

Viennese Style in Viennese Waltzes: An Empirical Study of Timing in the Recordings of *The Blue Danube*

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Abstract

It is widely assumed that Viennese orchestras, especially the Vienna Philharmonic Orchestra (VPO), possess distinctive qualities in their performance of Viennese waltzes. This article sets out to provide empirical evidence of this hypothesis. Focusing on the parameter of timing, it analyzes the rhythm and tempo in 34 recordings of Johann Strauss II's *The Blue Danube*, widely regarded as the best-known Viennese waltz. The results yield the following findings: (1) At the beat level, Viennese orchestras, particularly the VPO, widely employ an uneven 3-beat pattern of "short-long-medium," whereas non-Viennese orchestras play the three beats with relatively even lengths; (2) at the phrase level, the VPO tends to demonstrate much more rubato, which goes hand in hand with "spiral tempo-dynamic shaping"; (3) at the sectional level, larger-scale and more structural tempo modifications, especially the "long-range accelerando," are found in the VPO's recordings. Some of these features seem to be associated less with the conductors than with the orchestra's own performance practice. In addition, the choreographic factors and the gala circumstances of the Vienna New Year's Concert may also play a role in the stylistic distinctiveness of Viennese orchestras.

Introduction

[1] *The Blue Danube* (“An der schönen blauen Donau,” op. 314), composed by the Austrian composer Johann Strauss II (1825–99), is widely regarded as the best-known Viennese waltz. As one of the standard encores in the Vienna New Year’s Concert (VNYC), it is heard by an audience of millions worldwide every year and has been frequently performed by orchestras across the world. In the performance of this piece, the Vienna Philharmonic Orchestra (VPO) seems to demonstrate a distinctive style in their interpretation of Viennese waltzes. For example, the famous conductor Zubin Mehta, who has collaborated regularly with the VPO, once said:

If I could hear on the radio any waltz played ever, I would know immediately that, first of all, it’s an Austrian orchestra, and most probably the Vienna Philharmonic ... It’s not only the sound. It is the relaxed rhythm; it is the organized sloppiness ... something that other people can’t do.^[1]

However, in musicology, to my best knowledge, this assumption has not been systematically scrutinized on the basis of empirical data. Is there such a Viennese style in the performance of Viennese waltzes? If so, what are the key features of such a style, and what factors may result in these features? This article aims to provide answers to these questions.

In recent academic publications, Elaine Chew^[2] and I^[3] have independently released pilot investigations on the timing features of Viennese waltzes, with empirical methods but relatively small datasets. The former analyzed the recordings of *The Blue Danube* from the VNYC 1987, conducted by Herbert von Karajan, and the VNYC 2010, conducted by Georges Prêtre (see table 1A), using Sonic Visualiser^[4] and MATLAB,^[5] and demonstrated that the three beats of a Viennese waltz are normally played unequally. In comparison, the latter was a more comprehensive study with more diversified approaches and will be further expanded on in this research. Both papers were more or less inspired by the methodology of recording/performance analysis and performance studies in general, which were initiated in the 1980s and rapidly developed in two successive projects funded by the Arts and Humanities Research Council: CHARM (Centre for the History and Analysis of Recorded Music, 2004–09)^[6] and CMPCP (Centre for Musical Performance as Creative Practice, 2009–14).^[7] One of their particularly relevant outputs was a study in which John Rink, Neta Spiro, and Nicolas Gold investigated 29 performances of Frédéric Chopin’s Mazurka, op. 24, no. 2, and found that expressive patterns in timing and dynamics such as the uneven three beats could be identified in various hierarchical levels in this typically waltz-like accompanied genre.^[8] These pioneering studies have accumulated related methodological foundations, and recently, as this article was approaching completion, the University of Music and Performing Arts Vienna launched an Austrian Science Fund (FWF) project entitled “Signature Sound Vienna: Quantifying the Signature Sound of the Vienna Philharmonic’s New Year’s Concerts,” which would potentially enable the follow-up research on this topic to develop in an even more data-rich and interdisciplinary environment.^[9]

Research Materials

According to its online archive,^[10] the VPO has performed *The Blue Danube* in more than 380 concerts since it first appeared in the orchestra’s program as part of the “Concert Chinese World’s Fair Commission” under the composer’s own baton on November 4, 1873. It is the most

performed piece by the VPO at the VNYC^[11] and in general, and is therefore an appropriate case for this research. Structurally, it follows a typical formal design and consists of an introduction, five waltzes in binary or ternary forms, and a coda,^[12] as shown in figure 1.

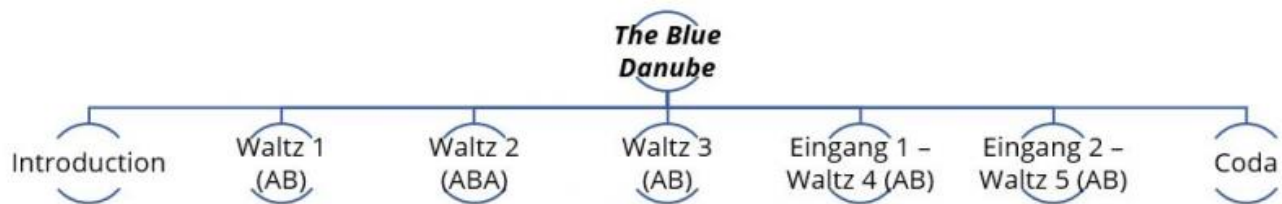


Figure 1: The formal structure of *The Blue Danube*

I selected and analyzed 34 recordings to investigate the performance styles of *The Blue Danube*. They were divided into two groups. Group A (see table 1A) consists of seventeen live recordings (nos. 1–17, sub-group A1), which cover the last performances by all the conductors who have conducted the VNYC since the 1950s,^[13] when audio and video productions became consistently available. This group also includes five studio recordings (nos. 18–22, sub-group A2) by the VPO and the Wiener Symphoniker (Vienna Symphony; VSO). Group B (see table 1B) consists of twelve live and studio recordings by professional orchestras from various countries, including China, Germany, Japan, the Netherlands, South Korea, the United Kingdom, and the United States.

Sub-group	No.	Year	Conductor	YouTube link ^[14] or label
A1	1	1954	Clemens Krauss	https://youtu.be/mqBtrjnSE0U
	2	1979	Willi Boskovsky	https://youtu.be/6i9UVEROmm4?t=3260
	3	1987	Herbert von Karajan	https://youtu.be/WyUNDnQmPq4
	4	1991	Claudio Abbado	https://youtu.be/GUG_UH1CZjc?t=4696
	5	1992	Carlos Kleiber	https://youtu.be/lkQEa6RStWg
	6	2002	Seiji Ozawa	https://youtu.be/SxsXalb3j_s
	7	2003	Nikolaus Harnoncourt	https://youtu.be/bnARntLKzG8?t=5863
	8	2005	Lorin Maazel	https://youtu.be/qABAh-b8ZgQ
	9	2010	Georges Prêtre	https://youtu.be/NIFBWo-Cbz8
	10	2013	Franz Welser-Möst	https://youtu.be/y2sB9riQloo
	11	2015	Zubin Mehta	https://youtu.be/NMKctIX8N9s
	12	2016	Mariss Jansons	https://youtu.be/HaOBafIm14g?t=9146
	13	2017	Gustavo Dudamel	https://youtu.be/NksNkQMjYhU
	14	2019	Christian Thielemann	https://youtu.be/szgpKRQohg0?t=8082
	15	2020	Andris Nelsons	https://youtu.be/7CNETjdkFgU
	16	2021	Riccardo Muti	https://youtu.be/wri6nkr8ZEs
	17	2022	Daniel Barenboim	https://youtu.be/-W2PeOvUSV0
A2	18	1934	George Szell	Warner Classics 9029526718
	19	1953	Clemens Krauss	Decca Eloquence 4841704
	20	1957	Josef Krips	Decca Eloquence 4840692
	21	1971	Robert Stolz	Legacy International CD 512
	22	1973	Karl Böhm	DG 413 681-2

Table 1A: Group A, recordings of *The Blue Danube* by Viennese orchestras^[15]

No.	Year	Conductor	Orchestra	Live YouTube link or label
1	1942	Arturo Toscanini	NBC Symphony Orchestra (NBC)	Symposium 1240
2	1953	Eugene Ormandy	The Philadelphia Orchestra (PHO)	Columbia ML 5166
3	1969	Leonard Bernstein	New York Philharmonic (NYPO)	CBS MYK 37771
4	1981	Herbert von Karajan	Berliner Philharmoniker (BPO)	DG 400 026-2
5	1981	Heinz Wallberg	NHK Symphony Orchestra (NHK)	Live https://youtu.be/uB_5CCYmiVM
6	1986	Nikolaus Harnoncourt	Royal Concertgebouw Orchestra (RCO)	Teldec 9031-74786-2

7	1991	Franz Welser-Möst	London Philharmonic Orchestra (LPO)	EMI Classics 69838
8	2000	Jiapeng Peng	China Broadcasting Chinese Orchestra (CBCO)	Live https://youtu.be/3jdenXU6Eiw
9	2012	Xiaotang Xia	China Philharmonic Orchestra (CPO)	Live https://youtu.be/9n6hDWsJLC8
10	2016	Jia Lv	China NCPA Orchestra (CNCPO)	Live https://youtu.be/BSbw75TFWfA
11	2017	Yoel Levi	KBS Symphony Orchestra (KBS)	Live https://youtu.be/d9tXWWbPlqc
12	2019	Jaap Zweden	New York Philharmonic Orchestra (NYPO)	Live https://youtu.be/LtgASiXbnDE

Table 1B: Group B, recordings of *The Blue Danube* by non-Viennese orchestras^[16]

[2] I measured the beat lengths in each recording by tapping the onsets of each beat and calculating the inter-onset intervals (IOI) on an online application I developed called Vmus.net.^[17] Since the current automated tempo tracking system still requires a moderate amount of manual correction to improve the accuracy, I tracked and adjusted the beats manually. The procedure was re-done at a decreased playback speed. I adjusted the tapped markers in playbacks by dragging them backwards or forwards until I was satisfied with the placement of each mark. I analyzed information on three timing levels—beat, phrase, and sectional.^[18]

Results

Beat-Level Timing Variation

Comparison of beat lengths in the group A and B recordings reveals immensely different results: the beat length ratio for group A is approximately 1:1.4:1.3, whereas that for group B is rather equally spaced. Such rhythmic “inequality” results in two expressive features in the performances by the Viennese orchestras:

Accelerando with “Uncertainty”

The first phrase of waltz 1A is a good example of this expressive feature. In most group A recordings, particularly the 1992 VNYC live recording conducted by Carlos Kleiber (see table 1A), the three beats are apparently played unevenly during accelerando. The first beat is the shortest, the second is the longest, and the third is mostly between the first and the second. In figure 2A, the y axis represents inter-onset-interval (IOI) deviation and shows whether the note is played longer (positive percentage) or shorter (negative percentage) than the notated value. It shows a repeated pattern of shortened first beats and elongated second beats. And this pattern, commonly found in Viennese orchestras, is not commonly demonstrated in non-Viennese orchestras’ recordings. For example, in the 2012 China Philharmonic Orchestra recording conducted by Xiaotang Xia, the three beats are almost equally spaced, which creates a more straightforward expression (see figure 2B).

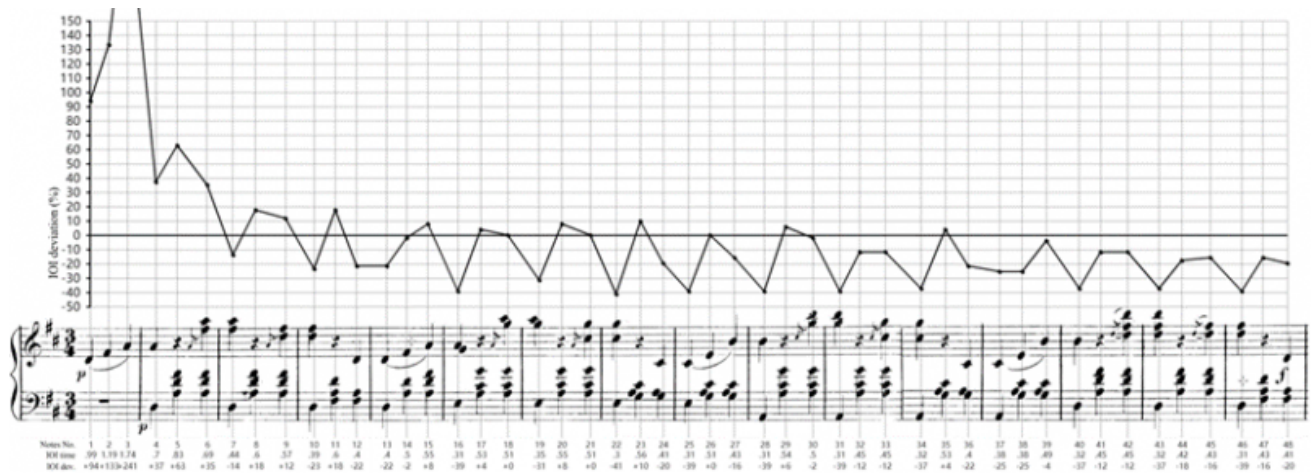


Figure 2A: IOI deviation curve of the 1992-Kleiber recording of Waltz 1A

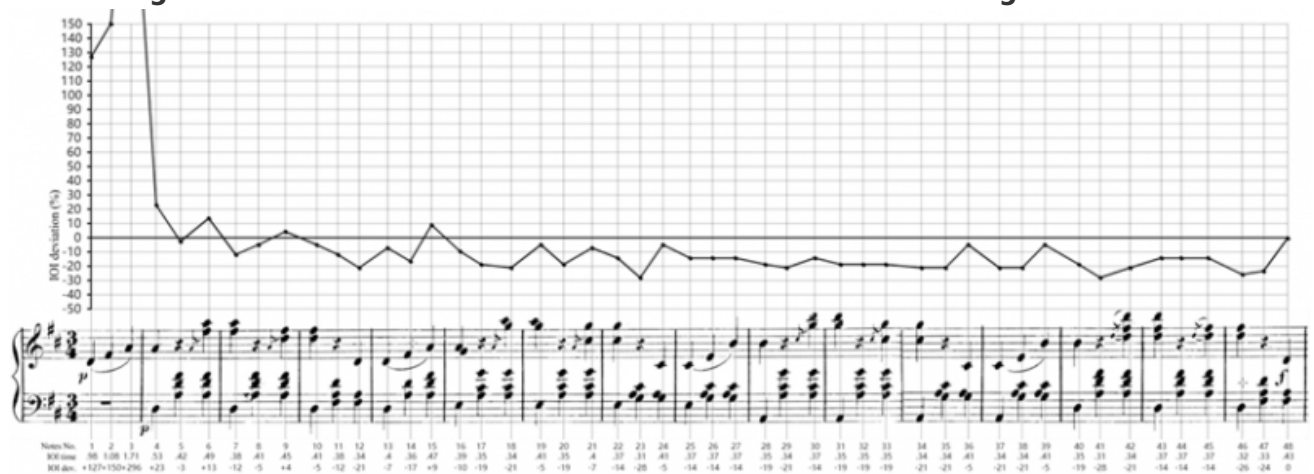


Figure 2B: IOI deviation curve of the 2012-Xia-CPO recording of Waltz 1A

Figures 3A and 3B compare the average beat ratio in waltz 1A (mm. 2–16). The group A recordings all follow the “short-long-medium” rhythmic pattern—except for the two recordings conducted by Clemens Krauss (1893–1954) in 1953 (studio) and 1954 (live in VNYC), in which he further elongates the third beat to create an extra sense of “uncertainty.” The average beat ratio for this group is 1:1.37:1.28. The VNYC recording that demonstrates the most exaggerated ratio is the one conducted by Gustavo Dudamel (1981) in 2017, which shows 1:1.53:1.27. Two possible explanations are that he was the youngest-ever conductor to feature in the VNYC and that 2017 was the 150-year anniversary of *The Blue Danube*, first performed in 1867. The recording conducted by Karl Böhm (1894–1981), the “Ehrendirigent” (honorary conductor) of the VPO and the Austrian “Generalmusikdirektor” (general music director),^[19] in 1973 is the most exaggerated studio recording, showing a beat ratio of 1:1.53:1.30. In contrast, the most “literal” interpretation comes from the one conducted by the “historically informed performance” (HIP) expert Nikolaus Harnoncourt (1929–2016) in 2003. It would be natural for him to interpret the piece in a more classical or baroque manner. The recording that comes after it is Riccardo Muti’s (1941) version from 2021, which is the second most “literal” one. This might be because of the lack of a live audience in the Musikverein due to the COVID restrictions in that year.

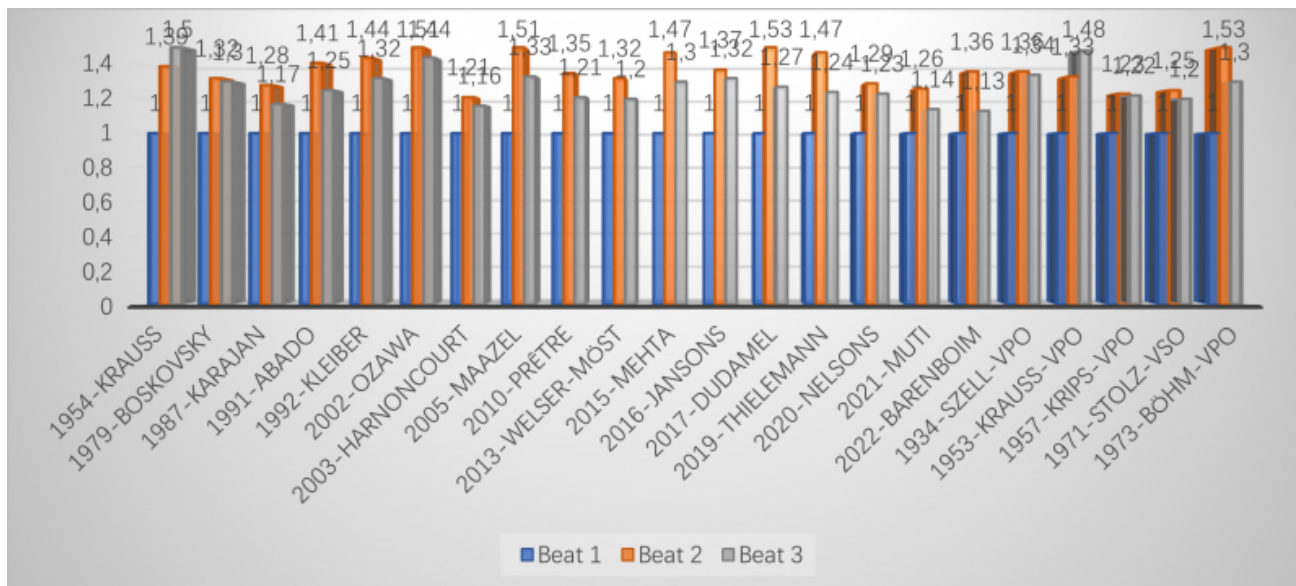


Figure 3A: Average beat ratio in Waltz 1A (mm. 2-16), group A, overall mean 1:1.37:1.28



Figure 3B: Average beat ratio in Waltz 1A (mm. 2-16), group B, overall mean 1:1.15:1.16

In comparison with group A, rhythmic patterns are more diverse in group B, which shows an overall mean of 1:1.15:1.16. Some of them follow the “short-long-medium” pattern, but to a lesser extent: 1942-Toscanini-NBC, 1953-Ormandy-PHO, 1981-Karajan-BPO, 2000-Peng-CBCO, and 2019-Zweden-NYPO. The rhythmic pattern in 2019-Zweden-NYPO (1:1.24:1.13), a live performance at a New Year’s concert, is the closest to that of Viennese orchestras. Some others demonstrate a “short-medium-long” pattern: 1969-Bernstein-NYPO, 1981-Wallberg-NHK, 1986-Harnoncourt-RCO, 1991-Welser-Möst-LPO, 2016-Lv-CNCPAO, and 2017-Levi-KBS. Among all those recordings by non-Viennese orchestras, 2012-Xia-CPO was an exception. It shows a “medium-short-long” pattern (1:0.94:1.05).

Video 1: IOI deviation and conducting gesture curves in the 1992-Kleiber recording of waltz 1A;^[20] by courtesy of YANGjianviolin

It is worth mentioning that Karajan (1908-89), Harnoncourt, and Franz Welser-Möst (1960) are all Austrian conductors who have conducted the VNYC. But when they conduct other first-class orchestras such as the Berliner Philharmoniker (Berlin Philharmonic), the Royal Concertgebouw Orchestra, or the London Philharmonic Orchestra, the rhythmic patterns are very different than

In fact, such uneven beats are universal in all the group A recordings, and all of them conform to the “long-short-medium” rule, with an overall mean beat ratio in waltz 5B 1:1.20:1.09 (see figure 5A). In comparison, the rhythmic patterns in group B recordings vary almost randomly, and their overall mean is 1:1.05:1.06. Interestingly, the 1986-Harnoncourt-RCO recording (1:1.12:1.21) is totally different from his 2003 VNYC live performance (1:1.26:1.12). Among all the recordings by the non-Viennese orchestras, the 1942-Toscanini-NBC (1:1.04:1.01), 1981-Karajan-BPO

(1:1.02:1.01), 2000-Peng-CBCO (1:1.06:1.03), and 2019-Zweden-NYPO (1:1.08:1.03) recordings demonstrate the “short-long-medium” pattern. But they are certainly not as majestic and elastic as their Viennese counterparts.

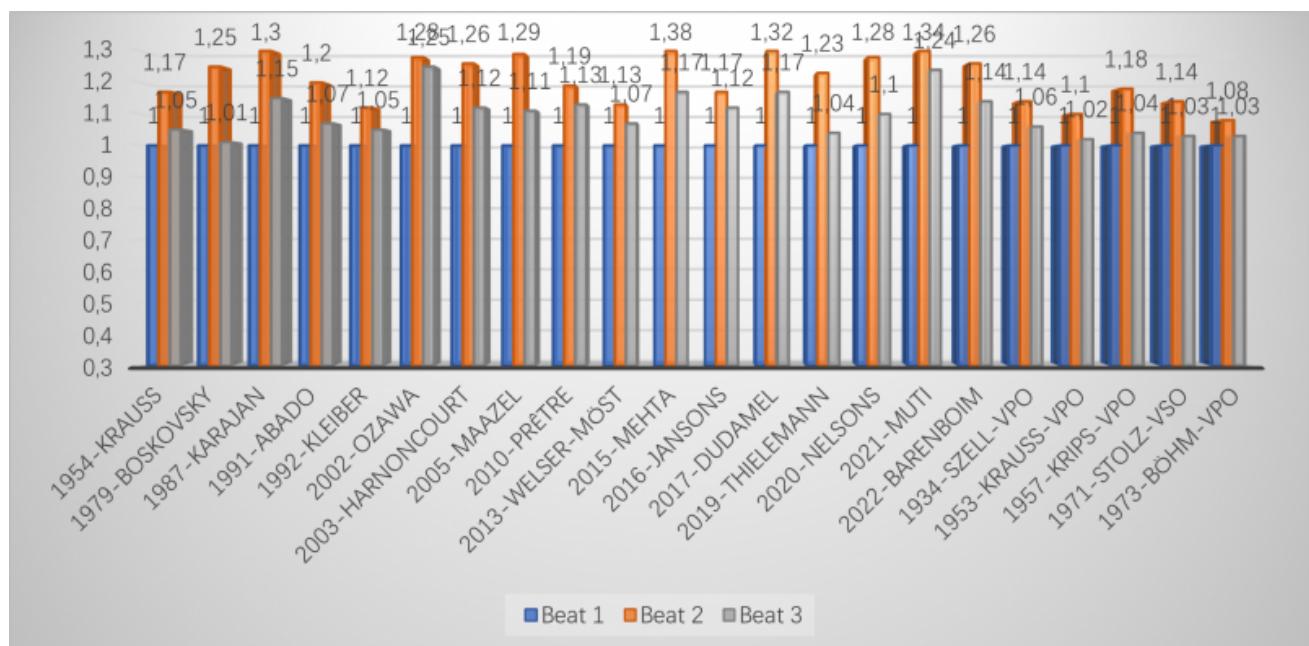


Figure 5A: Average beat ratio in Waltz 5B, group A, overall mean 1:1.20:1.09

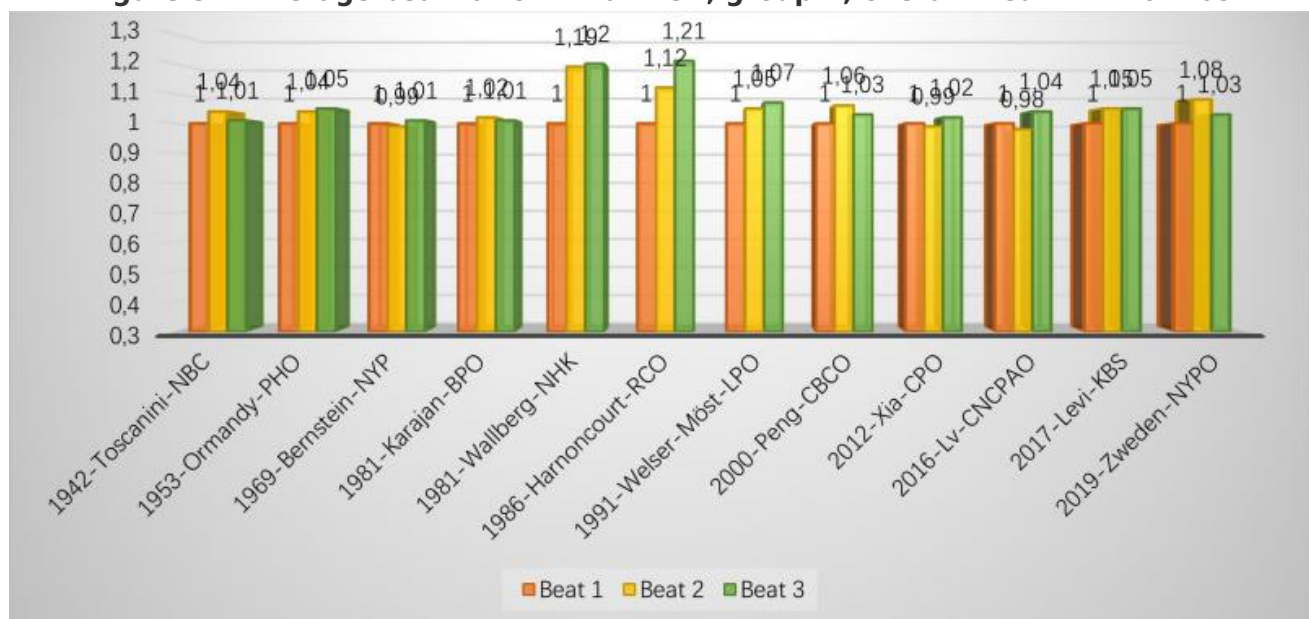


Figure 5B: Average beat ratio in Waltz 5B, group B, overall mean 1:1.05:1.06

Phrase-Level Timing Variation

The uneven beats discussed above are probably the most prominent characteristic of the performance style in Viennese waltzes. It is a beat-level timing feature for expressive purposes. Waltz 4A is very similar to waltz 1A in that both start with some “uncertainty” and show uneven beats to a greater or lesser extent. But at the phrase level, Waltz 4A demonstrates more sophisticated rubato and tempo-dynamic shaping, a feature also typical in the performance of Viennese waltzes. In figure 6, such unique shapes are compared with a customized type of “performance worm.”^[23] The horizontal axis shows the dynamics and the vertical axis the tempo. It is clearly shown that the five recordings from group A1, conducted by those who featured in the VNYC more than five times, demonstrate a certain extent of spiral shaping in addition to the

conventional “phrase arching”—the tendency to play faster and louder when entering a musical phrase and softer and slower when coming out of it—especially the more recent ones. In contrast, a variety of shapes can be seen in those from group A2 performed by the VPO and VSO in studio settings and group B performed by orchestras from five different countries, namely China, Germany, Japan, South Korea, and the United States.

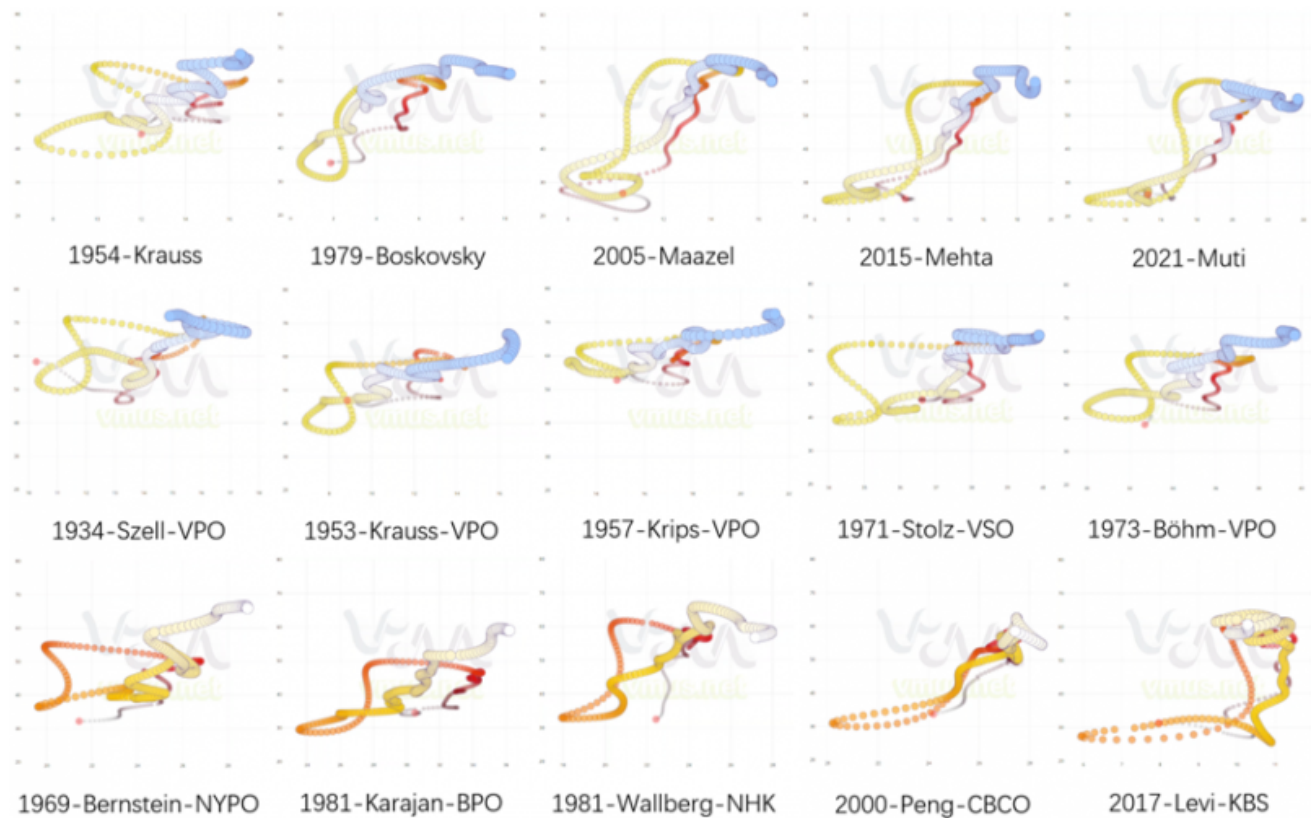


Figure 6: Tempo-dynamic shapes of waltz 4A in the group A1 (first row), A2 (second row), and B (third row) recordings

Video 2A: IOI deviation curve and tempo-dynamic shape in the 2003-Harnoncourt recording of waltz 4A; by courtesy of [YANGjianviolin](#)

Video 2B: IOI deviation curve and tempo-dynamic shape in the 1986-Harnoncourt-RCO recording of waltz 4A; by courtesy of [YANGjianviolin](#)

It is not possible to write down such dance music precisely as it should be played,” Harnoncourt once argued about the performance style of Viennese waltz, “and if musicians were to play it literally (at least, what we think of as ‘literal’), it would be very far from the real waltz style.”^[24]

Indeed, Harnoncourt’s 2003 VNYC live recording demonstrates a very typical spiral tempo-dynamic shaping in waltz 4A (see video 2A). It creates a lively *giocoso* effect, and the VPO in full size sounds as flexible as a small chamber ensemble. However, video 2B clearly shows that his 1986 studio recording with the RCO interprets the same section with much less nuances. It adopts a relatively “literal” approach, vastly different from the Viennese style.

Sectional-Level Tempo Modification and Repeats

In videos 2A and 2B, we can see how the “spiral tempo-dynamic shaping” at the phrase level combines with uneven beats at the bar level to create unique Viennese spirits of “enlivening” and “swing” (or the *Wiener Schwung* in German). At a larger scale, these timing features are supported by long-range tempo modification. In figure 7, the horizontal axis represents the bar

number and the vertical axis the tempo (in beats per minute, BPM). Similar tempo profiles can be found in all recordings by the Viennese orchestras, especially those from the VNYC, which clearly articulate the overall structure of the piece. Among the group A recordings, 1992-Kleiber shows the most prominent contrasts between fast and slow sections. The 2021-Muti performance is the slowest and most modest, partly because of the reason mentioned before: an 80-year-old maestro conducting in an empty Musikverein. In comparison, the recordings by the non-Viennese orchestras (group B) generally show a lesser extent of tempo modification.

Besides these sectional level tempo changes, tempo modification can also be found at structural borders in the group A recordings (especially group A1). For example, the accelerando from waltz 2B to waltz 3B and from waltz 5A to the beginning of the coda seems to be related to the tonal scheme at the formal level. They create a sense of structural momentum. Such large-scale tempo modification coincides with the concept of *Fernhören* (long-range hearing), that is, “hearing applied over great spans to fundamental relationships that often spread across many pages.”^[25] This concept was proposed by the Austrian music theorist Heinrich Schenker (1868–1935) and can be clearly demonstrated in sectional Viennese waltzes like *The Blue Danube*. According to Schenker’s theory, “the performance of a musical work of art can be based only upon a perception of that work’s organic coherence ... [and] one can transcend ‘motive,’ ‘theme,’ ‘phrase,’ and ‘bar line’ and achieve true musical punctuation only by comprehending the background, middle-ground, and foreground.”^[26] From this perspective, these tempo modification strategies can be called “long-range accelerando,” which contributes to the coherence of the piece as an organic whole rather than a series of individual waltzes. Certainly, they are also important timing features in the VPO’s recordings of the Viennese waltz and may also be found in other Viennese orchestras. In figure 7, we can clearly see that such “long-range accelerando” in the recordings by non-Viennese orchestras (group B) is much less obvious.

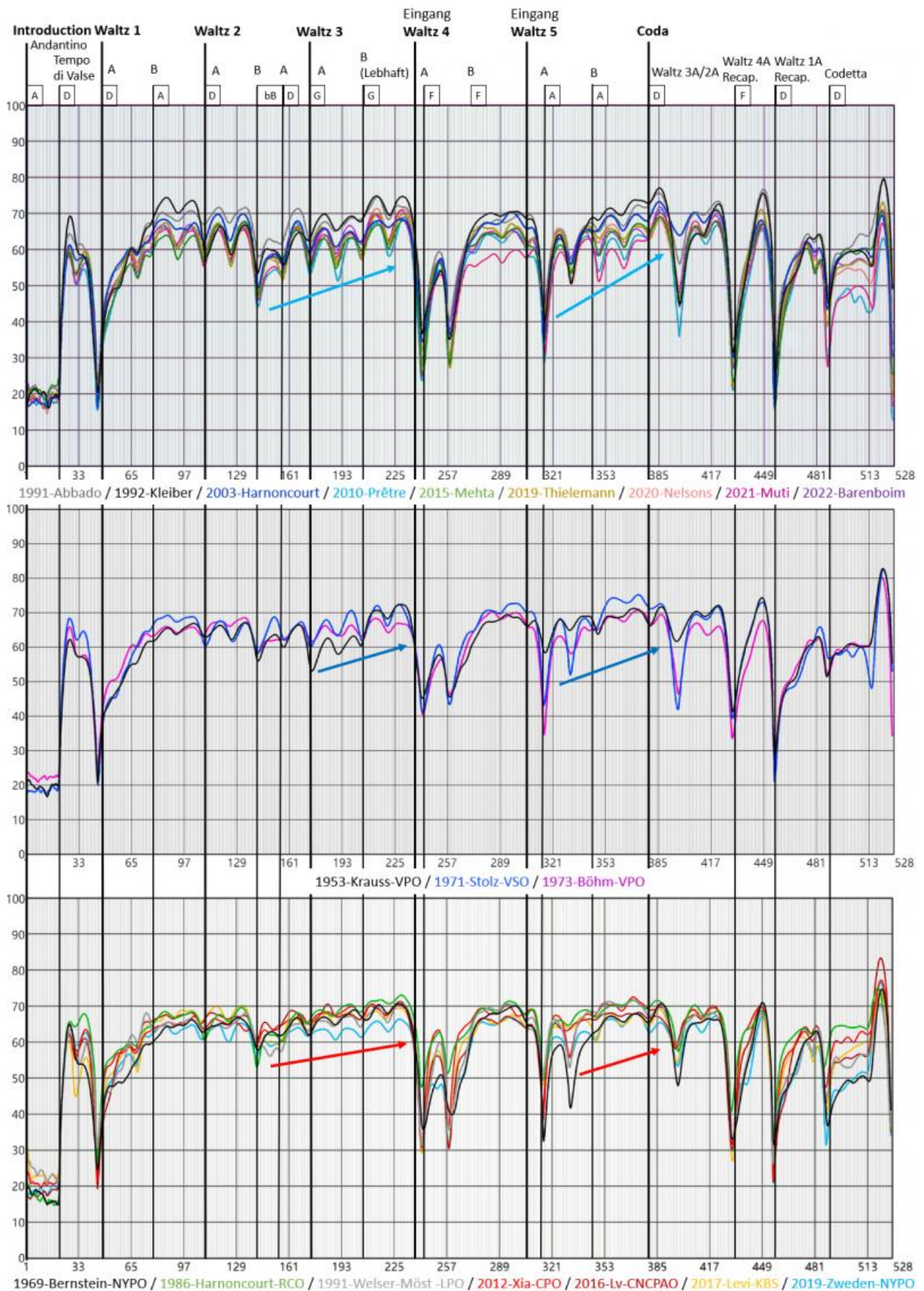


Figure 7: Tempo curves with structure and tonality of the group A1, A2, and B recordings with standard repeats (see table 3) since the 1950s

[4] It is worth mentioning that there are many repeat signs in each section of *The Blue Danube*.

These signs are treated very differently in different recordings. Some trends in the use of repeats can be noted (see table 3). The use of repeats is not only part of performance style in general but also an indicator of a conductor or orchestra's stylistic conviction. For example, the recordings without full repeats or with extra da capo (which is indicated in the score but is barely executed)^[27] are different from those with full repeats in terms of large-scale tempo modification, as shown in figure 7. Probably under the influence of historically informed performance, the recordings from more recent years tend to follow all the repeat signs more strictly, while the earlier ones tend to omit some of them, especially in the first three waltzes. Some conductors prefer to leave out some repeats in live performances but rigidly execute them in the studio setting. For example, Krauss played all the repeats in his 1953 studio recording but neglected the one in waltz 2 in his VNYC live recording with the same orchestra two weeks later. Similar treatments are also found in the pairs 1981-Karajan-BPO vs. 1987-Karajan and 1991-Welser-Möst-LPO vs. 2013-Welser-Möst.

Year-Conductor-Orchestra	Waltz 1 A :B:	Waltz 2 :A: B A	Waltz 3 :A: :B:	Waltz 4 :A: :B:	Waltz 5 ^[28] :A: :B:
1953-Ormandy-PHO	✓				✓
1954-Krauss	✓		✓	✓	✓
1957-Krips-VPO	✓		✓	✓	✓
1979-Boskovsky			✓	✓	✓
1981-Wallberg-NHK				✓	✓
1987-Karajan			✓	✓	✓
2000-Peng-CBCO				✓	✓
2002-Ozawa			✓	✓	✓
2005-Maazel			✓	✓	✓
2013-Welser-Möst	✓		✓	✓	✓
2016-Jansons	✓		✓	✓	✓
2017-Dudamel			✓	✓	✓

Table 3: The incomplete execution of repeats in all groups

Further Considerations

The above-mentioned timing features in the recordings of *The Blue Danube*, particularly the live performances from the VNYC, may be closely associated with the dancing steps and jumps of the dancers. As noted by Eric McKee, in Viennese waltz “dance and music not only reflect but also, by their inherent differences, enhance each other's aesthetic qualities, thereby creating a greater whole.”^[29] Such a relationship can be confirmed by the TV broadcasts of the VNYC, which frequently feature dancers from the Vienna State Ballet. A rare and convincing example is the 150-year-anniversary performance of *The Blue Danube* at the 2017 VNYC, conducted by Dudamel. In the TV broadcast, various ballet scenes of the past VNYCs—from the 1960s to 2010s—were edited and combined. During waltz 5B, there were numerous high jumps, kicks, and spins, which might be facilitated by uneven beats in the music (see video 3). It seems that the subtle timing variation in the music not only brought a majestic and elastic effect but also helped the dancers to kick and jump higher and spin faster.

Video 3: IOI deviation curve and ballet collections in the 2017-Dudamel recording of waltz 5B; by courtesy of [YANGjianviolin](#)

On the potential relationship between the music's timing and choreographic features in the performance of *The Blue Danube*, *The Sydney Morning Herald* once described Lorin Maazel's

(1930–2014) VNYC performance in this way:

Maazel avoided slinky meretricious rubato, yet when the phrase needed to be punctuated, the breath caught, or the third beat held just enough to get a firmer grip on one's partner's waist to attack the next downbeat with abandon, the control and timing was, as one might expect, impeccable.^[30]

Video 4: Tempo-dynamic shape and dance in the 2005-Maazel recording of waltz 4A; by courtesy of [YANGjianviolin](#)

In the 2005 VNYC video, the eleventh and the last one conducted by Maazel, we can compare the gestures of both musicians and dancers with the spiral tempo-dynamic shaping in waltz 4A. In video 4, the spiral climbing of the performance worm is mostly synchronized with the swinging side-to-side and turning around gestures of all the performers (music and dancing). This effect led by Maazel is partly indicated by the wavy melodic line and can be seen as the visual representation of the timing features in the performance of the Viennese waltz. Technically, as revealed by the director from the ORF (Österreichischer Rundfunk or Austrian Broadcasting Corporation) in charge of the broadcast of the VNYC,^[31] there are generally two types of coordination between music and ballet during the VNYC: (1) inserting pre-recorded ballet scenes (based on audio recordings of earlier rehearsals) into the live broadcast; (2) synchronizing the ballet and music live, in some cases both taking place in the Musikverein (such as the VNYC 2011) and in most cases with remote signal transmission. Either way, it is inevitable that the conductor and the orchestra might need to pay extra attention to all levels of timing aspects, which affect not only the choreographic factors but also the sectional and overall lengths according to which the pre-recorded ballet footages (if any) are inserted.

The Austrian professional coach Michael Herdlitzka offers some insight from a dancer's perspective. He notes that it is essential to use the right music properly when performing Viennese waltzes and comments on the close relationship between the musical rhythm and dance steps: "the beat values change only slightly but the second beat is anticipated, in other words the time between beats 1 and 2 is shorter than between beats 2 and 3 ... The 'quicks' at the beginning of each bar would encourage couples to pick up their swing earlier instead of trying to push a far too long and heavy step on '1.' But in order to do this, they must be aware of the rhythmical character of the music they use for practicing and of course competing."^[32] For musicians, it is also extremely important to distinguish between a waltz as a stylized concert piece and a waltz as a piece that is literally meant to be danced. This distinction goes a long way toward explaining the differences between the group A and group B recordings, as well as the subtle differences between sub-groups A2 and A1.

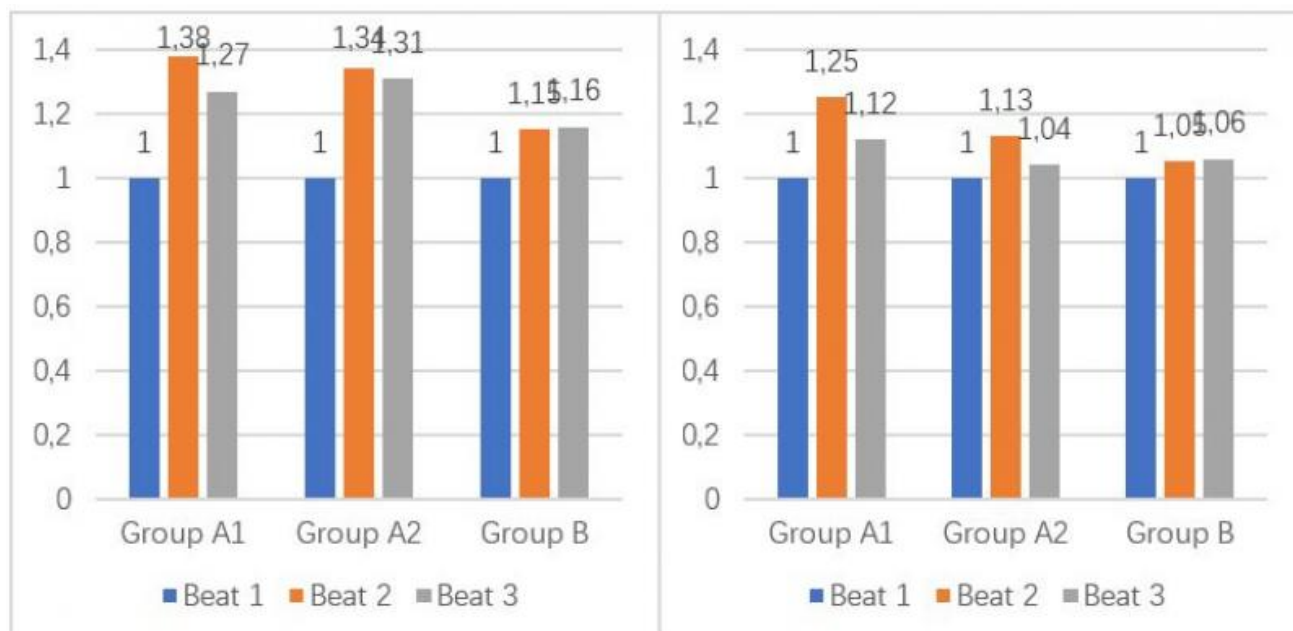


Figure 8: Overall mean of average beat ratio comparison between group A1, A2, and B in waltz 1A (left) and waltz 5B

[5] The above results clearly indicate that both the VNYC recordings (group A1) and the studio recordings by the VPO and VSO (group A2) have similar timing features. These features are different from those in group B. In addition, if we compare the respective data of groups A1 and A2, in most cases the former demonstrates more exaggerated timing features than the latter. For example, figure 8 compares the overall mean of average beat ratios between groups A1, A2, and B. It shows that although both groups A1 and A2 follow the “short-long-medium” pattern, there is a difference in its extent between group A1 in waltz 1A (1:1.38:1.27) and in waltz 5B (1:1.25:1.12) and group A2 in waltz 1A (1:1.34:1.31) and in waltz 5B (1:1.13:1.04). Similar differences can also be found in figures 6 and 7. In particular, Krauss’s 1953 studio recording, only two weeks earlier than his 1954 VNYC one with the same orchestra, has average beat ratios in waltz 1A (see figure 3A) and waltz 5B (see figure 5A) and spiral tempo-dynamic shaping in waltz 4A (see figure 6) that are noticeably lower. As a gala event consists of both music and dance performances, all these results indicate that the VNYC apparently encourages a more exaggerated presentation of all these timing features.

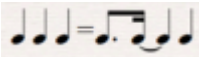

Scale	Beat level		Phrase level	Sectional level
Timing features	uneven beats (short-long-medium)		spiral tempo-dynamic shaping	long-range accelerando
				
Artistic effects	accelerando with “uncertainty”	maestoso with “elasticity”	giocoso with “revival” and “swing”	accelerando with “direction sense”
Choreographic routines	starting with some hesitation	high kicks, jumps or spins	swinging side to side or turning around	rotating gradually faster towards a destination
Typical sections	waltz 1A and 4A	waltz 4B and 5B	waltz 4A and 5A	waltz 2B to 3B, waltz 5A to coda

Table 4: Summary of the timing features in the performance of *The Blue Danube*

Table 4 summarizes all the timing features and their artistic effects created in the performance of *The Blue Danube* as discussed above. It is worth mentioning that these features are generally universal in all Viennese waltzes. For example, in the second most performed waltz at the VNYC—the *Emperor Waltz* (*Kaiser-Walzer*, op. 437) by Johann Strauss II, the musical character of

waltz 1B is similar to that of waltz 4B or 5B in *The Blue Danube*, which brings a high possibility of the majestic “uneven beats” (short-long-medium), and the musical character of waltz 4A is similar to waltz 4A in *The Blue Danube*, which encourages the spiral tempo-dynamic shaping.

Furthermore, these features can also be found in many compositions with Viennese-waltz passages. For instance, in the popular operetta *Die Fledermaus* by Johann Strauss II, the uneven beats are almost essential for the interpretation of the “Tempo di Valse” sections and the aria

“Mein Herr Marquis,” especially when it comes to the rhythmic pattern  in waltz 5B of *The Blue Danube*. In video 5, the American soprano Janet Perry and the conductor Carlos Kleiber (1986) perform the pattern with the typical Viennese waltz style of the “short-long-medium” pattern (mean: 1:1.17:1.07), whereas the Korean soprano Sumi Jo and the conductor Alfredo Silipigni (1993) apparently sound much less stylish by showing a heavy “long-short-short” pattern (mean: 1:0.90:0.90).

Video 5: IOI deviation curves in *Mein Herr Marquis* performed by Perry and Jo; by courtesy of [YANGjianviolin](#)

Conclusion

This study shows that although other aspects, such as pitch, timbre, articulation, and the balance of voices, might all play a part in the overall style of Viennese waltzes, the “Vienneseness” in their performance, which may be deeply rooted in the music tradition and social life of Vienna originating in the nineteenth century, lies mostly in the timing dimension. This dimension includes tempo modification, such as the long-range “Schenkerian” accelerando, spiral tempo-dynamic shaping, and more localized rhythmic flexibilities—the “uneven beats” of the “short-long-medium” pattern. These features may be closely related to steps, turns, and jumps in dance and have been repeatedly reinforced by the live or remote synchronization between ballet and music in the TV broadcast of the VNYC. Interestingly, the VPO’s performance style of *The Blue Danube* seems to be less associated with the conductors than it is influenced by the orchestra’s own convention as well as the gala circumstances and choreographic factors of the VNYC. On the one hand, as mentioned above, the VPO had a close relationship with the Strauss family and enjoyed the privilege of performing under the composer’s own baton from the 1870s on. On the other hand, the VPO started the VNYC in the 1930s, in the middle of a half century in which musical performance style was undergoing radical changes,^[33] and has continued this annual event through the Second World War until today. In this sense, the timing features found in the performance of *The Blue Danube* not only contribute to our knowledge about the performing style of Viennese waltzes but also shed new light on stylistic differences in both geographical and historical traditions of musical performance.

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Cover picture: Silhouette „Johann Strauss (son): An der Schönen Blauen Donau," R. Lechner K. u. K. Hof-Manufactur für Photographie, before 1900; by courtesy of Österreichische Nationalbibliothek, [Bildarchiv Austria](#).