*.

17 The project is described in detail on its site <http://chansonniers.pwch.dk/>.

tion, without the existence of a quite fixed pitch standard the *fa*-clef notation might appear meaningless.

‘Prenez sur moi’, which I shall return to at the end of this article, is the final song of the Copenhagen Chansonnier and originally it also opened the Dijon Chansonnier.¹⁸ The scribe who wrote both manuscripts (and part of the Laborde Chansonnier) was well aware of the exceptional character of Ockeghem’s canon. Moreover, the Dijon Chansonnier also contains two of the most interesting chansons appearing in *fa*-clef notation. They will be starting points for the following attempt to chart and elucidate the musical and notational tradition, which Ockeghem refers to in his canon. First, however, we have to take a short look on models of how the *fa*-clefs may be regarded.

Fa-CLEFS AND THE *musica recta* SYSTEM

The history of the development of staff notation is well known. Since the 12th century it became more and more common to assign pitches to positions in a staff system by means of letters and coloured lines. C and F quickly became the most commonly used letters, but other letters were used too – even the B-*rotundum* and the B-*quadratum* in spaces between lines can be found alone as clefs in English sources.¹⁹ In the 15th century the stylized C- and F-clefs dominate musical notation as unmistakable indicators of the pitch and octave positions of the musical contents. Their normal use can easily accommodate a polyphonic range of nearly three octaves (*F-e''*), that is the gamut of the Guidonian hand, and when a greater range was needed the high G-clef (G₂) came more and more often in use (and some much rarer low pitch clefs).²⁰

To read a pattern of B-*rotundum* signs alone as *fa*-clefs is quite different from reckoning pitches from letter clefs. It means to correlate the positions of the signs on the staff with the hexachords contained in the traditionally used tone system, the Guidonian gamut. Figure 1 presents in schematic form the gamut of the Guidonian hand correlated with the positions of the hexachords, on which all pedagogical training in music depended. With the help of the inflexible structure of the hexachords (the semitone step *mi-fa* is always placed between two sets of whole tone steps *ut-re-mi* and *fa-sol-la*) the performer could build a mind map of the scale’s possibilities with its single variable step (B-*rotundum* and B-*quadratum* or B flat and natural) and always keep the placement of the semitones in mind. Combining *hexachordum naturale* and *hexachordum durum* it was possible to navigate through music using the high or hard B, and should the soft B be needed, the *hexachordum molle* came into play. This system was thought of as *musica recta*, while differing

18 For a list of source *sigla*, see the Appendix at the end of this article.

19 B-*rotundum* in the famous Notre Dame MS W1 (Wolfenbüttel, Herzog August-Bibliothek, Helmstedt 628), especially fos. 58v [50v], 195v [178v], and 213–213v [196–196v] (Scottish, 13th c., cf. J. H. Baxter (ed.), *An Old St. Andrews Music Book (Cod. Helmst. 628). Published in Facsimile* (London, 1931)); and B-*quadratum* in Bruno Stäblein, *Schriftbild der einstimmigen Musik* (Musikgeschichte in Bildern III.4; Leipzig, 1975), 120–21 (Irish, 12th c.) and 158–59 (English, 12th c.).

20 Cf. David Hiley’s article ‘Clef’ in *Grove Music Online* (Dec. 2009).

placements of hexachords (to obtain transitory leading notes etc.) were regarded as *musica ficta* (or *falsa*).²¹

A default reading of *fa*-clefs must logically (as the notation does not indicate anything else) be defined as the reading resulting from the positions of the steps, which can be named *fa* in the standard tone system (the untransposed *musica recta* system). In Figure 1 two models of arrangements of *fa*-clefs are drawn up:²²

- 1) To the left a configuration of flats in distances of alternating fifths and fourths, which interlocks in the voices, with three flats in every voice (some of the octave doublings may be omitted). They constitute a scale in which the structure is repeated in every octave. The default position will have C as the upper *fa* of the fifth and F as the lower. In this way the *fa*-clefs will function like the quite common phenomenon of C- and F-clefs a fifth apart found on top of each other in the same staff in older sources, and can thus be read without any key signatures. However, it must be emphasized that they do not prescribe pitches, only a scale structure.
- 2) To the right in Figure 1 is a corresponding arrangement of interlocking fifths only, in which the lower *fa* in a voice denotes the same note as the upper *fa* of the next voice. This arrangement will typically have two flats in every voice, but nothing hinders that a flat sign in a voice can be doubled at the octave as long as the basic structure is retained. This coupling of two fifths causes that there cannot be octave identity between all pitches of the voices, and that all three species of hexachords will be used; and that means that at least one voice will need a key signature of one flat or one sharp more than the other voices. In Figure 1 the default reading can only be placed in the *musica recta* system in a high position (designating the notes *b^b*, *f'* and *c''*, because the system does not contain the *B-rotundum* in its low octave. In practice this arrangement of *fa*-clefs will be read as sounding an octave lower, with a *B^b* in the low octave.²³

However, in many cases the sources force us to view the *fa*-clefs in a completely different light. When a piece in such pitch-indeterminable notation is copied into

21 Cf. Margaret Bent, 'Musica Recta and Musica Ficta', *Musica Disciplina*, 26 (1972), 73–100. Space does not permit any comments on the discussion of the transposition of the Guidonian system by flat signatures and its possible categorization as *ficta*; see further Karol Berger, *Musica ficta. Theories of Accidental Inflections in Vocal Polyphony from Marchetto da Padova to Gioseffo Zarlino* (Cambridge, 1987), and Bent, *Counterpoint*, 1–25.

22 These models only show minimum configurations of *fa*-clefs to demonstrate the principle, and only two voices, one higher and one lower. The other notes in *fa*-positions can of course also be involved as octave doublings. If we add a *fas* to the lower voice to the left, it will designate *c*; and a *fas* added to the lower voice in 'Fifths only' will designate *b^b*!

23 It must be this phenomenon of octave duplication that lies behind the suggestion of the preponderance of the role of the scale system rather than of the hexachordal system (which is a pedagogical subsystem of the former) in Stefano Mengozzi, "'Clefless' notation, counterpoint and the *fa*-degree', *Early Music*, 36 (2008), 51–64.

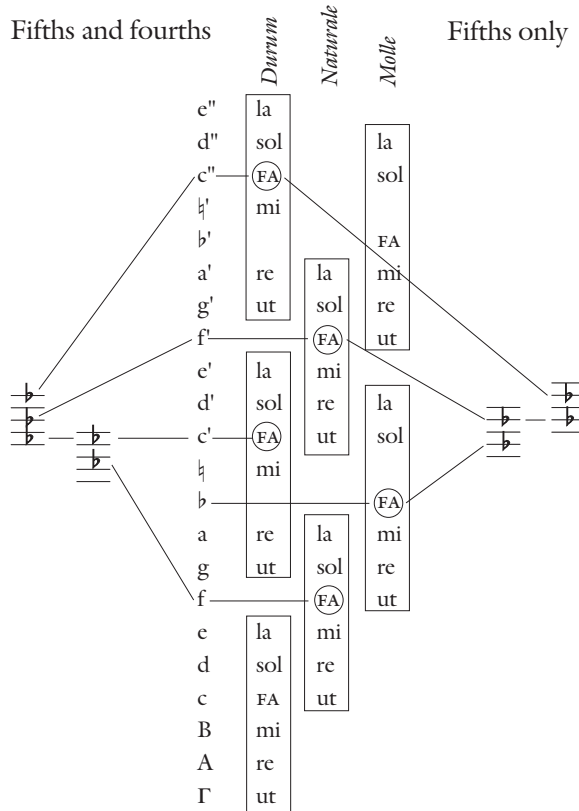


Figure 1. The Guidonian tone system, the placement of hexachords, and *fa*-clefs.

normal notation the scribes usually just added fitting combinations of letter clefs before the *fa*-clefs, which is then changed into key signatures (and reduced to the essential flats), and the pitch becomes locked. In this way contemporary practice reveals clef substitution as an appropriate procedure, and we have to discuss which and how many clef combinations can be used to read the chansons.

In the following discussion *fa*-clefs are mentioned in abbreviated form according to the same principles as used concerning letter clefs (C1, C4, F4, G2 etc.): *fa*1(-5) means a *fa*-sign or a flat on one of the five staff-lines (numbered 1-5 from below); *fa*5(-5) – *fa*-sign in one the five spaces of the staff; *mi*1(-5) – *mi*-sign or sharp/natural placed in the same way (only used by Ockeghem). All the chansons mentioned below without references to modern editions, even if in some cases several are published, can be found in complete transcriptions along with a more detailed commentary and complete lists of sources on the website *Chansonniers*.²⁴

24 See n. 17; the chansons found in the 'Loire Valley Chansonniers' can be reached through the alphabetical lists, while the remaining are listed under <http://chansonniers.pwch.dk/Facclefs.html>.

BARBINGANT'S 'L'OMME BANNY DE SA PLAISANCE' IN MANY VERSIONS

This sad song about a man abandoned by all pleasures had in *fa*-clef notation the widest circulation of all during the second half of the 15th century. It was probably written in the 1450s or earlier as it appears in sources from the 1460s on in versions, which show up such a wide variation in notation that we must presume that it already then had been circulating for some time, and that its original notation without letter-clefs was on its way to oblivion.²⁵

The name of the composer is found in the Mellon Chansonnier, which was prepared or supervised by the famous music theoretician Johannes Tinctoris in Naples around 1475,²⁶ and it is confirmed by his quotation of the beginning of the song under Barbingant's name in a theoretical treatise. Barbingant was a French composer flourishing in the middle of the century and was highly regarded by writers as Eloy d'Amerval and Guillaume Créatin. A younger Italian source, Florence 176, ascribes the song to the contemporary French composer Johannes Fedé (alias Jean Sohier), but Tinctoris' ascription must be regarded as the authoritative one, not least because he lived and worked in Northern and Central France during the years when the song found favour.²⁷

The earliest sources, the Laborde, Dijon, Nivelles and Pavia chansonniers, transmit the chanson in differing clefs, and the scribes of Laborde and Dijon did not understand its *fa*-clef notation at all. The Dijon scribe placed the flats in the upper voice exactly as in the lower voices (*fas*₂, *fas*₄, cf. Example 1.1); they should probably have been placed one step higher (*fa*₃, *fa*₅, cf. Example 1.8). The Laborde scribe could not get the clefs to make any sense, so he wrote them apparently at random, letting them vary from staff to staff (Example 1.2).

To get an impression of the original notation we must look at the clefs transmitted by some slightly younger sources, which were copied with greater care and understanding. The Florentine MS Florence 176 has a set of *fa*-clefs, which conforms perfectly to the model with interlocking fifths (see Example 1.3). This means that according to a default reading the flats from top to bottom designate the following scale positions: in the upper voice *f*^{''}, *c*^{''}, and *f*['], in the tenor and contratenor *f*['] and *b*^b; and it produces a tonal layout widespread in the middle of the century with an upper voice with a flat less than the lower voices. We find exactly this layout again in the contemporary Chansonnier Cordiforme and in the older Nivelles Chansonnier (see Example 1.4), but now in pitch locked notation with letter clefs: G₂ without flats and two voices in C₃ with one flat – Cordiforme has even retained the flat on the *f*^{''}-line in the superius, which also can be used to warn the singer that the music exceeds the

25 The song and its sources have been discussed several times in the scholarly literature, cf. Jeppesen, *La Frottola* II, 14–16, and Urquhart, 'Another Impolitic ...', 373–75, which both include tables of incipits.

26 Cf. Leeman L. Perkins and H. Garey (eds.), *The Mellon Chansonnier I-II* (New Haven, 1979) and Ronald Woodley, 'Tinctoris's Italian Translation of the Golden Fleece Statutes: A Text and a (possible) Context', *Early Music History*, 8 (1988), 173–244 (at 188–94).

27 Nivelles Chansonnier contains three chansons attributed to Fedé, all copied by the Nivelles scribe, but the manuscript's version of 'L'omme banny' is anonymous. This, too, speaks against Fedé's authorship.

Example 1. Barbingant, 'L'omme banny de sa plaisance'.

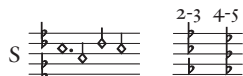
1.1 Incipits, Dijon, fos. 97v-98


S 


T 

C 

1.2 Incipits, Laborde, fos. 66v-67, and clefs in the following staves

S  2-3 4-5


T  2 3

C  2 3-4

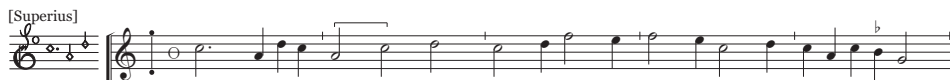
1.3 Incipits, Florence 176, fos. 54v-55

S 

T 

C 

1.4 Nivelles, fos. 24v-25

[Superius] 

Tenor 

Contra 

1. 4. L'om - - - me ban - - -
3. For - - - tu - ne

1. 4. L'om - - - me ban - - -
3. For - - - tu - ne

1. 4. L'om - - - me ban - - -
3. For - - - tu - ne


1.5 Incipits, Pavia 362, fos. 21v-22

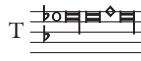
S  G

T 

C 

1.6 Incipits, Pixérécourt, fos. 29v-30

S 

T 

C 


1.7 Incipits, Mellon, fos. 30v-31


S 


T 

C 

1.8 Dijon, fos. 97v-98 (clefs corrected)

[Superius] 

Tenor 

Contratenor 

1. 4. L'om - - - me ba - - -
3. For - - - tu - ne

1. 4. L'om - - - me ba - - -
3. For - - - tu - ne

1. 4. L'om - - - me ba - - -
3. For - - - tu - ne

1.9 Laborde, fos. 66v–67 (clefs corrected)

[Superius]
 1. 4. L'om - - - - me ban - - - -
 3. For - - - - tu - ne - - - -

Tenor
 1. 4. L'om - - - - me ban - - - -
 3. For - - - - tu - ne - - - -

Contra
 1. 4. L'om - - - - me ban - - - -
 3. For - - - - tu - ne - - - -

Example 2. Anonymous, 'L'omme qui vit en esperanche' (Pixérécourt MS, fos. 182v–183).

[Superius]
 L'om - - - - me qui vit

[Tenor]
 L'om - - - - me qui vit en

Contra
 L'om - - - - me qui vit en

Guidonian gamut by using a high *ficta* hexachord on *c''*. The chansonnier Pavia 362 also locks the pitch of the chanson (see Example 1.5), but only in the upper voice, which has a G₂ clef without flats, while keeping the three-flat clefs in tenor and contra, which then must be read as *f'*, *b^b* and *f*. Unlike the Nivelle, Pavia and Cordiforme chansonniers the Florence 176 version is not locked to any pitch, and it can just as easily be performed a fifth lower by imagining a different set of letter clefs: C₂ with one flat and F₃ with two flats in the lower voices.

MS Pixérécourt, also from Florence and possibly a few years younger than Florence 176, transmits the song in a different configuration of *fa*-signs (see Example 1.6). It corresponds to the fifths-fourths model described above and produces a default reading of the flats in the upper voice as *c''*, *f'* and *c'*, and in the tenor and contratenor as *c'* and *f* – a fourth lower than in MS Florence 176, and no key signature is needed in any voice. It was probably such a combination of *fa*-signs that the Dijon scribe saw in his exemplar when he was copying the song into his own collection. Example 1.8 shows the beginning of this default reading in pure G Mixolydian according to the Dijon Chansonnier. Of course, this set of *fa*-clefs may also be read with imagined letter clefs, in C-Mixolydian with one G₂ and two C₃ clefs, all with a key signature of one flat, and a fifth lower in F-Mixolydian with one C₂ and two F₃ clefs, all with two flats.

The Mellon Chansonnier does not specify the fifth in the upper voices (see Example 1.7). It could refer to any of the two models, but most probable it is meant to be read with the last mentioned combination of letter clefs in mind, one C2 and two F3 clefs, now with one flat in the upper voice and two in the lower voices.

If we presume that the Laborde scribe in some instances got the clef right, and that he in the 2nd and 3rd staff of the upper voice and in the 2nd staff of the contratenor (see Example 1.2) really wrote what he saw in his exemplar, then Laborde could present the same set of clefs as Florence 176. It could be performed at any pitch, but an obvious reading is – like the Mellon Chansonnier – the one in low clefs (see Example 1.9). This reading of Laborde is interesting because it conforms perfectly to Tinctoris' censoring of Barbingant in his *Liber imperfectionum notarum musicalium* of 1474–75, where he tells us that a note, which has been augmented by a dot, of course cannot be imperfected by a following short note, and he gives the start of the superius and tenor from Barbingant's 'L'omme banny' as an illustrative musical example – in F-Mixolydian.²⁸ In the tenor the first *longa* is augmented by a *punctus additionis* but then shortened by the following *semibrevis*, which to make things clearer in some sources is followed by a *punctus divisionis* (see Example 1.9). We only find this 'error' in the older sources (cf. Examples 1.1, 1.2 and 1.5), while the younger sources have corrected the error by dividing the long first note into a *longa* and a *brevis* (which can be imperfected correctly), but so did also Nivelles, which probably can be dated some years before Tinctoris' *Liber*.

Tinctoris' and the assumed Mellon low-clef reading of 'L'omme banny' is confirmed by a *responce* to it, the anonymous 'L'omme qui vit en esperanche', about the man who lives in hope, in the Pixérécourt manuscript, fos. 182v–183, which cites the beginning of Barbingant's tenor and paraphrases its structure and cadential scheme (see Example 2). Here a set of C2, C5 and F3 clefs is combined with a setup of flats very much like the ones in Barbingant's song in the Pixérécourt MS (and probably the Dijon Chansonnier). A possible relation to the high pitch reading is the anonymous three-part song 'Plus que pour mille vivant' in the MS Bologna Q16, fos. 71v–72, mentioned by David Fallows, which quotes the opening music of 'L'omme banny'. The likeness is obvious in the first eight bars hereafter the connection becomes looser.²⁹

To sum up – and disregarding other interesting variants in the music and presuming that the song was composed at some time before 1450 – the investigation of 'L'omme banny' shows:

- 1) That it circulated in *fa*-clef notation during a long period of time. The sources can be dated between the 1460s and the middle 1480s, and already during the 1460s the knowledge of the notation was weakening (MSS Dijon and Laborde).

28 Book 1, Ch. 3, 'De tredecim generalibus imperfectionum regulis', see the online edition and translation by Ronald Woodley (www.stoa.org/tinctoris/liber_imperfectionum/liber_imperfectionum.html).

29 Fallows, *A Catalogue*, 261. The two anonymous chansons in the MSS Pixérécourt and Bologna Q16 have not yet been available in modern editions; both can now be found at <http://chansonniers.pwch.dk/Faclefs.html>.

- 2) That both configurations of *fa*-clefs are found in the sources, the pattern of fifths only (Florence 176) and the pattern of fifths and fourths (Pixérécourt), but the resulting differences in performance become negligible by the conventional practice of inflecting melodic lines. The default readings put the song in C- or G-Mixolydian, but performances can be at any convenient pitch.
- 3) That several sources (Nivelle, Pavia 362 and Cordiforme) lock the pitch of the song in high clefs according to the configuration in fifths only. In this process irrelevant flats (designating F or C) were usually suppressed.
- 4) That Tinctoris and presumably the Mellon Chansonnier (supervised by Tinctoris) may have regarded the *fa*-clefs as key signatures, which just needed an appropriate array of letter clefs imagined or in writing in order to work. A reworking of Barbingant's music in the Pixérécourt MS confirms that this was not an uncommon procedure.

'COMME FEMME DESCONFORTEE' AND OTHER CHANSONS BY BINCHOIS

Binchois' rondeau 'Comme femme desconfortee' enjoyed great popularity from c. 1460 until at least after 1500. It supplied materials for secular arrangements, to motets and masses, and it appears in many sources, among them three of the 'Loire Valley' chansonniers, Dijon, Laborde and Wolfenbüttel.³⁰ However, the composer is only specified in the same authoritative source, which attributed 'Lomme banny' to Barbingant, the Mellon Chansonnier. In by far the majority of sources this appealing song about a woman deploring her miserable loveless state is notated conventionally and in a normal tessitura with an upper voice in the range *b-c''* – the version of the Dijon Chansonnier may stand as a representative for these sources (see Example 3.1).

The song may have appeared rather old-fashioned to some of the compilers of the chansonniers. Quite a lot of musical variants show up in the sources, especially in the contratenor, and the voice has been partly recomposed in the Chansonnier Cordiforme.³¹ Some of the uneasiness surrounding the chanson could come from it being originally conceived in *fa*-clefs. In two sources it appears entirely in *fa*-clefs. It is among the latest additions, from the 1460s, to the Italian chansonnier Escorial IV.a.24 (often called EscB), fos. 131v–132,³² and two of its voices are found among the fragments of a contemporary Burgundian chansonnier, Munich 9659, fo. 3v.³³

³⁰ See the list of sources and citations in Fallows, *A Catalogue*, 116–17.

³¹ Cf. G. Thibault and D. Fallows (eds.), *Chansonnier de Jean de Montchenu (Bibliothèque nationale, Rothschild 2973 [L.5.13])* (Paris, 1991), no. 29. On the different 'families' of variants, see Allan W. Atlas, *The Cappella Giulia Chansonnier. Roma, Biblioteca Apostolica Vaticana, C.G.XIII.27* (Musicological Studies Vol. XXVII/1–2; New York, 1975–76), vol. 1, 183–85, Martella Gutiérrez-Denhoff (ed.), *Der Wolfenbütteler Chansonnier. Herzog August Bibliothek, Wolfenbüttel, Codex Guelf. 287 Extran.* (Musikalischer Denkmäler, X; Mainz, 1988), 122–23, and Perkins and Garey, *The Mellon Chansonnier*, II, 292–97.

³² Cf. Martha K. Hanen, *The Chansonnier El Escorial IV.a.24I* (Musicological Studies, 36; Henryville, 1983), and Dennis Slavin, 'On the Origins of Escorial IV.a.24 (EscB)', *Studi musicali*, 19 (1990), 259–303.

³³ Cf. C. Petzch, 'Fragment mit acht dreistimmigen Chansons, darunter Lochamer Liederbuch Nr. 18', *Die Musikforschung*, 22 (1974), 319–22.

Example 3. Gilles Binchois, 'Comme femme desconfortee'.

3.1 Dijon, fos. 4IV-42

[Superius]

1.4. Com - me fem - me des - con - for - te -
 3. Bien doi mau - di - re la jour - ne -

Tenor

1.4. Com - me fem - me des - con - for - te -
 3. Bien doi mau - di - re la jour - ne -

Contratenor

1.4. Com - me fem - me des - con - for - te -
 3. Bien doi mau - di - re la jour - ne -

3.2 Incipits, Escorial
 IV.a.24, fos. 13IV-132

S

T

C

3.3 Munich 9659, fo. 3v (default reading, contratenor according to Escorial IV.a.24)

[Superius]

1.4. Com - me fem - me
 3. Bien doy mau - di -

[Tenor]

1.4. Com - me fem - me des - con -
 3. Bien doy mau - di - re la

[Contratenor]

1.4. Com - me fem - me des - con -
 3. Bien doy mau - di - re la

3.4 Munich 9659, fo. 3v (alternative reading, contratenor according to Escorial IV.a.24)

[Superius]

1.4. Com - me fem - me des - con - for - te -
 3. Bien doy mau - di - re la jour - ne -

[Tenor]

1.4. Com - me fem - me des - con - for - te -
 3. Bien doy mau - di - re la jour - ne -

[Contratenor]

1.4. Com - me fem - me des - con - for - te -
 3. Bien doy mau - di - re la jour - ne -

Example 4. Gilles Binchois, 'Mon seul et souverain desir', Oxford 213, fo. 7IV: Binchois, and Escorial V.III.24, fos. 20V-21: Anonymous.

[Superius]

1. 4. Mon seul et sou - ve - rain de -
3. Car je voel a vous o - be -

Tenor

1. 4. Mon seul et sou - ve - rain de -
3. Car je voel a vous o - be -

Contratenor

1. 4. Mon seul et sou - ve - rain de -
3. Car je voel a vous o - be -

Example 5. Binchois?, 'Tous desplaisirs n'en sont prochains', Escorial V.III.24, fos. 7V-8: Anonymous.

[Superius]

1. 4. Tous des - plai - sirs m'en
3. Se dez griefs mauux ou

Tenor

1. 4. Tous des - plai - sirs m'en
3. Se dez griefs mauux ou

Contratenor

1. 4. Tous des - plai - sirs m'en
3. Se dez griefs mauux ou

The Neapolitan copyist of Escorial IV.a.24 apparently was bewildered by the notation of his exemplar and placed the *fa*-clefs in wrong positions, which according to a default reading would produce a song in D-Dorian and create difficult problems for the harmony (see Example 3.2). Luckily the fragment of the song in Munich 9659 transmits enough, the whole superius and half of the tenor, for us to conclude that the two sources have basically the same version of the song. In Munich 9659 the *fa*-signs are placed correctly and show that all three voices had a clef of three signs, namely *fa*₂, *fa*₄ and *fa*₅.

This is exactly the formation of interlocking fifths only, which is shown in Figure 1, and it produces a sound picture with a flat less in the upper voice than in the lower voices. A default reading of the combined sources (superius and tenor from Munich and contratenor from Escorial), in which we imagine a C₄ and two F₄ letter clefs, gives us a very low pitch, *F-f'*, hardly fitting for a female voice, but with the entirely conventional combination of key signatures of no flat in the upper voice and one flat in the lower voices (see Example 3.3). It can of course also be read an octave higher, but this is less probable as it then would exceed the Guidonian gamut.

At this point the *fa*-clefs prove their value, because we can just as easily imagine another set of clefs a fifth higher, C₂ and two C₄ clefs, and pitch and range then come into the same tessitura as in the fixed pitch sources, namely from *c* to *c''* (see Example 3.4). However, in this reading the notes revealed as *fa* by the flat signs are *c''*, *g'* and *c'* in the upper voice and *f'*, *c'* and *f* in the lower voices, and the upper voice thus has to operate with a fictive hexachord on *d'* comprising the semitone step *mi-fa* on *f#'-g'*.

A key signature of one sharp was close to unthinkable in 15th century polyphony, and it is not found in any of the main sources of French chansons.³⁴ But using *fa*-clefs you can perform the song at any pitch, even sing within the usual tessitura with a one-sharp key signature without writing it. The performance of 'Comme femme' according to these rules brings about in a natural way the F-sharps otherwise demanded by the counterpoint in bar 4 (cf. Example 3.1) and other places, and we hear a tonal shading rather characteristic of Binchois with a first section centred on G, while in the second section one has to sing naturals and firmly anchor the music on C. We can theorize that the Burgundian source Munich 9569 preserves Binchois' original notation including the tonal shadings, which were lost when the popular song was transformed into fixed pitch notation.

Such a theory can be supported by two songs in older sources. The other chansonnier in the Escorial library, MS V.III.24 (called EscA), whose origins can be placed in Burgundian lands around 1436–40 and very close to the court musician Gilles Binchois (c. 1400–60),³⁵ contains two three-part rondeaux in *fa*-clef notation, 'Tous desplaisirs n'en sont prochains' and 'Mon seul et souverain desir' (fos. 7v–8 and 20v–21). Both are anonymous in the manuscript, but the second song is firmly ascribed to Binchois in the slightly older North Italian MS Oxford 213 (fo. 71v).³⁶ Both songs show exactly the same two-octave range and the same system of *fa*-clefs as 'Comme femme', and the same reading procedure again results in a high clef alternative with a one sharp signature, which in both cases becomes inflected by an accidental flat after a few bars (see Examples 4 and 5).

34 According to Jeffrey Dean in 'Okeghem's attitude towards modality: Three-mode and eight-mode typologies', in Ursula Günther, Ludwig Finscher, and Jeffrey Dean (eds.), *Modality in the music of the fourteenth and fifteenth centuries. Modalität in der Musik des 14. und 15. Jahrhunderts* (Musicological Studies & Documents, 49; Neuhausen-Stuttgart, 1996), 203–46 (at 219), only one example of a B-*quadratum* used as a key signature in a Continental chanson survives from the 15th century, in the anonymous four-part arrangement of 'Se la face pale' in Trento 89 fos. 424v–425, in which the three upper voices have a sharp at the start; cf. Guillaume Dufay (ed. H. Besseler, rev. D. Fallows), *Opera omnia VI – Cantiones* (Corpus mensurabilis musicae, 1; American Institute of Musicology, 1995), 107.

35 Cf. Walter H. Kemp, *Burgundian Court Song in the Time of Binchois. The Anonymous Chansons of El Escorial, MS V.III.24* (Oxford, 1990), and Dennis Slavin, 'Questions of Authority in Some Songs by Binchois', *Journal of the Royal Musical Association*, 117 (1992), 22–61. A facsimile edition is in Wolfgang Rehm (ed.), *Codex Escorial: Chansonnier. Biblioteca del Monasterio El Escorial, Signatur: Ms V.III.24* (Documenta musicologica ii/2; Kassel, 1958).

36 Cf. H. Schoop, *Entstehung und Verwendung der Handschrift Oxford Bodleian Library, Canonici misc. 213* (Publ. der Schweizerischen Musikforschenden Gesellschaft, Ser. II, 34; Bern, 1971) and the facsimile edition by David Fallows (ed.), *Oxford, Bodleian Library, MS. Canon. Misc. 213. With an Introduction and Inventory* (Chicago, 1995).

While Binchois' 'Mon seul et souverain desir' has been discussed in scholarly literature,³⁷ 'Tous desplaisirs' has received less attention. Walter H. Kemp tentatively ascribed it to Binchois based on its use of imitation, which does not appear to be a very convincing criterion.³⁸ The two songs' identical system of notation and the resulting sound world is a much more convincing argument, and Dennis Slavin mentions this trait as a 'technical procedure otherwise unique to Binchois' when discussing Binchois' authorship of 'Comme femme'.³⁹ The late appearance of 'Comme femme' in the sources has put a question mark on the ascription in the Mellon Chansonnier, but David Fallows argues convincingly for keeping it within the Binchois canon.⁴⁰ And we can add that its perceived 'late style' fade away when the text's unusual poetic structure (*rondeau sixain*) and high literary quality is taken into account and it is heard in the notation of Munich 9659 and Escorial IV.a.24. Then it is evident that a song not much younger than the two songs from the 1430s was slightly modified when it was transformed into the fixed pitch notation of the late chansonniers.

I think that we can safely assume that Binchois composed all three chansons. Possibly he even invented the special notation with two flats a fifth apart in every voice, which permitted him to make songs with a sharp in the upper voice without putting such unheard things down in notation. This, however, raises the question if Binchois ever intended the notation to be of indeterminable pitch? There is a good possibility that the notation must be read a fifth higher than the default reading and that it is a substitute for the 'unwriteable': a superius with a sharp key signature. It is impossible to know for sure, but worth keeping in mind.

THE OTHER SONGS IN THE PAVIA CHANSONNIER

The small paper chansonnier Pavia 362 probably originated in the region of Savoy sometime in the years around 1470.⁴¹ In addition to Barbingant's 'L'omme banny' it contains three more three-part anonymous chansons with the lower voices notated in *fa*-clefs, while the upper voice has a letter clef. They may all have been written originally in pure *fa*-clef notation, and we will just take a short look at them.

The *rondeau* 'Pour avenir a mon actainte' (fos. 37v–38, see Example 6.1) has an arrangement of three flats and a C2 clef in the upper voice, while the lower voices only have flats. According to the pitch indicated in the superius the clefs in tenor and contratenor have to be C4 and F3. The formation of flats belongs to the model with fifths and fourths alternately. A default reading of the flats without taking the letter clef

37 Cf. Dahlhaus, 'Zu einer Chanson', Mengozzi, "Clefless" notation, and Slavin, 'Questions of Authority', 46–47.

38 Kemp, *Burgundian Court Song*, 39–40.

39 Dennis Slavin, 'Genre, Final and Range: Unique Sorting Procedures in a Fifteenth-Century Chansonnier', *Musica Disciplina*, 43 (1989), 115–39 (at 121–22).

40 In Thibault and Fallows (eds.), *Chansonnier de Jean de Montchenu*, CXII.

41 Cf. Frank A. D'Accone's Introduction to *Pavia*, *Biblioteca Universitaria, Aldini MS 362* (Renaissance Music in Facsimile, 16; New York, 1986), and Henrietta Schavran, *The Manuscript Pavia*, *Biblioteca Universitaria, Codice Aldini 362: A Study of Song Tradition in Italy circa 1440–1480*, Ph.D. dissertation, New York University, 1978.

Example 6. Anonymous, 'Pour avenir a mon actainte'

6.1 Pavia 362, fos. 37v–38



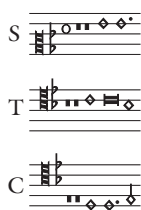
[Superius]

[Tenor]

[Contratenor]

1. 4. Pour a - ve - nir a mon
3. Trou - ver pe - ti - te fas -

6.2 Incipits,
Nivelle, fos. 23v–24



S

T

C

Example 7. Anonymous, 'Par
ung seul mot bien ordonné',
Pavia 362, fos. 45v–46, incipits.



S

T

C

Example 8. Anonymous, 'Puis
qu'il ha pleu a la tres belle', Pa-
via 362, fos. 60v–61, incipits.



S

T

C

into account will translate into these pitches from top to bottom: $c''-f'-c'$ in superius, $f'-c'-f$ in tenor, and $c'-f$ in the contratenor; and the song will sound in pure D-Dorian without any key signatures, a tone higher than in the locked reading of Pavia 362 in C-Dorian. Its two-octave total tessitura can be moved up and down quite a bit, but the most natural alternative reading with a set of G₂, C₂ and C₃ clefs all with one flat remaining is probably not relevant as it produces the very high tessitura of $g-g''$.

The song reappears in the Nivelle Chansonier (fos. 23v–24) and in the slightly later Florentine chansonier, Florence 2356 (fos. 83v–84), in normal notation with C₂, C₄, C₄ clefs and signatures of two flats (see Example 6.2).⁴² That the song originally really was conceived in *fā*-clefs is confirmed by its appearance in the Nivelle Chansonier. Here it stands shoulder to shoulder with Barbingant's 'L'omme banny' (as nos. 19 and 20), and they probably followed each other through the transformation into standard notation.

The two remaining songs in Pavia 362 are both unique and follow the same pattern as 'Pour avenir' in interpreting a fifth-fourth arrangement of flats as C-Dorian. 'Par ung seul mot bien ordonné' (fos. 45v–46) is moreover musically related to 'pour

42 In Florence 2356 the upper voice omits the second flat, but is otherwise quite close to the Nivelle Chansonier.

avenir' (see Example 7), while its text is a paraphrase of Guillaume Du Fay's famous song 'Le serviteur hault guerdonné',⁴³ which inspired many other pieces and is also notated in C-Dorian. 'Puis qu'il ha pleu a la tres belle' (fos. 60v–61, see Example 8) is a tour de force in proportional notation. From the beginning the *tempus perfectum* of the superius is juxtaposed with *proportio dupla* in Tenor and Contra, which must be performed twice as fast as the notes in the upper voice, and later on passages in the voices by turns have to be reduced to a fourth and an eighth of the notated values (*longa* = *semibrevis* or *minima*). All of this could just as well have been notated in *integer valor*, in normal values, and the composer might have avoided some clumsy passages and the copyist a lot of errors. Here the notation was created to make a visual impact and one cannot help wondering if the probable original *fa*-clef notation was part of this *Verfremdung*.

Especially the last song is in a low tessitura, in a range from *G* to *a*^b, and can with some advantage be performed a fifth higher by using another set of letter clefs (*G*₂, *C*₄, *C*₄ with only one flat), but as we have seen before the copyist has chosen to use the clefs, which transform the *fa*-clefs directly into a key signature.⁴⁴

GUILLAUME LE ROUGE AND THE SCHEDELSCHES LIEDERBUCH

Hartmann Schedel's private collection of a wide variety of music was established in Germany around 1460 and contains many songs with no clefs at all.⁴⁵ Such notation demands of its user a good knowledge of music. But the collection also has at least one chanson in *fa*-clefs, the three-part bergerette 'Se je fais duel je n'en ouis mais', which in the Mellon Chansonier (fos. 40v–42) is ascribed to the French composer Guillaume le Rouge. In the *Schedelsches Liederbuch* it is not copied as an integral composition because the first part of the song, the *refrain*, is found on fos. 103v–105 with only a short text incipit, while the short *couplets* with complete text are placed on fo. 24v – they appear as two separate compositions. Nonetheless, its version of the music is better than the one in Mellon, which in some passages interchanges the musical lines of Tenor and Contra, blurs the musical structure, and makes the performance of its complete text difficult. Mistakes in copying could easily happen as the song is composed for equal voices. In both sources all three voices have three flats as clefs: *fa*₁, *fa*₃, *fa*₅.⁴⁶ They can be interpreted in combination with several imagined letter clefs: *G*₂ without signature, *C*₂ with one flat, and the obvious *C*₄ with two flats.

By virtue of its restricted range of only 11 notes this charming song can effortlessly be moved between different tessituras, and here the *fa*-clefs really could be

43 Edited in Dufay, *Opera omnia* VI, 112, see further David Fallows, *The Songs of Guillaume Dufay. Critical Commentary to the Revision of Corpus Mensurabilis Musicae, ser. 1, vol. VI* (Musicological Studies & Documents, 47; Neuhausen-Stuttgart, 1995), 259–65.

44 All the songs mentioned in this section can be found in modern editions at <http://chansoniers.pwch.dk/Facclefs.html>.

45 See n. 4.

46 In *Schedelsches Liederbuch* the flats are placed one step too low in the Contra, but are given correctly in the second section.

any flats. In a few cases copying errors seem to indicate that a transformation from one system into another has taken place.⁴⁹ Another interpretation, which we have to take into account, could be that in some circles during a period around 1450 it might be regarded as sufficient to notate the multi-flat signatures for pieces in for example C-Dorian; the letter clefs were obvious and superfluous. All the pieces under discussion are French, and the sources in which the letter clefs are added to clarify the music (Pavia 362 and *Schedelsches Liederbuch*) are Italian and German. But this, on the other hand, does not exclude that an element of pitch indeterminateness still was at work, even if music scribes later when the notation was on its way to oblivion made short work of this element.

The theories of pitch indeterminateness cited at the start of this article still hold true, but the investigation has shown that the situation turns out to be a bit more complicated than that. In addition to allowing performances of indeterminate pitch as such, the *fa*-clefs may have had functions as means

- 1) to indicate alternative performing pitches a fifth apart by exchanging sets of (imagined) letter clefs;
- 2) to allow the notation of songs, which needed a key signature of one sharp in the uppermost voice (limited to formations of fifths only);
- 3) to make shorthand notation for letter clefs in compositions with two- or three-flat signatures (limited to formations of fifths and fourths).

49 See the discussion of the anonymous rondeau 'La plus mignonne de mon cuer' in the Copenhagen and Dijon chansonniers at <http://chansonniers.pwch.dk/>. Something similar might be the case with the three-part motet 'Beata dei genitrix' ascribed to both Dunstable and Binchois. It appears without letter clefs in the tenor and contratenor voices in the MS Bologna Q15, fos. 282v–283 (311v–312): Binchois; and MS Modena, fos. 133v–134 (136v–137): Dunstable. Other sources in normal notation ascribe it to 'Anglicus' (Aosta, fos. 167v–168) and to Dunstable (St Emmeran Codex, fos. 7v–8v). In the anonymous version in Trento 90, fos. 335v–337, the motet appears without key signatures and with wrongly placed clefs. Cf. *Bologna Q15. The Making and Remaking of a Musical Manuscript. Introductory Study and Facsimile Edition by Margaret Bent* (Lucca, 2008), vol. 1, 232; the motet is edited in John Dunstable (Manfred Bukofzer, ed.), *Complete Works* (Musica Britannica VII; London, 1953), no. 41, and Gilles Binchois (Philip Kaye, ed.), *The sacred music of Gilles Binchois* (Oxford, 1992), no. 56. The disposition of the key signatures could indicate that the motet originally was notated in *fa*-clefs only, namely in superius *fas*₂, *fa*₄, and in tenor and contratenor *fa*₁, *fas*₂, *fas*₄, which offers an obvious reading with one flat in every voice in the letter clefs C₁, C₃, C₃, in the range *f-d''*, but the *fa*-clefs could of course also be read as key signatures, as four sources do, with two flats, C₃, F₃, F₃, and range *B^b-g'*. A default reading of the interlocked *fa*-clefs in fifth-fourth formation (as *f'-c' / c'-f-c*) produces a motet in C without flats and a range *c-a'*. Maybe the idea that *fa*-clefs do not designate key signatures lies behind the version without flats and the misplaced clefs in Trento 90. The single *b^b* signature (*fas*₄) in the first staff on fo. 337 suggests that his exemplar was in *fa*-clefs, which he tried to interpret with an inadequate result. The other scribes succeeded by just interpreting the signs as key signatures and providing letter clefs.

OCKEGHEM'S 'PRENEZ SUR MOI' AND *Missa Cuiusvis toni*

While it is quite possible that the common music scribe's knowledge of the meaning and advantages of the *fa*-clef notation was waning around the middle of the 15th century, Johannes Ockeghem (c. 1420–1497), the leading musician in the chapel of four French kings, certainly knew all its secrets, and he was the first to see and hear its full potential. Of course he was well versed in the music of his friend, the older master Binchois, on whose death he wrote the lament 'Mort, tu as navré',⁵⁰ and at Tours he lived with the music of Barbingant and Guillaume le Rouge, a singer in the ducal chapel in nearby Orléans during the years 1451–1465.

With 'Prenez sur moi' he reduced the concept of *fa*-clefs to essentials and used it to develop or signal a new technique of *diatonic canon* and *imitation*, which here is presented emblematic in its stacked canon at the fourth and at the seventh. Canonically imitation was in the middle of the 15th century and earlier always exact or strict and restricted to the intervals of unison and octave, and fifth and fourth. Diatonic imitation, which Ockeghem unfolded in large dimensions in *Missa Prolationum*, reproduces the number value of an interval exactly, while its quality might change (for example minor third changed to major third or *vice versa*). This method of imitation soon became very common as it is easier to incorporate in harmony, and it was decisive for the development of the imitative style.⁵¹

The canon is notated as one single voice part with a famous enigmatic array of flats and sharps (see Example 10.1). With a knowledge of the *fa*-clefs the enigma is easily solved when the signs are read as clefs two at a time: The first two flats a fifth apart designate *c'* and *f*, and the first note is *a*; the next two, a flat and a *mi*-sign, are *f'* and *b-quadratum*, and the second voice starts on *d'*; and the last two *mi*-signs have to be *b'-quadratum* and *e'* with the last voice starting on *g'* (cf. Example 10.3). Hereafter the canon unfolds without any key signatures, with the voices in three different intervallic realisations, and at a pitch convenient to the performers.⁵²

Ockeghem's indubitable expertise in *fa*-clefs and the whole theoretical system surrounding them may have inspired the idea itself of the fourth-seventh canon 'Prenez sur moi vostre exemple amoureux' in combination with the poem's words. The point is that in a fifth-fourth formation of *fa*-signs moving one of the signs framing the fifth creates an automatic transposition of the following musical notation. The mechanics are drawn up in Example 10.2: The basic fifth *c'-f* defines the note *a*. If the lower flat is moved one step up, the signs become *f'-c'*, and the written note is now *d'*. Moving also the upper sign creates a new fifth *c''-f'* and the pitch *g'*. Instead of moving the *fa*-signs Ockeghem just replaced them with the sign for the lower

50 See latest Fabrice Fitch, 'Restoring Ockeghem's *Mort, tu as navré*', *Tijdschrift van de Koninklijke Vereniging voor Nederlandse Muziekgeschiedenis*, 51 (2001), 3–24.

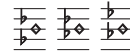
51 Urquhart, 'Calculated to Please', 76–79, and idem, 'Three Sample Problems of Editorial Accidentals in Chansons by Busnoys and Ockeghem', in J.A. Owens and A. Cummings (eds.), *Music in Renaissance Cities and Courts: Studies in Honor of Lewis Lockwood* (Warren, MI, 1996), 465–81.

52 For an edition and a complete bibliography of editions and scholarly literature, see <http://chansonniers.pwch.dk/>.

note of the hexachordal semitone, the *mi*-sign, and in this way he was able to create a very elegant solution by retaining the signs on the same lines, and it confounded theoreticians for centuries.

Example 10. Johannes Ockeghem, ‘Prenez sur moi vostre exemple amoureux’.

10.1 Incipit, Copenhagen Chansonnier, fo. 39v 10.2 Alternative incipits



10.3 Canon realization

We can now return to Ockeghem’s *Missa Cuiusvis toni*. Musicologists from Ambros to van Benthem have struggled to design selections of letter clefs to interpret Ockeghem’s notation in such a way that the three possible species of fourths and their related modes – as observed by Glarean – can work in performances.⁵³ Can superimposing formations of *fa*-clefs on the mass’ pitch indeterminate notation be of advantage? As an example we can look at one of the few places in the mass where all four voices start simultaneously, at ‘Osanna’ in the Sanctus, in Chigi Codex fos. 104v–105. The first notes are shown in Example 11.1.⁵⁴ Three different arrays of *fa*-clefs in conventional fifth-fourth formations may be imagined in front of the notes (*a-c*). Default readings produce performances of the music on *ut*, *re* and *mi* without the use of key signatures as Example 11.2a–c show: in C-tonality (Lydian with a flattened fourth), in A-Dorian, and E-Phrygian. If such readings were to be notated and pitch-locked according to the principles we have studied above, that is with *fa*-clefs combined with letter-clefs and superfluous flats removed, they could result in the notations in Example 11.3a–d – this is definitely hypothetical. The first is in *fa-ut* (Lydian with a flat signature), the second in D-Dorian, and the third in A-Phrygian. But in the last case as we have seen earlier, a reading which retains all the flats is more probable; it produces a version in D-Phrygian (Example 11.3d).

53 See the detailed explanation in Benthem, “‘Prenez sur moy ...’”, 100–4, and Dean, ‘Ockeghem’s attitude’, 233–37.

54 The different symbols used in the manuscript to indicate the position of the final notes are here replaced by black squares.

Example 11. Johannes Ockeghem, *Missa Cuiusvis toni – Sanctus*.

11.1 Beginning of ‘Osanna’ with three arrays of *fa*-clefs in front (a-c)

Three arrays of musical notation labeled a, b, and c. Each array shows four staves for Soprano (S), Contralto (C), Tenor (T), and Bass (B) voices. The notation consists of rhythmic patterns and clef-like symbols (b) placed on various lines of the staves, representing different clef positions for the 'fa' note.

11.2 Defaults readings in *ut*, *re* and *mi* (a-c)

Three systems of musical notation labeled a, b, and c. Each system shows four staves for Soprano, Contralto, Tenor, and Bass voices. The notation includes rhythmic patterns and notes, with some notes marked with a flat (b) to indicate specific pitch readings for the syllables 'ut', 're', and 'mi'.

11.3 Hypothetical clef combinations (a-d)

Four systems of musical notation labeled a, b, c, and d. Each system shows four staves for Soprano, Contralto, Tenor, and Bass voices. The notation includes rhythmic patterns and notes, with various clef-like symbols (b) placed on different lines of the staves to represent hypothetical clef combinations.

It is remarkable how easily *fa*-clefs operate the different possible modes. For example, the singers have to mentally move just a single flat in every array in order to change from Dorian to Phrygian (compare Example 11.1b and c, and Example 11.3b and d). If arrays of *fa*-clefs are imagined when performing from the notation of the Chigi Codex it is possible to sing the three modes at the pitches, which best fit the ranges of the singers involved, and all three modes can be performed within the same general tessitura. The notated (still hypothetical) results of these readings as regards the two first (Example 11.3a-b), moreover, agree perfectly with the versions published in van Benthem's complete edition, while the most probable Phrygian version (Example 11.3d) with regard to tessitura keeps much closer to the normal than the one proposed by van Benthem.⁵⁵ It is also interesting that the *fa*-signs used by the copyist in the Chigi Codex in the second section of Credo ('Et iterum venturus est', fos. 101v–103) agree with a reading in Dorian (corresponding to Example 11.1b or 11.3b), as if the scribe for a time forgot that he was copying according to a different principle and relapsed into a *fa*-clef interpretation.⁵⁶

JOSQUIN REMEMBERING OCKEGHEM

Composers one or two generations younger than Ockeghem had not completely forgotten the intricacies of *fa*-clef notation. Josquin Desprez (c. 1455–1521) erected a monument for the deceased master in his setting of Jean Molinet's lament 'Nymphes des bois, déesses des fontaines' combined with the Latin introit 'Requiem eternam' for five voices. In the Italian MS of 1518, the so-called Codex Medici, the song appears on fos. 125v–127 in *fa*-clefs, and it is copied entirely in black notes. Petrucci had printed it in *Motetti a cinque libro primo* (Venice, 1508) as a motet with only the Latin text incipit 'Requiem' and transposed into letter clefs. Without doubt the version of the Medici Codex is the original.

By using a nearly obsolete pitch notation Josquin honours Ockeghem – and puts his own knowledge of music's history on display. His *fa*-clefs are simple to read (see Example 12), only a canon prescription in the tenor creates a bit of mystery. Read in the same way as Ockeghem used them in 'Prenez sur moi' the flats designate the following pitches: superius *c''-f'*, altus *f'-f*, quinta vox *f*, tenor *f*, and bassus *f-F*, and the music sounds without key signatures in E-Phrygian within the range *E-d'*.⁵⁷ Petrucci's reading with letter clefs sounds a fourth higher with a flat in every voice (clefs: G₂, C₂, C₃, C₂, F₄).

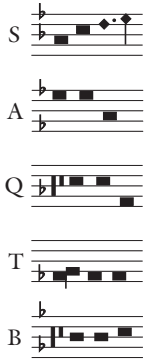
The canon in the tenor is rather deceptive. It says 'Canon. Pour eviter noyse et debat / Prenez ung demy ton plus bas' (To avoid noise and quarrel, take it a semi-

55 Ockeghem, *Missa Cuiusvis toni upon re and mi*, and *Missa Cuiusvis toni upon fa-ut*. *Missa Prolationum* (see nn. 6–7); Benthem's edition proposes a very low Phrygian version on *B-mi*.

56 See also Dean, 'Ockeghem's attitude', 236.

57 See further Jaap van Benthem, 'La magie des cris trenchanz: Comment le vray trésorier de musique échappe à la trappe du très terrible satrappe', in Anne-Emmanuelle Ceulemans and Bonnie J. Blackburn (eds.), *Théorie et analyse musicales 1450–1650. Actes du colloque international Louvain-la-Neuve, 23–25 septembre 1999* (Louvain-la-Neuve, 2001), 119–47 (including an edition of the chanson based on the *fa*-clefs).

Example 12. Josquin Desprez, ‘Nimphes des bois / Requiem’, Codex Medici, fos. 125v–127, incipits.



tone lower), but the voice-part is correctly notated on the staff, only the *fa*-sign has to be moved up on the line above, or Josquin could – like Ockeghem – have replaced it by a *mi*-sign.⁵⁸ The point is that the composer by this canonic operation changes the intervallic content of the pre-existing tune, the well-known plainchant introit for the Mass of the Dead; the Hypolydian tune is transformed into Phrygian by moving the *fa*-sign. This if anything is a reference to ‘Prenez sur moi vostre exemple’ – respectful and possibly with a playful twist!

⁵⁸ How difficult this ‘Canon’ is to handle in letter notation is demonstrated by E. E. Lowinsky in his comments on the song in *The Medici Codex of 1518 I–III* (Monuments of Renaissance Music III–V; Chicago, 1968), vol. I, 215 (the volumes also include a facsimile and a transcription of the repertory). For further possible repercussions of the *fa*-clef notation in the music of Josquin and others, see Urquhart, ‘Another Impolitic Observation’.

Appendix: List of manuscript sources mentioned in the text.

Aosta	Aosta, Biblioteca del Seminario Maggiore, MS A.1.D19
Bologna Q15	Bologna, Civico Museo Bibliografico Musicale, MS Q15
Bologna Q16	Bologna, Civico Museo Bibliografico Musicale, MS Q16
Chigi Codex	Rome, Città del Vaticano, Biblioteca Apostolica Vaticana, MS Chigi C VIII 234 (Chigi Codex)
Copenhagen	Copenhagen, The Royal Library, MS Thott 291 8° (Copenhagen Chansonnier)
Cordiforme	Paris, Bibliothèque Nationale, ms. Rothschild 2973 (Chansonnier Cordiforme)
Dijon	Dijon, Bibliothèque Municipale, Ms. 517 (Dijon Chansonnier)
Escorial IV.a.24	Escorial, Real Monasterio de San Lorenzo, Biblioteca y Archivo de Música, MS IV.a.24 (EscB)
Escorial V.III.24	Escorial, Real Monasterio de San Lorenzo, Biblioteca y Archivo de Música, MS V.III.24 (EscA)
Florence 176	Florence, Biblioteca Nazionale Centrale, Ms. Magl. xix.176
Florence 2356	Florence, Biblioteca Riccardiana, Ms. 2356
Laborde	Washington D.C., Library of Congress, MS M2.1 L25 Case (Laborde Chansonnier)
Medici Codex	Florence, Bibl. Medicea Laurenziana, Ms. Acquisti e doni 666 (Medici Codex)
Mellon	New Haven, Yale University, Beineke Library, MS 91 (Mellon Chansonnier)
Modena	Modena, Biblioteca Estense, MS A.X.I.II
Munich 9659	Munich, Bayerische Staatsbibliothek, Mus.Ms. 9659 (fragments)
Nivelle	Paris, Bibliothèque Nationale, Rés. Vmc. ms. 57 (Chansonnier Nivelle de la Chaussée)
Oxford 213	Oxford, Bodleian Library, MS Canon. Misc. 213
Pavia 362	Pavia, Biblioteca Universitaria, Codice Aldini 362
Pixérécourt	Paris, Bibliothèque Nationale, ms. f.fr. 15123 (Chansonnier Pixérécourt)
Schedelsches Liederbuch	Munich, Bayerische Staatsbibliothek, Codex germ.mon. 810 (Schedelsches Liederbuch)
St Emmeran Codex	Munich, Bayerische Staatsbibliothek, Codex lat.mon. 14274 (Codex St Emmeran)
Trento 89	Trento, Castello del Buonconsiglio, Monumenti e Collezioni Provinciali, Ms. 89 (1376)
Trento 90	Trento, Castello del Buonconsiglio, Monumenti e Collezioni Provinciali, Ms. 90 (1377)
Wolfenbüttel	Wolfenbüttel, Herzog August Bibliothek, Codex Guelf. 287 Extravag. (Wolfenbüttel Chansonnier)

SUMMARY

Ockeghem's famous canon 'Prenez sur moi' is in most scholarly publications classified as member of an exclusive group of 'clefless' compositions, which uses combinations of flats in all or some of its voices to organize pitch structures. However, while these songs do not use the conventional 'letter clefs' to specify the pitch, they are certainly not 'clefless', since the flats or rather the *fa*-signs, which refer to contemporary hexachordal theory, carry out some of the functions of the normal clefs, and it is thus most productive to regard them as using '*fa*-clefs'. The article investigates the use of *fa*-clef notation in chansons by Barbingant ('L'omme banny'), Binchois ('Comme femme desconfortee', 'Mon seul et souverain desir', and most likely also by Binchois 'Tous desplaisirs'), Guillaume le Rouge ('Se je fais duel'), and related songs in the chansonnier Pavia 362 and the *Schedelsches Liederbuch*, with the aim of outlining some answers to the question of why such notation was used. Two models of structuring arrays of *fa*-clefs are discerned: 1) the most common is a formation of alternating fifths and fourths, which interlocks in the voices; and 2) a corresponding arrangement of interlocking fifths only, which means that at least one voice will need a key signature of one flat or one sharp more than the other voices.

The theories of pitch indeterminateness adhered to by most scholars hold true, but the investigation shows that the situation turns out to be a bit more complicated than that. In addition to allowing performances of indeterminate pitch as such the *fa*-clefs may have had functions as means 1) to indicate alternative performing pitches a fifth apart by exchanging sets of (imagined) letter clefs; 2) to allow the notation of songs, which needed a key signature of one sharp in the uppermost voice (limited to formations of fifths only, probably a speciality of Binchois); and 3) to make shorthand notation for letter clefs in compositions with two- or three-flat signatures.

While it is quite possible that the common music scribe's knowledge of the meaning and advantages of the *fa*-clef notation was waning around the middle of the 15th century, Ockeghem certainly knew all its secrets. With 'Prenez sur moi' he reduced the concept to essentials and used it to develop or signal a new technique of diatonic canon which is presented emblematic in its canon at the fourth and at the seventh. Also, it is remarkable how easily *fa*-clefs operate the different possible modes in a performance of Ockeghem's *Missa Cuiusvis toni*. If arrays of *fa*-clefs are imagined when performing from the notation of the Chigi Codex, all three modes can be performed within the same general tessitura. Later Josquin Desprez erected a monument for Ockeghem in his setting of Jean Molinet's lament 'Nimphes des bois' for five voices by using *fa*-clefs, black notes, and a canon prescription.