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## Beethoven's Tied-Note Notation. An Ongoing Debate

Beethoven's tied-note notation, in which he prescribes a slide from one finger to the next onto a note of the same pitch, is infamous among his keyboard techniques and is an area that has received much scholarly attention. Examples of this notation can be found within the Piano Sonatas Opp. 106 and 110, as well as in the *Große Fuge* for piano duet Op. 134, and in the piano part of the Cello Sonata Op. 69 (Figures 1a–d).

**Allegro molto.**

FIGURE 1A Cello Sonata in A major Op. 69, 2nd movement, bars 1–8

FIGURE 1B Piano Sonata in B $\flat$  major (Hammerklavier) Op. 106, 3rd movement, bar 165

FIGURE 1C Piano Sonata in A $\flat$  major Op. 110, 3rd movement, bar 5

**Allegro**

FIGURE 1D *Große Fuge* in B $\flat$  major Op. 134, bars 27–38

In general, discourse has largely centred around two areas: the way in which the notation should be executed, and, by extension, what (if any) effect Beethoven was evoking in instances where this notation occurs. Perhaps most famous among the discussions are the series of articles by Paul Badura-Skoda, Jonathan Del Mar and Malcolm Bilson, in which Del Mar and Bilson advocate a repetition of the second note while Badura-Skoda asserts that it should be unsounded (i. e., tied) and thus seemingly contradicting the 4-3 fingering indications as shown in the examples above.<sup>1</sup> Arguably, the answer to this question lies in the origin of the notation itself: what was Beethoven intending and from where did he draw his inspiration? As with the execution of this notation, the source of Beethoven's inspiration has also been subject to much debate. One of the most popular theories contends that he was evoking the *Bebung* technique of the clavichord in which a quasi-vibrato effect is created by rocking the pressure of the finger on the key. However, Badura-Skoda argues against this suggestion, asserting:

“Even the ‘*Bebung*’ of the clavichord has been quoted in order to justify the (slight) separation of the tied notes, as if Beethoven had tried to imitate a peculiarity of a virtually extinct instrument. [...] it is difficult to see a reason why Beethoven should have developed a nostalgia for an instrument that meant little or nothing to him.”<sup>2</sup>

Beethoven's earliest published use of his tied-note notation appears to be the Cello Sonata Op. 69, published by Breitkopf & Härtel in 1809, and thus Badura-Skoda is arguably correct in suggesting that clavichords were no longer the keyboard instrument of choice at this time, and certainly by the publication of the later examples in the Piano Sonatas Opp. 106 (1819) and 110 (1822), since their popularity began to decline towards the end of the eighteenth century. However, a sketch in the *Fischhof Miscellany*, which has never before featured in discussions of Beethoven's tied-note notation, adds a new dimension to this argument, namely that of chronology.<sup>3</sup> A figuration of this type (Figure 2) appears on a leaf dated circa 1790, thus preceding the published occurrences by almost twenty years. Significantly, the dating of the sketch leaf likely places Beethoven in Bonn (i. e., prior to his move to Vienna at the end of 1792) and Tilman Skowronek has deduced that Beethoven's early keyboard training not only would have included the clavichord,

1 See Paul Badura-Skoda: A Tie is a Tie is a Tie. Reflections on Beethoven's Pairs of Tied Notes, in: *Early Music* 16 (1988), pp. 84–88; Jonathan Del Mar: Once again: Reflections on Beethoven's Tied-Note Notation, in: *Early Music* 32 (2004), pp. 7–25; Malcolm Bilson: Beethoven's Tied-Note Notation, in: *Early Music* 32 (2004), pp. 489–491. The debate was then reignited in 2016 with Paul Badura-Skoda: Ein Haltenbogen ist (und bleibt) ein Haltenbogen, in: *Piano News* 4 (2016), pp. 30–33; Malcolm Bilson/Michael Struck: Letters to the Editor, in: *Piano News* 6 (2017), pp. 70–72; Malcolm Bilson: The Case of Beethoven. A Tie by Any Other Name..., in: *Journal of Musicological Research* 39 (2020), pp. 88–98.

2 Badura-Skoda: A Tie is a Tie is a Tie, p. 88.

3 Staatsbibliothek zu Berlin – Preußischer Kulturbesitz, Mus.ms.autogr. Beethoven, L. v. 28.

but also that – given his tendency to practise late at night – the clavichord may have been his instrument of choice for these sessions.<sup>4</sup> As such, the new figuration and its dating poses a direct challenge to Badura-Skoda’s argument that the clavichord would have meant little to Beethoven since it is likely Beethoven would (at the very least) have had access to such an instrument at the time he was sketching this example.

**FIGURE 2** Fischhof  
Miscellany, fol. 18v,  
st. 3 & 4 (circa 1790)

The sketch appears on a leaf among other short sketches for keyboard and clearly documents Beethoven experimenting with two different fingerings: while in his published uses of the technique a 4-3 fingering is universally indicated, in this example he also tries out slides from 3-2, notably using a 4-3 fingering for black keys and a 3-2 fingering for white keys. The ties in beats 2, 3 and 4 of bar 1 are seemingly implied by the dashes written above the notes, denoting they are to be executed in the same manner as the first beat. Given that Beethoven is experimenting with different fingerings in this example, it is likely that the figuration is his earliest notated attempt at the technique and that he is identifying which fingering produces the effect for which he is aiming. By extension, it appears that Beethoven eventually determined a 4-3 fingering to be most successful in producing the desired effect and thus this became his favoured (and published) means of execution. Unfortunately, however, while interesting in and of itself, the figuration in the Fischhof Miscellany does not provide an answer to the primary questions surrounding the ongoing debate: what was Beethoven evoking and do we or do we not repeat the second note? Nonetheless, the notion that Beethoven might have been indicating a 4-3 finger substitution is doubtful since he does use this technique in a figuration located in his Kafka Miscellany (Figure 3).<sup>5</sup> Here, he clearly calls for 4-3 finger substitutions but notates them with the 4 placed over the 3; there are no ties, and the note value is written in full.

Hie[r] bei muss der 3te Finger über den 4ten solange kreuzweiss liegen,  
bis dieser wegzieht und alsdann der 3te an seine Stelle kömmt.

*Andante* *sf* *p* *usw*

**FIGURE 3** Kafka Miscellany, fol. 39v, st. 1(3) (1793)

4 Tilman Skowronek: *Beethoven the Pianist*, Cambridge 2010, pp. 26–32.

5 London, British Library, Add MS 29801.

Furthermore, although the Fischhof *Miscellany* figuration was written at a time when it is likely Beethoven would have had access to a clavichord, the style of the notation itself poses further challenges to this theory. In published instances where *Bebung* is indicated, the technique is typically notated with dots above the note on which it was to be used. For example, in their respective treatises, both Daniel Gottlob Türk (*Klavierschule*, 1789) and Franz Paul Rigler (*Anleitung zum Klavier*, 1779) explain that the number of dots equate to the number of pulsations required;<sup>6</sup> Beethoven's examples, however, are all notable for their complete omission of any dots.

Therefore, rather than arguing that Beethoven may simply have adapted the notation by omitting the dots and incorporating ties instead, it seems prudent to take the search for his inspiration elsewhere, and this is where the dating of the new example in the Fischhof *Miscellany* does prove invaluable. During the eighteenth century, Bonn was a city with a vibrant music culture which had a particular affinity with French culture and French opera, and there is a particular technique that despite originating in Italy, was popular in French opera throughout the seventeenth and eighteenth centuries, and which is of particular significance to the ongoing debate over Beethoven's tied-note notation. The technique is known as the string tremolo (or sometimes bow vibrato),<sup>7</sup> and its execution and effect were described by Carlo Farina in 1627. He explains that the string tremolo "is performed by a pulsation of the hand that holds the bow, in imitation of the effect of a tremulant on the organ",<sup>8</sup> and in 1642 Andreas Hammerschmidt observed – in the preface to his *Musikalischer Andachten Dritter Theil* – that:

"In the violin parts, sometimes several notes will be found, namely



which are meant in such a way that one plays four notes with one stroke of the bow (like a tremulant in an organ)".<sup>9</sup>

- 6 Daniel Gottlob Türk: *Klavierschule oder Anweisung zum Klavierspielen für Lehrer und Lernende*, Leipzig 1789, p. 293; Franz Paul Rigler: *Anleitung zum Klavier für musikalische Lehrstunden*, Vienna 1779, p. 36.
- 7 I am especially thankful to Professor Graham Sadler for drawing my attention to this technique.
- 8 "So wird das Tremuliren mit pulsirender Hand / darinnen man den Bogen hat / auff art [sic] des Tremulanten in den Orgeln imitiret." Carlo Farina: *Ander Theil newer Paduanen, Gagliarden, Couranten, Frantzösischen Arien*, Dresden 1627, the description can be found as point 8 in the section entitled *Etliche Nothwendige Erinnerungen wegen des Quotlibets von allerhand Inventionen*. All translations are mine.
- 9 "Es wird derselbe in den Violinen bißweilen etliche Noten / nemlich also [music example] finden / welche so gemeynt / daß man mit dem Bogen ihrer viere auff einen strich (gleichsam wie einen tremulanten in einer Orgel) machet". Andreas Hammerschmidt: *Musikalischer Andachten Dritter Theil* [...] *Sechste und Letzte Stimme*, Freiberg 1642, [Preface].

The string tremolo, which was used in passages of both quick and slow tempi, did have variations to the way in which it was notated as can be seen in the occurrences of its use in François Couperin's *Apothéose de Lully* (1725), marked 'vite' – the old French for 'vite' (quickly) where it is notated with a wavy line – in contrast to Jean-Féry Rebel's *Les Éléments* (1737), marked 'tres lent', where it is indicated with a slur (Figures 4 and 5).<sup>10</sup>

The image displays a musical score for 'Rumeur Souter[r]aine' from François Couperin's *Apothéose de Lully*. The score is presented in three systems. The first system features a wavy line for string tremolo in the upper staves and a straight slur in the lower staff. The second system shows a straight slur for string tremolo in the upper staves and a wavy line in the lower staff. The third system shows a straight slur for string tremolo in the upper staves and a wavy line in the lower staff. The score includes the title 'Rumeur Souter[r]aine: Causée par les Auteurs - Contemporains de Lully' and the tempo marking 'vite'.

FIGURE 4 François Couperin: *Apothéose de Lully*, 'Rumeur Souter[r]aine', Paris 1725


Despite these slight variations, the examples above clearly demonstrate that the string tremolo was often notated by a slur (whether straight or wavy) across notes of the same pitch, with the number of notes varying according to the number of pulsations required, and in this form – especially when the straight slur is used – the notation bears a striking resemblance to Beethoven's tied-note notation. By the mid nineteenth century, the string tremolo does appear to have become much less popular, but it was still discussed in several treatises published throughout the century, thus implying that it was still in use, although perhaps to a lesser extent than in the previous century. For example, in 1803, Pierre Baillot, Pierre Rode and Rodolphe Kreutzer speak of a swelling and diminishing

<sup>10</sup> In other instances, the string tremolo could also be notated by dots above the notes, similar to the *Bebung*.

The image shows a page of a musical score titled "I. Cahos." from Jean-Féry Rebel's "Les Élémens," Paris 1737. The score is arranged in two systems. The first system includes staves for "1. Violon." (Violin), "2. Violon." (Violin), "Flûtes Haute Contre et Taille." (Flutes), and "Clavecin." (Cello). The second system includes staves for "Violon." (Violin), "Violon." (Violin), "Flûte." (Flute), and "Clavecin." (Cello). The music is in 3/2 time and features complex rhythmic patterns with many tied notes. Performance markings such as "fort.", "doux.", "très lent.", "moderé", and "trés lent." are present. A handwritten signature "Rebel," is visible at the bottom left. At the bottom right, there is a handwritten note: "point d'autre harmonique que des Octave triple jusqu'à ce qui est chiffré." and a "7b" marking.

FIGURE 5 Jean-Féry Rebel: *Les Élémens*, '1 Cahos', Paris 1737

on individual notes by way of undulating the bow;<sup>11</sup> Joseph von Blumenthal (member of the orchestra of the Theater an der Wien) discusses a similar idea in 1811, describing how “one can make strong and loud twice in one bowstroke”;<sup>12</sup> Johann Justus Friedrich Dotzauer (circa 1825) refers to a vibrato or tremolo which comes from the bow;<sup>13</sup> and in his *Grand traité d'instrumentation* Hector Berlioz acknowledges:

- 11 “On peut filer les sons d'une autre manière, en faisant faire une espèce d'ondulation à l'archet. Cela s'employe quelquefois dans les tenues et les points d'orgue, mais on doit user rarement de cette manière de filer les sons. – Le compositeur l'indique par ce signe .” Pierre Baillot/Pierre Rode/Rodolphe Kreutzer: *Méthode de Violon*, Paris 1803, pp. 136 f.
- 12 “Man kann auf diese Art zweymahl Stärke und Schwäche in einen Bogenstrich machen.” Joseph von Blumenthal: *Theoretisch-praktische Violinschule*, Vienna 1811, p. 18.
- 13 Johann Justus Friedrich Dotzauer: *Méthode de Violoncelle/Violonzell-Schule*, Mainz ca 1825, p. 47.

“There is a final type of tremolo which is rarely used today but which Gluck made admirable use of [...], I will call it tremolo ondulé. It consists of the not-rapid sounding of notes that are tied together on the same pitch, and without the bow leaving the string.”<sup>14</sup>

Thus, while a decline in popularity is evident, it is noteworthy that the string tremolo was still acknowledged in published treatises even as late as the 1890s. For example, in his *Le Virtuose moderne* (1895), Luis Alonso recognises that “bow vibrato is very elegant and is little used, for one hardly hears it, but it produces its visual effect, its elegance; it is a kind of serpentine slur.”<sup>15</sup> The extent to which Beethoven himself was familiar with this technique – both from a visual perspective and from its performative realisation – however, must first be established before the string tremolo can be considered in relation to his tied-note notation.

During the period 1770–1790, the Bonn court orchestra became renowned for the calibre of its performances, and in particular its facility in creating musical nuance. The pivotal role that its concert master (1774) and musical director (1777) Cajetan Mattioli played in introducing and developing the mastery of these skills is discussed in an account detailing court music in Bonn, which was published in 1783, and which draws attention to these features:

“He [Mattioli] studied in Parma with the first violinist Angelo Moriggi, a Tartinian pupil, and already in Parma, Mantua and Bologna conducted grand operas like *Alceste*, *Orfeo ed Euridice*, etc., by the Chevalier Gluck with acclaim. He owes much to the example of Chevalier Gluck in matters of leading an orchestra. [...] He was the first to introduce in this orchestra instrumental accentuation or declamation, and the exact observation of *Forte* and *Piano*, or musical light and shade in all its gradations and levels. His bowing is very diverse. In all the qualities of a director he is in no way inferior to the famous Cannabich in Mannheim.”<sup>16</sup>

- 14 “Il y a enfin une dernière espèce de tremolo qu’on n’emploie jamais aujourd’hui, mais dont Gluck a tiré un parti admirable [...], je l’appellerai tremolo ondulé. Il consiste dans l’émission peu rapide de notes liées entre elles sur le même son et sans que l’archet quitte la corde.” Hector Berlioz: *Grand traité d’instrumentation et orchestration modernes*. Nouvelle édition, Paris 1855, p. 19.
- 15 “Le vibrato de l’archet est très-élégant et s’emploie peu car on ne l’entend guère mais il produit son effet vu son élégance; c’est une espèce de coulé, serpenté.” Luis Alonso: *Le Virtuose moderne, technique et gymnastique nouvelles pour arriver à la plus grande virtuosité sur le violon*, Paris 1895, p. IV.
- 16 “Er hat in Parma bey dem ersten Geiger, Herrn Angelo Moriggi, einem tartinischen Schüler, studirt, und schon in Parma, Mantua und Bologna grosse Opern: *Alceste*, *Orpheus* und *Euridice* &c. vom Ritter Gluck, mit Beyfalle dirigiret. Dem Beyspiel des Ritters Gluck, hat er viel in Absicht auf die Direction zu verdanken. [...] Er hat zuerst die Accentuation oder Declamation auf Instrumenten, die genauste Beobachtung des *Forte* und *Piano*, oder des musicalischen Lichts und Schattens in allen Ab- und Aufstufungen im hiesigen Orchester eingeführt. Sein Bogen is sehr mannigfaltig. In allen Eigenschaften eines Directors steht er dem berühmten Cannabich zu Mannheim gar nicht nach.” [Christian Gottlob Neefe]: *Nachricht von der churfürstlich-cöllnischen Hofcapelle zu Bonn und andern Tonkünstlern daselbst*, in: *Magazin der Musik* 1 (1783), pp. 377–396, here pp. 377f.

Of particular significance here is the acknowledgement that Mattioli studied violin in Italy, that he introduced instrumental accentuation and declamation to the orchestra in Bonn, and that he utilised a diverse range of bowings. As discussed above, the string tremolo was a bowing technique that originated in Italy but was adopted by the French, and thus the acknowledgement that Mattioli not only studied violin in Italy but also that he owed much to Gluck is significant since in his descriptions of the string tremolo, Berlioz acknowledges Gluck as a significant proponent of the technique.<sup>17</sup>

As such, Mattioli provides Bonn with a direct link to the string tremolo via his studies in Italy and through the influence of Gluck. Even after his departure, Bonn's orchestra continued to impress critics and seemingly maintained the interpretative practices he had introduced, leading Carl Ludwig Junker in 1791 to draw attention again to the calibre of its performances, highlighting the orchestra's ability to create nuance, and notably singling out the strings for special attention; the longevity of Mattioli's influence is clear:

“It was not possible to obtain a higher degree of exactness. Such perfection in pianos, fortes, rinforzandos, such swelling and gradual increase of tone and then such an almost imperceptible dying away, from the most powerful to the lightest accents – all this was formerly heard only in Mannheim. It would be difficult to find another orchestra in which the violins and basses are so thoroughly well-staffed as they are here.”<sup>18</sup>

Further exposure to French performance techniques may also have come from the visiting Französische Hoftheater, who came to Bonn in January 1786 and stayed for two months, giving twenty-four performances in total, some of which were in the original French, and all of which would likely have required Bonn to provide the orchestra. The troupe proved very popular and Christian Gottlob Neefe (Beethoven's teacher in the 1780s) even reported in a letter to Gustav Friedrich Wilhelm Großmann, the former director of the court theatre, that the theatre had been full owing to the decision to stage their first performance for free.<sup>19</sup> Thus, during the period when Beethoven was living in Bonn, the court orchestra appears to have been renowned for the quality of its performances, and its string section noted for its ability to use diverse bowing techniques. There

17 Berlioz: *Grand traité d'instrumentation et orchestration modernes*, p. 19, quoted above.

18 “[...] die Aufführung konnte durchaus nicht pünktlicher seyn, als sie war. Eine solche genaue Beobachtung des Piano, des Forte, des Rinforzando, eine solche Schwellung, und allmähliche Anwachsung des Tons, und dann wieder ein Sinkenlassen desselben, von der höchsten Stärke bis zum leisesten Laut, – – dies hörte man ehemals nur in Mannheim. Besonders wird man nicht leicht ein Orchester finden, wo die Violinen und Bässe so durchaus gut besetzt sind, als sie es hier waren.” Carl Ludwig Junker: *Noch etwas vom Kurköllnischen Orchester*, in: *Musikalische Korrespondenz der teutschen Filarmonischen Gesellschaft für das Jahr 1791* 47 (1791), col. 373–376 and 379–382, here col. 376.

19 Ian Woodfield: *Christian Gottlob Neefe and the Bonn National Theatre, with New Light on the Beethoven Family*, in: *Music & Letters* 93 (2012), pp. 289–315.



were also clear opportunities for exposure to Italian and French performance techniques, notably via Mattioli, but also possibly through the visiting French troupe in 1786. But what of the repertoire itself? Did the operas performed in Bonn include any instances of the string tremolo and, by extension, would Beethoven have been exposed to them?

Beethoven's admiration for Gluck is well known. For example, the structure of his Fourth Piano Concerto Op. 58 and its similarity to the scene between Orpheus and the Furies from Gluck's *Orfeo ed Euridice* (1762) has been discussed elsewhere.<sup>20</sup> Likewise, Beethoven's somewhat mysterious comment in his *Tagebuch* lists Gluck's name alongside Bach and Händel, both of whom he admired greatly. The entry reads: "The portraits of Haendel, Bach, Gluck, Mozart, Haydn in my room – they can help me to claim tolerance."<sup>21</sup> Further evidence of Beethoven's admiration for, and interest in, the music of Gluck is found in a letter dated circa 1806, which reveals that he had borrowed a copy of *Armide* (1777),<sup>22</sup> and scores of both *Iphigénie en Tauride* (1779) and *Orfeo ed Euridice* were listed in Beethoven's estate at the time of his death.<sup>23</sup> He would also have had a number of opportunities to attend performances of Gluck's operas while living in Bonn: during the 1784/1785 season, Gluck's *Alceste* (1767), *Orfeo ed Euridice* and *La Rencontre imprévue* (1764) were performed, and notably, all three call for the use of the string tremolo.<sup>24</sup>

The operatic library of Maximilian Franz may also have provided Beethoven with further exposure to the music of Gluck since it contained scores to the operas *Iphigénie en Tauride*, *Armide*, *Iphigénie en Aulide* (1774), *La Rencontre imprévue* (arranged for sextet and quintet), *Il Parnaso confuso* (1765), and *Tirsi e Nice* (1755).<sup>25</sup> And, thanks to annotations within the operatic catalogue of Maximilian Franz,<sup>26</sup> we also know that he was willing to loan out copies of his music to musicians in Bonn. Significantly, a small slip of paper can be found among the pages of this catalogue which reveals Beethoven to be one of the

- 20 See, for example, Adolf Bernhard Marx: *Ludwig van Beethoven. Leben und Schaffen*, Berlin 1859, Vol. 2, pp. 91–94; Owen Jander: *Beethoven's 'Orpheus' Concerto. The Fourth Piano Concerto in its Cultural Context*, New York 2009.
- 21 "Haendel, Bach, Gluck, Mozart Haydn's Portraite in meinem Zimmer – – – Sie können mir auf Duldung Anspruch machen helfen." Maynard Solomon: *Beethovens Tagebuch, 1812–1818*, Bonn 2005, p. 57.
- 22 Letter to Heinrich Joseph von Collin of early 1806 (No. 246). *Ludwig van Beethoven: Briefwechsel. Gesamtausgabe*, ed. by Sieghard Brandenburg, Munich 1996/1997, Vol. 1, pp. 279–281.
- 23 Alexander Wheelock Thayer: *Life of Beethoven*, ed. by Elliot Forbes, Princeton 1967, Vol. 2, p. 1061.
- 24 In *Alceste* the string tremolo can be found in "Ciel! Tu pleures? Je tremble" and "Tu m'aimes, je t'adore", for example. Occurrences in *Orfeo* and *La Rencontre imprévue* will be discussed below.
- 25 Elisabeth Reisinger/Juliane Riepe/John D. Wilson/Birgit Lodes: *The Operatic Library of Maximilian Franz 1780–1794 Database*, [www.univie.ac.at/operaticlibrary/db/](http://www.univie.ac.at/operaticlibrary/db/) (last consulted 29 January 2021). *Tirsi e Nice* is otherwise known as *La danza*.
- 26 Modena, Biblioteca Estense Universitaria, Cat. Gen. 53.

musicians who borrowed music from Maximilian Franz. The repertoire listed on the slip does not contain works by Gluck, instead revealing Beethoven's interest in Felice Giardini's Six Piano Quintets Op. 11 (1767) and Johann Christoph Schmügel's 12 *Préludes, fugues et autres pièces pour l'orgue* Op. 1 (1778),<sup>27</sup> but it remains uncertain if this represents the only occasion on which Beethoven borrowed music or whether this was an occasion on which works out on loan were merely recorded as missing from the library. It does seem, however, that while Beethoven was living in Bonn, he not only had the opportunity to hear performances of Gluck's operas that featured the string tremolo, but also that possibilities existed for him to access further scores by Gluck via the operatic library of Maximilian Franz.

Aside from operas by Gluck, Pierre-Alexandre Monsigny's *Le Déserteur* (1769) was especially popular in Bonn and was performed in the seasons 1779/1780, 1782/1783, 1786/1787,<sup>28</sup> and in 1787 there was a further aborted attempt in which only the rehearsal was staged.<sup>29</sup> Notwithstanding its popularity within the city itself, *Le Déserteur* also has particularly close connections to the Beethoven family from a performance perspective: Franz Gerhard Wegeler suggests that Beethoven's grandfather won praise for his role in an undated performance of this work;<sup>30</sup> Tobias Pfeiffer (Beethoven's teacher from the period circa 1779/1780) performed the role of Alexis, the soldier, in the 1779/1780 season; and in the projected performance of 1787, Beethoven's father was cast in the role of the father, the appropriately named Johann Ludwig.<sup>31</sup> *Le Déserteur* also includes the string tremolo,<sup>32</sup> and in his assessment of the aborted attempt of this opera, Ian Woodfield suggests that Beethoven may even have helped his father prepare for the role of Johann Ludwig by accompanying him in practice sessions and possibly may have taken part in the rehearsal himself.<sup>33</sup> Although plausible, doubt remains over this suggestion, however, since the public rehearsal took place around the beginning of May 1787, at which point Beethoven may or may not have returned from his first journey to Vienna.<sup>34</sup> Nonetheless, the close personal connection (and exposure) that Beethoven appears to have had with this opera

27 I am especially grateful to John D. Wilson for providing me with this information during the Coronavirus Pandemic of 2020.

28 The Operatic Library of Maximilian Franz 1780–1794 Database.

29 Woodfield: *Christian Gottlob Neefe and the Bonn National Theatre*, p. 303.

30 Franz Gerhard Wegeler/Ferdinand Ries: *Biographische Notizen über Ludwig van Beethoven*, Koblenz 1838, p. 8. Although no further evidence supports this claim.

31 Woodfield: *Christian Gottlob Neefe and the Bonn National Theatre*, pp. 307–309.

32 See, for example, Act 1, Scene 4, and Act 3, Scene 11.

33 Woodfield: *Christian Gottlob Neefe and the Bonn National Theatre*; pp. 307–309.

34 Dieter Haberl: *Beethovens erste Reise nach Wien. Die Datierung seiner Schülerreise zu W. A. Mozart*, in: *Neues Musikwissenschaftliches Jahrbuch* 14 (2006), pp. 215–255.

further increases the likelihood that he was aware of the string tremolo and its realisation in performance.

Beethoven joined the electoral orchestra as a violist in 1789, and when the court theatre re-opened after its lengthy five-year suspension, Gluck's *Die Pilgrime von Mecca*<sup>35</sup> was again performed during the 1789/1790 season.<sup>36</sup> When examining more closely the occurrences of the string tremolo in this opera, one can find it indicated in the viola part (Figure 6), the part Beethoven was performing, and crucially a part he was performing at a time contemporary to his sketching of the figuration in the *Fischhof Miscellany* (i. e., circa 1790), thus making the connection between Beethoven's tied-note notation and the string tremolo even stronger.

Further evidence dating from this period also confirms that Beethoven was using bowing techniques to inform his approach to keyboard touch: in a well-known sketch, he notes that legato on the piano should sound as if it were being "stroked with the bow" (Figure 7).

While it is possible to argue that this evidence may be circumstantial, further examples exist that connect Beethoven's direct exposure to the string tremolo with an occurrence of his tied-note notation. The first comes in the form of an anecdote written by Carl Czerny, in which he recalls Beethoven performing for French soldiers:

"When the French were in Vienna for the first time, in 1805, several officers and generals who were musical once visited him and for them he played Gluck's *Iphigenie in Tauris* from the score, to which they sang the choruses and songs not at all badly. I begged the score from him and at home wrote out the piano arrangement as I had heard him play it."<sup>37</sup>

The string tremolo appears in this work (Figure 8), and so if Beethoven had been performing from the score as Czerny suggests, he arguably would have been required to interpret and recreate this effect on the piano. Moreover, the French invasion of Vienna is dated to November 1805 and (although it has a complex history) early sketches for the Cello Sonata Op. 69 are believed to date from circa 1806, and these early sketches contain ideas for the Scherzo, which also prominently features Beethoven's tied-note notation.<sup>38</sup>

35 The German translation of *La Rencontre imprévue*.

36 The Operatic Library of Maximilian Franz 1780–1794 Database.

37 "Als 1805 zum erstenmal die Franzosen in Wien waren, besuchten ihn einst mehrere Officiere u Generale, die musikalisch waren, und denen er Glucks *Iphigenie in Tauris* aus der Partitur spielte wozu sie die Chöre u Gesänge gar nicht übel sangen. Ich bat mir von ihm die Partitur aus, u schrieb zu Hause möglichst genau das Clavierarrangement so auf, wie ich es von ihm hörte." Czerny to Otto Jahn, quoted after Beethoven *aus der Sicht seiner Zeitgenossen in Tagebüchern, Briefen, Gedichten und Erinnerungen*, ed. by Klaus Martin Kopitz and Rainer Cadenbach, Munich 2009, Vol. 1, p. 228.

38 Staatsbibliothek zu Berlin – Preußischer Kulturbesitz, Mus.ms.autogr. Beethoven, L. v., Landsberg 10, pp. 49f.

Violino I  
Violino II  
Flauto  
Viola  
Ali  
Fagotto et Baŕo

*p:*  
*Andante*  
*p:*

FIGURE 6 Gluck: *La Rencontre imprévue* [Die Pilgrime von Mecca], Act 2, “Vous ressemblez à la rose naissante”, bars 1–6, after Manuscript copy, Paris, Bibliothèque nationale de France, VM2-518, circa 1790–1810

*adagio molto*

das schwere hiebey ist  
diese ganze Passage so  
zù schleifen daß man das  
aufsetzen der Finger gar nicht hören  
kann, sondern als wenn es mit dem Bogen  
gestrichen würde, so muß es klingen

FIGURE 7 Bonn, Beethoven-Haus, Wegeler Collection, w3, fol. 1r, st. 11(8) & 12(8) (circa 1790)

Corno in G#  
Oboe  
Violin 1º  
Violin 2º  
Alto  
Iphigénie  
Fagotti  
B.C.


*pp*  
*pp*  
*pp*  
*pp*  
*pp*  
*pp*  
*pp*



la - men - ta - ble hé - las! et quelle est donc la ri - guer de mon

FIGURE 8 Gluck: *Iphigénie en Tauride*, Act 4, Scene 1, “Je t’implore et je tremble”, bars 23–29, after the edition Au Bureau du Journal de Musique, Paris 1779

Thus, Beethoven's impromptu performance of *Iphigenie in Tauris* may have reminded him of (or reignited his interest in) the string tremolo.

In addition, the aforementioned letter of 1806 to Heinrich Joseph von Collin, confirming Beethoven was in possession of a copy of *Armide* at this time, provides further evidence of Beethoven's exposure to the string tremolo at the time he was sketching initial ideas for the Cello Sonata. Notably, the Cello Sonata includes the tied-note notation in both the piano and cello parts, and Beethoven's uses of tied-note notation in string parts – in the cello part of Op. 69 and in the *Grosse Fuge* Op. 133 – have often raised further questions aside from those already discussed since he never provided further commentary; while fingerings were supplied for the piano (as discussed above), no such guidance is given for the strings. However, if Beethoven were indeed indicating the string tremolo, arguably he would not need to explain its execution in the string parts since (for him at least) it was an established technique that was already around 200 years old; the transference into keyboard technique, on the other hand, did require further explanation since this was new, and seemingly developed by Beethoven himself. Nonetheless, despite reference to it in string treatises throughout the nineteenth century, the notion that the string tremolo was still in use during this period is called into question by Karl Holz's enquiries into its execution. Holz was a violinist and conductor who became second violinist in Ignaz Schuppanzigh's quartet when it was formed in 1823, and he began to work as a copyist for Beethoven from 1825. In his conversation book entries to Beethoven in January 1826, corresponding to the time when Holz was preparing the piano arrangement of the *Grosse Fuge*, he asks Beethoven to clarify his tied-note notation, implying he was unfamiliar with this form:

“Why have you written two eighths  instead of  $\frac{1}{4}$ .”<sup>39</sup>

Obviously, Beethoven's response is not known, but rather puzzlingly Holz asks the same question again in April 1826, barely four months after his first query. This time the question is slightly different, but Holz is clearly repeating his uncertainty over the interpretation of the notation. He asks: “whether the notes  may be contracted/drawn together as .

Setting aside the repeated request for clarification, Holz's apparent unfamiliarity with the technique might be explained in a number of ways. Firstly, he simply may have been unaware of the string tremolo: while little is known of his

39 “Warum haben Sie zwey Achtel [music example] geschrieben, anstatt  $\frac{1}{4}$ .” Ludwig van Beethoven: *Konversationshefte*, Vol. 8: Hefte 91–103, ed. by Karl-Heinz Köhler and Grita Herre, Leipzig 1981, p. 243.

40 “Ob die Noten [music example] in eine solche [music example] dürfen zusammengezogen werden”. Ludwig van Beethoven: *Konversationshefte*, Vol. 9: Hefte 104–113, ed. by Grita Herre, Leipzig 1988, p. 194.

musical training, he was regarded as a competent violinist but was an official in the finance ministry of the Lower Austrian Landstände; he was not a court musician nor considered a virtuoso. In fact, his unsuccessful substitution for Schuppanzigh as first violinist in a private performance of the String Quartets Opp. 127 and 132 apparently gave rise to the canon WoO 204 "Holz, Holz, geigt die Quartette so, als ob sie Kraut eintreten" [Holz, Holz fiddles the quartets as if he were stamping on cabbage].<sup>41</sup> Secondly, given he was born in 1799 and it appears that treatises of the nineteenth century acknowledge that the string tremolo was little used, it may be that he had never encountered it, especially since arguably he would not have had the exposure to French performance techniques that Beethoven did in Bonn. And, thirdly, as a violinist, he may have been unaware of Beethoven's previous uses of it as a piano technique in Opp. 69, 106 and 110, and was simply seeking extra clarification while preparing the arrangement; given the notorious state of Beethoven's handwriting in his manuscripts, who can blame him? Therefore, Holz's entries in the conversation books arguably raise more questions about his own musical awareness and desire to seek clarification when preparing the piano arrangement than perhaps they do of Beethoven's use of tied-note notation.

Finally, the musical contexts in which the string tremolo appeared also must be considered to help determine if Beethoven were evoking this technique. Typically, it appears to have been reserved for passages of high emotion, and in his study of the string tremolo during the seventeenth century, Stewart Carter has identified several specific instances in which it often appeared. He notes:

"In concerted vocal music it sometimes serves to highlight texts dealing with death or sorrow, while in instrumental music it is often used for a short, affective interlude. Later in the century it is also used to express fear, or trembling from the cold."<sup>42</sup>

Carter's assessment is also applicable to examples from the eighteenth century. For instance, the string tremolo appears in Jean-Philippe Rameau's first opera of 1733, *Hippolyte et Aricie* where the setting is Hades and the sea begins to boil, and in Gluck's *Orfeo*, it appears alongside the word "tremble" (Figures 9 and 10).

One can certainly describe the *Grosse Fuge*, *Hammerklavier*, and the scherzo of Op. 69 as highly emotive, and thus Beethoven's usage of it does appear to adhere to these principles. However, if one returns once more to Berlioz, he provides one further example of the context in which the string tremolo appeared – the recitative: "There is a

41 The canon appears in Beethoven's conversation book from September 1825 and was possibly entered by Holz himself. Beethoven: *Konversationshefte*, Vol. 8, p. 172.

42 Stewart Carter: *The String Tremolo in the 17th Century*, in: *Early Music* 19 (1991), pp. 42–59, here p. 56.

Viol

Hippolyte

Basse Continue

Mais de cour-roux l'on - de s'a - gi - - te;

Trem - ble, tu va pé -rir trop cou - pable Hip - po - li - te.

FIGURE 9 Rameau: *Hippolyte et Aricie*, Act 3, Scene 9, “Frémissement des flots”, bars 1–18, after the edition l’Hautecour/Le Clerc/Boivin, Paris 1733

final type of tremolo which is rarely used today but which Gluck made admirable use of in his recitatives.”<sup>43</sup>

The Recitative to Beethoven’s Piano Sonata Op. 110 contains perhaps the most famous example of his tied-note notation (Figure 1c, above), and in this instance he is indeed using the string tremolo in one of its original contexts, and – as inferred by Berlioz – one favoured by Gluck. Arguably, however, his other uses as discussed above also fit the dramatic, emotive settings in which the string tremolo was historically featured. Therefore, Beethoven’s sympathetic use of tied-note notation in musical contexts that correspond to the original settings in which the string tremolo was popularly used, further strengthens the notion that this was indeed the technique to which he was alluding in these works.

43 “[...] dans ses récitatifs”. Berlioz: *Grand traité d’instrumentation et orchestration modernes*, p. 19; full quote above p. 106.

Violino 1°

Violino 2°

Viola

Euridice

Basso

Il res-pi-rar. Tre-mo... va-cil-lo... e sen-to Frall' an

go-scia, e il ter-ro-re Da un pal-pi-to cru-del vi-brar-mi il co-re.

FIGURE 10 Gluck: *Orfeo ed Euridice*, Act 3, Recitativo, “Qual vita è questa mai”, bars 19–25, after the edition s. n., Paris 1764

In conclusion, the figuration in the Fischhof Miscellany has added a significant new piece of evidence to the ongoing debate over the meaning and execution of Beethoven’s tied-note notation, and relevantly, enables a connection with the string tremolo to be established. Unlike the *Bebung* technique proposed in earlier theories, however, the string tremolo does provide a model which fits notationally, contextually and chronologically. Having established the Bonn court orchestra’s technical mastery and exposure to French performance techniques, it is likely that Beethoven would have known first-hand of this technique through operatic performances in Bonn, through personal connections to those who performed in works that included the technique, and most notably as a viola player in the court orchestra, performing *Die Pilgrime von Mecca* at the time he sketched the piano figuration (Figure 2, above). Thus, if the string tremolo becomes a guide for performative interpretation, the technique would now be referred to as a form of ‘intensity vibrato’ in which the bow is gently pressed and released within a single stroke,



and this style of execution does appear to correspond with Czerny's advice on how to execute the tied-note notation in Op. 69:

"The Ligaturen in the right hand and the fingering placed over them, here signify something quite peculiar. Thus, the second tied/legato note is audibly struck again with the 3rd finger, so that it sounds something like this:



that means, the first note (with the 4th finger) very tenuto, and the other (with the 3rd finger) staccato and less marked: and so everywhere. The 4th finger must thereby slide downwards and make way for the 3rd."<sup>44</sup>

Czerny's acknowledgement that the notation is "quite peculiar" (peculiar being used here in its original context as belonging characteristically to one person) even corresponds to Berlioz's own affirmation that the notation was "rarely used". This interpretation is also shared by the pianist Charles Hallé (1819–1895), who was a renowned interpreter of Beethoven's piano works.<sup>45</sup> In his *Practical Pianoforte School*, Hallé includes a footnote on the execution of the tied-note passage in Op. 110, explaining that "The second note, played with the second [third] finger, is to be sounded softly (not tied to the first)."<sup>46</sup> Taken alone, this remark in and of itself is perhaps of little value other than providing another interpretation that supports Czerny's view. However, Hallé was also a close friend of Berlioz, and he edited a number of Gluck's editions with the assistance and advice of Berlioz.<sup>47</sup> In a letter to his wife, dated 17 August 1860, Hallé reveals:

"I spent nearly the whole day yesterday with Berlioz; we went through the score of 'Armida,' and, from memory, the whole of 'Iphigenia,' and I learned many things that I was ignorant of and which he

- 44 "Die Ligaturen in der rechten Hand, und die darüber gesetzte Fingersetzung bedeuten hier etwas ganz Eigenthümliches. Die zweite, (gebundene) Note wird nämlich mit dem 3ten Finger auch wieder hörbar angeschlagen, so dass es ungefähr so lauten muss: [music example] das heisst, die erste Note (mit dem 4ten Finger) sehr tenuto, und die and're (mit dem 3ten Finger)] kurz abgestossen und weniger markirt. Und so überall. Der 4te Finger muss dabei abwärts gleiten, und dem 3ten Platz machen." Carl Czerny: *Die Kunst des Vortrags der ältern und neuen Claviercompositionen. Supplement (oder 4ter Theil) zur grossen Pianoforte-Schule op. 500, Vienna [1846], Kapitel II: § 14, p. 90.*
- 45 Hallé was born in Hagen and moved to Paris in 1836. He stayed there until 1848, at which point he moved to England, firstly to London and then to Manchester in 1853 where he remained for the rest of his life. He is arguably best remembered as the founder of Manchester's Hallé Orchestra but was also a celebrated pianist and in 1861 gave the first known cycle of the Beethoven piano sonatas.
- 46 Charles Hallé's *Practical Pianoforte School. Sonata in A Flat Op. 110 by L. van Beethoven, Section V. No. 1, Manchester 1874, p. 14.* In this edition Hallé uses the English system of fingering whereby the thumb is indicated as "+", the index finger as "1", the middle finger as "2" and so on.
- 47 Hallé produced editions of *Armide*, *Orfeo*, *Iphigénie en Tauride* and *Iphigénie en Aulide*.

knows by tradition. He showed me effects that I should never have discovered by myself. I am therefore very pleased to have seen him."<sup>48</sup>

As we have seen above, both *Armide* and *Iphigénie* include the string tremolo, and thus it seems highly likely that Hallé's interpretation of the tied-note passage in Op. 110 derives from his experience of working with Berlioz on the editing of Gluck's manuscripts, which in turn further supports the view that Beethoven was evoking the string tremolo in these passages. Beethoven's trialling of two different fingerings (3-2 and 4-3) in the *Fischhof Miscellany* and his ultimate use of only 4-3 in the published examples suggests that he found this fingering the most desirable in achieving the effect for which he was aiming; sliding from a shorter finger to a longer one (rather than the opposite) arguably appears to have been both more comfortable and convincing for him, and thus certainly suggests a slurred approach to the finger change.<sup>49</sup> Therefore, in this sense, Beethoven's notorious 'tied-note notation' perhaps should no longer be regarded as such, and instead the indication reconsidered as a slur wherein both notes are necessarily sounded. His choice to use a conventional straight slur rather than the wavy line as seen in some of the published examples discussed above may even have been rooted in a desire to emphasise the sense of one continuous movement and the need for the notation to sound as if it were indeed "being stroked with the bow".

48 "Avec Berlioz j'ai passé presque toute la journée d'hier: nous avons parcouru toute la partition d'Armide, et, de souvenir, toute celle d'Iphigénie, et j'ai appris bien des choses que je ne connaissais pas et qu'il sait de tradition; il m'a montré des effets que je n'aurais pas pu trouver seul, je suis donc bien content de l'avoir vu." *Life and Letters of Sir Charles Hallé Being an Autobiography (1819-1860) with Correspondence and Diaries*, ed. by Charles E. Hallé and Marie Hallé, London 1896, pp. 257 f.

49 This point of course acknowledges that individual hand sizes/shapes/length of fingers vary, and what for one hand may seem easier may be the opposite for another.

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