

TANEYEV'S THEORIES OF MOVEABLE COUNTERPOINT AND THE MUSIC OF J. S. BACH¹

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Bach's compositions have featured prominently in analytical writings about music since the eighteenth century. Scholars employing a very diverse range of approaches have found an inexhaustible wealth of material in Bach's oeuvre upon which to articulate theories—often impressively elaborate—about the inner workings of musical composition. This has been especially evident in relation to the technique of counterpoint, where leading researchers of every generation have addressed the complexities of Bach's compositional processes and identified how the musical structures emerge from a logical and sophisticated assembly and treatment of basic musical materials.² Notwithstanding the recognised achievements of Bach scholarship and its ongoing prominence in musicological discourse, it is possible to observe instances where insightful and profound interrogation of this composer's creative output have not fully resonated within the scholarly community. The present study reflects on one such instance from the intellectual

¹An earlier version of this study was presented at a symposium entitled “Bach Studies in Australia” held at the University of Melbourne in July 2014 to mark the visit to Australia by Christoph Wolff. I am grateful to Professor Wolff for his comments and suggestions following my presentation and also to Jason Stoessel who provided valuable feedback on an earlier written version of the present article.

²A small sample of contrasting approaches published in recent years includes Joel Lester, “Heightening Levels of Activity and J. S. Bach’s Parallel-Section Constructions,” in *Journal of the American Musicological Society* 54/1 (2001), 49–96; David Yearsley, *Bach and the Meanings of Counterpoint* (Cambridge: Cambridge University Press, 2002); David W. Beach, “Bach’s Partita No. 1 in Bb, BWV 825: Schenker’s Unpublished Sketches with Commentary and Alternative Readings,” in *Music Theory Spectrum* 30/1 (2008), 1–34; Mark Anson-Cartwright, “The Mutable Subject: Tonal and Rhythmic Transformations in Selected Fugues of J. S. Bach,” in *Journal of Music Theory* 58/1 (2014), 1–24.

history of late nineteenth- and early twentieth-century Russia where Bach's music was known not only to performers, teachers and audiences but was also harnessed by the leading theorist of the time, Sergei Ivanovich Taneyev (1856–1909), to elaborate upon his original and encyclopaedic theories of counterpoint. The value of drawing attention to this material at this time lies in not only witnessing the originality of Taneyev's formulations but also in pointing to potentially fruitful applications of his analytical methods to current scholarship on traditions of contrapuntal writing in which Bach was the finest exponent.

Taneyev was a composer, pedagogue and music theorist of considerable repute in his native Russia and neighbouring central and Eastern European countries. He was a student and friend of Tchaikovsky, whom he succeeded as professor of harmony and orchestration at the Moscow Conservatory.³ In 1885 Taneyev became Director of the Conservatory, but in 1889 he relinquished all his duties apart from teaching counterpoint. Among Taneyev's students were Rachmaninov, Glière, Scriabin and Sabaneyev. An accomplished composer, he left an opera, a cantata, four symphonies, and several string quartets, string quintets and songs. As a performer, he was soloist in the Russian premières of all Tchaikovsky's works for piano and orchestra, and he toured Russia with the violinist Leopold Auer. Although Taneyev's compositions have received increased attention in recent years by both performers and musicologists,⁴ his theoretical writings on compositional techniques are almost unknown to Western scholars. This is despite the

³For biographical details about Taneyev, see David Brown, "Sergey Ivanovich Taneyev," *Grove Music Online* <<http://oxfordmusiconline.com>> Last accessed: 2/12/2015. This article gives little attention to the scope and achievements of Taneyev's theoretical writings. Common variants in spelling Taneyev's name in the Latin alphabet are Taneev, Taneiev and Tane'ev. Likewise his first name is rendered also as Serge or Sergey. The other major theoretical work by Taneyev, published posthumously, was on the topic of canon; see Paul R. Grove, *Sergei Ivanovich Taneev's Doctrine of the Canon: A Translation and Commentary* (PhD diss., University of Arizona, 1999).

⁴For instance, see Anastasia Belina and Michael Ewans, "Taneyev's *Oresteia*," in *Ancient Drama and Music for the Modern Stage*, ed. Peter Brown and Suzana Ograjansék (Oxford: Oxford University Press, 2010), 258–84.

unbroken influence that his treatise on counterpoint has had on generations of music students in Russia and nearby countries.⁵

In 1909 Taneyev published his monumental *Moveable Counterpoint in the Strict Style*, an exhaustive study of Renaissance contrapuntal processes that elucidates fundamental principles for procedures that he terms vertical-shifting counterpoint and horizontal-shifting counterpoint.⁶ The former includes procedures known collectively in English-language texts as invertible counterpoint, while the latter refers to imitation of a subject at different time intervals.⁷ Although Taneyev treats each topic separately, he provides many examples where the two procedures are combined, giving rise to what he calls double-shifting counterpoint. Although Taneyev's work was praised in the highest terms by such distinguished figures as Stravinsky, Rachmaninov, Walter Piston and Sergei Koussevitsky,⁸ there are likely several reasons for the neglect of this treatise among Western readers. They range from a problematic translation into English, a hostile review by the influential mid-century American musicologist Gerald Abraham, limited interest in analytical methodologies for Renaissance counterpoint until recent years, and possibly also the

⁵A notable exception to this situation is a recently published brief overview of Taneyev's principles in Christopher Segall, "Sergei Taneyev's Vertical-Shifting Counterpoint: An Introduction," *Music Theory Online* 20/3, 2014 <<http://www.mtosmt.org/issues/mto14.20.3/mto14.20.3.segall.php>>. For older items of scholarship on Taneyev, see Ellon Carpenter, "The Contributions of Taneyev, Catoire, Conus, Garbusov, Mazel and Tiulin," in *Russian Theoretical Thought in Music*, ed. Gordon D. McQuere (Ann Arbor: UMI Research Press, 1983), 253–378 (esp. 253–73); Beverly Lewis Parker, "Direct Shifting and Mixed Shifting: Important Contrapuntal Techniques or Taneyev's Oddities?," in *South African Journal of Musicology* 1 (1987), 1–27. A short study on Taneyev but without any musical examples is Andreas Wehrmeyer, "Sergei Ivanovič Taneev's Theorie des 'bewegbaren' Kontrapunkts," in *Musiktheorie* 7 (1992), 71–79.

⁶*Podvizhnoy kontrapunkt strogogo pis'ma*, Moscow, 1909; transl. by G. A. Brower as Serge Ivanovitch Taneyev, *Convertible Counterpoint in the Strict Style* (Boston, Bruce Humphries, 1962); rep. Branden, 2007. Bruce Humphries rarely included music texts amongst its publications, while Segall notes that Brower had finished his translation in 1932, some 30 years before its publication ("Sergei Taneyev's Vertical-Shifting Counterpoint," note 6). Brower's curious choice of the word "convertible" instead of "moveable" has not been adopted by English-speaking scholars.

⁷In vertical-shifting counterpoint the term "shifting" refers to moving a part up or down in register by a predetermined interval, while in the case of horizontally-shifting counterpoint it indicates moving a part's time interval of entry closer or further away from another part.

⁸Koussevitsky wrote the Introduction to Brower's translation.

lack of well-placed Taneyev disciples in Western universities corresponding to those of his illustrious contemporaries Schenker and Schoenberg.⁹

In many ways Taneyev's work prefigures directions in recent music theory scholarship, in particular, the interest in identifying principles for generating derivative materials from an original model, such as we can see in studies of modular structures in Renaissance polyphony by Peter Schubert and others.¹⁰ Furthermore, it is possible to observe connections to Taneyev's work in the principles of transformations of interval spaces in studies of atonal repertoire by David Lewin and his many followers.¹¹ Taneyev makes clear from the outset that his text employs algebraic principles in order to state general rules about the entire range of possibilities with moveable counterpoint. Although nothing more than a basic acquaintance with algebraic operations is required, this aspect of the text may be unattractive to many potential readers, especially those working on modal or early tonal repertoires where mathematically-oriented presentations of research findings are rarely encountered. On the other hand, such basic mathematical manipulation is possibly not sophisticated enough to attract the attention of music theorists accustomed to the rigorous investigations of leading scholars such as Allen Forte and David Lewin. Given that Taneyev's treatise in English translation runs to 350 pages of algebraically-informed analytical material in quite small typeface, it is important that this aspect of his work be demystified for the different audiences for whom its methods may be very useful.

As its name suggests, *Moveable Counterpoint in the Strict Style* deals with modal repertoire. Taneyev drew his examples mostly from

⁹Gerald Abraham, review of Taneyev, Sergei, "Convertible Counterpoint in the Strict Style," in *The Musical Times* 107/1475 (1966), 38. For a thoughtful assessment of the reasons behind the lack of traction for Taneyev's theories among Western scholars, see Simon Desbruslais, "The Western Reception of Sergei Taneyev" in *Journal of the Russian Society for Theory of Music* 9/1 (2015), 7–18. I am grateful to Dr Desbruslais for sharing his article with me in advance of publication.

¹⁰Peter Schubert, "Hidden Forms in Palestrina's First Book of Four-Voice Motets," in *Journal of the American Musicological Society* 60/3 (2007), 483–556; Julie Cumming, "Composing Imitative Counterpoint Around a Cantus Firmus: Two Motets by Heinrich Isaac," in *Journal of Musicology* 28/3 (2011), 231–88.

¹¹Desbruslais, "Western Reception," offers perspectives on how the preoccupations of twentieth-century music theory did not include the work Taneyev.

Palestrina but also quoted from a wide range of late fifteenth- and sixteenth-century composers. Although his focus was on the great tradition of Renaissance polyphony, he claimed that his approach could be applied successfully to later repertoires, and he described many examples by eighteenth- and nineteenth-century composers. In this study, I focus on Taneyev's discussions of examples drawn from five works by J. S. Bach, particularly how these examples elucidate practical solutions to specific challenges involving moveable counterpoint and also how they provided Taneyev with opportunities for developing his theories into further abstract possibilities. All but one of the examples that Taneyev quotes from Bach's music demonstrate vertical-shifting counterpoint in three and four parts. These are clustered in a chapter dealing with three-part invertible counterpoint,¹² while the remaining example demonstrates horizontal-shifting counterpoint.¹³ The examples are drawn from Books I and II of the *Well-Tempered Clavier*, and, as is customary with Taneyev, only short extracts are quoted from any given work. Elucidation of Taneyev's treatment of these examples may be of considerable benefit to Bach scholarship because of the opportunity it affords for further theorizing on the compositional processes of this great master. Specifically, this is an important step towards addressing what may lie behind Bach's choice of one permutation of invertible counterpoint over another, a direction of research that has seldom been pursued to date (a question to which I will return below). In order to investigate Taneyev's treatment of the examples from Bach, it is necessary to first introduce features of his methodology and nomenclature.

Vertical-shifting Counterpoint—Basic Principles

All of the procedures described in *Moveable Counterpoint* fall under the heading of complex counterpoint. This refers to the composition of an original combination of voices from which one or more derivative combinations are possible.¹⁴ Taneyev also devotes a

¹²*Moveable Counterpoint*, part I, Division B, chapter 12, transl. Brower, 174–82, at 177–79 and 182.

¹³*Moveable Counterpoint*, part II, Division C, chapter 20, transl. Brower, 240–61, at 260.

¹⁴For further information on Taneyev's approach and nomenclature, see Segall, "Taneev's Vertical-Shifting Counterpoint," and Carpenter, "The Contributions of Taneev."

chapter to what he calls simple counterpoint, which reviews the fundamentals of consonance and dissonance treatment and voice leading, though the reader is expected to have had basic instruction in counterpoint before embarking on moveable counterpoint.¹⁵ Two-part counterpoint forms the basis of Taneyev's theoretical and pedagogical outlook, from which three- and four-part textures are extensions.¹⁶ In vertical-shifting and horizontal-shifting counterpoint, the original combination may comprise two non-imitative melodies or one subject treated imitatively.

As noted above, a key feature of Taneyev's methodology is his adoption of an algebraically-informed methodology. This facilitates his enumeration and description of universal principles applicable to all instances of moveable counterpoint and is thus a very powerful tool in the hands of such an original thinker about music. However, this approach is not without potential difficulties for the reader because Taneyev describes musical intervals in two different ways: in the prose text uses familiar terms such as second, fourth, etc., to refer to harmonic or melodic intervals. This usage is consistent with how intervals are named in the great majority of writings about music. In his mathematical presentations of material, however, Taneyev labels intervallic motion using cardinal numbers: 0 for unison, 1 for second, 2 for third, etc. It is possible that some readers may have difficulty switching back and forth between the two systems.¹⁷ Otherwise, readers will encounter no more than two mathematical operators, the plus and minus signs, and will require little more than a basic knowledge of algebraic principles of simple addition and subtraction in order to follow Taneyev's methodical and

¹⁵*Moveable Counterpoint*, Part I, Division A, chapter 4.

¹⁶Taneyev's focus on two-part counterpoint is of tremendous—one may even say prophetic—significance for recently articulated theories of dyadic counterpoint. For an overview of this topic, which unfortunately does not mention Taneyev, see Julie Cumming, "From Two-Part Framework to Movable Module," in *Medieval Music in Practice: Studies in Honor of Richard Crocker*, ed. Judith Peraino (American Institute of Musicology, 2013), 177–215.

¹⁷One may bear in mind that cardinal numbers are used extensively in analytical writings about atonal music, and also that the increasing numbers of scholars who are conversant with fundamentals of computer science will likewise be familiar with this aspect of number usage.

thorough development of his theories about moveable counterpoint.¹⁸

Another basic feature of Taneyev's approach is the use of plus and minus signs to indicate ascending or descending motion by an individual voices in a two-part texture. If the upper voice ascends, it is designated as a positive interval (e.g., 2 indicates an ascending third); if it descends, it is given a negative number (e.g., -3 for descending fourth). In the case of the lower voice, however, the opposite applies: 5, for example, indicates a descending sixth in this voice, while -7 refers to an ascending octave. Although this approach is logical and Taneyev applies it consistently, it does not necessarily correspond to conventions within mathematics whereby movement by parts in the same direction would be given the same signs.¹⁹

Example 1 presents an original combination of two voices followed by its derivative combination. The upper voice is labeled I, the lower voice II. The formula for the original combination is I+II. The next step is to calculate the index ("J") of vertical-shifting ("v") counterpoint. An index refers to the specific category of vertical-shifting counterpoint that is employed in a musical example. In his text, Taneyev considers twenty-three indices for moveable counterpoint at intervals from the second to the fourteenth. This goes far beyond the intervals for invertible counterpoint normally covered in most Western textbooks, namely, the octave, tenth and twelfth, and is a major component of Taneyev's original contribution to the history of counterpoint. The index of vertical-shifting counterpoint ("J_v") for the derivative combination of voices in Example 1 is calculated by adding together the intervals by which each voice is transposed (shifted) up or down between original and derivative combinations. Voice I moves down a second (-1) and voice II moves up a seventh (-6); adding these together according to

¹⁸The English translation is often awkward and unidiomatic and sometimes includes errors in the mathematical formulae. However, some of these errors are present in the original 1909 Russian version of the book, especially those found within the annotations to the musical examples. A comparison between the examples in the original Russian text and those found in Brower's translation reveals that the latter reproduces the original examples exactly, including layout and formatting.

¹⁹The implications of this observation are mostly relevant to working out formulae for examples in three or more parts. However, as we shall see below, this problem is circumvented in the case of the examples by Bach.

the formula for the original combination of voices yields $J_v = -7$, the index for vertical-shifting counterpoint at the octave. The symbol “J” refers to an index, while “v” specifies vertical-shifting of the parts.

Other features of vertical-shifting counterpoint need to be noted: an inverse shift occurs when voices exchange their relative positions above or below each other, as is the case in Example 1, while a direct shift results when the relative positions of the voices is maintained in the derivative version. When a musical example uses both direct and inverse shifts, Taneyev uses the term “mixed shift.” Therefore, Taneyev’s system of vertical-shifting counterpoint includes cases with or without registral exchange of the parts, and can therefore account for a very broad range of possible derivations from an original combination. As noted above, Taneyev considers twenty-three possibilities for vertical-shifting counterpoint in his text, though others are theoretically possible. Both Parker and Segall state that recognition of both direct and inverse shifts is a crucial step and vital for investigations of how composers manipulated contrapuntal textures.²⁰ They note that other theoretical attempts to provide systematic accounts of invertible counterpoint (or double counterpoint as it is sometimes also called) rarely mention direct shifts and focus almost exclusively on cases involving inverse shifts. While scholars have sometimes acknowledged the existence of both shifts, they have not fully explored its ramifications or cited Taneyev’s original insights.²¹

Example 1: Taneyev: Two-Part Vertical-Shifting Counterpoint at the octave (Brower, 50)

²⁰Segall, “Taneyev’s Vertical-Shifting Counterpoint,” paragraph [3]; Parker, “Direct Shifting and Mixed Shifting,” 8–11.

²¹Peter Schubert, “Hidden Forms,” comes closest to dealing with the issue in his discussion of different presentation types for imitative and non-imitative counterpoint.

Three-part Vertical-shifting Counterpoint

In the section on three-part vertical-shifting counterpoint Taneyev builds upon the foundation laid in examples for two parts.²² Notably, when three parts participate in the original combination, there can be up to six possible permutations (i.e., the original plus up to five derivative combinations). These are illustrated in Figure 1a where the Roman numerals on the left indicate the location of parts I, II and III (highest, middle and lowest) relative to each other in the original, and those on the right refer to their locations in the derivative. This can be abbreviated in a way convenient for insertion into annotated musical examples (see Figure 1b).

Figure 1: Taneyev's representations of three-part vertical-shifting counterpoint (Brower, p. 161).

Figure 1a)

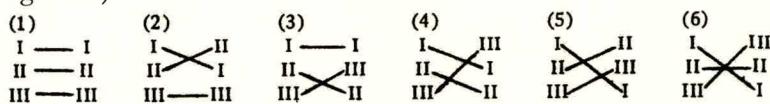
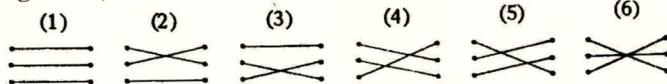


Figure 1b)



Importantly, each pair of voices must form correct counterpoint and obey the rules for its index within three-part vertical-shifting counterpoint. In other words, voices I and II follow the rules as described in the discussion of Example 1 above, and likewise, voices II and III and voices I and III. Furthermore, voice II will have both positive and negative signs. Because it functions as a lower voice to voice I but as an upper voice to voice III, it takes the opposite sign (plus or minus) when calculated against each of these two voices. For instance, when considering a combination involving voices I and II, voice II will take a plus sign if it descends and a minus sign if it

²²Taneyev modifies some of the rules for vertical-shifting indices in three-part counterpoint because the use of the intervals of the fourth and ninth is not as strict when writing for three parts as it is for two.

ascends. When considering voices II and III (i.e., voice II is now the higher voice in the combination), voice II will take a plus sign if it ascends and a minus sign if it descends. Taneyev summarizes all of this using an extension of the nomenclature that we have seen for two-part counterpoint. In Example 2, the index Jv' indicates the shift for voices I and II, the index Jv'' indicates the shift for voices II and III, and the sign $Jv\Sigma$ indicates both the index for voices I and III and also the sum of the other two indices.²³ The annotations to this example also include one of the symbols used in Figure 1b to illustrate the changes of register among the voices between the original and derivative combinations. Finally, brackets indicate how the fourth and eleventh (notated as 3 and 10 respectively) in the original combination invert to become a unison and octave in the derivative combination (0 and 7 respectively).

Example 2: Taneyev, Three-Part Vertical-Shifting Counterpoint (Brower, p. 166).

Original

Derivative

$\text{IIIv} = -7$

$\text{Iv} = -7$

$\text{IIv} = +/-4$

$(\text{Iv} = -7 + \text{IIv} = 4)$ $\text{Jv}' = -3$
 $(\text{IIv} = -4 + \text{IIIv} = -7)$ $\text{Jv}'' = -11$

$\text{Jv}\Sigma = -14$

Taneyev claimed that vertical-shifting at the twelfth was the most popular index in Renaissance polyphony.²⁴ This index is the most practical and versatile of the vertical-shifting indices because it has a relatively high number of consonant intervals in the original combination that invert to consonant intervals in the derivative. Taneyev introduced an example by Bach to support his claim that

²³This last operation follows basic mathematical principles and is useful for working out examples in three-part vertical-shifting counterpoint. Also, Taneyev uses the sign Σ in the conventional sense from algebra to indicate summation.

²⁴Taneyev, "Moveable Counterpoint," transl. Brower, 179.

this procedure was passed down by tradition to the era of free counterpoint, his term for counterpoint that is not in the strict style, i.e., tonal counterpoint. The example is from the Fugue in Ab major from Book I of the Well-Tempered Clavier.

Taneyev did not provide any commentary on this example, and the reader is left to work out the indices between the voices from the mathematical annotations accompanying the example. According to these annotations, voice I, the topmost part, shifts down a sixteenth between original and derivative combinations (indicated by -15 in Example 3) and becomes the lowest voice in the new combination. The other two voices do not exchange register in relation to each other because both move up an eleventh. Therefore, voice I has an inverse shift in relation to each of the other two voices, while voices II and III have a direct shift in relation to each other. The indices of vertical-shifting counterpoint are worked out by adding the intervals of transposition between each combination of two voices: therefore, voices I and II sum together their shifts of -15 and -10 yielding $Jv = -25$ which is the octave compound equivalent of -11, the index for vertical-shifting counterpoint at the twelfth. The index for voices II and III equals zero because they move by the same interval and their signs cancel out. In other words, voice II shifts upwards and has the negative sign before the number 10 when it is calculated in relation to voice I and the plus sign before 10 when calculated against voice III. As the lowest part, voice III takes a negative sign because it shifts upwards.

By now, the astute reader may have noticed a minor error in Taneyev's numerical labeling in this example: voice I is shifted downwards by three octaves plus a second, not two octaves plus a second; therefore, the annotation for voice I should read -22 and not -15. This makes no difference to the calculation of the overall index in this example because the correct result ($Jv\Sigma = -32$) is still a compound equivalent of vertical-shifting counterpoint at the twelfth.²⁵ Although the errors that I have observed in *Moveable*

²⁵Using cardinal numbers we can explain fully the octave equivalencies in this example: let us start with -11 to indicate the twelfth and -7 the octave. Therefore, summing -11 with -7 gives a nineteenth (-18), and adding another octave distance (-7) gives a twenty-sixth (-25), and adding yet another octave gives a thirty-third (-32).

Counterpoint are not numerous relative to its length, the necessity for vigilance while perusing the text highlights the difficulties that modern readers face with the current translation, which, in this instance, reproduces errors in the original text. An updated translation would benefit from a detailed set of accompanying notes in which the editor and translator remedy passages that are unclear or incorrect.

Example 3: Bach WTC I, Fugue in A^b major,
measures 11-12 and 14-15.

Original

I

II

III

Derivative

Iv = -15 IIv = -/+10 IIIv = -10

Iv = -15

Jv' = -25

Jv'' = 0

JvΣ = -25

Before leaving this example, a further general point can be made. Among all counterpoint texts with which I am familiar, invertible counterpoint at the octave, tenth and twelfth is worked out by identifying which voice is transposed up or down by one of these intervals. The other voice either remains at the same pitch or is moved up or down by octave. In Example 3, however, none of the voices moves by any of these intervals, and the reader may not be able to identify which type of invertible counterpoint, or inverse vertical-shifting counterpoint as Taneyev would term it, is operating in the example. Taneyev provides a practical method for working out any vertical-shifting index, regardless of the intervals of transposition among individual parts. I have noted this very useful aspect of

Taneyev's system across the modal and tonal repertoires which I have perused in relation to contrapuntal combinations.

Taneyev continued his discussion of three-part vertical-shifting counterpoint with further examples by Bach, none of which is accompanied by detailed descriptions in the main text. Elsewhere in the book, by contrast, Taneyev presents examples in support of points under discussion in the expectation that readers will undertake pastiche exercises and also examine other similar examples from the repertoire.²⁶ In his usual approach, Taneyev gives summary voice-leading instructions for each index of moveable counterpoint according to the stylistic norms of Renaissance counterpoint. These norms would need to be reassessed in relation to functional harmony if the student were to attempt exercises based on the examples by Bach. This, however, is a question which Taneyev set aside. The implication here is that he intended his discussion of Bach examples to assist readers in analyzing tonal repertoire, not for emulation through pedagogical exercises. This direction is underlined when he asserts that "analysis can be carried further, and be made to include all possible derivatives, whether or not the composer employed them."²⁷ In the next four examples, Taneyev takes material from Bach and provides his own newly-created derivative combinations according to vertical-shifting counterpoint at the twelfth.

The first of these examples is based on material from the Fugue in D major from Book II of the Well-Tempered Clavier. Taneyev extracts measures 37–39 as an original combination and provides a derivative combination of his own in which voice III moves up a twelfth while the other two voices each shift down by two octaves and do not exchange register with each other. The annotations to this example only refer to the shift upwards of voice III by a twelfth (-11). Similar to Example 3 above, we can work out the indices for all of the two-voice combinations and for the overall index of vertical-shifting counterpoint in this example. Voice Iv = -14 summed with

²⁶Taneyev developed much of his work on music theory through his classroom activities as a professor of counterpoint. For him, and for many of his contemporaries, there was little distinction between music theory research and music theory pedagogy, a distinction that became more pronounced in twentieth-century Western tertiary environments.

²⁷Taneyev, *Moveable Counterpoint*, transl. Brower, 177.

$\text{IIv} = +14$ gives $\text{Jv}' = 0$. Likewise, voice $\text{IIv} = -14$ summed with $\text{IIIv} = -11$ gives $\text{Jv}'' = -25$. Therefore, we arrive at $\text{Jv}\Sigma = -25$, which, as we have seen above, is a compound octave equivalent of inverse vertical-shifting counterpoint at the twelfth.

Example 4: Bach WTC II, Fugue in D major, measures 37–39, with derivative by Taneyev.

Example 4 is based on a three-part section from a four-part fugue, and Taneyev apparently could not resist extracting a four-part original combination from this work and writing his own four-part derivative combination, as we see in Example 5 where there is regstral exchange between the upper and lower pairs of voices. The two upper voices are shifted down an octave and the two lower voices up a twelfth. Taneyev does not provide any annotations to this example apart from the diagonal lines (derived from Figure 1b) nor does he discuss how the indices are worked out between the various two-voice combinations. This silence covers the fact that his method for calculating vertical-shifting indices would need to be extended to accommodate the larger number of two-voice combinations in a four-part texture and the need for an expanded nomenclature to mathematically represent the results.²⁸

²⁸An extension of Taneyev's methodology to four-part textures is beyond the scope of this paper, except to note that indices for all two-voice combinations would need to be worked out and some new mathematical symbols would be necessary to assist in working out the different three-voice combinations.

Apart from examples by Bach, four-part textures are not considered elsewhere in *Moveable Counterpoint*, with the exception of discussions of voice doublings in parallel motion arising in derivative combinations involving a vertical-shifting index at the tenth.²⁹ This reinforces the sense that in this section of the book Taneyev is using examples by Bach to probe further into abstract possibilities of his theories rather than working out a method for presentation and replication through supplementary exercises in the counterpoint classroom.

Example 5: Bach WTC II, Fugue in D major,
measures 46–48, with derivative by Taneyev.

Original

Possible Derivative

The next example is from the Prelude in E^b major from Book I of the Well-Tempered Clavier, with a derivative devised by Taneyev in four parts in which the two lower voices are shifted a twelfth higher and the upper voices remain untransposed in the derivative combination.³⁰ Taneyev demonstrates clearly that more combina-

²⁹See Part I, Division A, chapter 10, “The duplication of imperfect consonances in two-voice combinations,” 123–54, and Part I, division B, chapter 15, “Duplications in three-voice counterpoint,” 198–204.

³⁰According to Joseph Kerman, this Prelude comprises an introductory improvisatory section followed by a double fugue “exhibiting so many free, improvisatory ‘irregular’ features that it could never have found its way into the WTC as a ‘fugue,’ only as part of a special prelude.” Joseph Kerman, *The Art of Fugue: Bach Fugues for Keyboard 1715–1750* (Berkeley: University of California Press, 2005), 66.

tions are possible beyond those that Bach settled upon in this Prelude. This situation raises the question about what other compositional or aesthetic considerations might have influenced the composer's decision-making process, a matter to which I will return below.

Example 6: Bach WTC I, Fugue in E^b major,
measures 35–36, with derivative by Taneyev.

Taneyev turns to the four-part Fugue in A^b major from Book II of the Well-Tempered Clavier to demonstrate a possible derivative in which only one of the parts shifts register in relation to the other parts. In Example 7, the topmost part, voice I, shifts downwards at the compound twelfth relative to the other three parts. Its shift is indicated by the annotation Iv = -18, where -18 refers to a twelfth plus octave (i.e., a nineteenth). As with the previous examples, Taneyev does not discuss the calculation of the indices among the different two-voice combinations in this example. He does, however, lament the paucity of contemporary material on the importance of moveable counterpoint at the twelfth writing “in the textbooks of van Bruck, Jadassohn and Riemann, dealing especially with the analysis of the preludes and fugues of this collection, is found only silence on this point.”³¹

³¹Taneyev, *Moveable Counterpoint*, transl. Brower, 179. The awkward expression here is typical of Brower's translation.

Example 7: Bach WTC II, Fugue 17 in A^b major,
measures 22–23, with derivative by Taneyev.

Original

Possible Derivative

Iv = -18

The chapter concludes with examples by Taneyev and Bach of vertical-shifting counterpoint at difficult indices. These are indices where very few consonant intervals in the original combination invert to form consonant intervals in the derivative combination. Taneyev remarks that some indices are unlikely to be encountered at all in the literature due to their difficulty, even if they are theoretically possible, while others are infrequently employed. To demonstrate the latter (shown in Example 8), he again draws upon the Fugue in A^b major from Book II of the Well-Tempered Clavier where measures 6 and 7 form an original three-part combination that is vertically shifted at various indices to give Bach's derivative combination in measures 22–23 (which, incidentally, is the same passage seen in Example 7 as an original combination). In this example, highest and lowest voices exchange registral positions, while the middle part stays in the same position relative to the other two parts.³² Voice I is

³²Inspection of Example 8 shows that the label for voice II is placed midway through the first measure in both the original and derivative combinations. This is because of minor variation to the melody in this voice between both versions, indicated by notating these notes in smaller size than for the surrounding notes. Peter Schubert, “Hidden Forms,” points out the frequency of small variations between original and repeated combinations (or modules as he terms them) in Palestrina’s music, which we can accept generally as smoothing out of melodic lines

shifted down a fifteenth to become the lowest voice in the derivative;³³ the middle part is shifted down a seventh, while the lowest part is shifted up an octave. As indicated by the annotations to the example, calculation of the indices among the two-voice combinations yields vertical-shifting counterpoint at the ninth, fourteenth and twenty-second (i.e., a triple octave). Taneyev is the only writer to describe vertical-shifting counterpoint at infrequently used indices, but its presence in repertoire deserves further attention using the tools that this theorist developed.

Example 8: Bach WTC II, Fugue 17 in A^b major, measures 6–7, with derivative by Bach, measures 22–23.

Original

Derivative

$\cancel{\text{X}}$ $Iv = -14 + IIv = +/- 6 + IIIv = -7$

Indices: $Jv' = -8$
 $Jv'' = -13$
 $\underline{Jv\Sigma = -21}$

by a composer as the music unfolds. Also in this example, a fourth free voice, likewise indicated by small note shapes, appears in the derivative combination.

³³Another typographical error occurs in Taneyev's annotation $Iv = 14$ in the derivative version, which should be corrected to $Iv = -14$ because the upper part is shifted downwards.

Bach and Horizontal-shifting Counterpoint

Taneyev presents the only other example by Bach in a discussion of horizontal-shifting counterpoint, the second principal subject of his book. This procedure involves a derivative combination from an original combination where the time distances between voice entries are changed. In the derivative combination, the voices entries can be closer together or further away from each other than in the original combination. The example is from the Fugue in G# minor from Book I of the Well-Tempered Clavier, where we see imitation at two different time distances: a full measure in the original combination and a half-measure in the derivative combination.

Example 9: Bach WTC I, Fugue in G# minor, measures 24–25
and derivative combination by Bach, measures 32–33.

Taneyev's discussion of horizontal-shifting counterpoint in Renaissance music (or the strict style as he calls it) occupies a substantial portion of *Moveable Counterpoint*. He presents methods for working out different combinations of voice entries in two- and three-part textures, and he supports his discussion with many quotations from sixteenth-century music, especially examples by Palestrina. He includes an example by Bach to support his point that this composer carried on the great tradition of counterpoint represented by composers in the strict style. In this section, unlike his discussion of Bach and vertical-shifting counterpoint, Taneyev does not present alternative workings of materials from this composer's output. He refers the reader to additional examples for further study³⁴ but does not quote any other examples by Bach in the

³⁴Taneyev mentions the first and third subjects from the Fugue in Eb major from the *Clavierübung* as a further demonstration of horizontal-shifting counterpoint,

remainder of his text. The procedure which Taneyev calls horizontal-shifting counterpoint is, of course, well known to Western scholars and students, especially in relation to the music of Bach, and it is a topic of increasing importance in studies of Renaissance polyphonic practice.³⁵ However, Taneyev's contributions to this area as yet await full assessment in current Western scholarship.

Taneyev and Directions in Bach Scholarship

Through his reworkings of three- and four-part vertical-shifting combinations from Bach's output, Taneyev demonstrated how this composer's thematic material could lend itself to possibilities beyond what was chosen for inclusion in the completed versions of his works. Bach must have worked out beforehand all of the various possibilities inherent in his subjects, and the order of presentation in the finished composition may not reflect their order of conception.³⁶ This appears to have been a deliberate process in the genesis of works for the Well-Tempered Clavier, the source for Taneyev's investigations into extended applications of his theory of vertical-shifting counterpoint, but it may not have been such a prominent concern in other areas of Bach's output. Taneyev's manipulations of musical textures using principles of vertical-shifting counterpoint point to a useful tool for modern scholars to explore new analytical pathways in Bach's music.

Specialized scholarship on invertible counterpoint is rare, and none of the existing studies gives more than a passing reference to Taneyev. Two studies, however, may be mentioned. The earlier of these is by Daniel Harrison on triple counterpoint in Bach's music,

though he does not give examples of their use in original and derivative combinations (*Moveable Counterpoint*, transl. Brower, 260).

³⁵See especially the work of John Milsom on the topic of Renaissance *fuga*. His "Josquin and the Combinative Impulse," in Thomas Schmidt-Beste, ed. *The Motet Around 1500: On the Relationship of Imitation and Text Treatment* (Collection Épitome Musical, Turnhout: Brepols, 2012), 211–46 draws together many strands of thought in current scholarship.

³⁶Milsom, "Josquin and the Creative Impulse," makes the same point about the treatment of *fuga* in the music of Josquin.

where he deals only with triple counterpoint at the octave.³⁷ Harrison recognizes that a passage written in triple counterpoint can generate six distinct arrangements of three lines. He draws upon mathematical group theory to propose rules for how the lines can be disposed according to certain patterns, and refers to several passages from Bach's three-part Sinfonias and the Well-Tempered Clavier. Harrison acknowledges that Bach's works generally do not use all six possible combinations and that triple counterpoint serves as "a secondary means of organization in the service of other structures—harmonic, thematic, and so forth."³⁸ Harrison's enumeration of the six possible combinations available through triple counterpoint recalls Taneyev's diagrams (see Figure 1 above). Taneyev considers triple counterpoint at the octave to be a special category of three-part vertical-shifting counterpoint not only because it generates all six possibilities, but also because it is exceedingly difficult to derive this number of combinations using indices apart from the octave. Although Harrison does not explore combinations apart from the octave and omits double (i.e., two-part invertible) counterpoint entirely, his work is particularly important because it provides a definitive account of group properties and their application to triple counterpoint at the octave.

A recent study by Matthew Hall is the first since Harrison to examine invertible counterpoint in Bach's music in depth.³⁹ Through detailed investigation of contextual issues including relationships between contrapuntal and thoroughbass theory and practice, Hall

³⁷Daniel Harrison, "Some Group Properties of Triple Counterpoint and Their Influence on Compositions by J. S. Bach," in *Journal of Music Theory* 32/1 (1988), 23–49. Harrison does not cite Taneyev.

³⁸Harrison, "Group Properties of Triple Counterpoint," 43.

³⁹Matthew J. Hall, "Keyboard Technique as Contrapuntal Structure in J. S. Bach's Clavier Works," in *Understanding Bach* 10 (2015), 85–107. Hall does not cite Taneyev's work. A slightly older study by Peter Franck dwells on two-part invertible counterpoint at the twelfth and draws upon several examples by Bach. Franck aims to reconcile Schenker's paradoxical views on this procedure through Schenkerian analyses of how this technique works in music by Bach. A very important contribution of this study is its discussion of how invertible counterpoint at the twelfth may operate within functional harmonic contexts. Although Franck cites Taneyev's *Moveable Counterpoint*, his aims in this study do not include assessing the earlier theorist's work or integrating it with his own insights into Schenkerian theory. See Peter Franck, "'A Fallacious Concept': Invertible Counterpoint at the Twelfth within the Ursatz," *Music Theory Spectrum* 32/2 (2010), 121–44.

seeks to account for the combinatorial properties of three-part invertible counterpoint in Bach's keyboard repertoire. His premise is that "the disposition of contrapuntal parts under the fingers motivates the successive, ordered arrangements ('dispositions') of contrapuntal modules ('inventions') across the course of a piece."⁴⁰ Through close reading of several of Bach's keyboard works, Hall argues that the three voices forming triple counterpoint are designed so that two of them can be played by one hand and the third by the other hand. In other words, in some combinations the right hand may take two voices and the left hand one, whereas other combinations may involve two voices in the left hand and one in the right. Therefore, Bach's counterpoint in keyboard repertoire is not fully abstract but rather "is worked out in the hands as much as it is thought through by the mind."⁴¹ In some cases, Hall demonstrates how alternative hypothetical combinations in correct counterpoint but not chosen by Bach are deficient in terms of their wide spacing between the voices or awkward part crossing.⁴² A problem with this line of reasoning is that some of the Bach examples quoted by Hall do have wide registral spacing.⁴³ Overall, however, Hall provides a very useful perspective and helps to ground our understanding of Bach's counterpoint in practical considerations, especially those encountered by Bach and his contemporaries, rather than viewing it as a mainly esoteric and ephemeral dimension of the repertoire.⁴⁴

In light of Hall's findings, it is clear that Taneyev's hypothetical derivative combinations (Examples 4–7 above) work in correct counterpoint and do not pose any difficulty in terms of execution by the two hands. Taneyev developed his theory of moveable counterpoint within the specific context of his pedagogical duties at the Moscow Conservatory and did not claim in any way to be replicating an approach that Bach or any other composer may have used when employing counterpoint in their compositions. While

⁴⁰Hall, "Keyboard Technique as Contrapuntal Structure," 88.

⁴¹Hall, "Keyboard Technique as Contrapuntal Structure," 107.

⁴²Hall, "Keyboard Technique as Contrapuntal Structure," 105–106.

⁴³For instance, the extract taken from the Fugue in Ab major from the Well-Tempered Clavier, Book I (the same passage, incidentally, as quoted by Taneyev in Example 3 above). Hall, "Keyboard Technique as Contrapuntal Structure," 97.

⁴⁴David Yearsley has made related arguments for the relevance of counterpoint in many areas of contemporary eighteenth-century musical thought, in *Bach and the Meanings of Counterpoint* (Cambridge: Cambridge University Press, 2002).

Taneyev's work on moveable counterpoint draws upon a large number of theoretical and practical sources (impressive for his time),⁴⁵ the methodology he developed is original and based on principles that are applicable to invertible counterpoint at all intervals. Bearing these points in mind, it is perhaps advisable to be cautious in assessing what decision-making process lay behind Bach's choice of certain combinations of invertible counterpoint over others. While there is much merit in Hall's arguments, this issue could profitably be addressed by comparing a broader sample of possible derivative combinations across a wide selection of Bach's works with the combinations which the composer deemed the best reflections of his creative intentions. In this regard, the conceptual basis of Taneyev's work lends itself to further development. For instance, further research could explore mathematical properties of quadruple counterpoint across modal and tonal repertoires, which would require an extension of Taneyev's methods and mathematical nomenclature to account for the greater numbers of two-part combinations of voices in four-part textures. Furthermore, Taneyev's systematic and mathematical exposition of the principles of vertical-shifting counterpoint invites attention and development from the increasing number of scholars who use computational methodologies in their analyses of music by Bach.⁴⁶

The work of Harrison and Hall does much to advance our understanding of certain specific aspects of invertible counterpoint, though neither author makes any claim to providing a comprehensive theory of this topic in the way that Taneyev set out to do. As noted above, vertical-shifting counterpoint is understood by Taneyev as one part of the broader field of moveable counterpoint. He describes three-part vertical-shifting counterpoint as "one of the most difficult phases of the whole subject of complex counterpoint. It has reference more to the virtuoso aspect of contrapuntal technique, and the skill necessary for its mastery means the meeting of almost innumerable requirements."⁴⁷ Taneyev's choice of

⁴⁵These sources are reviewed in Desbruslais, "Western Reception," 3–6.

⁴⁶For instance, a recent study of Bach's chorales that includes a summary of recent directions in computer-aided studies of harmony is Mitchell Ohriner, "Effects of Temporal Position on Harmonic Succession in the Bach Chorale Corpus," in *Mathematics and Computation in Music, 4th International Conference Proceedings*, eds. Jason Yust, Jonathan Wild and John Ashley Burgoyne (Springer, 2013), 167–76.

⁴⁷Taneyev, *Moveable Counterpoint*, transl. Brower, 158.

repertoire from Bach's output is therefore especially significant because these examples are intended to demonstrate very effectively the sophisticated host of requirements in this branch of composition. Although Taneyev directed his attention throughout his book primarily to sixteenth-century counterpoint, his analytical perspective offers valuable insights into later repertoire, especially the works of one of the most inventive and inquisitive minds of the eighteenth century and in the entire history of counterpoint.

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