

# *Breaking the Matrix*

## Transcribing Bartók and Ligeti for the Guitar Using a New Capo System

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### Introduction

*It is much the same as with man himself. Born naked, and as yet without definite aspirations, he decides, or at a given moment is made to decide, upon a career. From the moment of decision, although much that is original and imperishable in the idea or the man may live on, either is depressed to the type of a class. The musical idea becomes a sonata or a concerto; the man, a soldier or a priest. That is an arrangement of the original. From this first transcription to a second the step is comparatively short and unimportant. And yet it is only the second, in general, of which any notice is taken; overlooking the fact, that a transcription does not destroy the archetype, which is, therefore, not lost through transcription.*

—Ferruccio Busoni, *Sketch of a New Esthetic of Music*<sup>1</sup>

GUITARISTIC IDIOMS have their own limitations and customs. A transcriber for the guitar, mining the piano literature of the twentieth century, will struggle to break open the shell of a nostalgic status quo. In this article, I develop an unexplored aspect of the guitar's idiom through transcription of piano music by Béla Bartók and György Ligeti, deploying customized capos and radical scordaturas.

Soundscapes of Bartók and Ligeti may evoke the guitar while seeming utterly incompatible with the matrix of frets and strings. This distinction begs for a more innovative and imaginative approach to transcription. Successful transcriptions of this repertoire will advance our field by opening up new and unexplored idioms for transcribers and composers.

<sup>1</sup> Ferruccio Busoni, *Sketch of a New Esthetic of Music*, trans. Theodore Baker (New York: Schirmer, 1911), 16.

## I The Guitar's Nostalgic Identity

### *Innovative Transcribers*

The colorful and diverse history of transcription is an essential part of the guitar canon, with its own virtuosos and innovative minds. Their contribution stretched the boundaries, brought innovation, opened up capacities of the guitar that no one could imagine before. It is enough to think of such pioneers as Coste arranging Baroque guitar repertoire,<sup>2</sup> or later, Segovia performing Bach—efforts that made early music a standard part of the guitar's repertoire. More recent guitar legends provide further examples of innovation. Yamashita's *Pictures at an Exhibition* demonstrated seemingly infinite potentials of guitar technique. Seeking to transfer polyphonic textures to the guitar, Paul Galbraith never stopped till he had invented a completely new instrument and method; his way of playing on the Brahms guitar established a new point of departure for all guitarists.<sup>2</sup>

In a trend historically related to transcription, guitarists are increasingly collaborating with living composers to adapt their works for guitar. Creative collaborations such as the 2016 premiere of Penderecki's *Viola Concerto*, transcribed for guitar and performed by Sinfonia Varsovia and Lukasz Kuropaczewski, have had a far-reaching impact. The fertile land of guitar transcription has been well researched by scholars, and I would not attempt a more detailed summary here.<sup>3</sup>

### *The Change of Medium*

When Frank Cox refers to translation as “the communicative chain between conception, notation, . . . interpretation . . . and reception” (using translation instead of direct correspondence), he offers an analogue to the translation from one musical medium to another. “Each domain,” he explains, should be seen as qualitatively different from the other: each has its own independent structuring, imperatives, and history, and could be treated as a separate “language.” Following this analogy, the translation between domains (as with human languages) must begin by acknowledging their fundamental differences, then attempt to create analogical bridges.<sup>4</sup>

A parallel is often drawn between translation and transcription: the change of medium is in some ways a similar act where the medium is either language or instrument. As Barbosa-Lima explains, for repertoire of any complexity, transformation is critical to this change: “It's really no different from the translator who must resort to a loose or idiomatic translation in order to convey fully the essence of some piece of poetry or prose.”<sup>5</sup>

2 The eight-string “Brahms guitar” was the invention of the guitarist Paul Galbraith and the luthier David Rubio in the mid-1990s. See Martin Woodhouse, “8-string ‘Brahms guitar,’” Online.

3 Richard Yates, *The Transcriber's Art* (Pacific, MO: Mel Bay, 2012).

4 Frank Cox, “Notes toward a Performance Practice for Complex Music,” in *Polyphony and Complexity, New Music and Aesthetics in the 21st Century*, ed. Claus-Steffen Mahnkopf, Frank Cox, and Wolfram Schurig (Hofheim: Wolke Verlag, 2002), 104.

5 Carlos Barbosa-Lima, “Guitar: The Art of Transcription,” *Music Journal* 34, no. 5 (1976): 32.

Although transcription has not been theorized in depth, it has been essential to the classical guitar's concert life. I agree with Leathwood's description of the guitar as an instrument that "throughout the twentieth century has measured its progress by its attraction to major composers."<sup>6</sup> Alas, not many of the major composers of Western classical music had an inspirational guitarist colleague, collaborator, or muse at hand. This is, of course, only one of the reasons for the instrument's isolation. Nevertheless, we often transcribe works from composers who never approached the guitar and therefore never established a characteristic guitaristic idiom of their own.

In such cases the transcriber needs to assist the new medium to "start speaking" and create a "reproduction" of the original masterpiece—a reproduction, that is, in Adorno's sense: "True reproduction is the x-ray image of the work. Its task is to render visible all the relations . . . that lie hidden beneath the surface."<sup>7</sup>

From the outset, the transcriber is faced with an idiomatic clash between the original and new medium. This clash makes the process both challenging and rewarding, for it requires the transcriber both to analyze and to innovate. For example, Galbraith's pursuit of a way to reconstitute Viennese Classical masterworks on the guitar followed a logical path. On the guitar he had to find a way to separate the different musical materials played by two hands on the piano, so that, for example, the Alberti bass does not get jumbled with the melodic line. Thus, at the end of his journey, we have the Brahms guitar.

A relevant theoretical framework to address some of these issues can be found in Jonathan De Souza's writings, especially in his book *Music at Hand*.<sup>8</sup> In De Souza's terms, these pioneers are exploring the guitar as "musical space" by stretching "instrumental affordances."<sup>9</sup> In the discussion below, I shall at times invoke some of De Souza's concepts and terms—in particular, transformations of the "instrumental interface" and "place-to-pitch mapping."

### *Trends in Modern Music and the Guitar's Self-Isolation*

György Kurtág dedicated his most significant guitar work, *Grabstein für Stephan*, to Stephan Stein, husband of the Hungarian gestalt psychologist Marianne Stein. Although it is difficult to reconstruct Stein's therapeutic method with Kurtág from the fragmented biographical sources, we know that her sessions took place during the composer's Paris stay between 1957 and 1958, and that they included "a strong and painful acting-out of our most traumatic experiences through composition."<sup>10</sup>

6 Jonathan Leathwood, "Carter's Solo Inventions: Compositional Ideas and Instrumental Idioms in Changes (1983) for Guitar," in *Ideas and Idioms: Composition, Collaboration and Interpretation in Some Recent Guitar Works* (PhD diss., University of Surrey, 2011), 1.

7 Theodor W. Adorno, *Towards a Theory of Musical Reproduction: Notes, a Draft and Two Schemata*, trans. Wieland Hoban (Cambridge: Polity 2006), 1.

8 Jonathan De Souza, *Music at Hand: Instruments, Bodies, and Cognition* (New York, NY: Oxford University Press, 2017), 1–191.

9 Jonathan De Souza, "Fretboard Transformations," *Journal of Music Theory* 62, no. 1 (2018): 25.

10 In 1959, Kurtág presented me to a rather exceptional person, Marianne Stein, a Hungarian Gestalt psychologist then living in Paris, who worked only with artists. Her influence on our lives was

**Figure 1** Kurtág, *Grabstein für Stephan*, op. 15/c, guitar part, mm. 1–4.

Larghissimo,  $\text{♩} = \text{ca. } 45-20$  Kurtág György Op.15/c



Quite possibly, they helped the composer to find his way out of the compositional crisis he was enduring.

In spite of the simplicity of its guitar part (**figure 1**), Kurtág refers to *Grabstein für Stephan* as a “harrowing experience.”<sup>11</sup> The radically simple and self-repetitive use of the guitar may be interpreted as personifying the instrument: the arpeggio Gestalt represents the human struggle,<sup>12</sup> a being closed to their own existence, reduced in the guitar part to the lonely, melancholic, self-repetitive strumming of the barely modified open strings.

Kurtág’s open-string chord seems an apt metaphor for the guitar’s twentieth-century culture. Traditional guitar tuning embodies a hierarchy of common practice harmony, based on a tonic-dominant relationship. But as Western composers began to treat the twelve notes as equal, the guitar fell behind. While the twentieth century dashed along with new compositional techniques, such as bitonality, multitonality, serialism, clusters, pitch-set technique, and many others, the guitar kept looking back to the past and repeating itself.

Each instance of “new music” that has been created by collaborating with composers or by transcribing non-guitaristic music can help dissolve the barriers around our thoroughly stereotyped instrument. It can help to “break the matrix” and create a new, more open idiom to express musical meaning.

My contribution to this shared project is a concrete way of experimenting with capos, scordaturas, and multi-string instruments. To transcribe twentieth-century piano music—beginning with the pieces by Bartók and Ligeti discussed below—I have invented single- and double-string capos, or *magnet capos*. In what follows, I begin by describing the capos and go on to discuss the new approaches that their use implies—technical, analytical, creative, and performative. I shall detail challenges of idiom, transformations of the instrumental interface, and the potential of new capos for the transcription of new music.

decisive. She suggested—and obtained—a strong and painful acting-out of our most traumatic experiences through composition. One can hardly understand Kurtág’s *Játékok*, but also his Kafka, Beckett and Hölderlin pieces without the huge liberating effect of her method.” Andre Hajdu, “A Galaxy Called ‘Mikrokosmos’—A Composer’s View,” *Tempo* 62, no. 243 (2008): 16–35.

11 Bálint András Varga, ed., *György Kurtág: Three Interviews and Ligeti Homages* (Rochester: University of Rochester Press, 2009), 50.

12 Klass Coulembier and Daan Janssens, “Writing Music (and Music History): Referential Ramifications in Claus-Steffen Mahnkopf’s *Kurtág-Zyklus*,” *Tempo* 71, no. 279 (2017): 18–37.

## II Tools, Landscapes, Affordances

### Capos

*This powerful tool should not be overlooked in the future music for the instrument.*

—John Schneider, *The Contemporary Guitar*<sup>13</sup>

A *capotasto*, *capodastro*, *capo d'astro*, or capo for short is “a mechanical device that shortens the vibrating length of the string, thereby raising the pitch.”<sup>14</sup> This widely acknowledged tool originated no later than the sixteenth century. The earliest reference to it comes from 1555, when the vihuelist Juan Bermudo spoke of wrapping a *pañezuelo* (Spanish *pañuela*, handkerchief) around the fretboard. Another significant reference is made by Battista Doni in his treatise of 1640.<sup>15</sup>

The capo—most often found in popular music—is generally used either for straightforward transposition or to enable otherwise difficult keys. On the classical guitar it is often used to create an alternative G-based tuning to imitate the Renaissance lute, but many contemporary pieces, such as David Fennessy’s *Rosewood* (2010), make imaginative use of it.

As Josel and Tsao explain, recent years have seen new types of capo that offer more flexibility than the traditional type: “Traditionally the capo used to stop the entire width of the fretboard, i.e., all six strings; recently, however, there have been experiments with partial capos, such as a ‘Spider Capo,’ that allow a select number of strings to remain in the open tuning.”<sup>16</sup> There have been a number of other experiments around the world to create partial capos, and though these tools are not widely known, some have also been used in popular music (by performers such as Trace Bundy, for example).

When I realized that currently existing models would not serve my ideas for transcriptions, I started to work on new models and came to invent prototypes for single- and double-string capos, or magnet capos. I will refer to these capos as model 1, model 2, model 3, and model 4, and will examine their attributes in detail. The new capos detailed here were designed and manufactured by R.A. Dorey, professor of nanomaterials at the University of Surrey, the research engineer Allin Groom, the metal artist Tóbiás Terebessy, and the goldsmith Viktor Varga.

Model 1 is a thin steel plate placed under five of the strings between the frets on the fretboard, but bridging over the remaining string to hold it down against the fret. This capo is somewhat slow to affix, and so cannot be changed mid-piece, but it is very secure (**figure 2**).<sup>17</sup>

13 John Schneider, *The Contemporary Guitar* (London: Rowman & Littlefield, 2015), 130.

14 Seth Josel and Ming Tsao, *The Techniques of Guitar Playing* (Kassel: Bärenreiter, 2014), 183.

15 Giovanni Battista Doni, *Annotazioni sopra il Compendio de' generi, e de' modi della musica* (Rome: Andrea Fei, 1640), 335.

16 Josel and Tsao, *The Techniques of Guitar Playing*, 183.

17 Photographs by Franciska Bethlenfalvy.

Model 2 is a single-string capo with a neodymium (rare-earth) magnet (**figure 3**). It is a two-part tool with a thin steel plate fixed under all six strings and a neodymium rod set in a plastic 3D-printed case that also incorporates a groove between the magnet and the string where it is pressed down. The magnet can be affixed and removed in two seconds but is less stable than model 1.

Model 3 is also a two-part tool: a double-string capo with neodymium magnet (**figure 4**). The first component is a thin steel plate fixed under all six strings, while the other is a neodymium cuboid set in a plastic 3D-printed case that also incorporates a groove between the magnet and the string where it is pressed down. The magnet can be affixed and removed in two seconds but is less stable than model 1.

Model 4 is a single-string capo for the twentieth (last) fret on the first string (**figure 5**). This two-part tool is similar to model 2, except that this is positioned differently through the edge of the soundhole.

The target of these single- and double-string capos is to enable any “open-string sets” by pressing down on any string at any fret.

### *Transformation of the Instrumental Space*

Before discussing how open strings modify our concept of the guitar in cognitive terms, let us examine how magnet capos may transform the instrumental space,<sup>18</sup> the physical space of the musician’s “embodied performance.”<sup>19</sup>

As Merleau-Ponty describes it, the organist “sizes up the instrument with his body, he incorporates its directions and dimensions, and he settles into the organ as one settles into a house.”<sup>20</sup> For the guitarist, a major part of this “house” is determined by the six parallel strings, each of the same length. On the fretboard the nut is the zero point (marked as a zero on a standard guitar tablature (**figure 6**), also called an open string); the instrumental space continues with the first fret, marked as 1, all the way to the bridge. **Figure 7** shows the musical space that results.

Although other plucked instruments—such as the lute—have different lengths of strings, the longer bass strings are only to be plucked and do not have frets below them, so the fretboard still starts at the same point at the nut. On the contrary, some banjos have a string with a shorter fretboard (the so-called thumb string).

On the classical guitar “the left hand has a stretch of five to seven frets, depending on the position on the fingerboard.”<sup>21</sup> What, then, is the typical span of frets available to the guitarist? Let us call this span the “fret-interval.”<sup>22</sup> Taking  $x$  to be the

18 De Souza, *Music at Hand*, 53.

19 De Souza, “Fretboard Transformations,” 4. “They are also, obviously, spaces for embodied performance, spaces that musicians inhabit.”

20 Maurice Merleau-Ponty, *Phenomenology of Perception*, trans. Donald A. Landes (London: Routledge, 2012), 146. This modified translation is by De Souza in *Music at Hand*, 22.

21 Jonathan Leathwood, *Some Notes on Writing for the Guitar* (the author, 2010), 17.

22 This concept of “fret-interval” is taken from Koozin, who speaks of “fret-interval type . . . as a generalized expression of fretboard hand position information.” See Timothy Koozin, “Guitar Voicing in Pop-Rock Music: A Performance-Based Analytical Approach,” *Music Theory Online* 17, no. 3 (2011): 1, online.

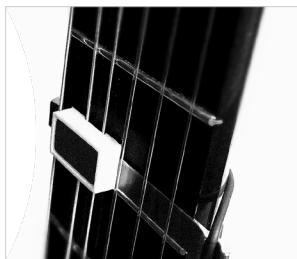
**Figure 2** Single-string capo: model 1.



**Figure 3** Magnet (single-string) capo: model 2.



**Figure 4** Magnet (double-string) capo: model 3.



**Figure 5** Magnet (single-string) capo: model 4.



higher-numbered fret and  $y$  to be the lower-numbered fret, the fret-interval is given by  $x - y$ . Assuming a guitar with twenty frets, the fret-interval cannot be more than seven frets, unless we use an open string, when the maximum fret-interval can be as large as the number of frets on the guitar.

$$x - y \leq 7, \text{ if } y \neq 0$$
$$x - y \leq 20, \text{ if } y = 0$$

Standard “chord-window” diagrams show a five-fret span, because mainstream guitar chords do not exceed a fret-interval of 5. The magnet capo creates a new and expanded set of affordances by transforming the fretboard. With the capo or a set of capos positioned at any fret, all combinations of fret-intervals become possible.

$$x - y \leq 20$$

We can see this transformed new instrumental interface as a musical space where the strings start at different “zero points” depending on the position of the capos.

**Figure 8** shows an example of the musical space where the magnet capos are positioned on the different strings and frets, therefore resulting in different string lengths.<sup>23</sup> This kind of diagram will be used throughout the ensuing discussion as an aid to visualize the interface.

### *Pitch Centricity and Open-String Sets*

When it comes to widespread chords, fast passages, fluidity, polyphony, or any complex musical material, the tuning of open strings defines the possibilities. Leathwood discusses in detail why using open strings is crucial when it comes to complex musical structures.

[Widespread chords:] We have already seen that extreme spans from bottom to top, so important in much modern music, can present impossibilities, because these spans cannot be stretched by the left hand. The easiest way to avoid these difficulties, of course, is to make the bass note an open string.

[Fast passages, fluidity:] Fast flourishes that leap from one extreme of register to another become much easier to perform if there is an open string somewhere in the figure. The open string gives the left hand time to jump between opposite ends of the fingerboard.<sup>24</sup>

As mentioned before, the open string can be seen as a zero point of musical space. Jonathan De Souza connects this notion with ideas both of embodiment and variability—a connection of particular significance to capos:

Merleau-Ponty also mentions a *zero point* of embodied spatiality. This concept derives from phenomenology’s founder, Edmund Husserl. For Husserl, the body is “the bearer

23 Special thanks to Jonathan Leathwood and Milton Mermikides for their contribution on creating diagrams and tablature.

24 Leathwood, “Some Notes on Writing for the Guitar,” 9, 3, 20.



Figure 6 Standard guitar tab.

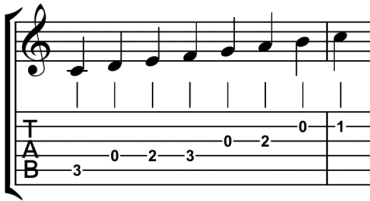


Figure 7 The musical space on the guitar.

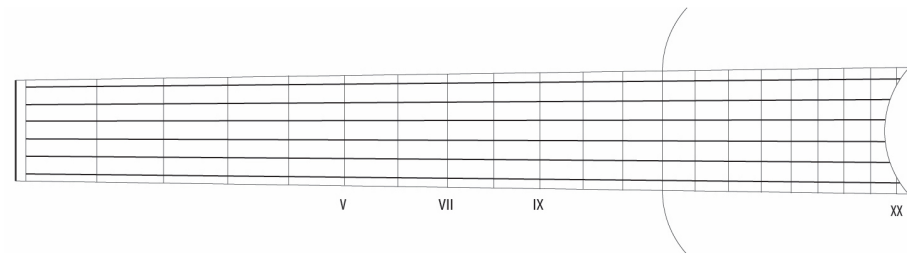
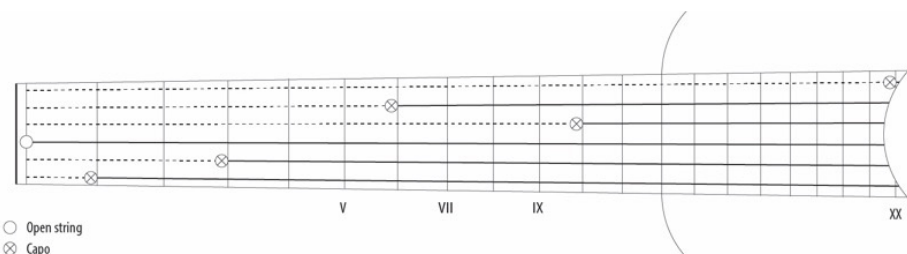


Figure 8 Fretboard diagram with different string lengths.



of the zero point of orientation, the bearer of the here and now,” and “the peculiarity of a horizon . . . resides . . . in the fact that depth has a ‘zero point’ and an ‘infinity-limit.’” If the zero is understood as a point of orientation, we might arbitrarily label *any* fret or string as o. Indeed, this is also a lesson from Lewin’s essay on pitch-class labeling. “By labelling any one pc with the zero residue,” he writes, “we are implicitly (if only formally) attributing a tonic status to that pc.”<sup>25</sup>

While traditional capos can expand the guitar’s range of starting keys in tonal music, post-tonal languages challenge the instrument in an idiomatically new way. The classical guitar’s tuning, with its perfect fourths, builds on the main functions of the tonic-dominant relationship. On the other hand, post-tonality constructs different types of hierarchy of pitch classes, in some cases having a pitch-center too:

<sup>25</sup> De Souza, “Fretboard Transformations,” 11.

All tonal music is centric, focused on specific pitch classes or triads, but not all centric music is tonal. Even without the resources of [CP] tonality, music can be organized around referential centers. . . . In the absence of functional harmony and traditional voice leading, composers use a variety of contextual means of reinforcement. In the most general sense, notes that are stated frequently, sustained at length, placed in a registral extreme, played loudly, and rhythmically or metrically stressed tend to have priority over notes that don't have those attributes.<sup>26</sup>

While transcribing twentieth-century piano music, I often realized the practical necessity of identifying the pitch center and addressing it through a scordatura or an *open-string set* using capos. In this article, the term *open-string set* will refer to a given set of open strings. The default open-string set is E<sub>2</sub> A<sub>2</sub> D<sub>3</sub> G<sub>3</sub> B<sub>3</sub> E<sub>4</sub>, as seen in figure 1, m. 1. The pitch of an open string can be changed by retuning or by applying a capo. Note that a capo can only raise the pitch of a string, and that it is rare to retune a string by more than two semitones above or below, although we will see string 6 lowered by up to six semitones in the transcribed excerpts below.

The following musical examples demonstrate these principles in action. Starting from the pitch centrality of a particular piece, I construct an open-string set by combining a scordatura with one or more custom capos. The result is a transformed guitaristic landscape well-suited to the materials of post-tonality—in particular, multi-layer structures, ostinatos, pedal tones, clusters, modern vertical forms, bass lines with high tremolos, and wide-spaced chords.

<sup>26</sup> Joseph Straus, *Introduction to Post-tonal Theory*, 3rd ed. (Upper Saddle River, NJ: Pearson/Prentice Hall, 2005), 131.

### III Bartók's "Night Music": Clusters and Multilayers

There was a sense of general acclaim in response to the 1926 premiere of "The Night's Music," the fourth movement of the piano cycle *Out of Doors*, performed by Bartók himself on his recital at the Liszt Ferenc Academy of Music in Budapest. "One of the most wonderful masterpieces of Hungarian nature-poetry,"<sup>27</sup> "The Night's Music" became a locus classicus for a new genre that scholars labeled the "nocturno type" or the "music of the night." Details about the history of the piece's creation can be discovered in the memoirs of family members, especially Bartók's son Péter, who recounts his father's summertime stay with Elza (Béla Bartók's sister) in Szöllőspuszta and how his father spent many nights outdoors listening to the sounds of nature and of the distant village.

Night music—its intimacy, introversion, and melancholy—seem an ideal topos for the guitar. Benjamin Britten, who developed his own brand of night music in the wake of Bartók, evidently thought so, as he wrote his *Nocturnal* for guitar. Perhaps Bartók might have done the same, had he thought of the guitar; but Hungarian guitar culture of the time did not have much to offer modernist composers.<sup>28</sup>

The only occurrence of the guitar in Bartók's oeuvre is in the first volume of his collection of Romanian folk music, devoted to instrumental melodies.<sup>29</sup> As Vikárius explains, "The Maramures violinists have as an accompanist a player of a kind of two-stringed guitar which is tuned in the perfect fifth d–a. He invariably plays equal eighths to all the pieces" (figure 9). This instrument, called zongor, is imitated by Bartók—again in a percussive accompanying part—in the second movement of his Sonata, "*Medvetánc*" (Bear Dance).<sup>30</sup>

27 In these strains one can hear everything imaginable—a kind of crying, vague, distant music, bird-music, star-music, then the tranquil sounding of the transcendental melody of the night's sublime hymn. Without the notes attempting to be crickets, birds, or stars, they truly capture the unearthly picture of the night—of Bartók's night—in front of your eyes. This is one of the most wonderful masterpieces of Hungarian nature-poetry. This grandiose picture of the 'Night' is, together with Kodály's 'Hegyi éjszakák' [Mountain Nights], worthy of the verses of the greatest Hungarian poets, and [let us not forget that] Petófi and Vörösmarty also wrote poetry about the stars!" From a 1926 review by Aladár Tóth, translated by David E. Schneider in *Bartók, Hungary, and the Renewal of Tradition: Case Studies in the Intersection of Modernity and Nationality* (Berkeley, CA: University of California Press, 2006), 85.

28 The role of the classical guitar in Hungary in the first half of the twentieth century was as a popular instrument, often accompanying singers. Between 1900 and 1940, all together fifteen concert programs involving the guitar are mentioned in the concert archives of the Hungarian Academy of Sciences – Research Centre for the Humanities, Institute for Musicology. Here, the guitar typically plays a role accompanying voice or violin, but it is also important to mention Segovia's recital in 1937. Besides information found in concert databases, I should also mention the Hungarian Barna Kováts, an absolutely progressive guitarist and composer, born too late—1920—to collaborate with Bartók.

29 Bela Bartók, *Rumanian Folk Music*, ed. Benjamin Suchoff, vol. 1, Instrumental Melodies (The Hague: Martinus Nijhoff, 1967), 16. I would like to express special gratitude to László Vikárius for searching for any mention of the guitar in the Bartók Archives.

30 For an exploration of the bear dance as a genre and its relationship to Bartók's research, see László Vikárius, "Bartók: 'Bear Dance,'" *Studia Musicologica* 49 nos. 3–4 (2008): 341–67.

Discussions of “The Night’s Music” in the Bartók literature offer an important reference for the transcriber, because each of the key points must somehow be represented on the guitar. According to Tallián, the composer created “his most personal genre—night music” with this piano piece, which later formed “the kernel of the Quartet no. 4” too.<sup>31</sup> Schneider points to “antihuman chords” (clusters), which create a vision of “the secretive murmurs of cool, starry, demonic Night.”<sup>32</sup> Turning to the score to continue this description, we find irregular intervals spread over a wide range, imitating the noises of nature. Five-note clusters create an atmospheric background for the whole piece (figure 10), and this becomes the first layer, upon which the composer builds other layers of nocturnal sounds, a chorale melody, and a peasant flute melody.

This layered structure scarcely suggests the guitar. Evidently, clusters do not work well on a traditionally tuned instrument, and neither is it possible to hold a chord as a layer on which to build.

The solution is to create an open-string set based on the cluster as a central pitch set. This becomes possible with the single-string capos I previously described. With the cluster thus assigned to “open” strings, additional layers can be added—the capos function as a kind of pedal, leaving the left hand free to play other motives above that layer. In my transcription, I reduced the five-note cluster to four notes. Figure 11 shows the open-string set and the fretboard diagram of the instrumental space with the capos positioned at two of the frets. Transposing the whole piece a major third higher, I created the transcription of the opening two measures shown in figure 12.

The first part of the piece consists of the background cluster and the imitations of the nature sounds. Bartók’s son, Péter, writes the following about the piece and the summer in Szőlőspuszta:

In the front of the house we were surrounded by silence, except for distant dogs barking, crickets or similar pretty sounds, and frogs. Do not forget the frogs . . . . In the fourth movement . . . I recognized the frogs of Szöllös in an altogether reminiscent atmosphere. There were even those occasional jumps into the water. And in the distance sounded some faint music, the man-made kind, perhaps coming from the nearby village.<sup>33</sup>

Bartók uses five motives to imitate the outdoor’s nocturnal ambience. To transcribe them for guitar, it is often helpful to take into account the choreography of the two media. The motives and their transcriptions are shown in figure 13:

- a A soft sound nearly inaudible in the surrounding atmosphere. This was translated to a dark-colored natural harmonic on the 4th string of the guitar.
- b A dry and sharp staccato note (imitating a pebble falling into the water, according to some interpreters), translated to a combination of a note played on the fourth

31 Tibor Tallián, *Béla Bartók: The Man and His Work* (Budapest: Corvina Kiado, 1981), 156.

32 David E. Schneider, *Bartók, Hungary, and the Renewal of Tradition*, 85.

33 Péter Bartók, *My Father* (Homosassa, Florida: Bartók Records, 2002), 164, 161.

string and a very high harmonic on the first string, played using the edge of the nail, resulting in a *metallico* timbre.

- c A scotch snap in high register, translated equivalently.
- d Staccato notes with minor seconds—the “frogs motive.” In the guitar version the dynamic changes are also supported with a gradual change of timbre between *sul ponticello* (at *forte*) and *sul tasto* (at *piano*)
- e A rumbling motive, translated to a left-hand slur on the lowest string.

Although the structure in **figure 14** might seem impossible to the guitarist’s eye, **figure 15**, with its clarifying annotations in tablature, shows how the instrumental landscape shifts with the new tools and transposition.

The first appearance of the chorale melody, a lonely single line (colored with a doubling octave) expresses the loneliness of the human soul. When it enters the second time it sounds in three octave registers, ceremonial and reassuring (**figure 16**).

In the guitar transcription, the chorale enters as a single line and is played in two octaves for the ceremonial repetition (**figure 17**). This reduction to two parallel octaves recalls the fifth section (“March-like”) of Britten’s *Nocturnal*—a melody in octaves on the two extreme strings, accompanied by the middle strings.

The third section marks the most folkloric moment of the piece—snatches of a peasant flute tune (**figure 18**), a nostalgic recall of the music of the distant village.

The dancelike character and the ornamented melodic line, rhythmically accompanied by strummed chords, are equally idiomatic on the guitar (**figure 19**).

In bar 41, Bartók writes an expanded cluster, played by the whole arm on the piano. This extreme expression of noise, sounding like broken glass, is played in the high register of the keyboard, where the strings have no damping mechanism. Translating this musical gesture to an equivalent on the guitar, I decided to strum the strings behind the nut, as marked in the notation example above.

The final part, the climax of the movement, summarizes all the layers and brings all the themes together. This *stretto* is idiomatically challenging on the guitar but not exceptional in the guitar literature—compare the *passacaglia* in Britten’s *Nocturnal*. Britten also decided to notate his layers in two staves. Obviously, this part stretches the idiomatism the furthest, but through some octave modifications, all the elements of the texture can be represented as shown in **figure 20**.

Figure 9 Bartók, *Rumanian Folk Music*, volume 1, "Bear Dance."

171.  
F.: 2195b) (jocul ursului) Oncești  
Pătru Drăguș, țigan (28)

Allegretto ♩ = 126

Violino

Guitare *sempre simile*

Var. 1) 2) 3) 4) la sfârșitul: *Schluss:*

The image shows a page of musical notation for 'Bear Dance' (jocul ursului) by Béla Bartók. The score is for Violino and Guitare. The tempo is Allegretto with a metronome marking of ♩ = 126. The key signature has one flat (B-flat). The score includes a main section with first and second endings, and a variation section with four variations. The first ending of the main section leads to the second ending, which then leads to the variation section. The variation section is marked 'la sfârșitul: Schluss:'. The Guitare part is marked 'sempre simile'.

Figure 10 Bartók, *Im Freien* [Out of Doors], Sz.81, "The Night's Music," mm. 1–2.

Lento, ♩ = 72 - 69

*pp*

*m.s. pp*

The image shows the beginning of the musical score for 'The Night's Music' (The Night's Music) by Béla Bartók. The tempo is Lento with a metronome marking of ♩ = 72 - 69. The key signature has one flat (B-flat). The score is for Violino, Piano, and Guitare. The Violino part starts with a whole note chord. The Piano part starts with a half note chord. The Guitare part starts with a rhythmic pattern of eighth notes. The score is marked 'pp' (pianissimo) and 'm.s. pp' (mezzo-soprano pianissimo).

**Figure 11** Open-string set and fretboard diagram for Bartók, “The Night’s Music.”

The figure shows an open-string set and a fretboard diagram. At the top, a treble clef staff displays the notes G4, A4, B4, C5, with fingerings 6, 5, 4, 3, 2, 1 above them. Below this is a fretboard diagram with six strings and frets marked V, VII, IX, and XX. A dashed line indicates the open string set, and two 'X' symbols indicate capos at frets V and VII. A legend below the diagram defines 'O' as 'Open string' and 'X' as 'Capo'. The text '6=D2' is written to the left of the diagram.

**Figure 12** Bartók, “The Night’s Music,” mm. 1–2 (transcription by the author).

Scordatura (red = capo)

The figure shows a musical score for two staves. The top staff is a treble clef staff with a 3/2 time signature. It contains two measures of music. The first measure has a whole note chord with fingerings 6, 5, 4, 3, 2, 1 above it. The second measure has a whole note chord with a sharp sign above it. The bottom staff is a guitar staff with a 3/2 time signature. It contains two measures of music. The first measure has a whole note chord with fingerings 6, 5, 4, 3, 2, 1 above it. The second measure has a whole note chord with a sharp sign above it. The tempo is marked 'Lento, ♩ = 72-69'. The dynamics are marked 'pp' in both measures. The guitar staff has a red '0' above the first measure and a red 'H20' above the second measure. The guitar staff has a red '0' above the first measure and a red 'H20' above the second measure.

Figure 13 Bartók, "The Night's Music," motives.

(a) (b) (c) (d) (e)

pno

gtr

*pp* *p* *poco sf* *poco sf* *poco sf*

2 4 5 8 10 6

8<sup>va</sup> 1

Detailed description: This figure shows five musical motives labeled (a) through (e) for piano (pno) and guitar (gtr). Motive (a) starts at measure 2 with a piano (*pp*) dynamic. Motive (b) starts at measure 4 with a piano (*p*) dynamic. Motive (c) starts at measure 5 with a piano (*p*) dynamic. Motive (d) starts at measure 8 with a *poco sf* dynamic. Motive (e) starts at measure 10 with a *poco sf* dynamic. The piano part includes fingering numbers 2, 4, 5, 8, and 10. The guitar part includes a fingering number 6. A first-octave sign (8<sup>va</sup>) is present above the piano staff at measure 5.

Figure 14 Bartók, "The Night's Music," mm. 7–9.

*poco sf* *poco sf* 3

m.s.

8<sup>va</sup>

*poco sf* *poco sf* *poco sf*

m.s.

Detailed description: This figure shows measures 7-9 of the piano and guitar parts. The piano part features a melodic line with a *poco sf* dynamic. The guitar part provides harmonic accompaniment. The piano part includes a first-octave sign (8<sup>va</sup>) above the staff at measure 8. The guitar part includes a first-octave sign (m.s.) below the staff at measure 7. The piano part includes a fingering number 3 at measure 8.





Figure 17 Bartók, "The Night's Music," mm. 26–29 (transcription by the author).

Musical score for Figure 17, Bartók's "The Night's Music," measures 26–29. The tempo is marked "Più andante" with a quarter note equal to 76 (♩ = 76). The score is in 4/4 time and features a complex, chromatic melody in the right hand and a more rhythmic accompaniment in the left hand. The key signature is three sharps (F#, C#, G#). The dynamic marking *pp* (pianissimo) is indicated at the end of the passage.

Figure 18 Bartók, "The Night's Music," mm. 37–40.

Musical score for Figure 18, Bartók's "The Night's Music," measures 37–40. The score is in 3/2 time and features a complex, chromatic melody in the right hand and a more rhythmic accompaniment in the left hand. The key signature is three sharps (F#, C#, G#). The dynamic markings *p* (piano), *mf* (mezzo-forte), *m. s.* (mezzo-solito), *m. d.* (mezzo-dolce), and *mp* (mezzo-piano) are indicated throughout the passage.

Figure 19 Bartók, "The Night's Music," mm. 37–43 (transcription by the author).

Musical score for Bartók's "The Night's Music," measures 37–43. The score is in 2/2 time and features a complex rhythmic structure with frequent changes in meter. The key signature is B-flat major. The score is divided into two systems. The first system covers measures 37–39, and the second system covers measures 40–43. The notation includes a variety of dynamic markings: *p* (piano), *mf* (mezzo-forte), *mp* (mezzo-piano), *pp* (pianissimo), and *f* (forte). A specific performance instruction, "Strum behind the nut," is indicated with a guitar icon in measures 39 and 41. The score also includes a tempo marking  $\text{♩} = \text{♩}$  at the beginning of the first system.

Figure 20 Bartók, "The Night's Music," mm. 58–65 (transcription by the author).

Musical score for Bartók's "The Night's Music," measures 58–65. The score is in 3/4 time and features a complex rhythmic structure with frequent changes in meter. The key signature is B-flat major. The score is divided into three systems. The first system covers measures 58–61, the second system covers measures 62–63, and the third system covers measures 64–65. The notation includes a variety of dynamic markings: *p* (piano), *pp* (pianissimo), and *f* (forte). A specific performance instruction, "Strum behind the nut," is indicated with a guitar icon in measure 61. The score also includes a tempo marking *a tempo*,  $\text{♩} = 76$  at the beginning of the first system.

## IV Ligeti

### *Stretching the Range without Stretching the Hand: Ligeti's "Music from Nothing"*

The 1950s saw the worst decade of Hungary's communist dictatorship. Between 1951 and 1953, György Ligeti—isolated and censored—composed a set of eleven pieces for a secret “bottom drawer”: his *Musica ricercata*.

I was twenty-seven years old and lived in Budapest completely isolated from all the ideas, trends, and techniques that had emerged in Western Europe after the war. In 1951 I began to experiment with very simple structures of rhythms and sonorities as if to build up a “new music” from nothing. I regarded all the music I knew and loved as being, for my purpose, irrelevant. I asked myself: what can I do with a single note? With its octave? With an interval? With two intervals? With certain rhythmic relationships? In this way, several small pieces resulted, mostly for piano.<sup>34</sup>

The composer builds eleven “studies” on sets with an increasing number of pitch classes, meaning that the first movement consists of two pitch classes, the second three, the third four, the next five, and so on, until finally, the eleventh has a full twelve-tone aggregate. It is interesting to add that *Musica ricercata* was arranged for another medium by the composer himself: commissioned by the Jeney Quintet, he arranged six movements for wind quintet, entitled *Six Bagatelles*.<sup>35</sup>

There is no mention of the guitar in Ligeti's writing, although according to his former student Sidney Corbett, he intended to write for the instrument.<sup>36</sup> The discussion that now follows attempts to remedy this lack by showing how Ligeti's musical “research” maps precisely onto this set of new affordances, almost as though he was writing for them.

The first movement of *Musica ricercata* (figure 21) is a composition on one note, A, repeated in all the octave ranges of the piano, which resolves itself to D in the last few bars. While Ligeti works with a very limited pitch content here, he uses a wide range of instrumental accessories. Translation of these, or finding equivalences between the two idioms, will be the focus here.

34 Ligeti's program notes to *Musica ricercata*, cited by Márton Kerékfy, “‘A “New Music” from Nothing’: György Ligeti's *Musica ricercata*,” *Studia Musicologica* 49, nos. 3–4 (2008): 208. “Ich war siebenundzwanzig Jahre alt und lebte in Budapest völlig isoliert von allen Ideen, Trends und Techniken der Komposition, die sich nach dem Krieg in Westeuropa entwickelt hatten. 1951 begann ich, mit einfachen rhythmischen und klanglichen Strukturen zu experimentieren, um eine ‘neue Musik’ sozusagen aus dem Nichts aufzubauen. Alle Musik, die ich bis dahin kannte und liebte, betrachtete ich als irrelevant für mich. Ich fragte mich, was kann ich mit einem einzelnen Ton, was mit seiner Oktave tun, was mit einem Intervall, mit zwei Intervallen, mit bestimmten rhythmischen Verhältnissen. Auf diese Weise entstanden mehrere kurze Stücke, vorwiegend für Klavier.”

35 *6 Bagatelles from “Musica Ricercata,” for Wind Quintet* (Mainz: Schott, 1973).

36 I spoke with him several times about writing for guitar but alas he never managed to do it” (Sidney Corbett, letter to the author, December 3, 2019).

Because this first movement has only two pitches, the questions of pitch centrality discussed above are somewhat moot. Instead, we must confront the movement's range: Ligeti explicitly composes with all registers of the piano, but on a conventionally strung and tuned guitar, only three octave spans can be played simultaneously.

Combining the single-string capos with scordatura, and substituting C for Ligeti's A, I created the set of open strings shown in **figure 22**. If the guitar has an additional twentieth fret for string 1, and the sixth string is lowered to C<sub>2</sub>, it becomes possible to play seven different Cs—six of them simultaneously in four octaves.

Note that the percussive timbre of the piano's high and low As is well matched by the highest and lowest Cs on the guitar. The diagram in **figure 23** shows the opening chord of the piece, which exploits the maximum range given by the alternations.

The piece starts with a tremolando effect; on the guitar, I translated it to a rasgueado—an equivalent kind of vibration (**figure 24**). Later on, Ligeti uses the low register of the piano to create a rhythmical octave ostinato (**figure 25**). This rough and suppressed voice becomes a damped pizzicato on the guitar's two lowest strings (**figure 26**).

The piano possesses seven octaves to the guitar's four, but as a counterbalance, the guitar offers a wider scale of timbres and techniques. Not only is there the scale of colors from *tasto* to *ponticello*, as well as *pizzicato* to *metallico*, but there is also the possibility of playing the same pitch on different strings. The set of three capos allows the guitarist to exploit different fingerings, thereby creating *Klangfarbenmelodie* throughout the culmination of the motivic structure.

Step by step, the composition escalates through increasing frequency of motives, additional octaves, *stringendo*, and *crescendo*. **Figure 27** shows one of the steps of this culmination in the original piano version, transcribed for guitar in **figure 28**.

While the buildup in the piano version is achieved through an increase of tempo, octave range, volume, and density of rhythm, the guitar version can offer a wider technical palette by using *Klangfarbenmelodie*, *campanellas*, and different strumming techniques (**figure 29**).

At the climax, the pianist plays *tutta la forza* in four different octaves and accelerates (**figure 30**). In the guitar version, six different Cs can be played together in four different octaves, accelerating into a strumming technique (**figure 31**).

The last four bars of the piece are a resolution to D (to F in the transcription), sporting an extended technique on the piano: by holding the previously played D and depressing A keys without sounding, the natural harmonics ring on the depressed notes. This technique has an equivalent in the guitar arrangement, as the silently depressed notes are held by the capos. Playing the F creates the same sympathetic resonance. **Figure 32** shows the original piano version.

**Figure 33** now summarizes how signature idiomatic elements are translated from piano to guitar throughout the first movement.

**Figure 21** Ligeti, *Musica ricercata*, I, mm. 1–5.

**Sostenuto** ♩ = 66

**György Ligeti**  
\* 1923

**Figure 22** Open-string set and fretboard diagram for Ligeti, *Musica ricercata*, I.

⑥ ⑤ ④ ③ ② ①

⊙ Open string  
⊗ Capo

**Figure 23** Ligeti, *Musica ricercata*, I, opening chord.

⊙ Open string  
⊗ Capo  
● Stopped note

**Figure 24** Ligeti, *Musica ricercata*, I, mm. 1–4 (transcription by the author).

Scordatura (red = capo)

**Sostenuto** ♩ = 66

suddenly release  $\textcircled{c}$  with the left hand to create sympathetic resonance

*ff* *sff* *ff* *sff*

20 0 0 0 0 0

12 0

**Figure 25** Ligeti, *Musica ricercata*, I, mm. 14–15.

(*misurato, poco pesante*)

*pp*

**Figure 26** Ligeti, *Musica ricercata*, I, mm. 14–17 (transcription by the author).

(*misurato, poco pesante*)

*pp*

$\textcircled{c}$

pizz. (damped by left hand at the bridge)

0 0 0 0 0 0

Figure 27 Ligeti, *Musica ricercata*, I, mm. 30–32.



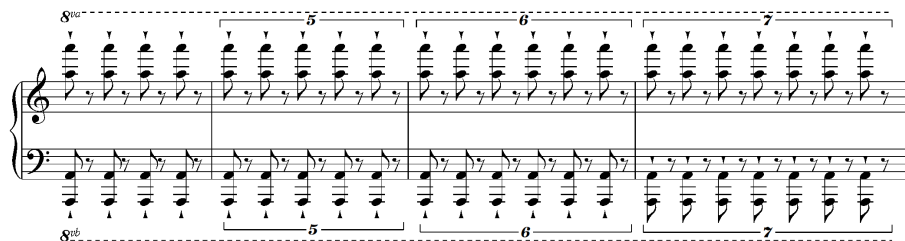
Figure 28 Ligeti, *Musica ricercata*, I, mm. 30–33 (transcription by the author).



Figure 29 Ligeti, *Musica ricercata*, I, mm. 56–59 (transcription by the author).



Figure 30 Ligeti, *Musica ricercata*, I, mm. 77–80.





**Figure 31** Ligeti, *Musica ricercata*, I, mm. 77–80 (transcription by the author).

**Figure 32** Ligeti, *Musica ricercata*, I, mm. 82–83.

\*) Tasten stumm niederdrücken / *depress keys without sounding.*

\*\*) Mit beiden Fingern anschlagen, dann mit einem Finger halten. / *Play note with both fingers then hold with one.*

**Figure 33** Piano to guitar mappings.

PIANO	GUITAR
Tremolando	Rasgueado
<i>Secco</i> ostinato in the low register	Damped pizzicato on a retuned string (⑥ = C)
Depress keys without sounding	Sympathetic resonances
Culmination created by a wide range of articulation differences and crescendo	Culmination created by different timbres, articulation, crescendo, <i>Klangfarbenmelodie</i> , <i>campanellas</i>
Range of registers	Range of timbres
Four parallel octaves played <i>tutta la forza, ferocissimo</i> , in six-octave range	Six different Cs in four-octave range, strumming technique

### *Independent Voices: A Canon Flourishes over an Ostinato*

In the seventh movement, all musical events unfold over a seven-note pentatonic ostinato that never ceases for the duration of the piece. Soon, the ostinato becomes the unsynchronized background to a “gentle folk-style melody,”<sup>37</sup> which blossoms into a counterpoint in three parts (**figure 34**).

Transferred to the guitar, the difficulties seem insuperable. The rapid ostinato would normally occupy both hands of the player, so to add an extra melody line would be possible—if at all—only at the same fret position as the ostinato. And yet Ligeti sets the melodic line in different octaves, adding decoration, parallel thirds, and an additional imitative line. My transcribing strategy was similar to the Bartók movement discussed above. The crucial step is to create an open-string set that allows the ostinato to be played without occupying the left hand, which then becomes free to fret the two layers of the melody. Transposing the piece a perfect fifth higher, I was able to create an open-string set around the mixolydian pitch center C, articulated in the ostinato. **Figure 35** shows this set and the musical space for this movement. (There is a double-string capo holding down C<sub>3</sub> on string 6 and F<sub>3</sub> on string 5, while string 2 is tuned to C<sub>4</sub>.) When the ostinato is played with this configuration, the left hand has only to fret the third note, B $\flat$ , which is available in multiple positions on the fretboard.

Ligeti’s compositional idea of creating two unsynchronized but still strictly measured voices playing their line simultaneously is very modern; a task which in my opinion cannot be achieved on the guitar without creating a proportioned, deliberate distribution between the voices. Therefore, I decided to create a fixed proportion of voices.

In this regard I decided the transcription would be based on the approximate tempo suggestions made by the composer. Further encouragement to do this comes from Ligeti himself, as the composer synchronizes the layers in his own transcription for quintet (**figure 36**). But Ligeti’s solution, which sets the ostinato at a much slower rate of repetition in relation to the melody, would often require the guitarist to play three notes of the melody against seven notes of the ostinato, which is utterly impractical with one plucking hand. My solution doubles the rate of the ostinato repetitions (**figure 37**), creating an effect that is much closer to the piano version in tempo, although now synchronized. The character of the piece also creates a resemblance to the first minutes of Bartók’s Third Piano Concerto, where the orchestral murmuring creates a background to an equally idyllic melody line played by the soloist.

In the example shown in **figure 38** we can see the melody line with parallel thirds. Later the composer creates a canon at the higher octave (**figure 39**), followed by more imitations (**figure 40**).

Looking at the piece from a performative aspect, the player has to create the illusion of the continuous presence of the ostinato, while playing a clear and beautiful melody line. When the melody line is dense, it may not be necessary to play all the

37 Richard Steinitz, *György Ligeti: Music of the Imagination* (London: Faber, 2003), 57.

notes of the ostinato, as the listener is more focused on the melody, so some of the notes of the ostinato can be left out. These decisions depend on the performer's subjective choices, including character and tempo.

It is interesting to examine how the change of medium affects the character of the piece. In spite of its technical complexity, the piece becomes very guitaristic with the continuous arpeggios and the elegance of the melody line. While on the piano there is a certain stiffness, solidity, strictness in the repetition, the guitar lends a more impressionistic touch. On the guitar it is more about creating an illusion of the flow, and this delivers a very personal message (even technically, as sometimes notes of the ostinato can be omitted for the sake of the melody line), while on the piano the attitude expresses distance and alienation, for the demand of complete asynchronicity between the two hands seems inhuman.

### A “Knife through Stalin’s Heart”: Combining Extremes of Pitch

The second movement of *Musica ricercata* is well known from Kubrick’s film *Eyes Wide Shut* (1999), where sections are repeated throughout the most disturbing scenes of the film. The movement consists of three pitch classes: E#, F#, and G. The principal theme of the piece, a varied, haunting melody on E# and F#, is dramatically opposed by G (figure 41). In a later interview about the film’s production, Ligeti revealed that the “reiterated Gs symbolized for him ‘a knife through Stalin’s heart.’”<sup>38</sup>

Looking for the ideal open-string set or scordatura for this movement, my main aim was to stretch the range to the maximum limit of the instrument and to play the high-pitched “knife” in the left hand as high as possible, independently from the theme. I transposed the piece a perfect fourth higher and created the open-string set shown in figure 42, with string 6 tuned to B $\flat$ 2, string 2 tuned to C $_4$ , and string 1 pressed down by a single-string capo on fret 20 to sound C6.

Figure 43 shows how the principal theme with the dissonant high tremolo in the original version becomes on the guitar a tremolo on the high C, held by the capo at the 20th fret.<sup>39</sup>

In idiomatic terms, I find this solution particularly exciting to perform: moving low bass lines with simultaneous high notes are not generally possible on the guitar. With the magnet capos, the fretboard’s affordances are transformed almost to the extreme: the 6th string is tuned down to its practical limit, and the 1st string is stopped at the highest available fret.

38 Steinitz, *György Ligeti*, 57.

39 Note the key signature of A#, corresponding to Ligeti’s key signature E#/F# in the original version.

Figure 34 Ligeti, *Musica ricercata*, v11, mm. 1–5.

[|||||] = ca. 88 \*\*)

**Cantabile, molto legato**  
 ♩ = ca. 116 \*\*\*)

***p***

una corda  
 con moto, giusto  
 \*)

simile sin al fine

pochiss. ped. sin al fine

***pp*** sempre molto leggero  
 quasi senza ped.

1 3 2 4 1 4 5  
 (4)

Figure 35 Open-string set and fretboard diagram for Ligeti, *Musica ricercata*, v11.

⑥ ⑤ ④ ③ ② ①

②=C4

V VII IX XX

○ Open string  
 ⊗ Capo

Figure 36 Ligeti, 6 Bagatellen for Wind Quintet, 111, mm. 7–10.

Fl. grande

Ob.

Cl.

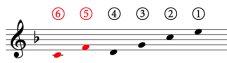
Cor.

Fg.

7 7 7 7 10

**Figure 37** Ligeti, *Musica ricercata*, VII, mm. 1–5 (transcription by the author).

Scordatura (red = capo)



**Cantabile, molto legato**

*con moto* *pp sempre molto leggero* *sim.* *p*

**Figure 38** Ligeti, *Musica ricercata*, VII, mm. 30–38 (transcription by the author).

30 *sim.*

33

36 *sim.*

+ LH alone



Figure 41 Ligeti, *Musica ricercata*, 11, mm. 24–26.

**Senza tempo, rapido**  
 \*\*) *sfpp* lunga *perdendosi*

**Intenso, agitato** ♩ = 76  
*ff* *sfpp* *pp* (m.s.) *ff*  
 con ped. *sfpp sfpp sfpp*  
 (sempre *ff*)

\*) Mit beiden Fingern zugleich anschlagen / play note with both fingers at once.  
 \*\*) Tonrepetition so dicht wie möglich / repetition of tones as dense as possible.

Figure 42 Open-string set and fretboard diagram for Ligeti, *Musica ricercata*, 11.

⑥ ⑤ ④ ③ ② ①

②=C4  
 ⑥=B♭1

V VII IX XX

○ Open string  
 ⊗ Capo

Figure 43 Ligeti, *Musica ricercata*, II, mm. 24–26 (transcription by the author).

Scordatura (red = capo)

⑥ ⑤ ④ ③ ② ①

Senza tempo, rapido

21 *sfpp* *perdendosi*

*lunga*

*sf*

22 Intenso, agitato ♩ = 76

*sfpp*

*ff*

23 *sfpp* *sfpp* *sfpp*

*(pp)* *sf*

*(sempre ff)*



## v Conclusion

The argument in this paper has consisted of two related threads. The first is technological: magnet capos can expand the guitar's affordances and transform its interface, making new kinds of transcription and composition possible. Their use is particularly applicable to twentieth-century music that uses pitch centers: the collection of referential pitches can be used to derive an open-string set, made playable through a combination of scordatura and capo settings.

These case studies from Ligeti and Bartók are only a starting point. Further explorations will realize more of the potential of these tools, leading to more transcriptions. Ongoing collaborations with composers can only result in new developments, new maps of the guitar's idiomatic borders. I hope that this contribution to the field will stimulate similar experiments by other transcribers and performers in diverse styles.

Certainly, this approach has its limitations. For one thing, the single- and double-string capo prototypes described above were made in very limited numbers and tested only on my guitars. The invention is not yet ready for commercial or standardized use; some technical constraints remain. For another, the notion of an open-string set as it relates to the pitch center of a given piece can hardly be generalized to all twentieth-century piano music. Many pieces lack a clear pitch center and present other kinds of idiomatic challenge besides.

Thus, we arrive at the second thread of this paper. We have seen how a transcription to a new medium can become a new musical invention. By using an analytical approach, equivalences can be found between different idioms. Musical invention can then lead to technological invention, to ever new ways of transforming the instrumental landscape. And so the two threads connect: musical intentions and technical solutions. As Heidegger puts it, "Technology is . . . no mere means. Technology is a way of revealing."<sup>40</sup>

<sup>40</sup> Martin Heidegger, *The Question Concerning Technology and Other Essays*, trans. William Lovitt (New York: Garland, 1977), 12.

## Acknowledgment

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### Video

The author's performances of the transcriptions discussed are available on YouTube at the following links:

- Bartók, "The Night's Music." <https://youtu.be/CoR2s9YYni8>.
- Ligeti, *Musica ricercata*, 1. <https://youtu.be/5AD03ogavns>.
- Ligeti, *Musica ricercata*, 2. <https://youtu.be/w1Nf5FP8iZA>.
- Ligeti, *Musica ricercata*, 7. <https://youtu.be/GLt2NGWETfY>.

### *About the Author*

KATALIN KOLTAI performs regularly as a soloist and chamber musician. She is a champion of contemporary music, creating interdisciplinary stage works and transcriptions. She records for North/South Recordings, Naxos, Hungaroton, and Genuin. Her transcriptions of music from various musical eras have been published by Doblinger Austria. She has degrees from the Budapest Ferenc Liszt Academy of Music, the Royal Conservatory of Brussels, and the Conservatorium Maastricht. She has studied with József Eötvös, Antigoni Goni, Raphaella Smits, Carlo Marchione, and José María Gallardo Del Rey. Since 2018, she has been a PhD researcher at the International Guitar Research Centre, University of Surrey, where she is focusing on guitar transcription and new music for guitar under the supervision of Stephen Goss and Tom Armstrong. Currently a FASS Scholarship Holder, she is a former fellow of the Dutch Cultural Ministry and winner of the Hungarian Junior Prima Prize. For more information, visit [katalinkoltai.com](http://katalinkoltai.com).

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