

Hacking the System II: Notational Conventions in Early Sixteenth Century Printed Italian Keyboard *Intavolatura*

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Introduction

The vast majority of extant keyboard music in 16th-century Italy was notated in *intavolatura d'organo* or *intavolatura di cimbalo*. Other common methods for the printing of music for keyboard instruments included the use of either partbooks (from 1540 onwards) or open scores (mainly in Naples and Milan, from 1575 onwards). At a first glance, the Italian keyboard *intavolatura* resembles our modern system of keyboard notation on two staves, using mensural notation. This gives the impression that the former is easily transferable to the latter without any loss of information. However, as has been pointed out in more recent literature,¹ when the music is transcribed according to modern conventions certain information, for example regarding the part writing, is lost. Then again information, not present in the *intavolatura*, is

1 Ian Pritchard, 'Hacking the System: Italian Keyboard *Intavolatura* and Scribal Habit', in: 'Universum rei harmonicae concentum absolvunt': *The Harpsichord in the Sixteenth Century*, ed. Augusta Campagne and Markus Grassl (Vienna, 2024), 42–65, <<https://www.mdw.ac.at/mdwpress/en/mdwp003-hacking-the-system/>> (accessed on 3 August 2024); Ian Pritchard, 'Keyboard Thinking: Intersections of Notation, Composition, Improvisation and Intabulation in Sixteenth-Century Italy', PhD diss., University of Southern California, 2018, <https://ianpritchardearlykeyboards.com/wp-content/uploads/2020/09/ian_pritchard_dissertation.pdf> (accessed on 3 August 2024); Augusta Campagne, *Simone Verovio: Music Printing, Intabulations and Basso Continuo in Rome around 1600*, Wiener Veröffentlichungen zur Musikgeschichte 13 (Vienna, 2018), <<https://www.vr-elibrary.de/doi/pdf/10.7767/9783205207184>> (accessed on 3 August 2024), and Augusta Campagne and Elam Rotem, *Keyboard Accompaniment in Italy around 1600: Intabulations, Scores and Basso Continuo* (Basel, 2022), <<https://forschung.schola-cantorum-basiliensis.ch/en/forschung/keyboard-accompaniment-1600.html>> (accessed on 3 August 2024).

frequently added in modern editions.² As Alexander Silbiger³ has pointed out in his seminal article ‘Is the Italian Keyboard “Intavolatura” a Tablature?’, the *intavolatura* notation has its very own distinct set of conventions. It displays the characteristics of a *Griffsschrift*, a practical system of notation indicating hand positions, thereby incorporating a pronounced haptic element. It delineates the specific instances and locations where the fingers of each hand should press down a specific key, as well as the requisite duration of each key press. This can obscure some of the polyphonic information present in keyboard notation in other countries or in modern notation.

The only extant source containing comprehensive instructions for the conversion (or translation) of musical pieces into an *intavolatura*, a keyboard table⁴ or tablature in Italy, is the *libro primo* in the *Seconda parte del Transilvano* by Girolamo Diruta (Venice: Giacomo Vincenti, 1609).⁵ This provides a detailed account of the conventions in question, elucidating the significant divergences between the modern piano notation and the *intavolatura d’organo* or *intavolatura di cimbalo* notation.

As Ian Pritchard remarks, a more thorough examination of intabulations and tablature notation is long overdue.⁶ Previous research has focused on the period around 1600 and on manuscripts, mainly from the latter half of the 16th century. The objective of this article is to give an overview of the notation in keyboard prints from the first half of the 16th century and to demonstrate that the majority of the conventions described by Diruta in 1609 were already in place nearly a century earlier. This in turn

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- 2 The direction of the stems is altered, rests are added, the distribution of the notes over the hands is changed etc., all according to modern conventions.
 - 3 Alexander Silbiger, ‘Is the Italian Keyboard *Intavolatura* a Tablature?’, in: *Recercare* 3 (1991), 81–103.
 - 4 John Griffiths has recently defined a tablature as a table and divided instrumental tablatures into two categories, fingerboard and matrix tablatures. He includes all keyboard tablatures in the matrix category. See John Griffiths, ‘Keyboard Tablatures and Imaginary Instrumental Interchange in the Sixteenth Century’, in: ‘*Universum rei harmonicae concentum absolvunt*’: *The Harpsichord in the Sixteenth Century*, ed. Augusta Campagne and Markus Grassl (Vienna, 2024), 24–41, <<https://www.mdw.ac.at/mdwpress/en/mdwp003-keyboard-tablatures/>> (accessed on 3 August 2024), and John Griffiths, *Turning the Tables: Reassessing Tablature*, paper read at the 2021 annual conference of the Musicological Society of Australia, for more information on types of tablatures, <https://www.academia.edu/63608978/Turning_the_tables_reassessing_tablature> (accessed on 3 August 2024).
 - 5 Girolamo Diruta, *Seconda parte del Transilvano Dialogo diviso in quattro libri* (Venice: Giacomo Vincenti, 1609), <http://www.bibliotecamusica.it/cmbm/viewschedatwbca.asp?path=/cmbm/images/ripro/gaspari/_D/D019/> (accessed on 3 August 2024). Translation in Edward Soehnlein, ‘Diruta on the Art of Keyboard-Playing: An Annotated Translation and Transcription of Il Transilvano, Parts I (1593) and II (1609)’, PhD diss., University of Michigan, 1975.
 - 6 Pritchard ‘Hacking the System’ (see n. 1), 71.

suggests that the process of keyboard thinking and verticalisation, as described by Leon Chisholm and Ian Pritchard, was already well underway by 1520.⁷

The Challenges

In contrast to the *intavolatura di liuto* notation, which only indicates the fastest note value at a given moment, the keyboard *intavolatura* additionally needs to show the length of all note values. This is important, as the length of *every* note can be controlled: the end of the sound is defined by the lifting of the key.⁸ The musical importance of the exact moment a key is lifted, is highlighted in an example by Girolamo Diruta (see Fig. 1). In his discussion of the topic of touch, Diruta⁹ emphasises the desirability of continuity of sound. According to him, this is achieved by ensuring that the hands remain on the keyboard to prevent any gaps in the sound. In *Il Transilvano* he illustrates the good way of playing (*primo esemplo buono*) where the sound is continuous and the bad way of playing with gaps in the sound (*secondo esemplo cattivo*).



Fig. 1: Girolamo Diruta, *Il Transilvano* (Venezia, 1593), fol. 5v.

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- 7 As the objective of this article is to examine the notation, ornamentation and other stylistic aspects have not been taken into account. This is the subject of several other more recent studies, for example Vania Dal Maso's article in this volume as well as Ian Pritchard, 'Hacking the System' (see n. 1), 'Keyboard Thinking' (see n. 1), and Leon Chisholm, 'Keyboard Playing and the Mechanization of Polyphony, Circa 1600', PhD diss., University of California, Berkeley, 2015, <<https://escholarship.org/uc/item/950881g4>> (accessed on 31 August 2024), as well as Catalina Vicens' forthcoming PhD thesis 'Printed Keyboard Intabulation of Secular Vocal Works and Dances in 16th-century Italy'.
- 8 On plucked instruments from the lute family, some notes are stopped automatically, when the next note is played on the same string, whereas others are left to sound and can be stopped manually, like on the harp, if there is time.
- 9 Girolamo Diruta, *Il Transilvano dialogo sopra il vero modo di sonar organi, & istromenti da penna* (Venice: Giacomo Vincenti, 1593), fol. 5r. There are several later editions with varying page numbers. I will be referring to the 1593 edition, <<http://hdl.loc.gov/loc.music/muspre1800.100422>> (accessed on 29 July 2024).

In order to compensate for the decay of the sound on plucked keyboard instruments, Diruta suggests a number of potential methods, such as the addition of ornaments and the restriking of notes.¹⁰

But notating, playing and sustaining the right length of a note correctly was not the only challenge. The printing of multiple parts on a single staff with disparate note values, as found in the context of *intavolatura* notation, represented a significant challenge for printers.

A survey of the *intavolatura* prints also shows the technological development in music printing. The printing techniques employed in the 16th century encompass the full range of techniques in use for printing music: woodcut, printing with movable type, initially in double imprint, later in single imprint (made possible by the use of types including a note on a staff), and towards the end of the century the engravings from Verovio's workshop.

The Prints

A total of approximately twenty-five out of around thirty known Italian prints¹¹ containing music for keyboard along with the majority of manuscripts prior to 1600¹² use the *intavolatura* notation. On the one hand we find keyboard adaptations of music for several parts originally printed in separate partbooks, and on the other hand we also find music originally conceived for keyboard, such as *ricercari* and music specifically for the liturgy, as well as dances and pieces based on ostinato basses.

Tab. 1 shows a list of the five prints of keyboard music from the first half of the 16th century. Although Ottaviano Petrucci seems to have been the first to apply for a privilege to print both lute and keyboard *intavolature* in 1498, no keyboard *intavolature* print seems to have been published until 1517 (almost twenty years later). Furthermore, this was printed by another printer, Andrea Antico.

10 Ibid., fol. 6r.

11 See Robert Floyd Judd, 'The Use of Notational Formats at the Keyboard: A Study of Printed Sources of Keyboard Music in Spain and Italy c. 1500–1700, Selected Manuscript Sources Including Music by Claudio Merulo, and Contemporary Writings Concerning Notations', 2 vols., PhD diss., University of Oxford, 1989, Tab. 3.3, 89, <https://www.academia.edu/attachments/50221810/download_file?st=MTcyMjY5NDIiMiw4MC4xMDkuMjM4LjIwMCwx-MzcxNjE5&s=profile> (accessed on 3 August 2024). Four prints are in four-part score (three of which were manufactured in Naples) and one in a number tablature (see the article by Paola Erdas in this volume). This number does not include partbook editions that mention keyboards on the title page.

12 See Ian Pritchard, 'Hacking the System' (see n. 1).

Year	Composer	Title	Place	Publisher	Printing technique	
1517	(Andrea Antico) ¹³	<i>Frottole intabulate da sonare organi libro primo</i>	Rome	Andrea Antico	Woodcut	Brown 1517 RISM B/I 1517 ³
1523	Marc'Antonio Cavazzoni ¹⁴	<i>Recerchari motetti canzoni [...] libro primo</i>	Venice	Bernardo Vercelensis	Double impression	Brown 1523 ₁ RISM A/I-C 1574 RISM A/I-CC 1574
1543	Girolamo Cavazzoni ¹⁵	<i>Intavolatura cioe recercari canzoni himni magnificati [...] libro primo</i>	Venice	B. V.	Double impression	Brown 1543 ₁ RISM A/I C-1571
154?	Girolamo Cavazzoni ¹⁶	<i>Intabulatura dorgano, cioe misse himni magnificat [...] libro secondo</i>	Venice	?	Double impression	Brown 154? ₂ RISM A/I C-1572
1549	Jacques Buus ¹⁷	<i>Intabolatura d'organo di recerari [...] libro primo [...] novamente stampate con carateri di stagno. Libro primo</i>	Venice	Antonio Gardano	Single impression	Brown 1549 ₄ RISM A/I B-5197

Tab. 1: *Intavolatura* prints from before 1550

The Conventions around 1600

To start making an intabulation, Diruta¹⁸ recommends taking a *cartella* or sheet of paper including a barred system of two staves of which the upper one with five lines

13 CZ-Pk.54 E 102.

14 GB-Lbl K.8.b.8 and US-Cn VAULT Case minus VM 7-63.

15 <http://www.bibliotecamusica.it/cmbm/viewschedatwbca.asp?path=/cmbm/images/ripro/gaspari/_S/S002/> (accessed on 2 Sept. 2024).

16 <http://www.bibliotecamusica.it/cmbm/viewschedatwbca.asp?path=/cmbm/images/ripro/gaspari/_S/S411/> (accessed on 2 Sept. 2024), bound together with another copy of libro primo.

17 GB-Lbl K.1.f.16 and B-Bc 26.671 (incomplete).

18 Girolamo Diruta, *Seconda parte* (see n. 5), 1.

is for the right hand and the lower one with eight lines for the left.¹⁹ This practice of notating each hand on a separate staff, was already in use in Italy c. 1400, as can be seen for example in the Codex Faenza.²⁰ To intabulate a given composition, Diruta instructs his reader to write the upper part on the top keyboard staff with the stems upwards and the lowest part on the lower staff with the stems downwards. Then he tells his student to add the alto part on the top staff unless the note is an octave or less above the bass, in which case it is notated in the bottom staff. The tenor should be notated in the staff for the left hand, unless it is more than an octave above the bass. In this way the middle parts are divided over the hands according to the distance above the bass.²¹ If one hand plays diminutions, however, the other hand will take over the other parts.

As has been frequently observed (see n. 1 and 3), the practice of placing music for more than two parts on two staves naturally obscures the underlying polyphonic structure. Unless specific conventions are used – such as for example stem direction or special signs like a *custos* or colour coding²² – the crossing of parts will not be visible: if one of the inner parts is lower than the bass, that part will visibly and audibly become the lowest part. Nowadays we call such a part a *basso seguente*. The same can be true for the uppermost parts, which can form a *canto seguente* and occasionally changed or new inner parts will appear that could also be described as *voci di mezzo seguente*. Ian Pritchard refers to these as ‘tablature voices’.²³ In certain instances, most frequently in the case of final chords, the original parts were enhanced by the addition of notes. As Luigi Ferdinando Tagliavini observed, ‘chords were frequently not merely the consequence of the simultaneous sounding of parts, but autonomous entities

19 The first thing that meets the eye when examining *intavolature* is, that unlike the modern piano notation or the *scala decemlinealis*, there is an overlap in the notes covered by the two staves. Depending on the clefs employed five or more notes can be notated on both staves, if to be played by the right hand on the top staff, or for the left hand on the bottom staff.

20 See <https://s9.imslp.org/files/imglnks/usimg/8/82/IMSLP352519-PMLP569345-codex_faenza.pdf> (accessed on 3 August 2024). See Michael Kugler, *Die Tastenmusik im Codex Faenza*, Münchner Veröffentlichungen zur Musikgeschichte 21 (Tutzing, 1972), 34–42, esp. 38. See also Pedro Memelsdorff (ed.), *The Codex Faenza 117: Instrumental Polyphony in Late Medieval Italy. Introductory Study and Facsimile*, Ars Nova ser. n. 3 (Lucca, 2013).

21 For further information on how to intabulate see Campagne, *Simone Verovio* (see n. 1), 167–74, and Pritchard, ‘Hacking the System’ (see n. 1), or watch Elam Rotem’s video <<https://www.earlymusicsources.com/youtube/diruta>> (accessed on 6 Sept. 2024).

22 In some fifteenth-century manuscripts colour coding was employed to distinguish specific voices. For example in I-PEc MS 3410, fol. G I, the scribe uses black and white notation to differentiate between the two distinct parts on the left-hand stave, see Memelsdorff, *The Codex Faenza* (see n. 20), 178.

23 Pritchard ‘Hacking the System’ (see n. 1), 53.

in their own right'.²⁴ A further consequence of these *segunte* parts is that what is regarded as forbidden parallels can occur as a result of the crossing of these parts. Some composers do their best to avoid such forbidden consecutives, others are less careful and genres such as dances or arie seem to use the movement in consecutive fifths and/or octaves as a distinctive characteristic trait.

Unlike music published in partbooks, compositions in *intavolatura* are always divided by vertical tablature bar lines into what Diruta and others call *caselle*, 'measures' usually consisting of two semibreves.²⁵ As Pritchard summarises: these elements lead to 'an inherent "verticalization" of *intavolatura*, with polyphony reduced and made to coalesce around a structure of regular pulses (most typically at the minim level) [...]'.²⁶ Tab. 2 illustrates the principle conventions that differentiate the *intavolatura* notation from the contemporary 'piano' notation.

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- The division of the parts over the hands
 - The top staff is for the right hand and the bottom staff for the left hand
 - The top staff is commonly made up of five to six lines, the bottom of five to eight lines. There is an overlap of notes notated on both staves, avoiding the use of ledger lines
 - All parts except the highest are taken by the left hand unless the distance to the bass is more than an octave, with several exceptions
 - when the bass is ornamented chords will be taken in the right hand and vice versa
 - Middle parts can migrate from one hand to the other
 - Stem direction
 - The stems of the highest sounding part are upward and those of the lowest on the staff downward
 - A unison need only be notated in one hand; no double stems are needed to indicate two voices reaching a unison
 - Rests
 - If notes are present on the staff at a given moment, it is not necessary to include rests for other parts, even if these are present in the original parts.
 - 'Fictitious'²⁷ rests may occur to indicate the entry of a part
 - 'Mechanical'²⁸ rests occur as a sign to lift up a finger to make the key available by for the other hand

24 Luigi Ferdinando Tagliavini, 'Die italienische Orgelmusik vom Codex Faenza bis Giovanni Gabrieli', in: *Orgel und Orgelspiel im 16. Jahrhundert. Tagungsbericht Innsbruck 9.–12.6. 1977*, ed. Walter Salmen (Innsbruck, 1978), 70–6, at 72: 'Der "Akkord" ist kein ausschließliches Ergebnis der Stimmbewegung mehr, sondern wird zu einem eigenständigen Element; Akkorde vollstimmig zu greifen und die Harmonien auszukosten gehört zur neuen Kunst der Orgel- und Klaviervirtuosen.'

25 Diruta, *Seconda parte* (see n. 5), 2. This was already the case in fifteenth-century Italian keyboard manuscripts such as the Codex Faenza and other shorter manuscripts (see Kugler, *Die Tastenmusik* [see n. 20]).

26 Pritchard, 'Hacking the System' (see n. 1), 52.

27 Rests when there are no rests in the original parts. See Silbiger, 'Italian Keyboard *Intavolatura*' (see n. 3), 83.

28 The term 'mechanical' rest is suggested by Pritchard in 'Hacking the System' (see n. 1), 52.

- Caselle
 - *Caselle* (measures) are marked every two semibreves
 - Splitting longer notes into shorter ones
 - Longer note values are systematically broken up into shorter ones, with or without ties
 - Sustained voices are interrupted if another part needs the key
 - Correct vertical alignment is not always a priority
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Tab. 2: Conventions of the *intavolatura* notation around 1600

As Pritchard has demonstrated for manuscripts,²⁹ exceptions to these conventions can be observed. Some of these exceptions assist the understanding of the underlying polyphonic structure, for example the addition of signs such as a *custos*.³⁰ Other exceptions, also found in prints, concern the execution on the keyboard and are largely of a practical nature. For instance, chains of parallel thirds are typically maintained in one hand; in the event that the bass descends with a larger leap, some notes might be taken in the right hand to make the leap easier; scales are typically retained in one hand. In general, however, these are exceptions ‘that prove the rule’.

Four further notational aspects are of interest: the length of the *caselle*, the use of dots, the use of ties and the vertical alignment.

Diruta instructs the Transilvano to draw lines after two semibreves, thereby establishing regular *caselle* or ‘measures’ of a breve. In practice, in the musical content of his treatise most *caselle* conform to his instructions, although there are instances of both longer and shorter *caselle*. In earlier sources, triple time can be fitted into a *casella*, but in certain instances, particularly in dances and lute music, the metrical division does not necessarily align with the accentuation pattern of the music.³¹

In mensural notation dots had traditionally been used for a variety of purposes and practical applications of these traditions can be found in the earlier prints.³² As well as the dots of addition (*punctus additionis*), still in use in our contemporary music notation, the earlier prints also feature dots as a means to indicate *ficta*, both sharps and flats.

The continuation of the tradition of mensural notation of what in English are referred to as ligatures, is reflected in the Italian term for ties: *ligature*. Ties might be used as a substitute for the dots of addition, either across bar lines or within a bar. Furthermore, ties are also found between notes of equal length, both when the note

29 Ibid.

30 Ibid., 64.

31 See Vania Dal Maso’s article in this volume.

32 For a mid-sixteenth-century description see for example Claudio Sebastiani, *Bellum musicale* (Strasbourg: Paulus Macheropäus, 1563), Cap. XII, L3, <<https://gallica.bnf.fr/ark:/12148/bpt6k8709495z#>> (accessed on 3 August 2024).

becomes a dissonance (*legatura de note dissonanti* according to Diruta) and when it remains consonant (*legatura de note consonanti*).³³

Nowadays we have become accustomed to reading scores, that display a perfect vertical alignment of all notes as well as a clear spacing between them. When notes are intended to be played simultaneously, this is reflected in the notation and in general shorter notes will occupy less space than longer ones. When using moveable type, however, each type will be more or less the same size, so shorter notes can occupy the same amount of space as longer notes. The simultaneous printing of multiple notes with differing rhythmic values poses a significant challenge for printers, particularly when the objective was to minimise paper wastage as paper was an expensive commodity in the 16th century. This makes many of the *intavolatura* prints difficult, though not impossible, for players accustomed to modern piano notation to read. Thus, when examining the prints in *intavolatura* notation, the following conventions will be considered:

- The division of parts over the hands
- Stem direction
- The use of rests
- The splitting of longer notes into shorter ones
- The length of *caselle*
- The use of dots
- The use of ties
- The vertical alignment

ANDREA ANTICO

The *Frottole intabulate*, published by Andrea Antico (c. 1480–after 1538) in Rome in 1517, is the earliest known printed publication of keyboard works.³⁴ The collection comprises twenty-six *frottole* by various composers, which have been adapted and ornamented for keyboard performance, probably by Antico himself. The majority of these *frottole* can be found in various collections published in partbooks by, among others, Petrucci and Antico himself. This allows for comparisons to be made between the original compositions and the intabulations, although sometimes it appears that Antico worked from a slightly different version of the *frottole* than the prints.³⁵

³³ Diruta, *Seconda parte* (see n. 5), 9.

³⁴ New modern edition: Andrea Antico, *Frottole intabulate da sonare organi* (Roma, 1517), ed. Maria Luisa Baldassari (Bologna, 2016).

³⁵ The first to do so was Knud Jeppesen in *Die Italienische Orgelmusik am Anfang des Cinquecento* (Copenhagen, 1943).

Furthermore, it is the sole surviving example of a collection of printed keyboard music in Italy that employs woodcuts.

The division of parts over the hands

In general, the top staff (five lines) is assigned to the right hand and the bottom staff (also five lines) to the left hand, though there are numerous exceptions. In contrast to many later publications, the clefs usually remain the same throughout a piece. This might be due to the range of the parts, which is less extensive than in later music. In general, there seems to be a preference for keeping two parts, though not necessarily the same two parts, in each staff.³⁶ At times this results in unplayable positions for the left hand. At other times, notes that Diruta would have placed in the left hand, are on the top staff, despite the fact that playing them in the right hand is awkward and it would be more straightforward to place and play these in the left hand (see Fig. 2, m. 4). Although the number of parts is mostly equivalent to the number of parts active in the partbook pieces, the last chords are always thicker and usually consist of six notes.



Fig. 2: Andrea Antico, 'Hor chel ciel e la terra B[artolomeo]. T[romboncino].', *Frottole intabulate da sonare organi libro primo* (Rome: Andrea Antico, 1517), fol. 36'. Collection of the National Museum of the Czech Republic, National Museum Library, Nostic gg 19.

Stem direction

The direction of the stems follows the vertical placement on the staff rather than the specific part being intabulated; however, there are a few exceptions. As in later music, we encounter *tablature voices*, particularly when the parts cross. There are no double stems, but occasionally the same note is notated in both hands and sometimes stems are placed in a complicated way (see Fig. 3).

The use of rests

Unnecessary rest, both 'fictitious' and 'mechanical' rests, are found in many pieces.

36 How much this is due to the technical limitations of woodcutting is not clear.

The splitting of longer notes into shorter ones

Most breves are divided into two separate semibreves (which are only exceptionally tied) thus indicating the restriking of long notes. However, even when the text has two syllables on two distinct minims, in the intabulation these are occasionally adapted to a semibreve.³⁷ Thus shorter note values might be grouped together into one note, whilst longer note values are divided and restruck.

The length of a *casella*

In accordance with Diruta's instructions, lines are drawn after two semibreves, thereby establishing regular *caselle* or 'measures' of a breve. Only final notes are invariably *longae*, which results in irregular last measures. In *tempus perfectum* the *caselle* follow the accentuation pattern of the triple rhythm, but as in *tempus imperfectum*, not necessarily that of the text.³⁸

The use of dots and ties

Flats and sharps are indicated by dots, which are placed either above or below the note in question. In instances where there is limited space, the dot may be placed behind the note. With only a very few exceptions our modern dotted notes are indicated either as colored notes without stems (usually a *color minor*), or as equal notes complying to the old rule '*similis ante similem perfecta*'. One of the few exceptions employing a tie can be seen in Fig. 2, m. 1. Alternatively, in the event that such notes cross the bar line, or if the following note is not half the value of the initial one, ties are printed. In one exceptional example (*Animoso mio desire*, fol. 20^r) dots are used both to indicate the accidentals and the lengthening by half of the note. This occurs in one of two pieces in ternary time.

The vertical alignment

In general, the alignment presents a significant challenge to those accustomed to reading modern editions (see Fig. 3).

37 For a detailed discussion of the relationship between text and the accentuation patterns see Fabio Antonio Falcone, 'On the Performance Practice of Andrea Antico's *Frottole intabulate da sonare organi, libro primo* (Rome, 1517)', in: '*Universum rei harmonicae concentum absolvunt*': *The Harpsichord in the Sixteenth Century*, ed. Augusta Campagne and Markus Grassl (Vienna, 2024), 112–35, <<https://dx.doi.org/10.21939/harpsichord-16c-07>> (accessed on 30 July 2024).

38 Ibid.



Fig. 3: Andrea Antico, ‘Che debbio fare B[artolomeo]. T[romboncino].’ *Frottole intabulate da sonare organi libro primo* (Rome, 1517), fol. 12^r. Collection of the National Museum of the Czech Republic, National Museum Library, Nostic gg 19.



Ex. 1: 'Che debbio far B[artolomeo]. T[romboncino].' Score of the choir-book version from *Frottole libro septimo* (Venice: Ottavio Petrucci, 1507), fol. 13^v–14^r (RISM 1507³) and the intabulation from *Frottole intabulate da sonare organi libro primo* (Rome, 1517), fol. 12^r (see Fig. 3).

Ex. 1 shows the choir-book version from Petrucci's *Frottole libro septimo*³⁹ of 'Che debbio far che mi consigli amore' in comparison with the transcription of Antico's intabulation (see Fig. 3).⁴⁰ By colour-coding the parts (cantus: magenta, altus: orange, tenor: blue, and bassus: red) I have attempted to show the formation of the various *sequente* or tablature voices that emerge when transcribing and adapting this piece for a keyboard instrument. Some notes are omitted, some ornamentation added, and an initial chord highlights a vertical texture. The final chord (not shown) is thicker, with six notes. Despite the considerable amount of ornamentation, it becomes evident that these 'new' tablature voices are derived from the four vocal parts primarily as a result of the crossing of the parts. Although most stems are in the 'correct' direction (upward for top parts in each staff and downward for the lower parts) several exceptions can be noted (mm. 7–8). No double stems occur and, typically, the upper part is given precedence in the direction of the stem. Both 'fictitious' rests to show part-writing and 'mechanical' rests (m. 7) can be observed.

39 *Frottole libro septimo* (Venice: Ottavio Petrucci, 1507), <<https://mdz-nbn-resolving.de/de-tails:bsb00082313>> (accessed on 30 July 2024).

40 In the transcription, care has been taken to remain as close to the original as possible regarding the division of notes over the hands, as well as the note values, stem directions, rests, dots and ties. Due to technical limitations, it was not possible to replicate the original note values as documented in the partbook version. Consequently, the parts contain a multitude of ties that are not present in the source material. Notable adaptations of the notational aspects are indicated in red. For obvious reasons the alignment has been modernised.

The intabulator was not especially meticulous: this frottola, originally in *cantus mollis*, appears in *cantus durus* with quite a few accidentals omitted. Occasional awkward hand divisions pose challenges for performers.

It should be noted that, although a system as described by Diruta seems to be the basis for this initial publication, there are more exceptions (and mistakes) than in any of the later editions.

MARC'ANTONIO CAVAZZONI

The second extant print is the *Recerchari motetti canzoni [...] libro primo* by Marc'Antonio Cavazzoni or Marcoantonio da Bologna (c. 1490–c. 1560) as indicated on the title page. Whereas Antico employed existing compositions by other composers (primarily Marchetto Cara and Bartolomeo Tromboncino), Cavazzoni, as Cristina Cassia has observed, takes ownership of the compositions, presenting himself as the composer. Furthermore he played an active role in the publication of the print, signing the dedication and acquiring the privileges himself.⁴¹ This print uses a double impression process with movable type: one for the staves and one for the notes, a demanding process to print correctly. The printer, Bernardino Vercellense (Bernardino Viani, fl. 1501–1543)⁴² is otherwise not known for printing music, and as yet there is no evidence to suggest that the types were used elsewhere.

This publication is the first to contain original works for keyboard, not merely arrangements of vocal pieces. The collection contains two free ricercares, two hymns and four chansons. Although some of the compositions are titled chanson, they are not strict arrangements for keyboard, but rather what John Ward calls paraphrase-parodies,⁴³ created by using material from the chanson to construct a new composition.⁴⁴ A noteworthy feature of this print is its deviation from a regular number of parts, which can vary from two to six. These form chords that are autonomous entities.

41 Cristina Cassia, 'Authorship in Sixteenth-Century Italian Printed Keyboard Music', in: *Studies on Authorship in Historical Keyboard Music*, ed. Andrew Wooley (Abingdon/New York, 2024), 32–56, at 33–4.

42 <<https://edit16.iccu.sbn.it/editore/CNCT000442>> (accessed on 2 Sept. 2024). He was known for printing theological and philosophical works.

43 John Ward, 'The Use of Borrowed Material in Sixteenth-Century Instrumental Music', in: *JAMS* 5 (1952), 88–98.

44 See Martin Picker, 'A Josquin Parody by Marco Antonio Cavazzoni', in: *TVNM* 22 (1972), No. 3, 157–9. Picker shows that *Plus.ne regres* is based on material from the famous five-part chanson by Josquin *Plusieurs regretz* (see Josquin Desprez, *Secular works for five voices*, NJE 29.21, ed. Patrick Macey [Utrecht, 2017]). The other chansons have not been identified. For an in depth comparison of these pieces see Chisolm, 'The Mechanization' (see n. 7), 27–38.

The division of parts over the hands

Whereas in the Antico print there are certain instances where the notes need to be played by the hand of the other staff, in the Cavazzoni 1523 publication this is not the case. In general, each staff has six lines; however, this may be expanded to eight lines if necessary (see Fig. 4). In consideration of the fact that the music is purely instrumental, the full range of the keyboard (C to f^3) is employed, which frequently necessitates clef changes. There is a large variety of the number of notes being played simultaneously and finals are always full.

Stem direction

All stem directions of the highest notes on each staff point upwards and of the lowest part downwards, if there is more than one note on the staff. Notes in between, in chords, can have stems in either direction. Stem directions do not provide any extra polyphonic information.

The use of rests

In addition to some 'fictitious' rests, there are also some instances of 'mechanical' (see Fig. 4, m. 3, where the d' in the right hand needs to be raised for the same note in the left).

The splitting of longer notes into shorter ones

As we cannot compare any of the music from this print to other sources, the only conclusion that can be drawn is that the use of breves and semibreves is very precise (see Fig. 4 and in particular Fig. 5).

The length of a *casella*

The length of a *casella* is always two semibreves. The length of the *caselle* in the only triple time section in the 'O Stella Maris' fits the accentuation patterns.

The use of dots and ties

Dots are exclusively used for accidentals. In a highly limited number of instances a flat sign is employed to ensure that a note is not automatically interpreted as a *mi*, thus not necessitating an alteration of a sharp. Notes with dots of addition do not occur. Such notes are either notated as coloration (Fig. 4, m. 8) or with ties (Fig. 4, mm. 1, 2, 3 and 7).

The vertical alignment

The vertical alignment is exemplary, demonstrating that if and when it is considered important, it is technically feasible to align the notes horizontally (see Fig. 2 and 3).

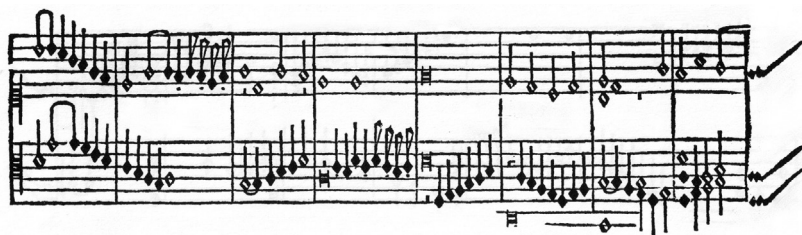


Fig. 4: Marcoantonio da Bologna, 'Recercare primo', *Recerchari motetti canzoni [...]* libro primo (Venezia, 1523), fol. [Aiii'].



Fig. 5: Marcoantonio da Bologna, 'Recercare primo', *Recerchari motetti canzoni [...]* libro primo (Venezia, 1523), fol. Aii'.

One striking aspect of this print is the difference between the hands in the variety of forms of ornamented *cantizans* cadences. As can be seen in Fig. 4 these ornamented cadences occur both in the right and left hands, but only very exceptionally in the bass. Ex. 2 shows one of the most common variants, of which there are several versions. For the right hand four types can be distinguished: with a minim and repeated crotchet, with a minim and a tied crotchet, with a dotted minim or with a *color*. For the left hand two types can be discerned: with a rest and with a tie. These occur over a *tenorizans* in the bass or, much less frequently, over a *bassizans*. In the majority of such cadences, the dissonance is tied in the right hand; however, in the left hand, the majority are notated with a rest. In general the 'tablature tenor' part has many more rests than the 'tablature cantus'.⁴⁵

⁴⁵ These kind of rest in the tablature tenor cannot be found in the other *intavolatura* prints, but in the Castel' Arquato Ms, fasc. 2, 3, they do appear sporadically. See Pritchard, 'Keyboard Thinking' (see n. 1), 198, Ex. 2.14 from the 'Jaches' *Missa de la domenica*; *Chirie*.



Ex. 2: Standard *cantizans* cadence figurations in the 1523 print

Although the version with a tie does also appear in the left hand, these instances mostly occur in what nowadays would be called sequences of descending circle of fifths. In the ‘*Recercare primo*’ for example such sequences occur where the *cantus* and *tenor* alternately have a *cantizans* (see Fig. 6). In general, there are many more rests, particularly in the ‘*tablature tenor*’ part in the left hand, also when this part is in a higher register (in the octave above *c*).⁴⁶



Fig. 6: Marcoantonio da Bologna, ‘*Recercare primo*’, *Recherchari motetti canzoni [...] libro primo* (Venezia, 1523), fol. B^r.

46 It would be possible to speculate that this is for the sake of clarity, but further practice-based research is needed.

As Chisholm has pointed out, many of the characteristics of intabulations that can also be found in early 17th-century intabulations are present in this print. These include on the one side the conflation of parts into one, on the other the addition of notes creating ‘Griffe’, the adding of ornaments and diminutions, the acceptance of parallel perfect intervals, and the obscuring of voice crossing.⁴⁷

In general, this print seems to be free of significant errors, indicating that it was produced with meticulous attention to detail and precision.⁴⁸ The instructions to lift fingers through the use of rests in *cantizans* cadences, particularly in the tablature tenor, illustrate that the printed material is meant to be used as a guide for performance. The varying number of parts (with chords of up to six parts, even in the hymns and canzonas) demonstrates an inherent verticalisation and chordal manner of thinking and playing, which can be observed alongside more imitative passages. This style is markedly distinct from the polyphonic vocal style at the time.

GIROLAMO CAVAZZONI

In 1542, almost 20 years after the publication of his father’s print, the young Girolamo Cavazzoni (c. 1525–after 1577) obtained a privilege to print his own keyboard works, the first of which was the *Intavolatura cioe recercari canzoni himni magnificati composti per Hieronimo de Marcantonio da Bologna detto Urbino libro primo*. In contrast to the two preceding prints which both bear the inscription *libro primo* on the title page, but lack any evidence of a *libro secondo*, Girolamo Cavazzoni’s *libro primo* is, in fact, followed by a second print: the *Intabulatura dorgano cioe misse himni magnificat composti per Hieronimo de Marcantonio da Bologna detto d’Urbino libro secondo*. The dedication of the *libro primo*, signed by Girolamo himself, is dated 1542, however, one of the two copies⁴⁹ in the Bologna library states that it was printed in 1543 by B.V. A reprint was published by Antonio Gardano in Venice probably after 1555. However, in the reprint the title is confusingly given as *libro primo: Di Hieronimo D’Urbino il primo libro de intabolatura d’organo dove si contiene tre messe ricercare da Antonio Gardano ristampato & da molti errori emendato*.⁵⁰

47 See Chisholm, ‘Keyboard Playing’ (see n. 7), 39.

48 In the critical notes of his modern edition most of the corrections Tamminga mentions are related to missing dots of alteration and missing ties and rests, all comprehensible additions, but personal choices. See Marco Antonio Cavazzoni, *Recerchari Motetti Canzoni Libro Primo* (Venezia 1523), *Recercada* (CastellArquato, II), ed. Liuwe Tamminga, Tastata 23 (Latina, 2009), xii–xv.

49 I-Bc S411. The title page and dedication are not included in the second copy I-Bc S002.

50 I-Bc S003 <http://www.bibliotecamusica.it/cmbm/viewschedatwbca.asp?path=/cmbm/images/ripro/gaspari/_S/S003/> (accessed on 2 Sept. 2024).

Whereas Marcantonio's *ricercare* from 1523 are characterised by free forms with passage work, the *Recercari* twenty years later are more strict polyphonic works with several sections and multiple *soggetti* or themes. Similar to Marcantonio's music, the number of parts is not always strictly the same. In general, it is possible to identify four parts, not always active at the same time, with some added notes at cadences (see Fig. 7). The two canzonas are once again loosely based on material from French chansons, but not intabulated versions. These are followed by hymns and magnificat settings for alternatim use. The *libro secondo*, which lacks both a date and the name of a printer, contains alternatim masses, hymns and magnificats. A comparison of the two books reveals similarities that suggest they were produced by the same printer in more or less the same period.

In contrast to his father's print, the two Girolamo prints appear to be less meticulously crafted and more oriented towards optimising the utilisation of the paper, an expensive commodity at the time. As noted by Gardano in his reprint, numerous mistakes needed to be corrected (*da molti errori emendato*), and the notation is frequently quite compressed. The dissimilarity of the types employed in the father's 1523 print and the son's prints, in addition to the aforementioned factors, lends credibility to the hypothesis that different printers were at work.⁵¹



Fig. 7: Girolamo Cavazzoni, 'Recercar IIII', *Intavolatura cioe recercari canzoni himni magnificat* (Venice, 1543), [D ii^v]. Museo internazionale e biblioteca della musica di Bologna S411.

The division of parts over the hands.

As in his father's print, the division of the hands over the staves follows the system described by Diruta more than sixty years later. However, it is possible to identify a

⁵¹ According to most modern research B.V. is probably Bernardino Vitali rather than Bernardino Vercellense, although Judd believed the latter was the printer, citing the similarities between Girolamo's double impression prints and that of his father. See Judd, 'The Use of Notational Formats' (see n. 11), App. A, 6; Claudio Sartori, 'Precisazioni bibliografiche sulle opera di Girolamo Cavazzoni', in: *RMI* 44 (1940), 359–66; Stanley Boorman, Art. 'Vitali, Bernardino', in: *Grove Music Online*, <<http://www.oxfordmusiconline.com/>> (accessed on 2 Sept. 2024). I would like to thank Jane Bernstein for kindly providing me with this information.

number of instances where exceptions are made for practical reasons. Once more, such instances appear to be exceptions that prove the rule, as they are also evident in music published in *Il Transilvano* as well as in manuscripts. Again the last chords are fuller and mostly consist of six notes, three in each hand.

Stem direction

When there is only one part per staff, the stems can be in either direction. As soon as a second part appears on the staff, the stems of the highest part will point upwards and the stems of the lowest downward.

The use of rests

In general, there are fewer instances of 'unnecessary' rest.

The splitting of longer notes into shorter ones

As with his father's music, it is not possible to make comparisons with other sources. However, the use of semibreves and breves, etc., whether tied or not, appears to be more haphazard than in the 1523 print.

The length of a *casella*

The length of a *casella* is variable, encompassing either two or three semibreves. As in the previous publications, the length of the *caselle* in *tempus perfectum* sections is consistent with the accentuation patterns.

The use of dots and ties

Dots are used to indicate accidentals. In the *libro primo*, they are employed exclusively for sharps (see Fig. 8, m. 7), whereas flats are indicated by a 'b'. In contrast to previous prints a flat at the beginning of each staff is used in certain compositions to indicate the presence of *cantus mollis*, thus requiring a reduced number of accidentals. In the second book, a sharp sign is also used as an alternative to dots (see Fig. 9, first system, m. 6). However, it is evident that dots of addition are also employed (see Fig. 8, second system, m. 1). While ties are always used across bar lines, there appears to be no discernible system governing the use of dots or the tying of notes of the same length, even if they occur within the same *soggetto* (see Fig. 8, first system, mm. 7 and 9). The same can be said of the selection of tied equal notes, such as the choice between two tied semibreves and a breve.

The vertical alignment

In comparison to the 1523 print, Girolamo Cavazzoni's prints demonstrate an attempt to incorporate a greater number of notes into a single system. This has negative consequences for the alignment (see Fig. 8).

Fig. 7 provides an example of what we now refer to as a *basso seguente* bass. The piece begins with two voices; a third enters in the next bar, followed by a fourth in bar four. At the cadence in bar seven, an additional note is added, and the piece ends with a six-part chord on the final. The inner voices shift between the hands, and the overall distribution of notes between the hands follows the conventions described by Diruta.



Fig. 8: Girolamo Cavazzoni, 'Credo cardinalis', *Intabulatura d'organo, cioe misse himni magnificat [...]* libro secondo (Venice, [154?]), fol. C^r. Museo internazionale e biblioteca della musica di Bologna, S411.

Fig. 8 shows the use of sharps as accidentals, and dots functioning both as accidentals and as dots of addition.



Fig. 9: Girolamo Cavazzoni, 'Missa Dominicalis Chirie primus', *Intabulatura d'organo, cioe misse himni magnificat [...]* libro secondo (Venice, [154?]), fol. D^r. Museo internazionale e biblioteca della musica di Bologna S411.

JACQUES BUUS

In 1549 Antonio Gardano published *Il secondo libro di recercari [...] da cantare, & sonare d'organo & altri stromenti* in partbook format.⁵² In the same year, Gardano also produced the *Intabolutura d'organo di recerari di M. Giaques Buus [...]* which included an ornamented intabulation of a *ricercar* from the partbook edition and three additional pieces. As Jane Bernstein has observed, this publication was the first *intavolatura*

⁵² The first book was brought out in 1547: *Recercari di M. Jacques Buus organista in Santo Marco di Venetia da cantare & sonare d'organo & altri stromenti nouamenti posti in luce. Libro primo. A quattro Voci* (Venice: Antonio Gardano, 1547). This edition, containing ten *recercari* was also printed in partbook format. <<https://stimmbuecher.digitale-sammlungen.de/view?id=bsb00071914>> (accessed on 30 Sept. 2024).

d'organo using movable type in single impression.⁵³ Buus (c. 1500–1565) dedicated the collection to his student, a young nobleman, Paolo di Hanna. In the dedication Buus asserts that he intabulated these *ricercares* for his student Hanna and subsequently had them printed because his friends persuaded him to do so.⁵⁴ This print is the first keyboard publication in Italy explicitly showcasing an exemplary adaptation of compositions originally published in partbook format. Compared to most other 16th-century keyboard music in print, these pieces are exceedingly long and complex, with several *soggetti* and a significant number of voice crossings.⁵⁵ Fig. 10 shows the beginning of the *Recercar primo*. In general the number of parts active in the partbook version is maintained, although in several cases notes are added.



Fig. 10: Jacques Buus, 'Recercar primo', *Intabolatura d'organo di recerari di M. Giaques Buus* (Venice, 1549), fol. Aii^r. Library of the Brussels Conservatories, B-Bc 26.671.

53 Jane Bernstein, *Print Culture and Music in Sixteenth-Century Venice* (New York, 2001), 65.

54 'Essendo io dalli preghi de molti amici stato astretto à dovere dare in luce I Ricercari in Tavolatura ad instantia vostra da me fatti'. Jacques Buus, *Intabolatura d'organo di recerari di M. Giaques Buus* (Venice: Antonio Gardano, 1549): opening of the dedication 'al molto Nobile, & Vertuoso Giovane M. Paolo di Hama'. This was a common topos at the time.

55 See for example Gordon Sutherland, 'The Ricercari of Jacques Buus', in: *MQ* 31 (1945), 448–63, and the preface to the modern edition, *Jacobus Buus Orgelwerke I. Intabolatura d'organo Venezia 1549 Quattro ricercari*, ed. Thomas Daniel Schlee (Vienna, 1980), and Filipe Mesquita de Oliveira, 'Some Aspects of P-Cug, MM 242: Antonio Carreira's Keyboard tentos and His *fantasias* and Their Close Relationship with Jacques Buus's *ricercari* from His *Libro primo*', in: *Interpreting Historical Keyboard Music*, ed. Andrew Wooley and John Kitchen (Abingdon, 2013), 7–18, at 8 and 13.

Ex. 3 shows a transcription of mm. 6–17 from the ‘Recercar primo’ (partly shown in facsimile in Fig. 10), together with the corresponding parts from the partbook publication in score.⁵⁶ In general, possibly due to the nature of the *ricercars*, the ornamentation is less free and extensive than in the Antico print. It would seem that the diminutions added in the Buus *ricercars* bear a resemblance to the *minute* added by Diruta in his *intavolatura diminuita* of the canzona ‘L’albergona’ by Antonio Mortaro.⁵⁷ Typically, only a single part is diminished. Although the example (Ex. 3, mm. 10–11) shows relatively few voice crossings, it is worth noting that the *ricercars* as a whole feature numerous instances of this technique. Felipe Oliveira de Mesquita has shown that in the *Libro primo* (1547) up to 36% of the bars have voice crossings.⁵⁸ In Ex. 3 the differences, mainly tablature voices, have been highlighted in red.

56 Aside from *intavolatura*, the only other tablature system used in Italy was that developed by Antonio Valente, a blind organist active in Naples. His system numbered the keys from bottom to top rather than employing mensural notation. As in lute tablature, only the fastest rhythmic value is explicitly notated. In the case of the Buus publication, the Brussels copy presents an especially intriguing example where someone attempted to translate one notational system into another (see Fig. 10).

57 Diruta, *Seconda parte* (see n. 5), 18–21.

58 See Mesquita de Oliveira, ‘Some Aspects’ (see n. 55), 12.

Ex. 3: Jacques Buus, 'Recercar primo': comparison of the partbook version and the *intavolatura*, mm. 6–17.

The division of parts over the hands

In general the conventions as set out by Diruta are adhered to strictly.

Stem direction

The stem directions usually adhere to the conventions established by Diruta: the stems of the highest parts on a staff point upward, the lowest parts downward and there are no double stems. There is no system in place to show voice crossings when these occur (see for instance Ex. 2, m. 10.) This results in the generation of several tablature voices. The direction of the stem of the new entry of a part after a rest is prioritised over the part that was already there (see Fig. 10, first system, m. 3).

The use of rests

The pieces are characterised by a strict contrapuntal imitative style, which gives rise to a greater number of 'fictitious' rests than is the case in the previous prints. This can lead to a rest creating a 'fifth part' to highlight the entry of a theme in a specific part or to indicate that the part moves from one hand to the other (see Fig. 9, second system, m. 3, and Ex. 2, m. 8). In other measures, however, this was not deemed necessary (see Ex. 2 the altus entry at m. 7 or in m. 12 where tenor and altus move from one hand to the other). Additionally, the incorporation of 'mechanical' rests can be observed when appropriate (see Ex. 2, m. 13). Although these 'fictitious' and 'mechanical' rests seem to be common practice, there are numerous places where these are not added.

The splitting of longer notes into shorter ones

In general the longer note values of the partbook version are transcribed literally, with minims and semibreves, unless there is ornamentation. In a few cases semibreves are divided into two minims (see m. 14), or even a minim and two crotchets (see mm. 13–14) or a dotted minim with a crotchet.

The length of a *casella*

The typical length of a *casella* is usually two semibreves, although there are *caselle* where the length is one semibreve, and others of three. In sections in three, the accentuation patterns are reflected in the length of the *caselle*.

The use of dots

Gardano exclusively uses dots of addition. Accidentals are indicated by sharp signs and in *Recercar terzo* and *quarto*, which are notated in *cantus mollis*, also by flat signs.

The use of ties

With very few exceptions ties are used exclusively across bar-lines.

The vertical alignment

Although in many cases the alignment is not perfect but intelligible, in other cases it is not optimal for our modern eyes. This is usually the case when there is abundant ornamentation.

Conclusions

It can be concluded that the system of notation as described by Diruta, was already habitual around 1520.

- The music is divided between the two staves according to the respective hands, rather than according to the polyphonic parts. The Antico print appears to contain the greatest number of exceptions.
- The stem directions follow the position on the keyboard. There are never any double stems.
- Unnecessary rest are used in all prints, more so in the stricter polyphonic genres but never consistently. In Marc'Antonio Cavazzoni's print rest are used frequently in the tablature tenor on the left hand staff.
- In contrast to many later prints (with the exception of the first Gardano print for keyboard instruments, the Buus *recercari*), the *caselle* are consistently two semibreves long. The pieces or sections in ternary time are notated as such, unlike in the 1551 Gardano print of dances and many lute tablatures.⁵⁹
- In the earlier prints dots are exclusively used to indicate alteration. Coloration is employed for what we now refer to as 'dotted notes'. In the prints from the 1540's, the use of dots is primarily that of dots of addition. Accidentals indicate

59 See Vania Dal Maso article in this volume, which also points out the similarities between the dances for lute and the Gardano print.

alteration; if, however, there is a lack of space, dots of alteration are exceptionally used.

- In the overwhelming majority of cases, ties are principally used across bar lines. The earliest prints have very few ties within the bar. Later these are used for dotted rhythms and, on occasion, to join two notes of equal length, again never consistently.
- With the exception of Marc'Antonio Cavazzoni's print, the question of alignment, although it might have been perceived as the ideal, does not appear to have been given the highest priority.

The five prints examined are diverse, with different genres of music and different degrees of precision in their notation. Even in the most skilful and rigorous polyphonic compositions, such as the *recercari* by Buus and the masses by Girolamo Cavazzoni, there is a notable absence of methods to explicitly delineate the individual part-writing. All the conventions to indicate the individual part-writing used today, such as using double-stemmed noteheads, keeping the stems in the direction of the parts (that is: cantus and tenor always pointing upward and altus and bassus downward) or the addition of dotted lines to indicate the crossings of the parts, were not in use at the time in question. Although certain conventions, such as the use of fictitious rests,⁶⁰ can facilitate more clarity, and aid in identifying the underlying polyphony, these were not consistently employed. When they were used, they were primarily employed to highlight the entries of a *soggetto*.

Keyboard music in the early modern period was conceived as an interplay between linear counterpoint and vertical sonority. Depending on the genre of a composition, emphasis could lean more towards verticality – as in Marc'Antonio Cavazzoni's *recercari* and in dances – or more towards horizontal polyphony, as in stricter imitative *recercari*. As Tagliavini observed: chords were often not merely the incidental result of the simultaneous sounding of parts, but autonomous sonorities with structural significance. *Intavolatura* functioned as a *Griffsschrift* – a tactile notation system that could even specify finger-lifting to avoid interference between the hands. It offers not just a way of notating music, but a way of embodying it – *intavolatura* was a durable system that could adapt to stylistic evolution while retaining its deeply physical, keyboard-centric orientation. Keeping the separate parts clearly distinct or notating these parts as well-aligned chords was not always the first priority.

Although stylistic and compositional conventions may have evolved over time, the notational habits appear to have remained relatively consistent from the early 16th to the early 17th century. It seems reasonable to assume that, while the printing of

60 Other signs to indicate exact part writing, such as for example *custos*, can be seen in the Attaignant prints, English Virginalist notation and the Layolle manuscript. See Pritchard, 'Hacking the System' (see n. 1).

keyboard music was a radically new phenomenon in 1517, the method of intabulating as described by Diruta in 1609 must have been well established by the beginning of the 16th century.

Intavolatura was not merely a practical tool – it functioned as a musical lens, shaping how performers conceived, internalized, and realized music. When compositions originally written in separate parts were adapted for keyboard, their structural character could shift in transmission, with increased emphasis on vertical sonorities. Chords – no longer incidental byproducts of contrapuntal interaction – emerged as discrete musical units. This conceptual reorientation laid the groundwork for later shorthand systems such as short scores and basso continuo.

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