Diatonic Trichords in Two Pieces from Kurtág's *Kafka-Fragmente*: A Neo-Riemannian Approach

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Introduction

It is easy to point to passages in the *Kafka-Fragmente* of György Kurtág and say, 'this one is diatonic' or 'this one is triadic,' or 'this one has Webernesque motives.' Such observations have some interest, but they tell us nothing of the work's freshness in the use of familiar materials, nothing of the composer's discovery of unrealised potential in old resources. And they tell us nothing of the special aura of the music. Even with the most powerful analytical tools, we can only hope to gain some small insight to *Kafka-Fragmente*, while holding its deepest aspects, like those of any music that touches us, to be essentially mysterious and beyond rational comprehension.

So it is with humility and in awe of what I hold to be a monumental achievement, that I invite you to visit two pieces from *Kafka-Fragmente,* and view them in light of neo-Riemannian theory – a theory developed in the past fifteen years to deal with chromatic music of the late 19th and early 20th century, and now seen to have broader application. If I am able to suggest how neo-Riemannian theory may serve to illuminate usage of diatonic trichords in music contemporaneous to its own development, I shall feel amply rewarded.

Repeated interval pairs

As a way into neo-Riemannian theory, we begin with the notion of a repeated interval pair. Such pairs call up the idea of *sequence,* and may be found in the works of virtually all composers of Western music of the last few centuries. Cases occur in Kurtág's *Wind Quintet,* op. 2, movement V (*Example 1a*).

Studia Musicologica Academiae Scientiarum Hungaricae 43/3–4, 2002, pp. 333–344
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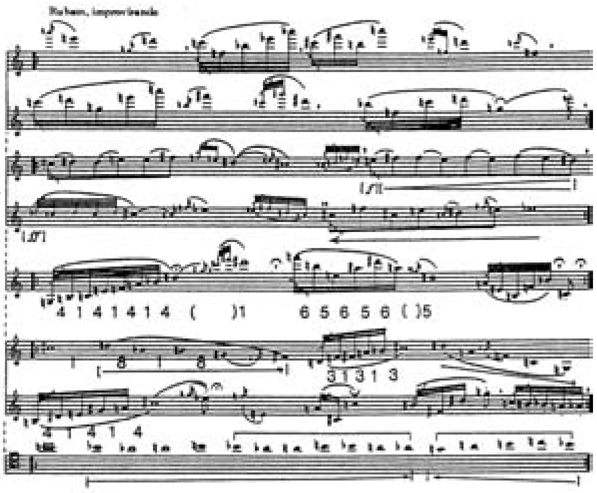
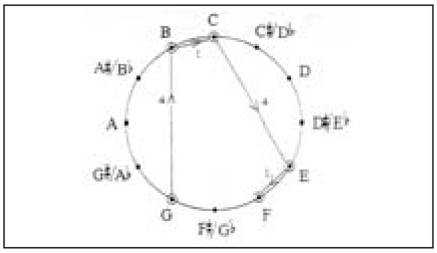


Example 1a: Kurtág, *Wind Quintet*, op. 2, movement V

The clarinet part begins with the notes G–B–C–E–F–A–Bb–D, followed by three embellishing notes, then a long D# (all sounded a whole-step lower).

Measuring intervals on the clockface (*Example 1b*), and moving clockwise from one note to the next, we find the interval pair (4, 1) repeated four times, as shown on Ex. 1a (embellishing notes are ignored). Continuing in

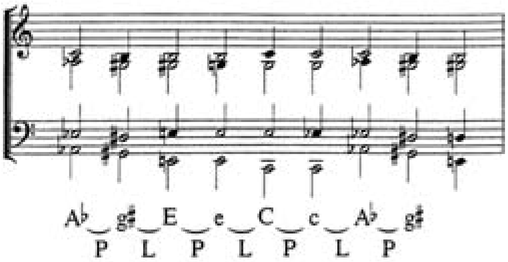


Example 1b

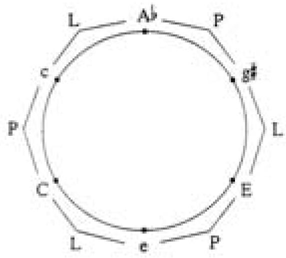
the clarinet, we find the pair (6, 5) repeated three times. Other such patterns are marked in the horn part.

Another case of a repeated interval pair may be found in *Example 2a*, excerpted from Brahms, *Concerto for Violin and Cello* as quoted by Richard Cohn (1996). The repeated pair (3, 5) – the rising minor 3rd and perfect 4th – is marked in the solo parts, interrupted by a projection of a complete triad (intervals 4, 3, 5) in the second pair of measures and again at the end of the example. In Cohn's reduction of the passage (*Example 2b*), the alternation of major and minor triads (marked by upper and lower case letters, respectively) is evident; likewise the pattern of descending major thirds in the root

Example 2a: Brahms, *Concerto for Violin and Cello*, I, mm. 268–279



Example 2b: Reduction of *Example 2a*



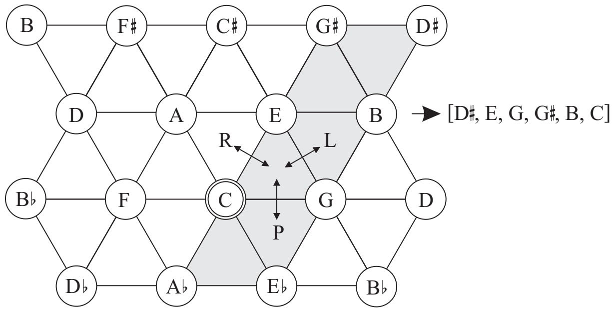
Example 2c

progression Ab (or G#), E, C. Note that after six chords, the pattern begins to repeat. This suggests a circular view of the progression as in *Example 2c*.

Contextual inversion and the *Tonnetz*

As we make our way through the progression of Ex. 2b two kinds of moves are needed. The first of these, Riemann's *Parallel* (symbolized P) converts a major triad into the minor triad on the same root, or *vice versa*, thereby maintaining the two notes of the perfect fifth in common; the initial Ab major of Ex. 2b moves via P to the following G# minor. The second move, Riemann's *Leittonwechsel* (L), changes a minor triad into the major triad on the root lying 4 semitones lower, or the reverse, while maintaining the two notes of the minor 3d in common; in Ex. 2b, G# minor moves via L to E major. In both P and L, the moving note progresses by half-step. Also, both P and L are self-inverses: performing either one twice simply reverses the initial action.

P and L are nicely seen on the *Tonnetz*, a construction found in the work of several 18th- and 19th-century theorists, and given as *Example 3* in a version appearing in Edward Gollin (1998). Under equal temperament, the *Tonnetz* wraps around a torus. We can trace the path of Brahms's melody beginning with the note C, marked with a double circle, and moving to Eb, then Ab, wrapping around from Ab to G# and continuing with B, E, and so forth. Beginning with the third note, Ab, each note completes a triad that has two common notes with the previous triad. The space of Brahms's six harmonic triads is shaded as six contiguous triangles on the *Tonnetz*. Adjacent triads in the space are linked by edge-flips: either P (north or south on the *Tonnetz*; see on Ex. 3 or

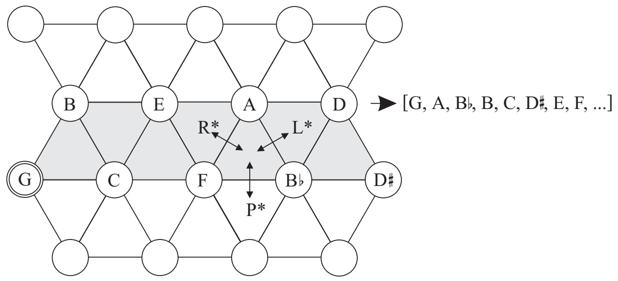


Example 3: (345) *Tonnetz*

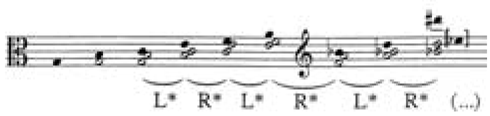
L (northeast or southwest on the *Tonnetz*). The cycle of six triads is a *PL-loop*. Another move that preserves two common tones, Riemann's *Relative* (R), well-known from elementary tonal theory and also shown on Ex. 3, does not play a part in the Brahms excerpt, but will be of interest to us later.

In neo-neo-Riemannian theory, P, L, R, and other *Wechsels* defined by Riemann (1880) are called *contextual inversions* after David Lewin (1993), to distinguish them from inversions around a fixed axis (for example, the note C) as is done in many analyses of post-tonal music. 'Inversion' here refers to 'mirror inversion' – the fact that the major and minor triads mirror one another's interval structure. 'Contextual' refers to inversion about an axis defined in terms of the triad itself; in the case of P, L, and R, the axis lies midway between the two common notes.

The *Tonnetz* of Ex. 3 may be called a (345) *Tonnetz,* since the edges of its triangles measure 3, 4, and 5 semitones. (Robert Morris (1998) proposes a different notation to distinguish among two-dimensional *Tonnetze*.) *Example 4a* shows a *Tonnetz* on which is traced an excerpt studied above: the opening of the clarinet part from movement V of Kurtág's *Wind Quintet*. Here we have, in terms suggested above, a (147) *Tonnetz.* Though the clarinet part contains no sustained chords, we posit a series of trichords (3-note chords) formed by consecutive notes and covering the shaded area on the example, beginning with written [G, B, C] and continuing with [B, C, E], to which the idea of contextual inversion applies as in the Brahms excerpt. La-



Example 4a: Kurtág, *Wind Quintet*, op. 2, movement V, opening of clarinet part, on (147) *Tonnetz*



Example 4b

belling these inversions L^*, P^*, R^*, in correspondence to the *Tonnetz* of Example 3, we have an L^*R^* loop; however, in contrast to the Brahms, the loop remains unclosed within the music; in order to close, it would need to run through all 24 major and minor trichords. *Example 4b* shows the posited progression of trichords in a notation similar to that of Ex. 2b.

Resultant sets

In loops such as those studied above, another feature of interest is the set of notes, or 'scale' (if we choose to think of it so) that is built as we traverse the loop. In the case of the Brahms excerpt, the six-note collection [E, G, C, Eb, Ab, B], or in scalar order [Eb, E, G, G#, B, C], is captured by a complete PL-loop, as shown on Ex. 3; hence Cohn's designation *hexatonic* for the system of six major and minor chords built from six notes. In the case of the clarinet part from the *Wind Quintet,* as shown on Ex. 4a, the first eight notes of the clarinet part (skipping over the embellishments) form the symmetrical nonachord [G, A, Bb, B, C, D, D#, E, F] and it is clear that, if continued, the pattern L^*R^* will quickly exhaust the 12-notes. We shall return to the matter of resultant sets later.

Extensions to P, L, R

In Riemann (1880) we find not only P, L, and R, but nine additional *Wechsels,* for a total of 12, plus 12 *Schritte* that result when *Wechsels* are composed with one another in all possible ways. Today we shall need just one additional *Wechsel* – that which holds the third of a major or minor triad fixed (by 'third' here, I mean the note lying a major or minor third above the root) and moves the remaining two notes by a half-step (for example, C major to C# minor or *vice versa).* This *Wechsel,* features parallel fifths moving by semitone and is accordingly called 'slide' (S) by Lewin (1987). Also, we shall need just one *Schritt,* namely PL (as it is called in neo-Riemannian theory), the net result of performing P then L. Looking back at Ex. 2b, it is easy to see that PL takes a major triad and transposes it down by 4 semitones, or takes a minor triad and transposes it up 4 semitones. Unlike *Wechsels, Schritte* are, in general, not self-inverses.

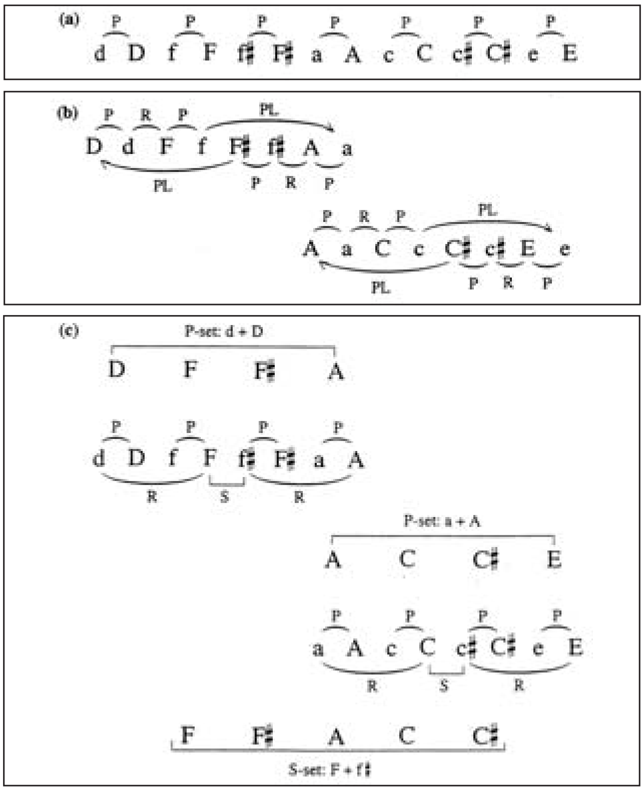
Kafka-Fragmente, 'Penetrant Jüdisch'

Part III, no. 10 of *Kafka-Fragmente,* 'Penetrant Jüdisch' (*Example 5*), offers

Example 5: 'Penetrant Jüdisch,' *Kafka-Fragmente*, III, 10

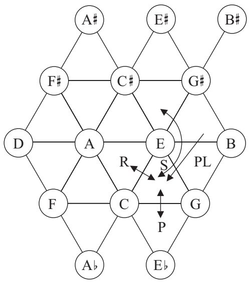
a vigorous exercise of neo-Riemannian theory, applied in a piece whose text speaks of struggle and whose music sets major and minor in opposition or, at the end of the day, in harmony. The vocal part suggests all six major and minor triads on the set of three roots [D, F, and A] which itself forms one of the six triads. The violin part confirms the same six triads, adding eight triads of its own, often asserted in parallel pairs by means of an open 5th placed next to a semitone dyad containing both major and minor thirds, as in mm. 3–4.

The set of 14 triads might be arrayed in many different ways. The general rising tendency in both vocal and violin parts suggests an ordering as shown in *Example 6a*, where we see a symmetrical 'scale,' if you will [D, F, F#, A, C, C#, E], each note serving as root for its own parallel pair of major and minor triads. To gain greater connectivity we reorder the set into two overlapping parts as in *Example 6b*, the two 'halves' being exact transpositions of one another at the perfect 5th. Using P, R, and PL, we now have for each half a closed *Hamiltonian path* – a complete loop passing exactly once through each triad. *Example 6c* proposes another graph on the same arrangement, but now using P, R, and slide (S); here there is no Hamiltonian path.



Example 6: Networks of Triads in 'Penetrant Jüdisch'

On Ex. 6c are three large square brackets, two marked 'P-set,' and one marked 'S-set.' Each bracket contains all the notes found in a pair of triads; for example, the uppermost bracket contains the notes of the D-minor and



Example 7: Triadic Space of 'Penetrant jüdisch'

D-major triads. These brackets, are intended to show that the transformations Parallel and Slide appear at two levels – between adjacent pairs of triads and between higher level triads formed by chord roots, just as the constituent triads themselves appear at two levels, as noted above in the case of the D-minor triad.

Example 7 maps out the 14 triads on the (345) *Tonnetz*, showing that they form a connected, symmetrical region. The transformations of Exx. 6a, b, c, namely P, R, S, and PL, are indicated on the example.

***Kafka-Fragmente*, 'Die Guten gehn in gleichen Schritt...'**

In *Kafka-Fragmente*, Part I, no. 1 (*Example 8*), the organum of the first phrase is followed by a dancing vocal melody set against the continuing stepwise march of the violin. On *Example 9a*, the notes of the vocal melody are divided into three segments, marked by braces overlying. Considered in terms of their unordered content, the segments engage first a 'major pentachord' [F#, G#, A#, B, C#], second, a pentatonic [C, D, E, G, A], and third, a complete diatonic set corresponding to the F# or Gb-major scale (the term is used here for convenience only, with no intent to suggest the *key* of F# or Gb). The intervals of the dancing melody might appear to be almost random, though we find several segments that form triads, marked by braces underlying the top staff of Ex. 9a, including one arpeggiation of the Cb or B major triad through an octave (regarding the Fb's and F's as embellishing notes).

In spite of these triads, the passage sounds curiously non-triadic. Certainly it is not stepwise; there is no case of three consecutive notes that are ad-

Example 8: 'Die Guten gehn im gleichen Schritt…,' *Kafka-Fragmente*, I, 1

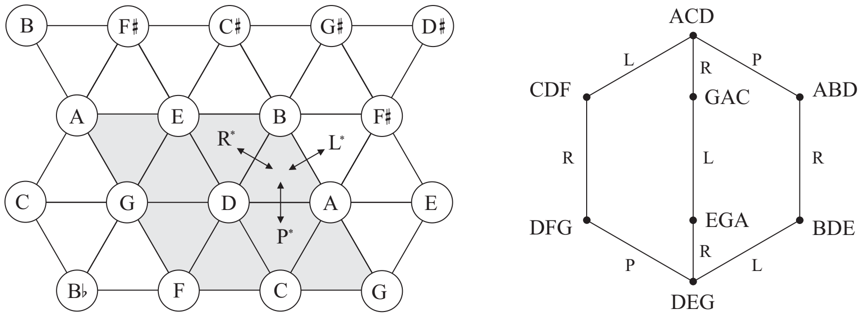
jacent in a diatonic scale. Since the melody is diatonic, if we search for triples of notes that are not triads and not scale fragments, then just two possibilities remain: (i) a triple such as the initial [G#, B, C#] or the terminal [G#, D#, E#], whose three pairs of notes form one each of 2nd/7th, 3rd/6th, and 4th/5th, and (ii) a triple such as that beginning with the high Ab midway through the melody [Ab, Db, Gb], whose pairs form two 4th/5th's and one 2nd/7th. For other examples of these two types, see the middle segment [A, C, G, D, E], where the first three notes and the last three notes form triples of the first type, while the middle three notes [C, G, D] form a triple of the second type.

The first kind of triple described above (with one pair each of 2nd/7th, 3rd/6th, and 4th/5th) engages many diatonic passages across diverse idioms. It is ubiquitous in the folk song of many cultures, and it is intriguing for other rea-

Example 9a: (237) Trichords in 'Die Guten gehn im gleichen Schritt'

sons which I hope to make clear. In 'Die Guten gehn,' if we confine our attention to triples that are either consecutive or 'almost consecutive' (that is, with no more than one intervening note), then many such triples are of the 'one pair of each' type, but yet more restricted, having one pair each of major 2nd/minor 7th, minor 3rd/major 6th, and perfect 4nd/5th. Given our prior knowledge of the diatonic bias of the melody at hand, this is not surprising, for it turns out that the diatonic scale is rife with such triples: of the 35 triples in any diatonic scale, 8 are of this type, more than for any other type so qualified, as noted by Richmond Browne (1981). On Ex. 9a triples of the type just described are beamed together. The beamed triples are consecutive or almost consecutive, as defined above. It is plain that many of the indicated triples are linked by means of one or two common tones. This suggests that we explore their connections via a *Tonnetz*, before returning to the other material on Ex. 9a.

Example 9b shows the (237) *Tonnetz*. As in the case of *Tonnetze* employed above, the notation (237) refers to semitone measures of intervals around the triangle: The '2' of (237) corresponds to major 2nd/minor 7th; '3' corresponds to minor 3rd/major 6th, and '7' to perfect 4th/5th. Following our practice above we label L^*, the inversion that preserves the smallest interval (2), P^* that which preserves the largest (7), and R^*, that which preserves the middle-sized interval (3). Let us call a triple of the kind we are studying a (237) triple. The eight (237) triples of the C-major diatonic are



Examples 9b–c: (237) Trichords in 'Die Guten gehn im gleichen Schritt'

shaded on Ex. 9b. It is easy to see that we can visit all seven notes of the scale by cycling over just six of these (237)s – the shaded ones that form a double PLR-loop, a closed *Hamiltonian path*, one covering precisely the six (237) triples containing D, the axial note around which the C-major diatonic inverts into itself. The (237) triple stands alone as the only triple that can generate the diatonic scale (with no extraneous notes) while traversing such a path. Visiting the two striped triangles as well, and wrapping around the imaginary torus as necessary, we can find other pathways that capture the diatonic scale while visiting all eight (237)s; these pathways are open.

Both kinds of paths are presented in a different format on *Example 9c*, a graph resembling that of a hydrocarbon molecule. The closed path tours the perimeter of the hexagon, and various open paths originate with any one of the six (237)s with only two lines connected to it. Now returning to Ex. 9a, on the lower part of the example we see, in notation similar to that used earlier, the seven distinct (237)s (from the F#/Gb scale) that may be found in 'Die Guten gehn' and their connections by means of P^*, L^*, R^*. The seven (237) triples are labelled A through F and E'. The fact that, of eight (237)s in the F#/Gb scale, seven appear, several more than once in the melody seems striking. What is more interesting is their interconnection via common tones. Of the 14 (237)s identified in the F#/Gb diatonic part of Ex. 9a, none appears in isolation, and eight appear in a tight web in the closing moment of the melody following the lengthy embellishment of Eb on the word "sie," where the vocal melody at last finds an even pulse, though out of phase with that of the violin, as it had been in the closing moment of the first phrase. Over the course of the F#/Gb diatonic segment, we can trace a nearly continuous (though backtracking) path from the triple labelled A to that labelled F: ABCDE'EDCEE'DEEF. It is also interesting to note that Ab/G#, which would be the central note of a *Tonnetz* region depicting the F#/Gb diatonic passage studied here, is prominent as the initial and repeated highest pitch of the vocal melody.

It would, I suspect, prove interesting to pursue a neo-Riemannian approach more broadly in 'Die Guten gehn,' exploring pathways among not only (237)s but other configurations as well, but that project must wait for another time and place.

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