LIVING IN IRREGULAR RHYTHM

Four Pillars of Embodied Odd-Meter Mastery

A Neuroscience-Informed Bass Pedagogy Essay

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Abstract

Over more than two decades of teaching bass guitar and giving master classes across Serbia and countries of former Yugoslavia (Western Balkan), one diagnostic pattern recurs with striking consistency: students who can imitate odd-meter bass lines but cannot genuinely feel or navigate them in real time, under improvisation, or when the harmonic context changes. This essay focuses on the mastery of 7/8 and 7/4 as the foundational odd-meter framework — approached through four interdependent, biologically grounded pillars: (A) active listening immersion, (B) percussion and rhythmic instrument practice, (C) rhythmic solfège with simultaneous multi-limb execution, and (D) embodied movement synchronized to the pulse.

Each pillar corresponds to a well-documented neural mechanism. Contemporary cognitive neuroscience confirms what Balkan, Middle Eastern, South Indian, African, Afro-Cuban and Brazilian musical traditions have long understood: rhythm is a whole-body affair, encoded not merely in auditory cortex but across a distributed sensorimotor network spanning premotor cortex, supplementary motor area, basal ganglia, and cerebellum. The essay includes a new neuroscience section on perceptual narrowing, vestibular-auditory coupling, and structural neuroplasticity — and concludes with a complete methodological lesson plan for practicing 7/8 within a 7/4 framework using Balkan additive groupings.

"The 7 is not a difficult rhythm. It is just an unfamiliar body."

— Vladimir Samardžić

1. The Problem: Imitation vs. Internalization

During my career as a bass guitar teacher, explaining and transferring knowledge when it comes to odd rhythms has always been relevant. It doesn't take long for a student to come to me who wants to learn to play at least the basic odd rhythmic divisions or to improve their understanding. It is not uncommon for a student to say that they understand and can play at an enviable level of odd divisions, but after a short test I determine that there is no real understanding and mastery of divisions on multiple levels, but rather memorized bass lines from certain popular songs such as 'Jovano, Jovanke' in 7/8 (Macedonian trad.) or 'Money' by Pink Floyd in 7/4. And that's where it all stops.

In those situations, I often ask four diagnostic questions:

- Have you ever attended music school? Which means: have you ever done rhythmic solfège?
- What kind of music do you listen to? Are there bands and performers you listen to who use odd rhythms in their songs?
- Have you ever practiced folklore dance in your childhood, or some modern dance that includes Latin dances?
- Have you ever played or practiced drums, or any kind of hand percussion?

If the answer to all four questions is negative, there is a high probability that we will need significantly more time to master basic rhythmic divisions and polyrhythms — especially if the person is older. It is easier for younger students. If at least one of those questions was positive, we already have a healthy foundation — a base — on which we can build new synapses, new neurological connections in the brain, and further develop a new polyrhythmic feeling in the body.

Why has this never been the case with me and other musicians with similar backgrounds? I have found the answer lies in 4 key parameters that have been scientifically proven in the 21st century. But before that, let me recall two personal moments, events, that concerns the very beginning of my career as a bass guitarist and a new chapter in my professional life, after returning from Boston.

2. The Origin: Two Defining Encounters

That first moment is my encounter with Vasil Hadžimanov, and the start of our collaboration in 1992. Before that, I had practiced bass guitar for just a couple of years, starting in the military JNA orchestra in 1990. Of course there were other great musicians I worked with during the 90s, before going to Berklee College of Music in Boston (1997), who were good at odd rhythms — but Vasil had it in his blood. As if he were born with it: already at nineteen, he moved through odd polyrhythms with a naturalness and authority that was simply stunning. The experience of playing alongside him, as well as with the drummers who shaped my early years — Miroslav Karlović, Rastko Rašić, and Igor Malešević — was invaluable. They trained me to travel untrodden rhythmic paths without sheet music, without textbooks, without time to think. I just had to figure it out. Without excuse.

One of Vasil's first odd compositions that I had to master — without notes or explanations — was '11 Reasons for a Wedding' (https://www.youtube.com/watch?v=UCzNLmlg7uY). We played it in clubs long before it had its studio version, which was included on the debut album of the same name by Vasil Hadžimanov Band (PGP RTS, 2001), of which I was a member from 2001 to 2010. This 11/8 was not even remotely like anything odd I was used to hearing in my youth — the musical folklore heritage of southern Serbia and Macedonia, which mostly consisted of songs with a clear rhythmic division of 7/8 or 9/8.

However, after a certain period of time — and especially during my studies at Berklee (1997–1999), playing with amazing musicians from all over the world — it became clear to me that my 'natural' understanding and feeling of uneven subdivisions had deep roots in both my background and my musical interests. My intensive listening and absorption of various jazz sub-genres, including jazz rock, fusion, and jazz world music over the years 1989–1993 — albums by the Mahavishnu Orchestra, Frank Zappa, Dave Holland, Steve Coleman, John McLoughlin, Trilok Gurtu, and the Macedonian band Leb i Sol — had already prepared me rhythmically to a good extent for such challenges. I was not immediately aware of this. I just felt attracted to such music, that I wanted to play it, and on a deeper level: that I could truly surrender to it while performing, as if it were the most normal 4/4 rhythm.

Studies at Berklee helped me better understand polyrhythms and polymetrics — especially two courses: PSW-235: World Percussion for Non-percussionists with Jamey Haddad, where we worked studiously on the South Indian counting system, Konakol singing, and playing the Frame Drum; and ILPH-359: Brazilian Rhythms and Percussion with Michael Rinquist, where I had the opportunity to study various Brazilian rhythms and styles on a wide variety of Brazilian percussion instruments at a deeper level. Additionally, the Steve Coleman Ensemble and Bret's Frets Ensemble — where I played beautifully complex odd-meter arrangements written for 5 guitars and rhythm section by guitar professor Bret Willmott — were defining experiences.

The second encounter arrived a decade later — not in a rehearsal room, but in a recording studio under deadline pressure, with a composition nobody had yet written down.

It was a very interesting and demanding recording session in 2001, in Novi Sad, for the debut album Prizivanje Kiše — Evocation of the Rain (PGP RTS, 2002) of multi-instrumentalist Slobodan Trkulja and his band Balkanopolis. This was Balkan jazz fusion music with many odd

meters, but with one particularly challenging composition in 25/8, named 'Pitagorino Oro' ('Pythagoras' Dance').

Slobodan had all the melodic material finished on clarinet — but no bass lines, no drum grooves, no arrangement. He played us the two most important themes very slowly. The drummer Igor Malešević and I analyzed the structure independently, counted it, and wrote our own parts on paper. When we compared our solutions, we had arrived at the same conclusion by completely different routes: Igor had written his part in 16th-note subdivision, counting in eighths — while I had written mine in eighths, counting in quarter notes. All accents and pauses were reciprocally on exactly the same positions. We had great fun recording and performing it live. A video from the live performance at Atelje 212 in Belgrade (2002) is available here:

https://www.youtube.com/watch?v=SFMS6BnR-6A — Slobodan Trkulja: Pitagorino Oro

Hearing about this, Slobodan Trkulja once said something that became a useful teaching concept for me:

> *"Every odd meter, every uneven rhythmic pattern, can be presented with combinations of 2s and 3s. You can think of it like Binary Code — but instead of zeros and ones, you have 2s and 3s. Call it: Balkan Binary Code — BBC!"*
>
> **— Slobodan Trkulja**

This is a precise and elegant description of the additive principle at the heart of the lesson plan in Section 7.

In practice, the BBC principle means this: any meter that looks exotic on paper — 11/8, 13/8, 25/8 — can be immediately decoded by asking two questions: how many 2s and 3s does it take to build it, and how are they organized, in what order? 11 = 2+2+3+2+2 is the most common subdivision (Bulgarian 11, also felt as 4+3+4) — but the 3-cell can sit in a different position: 2+3+2+4, 3+4+4, 4+2+3+2, 4+4+3. Or 11/8 can be built with more 3s and only one 2, giving further options: 3+3+3+2, 3+3+2+3, 3+2+3+3, and 2+3+3+3. Once a student stops seeing an intimidating number and starts seeing a short sequence of familiar cells, the psychological barrier dissolves. The meter is no longer foreign — it is just a specific address in a neighbourhood they already know.

3. The Four Pillars — My Pedagogical Framework

After returning from Boston (2000), I soon began working as a private bass instructor and was engaged as a participant in many jazz camps and masterclass seminars, often giving lectures for bassists on odd subdivisions. Then — and especially today, in a time of daily information invasion, lack of focus, and lack of time to truly listen to music (not to watch it) — I consider the following four parameters to be the essential elements in mastering and understanding odd rhythms.

> **PILLAR 1:** LISTENING — absorbing odd music, NOT watching. I cannot emphasize this clearly enough. In Balkan and Middle Eastern music, listening to the melody is especially important — it is often the fastest shortcut to discovering the subdivision of an uneven metric pulse.

> **PILLAR 2:** PLAYING PERCUSSION — drums, any rhythmic instrument involving both hands, or hands and feet.

> **PILLAR 3:** RHYTHMIC SOLFÈGE — interpretation of AT LEAST TWO rhythmic divisions simultaneously in real time through pairings: Hand–Hand, Hand–Foot, Hand–Voice, Voice–Foot.

> **PILLAR 4:** DANCE / BODY MOVEMENT / SWINGING — my go-to method for unlocking body awareness to multiple rhythmic layers.

Every musician, including every bassist, is unique — with a unique genetic heritage, past, environment in which they grew up, went to school, and music that reached them before they were even aware of it. Everything affects the brain, the construction of certain neurosynaptic connections that will later be of great importance for the speed with which that same person will be able to understand and interpret odd-meter music.

4. Biographical Roots — Why My Brain Was Already Prepared

Analyzing my past, I discovered several factors that contributed early to my tendency toward understanding odd rhythms. Each one, I now recognize, maps directly onto a neurological mechanism.

4.1 The Household — Early Rhythmic Enculturation

When I was very young, we always listened to quality music in our house. My older sister had her own records: The Beatles, Supertramp, Bee Gees, Saturday Night Fever, Grease, Hair. My parents listened to good Yugoslavian pop music influenced by American, Italian, French, and Spanish music scenes — and to original traditional folk music, which at that time was of very high quality (you could call it the 'Serbian Buena Vista Social Club'). This music often contained songs in odd time signatures, 7/8 and 9/8. My parents not only sang those songs but also knew how to dance to them, especially my mother. Of course, they were not aware that they were dancing and singing in odd time signatures — because it was not important to them, but completely natural.

4.2 KUD 'Svetozar Marković' — Folklore Dance

In elementary school, I went to the folklore dance section of KUD 'Svetozar Marković,' where I danced 'kola' and other folklore dances from southern Serbia and Macedonia, with influences from Romania and Bulgaria, which were sometimes in odd rhythmic divisions: 5/8, 7/8, and 9/8. We learned steps by naming them: 'Long' was a 3/8 subdivision, 'Short' was a 2/8 subdivision. I was physically encoding additive meter through footwork — years before I had any theoretical vocabulary for it.

4.3 Rhythmic Solfège in Music School

In music education classes in elementary school, I performed Rhythmic Solfège with pleasure and ease — unlike melodic solfège, which was less engaging for me. The brain's affinity for rhythmic multi-layer execution was already clearly present.

4.4 Dance School and Oscar Stagnaro's Lesson

At the end of elementary school, at the beginning of my teenage years, I went to a dance school for a year and for the first time began to experience Latin music and Latin rhythms in a different way. My love for Latin music was already planted then. I became fully aware of it much later — especially in my first year at Berklee, when my principal professor was Oscar Stagnaro, one of the most influential Latin bass performers and educators (The Latin Bass Book, 2005). I remember his words well:

> *"If you want to really feel Cuban lines the right way, learn to dance Salsa — or at least sway in 2 (alla breve) while playing the Cuban lines."*

This sentence is something I have been using for years when I see a student having trouble feeling finer subdivisions — eighths or sixteenths — over a larger rhythmic pulse in quarters or eighths, depending on tempo. It is the distillation of Pillar 4.

4.5 Composing and Teaching

One of my first compositions in an uneven meter was 'The Bridge' — with a theme in 9/4 — which I composed mostly during my Berklee studies, and later recorded with my jazz quintet Pannonia Project for the album of the same name (M Records, 2010):

https://vladimirsamardzic.bandcamp.com/track/the-bridge

Apart from many other great things I learned at Berklee, two are of particular importance when you want to get deep into a certain subject — a music style, technique, theoretical area, or harmonic concept — and become the owner of it, not just a performer. If you want to truly master it, do these two things:

1. Write, compose, and arrange in that subject — then learn how to improvise through it.
2. Learn and study it well enough that you can teach it to other musicians.

Today, both of those claims are strongly supported by my own teaching experience. Writing and teaching activate a deeper level of personal ownership over the material — as I have observed in practice, a student who arranges a 7/8 groove and then explains it to another musician retains it at a qualitatively different level than one who only performs it.

5. The Grožnjan Experiment — Embodied Cognition in Practice

During the Jazz Camp in Grožnjan in 2018, I had a 2-hour break during which world-class jazz drummer and educator John Railey gave a lecture on polyrhythms. He invited me to be his collaborator on bass guitar. There were not only drummers in that class but also other instrumentalists. At one point, he asked those present to clap, or to clap and sing, certain rhythmic divisions over a steady pulse that they also had to perform simultaneously. For some, it was impossible in that moment. The standard frustration started: watching someone next to them perform it with ease.

Then I remembered Oscar's words. I suggested to John that everyone stand up and perform the basic pulse in quarter notes by shifting their weight from one foot to the other — or moving one foot to the side, as if dancing — while using their hands or voice or both to perform the given rhythmic figures. After a while, everyone was able to do it. Better or worse, but it was evident that they had lost their inhibitions. The brain was now forced to solve this task differently, without time to think about how others do it better, why it's not working for me, and so on.

John thanked me later for the idea, noting that to him — who sits while playing drums, and teaches drummers who must do the same — it simply never occurs as a methodical possibility for solving the problem of feeling and performing polyrhythm. The foot is already doing the work at the hi-hat. For standing instrumentalists, the anchor must be consciously created.

> **NEUROSCIENCE VALIDATION:** Studies by Phillips-Silver and Trainor (2005, 2007) proved that body movement — specifically movement engaging the head and torso via the vestibular system — directly biases how the brain perceives rhythmic structure. You are not just dancing; you are utilizing Embodied Rhythm Perception to resolve ambiguous metrical structures. This bypasses the analytical 'jam' and recruits the motor system to feel the beat before the analytical mind tries to count it.

6. The Neuroscience — Why All Four Pillars Work

The neuroscientific literature of the past two decades provides robust validation for each of the four pillars through four intersecting mechanisms: perceptual narrowing, vestibular-auditory coupling, structural neuroplasticity, and cognitive load reduction through multi-limb automatization.

6.1 Perceptual Narrowing and the Balkan Advantage

In neuroscience, 'perceptual narrowing' describes how the brain, during a sensitive period in the first year of life, begins to tune out unfamiliar sensory patterns to focus on native ones. Research by Hannon and Trehub (2005) demonstrated that 6-month-old infants can detect disruptions in both simple Western meters and complex Balkan meters such as 7/8 or 11/8. However, by 12 months, North American infants lose the ability to process complex meters, while infants raised in Balkan cultures retain it.

Growing up in a household where odd meters were the norm — where parents sang and danced in 7/8 and 9/8 as naturally as breathing — effectively 'voted' for those neural pathways to remain active. This prevented the typical perceptual narrowing that makes odd meters feel intrinsically 'strange' to most Western-trained musicians. My Balkan rhythmic enculturation was not incidental. It was neurologically formative.

> **KEY FINDING:** *Hannon & Trehub (2005, Psychological Science): Cultural exposure to complex meters in infancy preserves the perceptual plasticity needed to process them. This is the biological basis of 'having it in the blood.'*

6.2 Vestibular-Auditory Coupling — The 'Felt Accent'

Early dance training engaged the vestibular system — the sensory system in the inner ear responsible for balance and spatial orientation. Studies by Phillips-Silver and Trainor (2005, 2007) proved that body movement — specifically movement engaging the head and torso — directly biases how the brain perceives auditory rhythm. This is a 'cross-modal' link between the auditory and motor cortices that the vestibular system helps construct.

Because the vestibular system is one of the first to mature, early dance training creates embodied metric representations — allowing the musician to perceive meter not just as a mathematical division of time, but as a physical sensation of 'felt accents.' This is precisely what separates a musician who 'counts in 7' from one who 'lives in 7.'

> **KEY FINDING:** *Phillips-Silver & Trainor (2007, Cognition): The vestibular system directly influences auditory meter perception. Bouncing infants on every 2nd beat*

> *caused them to subsequently prefer the binary version of an ambiguous rhythm. Movement at the macro-pulse literally sets how the brain hears the micro-subdivisions.*

6.3 Structural Neuroplasticity — The Long-Term Investment

Beginning dance and rhythmic training before the age of 7–8 (the sensitive period for rhythmic skills) likely caused permanent structural changes in the brain. Dancers who train from childhood demonstrate significantly higher temporal resolution — the ability to detect minute timing differences in sound. Neuroimaging shows that experienced dancers exhibit stronger 'neural resonance': their brains literally synchronize more intensely with external rhythmic stimuli.

At the structural level, early rhythmic training strengthens the white matter tracts — particularly the superior longitudinal fasciculus — that connect auditory and motor regions. This makes the translation from hearing to playing a complex 11/8 line nearly instantaneous for a trained musician, while remaining effortful or impossible for an untrained one.

This also explains the asymmetry in my classroom: an older student without this early investment requires longer to build what should have been constructed before the age of 12. The neural substrate is not absent — it is simply underdeveloped for this task, and must be grown through all four pillars together.

Regarding percussion specifically: 8 weeks of group drumming (3 × 30 minutes per week) produces measurable cerebellar neuroplasticity — changes in cerebellar grey matter volume, white matter microstructure in the inferior cerebellar peduncle, and cortical thickness increases in paracentral and superior frontal regions (Belden et al., 2020 — Scientific Reports). The cerebellum is the brain's master timekeeper; its reorganization through drumming directly enhances rhythmic precision even in non-musicians and non-drummers.

> **KEY FINDING:** *Grahn & Rowe (2009, Journal of Neuroscience): Auditory-motor coupling is significantly stronger in musicians than non-musicians, and strongest among percussionists. Rhythm training generalizes from motor production to motor-mediated perception — you hear better because you have played.*

6.4 Rhythmic Solfège and Cognitive Load Reduction

Advanced rhythm training strengthens connectivity between the motor cortex and the prefrontal cortex. By automating rhythmic motor patterns through vocalization and multi-limb coordination, the musician frees up residual cognitive resources for musical expression. This is the principle of 'Dual-Task Processing' applied to polyrhythm: when one layer becomes motor-automatic, the executive system can monitor and shape the second layer in real time.

The four pairings (Hand–Hand, Hand–Foot, Hand–Voice, Voice–Foot) are not equivalent in difficulty. Research on bimanual coordination (Bugos, 2019 — Frontiers in Integrative Neuroscience) confirms that each pairing recruits a partially distinct network, and that practicing multiple pairings builds more comprehensive sensorimotor encoding than any single pairing alone.

Even passive beat perception engages the motor system: fMRI studies consistently show activation of premotor cortex, supplementary motor area (SMA), and the basal ganglia during musical rhythm perception — even in the complete absence of movement (Chen, Penhune & Zatorre, 2008; Grahn & Brett, 2007). The motor cortex is not waiting to execute movement; it is actively constructing and predicting temporal structure. This is the neural basis of Pillar 1 — listening is already a motor act.

7. Methodological Lesson Plan: 7/8 within 7/4

The Balkan Additive Approach — Small Circles inside the Big Circle

The following lesson plan implements all four pillars in an integrated sequence. It uses the Balkan pedagogical framework of additive groupings — treating 7 as cells of 2s and 3s nested within a larger cycle. The pedagogical metaphor is that of circles: small circles (7/8 grouping cells) rotating inside a big circle (the 7/4 bar). Mathematically: two complete 7/8 bars = one 7/4 bar = 14 eighth notes.

Start tempo: quarter note = 60–70 BPM. Do not increase tempo until all four pillars are integrated at the current level.

STAGE 1 — Listening and Physical Orientation (Pillars A + D)

Before touching the instrument:

3. Listen to a recording in 7/4 or 7/8. No score. No counting. Two full listens, pure absorption.
4. Stand. On the second or third listen, shift body weight left on beat 1, right on beat 2, continuing through all 7 quarter-note beats. Do not count aloud. Feel the asymmetry.
5. Locate where the phrase 'breathes' — where the 7 feels like it completes and begins again. Mark that with a slight nod or knee-bend. This is the macro-pulse of the big circle.

STAGE 2 — Establishing the Big Circle (7/4) with Simple Binary Division

Begin clapping or tapping. No pitch yet. The 7/4 bar contains 14 eighth notes. The simplest orientation: divide as 4+3 (quarter notes), feeling the internal subdivision as constant eighths.

```
4+3 grouping — clap accents on beat 1 of each group: Quarters:  1   2   3
4  |  1   2   3 8th count: 1   2   3   4   5   6   7   8   9 10 11 12 13 14 Accent >:  >
>
```

6. Clap the 4+3 grouping, shifting weight on every quarter note. Verbalize: 'ONE-two-three-four / ONE-two-three.'
7. Reverse: 3+4. Verbalize: 'ONE-two-three / ONE-two-three-four.'
8. Alternate 4+3 and 3+4 every full bar. Body weight-shift continues uniformly on every quarter. Only the vocal accent changes.

STAGE 3 — Balkan Additive Cells: 2+2+3, 3+2+2, 2+3+2 within 7/4

Each 7/4 bar contains 14 eighth notes. We use the three Balkan 7/8 additive cells (each summing to 7 eighths) twice per 7/4 bar. This is the core of the lesson. Execute each pattern using the 4-step embodiment sequence: (1) Voice alone, (2) Voice + foot weight-shift, (3) Voice + foot + hand tap, (4) Transfer to bass.

Each pattern is presented in three counting systems. Use whichever feels most natural to you — or cycle through all three as a separate exercise in itself.

Pattern 2×(2+2+3) — 'Laz (Armenia) or Geamparale (Romania) feeling'

(Mostly found in instrumental compositions)

```
2+2+3 | 2+2+3 across 14 eighth notes: 8th pos:    1  2 | 3  4 | 5  6  7 ||
8  9 |10 11 |12 13 14 Cell:        [2  ] [2  ] [3      ] || [2  ] [2   ] [3
] Accent >:   >      >      >          >      >       >  1. Numbers:  One-Two
One-Two  One-Two-Three  (repeat) 2. Konakol:  TaKa     DiMi     ThaKiTa
(repeat) 3. Serbian:  Ma-Te    Ma-Te    Ma-Ti-Ka       (repeat)
```

9. Voice only: choose one system and repeat continuously. Body sways on every eighth. The accent falls on the first syllable of each cell.
10. Add feet: walk in place — left foot on the accented syllable (One / Ta / Ma), right foot on the second. The 3-cell gets L-R-R. Feel the lopsided weight of the 3 against the even 2s.
11. Add hand tap on the bass body or a table: stronger on the accent, quieter on the remaining syllables.
12. Transfer to bass — three progressive steps:

- Pure rhythm, no melodic movement: E E + E E + E E E (open E on every eighth, accent only)
- Divide into 4+3 with different notes: E E E E + G G G | E E E E + A A A
- Each cell with a different note: G G + A A + E E E | C C + D D + E E E

Pattern 2×(3+2+2) — 'Lesnoto Oro (North Macedonia, Balkan) feeling'

(The most common 7/8 subdivision in many vocal compositions and folk songs)

```
3+2+2 | 3+2+2 across 14 eighth notes: 8th pos:    1  2  3 | 4  5 | 6  7 ||
8  9 10 |11 12 |13 14 Cell:        [3     ] [2  ] [2  ] || [3     ] [2   ] [2
] Accent >:   >          >      >       >          >      >  1. Numbers:  One-
Two-Three  One-Two  One-Two  (repeat) 2. Konakol:  ThaKiTa       TaKa     DiMi
(repeat) 3. Serbian:  Ma-Ti-Ka       Ma-Te    Ma-Te    (repeat)
```

13. Follow the same 4-step sequence. The opening 3-cell creates a sense of suspension before the two quick 2-cells resolve it. The bodily feeling is quite different from 2+2+3.
14. Transition exercise: play 4 bars of 2×(2+2+3), then 4 bars of 2×(3+2+2) without stopping. The body weight-shift continues without interruption — only the accent pattern changes. Use these note combinations across the rotation:

- | G G + A A + E E E | A A + B B + E E E | G G G + B B + D D | C C C + E E + G G |

Pattern 2×(2+3+2) — 'The Middle Child' feeling

```
2+3+2 | 2+3+2 across 14 eighth notes: 8th pos:    1  2 | 3  4  5 | 6  7 ||
8  9 |10 11 12 |13 14 Cell:        [2  ] [3     ] [2  ] || [2  ] [3     ] [2
] Accent >:   >       >         >       >      >          >  1. Numbers:  One-
Two  One-Two-Three  One-Two  (repeat) 2. Konakol:  TaKa     ThaKiTa       DiMi
(repeat) 3. Serbian:  Ma-Te    Ma-Ti-Ka       Ma-Te    (repeat)
```

15. This is the most disorienting grouping for Western-trained musicians: the 3 in the middle creates a pull toward false 4/4. Countering this requires a very physical, committed first left step on beat 1. The foot is the anchor. Note combinations to use:

- | E E + G G G + E E | E E + A A A + E E |

> **PRACTITIONER'S ADVICE:** Find a word or short phrase in your own native language that naturally carries the same number of syllables as the subdivision you are working on — two short syllables for a 2-cell, three for a 3-cell. For 7/8 in 2+2+3, you need two two-syllable words and one three-syllable word. If numbers feel mechanical and

> Konakol feels foreign, your mother tongue will always find the groove faster. The rhythm already lives in your language — you just need to locate it.

STAGE 4 — Rotation Exercise: All Three Groupings in Sequence

Play 4 bars of 2×(2+2+3) → 4 bars of 2×(3+2+2) → 4 bars of 2×(2+3+2), cycling without stopping. The big circle (7/4) never changes; only the internal small circles rotate. Then reduce to 2 bars per grouping, then 1 bar. Then call transitions randomly (instructor calls, student switches). The body weight-shift must never hesitate. Use the note combinations from Stage 3 as your melodic material throughout.

STAGE 5 — Implementing Rests at Different Metric Positions

Remove individual eighth notes, replacing them with rests at different positions. This trains the internal pulse to remain stable in the absence of sound — the hallmark of metric mastery.

Rest on the last eighth of the 3-cell — 'Breathing Space'

```
2×(2+2+3) with rest on positions 7 and 14: 8th pos:  1   2 | 3   4 | 5   6   7
|| 8   9 |10  11 |12  13  14 Sound:     ●   ●  | ●   ●  | ●   ●   –  || ●   ●  | ●    ●  | ●   ●
–  1. Numbers:  One-Two   One-Two   One-Two-_    (repeat) 2. Konakol:  TaKa
DiMi      ThaKi-_      (repeat) 3. Serbian:  Ma-Te     Ma-Te     Ma-Ti-_
(repeat)
```

The rest must feel like an inhale, not a hole. Foot continues. Voice continues internally on the rest position.

Bass example: G G + A A + E B E (no rest) → G G + A A + E B _ (with rest on position 7)

Rest on the first eighth of the bar — 'Anticipated Entry'

```
2×(2+2+3) with rest on positions 1 and 8: 8th pos:  1   2 | 3   4 | 5   6   7
|| 8   9 |10  11 |12  13  14 Sound:     –   ●  | ●   ●  | ●   ●   ●  || –   ●  | ●    ●  | ●   ●
●  1. Numbers:  _-Two   One-Two   One-Two-Three    (repeat) 2. Konakol:  _-Ka
DiMi      ThaKiTa          (repeat) 3. Serbian:  _-Te    Ma-Te     Ma-Ti-Ka
(repeat)
```

Highly destabilizing. The attack on the weak syllable with silence on the accent is the moment most students lose the big circle. Keep the weight-shift foot moving before playing.

Bass example: G G + A A + E B E (no rest) → _ G + A A + E B E (with rest on position 1)

STAGE 6 — Accent Displacement Against the 7/4 Bar

Now displace the primary accent to create cross-metric tension — the jazz and Balkan improvisational frontier, where the small circles begin to move independently against the big circle.

Fixed accent every 3 eighth notes against 2×(2+2+3)

```
Accent every 3 eighths (3+3+3+3+2) across the 7/4 bar: 8th pos:  1   2   3
4   5   6   7   8   9  10  11  12  13  14 Accent >: >         >         >         >         >
> Grouping: [3   ]   [3   ]   [3   ]   [3   ]   [2 ] This 3-against-7 pattern takes 3
full bars of 7/4 to re-align.
```

16. Establish 2×(2+2+3) subdivision vocally. Simultaneously tap the every-3 accent with your dominant hand. Let them coexist — experience the tension between the two layers without trying to merge them.
17. Transfer to bass: steady eighth-note ostinato, accent (dig in harder) every 3rd eighth. The result is the driving cross-metric groove characteristic of Balkan fusion and M-Base jazz.

- Note combination example: | G A E + A B E + C D E + A B E + C D |

Fixed accent every 5 eighth notes against 7/4

```
Accent every 5 eighths (5+5+4) across 14 eighth notes: 8th pos:  1  2  3
4  5  6  7  8  9 10 11 12 13 14 Accent >: >              >              >
> Grouping: [5          ] [5          ] [4      ] Does NOT cycle within one 7/4
bar — resolves over multiple bars.
```

Advanced exploration only — not a mastery requirement at beginner-intermediate level. Related to Steve Coleman's M-Base vocabulary and certain Mahavishnu Orchestra cross-metric textures.

Steve Coleman melodic example in E minor — 14/4 (5+5+4):

```
| E E B D E + D D A C D + E G A B |  (E minor) Cell:   [5              ]
[5             ] [4          ] Notes:   E  E  B  D  E    D  D  A  C  D    E  G
A  B
```

Over the given harmonic cadenza — all notes are equal eighth notes unless otherwise marked (chord durations in eighth notes shown in parentheses):

```
Harmonic cadenza — Dm7 | BbMaj7 | Gm7 | A7b9: (5)  Dm7:     D  A  C  D  C
(9)  BbMaj7:  Bb G  Bb C  D  F  G  D  F (5)  Gm7:     G  F  D  C  Bb (9)  A7b9:
A  E  G  A  C# E  A  G  C#
```

STAGE 7 — Integration on the Instrument: Pentatonic & Arpeggios

18. Choose a chord progression in a minor key (e.g., Dm7–BbMaj7–Gm7–A7, 2 bars each). Set metronome to 70 BPM quarter note.
19. Play only root note motion first to establish the harmonic cadence, using 2×(2+2+3). Every 3 bars, rotate to 2×(3+2+2). Every 3 bars, rotate to 2×(2+3+2). Chord progression continues unchanged — only the internal accent grouping rotates.
20. Add the 5th. Play root and 5th (up or down) on every chord, dividing with long 3-cell and short 2-cells:

- | D D + D D + A A A | BB BB + BB BB + F F F | G G + G G + D D D | A A + A A + E E E | …and so on

21. Play triad arpeggios in eighth notes. Add rests: drop out on the last eighth of each 7/8 cell (positions 7 and 14 of the 7/4 bar). This creates phrase breath without losing metric position.
22. Play seventh chord arpeggios in eighth notes, combining long and short notes across the cells.
23. Play the appropriate pentatonic scale over each chord, as well as D natural minor. Add ghost notes on rested positions — no pitch, just a quiet percussive click. This maintains physical continuity and communicates internal subdivision to the rhythm section.
24. Record. Listen back without watching your hands. Does the 7 feel inevitable? Does the phrase have direction? If yes — increase tempo by 5 BPM. If not — return to Stage 3 with full body movement.

A Personal Listening Guide — Odd-Meter Recordings Featuring Me on Bass

Vladimir Samardžić — CATCHING THE WIND (SKC NS, 2022)

- Grisignana (Part I & II) — 5/4
- Catching The Wind — 7/4 YouTube
- African In Vienna — 9/8 (3/4) YouTube

Tihomir Trio — TANDRCHAK (11/8)

https://www.youtube.com/watch?v=rEyogdBZh_w (YouTube, 23.02.2024.)

Nenad Gajin — KEC (Xpanse pub., 2008)

- 25/8 (11+7+7) YouTube
- Seven Lakes — 7/8

Vasil Hadžimanov Band

- ŽIVOTA MI (PGP RTS, 2009): Give me the 9 (9/4), Krstačko Oro (13/8)
- TRI — 3 (PGP RTS, 2007): Cheick (7/4), Ohrid (7/8)
- KAFANKI (PGP RTS, 2003): 17 Accordions (17/8), Velez (9/8), Kolemanka (7/8)
- 11 RAZLOGA ZA... (PGP RTS, 2001): 11 Reasons for Wedding (11/8), Ohrid (7/8)

VA Bentbaša — Sevdalinka Bosanska Ljubavna Pjesma (Yaman, 2006) — QuattroBassi

https://www.youtube.com/watch?v=pbIEgr1TMDM

- Lijepi li su mostarski dućani — 7/8

An instrumental bass guitar arrangement by Sanin Karić of a famous traditional sevdalinka from Bosnia & Herzegovina. Notable for its rare 2+2+3 subdivision of 7/8 in a vocal tune — the most common subdivision for Balkan songs is 3+2+2.

Slobodan Trkulja & Balkanopolis — Prizivanje Kiše (PGP RTS, 2002)

- Pitagorino Oro — 25/8 (7+7+11)
- All The Things U R — 11/8
- Alexandar — 7/8

Recommended Listening — General Odd-Meter Internalization

Balkan & Middle Eastern Traditional

- Folk music of Serbia, Macedonia, Bulgaria, Romania, Greece, Armenia, Israel, Turkey, Iraq, Lebanon, Syria, Jordan, Palestine

- Famous Oud players: Rabih Abou-Khalil, Anouar Brahem, Dhafer Yousef

Jazz — Odd Meter Masters

- Dave Holland Quintet, Sextet, Octet, Big Band — complex odd-meter jazz
- Steve Coleman and Five Elements — M-Base, rhythmic superimposition
- Trilok Gurtu — South Indian influenced polyrhythm
- John McLaughlin, Mahavishnu Orchestra, Shakti, 4th Dimension — odd-meter jazz fusion
- Avishai Cohen (bass player/composer) — all discography (complex but melodic)
- Jazz history: Dave Brubeck, Don Ellis

Piano — Composers & Trios

- Pianists/composers: Tigran Hamasyan, Vardan Ovsepian, Shai Maestro, Sam Barsh, Emmet Cohen, Nitai Hershkovits, Hiromi Uehara, Bojan Zulfikarpašić, Jean-Michel Pilc
- Piano trios: Esbjörn Svensson Trio, Phronesis, GoGo Penguin

French World Music Scene

- Jazz fusion band SIXUN, Nguyên Lê, Karim Ziad, Majid Bekkas, Henry Texier, François Jeanneau, Julien Lourau

New York Contemporary Jazz Scene

- Chris Potter, David Gilmore, Robin Eubanks, Matt Garrison, Adam Neely, Nate Smith, Lakecia Benjamin, Linda May Han Oh

Bands

- Sungazer, Haken, Animals as Leaders, Nik Bärtsch's Ronin, King Gizzard

Pop / Rock with Odd Meters — Accessible Entry Points

- 5/4 (3+2): Seven Days — Sting (Ten Summoner's Tales)
- 7/4 (4+3): Straight To My Heart — Sting (Nothing Like The Sun)
- 7/4 (4+3): I Was Brought To My Senses — Sting (Mercury Falling)
- 7/4 (4+3): Twenty Five Miles To Midnight — Sting (Mercury Falling)
- 7/8 (4+3): St. Augustine in Hell — Sting (Ten Summoner's Tales)
- 7/4 (5+2): Love Is Stronger Than Justice — Sting (Ten Summoner's Tales)
- 9/4 (5+4 / 2+3+2+2): I Hung My Head — Sting (Mercury Falling)
- 15/4 (4+3+4+4): Brass in Pocket — The Pretenders
- 13/8 (3+3+3+4): Golden Brown — The Stranglers
- 15/8 (7+8): Tubular Bells — Mike Oldfield
- 7/4: Money — Pink Floyd
- 7/4: Solsbury Hill — Peter Gabriel

Rock / Prog Rock / Heavy Metal

- Led Zeppelin, Genesis, King Crimson, Radiohead, Rush, Soundgarden, Dream Theater, Tool, Meshuggah, Porcupine Tree, Slint

8. References

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"The 7 is not a difficult rhythm. It is just an unfamiliar body."

— Vladimir Samardžić