

Mendelssohn's Education and Practice in Composing Variations for Piano: Exploring the Construction Principle of Interval Canons*

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Abstract: This paper considers Felix Mendelssohn Bartholdy's (1809-1847) variations for piano from the perspective of his education, specifically the construction of interval canons. Mendelssohn studied composition and music theory under Carl Friedrich Zelter (1756-1832). The lessons integrated double variation and traditional interval canons, highlighting the principle behind their construction. Mendelssohn applied the construction principle to his only public work in the same genre of piano solo variations. Applying the principle is a more practical approach to composing by adapting old tradition to contemporary composition of the time rather than using only interval canons. Zelter led Mendelssohn to the tradition of 18th century music, and Mendelssohn applied traditional styles to his own compositions. Thus, his application of the principle to link the education and practice of variations is explained by his adaptation to the traditional and strict interval canons of the 19th century. This explanation provides a new perspective on the study and the role of Mendelssohn's work.

Keywords: canonic imitation, variations, interval, Mendelssohn, Brahms

Introduction

This paper examines Felix Mendelssohn Bartholdy's piano variations through the lens of his education in constructing interval canons. Beginning at the age of ten (1819), Mendelssohn studied composition and music theory under Carl Friedrich Zelter, a composer within the tradition of Johann Sebastian Bach. For 7 years, Zelter profoundly influenced young Mendelssohn, introducing him to 18th century music traditions¹, and guiding him to integrate these traditional styles into his own compositions. By June 1819 Zelter was instructing Felix's sister Fanny Mendelssohn in music theory and about this time he began to teach Felix as well². Felix documented Zelter's lessons in his workbook roughly from September 1819 to January 1821³.

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¹ Todd 2003: 43.

² Todd 2001.

³ Bodleian Library, University of Oxford, MS M. Deneke Mendelssohn Collection c. 43. Todd 1983: ix; 2. Certainly he had been receiving tuition from Zelter since at least July 1819, and perhaps earlier. Jones 2002: 101. His study was subsequently interrupted when Zelter left Berlin and travelled; returning to Berlin, fresh from a brief encounter with L. v. Beethoven in September, Zelter resumed his work with Mendelssohn, who completed his exercises in thoroughbass in October. Todd 1983: 12. According to Jones, Zelter was a stickler for old-fashioned

Based on the studies in this workbook, the lessons progressed from figured bass and a rigorous course of chorales, invertible counterpoint, canon, and fugue, all according to a method of instruction drawn from Johann Philipp Kirnberger's monumental "*Die Kunst des reinen Satzes in der Musik*" which had been written to disseminate Bach's pedagogical method⁴. The workbook also preserves free compositions, including variation sets and sonata movements⁵.

Among these, two variation sets were notable: Z1, Nr. 98⁶ (fols. 37v-39r) for piano and violin, and Z1, Nr. 119 (fols. 53r-54r) for solo piano. The former employed rhythmic acceleration and fugato⁷, techniques later integrated into Mendelssohn's piano variations. The latter combined double variation like Haydn and traditional interval canons⁸, though these techniques were not revisited after his lessons with Zelter. This raises questions about the purpose of studying and combining these techniques in Zelter's systematic instruction, as well as their relevance to the relationship between Mendelssohn's education and compositional practice?

Previous studies on Z1, Nr. 119 often attribute its contrapuntal features to Mendelssohn's intense study of Bach's music⁹, but they overlook the significance of the combination of techniques. While research on Mendelssohn's early education often focuses on the sonata and cyclic forms, the variation form remains underexplored. This study investigates the combination of his education and practice in the variation form.

The double variation in Z1, Nr. 119 was seldom used in Zelter's lessons, and the interval canons were not revisited. Although rarely applied individually, their combination reveals a striking principle: the construction of interval canons. Zelter selected the genre of piano variations for teaching interval canons, possibly inspired by Bach's *Aria mit verschiedenen Veränderungen* BWV988, commonly acknowledge by the *Goldberg Variations*. In Bach's set, the 3rd variation is a canon at the unison, the 6th variation is a canon at the 2nd, the 9th variation is a canon at the 3rd, and so forth (Figure 1).

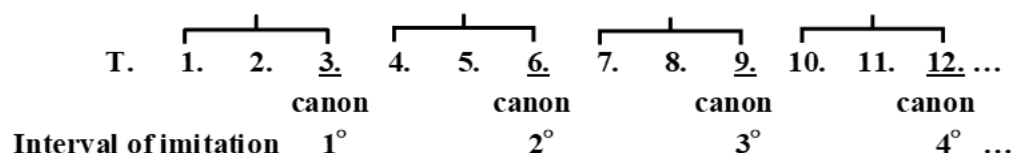


Figure 1: Interval canons in BWV988

virtues and in fact we know from his comments in the book that on occasion he rebuked Felix for his hastiness, and insisted that exercises originally done in pencil should be gone over in ink before proceeding further. Jones, 105. Felix's first sonata, S1, exhibits little evidence of counterpoint, composed before Zelter's instruction had exerted its full influence—before the rigors of contrapuntal discipline had firmly taken root. By contrast, the slightly later S2 already reveals the nascent presence of imitative techniques, which become increasingly pronounced in subsequent works from 1820, such as Q7. See *Ibid.*, 113. It seems unlikely that the lessons were begun because he was already actively composing, and his parents decided that it was time that he learned the disciplines of the craft. *Ibid.*, 109.

⁴ Todd 2001; Todd 2003: 45. Fanny and Felix's mother Lea had, like her mother Bella, studied under Zelter's teacher Kirnberger. See Stinson 2006: 7-8.

⁵ Todd 2003: 45.

⁶ Basic information on his compositions follows Wehner 2009. "MWV" is omitted in this paper.

⁷ Todd 1983: 71.

⁸ See *Ibid.*, 72-74; 81. Todd called them "a kind of canonic cycle" or "the attempted canonic cycle". *Ibid.*

⁹ Todd 2004: 181.

Similarly, in Mendelssohn's variations Z1, Nr. 119, the combination of double variation and interval canons was used. The 1st variation is a canon at the unison (or 8ve), the 3rd variation at the 3rd, and the 5th variation at the 5th. The interval of imitation in each canon corresponds to the ordinal number of the variation (e.g., 1st, 3rd, and 5th), forming a simple principle of construction, hereafter referred to as the "Construction Principle of Interval Canons" (PI)¹⁰ as shown in Figure 2. Unlike traditional interval canons using all intervals from the unison to the 8ve, this principle offers simplicity and ease of application.

T.	<u>1.</u>	2.	<u>3.</u>	4.	<u>5.</u>	6.
	canon	imitation	canon	imitation	canon	(canon)
Interval of imitation	1 ^o	2 ^o	3 ^o	4 ^o	5 ^o	(1 ^o)
Key	D:	d:	D:	d:	D:	d:
Double variation's theme	α	β	$\alpha 1$	$\beta 1$	$\alpha 2$	$\beta 2$

Figure 2: Interval canons and PI in Z1-119

In the aforementioned case of interval canons, the PI applies with the starting point as the 1st variation, while in others, it begins elsewhere. To analyze PI, one must extract the canonic or imitative variations and their intervals of imitation, then determine whether numerical correspondence exists between the intervals of imitation and the ordinal positions of the variations; what is most significant is the imitation interval(s), which remain relatively constant and sustained, thereby making them distinguishable from the others¹¹. The octave (8ve) interval is often regarded as equivalent to the unison (1st) for practical purposes¹².

This study analyzes Mendelssohn's early piano variations and those published during his lifetime: Z1, Nr. 98 and Nr. 119 in the workbook; the variation movements in violin sonata Q7 (July 1-December 3 1820) and viola sonata Q14 (November 23, 1823-February 14, 1824); *Variations concertantes* Q19 (Op. 17, 1830) for cello and piano; and *Variations sérieuses* U156 (Op. 54, 1841) for solo piano. As for *Andante und Variationen* U158 and U159, unpublished during his lifetime but released posthumously in 1850 (Op. 82 and 83 for solo piano, Op. 83a for piano with four hands), are excluded due to uncertainty about Mendelssohn's intent for their publication¹³. These are not addressed in this paper because he did not publish them even though he was already mature as a composer and continued publishing his compositions at that time¹⁴.

¹⁰ The method for extracting PI was already defined as DIRS (Degrees of Intervals of imitation and Rotational Symmetry), which illustrated numerical relations between vertical plane and horizontal temporal plane. Mishima 2015: 68-69; 91-93. The current paper aims to simplify the identification of the PI device.

¹¹ See also DIRS; Mishima 2022: 13 n.53. The intervals themselves are readily distinguishable from one another, even if they do not follow strict imitation.

¹² In musical works with a wide register, intervals of imitation are often interpreted as single or compound intervals, transposed a few 8ves lower than those indicated on the score.

¹³ See Stüwe 2009: VII-XIX.

¹⁴ U3 contains few variations is not addressed as well.

Chapter 1: Education in Imitation Techniques and PI

This chapter examines examples from other composers alongside Mendelssohn's workbook, exploring the relationship between education in imitation techniques, including the canon and fugue, and the development of PI. The workbook Z1, Nr. 119, contains a D-dur theme and 6 variations: the 1st variation in d-moll is a canon at the unison (or the 8ve), the 2nd variation in D-dur uses imitation at the 2nd, the 3rd variation in d-moll is a canon at the 3rd, the 4th variation in D-dur uses imitation at the 4th, the 5th variation in d-moll is a canon at the 5th, and the 6th variation in D-dur employs imitation at the unison only at the beginning.

As previously mentioned, this variation sequence combines interval canons and double variations. Using α for D-dur and β for d-moll, the sequence can be represented as α - β - α 1- β 1- α 2- β 2- α 3. In this pattern, the 1st, 3rd and 5th variations (β , β 1 and β 2) are canons. The canon interval of the 3rd variation aligns with the numerical interval (3) between the 1st and 3rd variation (β and β 1). Similarly, the canon interval of the 5th variation corresponds to the numerical interval (5) between the 1st and 5th variation (β and β 2). Thus, PI starts from the 1st variation (β) (Figure 2).

Traditional interval canons, originating in the 15th century, were often associated with religious exaltation due to the orderliness of their sequential arrangement¹⁵. However, PI diverges significantly from interval canons, offering the advantage of creating a coherent structure without relying on strict imitation techniques or an orderly arrangement of canons. This approach aligns with the 19th century practices, where strict imitation techniques were used less frequently than in earlier periods¹⁶.

In the book, piano pieces alternating between major and minor keys, as well as between canon and non-canon pieces, exemplified Z1, Nr. 119. For instance, in the suite Z1, Nr. 105 to Nr. 108 (fols. 43v-44v), the 1st and 3rd pieces are in G-dur, while the 2nd and 4th pieces, canons at the unison, are in g-moll¹⁷. This reflects a process where the alternation sequence is initially explored in the suite. Later, the PI emerges when the alternation sequence is combined with double variation and interval canons. This progression demonstrates the preliminary role of the alternation sequence in recognizing the PI, with examples step by step to make the concept educational and easy to understand.

To facilitate this process, imitation intervals must be flexibly manipulated. When the boy Mendelssohn began composition lessons in 1819, Zelter guided him through a course of instruction substantially derived from Kirnberger¹⁸. By all accounts, in fact, Zelter instructed Mendelssohn in much the same way that he himself had been instructed by C. F. C. Fasch and Kirnberger¹⁹. Despite Mendelssohn's assertion of freedom from treatises, Zelter circumscribed

¹⁵ See Reese 1954: 133.

¹⁶ It may relate some kind of stylization and historicism and popularization. For the author's further studies, see Mishima 2022; Mishima 2023; see also the author's official columns, the essay series no. 49 in the Musicological Society of Japan, published May 7, 2023 (https://twitter.com/MSJ_musicology/status/1655135418910912512) (<https://www.musicology.jp/webplus/post/archives/172>).

¹⁷ Todd 1983: 74-76. These are considered as his suite. *Ibid.*

¹⁸ Todd 2003: 4.

¹⁹ Todd 1979: 6. Zelter's principal teacher Fasch referred the young Zelter to Kirnberger for instruction;

boundaries around certain model texts—particularly *Die Kunst* for figured bass and chorale and “*Abhandlung von der Fuge*” by Friedrich Wilhelm Marpurg for counterpoint²⁰, which emphasized Bach’s BWV988, *Musikalisches Opfer* BWV1079 and *Kunst der Fuge* BWV1080, as exemplary works offering a wealth of counterpoints techniques²¹. These resources helped Mendelssohn create canons at different intervals²². Marpurg, Kirnberger, and Zelter viewed the canon as a preparatory study for the fugue, considered the pinnacle of counterpoint²³. In preparation for fugue studies, Mendelssohn composed canons imitating one interval and then another, demonstrating his mastery of imitative techniques²⁴.

A supporting case for the study of imitation techniques and the practice of PI is Johannes Brahms, a 19th century composer similarly drawn to canons and fugues. Brahms admired earlier music, particularly Bach, and incorporated it into his compositions²⁵. On February 3, 1855, Brahms expressed his mastery of canons techniques to Clara Schumann, by writing to her “Now I can make canons in all possible artistic forms. I am eager to see how it will go for me once again with fugues.”²⁶. It is considered this would be consistent with Marpurg’s following advice in “*Handbuch bei dem Generalbasse und der Composition*”, which emphasized making canons at

according to Zelter, Fasch praised Kirnberger’s theoretical work highly. See Todd 1983: 8-10. Gelbart (2013: 23) points out “a trait Zelter inherited from his own teacher, Kirnberger” by citing Todd (1983: 2; 29-31) and writes that “his [Kirnberger’s] teachings and textbook [*Die Kunst*] had the most direct effect of Mendelssohn, as Todd’s study of the composer’s education makes clear.” by citing Todd (1983: 8). The teacher-pupil lineage between Zelter and Mendelssohn can be traced back through Fasch, to Kirnberger, and ultimately to Bach. See Matsubara 2020: 97; (51)-(52) n.7; (61) n.7; Todd 1983: 2; 8-9; 26; Todd 2003: 4; 38-39; 44. In fact, Todd (1983: 2) illustrates the pedagogical line with his diagram, directly connecting Kirnberger and Zelter straight as a line.

²⁰ See Todd 2003, 43-45. Thus, according to Todd, Zelter essentially served as a musical hyphen to connect Mendelssohn to 18th century German musical culture, epitomized by Bach and expounded in the music theory of the two Berliners. *Ibid.* *Die Kunst* stood as the last meticulous examination of figured bass. *Ibid.*, 4. Even as late as 1819 and 1820, Zelter was still using the Kirnbergerian *Grundbass* in Mendelssohn’s exercises: from Kirnberger, Zelter borrowed the theoretical basis for much of Mendelssohn’s training in composition. Todd 1983: 9. Mendelssohn’s workbook establishes clearly that *Die Kunst* was still held in high esteem in Berlin several decades after its first appearance in the 1770s. *Ibid.*, 8; 26. Thoroughly grounded in the 18th century German theoretical tradition, Zelter based his conservative tutelage of Fanny and Felix on the treatises of Kirnberger. Todd 2010: 38. Kirnberger had given their grandfather Moses Mendelssohn lessons in keyboard and probably music theory as well; exactly how far Moses pursued his studies with Kirnberger is unclear, the theorist’s influence remained potent in conservative Berlin into the opening decades of the 19th century. Todd 2003: 4. Matsubara cites Todd 1983 as the study on Felix’s early musical education under Kirnberger’s pupil Zelter, considering that Felix had read *Die Kunst*. See Matsubara, (51)-(52) n.7. *Die Kunst* described also interval canons and fugue in BWV988. See Kirnberger 1777: II, 2: 172.

²¹ See Todd 1983: 47. According to Wolff (2000: 308), no theoretical work on fugal composition existed before *Abhandlung*. Perhaps Zelter was aware of Marpurg’s interest in inversion at the 9th and, for this reason, inscribed the corresponding set of numerals on fol. 25r of Mendelssohn’s workbook to assist his pupil; on fol. 32v, which presents Mendelssohn’s first two-part fugal exercise, the terms (explained in *Abhandlung*), *dux*, *comes*, and *repercussio* also appear. See Todd 1983: 49; 58; 156; 170.

²² For centuries canon had been regarded, as Marpurg recognized, as a primary test of musical prowess. *Ibid.*, 47.

²³ See *Ibid.*, 47-52.

²⁴ See *Ibid.* One musical obsession that Kirnberger and Fasch shared, and that Zelter, in turn, instilled in Felix—was the composition of learned canons; the abstract, mathematical beauty of high counterpoint fascinated Fasch. See Todd 2003: 39. Marpurg was so enthusiastic about Zelter’s early work that he encouraged him to study composition from Fasch and Kirnberger. Seaton 1981: 126. For Zelter and the Mendelssohns, the fugue, especially as perfected by Bach, was no less than an article of faith. Todd 2010: 41.

²⁵ See Todd 1983: 85; Brodbeck 1998: 210.

²⁶ Litzmann 1927: 73.

all intervals, as a preliminary to fugue studies: "What he who is a beginning fugue writer, after instruction in double counterpoint, has to study, before he comes to grips with the fugue itself, is imitation in canon, and the canon that arises therefrom. ... Since every imitation can happen not only at the unison, but also at all remaining intervals, as at the 2nd, 3th, 4th, 5th, 6th, 7th, and 8ve, so consequently imitation in canon likewise is possible not only at the unison but also at all remaining intervals. All of these various categories of imitation in canon are of the utmost importance in the study of fugue."²⁷

On April 27, 1856, in his correspondence with Joseph Joachim, Mendelssohn's pupil, Brahms explained that mastering the calculation of canon technique would enhance their musical value. He proposed creating imitations at various intervals based on theme from BWV 1080 and critiqued the results²⁸. These practices reflect similarities with the education in imitation techniques that Mendelssohn received, as both composers likely acquired and mastered the skill of manipulating imitation intervals at will through a similar education approach. Brahms was aware of Mendelssohn's advanced early education, and expressed strong envy of it²⁹. Although Brahms' early training was comparatively impoverished, he compensated during the late 1850s by embarking on a similarly rigorous course alongside Joachim³⁰.

The main focus of Brahms's studies during this period was counterpoint and variation techniques. His familiarity with the *Abhandlung* would begin in 1854, facilitated by unfettered access to Robert Schumann, who studied the treatise intensively³¹. Brahms' application of information from Marpurg's and other treatises, with reference to the music of Bach and Schumann, is evident in the counterpoint strategies he employed in his gigue studies³². In August of the same year, he composed the piano variation set *Variationen über ein Thema von Robert Schumann*, Op. 9, which was significantly influenced by Schumann's piano music. Op. 9 exhibits clear PI through canons at various intervals, a feature that would recur in many of Brahms' later piano variations³³.

In Op. 9, The 8th variation is a canon at the 8ve below, the 10th an inversive canon at the 3rd below mainly, the 14th a canon at the 2nd above, and the 15th a canon at the 6th below. These 4 canons are considered the first major culmination of his canon studies³⁴. The 8ve below in the 8th variation corresponds to the numerical interval (8) between the 8th and 1st variations; the 3rd below in the 10th variation corresponds to the numerical interval (3) between the 10th and 8th variations; the 6th below in the 15th variation corresponds to the numerical interval (6) between the 15th and 10th variations; the 2nd above in the 14th variation corresponds to the numerical interval (2) between the 14th and 15th variations. These 4 canons illustrate PI, where the numerical interval of

²⁷ Horne, 542-543; Marpurg 1755: 295. The English translations follow Horne. Marpurg's *Handbuch* provided an appendix that summarized discussion on invertible counterpoints, canons, and fugues, offering advice on systematically progressing from canon to fugue; these materials were condensed from *Abhandlung. Ibid.*, 540.

²⁸ Moser 1908: 133ff.; Brodbeck 1994: 37.

²⁹ Brodbeck 1998: 210 n.3.

³⁰ *Ibid.*

³¹ Horne, 541. Schumann studied under H. Dorn who completed his studies with Zelter and others in Berlin.

³² See Horne.

³³ Mishima 2015: 114-132.

³⁴ Brodbeck 1994: 32 n.4.

the variations corresponds to the interval of imitation, with separate starting points³⁵ (Figure 3).

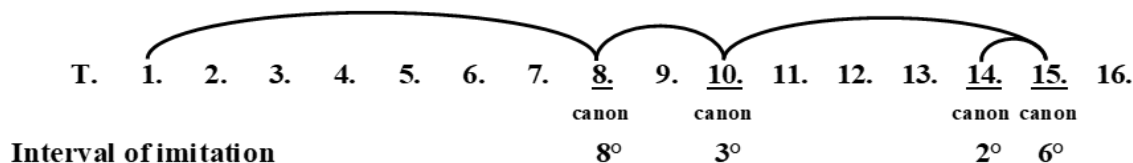


Figure 3: PI in Brahms's Op.9

Joachim praised Brahms for his subtle concealment of his techniques, including all the canons, calling him a “wonderful master builder (*wunderbarer Baumeister*).”³⁶ Later, as Brahms worked further on the variation form, he cited BWV988 as his ideal model³⁷. Op. 9 showcases structural control reinforced by Brahms’ contrapuntal mastery, which, in some respects, surpassed that of Robert Schumann, particularly in the strict canons that articulate multiple variations³⁸. This control is embodied in the PI structure.

PI was already present in the first version of Op. 9 (June 15, 1854), which lacked the present 10th and 11th variations³⁹. In the present Op.9, the 6th and 3rd below in the 15th and 10th variations correspond to the numerical intervals between the 15th, 10th, and 8th variations. In the first version, which lacked the two additional variations, the present 15th variation was the 13th, and the 6th below of canon corresponded to the numerical interval (6) between the 13th and 8th variations⁴⁰.

Brahms omitted only the canon at the 5th, as seen in Clara Schumann’s piano variation set (Op. 20, the 6th variation), which was published around the same time and based on the same theme as Brahms’ Op. 9⁴¹. He consciously used different imitation intervals. The manipulation of imitation intervals in Brahms’ work reflects the application of PI, demonstrating a clear continuity between the teaching of imitation techniques and the application of PI.

Examples of PI suggest this continuity had appeared around Mendelssohn at that time. In C.

³⁵ Mishima 2012: 17-19; Mishima 2015: 114-117. For more precise analyses of Op. 9 concerning Brahms’s nature to hide and his private and public composition, see the author’s further studies.

³⁶ Moser, 45.

³⁷ Kalbeck 1915: 218.

³⁸ See MacDonald 2001: 82.

³⁹ Brahms sent the version to Clara soon after she gave birth to her last child, who became his godson, named Felix, after Mendelssohn. Such structures suggest anagrams, permutation and combination (*ars combinatoria*).

⁴⁰ Mishima 2012: 20. The present Op. 9 consisting of the total 16 variations used structurally interval ratio in combination with PI: a canon at the 8ve was placed in the 8th variation of the total 16 variations ($8:16=1:2$, ratio of perfect 8ve which is interval of the canon), and so forth. Mishima 2022: 3-8; Mishima 2015: 133ff. Even in the first version consisting of the total 14 variations, the 13th variation of a canon at the 6th pointed to the 8th variation by PI ($8:14=4:7$, ratio of septimal minor or harmonic 7th which can be treated as consonance and in the same way as augmented 6th in the 18th century music theory. See, for instance, Kirnberger 1771: I, 1: 24ff. n.24), and so forth. Note that Brahms made the 13th variation in the first version the only variation in enharmonic parallel key of variation theme’s and then made it the present 15th variation by inserting two new variations, and an implication of the chain of thirds and seventh chords in Op. 9. *Ibid.*; Mishima 2023: 15-16; Swinkin 2012: 46; the method defined as RIRS (Ratio of Intervals of imitation and Rotational Symmetry: Mishima 2015: 69-70; 132ff.). Brahms studied elaborately Renaissance and Baroque music theory was able to incorporate PI with ratio structure in more systematic and fundamental ways tacitly and naturally. Similar enharmonic usages of him appear also in the 20th century.

⁴¹ See Danuser 1983: 103.

M. v. Weber's *Variationen über ein Zigeunerlied* J. 219 (Op. 55, composed August 26-October 15, 1817), whose piano music particularly influenced him⁴², the 1st variation employs a canon at the 8ve below, while the code following the 7th variation and the 4th variation use canons at the 8ve and 5th below. The numerical intervals (8) and (5) between the coda, 4th, and 1st variations suggest PI starting from the coda. A. B. Marx's "*Die Lehre von der musikalischen Komposition*", which formalized instrumental music's autonomous language and deeply influenced Mendelssohn's work⁴³, describes this canon in the 4th variation as practical and explains imitation techniques by citing the interval canons in BWV 988 as exemplary⁴⁴.

Another variation composition in Mendelssohn's workbook, Z1, Nr. 98, also employs imitation techniques, with a fugato in the final variation, using all intervals of imitation. However, no PI appears in this sequence. As previously noted, the primary focus of these variations was rhythmic acceleration and fugato techniques.

Thus, PI in his workbook variations align with the 18th century educational practice of creating imitation at various intervals. Brahms' case illustrates the continuity from such education to the practical application of PI. The next section examines the continued use of PI in Mendelssohn's variations outside the book.

Chapter 2: Consideration of Mendelssohn's Variations Outside of the Workbook

This chapter considers Mendelssohn's variations outside of the workbook. In chamber music, as in all other genres, Zelter did not hold his pupil to abstract rules but encouraged him to practice certain textures and styles through repeated composition of pieces: the violin sonata Q7 is one such practice works⁴⁵. The early 1820s are described as years of consolidation for Mendelssohn as he applied the principles learned his studies with Zelter to his maturing art⁴⁶.

The second movement in Q7 is a variation movement on the f-moll theme, initially consisting of the theme with 4 variations. If the f-moll piece is α and F-dur piece is β , this forms a double variation sequence of α - β - α 1- β 1- α 2: the theme α and the 2nd variation α 2 use the three-voices imitation at the beginning of the second half (mm. 12 onward) (Figure 4).

	<u>I.</u>	1.	<u>2.</u>	3.	4.
	imitation		imitation		
Interval of imitation	1°		1°		
Key	f:	F:	f:	F:	f:
Double variation's theme	α	β	α 1	β 1	α 2

Figure 4: Alternation sequence in initial variation sequence of variation movement of Q7

⁴² Todd 2004: 184.

⁴³ Krummacher 1984: 73.

⁴⁴ Marx 1845: 77ff. Marx was a pupil of Zelter, though admittedly he decried Zelter as a book-bound pedant. Todd 2010: 28.

⁴⁵ Schmidt-Beste 2004: 131. Zelter, unlike his teacher Kimberger and his pupil Marx, never published a composition method. Seaton, 127.

⁴⁶ See Todd: 1983: 79-83.

In this variation sequence, the 4th variation was replaced with a new final variation in f-moll⁴⁷ (consisting of the 4th and 5th variations). The resulting variation sequence included the theme and 5 variations, namely α - β - $\alpha 1$ - $\beta 1$ - $\alpha 2'$ - $\alpha 3$, where variations using imitation techniques are α , $\alpha 1$, and $\alpha 2'$ (Figure 5). The imitation in the new 4th variation $\alpha 2'$ also appears at the beginning of the second half, with imitation at the 5th below, 4th, and 2nd above. Specifically, the piano's right-hand melody (mm. 8-11) is imitated in the piano's left hand (mm. 10-13) and right hand (m. 12) at the 5th and 4th, respectively, while the violin melody (mm. 9-10) is imitated in piano's right-hand (mm. 10-12) at the 2nd above. The imitative melodies at the 4th and 2nd above become identical on the piano's right hand (m. 12) (Example). The imitation does not continue thereafter.

	<u>T.</u>	1.	<u>2.</u>	3.	<u>4.</u>	5.
	imitation		imitation		imitation	
Interval of imitation	1 ^o		1 ^o		2 ^o 5 ^o 4 ^o	
Key	f:	F:	f:	F:	f:	f:
Double variation's theme	α	β	$\alpha 1$	$\beta 1$	$\alpha 2'$	$\alpha 3$

Figure 5: PI in changed variation sequence of variation movement of Q7

The figure shows a musical score for Violin and Piano. The Violin part (top staff) starts at measure 8 with a melody. The Piano part (bottom staff) starts at measure 8 with a melody. Annotations show 'the 5th below' from the piano's right hand to the left hand, 'the 4th above' from the piano's right hand to the left hand, and 'the 2th above' from the violin to the piano's right hand.

Example: Imitation at the 5th below, the 4th above, the 2th above in the new 4th variation of variation movement of Q7 (mm.8~13)

The initial double variation sequence of 4 variations alternates between major and minor keys and does not include PI. However, in the revised variation sequence with 5 variations, the 2nd above and 5th below in the 4th variation $\alpha 2'$ correspond to the numerical interval (2) between the 4th and 5th variations ($\alpha 2'$ and $\alpha 3$) and the numerical interval (5) between the 4th variation and theme ($\alpha 2'$ and α). Since the imitative melodies at the 2nd and 4th above become identical, the 5th

⁴⁷ Hoshino; Kiriyaama 2009: IX-X; 99-100.

variation ($\alpha 3$) is the starting point of PI, and the 4th above corresponds to the numerical interval (4) between the 2nd and 5th variations ($\alpha 1$ and $\alpha 3$), where PI appears. While PI began at β (the 1st variation) in the double variation sequence of Z1, Nr. 119, here PI begins at α (the theme).

Thus, PI emerges through the application of a new variation and changes to the initial variation sequence. This illustrates the process of altering part of the alternation sequence to reveal PI. The process of manifesting PI using the alternation sequence as a preliminary step was repeated in lessons, as seen in the progression from the suite study to Z1, Nr. 119 in the book.

Viola sonata Q14, similar to Mendelssohn's first published chamber works of the same period, used a cyclic form, although was not published. The third movement of Q14 consists of a c-moll theme and 7 variations, the 8th and 9th variations (mm. 40-58 of the final variation) in C-dur, and a coda in c-moll (mm. 59 onward), with the 5th variation as a return of the theme. This movement makes remarkable use of the rhythmic acceleration variation technique.

The 3rd variation employs imitation based on the opening melody of the 2nd variation at different intervals: imitation at the 5th, 7th, 4th, 6th, and 8ve above (mm. 1-2; 4-5; 8-9; 11-12). The 7th variation uses imitation at the 4th above and the 5th below (mm. 1-2, 4-6, 9-10, and 12), and the 9th variation uses imitation at unison (mm. 47). PI is as follows: the 5th, 7th above, the 4th below in the 3rd variation correspond the numerical intervals (5), (7), and (4) from the 3rd variation to the 7th and 9th variations and initial theme. The 8ve and 6th above correspond to the numerical intervals (8) and (6) from the 3rd and 5th (return of the theme) variations to the coda. Since these imitative melodies become identical, the coda is the starting point of PI. The 4th above and 5th below in the 7th variation correspond to the numerical intervals (4) and (5) from the 7th variation to the coda and the 3rd variation.

Thus, the variation movements of chamber music in Mendelssohn's studies continued PI practice. Later, as teacher of the Conservatory of Music in Leipzig which he founded in 1843, Mendelssohn used the same method as Zelter by incorporating lesson content into his pupils' compositions⁴⁸. Mendelssohn's musical authority during his formative years remained with Zelter⁴⁹, so he likely adapted Zelter's educational approach in his own way.

His published variation set in the chamber music genre, Q19 (Op. 17), consists of a D-dur theme, 7 variations, a return of the theme, and a coda. The imitation in each variation is merely fragmentary, and no PI appears. Mendelssohn did not publish any chamber variation works with PI.

Approximately 11 years later, Mendelssohn's only piano variation set published during his lifetime, U156 (Op. 54), was composed alongside U158 and U159. He composed a handful of piano variations in the 1820s but left the genre untouched afterward⁵⁰. U156 is said to be sought proximity to BWV988 and Beethoven's variations, employing contrapuntal compositional techniques evident in the theme and structural design of the composition as a whole⁵¹.

U156 consists of a d-moll theme, which bears melodic similarity to the theme of the variation

⁴⁸ See Schmidt-Beste 2004: 131. At the Conservatory, the textbook by E. F. Richter, which Mendelssohn himself directly commissioned for student education, was also used. Richter 1872: v.

⁴⁹ Todd 2003: 48.

⁵⁰ U156 and Z1, Nr. 119 are in the same d-moll and D-dur, pl.

⁵¹ See preface in Kube 2012.

movement in Q14⁵², 17 variations, a return of theme, and a coda. First and foremost, the 10th variation is a four-voice fugato at the 4th, 7th above and 5th below. The 11th variation employs imitation at the 8ve below (mm. 4-16) and 15th variation uses imitation at the 5th, 6th, and 3th above⁵³, while the 13th variation incorporates a thematic melody in the middle voice, and the 14th variation references the theme only in D-dur. The 3rd variation uses imitation at the 4th above, while the 4th variation employs imitation at the 7th, 6th below, 6th, 4th above, and a canon at the 8ve. The 7th variation features imitation at the 5th and 4th above (mm. 9-11), and the 9th variation uses simultaneous inversive imitation at the 6th (mm. 12-).

The PI is as follows : the 4th, 7th above and the 5th below in the 10th variation, a fugato, correspond to the numerical intervals (4), (7), and (5) from the 10th variation to the 7th, 4th, and 14th variations (return of theme in D-dur); the 8ve below in the 11th variation corresponds to the numerical interval (8) from the 11th variation to the last return of theme; the 4th, 6th, 7th and 8ve in the 4th variation correspond to the numerical intervals (4), (6), (7), and (8) from the 4th variation to the 7th, 9th, 10th, 11th variations; the 4th above in the 3rd variation corresponds to the numerical interval (4) from the 3rd variation to initial theme; the 5th above and 4th below in the 7th variation correspond to the numerical intervals (5) and (4) from the 7th variation to the 3rd and 10th variations; the 3rd, 5th, and 6th above in the 15th variation correspond to the numerical intervals (3), (5), and (6) from the 15th variation to the 13th (return of theme), 11th, 10th variations.

The first 9 variations of U156 build in intensity through faster rhythmic values, with the rigorous application of the canon in the 4th variation. The 10th variation, a fugato, serves as a contrapuntal counterpart to the 4th variation, while the 11th variation marks a structural pause⁵⁴. These contrapuntal 4th and 10th variations function as the centers of the PI.

Approximately three compositional stages were identified before U156 reached its present variation sequence⁵⁵, allowing us to trace the process of PI formation. In the first stage of the AK autograph, the 2nd, 3rd, 16th, and 17th variations, along with the return of the theme, are directly connected (the variation numbers correspond to those in the current sequence). At this stage, the interval between the 3rd variation, which uses a canon at the 4th below, and the return of theme was (4), providing an initial glimpse of PI.

In the next stage, a variation sequence up to the 14th variation was developed; however, some of these variations were abandoned⁵⁶. The PI in this incomplete sequence was inconsistent. This sequence underwent substantial reconsidered and, after further revisions, became the current variation sequence (Autograph AST, first edition ED). Another version exists in which the return of the theme in the final variation includes a canon at the 8ve below. In addition, some of the melody notes in the initial fugal dux of the 10th variation (a fugato) were originally placed a 5th

⁵² Jost, 59-60.

⁵³ It is pointed out that the interpretation of the 15th variation should be based on the notion that equivalent melodies follow each other in a sort of canon at a distance of one quaver and similar considerations could apply to the 11th and 5th variations. See notes on interpretation in Kube 2012. In the 5th variation, however, imitation interval is inconstant and not extractable.

⁵⁴ Todd 2003: 414.

⁵⁵ See Jost, 44-59; Stüwe 2009: VII-XVI.

⁵⁶ Jost, 54.

below the present ones⁵⁷, aligning with the placement where the fugal enters at the 5th below⁵⁸. When these variations are integrated into the present sequence, the PI remains consistent. Thus, the PI initially glimpsed in the first stage was obscured in the unfinished variation sequence but fully emerged in the substantially revised and reconsidered present variation sequence.

U156 influenced the piano variations of other 19th century composers. It is said that Brahms drew inspiration from the melodic contour and other element of the 11th variation of U156 for the 10th variation of his piano variation set *Variationen über ein eigenes Thema* Op. 21-1 (1862), much as Mendelssohn had found inspiration in musical tradition⁵⁹. In Op. 21-1, the 5th variation is an inversive canon at the 5th below, while the 8th and the 12th variation (mm. 37 onward in the final variation) use imitation at the 8^{ve} below. The intervals (8) and (5) between the 12th, 5th, 1st, and 8th variations indicate PI⁶⁰, revealing direct connections between in their piano variation sets applied PI.

The above considerations demonstrated PI not only in the piano variations of Mendelssohn's early education, but also in the variation movements of his chamber music studies and the only piano variation set he published during his lifetime. Simplified versions of interval canons, which have numerical correspondence concerning isomorphic and varying patterns of imitation and variation, provide music with coherence and autonomy. It is said that in his instrumental music, more than in any other medium, Mendelssohn strove to create a genuinely understandable idiom by combining the traditions of the past with his own innovations. He was critically aware of his historical position and the aesthetic questions with which he was struggling⁶¹. While only a few examples of musical works using traditional interval canons can be found over the centuries, the 19th century saw more examples of musical works using PI. During this time, as musical language expanded and the tradition of interval canons demanded autonomous instrumental principles rather than strict imitation, PI was likely applied as an implicit rule and considered a strategic approach.

Conclusion

Upon examination, some of the object compositions demonstrated consistent PI. In Zelter's systematic education, variations in the workbook would have had some significance: regarding the variation technique of rhythmic acceleration and fugato of Z1, Nr. 98, the former was followed in later variation movements and set, and both were also practiced together (in U156). On the other hand, the double variation and interval canons of Z1, Nr. 119 were respectively not practiced at all in the variations outside of his lessons. Thus, the significance of their combinations

⁵⁷ Todd 2004: 206-207.

⁵⁸ The fugal melody appears at the 5th below, serving as the only fugal melody in the major mode during the exposition of the 10th variation. By PI, its pointed to the 14th variation, which is the only variation in the major key in U156. Such instances seem to illustrate the relationships between PI and modes, imitation and variation, modality and tonality; the principles like PI concerning key and mode (and other structures) also can be expected. See, for instance, footnote 10, 15, 16, 39 and 40; Mann; Wilson; Urquhart 2001; the author's studies.

⁵⁹ Todd 2004: 208-209.

⁶⁰ Mishima 2015: 118. PI appeared also in works by other composers, including C. Reinecke who was principal of the Conservatory of Music in Leipzig and wrote about Mendelssohn's method as teacher which was the same as his teacher Zelter's. See Reinecke 1911: 3; Mishima 2022: 1; 11 n.5.

⁶¹ Krummacher, 74. Historicism is said about Brahms as well.

must have been more important than that of their individual studies. The combination of the two techniques indicates PI. The only public work in the same solo piano variation genre as Z1, Nr. 119 and the variation movements of his chamber music studies indicate PI. If Zelter's educational process was not wasted and Mendelssohn steadily carried it on, the meaning of combining the classical double variation with the traditional interval canons was not simply to practice the variation techniques, but also to recognize and transmit PI. As the Brahms case also demonstrates, the path through which education on imitation techniques in the 18th century led to the practice of PI in the 19th century is organized.

Mendelssohn's use of PI to link the education and practice of variations is more flexible than the use of strict interval canons alone and is consistent with the 19th century background that demanded instrumental autonomy without requiring strict imitation techniques. He was a composer who was both heir to the tradition and was flexible enough to adapt to the times. This paper provides a new perspective on the study and the playing and the role of his works.

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