

Systematisch-methodische Implikationen der Kontrapunktlehre

Contrapuntal Thinking

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In this study I investigate contrapuntal thinking, a thread that has run through all Western music since the tenth century. First, I distinguish “chordal” counterpoint from what is sometimes called “polymorphous” counterpoint, which is much richer in compositional possibilities. My examples include a Medieval *clausula*, a Renaissance motet, a Bach chorale prelude, a Mozart symphony, a Brahms intermezzo, and Schoenberg’s *Verklärte Nacht*; further examples are drawn from the *Musica Enchiriadis* and Anonymus II. Although contrapuntal music exists in non-literate cultures, many important aspects of polymorphous counterpoint can be traced to the development of its visual representation in musical notation. Finally, I offer various reasons that counterpoint should continue to be taught.

In dieser Studie untersuche ich kontrapunktisches Denken, wie es sich seit dem zehnten Jahrhundert durch die gesamte westliche Musik zieht. Zunächst unterscheide ich den ›akkordischen‹ vom mitunter so bezeichneten ›polymorphen‹ Kontrapunkt, welcher weitaus reichere kompositorische Möglichkeiten bietet. Als Beispiele führe ich eine mittelalterliche Klausel, eine Renaissance-Motette, ein Bach’sches Choralvorspiel, eine Mozart-Sinfonie, ein Intermezzo von Brahms sowie Schönbergs *Verklärte Nacht* an; weitere Exempla stammen aus der *Musica Enchiriadis* und von Anonymus II. Obwohl es auch in nicht-literarischen Kulturen kontrapunktische Musik gibt, lassen sich zentrale Aspekte des polymorphen Kontrapunkts auf die Entwicklung seiner visuellen Darstellung in der Musiknotation zurückführen. Abschließend nenne ich eine Reihe von Gründen, weshalb nach wie vor Kontrapunkt unterrichtet werden sollte.

Introduction

I was delighted to participate in this conference, with its amusing title, because the place of counterpoint in the university curriculum has been on my mind in recent years.¹ In my own musical education (1965–1970), the staples of the theory diet were harmony and counterpoint; but lately, in North America at least, counterpoint is on the wane. An emblem of this decline is the recent *Norton Guide to Teaching Music Theory*, in which

1 This talk was delivered at the eighteenth annual meeting of the GMTH (Friday, October 5, 2018), whose theme was “Counterpoint – stuck in the past or indispensable? Continuity and change in a compositional discipline” (*Kontrapunkt – ewiggestrig oder unerlässlich? Kontinuitäten und Wandlungen einer kompositorischen Disziplin*). Thanks to the many colleagues who contributed to sharpening the ideas in this paper: Evan Campbell, William Caplin, Suzannah Clark, Julie Cumming, Jennifer Iverson, Edward Klorman, Fabrice Marandola, Zachary Milliman, Elise Moser, Christoph Neidhöfer, Jason Noble, Brenda Ravenscroft, Derek Remeš, Steven Rings, Ayrton Zadra, Anna Zayaruznaya, and Lawrence Zbikowski. Special thanks to Severine Neff.

only one of 23 chapters is dedicated to counterpoint teaching, and of the remaining 22, only three even mention it.² This means that contrapuntal thinking is at risk.

Counterpoint can of course take many forms, and by “contrapuntal thinking” I specifically mean treating melodic fragments as objects to be moved this way and that in an imaginary space. This process resembles what is generally called “learned” counterpoint, (which includes melodic inversion, retrograde, canon, stretto, invertible counterpoint, etc.), and for the purposes of this article I will call all these techniques “polymorphous counterpoint.”

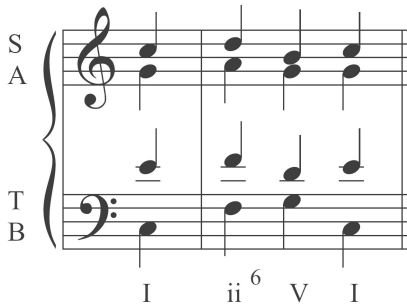
In the following pages I argue that contrapuntal thinking is a thread that has run through all Western music since the tenth century. First, I distinguish what I call polymorphous counterpoint from chordally conceived counterpoint (using examples from Nadia Boulanger and Mozart); then I will show some examples of the effect of polymorphous counterpoint on harmony (using examples from Bach, Brahms, and Schoenberg); then I argue that although counterpoint exists in non-literate cultures, many important contrapuntal techniques seem to be direct products of musical notation; and finally, that it is indispensable for understanding the music of the past, and that it should continue be taught both for the particular mental skills it develops and for helping us appreciate much recent music. My rather breezy trans-historical survey is meant to stimulate reflection on contrapuntal thinking and its place in our musical lives.

Chordally Conceived Counterpoint v. Polymorphous Counterpoint

At its most basic, contrapuntal thinking is a matter of attending to combinations of lines. It can be contrasted with harmonic thinking by grouping the 16 notes in Example 1a into four horizontals of four notes instead of four verticals of four notes. Nadia Boulanger taught her students to appreciate the four horizontal lines by first asking them to memorize the progression (playing it at the piano in different keys), and then singing the four lines *seriatim* as shown in Example 1b. If four people sing these four lines in canon after four beats, the chord progression emerges. I was very excited, as a student, to experience this linearization of the chord progression, in which the four lines are rotated in invertible counterpoint at the octave.³

² Lumsden and Swinkin 2018.

³ The author studied with Nadia Boulanger 1967–69.



Example 1a: Boulanger's progression



Example 1b: The four voices strung out into a melody to be sung as a canon after four beats

This type of counterpoint is quite rudimentary because of the many limitations that apply to chord progressions. The notes in the melodies are always in the same relationship: for instance, *a* always sounds with *f*, *b* with *g*, etc., and the *ii*⁶ chord always precedes the *V* chord, never the reverse. Joachim Burmeister is the first author I know of who recommended that if you want to compose a canon, first compose a chord progression (he calls it a *harmoniola*) and then pull it apart as Boulanger did.⁴ Rameau also counsels this method for composing a canon at the unison.⁵

The last movement of Mozart's Jupiter Symphony, K. 551 is celebrated for its contrapuntal complexity (see Ex. 2). Here the principal themes have much more individual character than the lines in Boulanger's progression: they contrast with each other in terms of rhythm, contour, and embellishment. The coda traditionally gets the most praise, for here all five themes are sounded together, rotating systematically in invertible counterpoint at the octave.⁶

However, Mozart's passage is as rudimentary as Boulanger's progression because it is chordally conceived. The five melodies are all the same length⁷ and always appear in the same relationships. In Example 2, the four-measure progression is *I vi ii*⁷ *V*⁷

4 Burmeister 1993, 189–95.

5 Rameau 1967, 359–60.

6 A diagram of these permutations appears in Ratner 1970, 361, and is reprinted in Sisman 1993, 45. See also Atkinson 2016.

7 Except for one that begins with a half-note upbeat, which makes a kind of tonal answer, moving from the root of the final C chord of one progression to the third of the initial G chord of the next, and then from the root of the final G chord of that progression to the third of the initial C chord of the next.

I, with chords appearing in different inversions as the themes rotate. In this coda Mozart was creating a climactic, “summative” passage in which earlier themes are combined. Because the progression is repeated in alternating keys of C major and G major, it gives the coda an appropriate tonic-dominant alternation. This coda consists of the kind of counterpoint Theodor W. Adorno (1949) complained about in Romantic music: “[...] counterpoint [...] became a kind of bonus in homophonic composition. There, counterpoint is restricted either to the external combination of homophonically conceived themes or to the merely decorative embellishment of harmonic ‘chorale’ with trumped-up voices.”⁸

Example 2: The five themes as they are combined in the coda (After Ratner 1980 and Sisman 1993, 45)

The term polymorphous, first used in relation to canons that can be solved in more than one way, has been traced by Denis Collins to Athanasius Kircher.⁹ Robert Gauldin

8 Adorno 2009, 44. Arnold Schoenberg sketched a distinction between an “independent voice” and “a dependent voice,” that “would have only the task and aim of completing the harmony” (1994, 67). Florian Edler has drawn attention to ways in which harmony infected 19th-century counterpoint pedagogy in the case of Cherubini. (Edler 2016, 16–17).

9 Collins 1992, 215–24. Other authors who use the term ‘polymorphous’ include Ebenezer Prout, in *Double Counterpoint and Canon* (New York: G. Schirmer, 1881), p.450 and J. Frederick Bridge, in *Double Counterpoint and Canon* (London: Novello, 1891), p. 92, both of whom show an example of a polymorphous canon by Stölzel that resembles the Mozart canon in Example 3. Sergei Taneyev uses the term to mean recombining at every possible pitch interval, in *Convertible Counterpoint in the Strict Style*, translated by G. Ackley Brower (Boston: B. Humphries), page 122. My use of the

defines polymorphous canon as characterizing “those pieces whose dux may be realized in more than one way, or in other words, canons with *multiple* solutions.”¹⁰ Schoenberg uses the term in a similar way, comparing contrapuntal composition to “diophantine equations, where there are many solutions, many ways to bring together point and opposing point (polymorphous canon, polymorphous texture) [...]” adding that the “parts ought to be independent of each other even in their harmonic relationship. This means [...] that in sounding together they need not be related to a common harmony.”¹¹

My use of the term polymorphous here is not restricted to canonic procedures, however, but to a wider variety of ways of recombining melodies and countermelodies. From Carpenter and Neff I borrow the more general definition of Schoenberg’s contrapuntal “idea”: “in contrapuntal composition, the idea is all the possibilities for combination that obtain among the given voices.”¹² These possibilities include melodic inversion, inversion of parts at other intervals than the octave, time-shifting, changing the speed at which one melody moves against another, adding a known line to another known line (*contrapunto fugato*), etc.

Thus Mozart’s coda, whose lines are “related to a common harmony,” as Schoenberg said (see n.12) seems to me less contrapuntally interesting than some other moments earlier in the movement, where the melodies are sounded in different combinations. An example of such polymorphous counterpoint appears in a four-part stretto of theme 4 (m. 98–101, shown in Ex. 3). To accomplish this, Mozart had to fashion a melody that could sound against itself at the octave below, the octave above, and the fifth below after one half note; at the twelfth below after two half notes; and at the fifth below after three half notes. These five relationships are shown with diagonal lines in Example 3.

term ‘polymorphous’ perhaps better corresponds to the broader 17th-century term *artificioso*. Stoessel and Collins characterize canon, for Kircher, as ‘the epitome of the *artificioso* composition’ (2022, 179). Marpurg also uses the term (Marpurg ([1753] 2022, 146).

10 Gauldin 2019, 29. Gauldin also discusses the Jupiter symphony.

11 Schoenberg [1975] 1984, 291.

12 Schoenberg 1995, 18. See also Neff 2026.



Example 3: Mozart K. 551/IV, m. 98–101 (wind parts omitted)

The melodic intervals in Mozart’s theme 4 make possible a technique that John Milsom has dubbed “stretto fuga,” where the melodic intervals in the guide melody guarantee a correct outcome when the consequent imitates at specific time and pitch intervals.¹³ A Renaissance example of four-part stretto fuga, from a motet attributed to Josquin (Ex. 4),¹⁴ uses the same melodic intervals (third down, fourth up) as the beginning of Mozart’s theme.

Example 4: Josquin[?], *In illo tempore*, m. 61–68 (Jos1905, Josquin Research Project 2012)

¹³ Milsom 2005 and 2012.

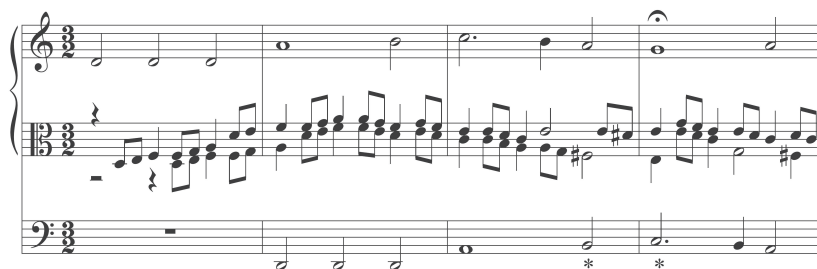
¹⁴ This piece has been recorded by VivaVoce on ATMA (Schubert 2014).

Mozart's coda does contain one instance of another kind of polymorphous counterpoint, consisting of multiple relationships between melodies. In this case it is the addition of a short repeating motive in one voice to a longer melody in another voice, a technique that resembles Renaissance *contrapunto fugato*.¹⁵ In the Jupiter finale it appears in the repetition of the six-note ascending scales (line 3 in Ex. 2) against the "cantus firmus" whole-note melody (line 1). To repeat the short melody against different segments of the longer theme exploits different vertical interval relationships. And, because melody 5 contains another fragment of melody 3, running in parallel thirds with the second half of melody 3, we have both time-shifting and transposition.

In sum, Mozart uses both polymorphous and chordal contrapuntal counterpoint in the finale, but the coda contains mostly the latter, which I jokingly call "impoverished counterpoint," limited to one set of relationships. In the following section, I will show three examples of multiple relationships that are the origin of otherwise mysterious harmonic progressions.

Polymorphous Counterpoint as the Generator of Harmony—Three Case Studies

Johann Sebastian Bach's organ prelude on the Easter chorale melody *Erschienen ist der Herrliche Tag* contains an unexpected progression in m. 3–4 (at the asterisks in Ex. 5). This progression could be plausibly interpreted as V-VI in E minor (or V/vi in G major resolving deceptively to IV). However, whatever the analysis, this progression is the result of the canon between the outer voices that produces a seventh on the last half-note beat of m. 3. In this half-note harmonic rhythm, Bach needs that dissonant interval to be part of a legitimate harmony, so the *b* and the *a* are made part of a dominant seventh chord. Johann Mattheson, speaking of contrapuntal artifices, said that "an assiduous organist no less than an ingenious composer can draw materials and inventions from [these artifices] for the rest of his life."¹⁶ Here, Bach draws a harmonic "invention" from the contrapuntal artifice of canon.



Example 5: Orgelbüchlein, BWV 629

¹⁵ Schubert 2020.

¹⁶ Mattheson 1987, III, Chapter 22 § 47, 427.

We know that Brahms was mildly obsessed with counterpoint, and in his music we find contrapuntal artifices even in pieces that at first seem chordal.¹⁷ In the intermezzo op.116 no.6, Brahms sounds a motive of two ascending semitones in m.1 (*b–b#–c#*) in the tenor (see Ex.6). This motive returns in the bass in m.2–3, transposed down an octave, and then back up an octave in m.7, shifted one quarter-note later. Here it is also combined with the same motive in the bass in its original metric position, but transposed to *d*. The strange harmony that this generates is the whole-tone chord on the second beat of m.7, with its augmented fifth. This chord could plausibly be analyzed as *V/C#* minor with a thirteenth in the bass. But whatever its analysis, its origin is time-shifting and transposition, operations that are repeated later.¹⁸

The image displays two systems of musical notation for Brahms' Intermezzo op. 116 no. 6. The first system is marked 'Andantino teneramente' and 'p dolce e ben legato'. It features a treble and bass staff with complex harmonic structures. The second system is marked 'sost' and 'p', showing a continuation of the harmonic complexity with a whole-tone chord on the second beat. The notation includes various accidentals, ties, and dynamic markings.

Example 6: Brahms intermezzo op.116 no. 6

Arnold Schoenberg considered himself a direct descendant of Bach and Brahms. Writing of the composition of *Verklaerte Nacht*, he singled out one passage, shown in Example 7. He said he had been trying to write “a complicated contrapuntal combination: a leitmotiv and its inversion played simultaneously. [...] The technical labor which required so much time was in adding such subordinate voices as would soften the harsh frictions of this combination.”¹⁹ I have elsewhere analyzed these chords as a series of vagrant chords built around an omnibus-like progression, but, whatever they are, Schoenberg’s account clearly states that harmony was generated from a contrapuntal

17 For some excellent examples and discussion of such “submerged artifice,” see Rings 2012.

18 Another example of this chord is found in Brahms’s *Waldesnacht* (op. 62 no. 3, m. 11 and 22) albeit generated differently. See Schubert 2018 for more on counterpoint in this intermezzo.

19 Schoenberg 1975, 55–56.

idea (the leitmotiv appears in the first violin, the inversion in the first viola).²⁰ Schoenberg's "harsh friction" reminds us of Bach's *b-a* seventh in Example 5; both are made acceptable by the harmony of the added ancillary parts.

Example 7: Schoenberg *Verklärte Nacht*, m. 165 (*H* + 5)

Is Polymorphous Counterpoint an Affordance of Notation?

It is tempting to believe that some of the techniques that characterize polymorphous counterpoint are the result of musical notation.²¹ To investigate this hypothesis, we could look at polyphony in societies that do not have notation. A chapter of *Musiques: Une Encyclopédie Pour Le XXIe Siècle*, called a "Typology of Polyphonic Techniques," enumerates eight polyphonic procedures and gives examples from all over the world.²² Regarding counterpoint, the authors say "Until the second half of the twentieth century, the prevailing idea was that counterpoint was the province of learned Western music.

²⁰ Schubert 1993.

²¹ Anna Maria Busse Berger (2009, 25–26) argues that even improvised counterpoint in the fifteenth century was dependent on notation and visualization.

²² Baroni *et al.* 2003–2007.

However, since then, the work of ethnomusicologists has revealed the pervasiveness of counterpoint in much music from oral traditions.”²³ The chapter continues: “One of the populations whose counterpoint is the best known today is that of the Aka Pygmies of Central Africa.”²⁴ Numerous studies, transcriptions and recordings are available of this fascinating, complex and beautiful music, for which ethnomusicologists have used terms such as counterpoint, canon, *Stimmtausch* (voice exchange) and hocket to describe the behavior of the parts.²⁵

In Western counterpoint, vertical sonorities are identified, classified by size and quality, categorized by type (consonance, dissonance) and subtype (perfect, imperfect), and sounded in distinct, conventionalized successions. In these successions, vertical intervals are used as vocabulary elements to which structural functions have been assigned (e. g., phrases in fifteenth-century music must begin and end with perfect intervals and use imperfect intervals in the middle). As I have written elsewhere, “The evolution of Western music can be characterized in terms of a dialectic between acceptable vertical sonorities on the one hand (whether a perfect consonance in Notre Dame polyphony or Schoenberg’s famous ninth chord in last inversion), and acceptable melodic motions on the other.”²⁶ This dialectic is subject to the historically developing rules of voice leading.

I think nobody who has not seen spatial musical notation would ever “naturally” sing a tune in inversion or retrograde, invert the positions of two parts at the twelfth, or imitate in augmentation. Visual notation creates, from sound, a picture that looks like the visual representation of an object; the person looking at it can then imagine manipulating it, as an object, in space. These metaphorical manipulations are one source of polymorphous counterpoint. The representation of music is different from that of sounding speech, which also unfolds in time: when it is written, speech always proceeds in one direction on one axis, whether from top to bottom, left to right, etc. For music, a two-dimensional visual representation had to be invented, in order to precisely identify vertical intervals and the voice leading motions that connect them. This new notation combines the horizontal time axis (X) with a vertical pitch axis (Y).

We first encounter a notation that maps time and pitch onto this sort of Cartesian space in *Musica Enchiriadis* (ME). Raymond Erickson writes: “the melodies represented by this notation [...] in the *Enchiriadis* treatises are among the oldest examples of melo-

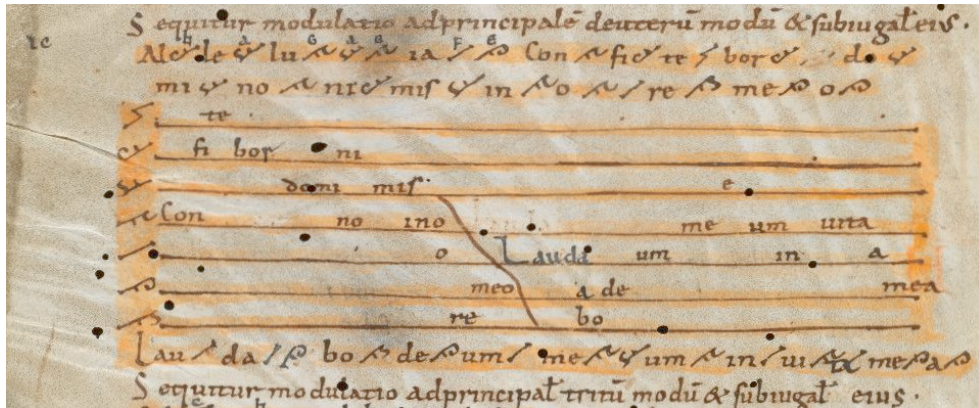
23 “Jusque dans la seconde moitié du XXe siècle prévalait l’idée selon laquelle ce procédé serait l’apanage de la musique savant occidentale. Or, depuis, les travaux des ethnomusicologues ont révélé la prégnance du contrepoint dans bien des musiques de tradition orale” (Arom et al, 2007, 1095).

24 “L’une des populations dont le contrepoint est aujourd’hui le mieux connu est celle des Pygmées aka de Centrafrique” (Arom et al, 2007, 1096). The words “pygmy” and “bushmen” are applied by many ethnomusicologists to several groups in Central Africa, and I use these terms only when quoting them. For a nuanced discussion of this naming issue see Bahuchet 1993 and a special issue of *Journal des Africanistes* 2012.

25 See for instance Turnbull and Chapman 1957, England 1967, Marandola 2000 and 2003, Grauer 2009, and Roeder 2019.

26 Schubert 2002, 528.

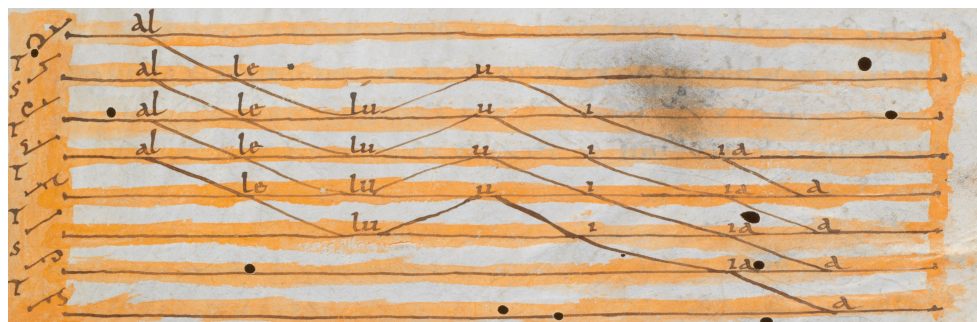
dies whose precise pitch content is known.”²⁷ Example 8 shows the representation of a melody where the successive syllables (“Laudate dominum de celis [...]”) unfold from left to right. In the Y-axis of the grid, adjacent diatonic notes are represented by Daseian symbols on the left, from which extend horizontal lines (representing strings), with the spaces between them representing diatonic intervals. These spaces conveniently accommodate the syllable sung to the note on the space above the string.



Example 8: License: CC-BY-NC – Einsiedeln, Stiftsbibliothek, Codex 79 (522), p. 7 – Musica enchiriadis (<http://www.e-codices.ch/en/sbe/0079/7>)

One of the first examples in the treatise shows a short melody transposed to four successive locations on the diatonic grid (Ex. 9). The diagonal lines between the syllables reinforce the idea of temporal succession and continuity. Each of these transpositions expresses a different mode, since the semitone falls in a different place in each. In Example 9 we see how the melodies all have the same shape in spite of being in different locations and having their semitones in different places. Graphic notation allows the singer to generalize a melody into unqualified steps and skips which can be placed in different locations in the diatonic arrangement and thus made to sound different in one respect yet be the same in another respect.

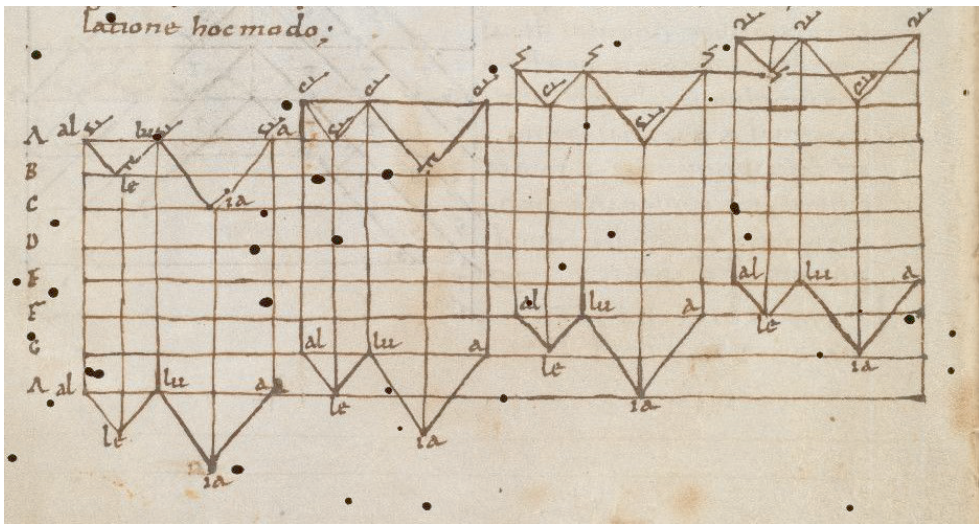
27 Erickson 2001, § 3.



Example 9: License: CC-BY-NC – Einsiedeln, Stiftsbibliothek, Codex 79(522), p. 6 – Musica enchiriadis (<http://www.e-codices.ch/en/sbe/0079/6>)

Although a student could be taught to read an unfamiliar tune using this notation, that was not the only purpose of *ME*. This graphic notation arose as a solution to the problem of teaching and understanding the earliest polyphony, parallel organum. Transposition is basic to the project of organum (*diaphonia*), since one must choose particular transpositions (fourth, fifth, octave, eleventh, etc.) for the added voice(s). This technique is well served by the bizarre *Enchiriadis* scale, which ensures that any melody lying above the finalis *d* can be sung in parallel perfect fifths both above and below, and that singers singing in parallel fifths will be singing in the same mode.

The new graphic layout makes it easy to grasp vertical distances and to conceptualize the motions of the parts. We might not appreciate how revolutionary this notation is, since it looks so much like the music notation we use, and the lines drawn between the notes that sound vertically and the notes that sound successively, making parallelograms, might seem unnecessary (Ex.10). But it must have been a challenge for people used to reading only neumes floating above a text to grasp vertical intervals and the geometry of voice leading.



Example 10: License: CC-BY-NC – Einsiedeln, Stiftsbibliothek, Codex 79 (522), p. 11 – Musica enchiriadis (<http://www.e-codices.ch/en/sbe/0079/11>)

The vertical lines in Example 10 are all exactly the same length (seven spaces for the seven diatonic intervals in the octave). When a middle voice is added between two voices an octave apart, the author takes pains to explain that “[...] the middle voice between the [outer] two is not at the same distance from both [...]”²⁸ We would not need to be told this; we already take for granted how the musical space between the extremities is filled in: we can place a fourth or a fifth, below or above, easily and immediately.

I propose a three-stage evolutionary scenario: 1. Although singers were surely able to improvise parallel organum, it was hard to conceptualize and teach how the different lines related to one another (i. e., how far from the principal voice the organal voice was, and where the semitones fell in the organal singer’s line); 2. *ME* notation was invented to make this conceptualization possible; 3. A perhaps unexpected by-product was the visualization of groups of sounds as shapes in space. This is what made some of the specific processes of future polymorphous counterpoint possible, because the shapes on the page can be interpreted as two-dimensional objects and moved about in space. Imagine I am writing Example 10 at a desk, and you approach me from the front: you will see a design on the paper that you and a colleague could sing, but you would start from your left (my right) and, beginning with an ascending third, you would sing the retrograde inversion of my line. If you sang your line from your right to your left, you would be singing the inversion of my line.²⁹ A parallel for this spatial/geometrical thinking is to be found in the Daseian symbols themselves, whose four basic shapes are shown in Example 11a.

²⁸ Erickson 1995, 17.

²⁹ A funny (but inaccurate) illustration of inverted notation is Victor Borge’s “William Tell” routine on YouTube.



D E F G

Example 11a: (after Holladay 1977)

These stand for the four notes in the tetrachord of finals. To obtain the notes in each of the other tetrachords, the author says “the *graves* are reversed *finales*... The *superiores* are *finales* turned around... The *excellentes* are *graves* turned around...”³⁰ (The third sign, *tritius*, is unique in each tetrachord.) “Reversed” can be taken as right-left retrograde,³¹ “turned around” as inversion, and the “graves turned around” as the inversion of the retrograde. The basic shapes of the signs reflect the tonal quality of the notes they represent, (e. g., the first note in each four-note group is *protus*, etc.), and the way they are rotated reflects the tetrachord it belongs to (i. e., its register). The operations performed on the symbols in the tetrachord of finals recall the rotations of the symbols in the Alypian instrumental notation of the ancient Greeks.³²

retrograde

original

inversion

retrograde inversion



graves

finales

superiores

excellentes

ultimi

Example 11b: (after Holladay 1977). Tetrachords are separated by short vertical lines; the two signs on the far right are “last” (ultimi) or “left over” (residui)

Musica Enchiriadis notation was replaced by our staff notation for several reasons.³³ The non-octaviating scale that results from the system of disjunct TST fourths is a disaster in practical application, since vertical perfect fourths are not assured (only fifths), and augmented octaves must be altered. In addition, the use of only lines (and not spaces) to represent notes is an inefficient use of space: as Nancy Phillips says, with graphic diastemy “the vertical space requirements would be cut in half.”³⁴ And the spacing in *ME* doesn’t allow for retaining neume shapes. The “path-dependent” change to staff notation made it possible for people to continue to read neumes, but at the same time to see the neumes themselves as physical objects in measured space, arranged into shapes that could be turned this way and that, combined, stretched out, etc.

30 Erickson 1995, 2.

31 The symbol is rotated on a vertical axis in the third dimension, or as seen if looking *through* the paper.

32 For a clear presentation of these symbols, see Hagel 2010, 13.

33 For a discussion of how ‘Guidonian’ the staff is, see Haines 2008.

34 Phillips 1987, 165.

Taking advantage of the affordances of staff notation began early, in the thirteenth century. Invertible counterpoint, for instance, is illustrated in Anonymous II. Example 12 is meant to show some counterpoints that can be made (improvised) against a tenor, in the middle line, that rises a step. The ones above are the same as the ones below, with the corresponding embellishments, but inverted at the twelfth.



Example 12: From Anonymi 2 (tractatus de discantu) as printed in Coussemaker, *Scriptorium de Musica Medii Aevi*. Vol. 1, p. 313

This arrangement in the treatise may have been designed to make it easier for the young singer to memorize possibilities for improvisation, but in fact invertible counterpoint is also a compositional resource. The following example is a *conductus* discussed by Yvonne Rokseth.³⁵

35 Rokseth 1933, 10–11.

13 a

13 b

13 c

Example 13: Transfretasse legitur, BN lat 15.139 ("St-Victor;" after Anderson 1988, 25–29). Example 13a shows m. 1–5; 13b m. 62–66; 13c m. 109–112

The first *cauda* (Ex. 13a) contains the original combination; in its second occurrence (Ex. 13b), the upper part has been moved down a fifth, acquiring a flat to maintain semitone positions, and the lower part has been transposed up an octave; in the third (Ex. 13c), the same procedure is followed (although it is missing the first two notes), so that both parts now have a flat.³⁶ We might have wondered about a G-*tetrardus* piece that ends in G-*protus*, but it all becomes clear when we see that this tonal shift comes about as a result of two contrapuntal procedures.³⁷

The first example we have of a melody retrograded is the famous *nusmido* clausula, which sounds the tenor notes of the melisma on the word *Dominus* backwards. Reading the tenor line of Example 14a (a *conductus* built on the normal version of the melody) from left to right, the notes are *d-c-c-a-c-rest-d-c-b-c*; reading Example 14b from right to left the tenor notes are the same. These last two examples show that, almost as soon as our modern notation was developed, musicians began to engage in the kind of contrapuntal activities that I am calling polymorphous.

36 Rokseth's version includes the missing measure so the three passages correspond completely.

37 For a seventeenth-century example of a similar multi-stage process using invertible counterpoint at the tenth, see Schubert 2002, 517.

14 a Clausula on "Dominus" (beginning)

14 b Clausula on "nus-mi-Do" (end)

The image displays two musical scores, labeled 14 a and 14 b, each consisting of a vocal line and a piano accompaniment. Score 14 a, titled 'Clausula on "Dominus" (beginning)', features a vocal line starting with a quarter rest followed by eighth and quarter notes, and a piano accompaniment of dotted half notes. Score 14 b, titled 'Clausula on "nus-mi-Do" (end)', features a vocal line with eighth and quarter notes and a piano accompaniment of dotted half notes, ending with a key signature change to one flat.

Example 14a–b: From the “Florence” manuscript (Magnus Liber Organi, 22, 28)

Conclusion: Historical Continuity and Pedagogy

The examples of polymorphous counterpoint in this study share two important features. First, most of them begin with only two voices. This is true of both “Transfretasse” and the passage in *Verklärte Nacht*. In the Renaissance, Spanish theorists Sancta Maria, Montanos, and Cerone were explicit about beginning to compose with a pair of voices, creating a combination that could be repeated and to which other voices were to be added.³⁸ Schoenberg says: “a basic configuration or combination taken asunder and reassembled in a different order contains everything which will later produce a different sound than of the original formulation.”³⁹ His focus on the “different sound” reminds us of Zarlino’s explanation for using double counterpoint in two parts: the parts are changed “in such a way that, when repeated, one hears something different from what was heard at first.”⁴⁰ Musical variation is a basic motivation behind polymorphous counterpoint.

Second, all polymorphous counterpoint is governed by the essential geometry that connects vertical and melodic intervals. The vertical intervals in any musical period are categorized and given acceptable formal functions (e.g., intermediate, final, etc.) and the melodic intervals are likewise categorized by acceptable types of motion (e.g., skip, step, etc.). Only the vocabulary of sounds and the rules of voice leading change through history. All music from 1250 to 1900 is built on this model. The composer

38 Schubert 2002, 519–23.

39 Schoenberg [1975] 1984, 397.

40 “[...] di maniera, che replicata si oda diverso contento da quello, che nelle istesse parti primiera-
mente si udiva.” Zarlino 1558, 229.

of “Transfretasse” had to reckon with this geometry, as did Mozart in making the stretto of theme 4, even though the syntax of vertical intervals and the conventions of voice leading are different for the two composers.

We can think of the composer as a watchmaker putting carefully crafted gears, levers, etc. into a beautifully working machine. To understand this machine, it is essential that we teach and study counterpoint. First-species counterpoint, so basic to music since the eleventh century, can be understood as a series of different quadrilaterals formed by Enchiriadis-type lines with parallel sides (for the vertical intervals).⁴¹ These parallelograms, rhombi, and trapezoids, clearly illustrate the four types of motion in two parts: parallel, contrary, similar and oblique.

If we gave up teaching counterpoint, our admiration for these intricate mechanisms and our understanding of the basic musical principles that link us to our past would be lost. It is essential not only if we hope to understand the music of the past, but for illuminating the complex layering of Stravinsky’s arrays, Wolfgang Rihm’s string quartets, and beats in hip-hop music. Without it, very close readings of scores, of the kind Yvonne Rokseth does with a *conductus* or the kind Steven Rings does with a Brahms intermezzo, would not be possible. Counterpoint is a useful old-school mental discipline (like geometry or anatomical drawing or Latin) for giving us a broader perspective and for sharpening our wits, and it is useful for learning to hear separate parts and to pay attention to details in two dimensions. But perhaps “useful” is not strong enough a word. As Nadia Boulanger used to say, “A thing is either inevitable or it is useless.” I believe contrapuntal thinking is inevitable.

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41 On the centrality of first species counterpoint, see Wegman 2014.

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